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OR
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Vol. III

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PREFACE.

The publication of the present volume has well-nigh brought to close that part of the Rasa-Vidya (or the science of the minerals in all their aspects, viz., medicinal, alchemical, and industrial) which should be considered to be an introduction to the study of a pharmacopoea of drugs prepared mainly from minerals—a pharmacopoea of a colossal magnitude, prepared, in pre-historic times, by the ancient Indians. Much of the materials, originally intended to be dealt with in the first three volumes, are left out for treatment in a subsequent volume. The fourth and a few of the succeeding volumes would be mainly devoted to the study of recipes most of whom would be found to be astonishingly infallible.

It is not possible for me to make my readers realise the nature of the labour which I, a busy medical practitioner, have been undergoing in carrying on a prolonged research on a highly abstruse and almost forgotten science, without any assistance, financial or otherwise, either from the state or from any body else.

The sympathy with which the lovers of culture all over the world have been viewing the present publication has been the main force which has hitherto enabled me to sustain my energy and to hope for a completion of the work put in hand.

It is gratifying to note that my works are already
being studied by almost all the eminent Ayurvedic physicians all over India, but the majority of the students of Ayurveda in the colleges have not yet had an opportunity to acquaint themselves with the contents of these books (which cover the greater and the better part of Ayurveda) much of which was hitherto unknown to the world. I know that there is a paucity of teachers who can efficiently teach this the most important branch of Ayurvedic studies, but I am confident that a gradual spread of the knowledge contained in the present publication will go a great way in removing this paucity at a near future.

I am thankful to Prof. Berthold Laufer of the Field Museum of National History, Chikago, and some other scholars for their suggestion to adopt the commonly accepted practice of transliteration of Sanskrit names into Roman characters. I have decided to act up to their suggestion from Vol. IV, which has already been sent to the press.

There are scholars who are more interested in the history of a science than in the science itself. For the satisfaction of such scholars, I have dealt briefly with the history of Hindu chemistry in a chapter in my newly published work, entitled “Indian Civilization and its Antiquity” (Price Rs. 2-India).

I cannot conclude the present volume without a reference to the encouragement which I have received from men of eminence connected with the spread of Ayurvedic education in this country, and especially from the Hon’ble Mr. Justice Manmatha Nath Mookerji of the Calcutta High Court (President,
Astanga Ayurved College, Calcutta) and from the late Mr. Justice Gokarna Nath Misra of Lucknow.

I am also thankful to Mr. H. E. Stapleton, M. A. I.E.S., Director of Public Instruction, Bengal, for his kindly taking an interest in my publications.

I am much obliged to Professors Satkari Mookerji, M. A. and Kshitish Chandra Chatterji, M. A., (both belonging to the Department of Post Graduate classes in Sanskrit, Calcutta University) for the help they have ungrudgingly rendered to me in correcting the proof sheets and for several suggestions received from them.

The keenness of interest with which the publication of the present volume has all along been watched by Kaviraj Jatindranath Ghosal Kaviratna, Kaviraj Birindra Mohun Chand Ray B. A., Sj. Debi Charan Ghosal and some other pupils of mine needs a special mention.

41-A, Grey Street, Calcutta.

_BHUDEB MOOKERJI._

The 27th December, 1929.
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ERRATA.

Page 11, line 2, for “ala” read “Kala”.

Page 74, line 7, for “iron” read gurh (molasses).

Page 104, insert “Purification of vanga” after the first line.

Page 220, after Maha-nila insert, “for Properties of sapphire, see page 253”.

Page 330, line 9, for VII, read VIII.
रसजलनिधिः ।

( तृतीयखण्डम् )

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सिद्धवैद्यभीम्बदेवदेवशर्मण्या रसाचार्येन
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रलेनव
वकान्तस्य

शाख्
रलेन वे
वकान्तस्य

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सन्निवेष्ट्यम् ।
रसजलनिधिः ।

तृतीयखण्डम् ।

मकुञ्जाचरणम् ।

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रूद्राकस्ये तव चरणो मे
काम्ये नित्यं मयि चिरतुष्टे ।
लीलाशीले तव शुभतेजो ॥
भातु प्रीते निकिलवरेण्ये ॥

( २ )
बाध्याभारा सति तुद्दते मां
वधातीशे मम चिरकांच्छाम् ।
प्रस्तवीकारास्थितस्सुतशीलेष्यें ।
श्राशीर्धारा तव विनिषिप्त ॥

( ३ )
विश्वे विश्वे ब्रह्मलक्ष्माणी
प्रोदुगोतास्तु छवयापिपासा ।
धीराणां शाम्यतु तव कायम्
कर्तु महं प्रविष्टर शक्तिम् ॥

1

1
(४)
जीवाणां लग्न भविष्यदात्री
देवाणां लं चिरशराण हि।
मायातीते मम हृदि तिश्च
काम्यं नातभ्रिभुवनधात्रि॥

प्रथमोऽध्यायः॥

ब्रह्म लोहम्।

अस्य नामांि।

लोहोढःश्रीकं तीच्छां पिण्डमयं कालायसम्।
ऋषिलोहं शिलामजमायसङ्क्रापि कथ्यते॥

अस्य गुणा:॥

(१)
मधुरं तुवरं तिकं लोहं शीतं सरं गुह।
रुचं वस्यं चबुस्यं लेखं वातलं हि ततु॥
कफं पितं गरं शूलं शोधार्शंश्रीपाषणंतृत।
मेदोमेघकमिनु हृतं सेवनातु तदृ यथाविधि॥

(२)
ब्राह्म: प्रदाता बलविर्यकर्ता रोगापहर्ता मदनस्थितात॥
ब्राह्म:समानं नं चिकित्सदिति रसायनं श्रद्धतं

नराशाम्॥
Chapter I.

LAUHA (IRON).

Properties of lauha.

(1)

Iron is sweet, astringent, and bitter in taste; cold; laxative; heavy; coarse; preventer of senile-decay; improver of eye-sight; reducer of fat; and increaser of a little of vayu (wind) in the system. It pacifies an excess of kapha (phlegm) and pittam (animal heat); and cures toxin, colic, swelling of the body, piles, spleen, anemæa, obesity, spermatorrhæa and worms.

(2)

Iron increases strength and longevity. It cures diseases and is an aphrodisiac. It is one of the best remedies for senility.

लीहस्य खामाविकदोषः ।
गुस्ता हट्टता क्लेदः कर्मलं दाहकारिता ।
भश्मदोषो मलपहो दोषः सतायसत्वं तु ॥
शोधितव्यमतस्तद्धर्मार्कोंयं यथाविधिः।
भशोधितममारितं लौहं ज्ञेयं महाविषम् ॥

Natural blemishes of iron.

The following are the seven blemishes of iron:—heaviness, hardness, mixture with foreign matters,
power of causing hysteria, power of causing inflammation, evil characteristics of stone, and power of causing constipation.

Evil effects of taking impure iron.

Iron, not properly purified and incinerated, gives rise to the following:—impotency, leprosy, death, heart disease, colic, stone disease, hiccough, and even augmentation of many of the diseases the patient has already been suffering from.

Varieties of iron.

Iron is of the following different kinds:

* पाठेश्यं रसेद्रव्यचिन्तामणेष्ठया रामराजीवलुकृतः ||
(a) Samanya or ordinary, (b) Krauncha (c) Kalinga
(d) Bhadra (e) Vajra (f) Pandi (g) Niraka, and (h) Kanta.

Of these, (b) is twice as efficacious as (a); (c) is eight
times as efficacious as (a); (d) is ten times as efficacious
as (c); (e) is thousand times as efficacious as (d); (f)
is hundred times as efficacious as (e); (g) is ten times
as efficacious as (f); and (h) is thousand times as
efficacious as (g). *

( २ )
मुळं तीथ्यं तथा कान्तं त्रिविंश लोहसुच्यते ।
मुळदाति तीथ्यं तत्त: कान्तं प्रशस्तं ज्ञाते बुधः ॥

* This classification was in vogue at the time of King Rama Chandra,
the hero of Ramayana. The present day Indians are unable to identify these
different kinds of iron. Such ancient chemists as Nityanatha, Bagbhat,
etc. were also ignorant of this classification. This is due to an incredibly
great decline in our knowledge of industrial chemistry since the time of
the great Rama Chandra. That the ancient Indians attained a high degree of
scientific knowledge is evident from the famous iron pillar of Delhi, which,
according to the inscription, was erected as a monument by King Chandra
who was most probably the founder of the Chandra dynasty (wrongly
translated as "Lunar Dynasty"). This huge pillar has been exposed, for
several thousands of years, to the roughness and extreme variations of
a tropical climate, but no rust has grown on its amazingly smooth and
glossy surface. The same remarks apply to the caunus lying in
Vismipur (Bengal) and to the iron beams used in the famous temple (now
in ruins) of Konarka in Orissa.

It is a matter of wonder and great significance that the ancient Hindus
were able, long, long before the birth of Christ, to forge such huge pillars and
beams; and to prepare a kind of iron the like of which modern scientists
have not yet been able to produce. It is a sheer want of encouragement
that accounts for the present state of deplorable forgetfulness in this
direction.
Iron is of three different kinds, viz. (a) Munda (b) Tikshna, and (c) Kanta. The second is better than the first and the third is better than the second.

(k) मुण्डम् (पूर्तिलोहम्).

मृदु कुएंट कड़ारक्ष त्रिविधं मुण्डमुच्यते ।
दु तद्रावमविस्फोटं चिक्राणं मृदु तच्छुभम्॥
हतं यत प्रसरेत दुःखात् तत् कुएंट मध्यमं स्मृतम्।
यक्ष्ठं भल्यते कुष्ठं हीनं स्थात्तू कड़ारक्षम।॥

(a) मुण्डा or ordinary iron.

Munda or ordinary iron is of three different kinds, viz. mridu (soft), kuntha (obdurate), and karara (brittle).

Mridu or soft is that which melts quickly and has a smooth and glossy surface.

Kuntha or obdurate is that which can be expanded with much difficulty by hammering.

Karara or brittle iron is that which breaks easily, when hammered, and presents black surfaces when broken.

Of these three, the first is comparatively commendable, the second is of moderate efficacy, and the third is the least efficacious for medicinal purposes.
Properties of excellent Munda iron.

Soft iron of superior qualities (duly incinerated) is efficacious in the following diseases:—excess of kapha (phlegm), colic due to excess of vayu (wind), piles, dysentery, spermatorrhoea, jaundice, anemia, gulma, rheumatism, diseases affecting the belly, and dropsy. It increases blood, and appetite, and purifies the stomach.

(ख) तीद्याम्।

खर्रं सारवं हस्तालं तरापद्यं वज्रकम्।
कालाहामिघानां पद्ध विचं तीद्यामुच्यते॥

(b) Tikshna iron.

There are six different kinds of tikshna iron, viz. (1) khara (2) sara, (3) hrinnala (4) tarapatta (5) bajraka and (6) kala. *

* Import of cheaper iron products from foreign countries has led to the total ruin of iron industry of an indigenous character in India. The last generation of iron smiths who were acquainted with the different kinds of iron, as described here, became totally extinct about 50 years back. The classification, as given here, has therefore nothing but a historical interest for us.
(1) Khara.

Khara iron is that which is coarse, inflexible, and devoid of pogara * or carved lines on its surface. This iron, when broken into pieces, presents sectional surfaces as glazy as mercury.

(2) Sara iron (Steel ?).

(a)

This is a kind of tikshna iron which breaks into pieces, when hammered, and has pogara or carved lines on its surface. It is obtained from ores of yellowish colour. **

---

* Pogarāmitrakvattu kuttīrīccha: |
  bhūnāyā vā bhūnā vogarastrāmānāna bharāmuv |
  cīkurā bhū guṛā bhodāla pogaṛte tāt pataṃ matamuv |
† Pāṇḍubhūmijān sūtra pāṭaṃtrām pāṇḍubhūmijāmu |

** According to another version, it is obtained from a province called "Pandya" (Pandra in Manbhum ?)
* Anga-chhaya and bangā are the two synonyms of pogara (carved
Sara iron is hard. Its surfaces give rise to hard and fine figures having the appearance of mountain peaks, if smeared with some kind of amla (sour vegetable juice).

(3) Hrinnala iron.

Hrinnala has a yellowish black colour. It has, on its surfaces, pogara of the shape of bird's beaks. It presents very coarse sectional surfaces at the places where it is cut into pieces.

(4) Tarapat līhām.

Gorīripattakāraṃ lōhē tarapattāṁ vikāhyate. 
Nirmiśyate shilāpaśca yatēn lōhāṃśrūčittikāt. 
Śṛuchopogarasūryan kṛṣṇāṃ yutō vikāhyam. 
Vṛṣaṃbhrorīdravāyuṃ bhī chaīyaṃ jāyate hi tattva.

* Shivalīsamāgrasāhāpākāraprāçēṣṭa: gaurīripattimati kāhyate. 
  Shilāp: (shilā + ṁ + ṣ) Pṛṣṭacarīdhānīpyuṣa: lōhākāra: sarāpa 
  iti bhāṣa.
(4) Tarapatta iron.

Tarapatta iron is obtained from iron ores by a class of smiths who are specialists in the science of ores. This iron is black, smooth, glazy, and has very fine pogara (carved lines) on its surface. This is prepared in the shape of a spoon (minus the handle). It is a kind of iron which never rusts, even if it is exposed to the sun, rains, and wind.

(5) Bajra iron.

Bajra iron is that which has got on its surface plenty of fine and deep-seated lines—straight and carved (pogara)—of the appearance of an electric flash (bajra), and is of a glossy black colour.

* This is most probably the iron out of which the wonderful iron pillar of Delhi, the iron beams in the ruins of konarka temple, the cannons in visnupur etc. were prepared. The art of preparing such iron is now hopelessly lost.
(6) ala or Black iron.

Kala iron is heavy and of a deep blue-black colour. Its surface is glossy, heavy, and bright. It can not be broken into pieces by being hammered upon by means of another piece of iron.

Properties of tikshna iron.

Khara iron is coarse and warm in touch, bitter in taste, but it turns sweet, when digested in the stomach. It produces a cooling effect upon the system. It is efficacious in the following diseases:—excess of kapha and pittam, leprosy, udara-roga, enlargement of the spleen, mucus, jaundice, colic, derangement of the liver, wasting diseases, senility, spermatorrhoea, inflammation, and rheumatism. It increases strength and appetite and prevents and cures senile decay, if taken in the manner prescribed hereafter. Each of the varieties of iron named after "khara" is superior in quality to that which precedes it.
Sara iron cures the following diseases, if taken in the prescribed way:—diarrhoea, both chronic and acute, paralysis affecting the whole or half of the body, colic felt at the time of digesting food, nausea, pinasa, diseases due to an excess of pittam, asthma, and cough.

Kanta iron (an oxide of iron having the magnetic power of attracting iron.)
Its characteristics.

(1)

Kanta iron is of such a nature that a drop of oil thrown into water contained in a pot of this iron does not spread over the surface of the water; neither does the oil stick to the inner surface of the pot. Hingu (asafetida) kept in a pot of this iron loses its smell in course of time. Bark of nimba tree (which is very bitter in taste), pestled with water, loses its bitterness, if kept for some time in a pot of this iron. Milk, boiled in a pot of this iron, may swell up, but will not overflow the borders of the pot, and will not flow into the ground.

(2)

Kanta iron is softer than silver. It is coarse and black in colour. Water boiled in a pot of kanta iron acquires the smell of hingu (asafetida). Kanta iron of superior quality is generally found to be in the form of ores covered with silver. Such a kanta iron (i.e. kanta iron found in ores rolled in silver) can
cure all sorts of diseases, if applied in the prescribed way, including all sorts of leprosy.

(2)

यत् पाषाण्युषिते तोये तेलबिन्दु ने सर्पिति ।
तारेखावर्चिते यत् तत् कान्तलोहिमति स्त्रतमः॥

(3)

Kanta iron is that which is found to be mixed with silver.

कान्तलोहिमति स्त्रतमः॥

भ्रामकं चुम्बकं चेत कर्षकं द्रावकं तथा ।
पूवं चतुर्विंदं कान्तं रोमकान्तश्च पद्मम्॥
पुक्तं तितिः चतुस्पदं सर्वतोमुख्मेव तत् ।
पीतं क्राशं तथा रक्तं त्रिवर्गं स्त्रात् पृथक् पृथक्॥
स्त्राश्चेचिः भवेत् पीतं क्राशं ब्रह्मं रसायने ।
रक्तवर्गं तथा वाकं परस्तं रसायने प्रशस्तं ॥
भ्रामयेवौहीजात्तु तत् कान्तं भ्रामकं मतम्॥
चुम्बयेवचुम्बकं कान्तं कर्षयेत् कर्षकं तथा ॥

* "कान्तलोहिमति" स्त्रतमः हस्यस्य स्थले "कान्तलोहि शुभं स्त्रतमः" इत्ये तत् पाठात्तरं हृदये।
Kanta iron is of five different kinds, viz. bharamaka, chumbaka, karshaka, dravaka, and romakanta. They may have one, two, three, four, five or more than five mouths or points. They may be of three different colours, viz. yellow, black, and red. Of these the yellow variety (popularly called the philosopher's stone) can transform base metals by mere touch. * The black variety is commendable in medicines and the red variety in medicines as well as in the act of solidification of mercury.

Bhramaka iron is that which makes a piece of ordinary iron revolve round it. Chumbaka kanta (load stone) is that which can cling to pieces of ordinary iron. Karshaka kanta is that which can attract to it pieces of ordinary iron. Dravaka kanta is that at the touch of which ordinary iron melts (without any heat being applied). Roma-kanta is that which causes the growth of fresh hair at that part of the skin which is lightly pierced through by it.

* It is an ore found in nature and is, therefore, to be distinguished from a kind of Philosopher's stone that can be prepared (vide page 235, Vol. I).
Of these four varieties, Bhramaka is the least efficacious. Chumbaka is superior to Bhramaka. Karshaka is superior to Chumbaka, and Dravaka is the most efficacious of all these varieties.

The kanta iron which has got only one mouth (or magnetic point) is the least efficacious; that with two or three mouths is of moderate efficacy; and that with four or five mouths is excellent. The kanta iron which has got several mouths is the best of all.

Special features of Bhramaka, etc.

Kanta iron of the name of Bhramaka and Chumbaka are commendable for use in medicines intended for cure of diseases. Karshaka and Dravaka are commendable for use in mercurial operations and in medicines intended for cure of diseases as well as for prevention and cure of senile decay. Mercury can be compared to a wild elephant, whereas kanta iron to a goad which serves to control its wildness.

Kanta iron is to be obtained direct from mines. The kanta iron which has been kept exposed to sun and air should be avoided in medicines.
Properties of kanta,

Kanta iron is bitter in taste, warm in touch, but produces a cooling effect in the system. It is a good rasayanan (i.e. a medicine which, if used in the prescribed manner, can prevent and cure diseases and senility). It imparts long life to a healthy man (who takes it regularly). It is soothing. If taken with suitable anupanam, it can cure all the diseases, especially, spermatorrhoea, colic, dysentery, excess of the three doshas, piles, fistula, gulma, enlargement of the spleen and liver, phthisis, jaundice, and udara-roga.

Purification of iron. **

* Shodhanaryam tattvikam lathapancha samvadavam vyavaharyam.

** Iron is, first of all, to be heated and hammered into thin leaves before it is purified.
First process.

(See Second process, page 242, vol. II.)

Second process.

All sorts of iron leaves are purified (medicinally, of course), if they are heated three times and immersed each time in the blood of hare.

Third process.

Kanta iron is purified, if it is heated after having been smeared with ksharas and amlas, and then immersed in the blood of hare.
Fourth process.

Sixteen palas of triphala are to be boiled with 128 palas of water until it is reduced to 32 palas. Five palas of iron leaves are to be heated seven times and immersed each time into this water. This results in the purification of the iron.

Fifth process.

Iron leaf is purified, if it is coated with a dense solution of sea salt, then heated, and cooled next by immersion into a decoction of triphala.

Sixth and Seventh processes.

Iron is purified, if it is boiled with decoction of leaves or fruits of tamarind.

It may also be purified, if it is boiled for some time with decoction of triphala, prepared with cow’s urine (and not water).
Eighth process.

(See Process No. 3, page 242, Vol, II)

Ninth Process.

A solution is to be made of the five salts, the two ksharas, the juice of shobhanjana, and the amlavarga.* This is to be exposed to the heat of the sun for one day. Kanta iron is purified, if it is boiled for one day by means of a Dola-Jantram containing this solution.

* For amlavarga, see page 301, Vol I.

Details of salts and ksharas will be given later in the present volume.
Incineration of Iron.

Medicines, in which iron is the leading ingredient, are better than those in which any other of the remaining metals (except mercury) forms the main ingredient. Iron is therefore to be incinerated very carefully.

Iron is not to be incinerated in quantities less than five palas and more than thirteen palas at a time. The following mantra (sacred text) is to be uttered just before the commencement of the process, leading to the incineration of iron:

"Om amritodbhavaya Swāhā" etc.

योहारणस्य प्रयोगोत्त्विचि: ||
सूतकाद्विहिषतां गन्धं द्वातः क्रयांश्र कत्वल्लिम।
द्वयोः समं योहच्छु रण मदृष्यत् कन्यकाव्रोऽ॥
यामयुगम ततःपियं कृत्वा तामस्य पात्रके ।
घरम धृतवा स्वूकस्य पत्रेराज्याद्येद्यु वुधः॥
Incineration of iron.

First process.

See fourth process, page 247, Vol II.

Second process.

Iron is incinerated by being rubbed with one fourth its quantity of incinerated mercury, and subjected to putam. It may also be incinerated, if rubbed with an equal quantity of swarnamakshika, gandhaka, and mercury, all combined, and then subjected to putam.
Third process.

Tikshna iron is to be hammered into fine sheets, devoid of layers. These are to be heated red hot and immersed into water. They are then to be reduced to powder by means of an iron bar in a stone mortar. Portions of the sheets, too hard to be powdered, are to be confined within two earthen basins, subjected to strong heat, and then immersed into water. When cooled, they are to be reduced to powder, being hammered in the aforesaid way. The powder, thus obtained, is to be rubbed with mercury and sulphur, and subjected to putam for twenty times. Rubbing very steadily is to be resorted to, previous to each act of putam. (Juice of kanya or lemon juice or kanji may be used for the purpose of rubbing in this case).
Fourth process.

Twenty tolas of fine iron sheets are to be smeared with an equal quantity of hingula, previously rubbed with human milk, and then subjected to gajaputam. The iron is then to be subjected to forty more acts of putam, previously rubbed each time with one tola of hingulam mixed with the following alternately:—(1) decoction of triphala and (2) lemon juice or aranala. The iron, thus incinerated, is again to be subjected to thirty more acts of putam, having been rubbed each time with one tola of hingula mixed with the juice of white punarnava and basaka. The iron thus grows as red as red vermilion.
Fifth process.

Iron sheets are reduced to ashes, if they are subjected to putam, after having been smeared with hingula, rubbed with human milk, and the juice of the following:—ahimara, ahadamani, basaka, asthi-sanghara, and arjuna.

Sixth process.

Iron is incinerated, if it is heated red hot and then immersed for several times in a solution made of lemon juice, salt, and cinnabar.
वज्ञाकृतियुद्धीदिवरतनुग्रंजातुरंगधन-
निग्रुं दीर्गदशुकुटेकरकनकविहिकमस्यालता-
हेमरसपदीजटामृतलताभं गेन्द्रसैदिने।
राजोऽ तदसंस्थ पृथक प्रथगहोतसैव भावा: पुटा। \(1\)
राजोतकुशुं खल्लवकतलेपिष्ट्टा दिनैकं द्रढ़म्।
भावाश्रैवं पुटाशस सत कथितः सर्वाश्र वेद्याधिपः। \(2\)
पश्चाद्वन्दवपुराण्य मंच सततं पंचामुखियां खुन्नत्त्वृहसः
दश्याष्टदश्युतं मयं च चौरे सियाम्। \(3\)
गोदुः मु दिवान्योपि संतं पिष्ट्वा च भावा:।
पुने तु पश्चारद्ध सुपारदेन शुचिना गंधन कन्यासे। \(4\)
तथा गण्य परिमहं येदु द्रढ़तरं संपाच्येतं संपुटे
पश्चात् केवल कन्यकाशुचिस्थेसबोझिः त्रिश्रं: पाच्येत। \(5\)
पश्चात् कज्जलेसितिः जलतरं शुद्धं च लोहं
भैत्व।
एवं प्रोक्तं वलाजलेऽ परिहतं तबाहमुकं शुभम्

Seventh process.

Purified and powdered iron is to be subjected to bhavanas with cow’s urine in day time and heated by putam at night. This process is to be performed

* दन्त पुनर्जुवां ग्रुतज्ञाव शकरसंयुतं मधु।
पश्चाद्वत्तमिदः प्रोक्तं विशेषं शुभकम्पेषु। \(1\)
for twenty times. The iron is then to be treated similarly for sixty times with the decoction of triphala, and with the juice of kanya for eight times. This is then to be subjected to bhavana for seven times in day time and as many times at corresponding nights, with the juice of each of the following plants, and subjected to heat by putam after each act of bhavana:— Bajra, arka, halini, ingudi, haridra, daruharidra, gunja, ashwagandha, nagaramustha, nirgundi, patala-garuri, bana-tulashi, dhattura, chitraka, matsu-yakshi, red hansapadi, jatamamsi, amrita-lata (a kind of guduchi growing in the amarkantaka forest), bhringaraja, and indra-baruni.

The iron is thus to be rubbed steadily for one day with raji and butter-milk and heated by putam. This process is to be performed for seven times. The iron is then to be rubbed with each of the five things known by the name of pancha-mritam (viz. curd, milk, ghee, honey, and sugar), and subjected to putam each time. The iron is then to be rubbed with human milk for sometime, and with cow's milk for three days at a stretch, and then heated by putam. The product is then to be mixed with half its quantity of purified mercury and the same quantity of purified sulphur, and then rubbed with the juice of kanya to be heated by putam. Next the iron is to be rubbed with the juice of kanya only, for three times, and heated by putam every time. The ashes, thus prepared, may then be rubbed with the juice or decoction of balā only, and used according to requirements.
Eighth process.

Tikshna iron, finely powdered, is to be rubbed with decoction of triphala and a little of powdered rice or wheat, and made into small cakes which are to be dried and subjected to putam. Performance of this process for five times leads to the reduction of iron to red-coloured ashes.
Ninth process.

Iron sheet, smeared first of all with a paste made of matsyakhi, and then with another paste made of the juice of lakucha fruit, matsyakhi plant, and saffron, is to be heated strongly by means of two bellows till the rise of flames. This is then to be immersed in a decoction of triphala mixed with cow's urine. The iron is then to be hammered into fine powders. The part which has not been incinerated are again to be heated and incinerated in the afore-said way. The ashes, thus obtained, are to be subjected to putam for thirty times after having been rubbed each time with sulphur, molasses, and decoction of triphala. The ashes, thus prepared, are incapable of being restored to their original state i.e., the state of iron before incineration.

Tenth process.

Powdered iron is incinerated, if it is subjected to putam after having been rubbed for sometime with an equal quantity of sulphur and a sufficient quantity of juice of kanya.
Eleventh process.

Iron of excellent quality is to be subjected to bhavana for twenty one days with cow’s urine, previously boiled with triphala. It is then to be rubbed for one day with the above decoction and subjected to heat by gajaputam. Next it is to be rubbed during day time with the above decoction, and subjected to putam at night. Performance of the process for twenty one days, leads to the incineration of the iron.

Twelfth process.

Purified and powdered iron is to be rubbed with juice of patalagaruri and heated by putam. This is to be performed thrice. It is similarly to be treated with the juice of kanya for three times, and for six times with the juice of kuthara-chhinna. This will lead to the incineration of the tikshna iron.
Thirteenth process.

Powdered and purified tikshna iron, mixed with one twelfth its weight of cinnabar, is to be rubbed for six hours with the juice of kanya, and then subjected to heat by putam. This process is to be performed for seven times leading to the incineration of the powder, which will be so light as to float upon the surface of water.

Fourteenth process.

Purified and powdered iron, usharaka (saltpetre), and asvagandha, each one palam in weight—all of
these are to be rubbed together with the juice of kanya for one day, and made into a ball which is to be wrapped up with the leaves of eranda and coated all round with mud. This ball, when dried, is to be heated by gajaputam, leading to the reduction of the iron into red ashes, which will float upon the surface of water.

Fifteenth process.

Bark of arjuna is to be rubbed with water, mixed with kanji and kept in a bell-metal pot. Purified and powdered iron is to be thrown into the afore-said liquid, and the pot containing the whole thing is to be exposed to the heat of the sun. Fresh juice of arjuna bark or aranala is to be poured into the pot over and over again, as soon as the iron is found to be dried. This leads to the incineration of iron.
Sixteenth process.

Purified and powdered iron is to be mixed with the juice of danti leaves, and exposed to the heat of the sun for one day, the juice being applied as many times as necessary for the moistening of the iron powder, whenever it is dried. The iron is then to be dried and subjected to heat at night by putam. It is then to be taken out of the putam, when cooled of itself, and again mixed with the juice, and exposed to the heat of the sun. This is to be done for eight days, leading to the incineration of the iron.

Seventeenth process.

Iron is to be made into leaves as thin and small as tamarind leaves. These are then to be kept immersed in the juice of danti, contained in an earthen vessel, which is to be exposed to the heat of the sun.

The heating is to be continued with fresh juice of danti applied, over and over again, till the incineration of iron, which is to be powdered very fine, when the process is completed.
Eighteenth process.

Powdered and purified iron is to be subjected to bhavana for three times with each of the following:—juice of kantakari, juice of trikantaka, cow’s urine, decoction of triphala, and juice of dhataki. After each act of bhavana referred to above, the iron is to be rubbed and subjected to heat by Gajaputam. This will lead to the incineration of the iron.
Nineteenth process.

Purified and powdered iron is to be rubbed in the intense heat of the sun for one day with each of the following:—juice of kuranta leaves, (b) juice of trikantaka, (c) juice of bandhya, (d) juice of bhringaraja, (e) juice of punarnava, and (f) cow’s urine. The iron is next to be subjected to bhavanás for twenty one days with the decoction prepared from triphala boiled with cow’s urine. The iron is then to be subjected to Gajaputam for twenty one times at night, after having been rubbed each time during the day with the same liquid (viz. decoction of triphala and cow’s urine). This is how iron is incinerated.
Twentieth process.

Makshika, manas-shila, haridra (turmeric), and maricha are to be rubbed with a sour vegetable juice. Into this solution are to be immersed hot iron leaves previously purified. They are next to be immersed, red hot, into the decoction of triphala for seven times. They are then to be washed off in water, and reduced to powder by being hammered by an iron rod. The powder, thus obtained, is to be rubbed with decoction of triphala and a sour non-metallic juice, and then heated by Gajaputam in a blind crucible. This will result in the reduction of the iron into ashes, incapable of being restored to their original state. The makshika and manas-shila used in this case should be one-sixteenth part of the iron.

Twenty first process.

Purified and powdered iron is to be smeared with the internal kernel of tindu fruits (previously rubbed with water and made into a paste), kept in a bell-metal pot, and subjected to the heat of the sun during the whole of the day time, and again subjected to heat by putam at night, having been pre-
viously rubbed with the decoction of triphala. This process of smearing and heating, as described above, is to be repeated over and over again, leading to the incineration of the iron.

Twenty second process.

Purified and powdered iron is to be heated with
the decoction of triphala, kept in an iron pot, and turned constantly with an iron ladle till the whole thing turns into a lump, which is to be rubbed with the decoction of triphala and subjected to heat by putam. This process is to be performed for sixteen times. The iron is then to be subjected to heat by the *sthali paka* system (to be described in process No 26) with the following liquids:—juice of bhringaraja, juice of talamuli, juice of the root of hastikarnapalasha, juice of the root of shatavari, juice of the root of bidari, and decoction of triphala. Next, all these processes from beginning to end are to be again performed for the second time. The iron is then to be subjected to bhavana for three hours at a stretch with each of the under-mentioned liquids, respectively:—juice of punarnava, decoction of dashamula, decoction of brihati, juice of bijapura fruit, juice or decoction of palasha seeds, and cow’s milk. It is then to be rubbed with the same juice, and subjected to heat by putam after each act of bhavana and rubbing. This results in the incineration of the iron.

** Twenty third process.**

Iron sheets are to be burned red hot and
immersed in the decoction of triphala. They are then to be reduced to powder and boiled with a decoction of triphala or cow’s urine. The iron is next to be rubbed with decoction of triphala or juice of matsyakshi, and subjected to heat by putam. The last process is to be repeated till the iron becomes incapable of being restored to its original condition. Thus incinerated, the iron gains in efficacy, if subjected to bhavana with the juices of suitable herbs, and again subjected to heat by putam after every act of bhavana.

चतुर्विन्दोषविधि: ॥

परिप्रेष्टं दाङ्दिमपत्रवारं लोहं रजः
खल्पकठोरिकायाम् ॥

त्रिभेत वज्राकुटसमकभासा पुरेत्
ततो वै त्रिफलदिवारा ॥

Twenty fourth process.

Purified and powdered metal is incinerated, if it is kept immersed in the juice of pomegranate leaves contained in a small earthen basin, and exposed to the heat of the sun, duly covered by means of a piece of cloth.

Purified iron, thus reduced, is to be rubbed with the juice or decoction of *triphaladi* and subjected to heat by putam. (For meaning of *triphaladi*, see page 48.)
Twenty fifth process.

Purified and powdered iron is to be rubbed with cow’s urine and subjected to putam. Performance of this process for hundred times results in the incineration of iron.

Utility of putam.

For the purpose of incineration of iron, heating by putam for ten to hundred times may be considered necessary for the cure of diseases only. Putam
for hundred to one thousand times is necessary for the purpose of curing and preventing physical decay and senility. For the purpose of retention of semen, it is necessary to subject iron to putam for more than one thousand times.

Increase in the number of putam is calculated to increase the efficacy of a metal, incinerated without mercury. This is not the case with a metal incinerated by the help of mercury.

Twenty sixth process.

Iron is incinerated and becomes incapable of being restored to its former condition, if it is roasted by means of all the three different operations called (a) Bhanu-paka, (b) Sthali-paka, and Puta-paka, as described below.

Bhanusiddhi: 1

लोहहर्ष्ठि लोहच्छ मुद्रगरेण हतं मुद्रः।
कठवामुम्मुगलिं शुद्धं जलेन त्रेपणलेन वा।
वालयेदुवहुंश: परशच्छे द्रवाचेव विमोचयेत् ।
शोषयेदु मानुभि: पुनर्भानुपकेप्रयोजयेत्।

1# लोहहर्ष्ठि लोहच्छ स्वर्गले इत्यर्धः।
† मानुभि:  सत्यरसिमि:।
(a) Bhanu-paka Process.

Purified iron is to be reduced to powder by being kept in an iron mortar and hammered repeatedly. The powder is then to be mixed with a sufficient quantity of water or decoction of triphala, and thus washed off. It is then to be dried by being exposed to the sun, subjected to the process of heating called bhanu-paka. For the purpose of bhanu-paka, triphala, equal in quantity to the iron, is to be boiled with double its quantity of water which is to be reduced to one fourth its quantity. The iron is now to be saturated with the decoction referred to above, and dried by the sun. The process is to be performed continuously for three days or it may be performed for seven times.

अथ खालीपाकबिधि: "

इत्यादित्यपाकान्ते खाल्यां पाकमुपाचरेत्।
तत्र फलान्तिकं प्रायामयस्त्रियुग्मिकटम्॥
Roasting of iron by sthali-paka is to be resorted to after bhanu-paka. For the purpose of sthali-paka, triphala, three times in weight of the iron, is to be boiled with water, sixteen times in weight of the former, to be reduced to one eighth of the water.

Decoctions of other things than triphala are to be prepared as follows:—The article from which a decoction is to be prepared is to be equal in weight to the iron. Such an article is to be boiled with water which is four, eight or sixteen times its weight, according as it is soft, hard, or very stiff, respectively. The quantity of the decoction, thus
रसजलनिधि:—तृतीयवांडम्

prepared, should be equal to that of the iron. If the juice of a plant is to be used instead of a decoction, the quantity of such a juice should also be equal to that of the iron. Roasting by sthali-paka means heating of the iron by fire in an iron cauldron, in which the iron is boiled with some decoctions or juices of plants, till the decoction or juice is completely dried up. Such a roasting generally takes place, first of all, with decoction of triphala (to be prepared in a way described above), and then with the decoction or juice of the following:—hastikarna-palasha roots, satamuli, bhringa-raja, kesharaja, and punarnava. For the purpose of sthali-paka, juices or decoctions of other herbs also may be made use of, if called upon by the nature of the disease for the treatment of which the iron is meant to be prepared.

अथ पुत्रपकविद्या:।
स्थाणोपके सुसंपकं प्रचाल्य स्वच्छवारिष्ण।
शुष्कं संचूर्यं यत्नेन पुटपके प्रयोजयते॥
पुटाहोषचिनाशः स्यात् पुटादेव युणोदयः।
खियते च पुटाहोहस्तस्मात् पुटं समाचरते॥
यथा यथा प्रदीयनते पुटा सुवहुशो यदि।
तथा तथा प्रकृतज्ञति युणानेव सहख्याः॥
पुटापकेन पकं तु शह्यते रसकम्भसु।
दशादिशा न्यायं न्तो गदे पुटो विचिन्तं:।
शतादिस्तु सहख्यान्तः पुटो देयो रसायने॥

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The iron, properly roasted by sthali-paka process, should be washed with clear water, then dried, powdered, and again roasted by puta-paka. Roasting by putam serves to remove the natural blemishes and to increase the properties of iron and other metals. Such a roasting causes the incineration of iron which gains in efficacy in proportion to the number of putam resorted to. Metals, properly incinerated by means of putam, should be used in mercurial operations. If it is meant to cure diseases only, iron, incinerated by 10 to 100 putams, may be made use of. Putams from 100 to 1000 are to be resorted to, if it is meant to prevent and cure senile decay. Putams from 10 to 500 are necessary, if it is meant to use the metal as an aphrodisiac. Putams, in case of a metal, are to be resorted to so long as it does not float upon calm water. For the purpose of puta-paka, the juice or decoction, whichever is
रसञ्जलिनिः—तुलियश्लाड्यम्।

available, of the herbs named below should be made use of:

अथ त्रिफलाविभिन्नः।

त्रिफला त्रिवृत्ता दन्ती कटुको तालमूलिका।

बुधदारकव्रशीरव्रपत्रकचिन्तकाः।

श्रुक्ष्येरविड़क्षे भूमभातकोषधम्।

दाड़िमस्य च पत्रानि शतपुष्प्री पुनर्भोवा।

कुठारकामको कन्दः तन्त्री भेकस्य परिका।

हस्तिक्षणपलाश्र्य कुलिशः केशराजकः।

मानः खंडितकण्ठिष्ठ गोजिहः लोहमारकः।

गिरिशयोगिभिः प्रोक्तस्त्रिफलादिर्यं गणः।

सामान्यपुपटपकाय गणानन्यानू श्रृणूदितानू।

अथ पररासिम्बः।

एरस्य शारिवा द्राचा शिरीषश्र्य प्रसारणी।

माषमुद्द्वाल्यपृष्ठिनी विदारीकन्दकेतकी।

एरासिम्बः हं श्रव्वेनातविकारनुत्।

अथ किरातादिगः।

किरातममृता निम्बः कुस्तुम्बुरु शतावरी।

पटोलांचन्दनं पद्रं शालम्युडम्बरी जटा।

पैतिकामयहन्तायं किरातादिगशोमत:।
प्रथमोध्यायः

अय श्रुत्वेराधिगणः

श्रुत्वेरस्य मूलानि निर्गुणदी कौटजं फलमुः
कर्तण्डित्यं मूवा शोभाज्ञानशिशिरोकाः
वसुवधाकरपणं च पटोलं काटकारिका
श्रुत्वेराधिको होष गणः श्लेष्मगदापहः

अय गोचुराधिगणः

गोचुराधरकौ व्याधी सिंहपुष्चीर्वयं स्थिरा
गोचुराधिरित्रि प्रोको वातश्लेष्महरोगाः

अय पटोलाधिगणः

पटोलपत्रकोशीरकासम्हारिपारिजिता
लोधते न्दीनं ग्लाद्वरवराही कांतया सह
Pटोलाधिरिति जयं पिनश्लेष्मगदापहः

अय किंशुकाधिगणः

किंशुकं कासरी विश्वमभिमन्त्रथ्रिकंगठः
श्योनां सतपार्नीं च सिंहपुष्चीयं स्थिरा
Pटलं काण्डकारीं च ब्रह्मति बिल्वमेव च
किंशुकाधिगणं होष दोषमत्रहरोमतः

अय शतावध्यायं धिगणः

शतावरी बला धास्री गुहृं च व्रक्कदारकः
वानरीभूद्राजास्थाय्विदं गोचुरचुरः
वाजिगन्या कणा चैव वाजिकमसु शस्यते

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They are as follows:—triphala, trivit, danti, katuki, tala-muli, briddha-dara, brischira, basaka, chitraka, ardraka, biranga, bhringa-rajha, bhallataka, shunthi, darima leaves, shatamuli, punarnava, kuthar-chhinna, mustaka, suranam, guduchi, vekarparsi, hastikarna-palasha, asthi-sanhara, kesha-raja, mana, khanda-karna (kharakona), and go-jihva. These are incinerators of iron. They are generally used in the process of heating of iron by putam.

Erandadi-gana.

They are as follows:—eranda, shariba, draksha, shirisha, prasarani, mashaparni, mudgaparni, bidarikanda, and ketaki. They serve to pacify all the diseases due to an abnormal excess of air. Iron, rubbed with the juice or decoction of these drugs,
and heated by putam, is therefore efficacious in diseases due to an excess of vayu.

**Kiratadi-gana.**

They are as follows:—kirata, guduchi, nimba bark, green dhanya, shatavari, patala, chandana, padma, shalmali,.udumbara, and jata-manshi. They serve to pacify all the diseases due to an abnormal excess of pittam. They should therefore be specially used in the process of incineration of iron by heating by putam, if it is meant to use such iron in diseases due to excess of pittam.

**Shringaberadi gana.**

They are as follows:—ardraka, nirgundi, indrajava, karanja, visha-karanja, murba, shobhanjana, shirisha, baruna, arka leaves, patala, and kantakari. They serve to cure diseases due to an excess of kapha. They should therefore be used in the process of incineration of iron by heating by putam, if it is meant to use such iron in diseases due to an excess of kapha.

**Gokshuradi gana.**

They are as follows:—gokshura, kokilaksha, kantakari, shala-parnti, and prishni-parnti. They serve to pacify an abnormal excess of vayu and kapha. They are therefore to be specially used in processes of incineration of iron by heating by putam, if it is meant to use such iron in diseases due to an excess of vayu and kapha.

**Pataladi-gana.**

They are as follows:—patala leaves, ushira,
kasha-mards, aparajita, lodhra, nilotpala, kalhara, (white utpala), barahi-kanda, and priyangu. They serve to pacify diseases due to an excess of pittam and kapha. Iron meant to cure such diseases should be rubbed with the juice or decoction of these drugs before it is heated by putam.

**Kinshukadi-gana.**

They are as follows:—palasha, gambhari bark, shunthi, agnimantha, trikantaka, shyona, sapta-parni, shala-parni, prishni-parni, shalmali, patala, kantakari, brihati, and bilva. They serve to pacify diseases due to an abnormal excess of the three doshas (i.e. vayu, pittam, and kapha). Iron meant to cure such diseases should be rubbed with the juice or decoction of these drugs and then heated by putam.

**Shatabarjadi gana.**

They are as follows:—shatabari, bala, amalaki, guduchi, briddha-daraka, banari, bhringa-raja, kesharaja, bidari, gokshura, kokilaksha, ashva-gandha, and pippali. They are aphrodisiac. Iron meant to be of this description should be incinerated with these drugs.

**Bidarjadi gana.**

They are as follows:—bidari-kanda, tagara, bhringa-raja, shatabari, kshirika, kanchuka, bhallataka, guduchi, chitraka, hasti-karna-palasha, mushali, jasti-madhu (or mahua plant), mundiri, and kesharaja. These are curer and preventer of senile decay. Iron meant to be of this description should be rub-
bed with the juice or decoction of these drugs, before it is heated by putam.

N. B. Iron should be rubbed, before being heated by putam, with all or any one of the groups of drugs referred to above, according to the necessity of the case. Such a rubbing, followed by an act of heating by putam, may be repeated as many times as desired. For the purpose of each act of such a rubbing, the quantity of the juice or decoction of the group of drugs referred to above should be equal to that of the iron.
Putam with special drugs for the treatment of special diseases.

Iron is to be subjected to heat by putam after having been rubbed with the following drugs, if it is meant to cure constipation:—triphala, sigru, hastikarna-palasha, bhringa-raja, and again triphala. Similarly, iron is to be rubbed with decoction of pippali for the purpose of curing indigestion. Juice of bidari is to be used for the treatment of impotency. Lime juice is to be made use of, for the treatment of loss of appetite. Decoction of shirisha is to be thus used for the removal of loss of complexion. Juice of bala is to be used for the treatment of rheumatism, paralysis, and other diseases due to excess of vayu. Juice of parpata is to be used for

पुनः स्थालीपाकविधिः ।

अथ कृत्यायोभागे दल्ल्वा त्रिफलायश्चेषमन्यद्रा ।
प्रथमं स्थालीपाकं कुर्याददेतत् चयाचन्दनं ॥
गजकर्भच्छदमूलशतवरीभृक्तिकेशराजर्षि: ।
प्राक्ष्वत् स्थालीपाकं कुर्याद्व द्वितीये एकत्र ब्रा ॥

(d) Sthalipaka for the second time.

The iron reduced in the above manner is to be
boiled with triphaladi, etc. (see page 47) in an iron pot. When dried, it is again to be boiled with some or all of the following juices:—hasti-karna-palsha roots, satabari roots, bhringa-raj, and kesha-raj.

सत्रियशोषिष्ठि।
कान्तादिरोहमारणाविधानसर्वश्च उच्यते तावत्।
यस्य क्षुद्रेत ताहों रक्तवर्य तत्स्य शुभदिवसेः॥
समस्तं चक्षुकराशोच्चलोभां शिवं समभृत्यं।
वेदिकविभिन्नां वाहिं निधाय दल्ल्यावहितेभ्यः॥
शक्यनुपश्च द्वादश द्रिजय सन्तोषिने गुष्णिने॥
सन्तोष्य कर्मकारं प्रसादपूर्वादिदानसम्मानः।
आदौ तदर्शसारं निर्मलमेकान्ततः कुर्यात्॥
तदनु कुटारचित्रश्रीचपालागिरिकर्णिकास्तिसंहरा॥
करिकंच्छदमूलशुल्तावरीकेशराजसः॥
शालिश्चमूलकशीमूलश्रृवप्राप्तमुन्नराजः॥
लिफ्वा द्राक्षवर्य तदुः शिक्रियलोहकारे॥
चिरजलभावितनिमित्सशालाकारे परित ब्राह्मण।
कुशलाध्यापितप्रभानवरतमुक्नेन पवनेन॥
मुच्छवल्लसलिभार्ग्यं किन्य ब्राह्मबुसंधुरतानि॥
द्रव्यान्तरसंयोगादूवा खा शक्तिं भेषजानि मुख्चन्ति।
मल्लिककात् सर्वसत्त्वं विच्छेदयेतु तस्मात्॥
Twenty seventh process.

Shiva is to be worshipped on a piece of land, duly cleansed, on a day considered auspicious for the man for whom the iron is meant to be prepared (an auspicious day is to be ascertained having regard to the configuration of the planets for the time being, with special reference to the position of the moon at the time of birth). The worship is to be conducted and a sacrificial fire is to be kindled in accordance with the rites prescribed in the Vedas. Presents may also be given to the Brahmanas, chemists, and the smiths according to ability. First of all, the iron is to be purified very carefully. It is to be coated with a paste made of
the following herbs, covered by means of charcoal prepared from shala wood (previously cleansed by being washed off in clear water), and heated by means of a bellows:—kuthara-chinna, triphala, girikarnika (black aparajita), asthi-sanhara, hasti-karna-palasha-roots, shatavari, kesha-raja, shalincha-roots, mulaka, and bhringa-raja. The iron, thus heated, is to be immersed into decoction of triphala only, when the coating is completely burnt out. It is then to be washed off, dried, and duly powdered. The process is to be repeated over and over again until the iron is reduced to ashes. The metal which is not incinerated by the above process is not iron at all. In performing the process, care should be taken to see that dust, mud, and other impurities do not find their way into the iron at any stage of its incineration, in as much as herbs and other medicinal ingredients lose their property coming in contact with foreign matters.

अथ पुटपाकप्रकारः ।

लौहादि पुटनीयं हि रक्तिपापशुशोधितम् ।
समृद्ध भृतशरावाभ्यं सन्धिलेपं समाचरेत् ॥
सप्तकबस्त्रघटनेन तथा कर्दमयोगतः ।
शुरावसंपुर्तं तद्भ्यं संपुर्तं च पुर्तं तथा ॥
पाचनं पुटयतन्त्रेन पुटपाको विकथयते ।
हस्ततात्रभिमि गर्ते करीषेनार्ज पूरिते ॥

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How to heat a thing by putam.

The material which is meant to be heated by putam is to be dried up by sun’s rays, and put upon an earthen basin, covered by another basin of the same kind, the joint being closed by means of mud and rags. The basins, thus joined, are called putam, samputam or sharaba-samputam. Heating of materials, confined in this apparatus, is called puta-paka.*

Fill up one half of a cubical pit, one cubit in dimensions, with cowdung cakes or wood and husks, set fire to it, and place the samputam containing iron, etc, upon the heap. Fill up the remaining half of the pit with cowdung cakes, etc. Such a

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* प्रथम लाल्पे २६३—२६६ पुष्पः प्रक्षयः ।
* See page 293 and 296, Vol. I.
fire is to be kept burning for 12 hours continuously. When cooled of itself, the samputam is to be taken out, and the iron, etc, to be obtained, breaking open the samputam. Heating in this way is known by the name of kukkuta putam (see page 296, Vol. 1) Heated in this way, even a little longer than the prescribed time of 12 hours at a time, the contents of the iron becomes incinerated; but they lose in quality, if they are heated for a shorter than the time prescribed.

नयमेतत्स्तन्त्रायःपांक न पलपश्चकाद्वाकुः।
सुबहुप्रयासदोपादृः पलत्रयोदशकातृ॥
तत्रायसि पचनीये पश्चपलादृ त्रयोदशपलान्ते।
लौहात् त्रियुण त्रिफला प्राह्या श्रवणे: पालर्षिका॥
मह नृपतनस्थालीपाकात्रिफललैंभागस्मया:।
त्रिफलाभागद्वितयं प्रहंगाः लौहपाकार्थः॥
सवर्षायःपुतनस्थालीपाककावरे जलः संव्याताः।
त्रिफलप्रतिर्पलं तदु द्रयुण वायथ काथार्थमादेयस॥
तत्रायसंशेष शेषः काथस्य यतं: स्यायः।
तेन हि मह नृपतनस्थालीपाक भविष्यति॥
पाकार्यं तु: त्रिफलाभागद्वितयं शरावस्मयातम॥
प्रतिपलम्बुसः स्याद्विधिकं द्वाभ्यां शरावस्मयाः॥
तत्र चतुर्थीमांगः शेषो निम्नंः प्रयवलं तो भाषः ।
अयसः पाकार्थत्वात स हि सर्वसमात् प्रथानतमः ॥
पाकार्थमश्मसरे पञ्चपलादौ श्रयोदशपलान्ते ।
दुग्धश्रावाधितयं पादैरेकाथिकैरिधिकम् ॥
पञ्चपलादौ स्त्राचा तदभ्रवे तदनुसारतो भाषाम् ।
चतुरादिकमकान्तं शक्ताविधिकं श्रयोदशादिकात् ॥
श्रिफलात्रिककुचित्रककान्तकामकब्रिक्ष्णानाम् ।
जातिफलजातीकोषैलाककोललब्रिक्ष्णानाम् ॥
सङ्कुष्णाजीरयोपि चूर्णन्ययसा समानानि स्थः ।
श्रिफलात्रिककुविक्ष्णा नियता अन्ये यथाप्रकृति ॥
कालायसदोषकते जातिफलादेलविक्ष्णानस्य ।
चैपः प्राप्त्यनुरुपः सच्चर्वोनस्या चैकायेः ॥
कान्तकामकमके क निशेषं दोषपहरुलयसः ।
हियुगात्रिकगुचतुर्गुणा मायं भाषं यथाप्रकृति ॥
यदि भेषजमयस्त्वं स्तोकलवं वा तथापि चूर्णयाम् ।
अयसः साम्यं संस्याभूयायोज्ज्वलनं भूयोज्ज्वले ॥
एवं धातुनुसारात तत्तन् कथितौषधस्य बाधेन । ॥
सच्चर्वोन विधेयस्तदकामितस्यार्जस्यहः ॥

Twenty Eighth process.

For the purpose of incineration, the minimum

* बाघेन वषानन्तितयंः ।

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and maximum quantities of iron should be 5 and 13 palas, respectively. In other words, iron less than 5 palas and more than 13 palas in quantity is unfit for incineration. For the purpose of such incineration, triphala, three times in weight of the iron, plus 6 palas is to be made use of. One third of this triphala is to be used for the purpose of rubbing, heating by putam and by sthalipaka process. For the purpose of the final act of roasting, the remaining two thirds of triphala is to be used. For the purpose of rubbing and heating by putam of iron, the quantity of water to be used for the preparation of decoction of triphala should be sixteen or thirty two times that of the triphala. If the quantity of iron varies from seven palas to 13 palas, the quantity of water to be used in preparing decoction should be as stated above, plus an additional quantity of 3 to 11 sarabas on the whole. The quantity of water thus used is to be reduced, by boiling, to one eighth of its original quantity. The decoction, thus prepared, should be used in rubbing and heating by putam and then boiling the iron by the sthali-paka process.

Next is the process of final roasting. For this purpose, the parts of triphala, as referred to above, should be boiled with water, eight times in weight, plus an additional quantity of two sarabas added to the whole. The water thus boiled with triphala should be reduced to one fourth its original weight. The decoction so prepared is the most important factor in the process of final roasting.
of the iron. If kanta iron or load stone is to be reduced to ashes, milk, one and one fourth prasthas in weight, should be added to the decoction at the time of the final roasting. Kanta iron or load stone may be incinerated, even if it is less than five palas in weight. As a matter of fact, the less the weight of the kanta iron to be incinerated, the greater is its efficacy. The milk referred to above is prescribed for the preparation of kanta lauha, 5 to 13 palas in weight. If the quantity of the kanta iron is less than 5 palas, the quantity of the milk to be used should be reduced accordingly. At the time of the final roasting of all sorts of iron, including load stone, powder of the following herbs, equal in quantity to the iron, is to be mixed with the iron undergoing roasting:— triphala, trikatu, chitraka roots, nagarmustaka, bidanga, jatiphala, jatipatra, ela, kakkola, lavanga, white jira, and black-jira. Of these, triphala, trikatu, and bidanga are to be used in all cases, whereas they are to be chosen from, having regard to the constitution of the patient for whom the preparation is meant. For the purpose of removing the faults of black iron (काल्यायत.), all the herbs from jatiphala to lavnga are to be given so far as they can be procured. In the event of the one being incapable of being procured, that which precedes it in the above list should be used as a substitute. Of all the herbs named above, only nagara mustaka is sufficient for removing the faults of any iron. In all cases of final roasting, clarified butter to the extent of 2 to
4 times in weight of the iron (to be decided upon in reference to the constitution of the patient) is to be applied at the final roasting. Herbs, not included in the list, may also be made use of, if considered necessary, exactly as one or more of those included in the list may be rejected, if called upon by the nature of the case.

उत्तरिन्धोविचि: ।
बौहचूर्णं पलदन्तं गुड़गन्धों समांशको ।
खल्ले विशयं नितरं पुटेद्रिं शातिवारकम् ॥
पेषणं तु प्रकर्तव्यं पुटः पश्चात्यदीयते ।
अनेन विचिना सम्प्रभस्मीभवति निधितम ॥
सर्वरोगान् निहत्येव नान्य कार्यं विचारणा ।
श्वेतपुनां वाप्पल्लोयने द्वाचसंबव्यकः ।
पुटास्ततः प्रदेयाश्च सिन्धृरामं प्रजायते ॥

Twenty ninth process.

Two palas of purified and powdered iron and the same quantity of each of gandhaka and gurh (molasses) are to be rubbed together and heated by putam. This process is to be performed for twenty times leading to the incineration of the iron, which should then be rubbed with the juice of white punarnava for ten times, and subjected to heat each time it is so rubbed. The product will be ashes as red as vermillion.
Thirtieth process.

Powdered and purified iron is to be saturated with the juice of pomegranate leaves pestled with four times their weight of water. When dried by the sun, they are to be subjected to heat by putam. Performance of the process for two times results in the incineration of the iron.

Thirty first process.

All the metals including gold are incinerated by being subjected to heat for twelve times, after having been rubbed with manas-shila, gandhaka and milk of arka plant.
Thirty second process.

The following are some of the drugs having the property of killing iron:—shalincha, kutharachhinna, bikankata, racta marisha, twachakam, manasshila, hingula, and swarna makshika. All of these combined have the property of curing pittam, kapha, menorrhagia, anemia, itches, loss of appetite, and loss of complexion. (Iron may be rubbed with all these drugs and heated by putam in the usual way).

**Removal of defects of iron incinerated without mercury.**

Iron incinerated without mercury is to be rubbed with one third its weight of mercury, and sulphur,
double the quantity of mercury, for six hours with
the juice of kanya. It is then to be heated by
Laghuputam, before it is used as a drug.
रसज्ञनिधि—तुलिपशण्ड्यम्

तत: संशोष्य विभिन्तः चूर्णयेलू लौहभाजने।
लौहेन च तथा शिष्यं द्वादशि शशचूर्णेण चिंतम्॥
धृत्वा लौहमये पात्रे माधवं वा लिससर्धके।
रसे: पंक्तिम सुत्वा पचेरु तद्गोमयाधिना।
पुतानि क्रमशः दयात् पुष्पसंघं विधा।
त्रिफलाद्रेण क्रमूं गानां केशराजस्य बुद्धिमानं।
कन्दर्मानकभज्ञातवहीनां शुरुणास्य च।
हस्तिकर्णपालाश्य कुलिशस्य तथैव च।
पुते पुते चूर्णयित्वा लोहात् पोड़िशिकं पलम।
तन्मानं त्रिफलायाश्र पलनाधिक्यमाहरेत्।
अध्यागावशिष्टे तु रसे तस्या: पचेदुबः।
अश्रोति पलानि दत्ता तु सर्पिषो लौहभाजने।
तावेव लौहदर्व्या तु चालयेत् विषपूर्वकम्॥
तत: पाकविधाने: सवष्ट्रो चोर्दः च सर्पिष।
मृदुमयादिभेदैन यह्यायात् पाकमाज्यत:॥
आरभेत विधानेन कुतकोतकम्भस्य।
पृज्ञामरसंयुक्तं लिखेदारक्रिकक्कमात्॥

* कुजिया: षणंद्वरः काण्डिं द्वा इति भावः।
† अन्यत्र एतोमध्यायं पाठादाम लोहे न पाच्यम्।
The sage, Shukra, who was a very great chemist, gave the following recipe to his disciple, Adima, for curing piles, etc., without the use of surgical instruments, etc. — A leaf of iron of a superior quality is to be freed, first of all, from rust by manas shila or makshika. It is then to be smeared with a paste made of the roots of shalinicha rubbed with the juice of the same, and burnt by means of a fire, made of charcoal prepared from the shal wood, and blown by...
bellows. The intensity of the heat is to be tested by means of decoction of triphala. When sufficiently burnt, the iron is to be removed from the fire and immersed at once into the pure decoction of triphala. If it has not been completely incinerated, the iron is again to be burnt in the same way and immersed in the decoction of triphala. It is then to be cleansed properly, and powdered in an iron mortar, by means of an iron rod, and then again finely powdered in a boat-shaped iron mortar by being rubbed by an iron pestle. The iron is then to be mixed with the juices of the under mentioned drugs in such a way as to resemble mire, and then heated over fire made of cowdung cakes in an iron cauldron or in an earthen pot sufficiently strong. The iron is next to be subjected to putam after having been rubbed with the juice of each of the following, separately, and in accordance with the order in which they have been given:—triphala, ardraka, bhringaraja, kesharaja, bidari-kanda, mana, bhallataka, chitraka, shurana, hasti-karna-palasha, and kulisha (khanda karna).

The iron is to be powdered each time after it is heated in the afore-said way. Sixteen palas of this iron* is to be roasted in an iron cauldron with a decoction prepared from triphala, seventeen palas in weight, boiled with 136 palas of water which is to be reduced to seventeen palas. In course of the roasting, eight palas of clarified butter is to be put into

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* Iron is generally not to be prepared in quantities greater than 13 palas. The present case is an exception.
the iron which is to be turned all along with an iron ladle. The preparation is to be considered complete, as soon as the clarified butter is found to float on the surface in a clear state. It may however be still roasted according as it is intended to make it soft, harder, and very stiff (see process No. 5 page 77.)

The minimum dose of the iron, thus prepared, is one racti (i.e., it may be increased up to six ractis a day) to be taken every morning with clarified butter and honey. After taking the medicine, the patient is to drink a little of cow’s milk which is to be increased day by day. In the absence of cow’s milk, goat’s milk may be used. The diet should be prepared with clarified butter and be of a nutritious character.

This medicine increases at once the power of digestion. It cures bhasmakagni or an abnormally strong appetite, all the diseases due to an abnormal excess of vayu and pittam, leprosy, visama-jvaram (malaria, kalazar, etc.), gulma, eye-diseases, anemia, excess of sleep, lethargy, aversion to food, all sorts of colic, prameha, dysentery, dropsy, bleeding, and especially piles of all sorts. It increases strength, nutrition, beauty, activity, longevity and voice. It is easily digested and is agreeable to the patient. It increases procreative power and is a destroyer of senile decay. It has been found to cure piles immediately.
Iron is to be rubbed during certain part of the day with the juice of the leaves of any tree, herb, or grass. It is then to be dried by the sun and then heated by putam at night. This process is to be performed for 4380 days, juice of leaves of a new tree, herb, or grass being used each of
these days. In other words, the iron is to be heated by putam for 4380 times, after having been rubbed each time with the juice of the leaves of a tree, herb, or grass, which is to be used in this way for one day only, so that 4380 different kinds of vegetable juices are required to complete the process. The tree, herb, or grass which has once been used must not be used for the second time. The iron, thus incinerated, has the property of re-juvenating an old man. It causes the growth of new teeth in place of fallen ones, even in old age; turns grey hair black; and makes the skin of an old man as tight as in youth. Ripe fruit turns green, if a grain of this iron is kept for a few hours inside the former. One dose of this medicine is to be taken once in every 20 years.

Test of incinerated iron.

Incinerated iron, mixed with honey and clarified butter, is to be confined in a silver samputam, and subjected to heat by putam. If in so doing, the quantity of the silver does not undergo any diminu-
tion, the ashes of the iron are to be considered actually incinerated and incapable of being restored to their original condition of un-incinerated iron. In case, the silver is found short of the original quantity, the iron is to be considered un-incinerated and capable of being restored to its original condition. In that case, it is to be incinerated again.


dhitiyathadhyayam nastriyikalpa

(1)

avasisthakumandabhojana pratishthakam:

yatho vama pashrasanah samayam chaitirah hi tata

mahum sarvasstatho gunjana tankho yuguhlusstaha

mitrapushkameta tu ghatinam dhaatametane

How to deprive the ashes of iron of the power of being restored to their original condition.

(1)

Ashes of iron, which can be restored to their original state, should be brought to a state in which it is impossible for them to be so restored, and this may be done, if the ashes are roasted with the panchamritam, viz. honey, clarified butter, gunja, tankanam, and guggulul.

(2)

gopagrat ganthakam laho tatkhalve vimadh yet

dinaeker kanyakadavam ruchho va gajapute pacheta

istyev samvabhojanan karthevyam pashtrasstithmah

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Ashes of iron are to be rubbed in a hot mortar with cow's ghee, sulphur, and juice of kanya for one day and then heated by Gajaputam, resulting in the ashes being incapable of being restored to the state of original iron.

Nectarization of incinerated iron.

In a copper cauldron, heated by a mild fire, five palas of iron are to be roasted with an equal quantity of clarified butter and the same quantity of decoction of triphala (prepared by boiling five palas of triphala fruits with 40 palas of water, reduced by heating to 5 palas), the whole thing being turned by an iron ladle till the iron is completely roasted. It is then to be again roasted with an equal quantity of powdered haritaki.
(2)

One pala of incinerated iron is to be mixed by heat with four palas of iron and made into pills of the size of a plum fruit. One such pill may be used in diseases with suitable accompaniments.

(3)

Equal quantities of incinerated iron and clarified butter are to be roasted in an iron pot till the latter is dried up altogether. The iron, thus prepared, is a joga-bahi, i.e. a thing which increases the property of any other thing with which it is mixed.

(4)

Ashes of iron become especially fit for being used in medicines meant for preventing and curing senility, if they are rubbed with clarified butter, honey, gunja, and tankanam.
लोहारकृतताम्रकटाहे हड़सून्मयेवा प्रशम्य शिवम् ।
भस्माय परवेधचपलः काष्ठेन्धनवहिना मृदुना ॥
निचिप्प त्रिफलाजलमृदित यच्चतु गृहत्थ दुग्धच ।
सच्चालय लोहमय दव्यां लग्नं समुतपात्य ॥
मृदुमध्यमलरवाचे पाकख्रितियोऽत्र वच्यते पुसाम् ।
पितसमोरखश्रेयप्रकृतीनां मध्यमस्य समः ॥
श्रिविधोशः पाक इंटक्स सवेंषां गुणक्षदेव न न विफळः ।
प्रकृतिविशेषं सुचमी गुणादोषों जनयतोत्यल्यम् ॥
अभ्यक्तदविलोमं सुखदः लस्यलनयोगः मृदुमध्यम् ।
उज्ज्वितदविखरं परिभाषन्ते केचिदशुचायः ।
अन्ये विद्योन्दर्वीश्रेणवर्मीशतु खराक्ति बु वते ॥
मृदुमध्यममध्रूवं सिक्ततप्यस्तोपमं नु खरम् ।
विज्ञाय पाकमेवं द्रागवतावर्गेच्छ विषपान कियतः ॥
विधाम्य तत्र लोहेः त्रिफलाः प्रतिचपच चूर्णम् ।
यदि कर्पप्रातिविभवति ततो विगलिते तदुपात्ये
चूर्णाक्तमनुरूपं चिपेत् तचु प्रयतनः ।
पके तदृशस्तरं सुचीं गुर्तस्थितं
गोदोहनादिभागः लोहामावे संरचणीयम् ।
रसज्ञानिधि:—रूपीयणम्।

यदि तु परिच्छेदे तिथिन्तौ धृतमीच्छेदतः ततोज्यस्मिन्।
भागे निधाय रचेदु भानुयशोगो यज्ञेन महान्॥।

अयस्मि विरूष्योभूतेः लोहेष्ठ्रिफलाध्यूतेन संपाधः।
पुत्रचो गुण्योचरारित्यमुनेिव लोहेनीयं ततः।

अत्यंतकफङ्कसंस्कारकमयसोमुनेिव श्रंसन्ति।
केवलमपीदमशिष्यं जनयतयसोुरुङ्गान् कियतः॥।

अथवा वर्षितविघिर्मारिस्तु कृष्णाक्रमादाय।

लोहेनाच्छुर्णत्यथा समद्रिष्टिचतुः पथर्गुरुभागम्॥।

प्रत्यङ्गायः प्रागृवत् पचेदुभाष्यां भवेदु रजोयावत्।

tनमानानुक्ते: स्मृतित्: स्यात् त्रिफलादिव्रण-परिमाणम्।

इद्माप्यायक्षमदमतिपिन्तुदिदिदेव कान्तिवल-जनमम्॥।

स्त्रभाति तृटुचूँ परमधिकाधिकमात्रया युक्तम्।

नानाविधरूक्ष शान्त्येकान्त्ये पुष्चेष्ठ शिवः

समभर्च।

सुविश्वुद्राः शहनि शुर्ये तदमृतमादाय लोहाख्यम्।

दुश्कुङ्क्पः परिमाणं शक्तिवियोजेदमाकलयः पुनः।

समस्तस्तुभालपात्रेऽतौ लोहेन लोहेन मद्येच पुनः।

दधु वधवनुपूर्ण तदनु धुर्तं योजयन्नाधिकम्॥।
Incinerated iron is to be placed with decoction of triphala, milk, and clarified butter, in a cauldron made of iron, brass or copper, heated by a very mild fire made of wood, an iron ladle being used for turning the contents of the cauldron every now and then. This preparation may be of three kinds, viz. mild, medium, and dry. They are especially beneficial to patients having an excess of pittam, vayu, and kapha, respectively. One having an equilibrium of the doshas (vayu, pittam, and kapha) should use a preparation which is also neither mild nor dry i.e. of medium softness. Each of these three different kinds of preparations, although especially efficacious to patients of especial temperaments, is beneficial, at least to a certain extent, to patients in general, irrespective of temperaments. A mild preparation in this case means that in which the iron sticking to the ladle can be separated easily; a medium preparation is that in which the iron paste sticking to the ladle can be separated with difficulty; a dry preparation in this case is that in which the
iron paste is so dried as not to attach itself to the ladle altogether or to do it only to a slight extent. The mild and the medium are partially powdered, whereas the dry preparation of iron is in a state of sands. On the completion of the preparation of the iron the cauldron is to be got down quickly from the oven, and after a few minutes, powdered triphala, etc. may be mixed with the product. Some camphor may also be mixed with it, when the product is sufficiently cooled. The iron, thus prepared, is to be very finely powdered, and kept with a sufficient quantity of clarified butter in an iron pot or in an earthen vessel previously used for keeping milk. In case, the clarified butter is found to be much in excess of the quantity required to keep the iron soft, a quantity of the former may be taken out and kept in a separate pot. This ghee is very useful. It may be used to soften the iron preparation in case it loses its softness. A patient having an abnormal excess of kapha should take iron mixed with this ghee, which, even if taken alone, produces a part of the effects which are produced by iron prepared in the afore-said way.

The incinerated iron may also be roasted in the afore-said manner, after having been mixed with decoction of triphala, clarified butter, milk, and one fourth or half or an equal or double or triple or four fold or five fold its quantity of powdered black mica, duly incinerated (see vol. II). The powder, thus prepared, is soothing to the system, destroyer of all abnormal excess of pittam, and is a giver of strength.
and beauty. If taken in doses gradually increased to a large quantity every day, it does away with thirst and hunger altogether without impairing the strength and longevity of the latter. After making due obeisance to God, the medicine should be begun to be taken on an auspicious day, in doses of ten ractis a day (a dose which is modifiable having regard to the age and strength of the patient), which should be rubbed with honey and ghee in an iron mortar by an iron rod. The following mantra is to be uttered at the time of taking the medicine:—“Om amritendra bhakshayami nama swaha.” After taking the medicine, a little of water or milk is to be taken. A little after that, juice or decoction of nagaramusta, mixed with pure rala or exudation of a sarja tree, should be taken.

लौहार्दीनां सेवनमात्रः

गुञ्जामात्रं रसेन्द्रस्य हेमनो भस्मं च भच्छयेतु।
तां त्रियुज्ञकं सेव्यं ताष्ठरमस्म द्रियुज्ञकम्॥
लौहार्द्वनागद्वानां यशोदस्य तथान्येषाम्॥
भातूनां ज्ञायते मात्रा पद्द्युञ्जाप्रमिता खलु॥
कांस्यपिन्चिलयोभस्मं भच्छयेत् ताष्ठरभस्मवत्।
वज्रं यद्यथोमितं तालकं यवसस्तकम्॥
ततो बुद्धधा भिषग् दयानं मात्रावित्त॥

चेत्रक्षानं: ॥

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Doses.

The following are the doses in which mercury, etc. are generally given:—mercury, one gunja a day; incinerated gold—one gunja a day; incinerated silver, 3 gunjas a day; incinerated copper, 2 gunjas a day; iron, mica, lead, tin, zinc, and other metals (each incinerated), six gunjas a day; incinerated bell-metal and brass—two gunjas a day; incinerated diamond, 2 javas a day; purified or incinerated hari-talam, seven javas a day. In especial cases, the physicians, having regard to the age and constitution of the patient, should use their own discretion in the matter of doses.

शूले हिंक्षुः, घृतान्वितं मधुयुतं क्रप्या पुराणवरे।
वाते साज्यरसोकः श्वसनकः चौद्रान्वितं ग्रुथयामु।
शीते व्यालवतादलं समरिचं मेहे वरा सोपला।
दोषाणां त्रितयेनुपानमुदितं संचौद्रान्वोदकम्।
घृतेन वातके देयं मधुना पितजे ज्वरे।
श्लेष्मपिते चाद्र केन निर्घ्न्यं एक्ष्या शीतवातके॥
शुष्टौ वाते सितां पिते कर्मु क्रप्यां प्रदायपेतु।
सन्धिरोगे त्रिजातकं प्रोक्तं लौहानुपानकम्॥
Anupanas or accompaniments of iron.

Incinerated iron is to be taken with hingu (purified by being fried with ghee) and honey in colic; with powdered pippali in chronic fever (such as malaria, kalazar, etc.); with ghee and garlic juice in rheumatism, paralysis, and other diseases due to an excess of vayu; with honey and trikatu in asthma; with the juice of brischikali mixed with powdered maricha in coldness; with triphala and sugar-candy in spermatorrhoea; with honey and ginger juice in diseases due to an excess of the three doshas; with clarified butter in fever due to an excess of vayu; with honey only in fever due to an excess of pittam; with the juice of ardraka in diseases due to an excess of kapha and pittam; with the juice of nirgundhi in shivering due to an excess of vayu; with powdered shunthi in diseases due to an excess of vayu; with sugar in pittam, with pippali in kapha; and with trijatakam in diseases affecting bone joints.

Foot note:—The general rule with regard to the taking of a mineral drug, either in the form of powdered ashes or in the form of a pill, is this:—It is first of all to be rubbed in a small stone mortar with a little of honey (even when there is no mention of it, unless it is explicitly prohibited or considered harmful in a particular case) and then again rubbed with the anupanam or accompaniment prescribed. When the drug is thus sufficiently rubbed, it is to be taken by licking or drinking, as the case may be.
Incinerated iron, in doses of four and half ractis, is to be taken with the following anupanams:—with triphala in senile decay; with kajvali (equal quantity of sulphur and mercury, turned into a black powder), honey, and pippali in diseases due to an excess of phlegm; with khanda gurh mixed with chaturjata in ractapittam; with cow’s milk mixed with the juice of punarnava for increasing strength and vigour; with the juice of punarnava in anemia; with the juice of haridra and powdered pippali, mixed with honey, in 20 different kinds of spermatorrhoea including gonorrhoea.

शिलाजलतुष्यतं लोैः मून्त्रकच्छुनिवारिकरणम्।
वासकपिप्पलीद्राचालोहानां मधुना सह॥

81
Incinerated iron may be used with shilajatu in gleet and stricture; with basaka, pippali, draksha, and honey (all rubbed together) in all sorts of cough; with the juice of betel leaves for increasing the power of digestion, nutrition, and physical beauty; with triphala and honey in all sorts of diseases; with triphala and sugar for increase of strength.
The following dietary is salutary for the person who takes iron:—
laba (a migratory bird—a sort of a quail), tittiri (the francoline partridge), godha (iguana), peacock, hare, bataka (a bird, popularly called, batkal), kalabinka or chataka (sparrow), barti (a bird popularly called, 'bater'), haritala (green partridge), hawk, big laba, all sorts of deer; fresh and wholesome fish, such as, madgura, rohita, and shakula; vegetables like papita, patola, dindisi, eatable sprout arising inside a palm fruit, shatavari, soft blossoms of a betra plant, the soft portion inside the uppermost part of a palm tree, tanduliyaka, bastu, leaves of dhanya plant, karnalu, punarnava, cocoanut, date fruit, pomegranates, lavali fruit, shringataka, ripe and sweet mango, grapes, jatiphala, lavanga, betel-nut, and betel leaves.
Prohibitions.

The following are to be avoided by one who takes iron:—lakuchga, kola, karkandhu, badara, lemon fruit, vijapura, karamarda, tintiri, meat of animals other than those enumerated in page 84, karkata bird, pundraka, goose, swan, water crow, madgu, crow, crane, masha gram, tubers of all kinds (such as potato, radish, onion, etc.), karira (shoot of a bamboo, and a thorny plant of that name), chanaka gram, kadamba fruit, kushmanda, karkoti, kebuka, banana fruit, pot herbs, kasheru, karkati, and all sorts of pulses.
One who takes iron should avoid the following:—
kushmanda, tila oil, rasona, raji, wine, sour things, 
bad fish, jeera, vartaku, masha gram, karbella, 
physical exercise, all sorts of fermented things, 
asava, sitting for a long time, physical exertion, 
excess of talking, excess of bathing, drinking, 
eating, and exposure to coldness and wind, eating 
at unusual times, eating articles of food stuff 
which, if taken with the same meal produce 
injurious effects (such as milk with fish, meat, 
or sours); sleeping in day time; keeping late
hours at night; all things having the property of increasing vayu and pittam; things which are pungent, sour, bitter, and astringent; sexual indulgence; anger; physical exertion; and all things calculated to kill mercury and the metals.

लोहव्यापन्नाराम चूर्णम् ।
जीवो लोहे तु पतति चूर्ण मुखीत सिद्धिसाराभ्यम् ।
लोहव्यापन् नाशयति तद्द्व वद्ध यति जाटरं बहिम् ॥

Remedy of evils due to irregularities in taking metals.

When incinerated iron (or any other metal) is digested in the stomach, a dose of the powder named siddhisara (described below) should be taken in order to counteract any evil arising out of irregularities committed while taking the iron (or any other metallic preparation).

सिद्धिसाराः ।
पश्यासैन्यवशुगठीमागाधिकारां प्रथक्क समं भागम् ।
तिर्वृतमागां निम्बुभावण्य स्यातु सिद्धिसाराभ्यम् ॥
काले मलप्रकृतिलापयवमुदरेव विशुद्धिस्थगारे ।
अझ्सा नावसादो मनःप्रसादोषस्य परिपाके ।
रद्धिर्दादशकादूच्छ वृद्धिस्वय भयप्रदा ॥

9-3
Siddhi sara.

Powders of haritaki, saindhava, shunthi, white jeera—each equal in quantity; and trivrit, double the quantity of each of the above-mentioned, should be subjected to bhavana with the juice of lemon. Dose—1 racti, to be gradually increased to 12 ractis, which should not exceed on any account. This medicine causes movement of the bowels in due time, lightness of the stomach, freedom of the belching (of wind from the stomach) from acidity and toxin, comforts of the limbs, and cheerfulness of the mind.

Evil effects of taking iron not properly incinerated.

Iron roasted with too little in quantity of the liquids prescribed, or by a fewer than the prescribed number of putams, or by being rubbed with sulphur or mercury of inferior quality (i.e. not properly purified), is injurious, and serves to shorten the longevity of the man who takes it.
Remedy of the evil effects of iron not properly incinerated.

(1)

Evil effects of impure iron are removed, if one takes biranga, previously rubbed with the juice of vasaka, and exposed for a long time to the heat of the sun, mixed with a sufficient quantity of the juice of vasaka.

(2)

आरगुवधस्त्य मज्या रेचनं कोटशान्त्ये।
भवेदप्यतिसारश पीत्वा दुर्गं तु तं जयेतु॥
यदि बौहविकारेऽय उदरे शूलसंभवः।
तदार्थं कविज्ञं तु विज्ञवसंघुतम्॥
पिबेद्धा लगसम्बुनाः प्लाचुर्ग्यं दिनत्रयम॥

(2)

Purgation by the oily part of aragbadha is to be resorted to for the purpose of destroying worms (growing from the use of iron, not incinerated with mercury). In case of diarrhoea being caused by the purgation, it is to be cured by the drinking of milk. Colic in the stomach, due to use of bad iron, may be cured by using ginger and biranga, taken for 3 days with the juice of biranga, or by taking for 3 days powdered ela mixed with khanda gurh and honey.
Liquefaction of iron.

(1)

Sulphur is to be subjected to bhavana with the juice of devadali for seven days. This sulphur, thrown upon iron, melted by fire, makes the iron resemble mercury (even after the heat is discontinued).

(2)

A kshara or alkali is to be prepared by dissolving the ashes of devadali with human urine, filtering it for 21 times and then drying it up by heat. A little of this alkali, if thrown upon melted kanta iron, keeps the latter in a liquefied state even after the heat is removed.
Eight different kinds of iron can be kept in a state of liquefaction, even after the removal of heat, if equal quantities of powdered sulphur and kanta iron are put upon them, while in a melted condition.

If iron is heated red hot, and hammered, small pieces throw themselves out of it, and scatter themselves all round. These particles of iron are called mandura. The mandura of a particular
iron possesses a part of the properties of the latter. Mandura also may therefore be used in medicines. Munda iron is ten times as efficacious as mandura. Tikshna iron is hundred times as efficacious as munda, and kanta is hundred thousand times as efficacious as tikshna. Kanta iron should therefore be used for the purpose of destroying diseases and senility. In the absence of kanta iron, gold or silver is to serve as a substitute.

**Varieties of mandura.**

Mandura from munda iron is slightly coloured, heavy, and soft; that from tikshna iron is like a collyrium of mixed ingredients, is much heavy, and has a smooth surface. The mandura which comes out of kanta iron is of grey colour, coarse, heavier than other manduras, with half its surface devoid of hollows, and it presents a sectional surface as glazry as silver, when cut into two pieces.
Fitness of mandura for use in medicines.

(1)

The mandura which should be used in medicines should be of the following description:—It is devoid of hollows, heavy, soothing, strong, of more than a hundred years' standing, and collected from an old village.

(2)

Mandura of over hundred years old is the best; that of over 80 years is of moderate efficacy, and that of sixty years' standing is the least efficacious. Mandura less old than the last-mentioned is like poison and should be avoided for medicinal purposes.
Incineration of mandura.

First process.

Manduram is to be heated by means of char-coal prepared from bibhitaki wood, and then immersed in cow's urine contained in a pot made of the same wood. It is then to be powdered very fine and roasted with double its quantity of decoction of triphala (by being boiled in a cauldron over fire).

Second process

A decoction of triphala is to be prepared by boiling it with cow's urine. Mandura, heated red hot, is to be immersed in this liquid. Repetition of this process leads to the incineration of the mandura.

Third process

Mandura is to be powdered very fine and then roasted with eight times its weight of cow's urine. When sufficiently roasted, it is to be powdered again and used where necessary.
Incinerated mandura, mixed with an equal quantity of each of the following, and taken in doses of one kola (all combined) a day, cures pandu (anemia), shotha (dropsy), halima (jaundice of the worst type), urustambha (carbuncle in the thighs), kamala (jaundice), and arsha (piles):—trikatu, triphala, musta, biranga, chavya, chitraka, darvi, granthi, and deva-daru. Mandura, thus used, is called the hansa-mandura. Butter-milk should be drunk after the medicine appears to have been digested in the stomach.

Liquefaction of mandura.

Rust of iron is liquefied and assumes the shape of butter, if it is immersed in a liquid paste, made of biranga pestled with the juice of agastya and dissolved in the same liquid, and exposed for a long time to the heat of the sun.
CHAPTER II.

श्रथ यशोदमू।
रसकस्य विजानीयादु यशोदं सत्त्वमेव हि। ॥
तदेव खलु वैधानां यशोदं धीमतां परम्। ॥

Jasoda (Zinc).

Jasoda is the essence of rasaka or calamine (see page 125, Vol II). Literally, it means a thing which helps the earning of fame. It is really a thing which enables a learned physician to earn reputation.

श्रथ गुणः।
यशोदं तुवरं तिफं शीतलं कफपित्तचूत।
चचुप्यं परं महापारदुश्चासविनाशनम्। ॥

Its properties.

Jasoda is astringent, bitter, cool, pacifier of kapha and pittma, beneficial to eye-sight, and destroyer of spermatorrhoea, gonorrhoea, jaundice, and asthma.

* द्वितीयक्षणे १२५ पृष्ठ प्रणवमू।
Purification of Jasoda.

First process.
Jasoda is purified, if it is immersed into milk for twenty one times, after it is melted each time.

Second process.
See Process No. 3, page 243, Vol. II.

Incineration of Jasoda.
First process.
See Process No. 4, page 247, Vol. II.
Second process.

Zinc is to be kept in an iron pot over fire, and heated highly, even after it is melted. A leaf of nimba tree is then to be thrown upon the molten zinc, which is to be rubbed with the leaf by means of an iron rod. This is followed by the rise of flames upon the molten zinc and the incineration of a part of the metal at the spot where the rubbing is carried on. Fresh nimba leaves are to be applied and the rubbing is to be continued. Wherever there is rubbing, there is incineration. The part which is incinerated may be sifted out and the remaining part of the zinc again incinerated in the same way. The powder, thus prepared, should be freed from the ashes of the nimba leaves by being washed off with water. Zinc, thus incinerated, is found to be beneficial to eye-sight and may be used as a collyrium. It is not commendable for internal use.
Third process.

Fine leaves of zinc are incinerated, if they are subjected to heat by Gajaputam for once only, after having been smeared with a paste made of kajvali (mercury and sulphur, combined in equal parts), one fourth in quantity of the zinc, rubbed separately with the juices of kanya and nimbu (lemon).

Zinc may also be purified and incinerated in the same manner as vanga (tin) and sisaka (lead) *

* See page 102.
यशोदं प्रमेहं हुन्ति ताम्बूलाक्षरसेन हि।
श्रमिमत्रेनासिकभरं त्रिसुगंवै ब्रिदोषप्रहत्त॥

Accompaniments of Jasoda.

Jasoda cures dysentery, if taken with a hima kashayam (decoction prepared without the application of heat) of kharjura (dates), and tanduliya roots. If taken in this way, it also cures fever due to an excess of pittam. It cures fever accompanied with a sensation of coldness, if taken with jamani and lavanga. In diarrhoea and vomiting it should be used with sugar and jeera. It is beneficial to sight, if used as a collyrium with old ghee (clarified butter). It cures spermatorrhoea and gonorrhoea, if taken with the juice of betel leaves. It increases power of digestion, if taken with the juice of agnimantha. It is a destroyer of all the doshas, if taken with the trisugandhi.

यशोदसम्बन्धी मात्रा।
गुंजाण्यं तु यशोदं तालेन भसितं खादेत्।
अन्यथा मारितं ततू तु यझीयानु मातसमाग्रकम्।

Doses of zinc.

Dose of zinc, incinerated with orpiment, is 2 ractis a day. It is six ractis a day, if incinerated without orpiment.
 Evil effects of zinc, not properly incinerated.

Zinc, not properly purified and incinerated, gives rise to the following diseases:—gonorrhoea, indigestion, flatulence, vomiting, and giddiness. It is therefore to be purified and incinerated properly.

Remedy.

A man is freed from the evil effects of bad zinc, if he takes for three days bala and haritaki mixed with sugar.
There are two kinds of tin, viz. khuraka and mishraka. The former is better than the latter which is unfit for use in medicine. Khuraka is white, soft, soothing, and capable of being melted quickly. It is heavy and melts without any noise. The mishraka variety is blackish white in colour.
Its properties.

(1) Tin is bitter, warm, coarse, and a little increaser of vayu. It cures spermatorrhoea, phlegm, obesity, worms, anemia, and asthma. It is laxitive, light, improver of eye-sight, nutritious, reducing of fat, and a special curer of spermatorrhoea.

(2) Vanga, duly incinerated, is an increaser of strength, power of digestion of food, appetite, intelligence, and beauty. It produces a cooling effect on the system. Duly taken, it does away with senility, diseases, and waste. It makes the dhatus stable, and cures all sorts of pramehas. Taken regularly, it prevents the nocturnal emission of semen.

अद्य शोधनम्।
प्रथमर्विधिः।
द्राविभाधा निषादयुक्ते चित्तं निर्गुणिभिकारसे।
विशुष्टि त्रिवारेि खुरच्छः न संशयं॥
First process.

Tin is purified, if it is melted for 3 times, and immersed each time in the juice of nirgundi, mixed with powdered haridra (turmeric).

Second process.

Tin is purified, if it is melted with punarnava, visha-tinduka, and katu-alabu, and immersed in sour butter milk.

Third process.

Lead and tin are purified, if they are smeared for seven times with the juice of ghosha only or with the juice of nirgundi mixed with the powder of its roots, and dried in the sun, each time they are so smeared.
Fourth process.

Vanga is purified, if it is heated and immersed, after each act of heating, in the following:—urines, amlas, juice of arka plant, solutions of ksharas, and milks of snuhi and arka. It is then to be again heated and washed off by means of decoction of kadamba leaves.

Fifth process.

Sisaka (lead) and (tin) are purified in the following way:—Keep the metal (tin or lead) inside an earthen vessel, the lower part of which is full of pores, and heat the metal with a fire, made of char-coal, placed inside the vessel, which is to be kept upon a pot containing milk of arka. The metal, when melted, will fall through the pores. The process is to be performed for three times.

Sixth process.

Thin leaves of vanga are purified by being boiled for one and half hour by means of the Dola Jantram containing lime water.
Incineration of tin.

First process.

Leaves of tin are to be smeared with haritala and milk of arka and then subjected to Laghuputam with the ashes of bodhi (called ‘bauri’ in Bengal) and chincha (tamarind). 

Second process.

Melt some purified bangā in an earthen pot placed over fire, and put upon it one sixteenth its weight of mercury. Then put a little purified haritala, every now and then, upon the compound which is to be frequently rubbed by means of a stick made of vanya karpasa wood, till the compound is reduced to ashes.
Third process.

Leaves of vanga are reduced to ashes, if they are subjected to putam after having been smeared with haritala rubbed with the juice of palasha.

Fourth process.

Vanga is reduced to ashes, if it is heated by fire made of chincha, palasha, and pippala wood, after having been mixed with oil or essence of bhallataka and wrapped with a piece of cloth.

Fifth process.

Vanga is incinerated, if subjected to putam for seven times after having been mixed with haritala and rubbed with milk of arka plant, dry barks of
aswatha tree being placed on all sides of the vanga, while confined within the samputam.

Sixth process.

Purified leaves of vanga are to be melted in an earthen vessel, placed over fire, and an equal quantity of ashes of apamarga is to be mixed with the melted vanga. The whole thing is to be rubbed quickly by means of the thick end of an iron rod, till the whole thing turns into ashes, which are next to be freed from powdered charcoal, and again subjected to a very strong heat by putam. This results in the incineration of the vanga.
Seventh process.

Vanga is to be placed over fire in an earthen pot. When it melts, the following powders are to be placed upon it, the whole thing being turned constantly by means of an iron ladle:—tumeric, jamani, jeera, chincha bark, and aswatha bark—all of these finely powdered. The whole thing is thus reduced to ashes. The ashes of the powders are then to be washed off by means of water, leaving the white powders of vanga deposited at the bottom.

Eighth process.

Vanga is incinerated, if it is subjected to heat by putam after having been smeared with a paste made
of makshika, and haritala, duly rubbed with the juice of palasha leaves.

नवमोचिति: ।

नागवच्छ छोधयेद्वं बंगं तदुवदश्वष्वचित्वदयोः ।
सदुभस्म हरितालं च तुल्यमल्लेन केनचित् ॥
पलाशोत्थरवेर्वाथ लिसः । वन्नं पचेन पुढे ।
उच्चू व्य दशमांशेन तालेन सह मद्येत् ॥
पूव्वद्रवः: सहासोऽऽ रुद्रः । गजपुटेष पचेन् ।
तदुविन्दलिपुरः: पक्ष मृत्तं भवति भस्मसात् ॥

Ninth process

Both vanga and sisaka (lead) may be purified in the same way, and both may be incinerated in the following way:—Ashes of aswatha and chincha and an equal quantity of haritala are to be rubbed with a sour-non-metallic juice or with the juice or decoction of palasha leaves. Vanga or sisaka is to be smeared with this paste and heated by putam. When cooled, the whole thing is to be taken out of the putam, rubbed again with one tenth its weight of haritala and the liquid referred to above, and then subjected to heat by putam. Twenty such putams are to reduce the vanga (or sisaka) into ashes.
वंगपादेन सूतेन बझप्रत्र विलेप्येत्।
शिरीशरजनीचूर्णं कुमार्याः सह पेष्येत्॥
सुतलिंसं बझपत्रं तत्कलकेन विलेप्येत्।
चिंचाटुच्चस्य संग्रहं चान्तश्चूर्णं च तवस्त्रलः॥
पिठा तत् पिळाइमधये तु वंगपत्रं च रज्ज्येत्॥
रुद्धं गजपुटे परं विशात्या चित्ते पुटे॥

Tenth process.

Leaves of vanga are to be smeared with one fourth their weight of mercury, and then with a paste made of bark of shirisha, turmeric, and juice of kanya. They are then to be put inside a paste made of rice and tamarind seeds, and then heated by putam. Twenty such putams result in the incineration of the vanga.
Eleventh process.

Tin melted in an earthen pot, kept over fire, is to be rubbed, by means of an iron ladle with salt petre, gradually put upon it, till fire comes out of it and burns the whole thing. Upon the fire being put out and the pot with its contents being cooled of itself, the ashes of tin are to be freed from those of salt-petre by means of water. The ashes, thus prepared, with an equal quantity of haritalam, are to be rubbed with a sour vegetable juice, and subjected to heat by Gaja-putam. The product with one tenth its weight of haritalam is again to be rubbed with a sour vegetable juice, and again subjected to heat by putam. Ten such acts of putam will kill the tin out-right.

Twelfth process.

Vanga is incinerated, if it is subjected to heat by putam, after having been smeared with a paste made of swarna-makshika, haritala, and juice of palasha.
Leaves of vanga are incinerated by means of haritala, rock-salt, camphor, shells of crab, conch, oyster, and cowrie. [This may be effected in one of these two ways:—(1) Molten vanga may be roasted with the powder of the things specified, the ashes of which may be washed away afterwards, or (2) Leaves of vanga may be heated by putam after having been smeared with a paste of the things specified.]

Vanga is incinerated, if it is heated by Gaja putam for forty times, after having been smeared each time with a paste made of bibhitaki and decoction of bhallataka and covered on all sides by means of sesamum cakes.
Vanga-kalpa,

Tin, kanta iron, and mica—all equal in quantities and reduced to ashes, are to be rubbed with the juices of leaves of kanaka dhutura, nimba, pomegranate, and apamarga, respectively and separately. Incinerated rajavarta, *equal in quantity to the tin, is then to be mixed with the compound, referred to above, and the whole thing is to be rubbed well with cow's urine, and shila-jatu dissolved with water.

* See chapter on gems in the present volume.
The product is then to be rubbed for eight days with guggulu (duly purified by means of being boiled in a Dola-Jantram with the decoction of guruchi, dashamuli, or triphala), dissolved with water. It is then to be dried, powdered, and mixed with an equal quantity of gum of babbula (acacia), fried by heat and reduced to powder, and with the same quantity of the powder of akuli (nirmali) seeds. The whole thing is then to be finely powdered and sifted by means of a piece of cloth and kept carefully. This medicine cures all sorts of meha and prameha, if taken with the juice of turmeric, pestled with butter-milk (prepared from cow's milk).

This preparation of vanga, taken in doses of 12 ractis a day, serves as a destroyer and preventer of senility. It also cures all sorts of diseases relating to the semen. The following diet should be taken by the user of the preparation:—shali rice, juice of mudga pulses, butter, sesamum oil, patola, gopala-karkati, and butter milk.
कपूर रैक युतं वंग मुखगन्धविनाशनम्।
जातिफलेन संयुक्तं पुष्पिकछ्चत्रभारायम्॥
तुखसीपञ्चतोथेन प्रमेहस्य विनाशनम्।
घुतेन पारंतरोगजितं टक्कोजैं लमनाशकम्॥
हरिद्रायम्बलिच्छलं मधुना बलवद्धिक्रमं।
सितोपलेन पिच्छवं ताम्भुलं: शुक्रबन्धनम्॥
पिप्पल्या वहिमान्यप्रवं निशया चोद्व स्वास्तहृत्।
चम्पकबलरसेनेन्म गात्रगन्धं विनाशयेतु॥
निम्बस्य खरसेनावं देहदाहप्रशान्तन्त्ये।
कस्तूरीसहितं वंग वायुम् वीर्यरोपक्रतः॥
खंदिरकाथयोगेन चर्मरोगं जयेदिदम्।
पूगफलस्य साधेनाजीयं विनाशयेतु वशातु॥
नवनीतसमायुक्तस्थितस्य जयेदिदम्॥
दयात् पुष्टिः समं दुह्गेः: भंगादिना हि स्तम्भनम्।
रसोनेरावतं पीड्डां नाशयेनाश्च संशयः॥
समुद्रपुलसंयुक्तस्य गढ़ीसरं: सह।
कुछं नाशयते चिव्रं सिंहनादं द्रुगानिव॥

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Accompaniments of vanga.

Vanga cures bad smell coming out of the mouth, if taken with camphor. It is nutritious and retainer of semen, if taken with jatiphala. In diseases relating to the semen, it is to be used with the juice of tulashi leaves. It is to be used in anemia with clarified butter; in gulma with tankanam; in amla-pittam (acidity and biliousness) with haridra; for increase of strength with honey; in an excess of
pittam with sugar-candy; for an increase of semen, with juice of tambula (betel leaves); in loss of digestive power, with pippali; in asthma or gasping, with haridra; with juice of champaka flower, in bad smell coming out of the body; with juice of nimba leaves in inflammation of the body; with musk, in diseases due to an excess of vayu; with juice of khadira in skin diseases; with betel nuts in indigestion; with butter in the decay of bones; with milk for nourishment; with bhang (bhang), etc., for retention of semen; with the juice of rasona (garlic), in diseases due to vayu; in leprosy with samudra fruit mixed with the juice of nirgundi; with the root of apamarga, in impotency; for increase of growth of the penis, it should be used as a paste with lavanga, samudra fruit, and juice of betel leaves. It produces a sort of hypnotising power in the man who uses it as a tilaka (a mark with sandal paste, etc., on the forehead). It cures head diseases, if applied on the forehead as a paste made with eranda roots and water. It is to be used with apamarga roots in hunch-backedness; with tankanam in enlargement of spleen. It cures hysteria, if used as a snuff with rasona and sesamum oil. It is to be used with the milk of ass for the purpose of conceiving or begetting a male child; with butter-milk in gulma due to an excess of vayu; with jamani or ashwagandha, in diseases due to an excess of vayu; with goat’s milk in dropsy; and with jatiphala and ashwagandha in sciatica.
Evil effects of vanga, not properly purified and incinerated.

Vanga, not properly purified and incinerated, gives rise to various diseases such as leprosy, gulma, anemia, spermatorrhoea and gonorrhoea, scrofula, vata-racta (leprosy of a mild type), and loss of strength.

Vanga as well as sisaka, not properly purified and incinerated, gives rise to the following:—spasm, shivering, kilasha, gulma, kustha, colic, dropsy,
anemia, prameha, fistula, impurities of the blood, phthisis, obstinate fever due to an excess of kapha, stone disease, and tumour.

Remedy.

A man is freed from the evil effects of vanga, prepared improperly, if he takes for three days mesha-shringi (powder or decoction) with sugar or sugar-candy.

Sisaka (Lead)
Its properties.

The properties of lead are similar to those of tin. It is especially efficacious in diseases affecting the semen. It is bitter and sweet in taste.
(2)
When incinerated, it increases longevity, semen, power of digestion of food, and procreative energy, if taken regularly and for a long time.

(3)
Lead produces a very hot sensation in the system. It is soothing, bitter in taste, destroyer of vayu, kapha, prameha, and rheumatism, and increaser of power of digestion.

(4)
Lead is bitter and sweet in taste. It is a good dyer of silver. By constant use, it increases memory, longevity, and semen.
Lead, incinerated in the best way prescribed, is efficacious in phthisis, diseases due to vayu, gulma, anemia, giddiness, worms, colic due to an excess of phlegm, spermatorrhoea, chronic diarrhœa, diseases affecting the rectum, and loss of the power of digestion. It also serves as an aphrodisiac.

Test of lead free from alloy.

Lead is to be regarded free from alloy, if it melts quickly, weighs heavy, and presents a black and bright sectional surface at the place where it is cut into two pieces.
Purification of Lead.

Lead is purified, if it is made into leaves, smeared with powdered nirgundi roots rubbed with milk of arka, and then dried, melted, and immersed into the juice of nirgundi, the process being performed for seven times.

Second process.

Leaves of lead are purified, if they are smeared with a paste made of the milk of snuhi and the ashes of as many as available of the following, and then heated for seven times, after having been smeared with the paste each time:—haridra, green dhanya seeds, kokilaksha, kootharika, amalaki, chincha, redrose, small brahmi, and jeera.
Third process.

Bell-metal, brass, lead, and tin are purified by heating and immersing them into the juice of nirgundi for seven times.

Fourth process.

Powdered root of nirgundi, barahi-kanda, and caridra are to be thrown into molten lead which is then to be immersed into the juice of nirgundi for three times (after having been melted each time). Lead, thus purified, does not give rise to hysteria, poils, etc.

Fifth process.

Lead as well as tin is purified, if it is melted for three times and immersed each time through an arthen pot full of pores, into the milk of arka.
Sixth process.

Lead as well as tin is purified, if it is immersed for three times in each of the following, after having been melted each time:—oil, butter-milk, kanji, decoction of kulattha, and especially, milk of arka plant.

सस्मोबिषि: ।
फलत्रिककपायेः वा कुमारीरसे वा करिवरसलिले वा गालयेत् सत्तवारम् ।
खदिरदहनतः लोहपात्रस्थितं स्यात् तदनु सपदि नागः जायते शुद्धभावः ॥

Seventh process.

Lead is purified, if it is melted for seven times in an iron pot by a fire made of khadira wood and immersed each time either in the decoction of triphala, or in the juice of kanya, or in the urine of elephant.

अस्त्य मारणाम् ।
प्रथमोबिषि: ।
अश्बत्थच्छार्गवभस्म नागस्य चतुरंश्च ।
चिप्तव चुल्ल्यां पचेतू पात्रे चालयेल लोहयष्टिना ॥
यावद्भस्म भवेतू तद्भस्मतुल्यं मनःशिला ।
जम्बोरेरारानालिवा पिष्टा रुधः पुटे पचेतू ॥
Incineration of Lead.

First process.

Leaves of lead are to be roasted with one fourth their quantity of the ashes of the barks of aswattha and chincha, in an iron cauldron, turned by an iron rod, till the whole thing turns into ashes. These ashes are to be rubbed with an equal quantity of manas-shila and lime juice or aranala and subjected to heat by putam. When cooled of itself, the contents of the putam are to be taken out and subjected to heat by putam for six times, after having been rubbed each time with one twentieth their weight of manas-shila and a sufficient quantity of a sour vegetable juice.

*पद्मतः पुरे: इत्येतस्य स्थः प्रशोष्ठः इत्येततः पादान्तरं दृश्यमः ।

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Second process.

Leaves of lead are to be smeared with a sufficient quantity of slaked lime and heated in an earthen pot by a very strong heat for three hours. The ashes, thus prepared, are to be roasted with a decoction of chitraka roots for forty eight hours, being turned all the while by means of a branch of an arjuna tree, fresh decoction being poured into the vessel every now and then. The ashes are next to be subjected to heat by laghuputam for six times, after having been rubbed each time with a decoction of chitraka roots.

Third process.

Leaves of lead are incinerated, if they are fried steadily in an iron cauldron with the ashes of chincha, bibhitaki, ikshu (sugar-cane), bhallataka, bala, asthisanhora, apamarga, arjuna, and aswattha, for seven days continuously, being turned constantly all the while by means of a palasha rod.
Fourth process.
Leaves of lead are incinerated, if they are subject to heat by putam after having been smeared with a paste made of an equal quantity of manas-sila and makshika, rubbed with the juice of arka leaves.

Fifth process.
Lead, killed and revived for ten times, is to be killed once more. The ashes, thus obtained, are freed from all defects and serve as a medicine which prevents and cures senility.
Sixth process.

Leaves of lead are incinerated absolutely, if they are subjected to heat by putam after having been smeared with manas-shila, rubbed with the milk of the arka plant. Such ashes are rendered incapable of being restored to their original condition.

Seventh process.

Lead is incinerated, if it is rubbed with the juices of kumbhi (a kind of water plant), vasaka leaves, and manas-shila, and then subjected to heat by putam for three times.

Eighth process.

Four parts of lead and one part of opium are to be heated together by a mild heat, and rubbed continuously, while heated, by a rod made of nimba wood. This results in the reduction of the lead to white powder, which, taken in proper doses, strengthens semen.
Ninth process.

Sixteen tolas of leaves of lead and two tolas of manas-shila are to be rubbed for three hours each with the juices of tanduliyaka and vasaka, and made into cakes which are to be dried in the sun and heated by putam. Performance of this process for seven times results in the incineration of the lead, which, taken in doses of two ractis a day (with honey and juice of turmeric, etc.) cures all sorts of prameha (gonorrhoea).
Tenth process.

Powdered manas-shila is to be mixed with lead, when melted in an earthen vessel. It is then to be powdered and subjected to heat by putam, after having been rubbed with sulphur and lemon juice. This results in the lead being reduced to ashes very soon. Powdered haritalam may be used in lieu of manas-shila.

Eleventh process.

Lead, heated in an earthen pot, is to be rubbed with the roots of arka plant for three hours, after which it is reduced to powder of a green colour.

Twelfth process.

Leaves of lead are reduced to ashes of a yellowish colour, if they are subjected to heat by putam.
for sixty times, after having been smeared each time with manas-shila, gandhaka, karpura, and kunkumara, all combined being equal in quantity to the lead, rubbed with lime juice for three hours.

Thirteenth process.

On an oven of slanting shape place a vessel which also is of slanting shape. All parts of the latter, except its mouth, are to be coated with mud. This apparatus is called the Bharista Jantra.
Pour 20 palas of lead into this vessel, and heat it by a very strong fire. One tola of purified mercury is to be poured into the lead, when melted, the whole thing being rubbed by means of an iron rod. One pala of the kshara of each of the following is to be put, one by one, on the lead, and the rubbing is to be continued:—arjuna, vibhitaki, mango tree, pomegranate tree, and apamarga. The roasting is to be carried on in this way by a strong heat for 20 nights, resulting in the reduction of the lead into ashes of red colour or of a colour resembling that of a pigeon.

**Fourteenth process.**

Lead is incinerated, if it is subjected to heat by putam for thirty two times, after having been smeared each time with a paste made of manas-shila, rubbed with the juice of tambula (betel leaves).
Fifteenth process.

Powdered lead is reduced to ashes of red colour, if it is subjected to putam for hundred times, after having been rubbed with the juice of the root of kanya each time it is so heated. Such ashes may transform silver, copper, and tin into gold.

Sixteenth process.

The inner surface of a pot is to be coated with a paste made of earthworms and leaves of vasaka. Into this vessel is to be placed some lead with one fourth its quantity of ksharas, prepared out of vasaka and apamarga plants (duly burnt, dissolved with water, filtered, and then dried). The vessel is then to be placed over fire and the lead with the ksharas to be turned constantly by a ladle made of the vasaka plant. This will result in the incineration of the lead, in course of three hours only. The ashes, thus prepared, are to be rubbed with the juice
of vasaka leaves, and subjected to heat by putam. They will thus assume the colour of red vermillion.

Seventeenth process.

Lead is to be smeared with a paste made of the leaves of vasaka. It is then to be melted and roasted for three hours with a decoction of vasaka and apamarga or one fourth its quantity of a kshara (alkali) prepared out of the ashes of vasaka and apamarga *, a branch of a strong vasaka tree being used as a ladle to turn the preparation. The ashes are then to be subjected to putam for seven times, after having been rubbed each time with the juice of vasaka. The product is sindura or red vermillion.

* The process of preparation of ksharas will be described later in the present volume.
It gains in efficacy, if mixed with one fourth its quantity of hingula (duly purified).

Eighteenth process.

Lead is to be dried after having been smeared with one fourth its quantity of vasaka leaves rubbed with earthworms. It is then to be melted and kept in a strong pot. Ksharas of vasaka and apamarga are to be rubbed with the leaves of vasaka and then heated for three hours by fire. These ksharas are to be mixed well with the lead (finely powdered). The powder, thus prepared, is to be subjected to heat by putam for 21 times, after having been mixed each time with manas-shila, swarnamakshika, and kshara of vasaka, these three combined being equal to the
original quantity of the lead. The product is again to be subjected twice to heat by putam after having been rubbed each time with the juice of vasaka. The product is red vermillion.

नागांधिंगलूः ।

(१) पलद्रयं भृतं नागं हिंगुलं च पलद्रयम् ।
शिला कर्षमिता प्राणा सर्वतुल्यं हि गन्धकम् ॥
निम्बुनीरेश्वरं संस्मर्यं ततो गजपुष्टे पचेत् ।
तदा नागेश्वरेऽयं स्वान् नागराजसुतोपमं ।
ससूते मारिते नागे न देयं गन्धहिंगुलम् ॥

Nectarization of lead.

(१) Two palas of lead incinerated (without the help of mercury), an equal quantity of hingula, and one tola of gandhaka—all of these are to be rubbed with the juice of nimboo (lime fruit), and subjected to heat by Gaja putam. Thus treated, lead becomes very powerful.

(२) वैवं नागोज्वरं भस्म ताप्यभस्माणं भागिकम् ।
पादं पादं चिपेदभस्मं शुल्वस्य विमलस्य च ॥
Four parts of incinerated lead, two parts of swarna-makshika, and one part each of copper, vimala, kanta iron, essence of mica, and sphatika (quartz) *—all of these are to be powdered together and subjected to heat by putam for 30 times, by means of a fire made of 30 pieces of cowdung cakes, found dried in the pasturage, after having been rubbed each time with decoction of triphala. The ashes, thus prepared, are to be mixed with an equal quantity of trikatu and biranga, finely powdered, and are to be taken in doses of one balla a day, duly mixed with a little of honey and clarified butter.

* For incineration of quartz, see later in the chapter on gems.
It cures eighty different kinds of diseases due to an abnormal excess of vayu, and especially dhanus-stanbha (titanus), those due to an abnormal excess of phlegm, all sorts of urinary diseases, asthma, kapha, phthisis, anemia, dropsy, fever accompanied with a sensation of coldness, and hydrocele.

Accompaniments of lead.

Incinerated lead, if taken with sugar, can cure pittam, vayu, head-ache, eye-disease, diseases affecting semen, delirium, inflammation, loss of appetite, and loss of sexual desire, provided there is nothing to be objected to in the diet taken by the patient.
Evil effects of lead, not properly purified and incinerated.

Lead, not incinerated in the prescribed way, gives rise to leprosy, gulma, loss of appetite, anemia, phthisis, phlegm, troublesome impurities of the blood, fever, stone disease, colic, and fistula.

Remedy.

One is freed from the evil effects of lead, not properly incinerated, if one takes incinerated gold with haritaki, (one fourth of a tola in weight), and sugar for three days.
ततोयोध्यायः ।

अथ मित्रश्रघातवः ।

अथ पितलम् ।

अस्य नामानि ।

पितलमारकूटश्र द्रव्यदारु रीतिस्तथा ।

मित्रश्र पतिकावेरः पिंगला पीतलोहकः ॥

आरश्र कपिला च ब्रजसुवर्षिः सिंहलं तथा ।

पीतलकं च पीतकं पितलशान्तु लोहितम् ॥

अस्य भेदः ।

रीतिका द्विविधा ज्ञेययात्रा राजरीतिका ।

ब्रह्मरीति द्वितीया सा काकतुग्रही च कथ्यते ॥

संतता काजिके चिता ताप्राभा राजरीतिका ।

एवं या जायते कुष्णा काकतुग्रही मता हि सा ॥

यशोदं द्रिघुनां तां द्वारिते राजरीतिका ।

ताप्राभाच जायते ब्रह्मरीतिका नागयोगतः ॥

तिका राजरीति सुचा जन्तुश्री रक्षपित्तुनु ॥

वस्तिविशोधिनी योगात्सोष्णवीयाः च शीतला ।

काकतुग्रही गतस्नेहा तिकोष्णा कफपित्तुनु ॥

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CHAPTER III.

MIXED METALS.

Pittala (Brass).

Its varieties.

Riti or Pittala is of two kinds, viz. (1) raja-riti and (2) brahma-riti or kaka-tundi. Raja-riti is that variety of brass which assumes the colour of copper after it is heated and immersed in kanji. Brahma-riti or kaka-tundi is that variety of copper which assumes a black colour, if treated in the afore-said way. Raja-riti consists of two parts of copper and one part of zinc, whereas brahma-riti is the product of copper, zinc, and lead.

Raja-riti is bitter, coarse, destroyer of worms, curer of hæmorrhage, and purifier of the abdomen. It is cooling, but produces heat in the system, if combined with other materials.

Kaka-tundi is coarse, bitter, warm in its immediate effect, but cooling afterwards, destroyer of kapha and pittam, and curer of diseases affecting the spleen and the liver.

Both the varieties are curer of anemia and worms.
Pitāmaha: १६२

पाघुपीता खरा रुचा वर्षरा ताळनाचमा।
पूतिगन्धा तथा लघी रीतिनेशा रसादिदु॥

Characteristics of good and bad brass.

Good brass is heavy, mild, yellowish, full of substance, malleable, soft, and smooth. Bad brass is blackish yellow, rough, course, ugly, brittle, yielding bad odour, and light. Such copper is not fit for being used in medicines.

Purification of pittala (brass).

Brass as well as bell-metal is to be purified and incinerated in the same way as copper.

Second process.

Brass is purified, if it is heated for five times and immersed each time into the juice of nirgundi, mixed with powdered turmeric.
Third process.

The three ksharas and five salts are to be subjected to bhavana for seven times with a sour vegetable juice. Leaves of brass and bell-metal are then to be smeared with the paste, referred to above, and subjected to heat by Gaja-putam. This results in the purification of the leaves.

Fourth process.

A lusty young goat of black colour is to be fed with powdered brass of an excellent colour, which, when come out of the goat’s stomach in the form of stool, is to be burnt in an earthen vessel with the result that excellent brass resembling gold of fourteen units of colour will come out of it. This brass,
when properly incinerated, serves to strengthen the body. It is important both in alchemy and in medicine.

Incineration of pittala.

First process,

Brass is incinerated, if it is subjected to heat by putam for eight times, after having been smeared each time with a paste made of lemon juice, manas-shila, and sulphur.

Second process.

Brass may be incinerated in the same way as copper. It may also be incinerated, if subjected to heat by putam after having been smeared with a paste made of sulphur and orpiment.
Third process.

Copper, brass, as well as bell-metal is killed, if subjected to heat by putam, after having been smeared with a paste made of the milks of arka, banyan, and nirgundi, rubbed with an equal quantity of sulphur.

Use of brass.

Incinerated brass, kanta iron, essence of mica, all equal in quantity to trikatu, biranga, palasha seeds, vana-jamani, chitraka roots, bhallataka oil, and tila (sesamum)—all of these are to be mixed together and taken in doses of one fourth of a tola a day. It cures worms, leprosy, and leucoderma. It increases appetite and power of digestion.
Transmutation of brass and bell-metal.

Brass and silver, equal in quantity, are to be melted. Incinerated vanga or tin is to be mixed, little by little, with this amalgam with the result that the whole thing will turn into silver.

Kansya (Bell-metal).

Bell-metal is composed of four parts of copper and one part of vanga, melted together. Bell-metal, thus prepared, is commendable in medicines.
Characteristics of good bell-metal.

Good bell-metal has the following characteristics:—(1) sharp sound, (2) softness, (3) mildness, (4) dusky white colour, (5) freedom from impurities and (6) assumption of red colour, when heated.

Characteristics of bad bell-metal.

Bell-metal of an inferior kind is (1) yellow in colour. (2) When heated, it assumes the colour of copper. (3) It is sharp, (4) coarse, (5) unable to stand percussion, and (6) turns glazy when rubbed with something else.
Properties of Bell-metal.

Bell-metal is light, bitter, and warm, reducer of fat, improver of eye-sight, curer of worms and leprosy, pacifier of vayu and pittam, increaser of power of digestion. Every article of food stuff, except clarified butter, becomes salutary to the system, if served on utensils made of bell-metal. One who takes a mercurial preparation should not take his food served on a bell-metal utensil.

अय्य शोधनम्।
 प्रथमोविचिः।
 १२३ पृष्ठे तृतीयोविचि: १४३ पृष्ठे प्रथमो विचित्तथा १४४ पृष्ठे
 तृतीयो विचित्वक दृश्या।।

Purification of Bell-metal.

First process.


द्वितीयोविचि:।
 ततं कांस्यं गवां मृत्रे वापितं परिशुच्यति।
 यामेकमथवा स्विष्ठं तस्मिन्नेव हड्डापिना॥

Second process.

Leaves of bell-metal are purified, if they are heated and immersed red hot into cow's urine, or boiled for three hours in the same liquid by a strong heat.

* See page 204, Vol. I.
Incineration of Bell-metal.

First process.

(See page 247, Process No. 4, Vol. II).

Second process.

Thin leaves of bell-metal, duly purified, are reduced absolutely to ashes, if they are subjected to heat by putam for five times, after having been smeared each time with a paste made of sulphur and orpiment.

Varta-loha.

It is an amalgam of bell-metal, copper, brass, iron, and lead. It is also called pancha-loha (amalgam of five metals).
Its properties.

(1)
Varta-loha is cool, sour, pungent, and coarse. It pacifies kapha and pittam. It increases appetite, is beneficial to skin and eye-sight, is a killer of worms, and purifier of stool, urine, and other excreta from the system.

(2)
All sorts of food, prepared in an utensil of this metal, is salutary to the system, and serves to increase the power of digestion, if there is nothing of sour in the materials cooked.
Purification and Incineration of Varta-loha.

Varta-loha is purified, if it is melted and immersed into the urine of horse. It is incinerated, if it is subjected to heat by putam after having been smeared with sulphur and orpiment.

त्रिलोहम्

पञ्चविंशति ख्यात्स्य तथा रौप्यम् पोडः।
ताम्रस्य दश भागात् त्रिलोहं मिलिता मतम्॥
त्रिलोहं सर्वदोषशं परमेव रसायनम्॥
पाचनं दीपं चैव सर्व्याधिविनाशनम्॥

Triloha.

Twenty five parts of gold, sixteen parts of silver, and ten parts of copper, melted together, form what is called the triloha. It destroys all the dohas and is a great rasayanam. It increases the power of digestion and is a curer of all the diseases.

अस्थ शोधनमारणम्

शोधनं मारणं ज्ञयं त्रिलोहस्य सुवर्णवत्।
अशोधितमारि त्रिलोहं हि विषोपयम्॥

Purification and Incineration of Triloha.

It is purified and incinerated in the same way as gold. Triloha, not properly purified and incinerated, acts like poison.
One who takes every morning one racti of incinerated tri-loha, mixed with honey, clarified butter, triphala, and trikatu, and observes the prescribed diet, lives a healthy, happy, and long life, without being affected by senile decay.

\textit{Essence of Earthworms.}

Cold is the essence of earthworms growing in the vicinity of gold mines. The nature of the essence of other earthworms is similarly ascertained with reference to the nature of their place of birth. \textit{Essence}

\textit{* द्वितीय खण्डे २३४ पृष्ठ ॥ दृष्ट्वयम् ॥}

\textit{* See page 234, Vol. II,}
of earthworms (whether gold, silver, iron, or copper) is useful for the purpose of liquefaction of diamonds and other hard stones. It also increases the potency of mercury and diamonds.

**Khara-sattwam.**

Essence of earthworms is to be cleansed with water, and rubbed for one day each with the juice of bhringa-raja, nimboo (lemon fruit), and nirgundi. It is then to be rubbed with the Dravana-varga * and

* Pratham ėśā 305 Pūrṇa Dṛṣṭavām. *
* See page 305, Vol. 1.
made into a lump, which is to be confined in a strong crucible, and heated steadily for forty eight minutes. When cooled of itself, the contents of the crucible are to be taken out and kept on a piece of smooth stone slab from which are to be collected the heavy metallic dusts of the shape of mustard seeds. These are to be mixed with one twelfth their weight of copper, and again heated in a crucible. The metallic dust is then to be separated from foreign matter by being washed off with water. It is then to be used for the liquefaction of diamond, etc. It is called khara-satttwam. It is not a good rasayanam (a medicine which can prevent and cure senile decay).
Four prasthanas (4 x 64 tolas) of earthworms are to be collected from the vicinity of mines of gold, silver, copper, or load-stone, and are to be washed by means of turmeric juice and cold water. These are then to be gradually made to be eaten by a hungry peacock, boar, or cock, and its stool collected. This stool is to be rubbed with ksharas and amlas, dried by the intense rays of the sun, and then fried in an earthen pot till it turns as black as ink. This black powder is to be rubbed with the ingredients which facilitate the melting of hard metal (see page 305, Vol. I.), and then heated for forty eight minutes by means of a bellows. When the crucible is cooled, the contents are to be powdered and washed off, and the metalic dust to be collected carefully. This dust is to be mellowed like gold dust, and then used as necessary.
Use of the aforesaid essence.

Essence of earthworms, as extracted in the aforesaid manner, is the best of all such essences. The present process was described by Soma-deva (author of Rasendra Churamani). One eighth tola of this essence, combined with half a tola of gold, is to be made into a finger-ring. The water into which this ring is kept immersed for some time can, by external application only, do away with poisons, both organic and inorganic, eye diseases, colic, piles, diseases affecting the ears, and troubles attending child-birth.
A medicine, prepared mainly from mercury and minerals, is superior to that prepared from herbs, in as much as (1) the former can be administered in much smaller doses than the latter; (2) it does not give rise to aversion in the patient who takes it; (3) it cures diseases more quickly than the latter; and (4) it cures diseases which are considered incurable by medicines prepared from herbs. Medicines prepared from mercury, with or without the addition of other minerals, poison, etc. are the best of all the medicines known to the world.

Incinerated metals assume, to a certain extent, the properties of mercury. They can also cure diseases which are troublesome and attended with complications. If used for a long time, they can not only cure diseases but also strengthen the body and cure and prevent senile decay.
चतुर्थेऽध्यायः।

अथ रञ्जानि।

जातो जातो यदुवक्षं तदं रञ्जं प्रचं चर्चते।
रञ्जथ वरपाषाण्यां रमन्ते यज्ञ मानवः॥

रञ्जानां प्रकारः।

वज्रं मरकतं चैव मार्गिक्यं मौक्किकं तथा।
नीलमणिगोमेदं च वेद्य्यं द्रुग्योरकम्॥
स्फटिकं चन्द्रकान्तं च सूर्यकान्तं प्रवालकम्।
कर्कें पुष्पारंगं च राजावरं च भीष्मकम्।
एते हि मण्यो चेयः सूतवन्धनकारकः॥
पालं शृंगरं पृति तारं च पीलु चोपलम्।
सुगन्धिकं च चित्तेया उपरञ्जानि सतकम्॥
यवतस्ते प्रयोक्तव्या रत्से रसायने तथा॥

* सबवृंचा रञ्जोपरञ्जाना विस्तृतविवरणायं प्रत्यक्षतो निमित्तिषिताः:
प्रन्या द्रुत्या: — ब्रह्मद्विनं, भोजकहविनविकुलंतः, विष्णुधर्मोत्तर-पुराणम्, अंगिरपुराणम्, गद्गुरा पुराणम्, तथागतयुपदेशाणकाम्।
CHAPTER IV.

_Ratnas (Gems)._ 

Gems are precious stones. The best of them are as follows:—(1) Vajram (diamond), (2) marakata (emerald), (3) manikyam (rubies), (4) mucta (pearls), (5) nila-mani (sapphire), (6) gomedam (zircon), (7) vaiduryam (oriental cat’s eye), (8) dagdha-hirakam or vaikrantam (garnet), (9) sphatikam (quartz), (10) chandra-kantam (moon-stone), (11) surya-kantam (sun-stone), (12) pravalam (coral), (13) karketam (chrysoberyl or chrysolete), (14) pusparaga (topaz), (15) rajavarta (lapis lazuli), and (16) bhismakam (a kind of anti-poisonous white quartz).

These gems are used in consolidating mercury.

The following are some of the upa-ratnas or minor gems:—(1) palanka (onyx), (2) rudhiram (carnelian), (3) puttika (peridot or bottle-green stone), (4) turkshajam (turquoise, biraja, or peroja), (5) pilu (jade), (6) upalam (opal, chalcedony, and agate), and (7) sugandhikam (spinel).

All these _ratnas_ and _uparatnas_ may be used in the preparations of mercury as well as in preparing medicines meant for curing and preventing diseases and senile decay.

* For a detailed account of these stones, see Vrihat Sanhita of Barahamihira (1st century B.C.), Jukti-kalpa-taru of Bhoja-raja, Vishnuśharmottara puranam, Agnipuranam, Garura-puranam. Ratna-shastram by the sage Agastya, etc.
The Five Gems.

(1) The following five are reckoned to be gems of superior quality:—(1) padma-raga (ruby), (2) indra-nil (sapphire), (3) marakata (emerald), (4) puspa-raga (topaz), and (5) hiraka (diamond).

(2) The following five are gems in ordinary use:—sapphire, diamond, ruby, pearl, and coral.
Gems favourite to the planets.

Manikya (ruby), mucta (pearl), pravala (coral), turkshya (emerald), puspa-raga (topaz), hiraka (diamond), nila-mani (sapphire), gomedam (zercon), and vaiduryam (oriental cat's eye)—These nine gems are favourites, respectively, to the nine planets, viz. Sun, Moon, Mars, Mercury, Jupiter, Venus, Saturn, Rahu (Dragon's head), and Ketu (Dragon's tail). *

Gems fit for use.

Only gems of excellent qualities should be used in mercurial preparations, in medicines meant to cure and prevent diseases and senile decay, in making gifts to objects of charity (such as priests, astrologers, etc), in being used by one's own self as an article of jewellery conducive to health and happiness, and in making offerings to God. Gems of inferior quality are abortive for each of these purposes.

* In addition to these nine planets, the Hindu Astronomy recognises five minor planets (See Brihat Parashara Hora Shastram).
Vajra or Hiraka (Diamond).

Diamond is increaser of longevity. It makes its good qualities felt quickly. It is nutritious, pacifier of the three doshas, and curer of all the diseases. It improves the quality of the consolidation and killing of mercury, is an increaser of the power of digestion, is an enemy of death, and is like nectar itself.
Colour of Diamonds.

Diamonds are of four different colours, viz, white, red, yellow, and black. The white variety is beneficial in all respects, and is a rasayanan or curer and preventer of diseases and senile decay. The red variety also is, to a certain extent, a rasayanan. The yellow variety is a giver of wealth (if worn with a ring), and is useful in alchemical operations. The black variety is a destroyer of diseases and a preventer of senile decay.

Another Classification of Diamonds.

(I)

Diamonds are of three kinds, viz. (1) masculine, (2) feminine, and (3) neuter. The former have six or eight angles or eight faces. They are very bright, and resemble, in lustre, rain drops falling at the time
of the appearance of a rainbow in the sky. They are flat-shaped, whereas feminine diamonds are cylindrical, depressed at the extremities, and are slightly heavy.

( २ )

सुन्दरः फलसम्पृणास्तेजोयका बुहित्तः।
पुरुषस्ते समाश्चारः रेखाबिन्द्विविवर्जिता:॥
रेखाबिन्द्वसमाश्चारः पड़ूस्ते ख्रियः सम्वृतः।
त्रिकोणः पतला दोषाः विघ्नास्ते नुपूसकः॥

( २ )

Masculine diamonds are well-rounded, well-faced, bright, comparatively big in size, and devoid of lines and spots.

Feminine diamonds have six angles and are full of spots and lines. The neuter diamonds are three-angled, thin, and elongated.

वज्रेषु पुरुषः श्रेष्ठ चेढङ्क रसवन्धकः।
ख्रियः कुर्वंति कायस्त्व कान्तिं श्रीणां सुखप्रदा:॥
नुपूसकास्त्वावीयः स्तुरकामा: सत्त्ववर्जितः।
ख्रियः ब्रीम्यः प्रदातवर्यं क्रोंंवं क्रोंवं प्रयोजनमेत।॥
सवेभ्यः सर्वं देयः पुरुषा वीर्यवर्ज्जः ना:।
पुत्रकामा न धारयेय नारी वज्रं कदाचन॥

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Merits of different kinds of diamonds.

Masculine diamonds are the best of all. They are able to help the transmutation of metals and to consolidate mercury. Feminine diamonds bring happiness to women and enhance their beauty. Neuter diamonds are impotent, useless, and devoid of essence.

Feminine diamonds are to be worn by women, neuter ones by hermaphrodites, but masculine diamonds may be worn always by any person, male, female, or hermaphrodite. A woman who wants to give birth to a son should on no account wear a diamond.
Characteristics of good Diamond.

(1)

Vajram or diamond is the best of all gems, whereas gomeda (zircon) and pravaia (coral) are inferior to the rest. None of the gems, except pearl and coral, can be scratched by iron, or even by stones, generally. None of the gems, except pearls and corals, undergoes decay. Heaviness is generally an indicator of preciousness in gems; but the case is quite the reverse with diamonds. Diamonds of superior quality are so light as to float on water. They are free from the five defects (to be described below) and are as soothing as moon’s rays.

(2)

Diamond of an excellent quality is that which cannot be worn out by being rubbed with the surface of even a very hard touch stone; which cannot be cracked even by the sharp edges of other stones, iron instruments, etc; which can easily create a
crack on other substances; and which can be rent asunder by another diamond only. Such diamonds are of a high order and very precious.

अशुमवश्रस्य रक्षणानि |
भस्माभं क्राकपादश्च रेलाकान्तं च बर्तुलम्।
आधारमलिनं विन्दुत्राशयुकं स्फुटितं तथा।
नीलामं चिपितं रुचं तद्रवजं दोषलं त्यजेत।

Characteristics of bad diamonds.

Diamonds of the following description are bad:—
(1) Those which are of ash colour; (2) those which have got spots of the shape of a crow's feet, (3) those which are marked by lines, (4) those which are cylindrical, (5) those which darken or soil their foils or receptacles, (6) those which have got spots, (7) those which have got cracks, (8) those which are rent asunder, (9) those which are of blue colour, (10) those which are flat-shaped, and (11) those which are coarse.

Such diamonds are to be avoided.

सचर्चारां साधारणदोषा:।
गारस्त्रासश्च विन्दुश्च रेखा च जलगभित्ता।
सचर्चारविश्वमिम पद्ध दोषा: साधारणा मता:।
चेतनतोयभवा दोषा रक्षेि ते लगनति न।

* गार: कद्रेष्म मलमित्यर्थः।
Defects found in gems in general.

The following five are the defects found in gems in general:—dirt, crack, spots, lined spot, and bubble spot.

Gems are not affected by defects in the soil in which they are found or in the water in which they are submerged.

Evil effects of Diamonds, not properly purified and incinerated.

Diamonds, not properly purified and incinerated, give rise to leprosy, pain in the side ribs, anemia, inflammation, and heaviness of the limbs. Diamonds should, therefore, be properly purified and incinerated.
Purification of Diamonds.

First process.

Diamond is purified, if it is boiled for three hours, by means of a Dola-Jantram, with the decoction of kulattha or kodrava (a kind of grass paddy).

Second process.

Diamond is purified, if it is put inside the tuber of vyaghri (red eranda plant or kantakari), and boiled for seven days, by means of a Dola-Jantram, with the decoction of kodrava and kulattha.

Third process.

Diamond of excellent quality is to be put inside the tuber of vyaghri (red eranda plant or kantakari).

* व्याघ्रीति रक्षैरण्ड: कण्ठकारी वा |
This is to be covered on all sides with the stool of a she-buffalo, and burnt by means of a fire made of cow-dung cakes burning the whole night, at the close of which the diamond is to be immersed into horse’s urine. This process is to be performed seven nights resulting in the purification of the diamond.

Fourth process.

Diamond is purified, if it is kept inside a lime fruit and boiled for three days by means of a Dola-Jantram with a decoction of meghanada, shami, shyama, shrini, madana, kodrava, kulattha, vetasa, agastya, (vasaka or vaka), and nirgundi, mixed with a sufficient quantity of water.
Fifth process.

Diamond is purified, if it is kept inside the tuber of a vyaghri plant coated on all sides with mud, heated by putam for twenty four hours, and then immersed into horse’s urine or milk of snuhi.

Sixth process.

Any gem or ratna is purified, if it is boiled in a Dola Jántram for one hour with the juice of jayanti leaves.

Incineration of Diamonds.

(1) White diamonds.

First process.

Diamond of white colour is incinerated, if it is heated by Gajaputam, after having been coated on
all sides with a paste made of aswattha, vadari (plum), jhinti, makshikam, and shell of crab, all rubbed together with an equal quantity of milk of snuhi.

Second process.

Diamond of white colour is incinerated, if it is subjected to heat by putam after having been kept inside a lump made of patala-garuri, sulphur, and orpiment, rubbed with the juice of plums, and then subjected to bhavana, first, with the juice of aswattha and then with blood (preferably bug’s blood).

(2) क्षत्रियवर्णवस्तव्य मारणम्।

प्रथमोपविधि।

करवीरं मेघश्वरं बदरकमुद्रमृ।
छेकदुग्धं समं पिष्ट्रा विप्रवन्मार्ग्येन्तृप्तम्॥

(2) Red diamonds.

First process.

Diamond of red colour is to be incinerated, if it is heated by Gajaputam, after having been coated

* नूपमिति क्षत्रियवर्णवस्तव्यम्।
on all sides with a paste made of karabira, mesha-shringi, vadara (plum), udumbara, all rubbed with an equal quantity of milk of arka plant.

Second process.

Diamond of red colour is incinerated, if it is subjected to heat by putam, after having been confined within a lump made of nila plant (indigo), powdered conch shell, manas-shila, earthworms, and shurana.

(3) वैश्यवज्ज्य मारणम्
प्रथमोविचि:
बला चातिबला गन्धं पेषयेत् कच्छ्पास्थिः च
पूर्तेष्ठ वारुणीदुम्पेत्रिः घं वेश्यो विप्रवचत्
(3) Yellow diamonds.
First process.

Diamond of yellow colour is to be incinerated, if it is heated by Gajaputam, after having been coated on all sides by a paste made of bala, atibala, sulphur, shell of tortoise, all rubbed with an equal quantity of the milk of indrabaruni.

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Second process.

Diamond of yellow colour is incinerated, if it is subjected to heat by putam after having been rubbed with the milks of snuhi, karabira, bata (banyan), and Indra-varuni, mixed with earthworms and hingula (cinnabar).

शूद्रवज्रस्य मारणम्
प्रथमविधि:
रसोनं शूरणं शक्तं समं पैशं मनःशिला
वटचीरेण मूषान्तवर्षवच्छूद्ममारणम्

(4) Black Diamonds.

First process.

Diamond of black colour is to be incinerated, if it is subjected to heat by Gajaputam, after having been coated on all sides with a paste made of shuramam, garlic, conch-shell, manas-shila, all rubbed with an equal quantity of the milk of banian tree.

गण्धारमकं ग्रन्तं तारं मेषश्रृंखं समांशकम्
वियं कान्तं स्तुतीचोरं नारीपुष्यं पयःङ्कुतम्
एभिविलितमुषयां धमनाति शूद्रमारणम्

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Second process.

Diamond of black colour is incinerated, if it is heated in a crucible, the inner surface of which is coated with a paste made of sulphur, clarified butter, orpiment, ram’s horn, aconite, load stone, milk of arka, and menstrual excretion of women—all equal in quantity and rubbed with milk.

Special directions.

Feminine diamonds are to be incinerated in the same way as described above. Neuter diamonds are to be incinerated with all the herbs combined, required for the incineration of masculine diamonds of four different colours, as described above.
(2) Incineration of Diamonds, irrespective of colour.

First process.

Diamond is to be heated and immersed into the urine of ass. Orpiment is to be rubbed with bug's blood and made into a lump, inside which the diamond is to be kept. It is then to be heated strongly and immersed into the urine of horse. Performance of this process for 21 times results in the incineration of the diamond.

Second process.

Horn of ram is to be rubbed with the juice of asthi-sanhara and made into a lump. Diamond is to be kept inside this lump and subjected to heat by putam. Three such putams result in its incineration. A lump made of asthi-sanhara creeper may be made use of in the place of a lump made of ram's horn.
Third process.

Diamond is incinerated, if it is heated by putam, after having been kept inside a paste made of the roots of cotton plant of two years’ standing and the roots of kanya, all rubbed with a sufficient quantity of human milk.

Fourth process.

Ram’s horn, snake’s bone, tortoise shell, amlavetasa, and elephant’s tusk—all these are to be pounded and made into a lump by being rubbed with the milk of snuhi. Diamond is incinerated, if it is kept confined within this lump and heated strongly.

* ग्रज्ञन्त इतिवेतस्य स्यते शास्त्रान्त इति पाठान्तरम् ।
Fifth process.

Tambula creeper (betel) of three years’ standing, as well as roots of a cotton plant are to be rubbed together and made into a paste. Diamond is incinerated, if it is confined within this paste and heated by Gaja putam for seven times, a fresh paste being used each time.

Sixth process.

Diamond is to be subjected to bhavana with the blood of bugs for seven times, and dried each time in the sun. Manas-shila is also to be similarly treated. Both these things are to be put together, covered by means of plum leaves, and then heated by putam. Performance of this process for seven times results in the incineration of the diamond.
Seventh process.

Diamond, kept in shells of oyster growing in a big river, is to be subjected to bhavana, quickly and over and over again, with the juices of snuhi, arka, dhatura, and kanya, a separate day being allotted to each of these juices. The diamond is then to be surrounded on all sides with the flesh of black crab. The oyster shells are then to be closed and covered by means of mud, raised by earth-worms. The whole thing is then to be heated strongly resulting in the incineration of the diamond.

Eighth process.

Diamond is incinerated, if it is heated after having been kept inside a paste, made of the roots of red water-lily and buds of meghanada.
Diamond is incinerated, if it is heated 21 times
and immersed each time into frog's urine, kept in
a bell-metal pot.

Tenth process.

Diamond is incinerated, if it is subjected to a
necessary amount of heat after having been rubbed
with the tuber of a blue jyotismati creeper and
dried in the sun.
Eleventh process.

Diamond is incinerated, if it is smeared with the blood of bugs, dried in the sun, and then heated and immersed into the juice of kasa-marda kept in an iron pot, the whole process being repeated for seven times. This process was described by the great sage Brahma-Jyoti.

Twelfth process.

Diamond is reduced to ashes of an excellent quality, if it is heated by putam for twenty times, after having been smeared each time with a paste, made of earthworms, rubbed with the juice of the fruits of madana tree.
Thirteenth process.

Diamond is to be subjected to bhavana with bug's blood for four times. It is then to be covered on all sides with the flesh of rats, cut into pieces, and heated by Baraha-putam for thirty times. It is then to be heated for 100 times and immersed each time in decoction of kulattha. The diamond is then to be heated by putam for eight times after having been confined in a crucible, the inner surface of which is to be coated with a paste made of decoction of kulattha, juice of lakucha, and manas-shila. The diamond is then to be heated for 100 times, and immersed each time in purified mercury, with the result that the diamond is reduced to ashes which can float on the surface of water.

This process was described by the chemist, Chandra Sena, founder of the Chandra dynasty.
Fourteenth process.

Diamond is incinerated, if it is heated for 21 times, and immersed each time into the decoction of kulattha, mixed with hingu and saindhava.

Fifteenth process.

General method of Incineration of all the Gems.

Diamond and other gems are incinerated, if heated by putam, after having been confined in a crucible the inner surface of which is coated with a paste made of mercury, hingula, manas-shila, haritala, swarna-makshika, sulphur, tankanam, earthworms, bimala, vanga, ram’s horn, load stone, semen, and blood—all these mixed together and subjected to bhavana with the juices of some of the herbs generally used in incineration of gems.
Uses of Diamond.

(1) The diamond, thus prepared and powdered, should be mixed with a little of borax, khara-satwa (see page 154), twenty times in weight of the diamond, and incinerated gold, equal in quantity to the diamond,—all these are to be rubbed together and heated. The product may be used in medicines.

(2) Incinerated diamond, rubbed with three times its weight of mercury, and made into a pill, strengthens even a tottering tooth and makes it steady.
Thirty parts of incinerated diamond, four parts of gold, eight parts of silver, eleven parts of white shankhi, four parts of mica, eight parts of swarna-makshika, and six parts of vaikranta—all these are to be mixed together and used with mercury for the enhancement of its properties by six times.

Ashes of diamond, with half its quantity of incinerated mercury, ashes of the essence of mica, equal in quantity to both—all these are to be rubbed together and taken in doses of one račti a day with honey and clarified butter. It cures all the diseases. It is a great rasayanam.
Softening of Diamonds.

Diamond is to be confined within a matulunga fruit, covered on all sides with mud. It is then to be subjected to heat by Gaja-putam for a hundred times. Next is it to be smeared with the juice of tambula (betel) leaves, wrapped up with the leaves of the same creeper, and buried deep into the earth for some time resulting in the softening of the diamond.

Liquefaction of diamond.

Ashes of diamond, incapable of being restored to their former condition, are to be kept inside an asthi-sanhara creeper and immersed into a vessel filled with a sour vegetable juice (such as lime juice), and then heated for seven days with the result that it turns into a liquid.
Liquefaction of all the gems.

(2)

Hingu, five salts, the three ksharas, that variety of amla-vétasa which can decompose flesh into a liquid, nava-sara, well-developed and

* कुम्भोफलामिति जवयात्विजयम्। ज्वालामुखीति भवात्तकम्।

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well-ripened jayapala seeds, bhallataka, dravanti, rudanti, bidari, chitraka roots, milks of snuhi and arka—all these are to be rubbed together and made into a lump, into which is to be kept any of the nine gems of excellent quality. The lump is then to be wrapped up with leaves of bhurja (birch) tree, and again covered with a piece of cloth. It is then to be boiled by means of a Dola-Jantram containing fermented liquid mixed with all the amlas. Strong heat is to be applied for 72 hours at a stretch, after which the gem, in a state of liquefaction, is to be collected from inside the vessel. This liquid has the glaze of gems. It is light. It makes the body as strong as iron.

(३)
केतकीखरसं भायं सैन्यवं खर्पुष्पिका।
इन्द्रगोपकसंयुक्तं सर्व भायं विनिचित्रेषु॥
सतां ह्वेदयेषु तस्मिन् वैकान्तं द्रवतां ब्रजेत्।
लोहाष्ट्रं कतिवा वज्र वापनां ह्वेदशात् द्रुतिः॥
जायते नात्र सन्देहो योगस्याय प्रभावतः।
कृत्यो योगराजोर्यं रज्जिनां द्रावणं परम्॥

(३)
Juice of ketaki flower, rock-salt, swarna-flower, and indragopa insect—all these are to be kept in a vessel. Diamond and all the other stones, and

*खण्डपुष्पीति खण्डयूथी विपलाहूली च।
metals are liquefied, if mixed and boiled for seven days with this solution.

\[ \text{रसजलनिधि:—अतीयश्रवणम्} \]

**Removal of evil effects of diamond, not properly incinerated.**

Cow's milk, taken for seven days with sugar-candy, honey, and clarified butter, does away with the evil effects of diamond, not properly incinerated.

\[ \text{ब्रह्मविनायकशान्ति:} \]

\[ \text{सिताम्युग्नते: साँद्रं गोबुर्गं दिनसतकम्} \]

\[ \text{विधिना सेवितं हन्ति वज्रदोषं चिरोत्थितम्} \]

**Purification of Gems in general.**

Metals, minerals, and gems do not spread through the different parts of the body, if not properly purified. They are positively harmful, if used without purification and incineration.
(1)  

General Process of purification of gems.

Masculine diamond, emerald, sapphire, ruby, topaz, cat's eye, zircon, pearl, and coral—these nine gems are like nectar itself, if purified and incinerated in the prescribed manner.

(1) Ruby, (2) pearl, (3) coral, (4) emerald, (5) topaz, (6) diamond, (7) sapphire, (8) zircon, and (9) cat's eye—these nine gems are purified by being boiled with the following, respectively:—(1) a sour vegetable juice, (2) juice of jayanti, (3) all the ksharas, (4) cow's milk, (5) fermented liquids mixed with the decoction of kulattha, (6) juice of tanduliya,
(7) juice of indigo, (8) go-rochana (dried bile of a cow sometimes found deposited in its horns), and (9) decoction of triphala.

(2)

कुलत्थस्य पचेৎद्रोणां वारिगाध्युगः च।
तेन पादावशेषं काध्यात्मं मण्यं: शिला:।
ब्रात्पे त्रिदिनं शुष्कं काध्यसिंहं पुनः: पुनः।
एवं शुभ्यति ततू सर्व मार्गीयं ततः परम्॥

One drona of kulattha is to be boiled with eight dronas of water. Gems and stones are to be boiled with this decoction. They are then to be dried in the sun for three days, saturated all this while with the same decoction, put upon them over and over again. This is how the gems are purified.

(3)

अम्लचारविपाचितं तु सकलं लोहं विशुद्धं भवेत्।
मादिकोष्ठिः शिलासिंहं तुल्यगतं तालं च
सम्यकं तथा॥

मुक्ताविवित्र मसुक्किकात्म चपला शुद्धा वराटा: शुभा:।
जायन्तेः मस्तस्मत्सिन्धा: पयसि च चिस्त: शुभः
स्याद्वलि:॥

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(3)

All sorts of metals, makshika, manas-shila, tutthaka, abhra, haritala, mucta (pearl), pravala (coral), shucti (oyster-shell), chapala, and cowri-shells are purified, if boiled with a solution of vegetable acids and alkalis (ksharas). Sulphur is purified, if boiled in the same way and then immersed (through a piece of dry cloth) into milk.

(4)

172 पृष्ठे पद्योविचित्रिन्द्रचयः

See Process VI. page 172

अथ वज्रेतरतालानां सर्वकमः

प्रथमोविचि:

लक्षचद्रवसंपित्य: शिलागन्धकतालकः

वज्रं विनात्यरतालि चिन्यन्तेपश्चपुः खलु

Incineration of gems other than diamond.

First process.

All the gems, with the exception of diamond, are incinerated, if subjected to heat by putam for eight times, after having been smeared each time with a paste made of manas-shila, gandhaka, and haritala, rubbed with the juice of lakucha.
Second process.

Any gem may be incinerated, if it is heated and immersed, for seven times, into the juice of each of the following:—kanya, tanduliya, and human milk.

Third process.

The rest of the gems may be purified and incinerated in the same way as diamond.
Desirability of avoiding defective gems.

(1)

One who uses a defective gem is subjected to such calamities as loss of friends and wealth, imprisonment, etc.

(2)

Exactly as a man of noble birth is ruined by coming in contact with a man of low birth and vulgar taste, the good effects produced by a genuine gem are nullified by the contact of bad gems.

General Properties of all the gems.

They are laxative, cool, astringent, sweet, destroyer of fat, beneficial to eye-sight, and destroyer of vice and misfortune.
The following seven are the features of a good emerald:

1. green colour, 2. heaviness, 3. softness,
4. radiating rays, 5. smoothness, 6. brightness,
and 7. density.
Characteristics of bad emerald.

A bad emerald is (1) tawny, (2) coarse, (3) blue, (4) pale-black (5) light, (6) flat-shaped (7) ugly, (8) black, and (9) rough.

Properties of emerald.

Emerald, duly incinerated, can cure fever, nausea, poison, asthma, abnormal excess of the three doshas, loss of the power of digestion, piles, anemia, and swelling of the body. It increases vitality.

Everything growing in a mine of emerald can counteract the evil effects of poison. Poison of a highly venomous snake, incapable of being cured by
all sorts of incantations and herbal drugs, can be done away with by emerald (duly incinerated).

Emeralds of superior quality.

Emerald of superior quality is very green, soft, and complex in lustre by the penetration of rays from outside. Its interior appears to be full of dust of gold. It is characterised by a structural excellence and uniformity of colour. It is not light in weight. On sun’s rays being reflected upon it, the whole room is illuminated. Without giving up the greenness of its colour, it keeps within itself its inherent lustre. It resembles in luster the beauty of green grass brightened with the effulgence of lightning. Its very sight pleases the mind.
Test of Genuine Emerald.

Genuineness of emeralds is tested by experts by rubbing it with a piece of stone. If treated in this way, it will break into pieces, if it is glass. This is not the case with a genuine emerald.

(2)

An emerald to be tested is to be scratched with an iron fork and then smeared with lime. Thus treated, a genuine emerald waxes in glaze, whereas an artificial one loses its lustre.
The emerald which is broken by another emerald should not be worn or bought.

(4)

Puttika (peridote) loses its lustre by being rubbed with a piece of silken cloth, whereas genuine emerald gains in lustre, if treated in the same way.

(5)

The weight of a genuine emerald is to be ascertained as compared with that of water of the same dimension. The figure, thus obtained, is to be compared with that representing the weight of a piece of stone (to be tested), in relation to the weight

* पुत्रिकेति नामापत्रम्।
of water of the same dimension. If the second figure is much lower than the first, the stone tested is to be considered glass or something other than an emerald. The water displaced by an article immersed into a pot full of water is regarded to be of the same dimension as the article itself.\(^*\)

\(\text{(6)}\)

कस्यचिदनेकरूपंरकतमनुग्रहतोऽपि गुणवर्गः ।
भज्जातस्य निर्योगतथा श्रवणपति वर्णस्य ॥

(6)
Some bhallata (a stone which possesses the colour and some other features of emerald) may appear to resemble a real emerald in colour and other features. The difference between such a stone and emerald can be known by a greater clearness of colour in the latter.

अथ माणिक्यम्

माणिक्यं शोभरं च तदसं ऽलोहितं तथा ।
श्रूक्कारो रंगरं च रञ्जमणिः स्वर रागयुक् ॥

तस्य भेदः ।

माणिक्यं पद्मरागस्यं हितीयं कुरुविन्दजम् ।
सौगन्धिकं तृतीयं स्यात् चतुर्थं नेत्रगल्लि च ॥

\(^*\) This is a clear reference to the ancient Indians having a knowledge of specific gravity.
Manikya is of four kinds, viz. (1) padma-raga, (2) kuruvinndaja, (3) saugandhika, and (4) nilagandhi.

The best of the former is lotus-coloured (i.e. white red), transparent, gladening to the eyes, highly bright, round-shaped, smooth, and heavy.

Kuruvinndaja, which grows from a stone named Kuruvinndam (corundum), is highly red and beautiful.

Saugandhika, which grows out of sugandhika (spinel), is yellowish red.

Nilagandhi is generally obtained from the bed of the river, Nila-ganga. It is red in colour with a bluish lustre emerging from inside.

* गात्रमिति स्थूलम् *

† "Ruby" is evidently a contraction of the Sanskrit "rabi-ratna" (i.e. the gem favourite to Ravi or the Sun).

‡ One of the tributaries of the river, Ganges, falling into it near Hardwar.
This classification of the rubies is in order of their excellence.

शास्त्रानिदित्युच्चचलक्षणम्।
युक्तं क्षिप्रवता चैव वेमल्लयमतिरचक्कता।
क्षत्रियता गात्रसाध्यां च दोषित्वा वृततूपता।
सर्वं तद्विधानियाच्छुस्तमाणिक्यलचलणम्॥

Characteristics of good rubies.

These are:—heaviness, softness, freedom from stains, excess of redness, transparency, smoothness and uniformity of structure, brilliance, and roundness of shape.

दुध्माणिक्रम लक्षणम्।
(१)
रन्ध्रकारक्षयमालिन्यरौच्यावैश्वरिक्षसंयुतम्।
चिपिंतं लघु वक्रं च माणिक्यं दुध्ममण्डथा॥

Defects of rubies.

(1)

They are as follows:—holes, ugliness, absence of lustre, roughness, absence of transparency, flatness, lightness, and deformity of size.
(2)

A ruby with two different kinds of lustre in two different parts of its surface is a destroyer of friends to its wearer. A ruby with a mark resembling crow’s foot gives rise to defeat. A crack in a ruby worn causes infliction of injuries by weapons. A ruby with a piece of pebble within it causes the destruction of cattle and friends. A ruby which appears to be coated with milk in a cavity in its body causes much distress. A ruby having the lustre of a drop of honey causes the loss of longevity, fortune, and fame.

* द्विपद्काकपादमित्यथः ।
A ruby without lustre causes the loss of riches. A ruby with the colour of smoke threatens an accident by lightning.

Test of Ruby.

A genuine ruby does not undergo any diminution in lustre, or in weight, even if rubbed with a hard stone. This is not the case with an artificial ruby.

Characteristics of excellent Rubies.

It is a ruby of an excellent quality which endows its surroundings with brilliance when the sun's rays are reflected upon it. Such rubies grow from quartz.
भाराकरसंस्पर्शात् यः शिख्रां लोहितां वमेत् ।
राज्येदाभ्रं वापि स महायुगां उच्चते ॥

( २ )
It is a ruby of superior worth which, at the touch
of the morning sun, vomits, as it were, red flames, or
dyes its surroundings with a red lustre.

( ३ )
दुःखे शतयुगेऽभिसो राज्येत् यः समन्ततः ।
वन्धः च लोहितां वा पद्मरागः स उत्तमः ॥

( ४ )
It is an excellent ruby which reddens even a
hundred times its weight of milk; or vomits red
flames.

( ५ )
यो मणिद्वश्यते दूराज्ज्वलं द्विर्ममच्छविः ।
वंशकान्तिः स विज्ञेयं सर्वसन्मप्पत्तिकारकः ॥

( ६ )
The gem which appears from a distance to be a
blazing fire is called vamsa-kanti. It is the giver
of all wealth.
The best ruby, if kept in dense darkness, illuminates the surroundings with its rays.

It is a ruby which is very rare even to the gods which, if put within a lotus, makes the latter put forth its blossoms immediately.

A ruby of the shape of a gunja should be 10, 7, or 3 gunjas in weight. The first is better than the second, and the second is better than the third.
(2)

A ruby of the shape of a shrigala-kola (jackal plum) weighs 12, or 8, or 7 gunjas. Of these three, the first is more valuable than the second, and the second is more valuable than the third.

(3)

The ruby which is of the size of a sweet plum fruit should weigh 12, or 10, or 8 mashas. The one which is of the shape of an amalaki fruit should weigh 30, or 20, or 16 mashas.

(4)

A ruby which is of the shape of a bimbi fruit should weigh 6, 8, or 10 tolas. A ruby of a greater weight and dimension is not generally available.
Properties of Ruby.

A ruby (duly purified and incinerated) is an increaser of digestive power. It is nutritious and destroyer of kapha, vayu, and waste. It also does away with the evil influence exerted by ghosts and other evil spirits.

अथ मुक्ता ।

मौर्त्किकं मुक्तिका मुक्ता लच्चिमीमुक्ताकालं च तत् ।
विन्दुकालं च मौर्त्किकं तारा च जोवरकक्षः ।
अन्तःसारः शशिप्रिया चन्द्ररतं तदेव हि ॥

अस्या गुणा: ।

( १ )

मौर्त्किकं शीतलं लघु चचुंपणं चलपुष्टिदम् ।
कप्यां तदेव स्वादु ख्रीकान्तिरतिवर्धिनी ॥
कफपितचिज्जूवसं कासर्वसादिमान्यनुतः ।
कान्तिदं वृष्ण्यमायुष्ण्यं भेदि दाहितिप्रस्फूतः ॥
वारिधिगम्भरंजामत मौर्त्किकं खलु वीर्यदम् ।
दीपि च पक्क्रोगायानां नाशकं ज्याते हि ततु ॥

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Mukta (Pearl).

Properties of Mukta.

Pearl is cool, beneficial to eye-sight, giver of strength and nutrition. It is astringent, sweet, and increaser of beauty and affection in women. It pacifies an excess of vayu and pittam, and is efficacious in cough, asthma, and loss of the power of digestion. It increases beauty, vitality, and longevity. It is laxative and efficacious in inflammation and poison.

Pearls growing in the sea (viz. oyster-pearls, conch-pearls, and fish-pearls) are increaser of the power of digestion and pacifier of all the diseases affecting the digestive organs.

अस्त्रा षेढा: ।

ढिपेन्द्रभेकेन्द्रवराहश्रेण्मतस्याहिषुक्त्युज्ज्रव ।

वेयुजानि ।

मुक्षाफलानि प्रथितानि लोके तेषां तु शुक्त्युज्ज्रवप्रेमेव ।

भूरि ॥

Varieties of Pearls.

Pearls grow in the following:—elephant, frog, boar, conch, fish, oyster, and bamboo.

(क) गजमुका ।

ऐरावतकुलजानां पुष्यश्रवणेनहसूर्यर्यदिबसेशु ।

ये चोतरायणभवा यह्येकेन्द्रदश्य भद्रेभा: ॥
तेषां किल जायन्ते मुक्ता: कुम्भेणु सरदकोषेणु।
बहवो ब्रह्मप्रमाणा बहुसंस्थानाः प्रभायुक्ता: ॥
नेपार्धः काय्योऽन च वेयोत्तीव ते प्रभायुक्ता: ॥
सुतविजयारोग्यकरा महापवित्रा धृता राजाम् ॥

(a) Elephant-Pearl.

Elephants of noble origin are those which are descendants of Airavata (owned by kings of Swarga in ancient times), and are born on a Sunday or Monday with the moon appearing to be in the fixed star of Pushya (in the sign of Cancer) or Shravana (in the sign of Capricorn), at that part of the year which begins after the Winter Solstice and ends with the Summer Solstice, and at a time of the eclipse of the sun or the moon. In the frontal globe on the fore-head or in the place of origin of the tusks of such an elephant grow several pearls of big size and varying structure. They are very bright. They should not be subjected to valuation, neither are they to be perforated. They are givers of sons, victory, and immunity from diseases. They should be worn by kings.

(ख) सर्पमणि: ॥

कणिजं मौक्तिकं रम्यं नीलच्छायं महादुध्यतिः ॥
श्रुगालकोलभात्कायुज्ञाफलप्रमाणाकम् ॥

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(b) *Snake-pearl.*

A snake pearl is beautiful, blue-lustred, and highly brilliant. It may be of three different sizes, viz, of the size of (1) jackal-plum, (2) amalaki fruit, and (3) gunja seed.

The test of genuineness of a snake-pearl is as follows:—

Keep it in a silver pot on a clean piece of open soil. If it is a genuine snake-pearl, it will cause immediately a shower of rain falling from the sky all on a sudden; otherwise, there will be no such rainfall.

(c) *Fish-Pearl.*

A fish pearl is as big as a gunja fruit. It grows in a kind of whale living in deep oceans. It is light in weight, and has the colour of a patala flower. It is not so bright and is very globular.
A fish pearl has the appearance of the eyes of a fish. It is sacred, endowed with several properties, and big in size. It grows in the mouth of whales growing in mid-ocean.

(d) *Hog-Pearl.*

Pearls sometimes grow at the root of the teeth of some hogs. These pearls are as bright as the moon’s rays. They possess several merits.

(e) *Bamboo-Pearl.*

A pearl growing inside a bamboo plant is as bright as the moon’s rays. It is greenish white in colour. (It is to be distinguished from vansa-
lochana, a sugar-like substance, sometimes found inside the reeds of a bamboo plant). Vansa-lochana is soft and light, whereas a bamboo-pearl is strong and heavy.

(f) Conch-Pearl.
A pearl growing in a conch-shell is as white as the moon. It is globular, bright, and beautiful. It is as big as a plum fruit, and sometimes, so big as the egg of a pigeon.

(g) Frog-Pearl.
The pearls which sometimes grow in the heads of frogs are like snake-pearls.
(h) Oyster-Pearl.

Rain drops, falling from the clouds at the time when the sun appears to be in the fixed star of swati (in the sign of Libra), if drunk by oysters, develop in course of time into bright pearls growing inside their shells.

Of all sorts of pearls, those which grow in oysters and conch-shells are inferior to the rest.

The pearls which grow in the ocean (viz. those growing in whales, conch-shells, and oyster-shells) are strengthening and efficacious in diseases relating to the digestive organs.

Classification of all the pearls according to colour.

Pearls of the best type are clear, white, heavy, and bright. Those of the second class are thick, with tawny colour and brightness. Those of the third class are slightly yellow, appearing to be smeared
with oil, white, and bright. Those of the fourth class are white, small, thick, and have a black lustre.

शुभमौक्कृक्ष्य लक्षणम्।
ह्यादि श्वेतं लघु स्लिग्धं रशिमवन् निर्मलं ब्रह्मं।ः
ख्यातं तोयन्यमं द्वारं मौक्किकं नवथा शुभम्॥

Characteristics of good pearls.

A good pearl is agreeable to eye-sight, white, light, appearing to be smeared with oil, bright as sun’s rays, big in size, praised by lookers-on, clear as water, and globular.

अपकल्यावृक्ष्य लक्षणम्।
रुचांगं नोड्जलं श्यांवं तास्त्रामं लवणोपपमम्।
इत्यदृश्यं च विकर्तं प्रन्थिलं मौक्किकं त्यजेत्॥

Characteristics of bad pearls.

Pearls of the following description are to be rejected:—coarse, devoid of brightness, tawny-coloured, having the colour of copper, resembling salt in appearance, half-white, ugly, and full of knots.

* स्नेहिणेव विलित् यत् तत् निर्ग्रंथिति गच्छते।
Perforation of Pearls.

Pearls, other than those which grow in oysters, should not be perforated. Neither should they be set a value to, on account of their scarcity.

NILA (SAPPHIRE).

This stone, in ancient times, was procured from Kalinga (modern Orissa including the western part of Bengal) and Ceylon.
Nila is of two kinds, *viz.* Jala-nila and Indra-nila. Of these, the latter is better than the former. The sapphire which is comparatively light and emits a white lustre from inside is Jala-nila, whereas Indra-nila is comparatively heavy, and emits a black lustre from inside.

The Jala-nila which contains a red lustre inside it is called Rācta-gandhi or Racta-mukhi nila. It is the best of the Jala-nilas.

*Characteristics of a good Indra-nila.*

A good indra-nila is of uniform lustre, heavy, appearing to be smeared with an oily substance, transparent, globular, soft, with a play of brilliance inside it.
Varieties of Jala-nila.

Jala-nila is of seven kinds, viz. (1) that which has got a blending of five different kinds of colour, (2) that which has got a blending of five colours in the one half and only one colour in the other half, (3) that which does not appear to have an oily surface, (4) that which is light, (5) that which has got a play of red lustre inside it, (6) that which is flat-shaped (or, according to a different reading, has the glaze of a chipita or boiled rice baked and hammered into a flat-shape), and (7) that which is small-sized.

Copper-coloured sapphire.

A sapphire which is copper-coloured should not be discarded. That is also the case with the two minor stones, viz. karabira and utpala (opal), even if they are copper-coloured.

Rain-bow sapphire.

The sapphire which has got a play of rain-bow, inside it, is very precious and rare in the earth.
The sapphire, which, on account of the abundance of its colour, can invest hundred times its weight of milk with a blue colour is called Maha-nila or great sapphire.

Gomedam (zercon).

It is a kind of quartz of a yellowish red colour. A gomeda (literally, cow’s fat) is so called simply because it resembles beef’s tallow in colour. This stone is of a reddish yellow colour.
Zercon is to be tested.

Zercon is found in the Himalayas and in the Sindhu (river Indus or province of Sind or the sea). The genuineness of this stone is to be tested by means of fire or by a whet-stone.

शस्तगोमेदम् ।
सुखच्छद्रगोजलच्छयायं स्वच्छं विग्नं सर्मं गुह ।
निर्द्देलं मस्त्रणं दीतं गोमेधं शुभमण्ड्यथा ॥

Good zercons.

Zercons of the following description are good:—
(1) having the colour of cow's urine which is very clear, (2) transparent, (3) appearing to be smeared with oil, (4) level-surfaced, (5) heavy, (6) devoid of layers, (7) smooth, and (8) bright.

अशस्तगोमेदम् ।
विच्छयायं लघु रचाईं चिपिंटं पटलाक्षितम् ।
निश्चयं पीतकाचारमं गोमेदं न शुभावहम् ॥

Zercon of bad qualities.

These are as follows:—(1) devoid of secondary colour, (2) light, (3) rough-surfaced, (4) flat-shaped, (5) appearing to have a layer, (6) devoid of brightness, and (7) appearing to resemble glass of yellow colour.
Secondary Colours of Gems.

Every gem has any of the following sub-colours (in addition to the predominant one) :—(1) white, (2) red, (3) yellow, and (4) black. This is also the case with zercons.

Zercon is principally of reddish yellow colour; but it must have, in addition, any of the four sub-colours mentioned above.

Zercon of highly excellent qualities.

Such a zercon is heavy, brilliant, white, appearing to be smeared with an oily substance, soft, or very ancient (i.e., one which was metamorphosed
long ago into its present state, from the state of a quartz), and transparent. Such a zeron is a giver of wealth and fortune to its wearer.

Properties of zeron.

Zeron cures an excess of phlegm and pittam. It is beneficial in wasting diseases and anemia. It increases the power of digestion and appetite. It is beneficial to the skin.

Vaiduryam (Oriental cat's eye and similar stones).

This stone used to be obtained from a mine close by the highest peak of the mount "Vidura", situated
on the border of a country named “Kama-bhuti” (Cambodia?)

It appears to contain inside it a mark resembling a swinging scarf.

Vaieties of Vaidurya.

This gem is of three different kinds, viz. (1) yellowish black, (2) reddish blue, and (3) white black.

Vaiduryam is of three different kinds, viz. (1) of the colour of green bamboo leaf, (2) of the colour of peacock’s neck, and (3) tawny-coloured like a cats’ eye.
Of all these Vaiduryas, those which are commendable are heavy, smooth, devoid of the general defects (referred to before), pellucid, and transparent.

Characteristics of a good Vaiduryam.

The Vaidurya, which is blackish-white, smooth-surfaced, transparent, heavy, bright, and appears to contain inside it a mark resembling a swinging scarf, is commendable.

Characteristics of bad Vaiduryam.

A Vaidurya of the following description is not commendable:—(1) black, (2) water-coloured (3) flat-shaped, (4) light, (5) rough, and (6) containing inside it a mark resembling a swinging scarf of red colour.
Test of Vaidurya.

The Vaidurya which gains in lustre, if rubbed with a touch-stone, is a genuine one.

बैदृष्ट्यम् गुणः।
बैदृष्ट्यम् रक्तपिन्च्यं प्रज्ञायुर्बलवद्ध नमः।
पितश्रिधानरोगसं दीपनं मलमोचनम्॥

Properties of Vaidurya.

Vaidurya cures hemorrhage; increases knowledge, longevity, and strength; cures diseases due to an excess of pittam; excites power of digestion, and is a laxative.

अथ वैक्कान्तम्।
वैक्कान्तं दशभीरकं नीचवजं च ताग्रकम्।
पुलकं ताग्ररलं च ताग्रशास्म विकसितं तथा॥
अध्यश्रास्याध्यफलकं पट्टकोणो मस्यन्तो गुरुं।
शुद्धमिथितवर्यद्धं युक्तो वैक्कान्त उच्चते॥

VAIKRANTA (GARNET).

Vaikranta has eight or six angles and eight facets. It is smooth, heavy, and has all sorts of colour, pure or mixed,
Varieties of Vaikranta.

(1) Vaikranta is of the following different colours:—
(1) white, (2) red, (3) yellow, (4) blue, (5) pigeon-coloured, (6) green, (7) black, and (8) mixed.

(2) Vaikranta is of the following colours:—(1) white, (2) yellow, (3) red, (4) blue, (5) pigeon-colour, (6) the colour of a peacock’s neck, and (7) the colour of an emerald.

The black variety is beneficial to health; the yellow one is to be used in the process for manufacturing gold; the white one is to be used in the
process for manufacturing silver (vide the operations of mercury in Vol I). The red variety has an all-round utility. The remaining two, viz., the blue and the pigeon-coloured varieties, are abortive, and should, therefore, be avoided.


dvetvkmt n.una: 

(1)

Arux:-padh bhalvarqykoro yati guya: 

prajgand: sakladopagadapahari II

ditamikhtu pavismanayagastrasvi  

vaktmt: klu vahurellohakari II

ratayneshu sarvqhu purvegag: pratapvani

vajrasthane nyokata vaktmt: sarvandroshah II

Properties of Vaikranta.

(I)

Vaikranta increases longevity, strength, complexion, nutrition, knowledge, and appetite. It removes all the three doshas and the diseases. It has almost the same properties as diamond. It makes the body as strong as iron. As a rasayanam, the white one is the best. A vaikranta, devoid of all the defects, may be used in lieu of diamond.
Vaikranta, like diamond, strengthens the body, and cures poison, fever, leprosy, and phthisis. It is also a king of the metallic drugs.

Mines of Vaikranta.

Vaikranta is obtained in several parts of the world, and especially in mines situated on the north and south of the Vindhya Hills.

The stone is so named, only because it can cut into pieces all sorts of metals. (The root from which the word has been derived, viz. "krit," means to cut.)

It has many of the characteristics of diamond, and can stand heating and percussion.

निन्द्यस्य द्रव्यम् भागे द्रा चरे वारस्ति सर्वतः।
विन्द्रन्तयति लोहानि तेन वैक्रान्तकः स्मृतः।
वज्रत्वादिसंयुको दाहादात्साहिष्णुस्तात्॥

Mines of Vaikranta.

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It has many of the characteristics of diamond, and can stand heating and percussion.
Purification of Vaikranta

First process.

Vaikranta is purified, if it is boiled for one day each with a solution of ksharas and salts dissolved with (1) the amlas (vegetable acids) (2) urines, and (3) decoction of kulattha, respectively.

It may also be purified, if boiled with a decoction of kodrava (a kind of grass-paddy).

Second process.

Vaikranta is purified, if it is boiled for 3 days with decoction of kulattha.

Third process.

Vaikranta is purified, if it is heated for seven times, and immersed each time in the juice of nirgundi, and then washed off with clear water.
Fourth process.

Incineration of Vaikranta.

First process.
Vaikranta is incinerated, if it is heated by putam for eight times, after having been smeared each time with a paste made of sulphur, rubbed well with lime juice.

Second process.

**Transliteration**

चतुर्थबध्याय: ।

चतुर्थबध्धिविचि: ।

1८४ पृष्ठे तृतीयोविधिन्द्रयय: ।

Fourth process.

वैकान्ततय मारणम् ।

प्रथमोविचि: ।

गन्धकं मद्येत् सम्यगु निम्बुद्रेष्य खल्वके ।

वैकान्तं झियते पुरैर्ग्रामिस्तेन लेपितम् ॥

Incineration of Vaikranta.

First process.
Vaikranta is incinerated, if it is heated by putam for eight times, after having been smeared each time with a paste made of sulphur, rubbed well with lime juice.

प्रथितीयोविचि: ।

1८४ पृष्ठे तृतीयोविधि ब्रह्मवय: ।

Second process.

तृतीयोविचि: ।

वैकान्तेषु च तप्तेषु हयमृगुं विनिचिपेत ।

पौन्युष्येन वा कुयांतः द्रव्य दल्ल्वा पुरेदनु ।

अनेनेव प्रकारेण झियते दशब्हीरकम् ॥

1८-३ । २३१
Third process.

Vaikranta is incinerated, if it is heated by putam as many times as necessary, after having been heated each time in the ordinary way and immersed in the urine of horse.

Fourth process.

Vaikranta is to be heated and immersed at once in the urine of horse. This process is to be performed for 21 times. The stone is then to be kept inside a lump made of the five different parts (viz. root, leaves, bark, flower, and fruit) of an Indra Baruni plant. The lump is then to be confined within a crucible and heated. The stone is next to be kept again inside a lump made in the same way as stated above, put into a crucible, and heated as before. The process of heating in crucibles is to be repeated as many times as are found necessary for the incineration of vaikranta.
Use of garnet in place of diamond.

Incinerated garnet is to be subjected to bhavana with cow’s urine mixed with a kshara of the following trees:—moksha, morata, and palasha.

Extraction of essence of Vaikrantha.

Tuber of shurana, haridra, powdered madana fruit, tankana, powdered laksha (lac insects, ashes of vaikanta, navasara—all these are to be rubbed with decoction of mesha-shringi and made into a lump, which is to be dried, confined in a blind (or

* मोरं छताकराण्ड इति माणा ।
dumb) crucible, and then heated by a very strong fire. This will result in the issuing of essence which will be found in the crucible.

(2)
सत्त्वपातनयोगेन मदर्दश वटोक्तः।
मूषास्यो गटिकाध्मातो वैकान्तः सत्त्वमुत्स्त्रज्ञेऽ॥

(2)

Essence of Vaikranta can be extracted, if the ashes of vaikranta are mixed with the materials required for extraction of essence of all things (see page 47, Vol. II) and heated in a crucible.

बुधान्तस्य प्रयोगः।

(1)
भस्मतवं समुपागतो विक्रतको हेश्ला सृतेनान्वितः।
पादांशेन क्षणिज्वेष्खसहितो मुखामितः सेवितः।
यच्चमायां जटरं च पाण्डुयुद्धं श्रवां च कासामयम्
दुष्ट्रं च प्रहणीमुरसुतं मुखानुर रोगानु जयेदहेश्ला।॥

Uses of Vaikranta.

(1)
Incinerated vaikranta with one fourth its quantity of incinerated gold, taken in doses of one racti
a day with a little of powered pippali, clarified butter, and powdered biranga, cures phthisis, diseases affecting the belly, anemia, fistula, piles, asthma, cough, chronic diarrhoea, cavities or ruptures in the lungs, etc. It strengthens the body as well.

(2)

सूतभ्रस्तात्त्वार्धतंत्रं नीलवैकान्तभस्ममकं।
मृताभ्रस्तमभयोवस्तुलितं परिमितित्वम॥
चौद्राजन्यसंयुतं प्रातरुजानमात्रं निपेतिम्।
निहत्ति सकलान् रोगान् दुर्ज्ञानन्यभेषजः।
त्रिसतदिवसे नृपां ग्राम्मभ इति पातकम॥

(2)

Two parts of incinerated vaikranta of blue colour, one part of incinerated mercury, and three parts of incinerated mica are to be rubbed together. This medicine, taken in doses of one racti a day early in the morning, with a little of honey and clarified butter, cures, in 21 days only, all the diseases incapable of being cured by other medicines.

अथ स्फटिकम्।

स्फटिकं स्फटकं स्वच्छं भासुरं स्फटिकोपलम्।
धौतशिला सितोपलं शालिपिट्टं शिवप्रियम्॥

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Varieties of Sphatika (Quartz).

Quartzes are of several varieties. The manda-kanti or lack-lustre quartz grows in the forests in the Vindhya hills. They have the colour of green tendrils of asoka tree or of pomegranate seeds. The black variety grows in mines of sapphire in Ceylon.

In mines of emerald grow quartz of three different variety. All of them are very clear, transparent, and free from layers. A glare of light emerge from them. The general name for all these
sphatikas is “jyoti-rasa”. Of these three, the red variety is called “rajavarta” (see later); the bluish variety is called “raja-maya”, and that variety which has got marks like a sacred thread upon its surface is called the “brahma-maya”.

Properties of Sphatika.

It is neither cold nor warm. It is efficacious in pittam, inflammation, impurities of the blood, and wasting diseases. To count its beads in religious devotion is productive of much good.

Properties of water kept in a pot made of sphatika.

Pure water, kept in a pot made of sphatika, is cool and pacifier of pittam.
THE SUN-STONE AND THE MOON-STONE.

The quartzes which grow in the peaks of the Himalayas are very clear and bright like the moon’s rays. Of these, the variety which emits fire on the sun’s rays being reflected upon it, is called the Surya-kanta (or sun’s favourite). It is the best of all the gems. There is another variety of this quartz, called the Chandra-kanta (or Moon’s favourite). This is also a very precious gem, and is very rare. On moon’s rays being reflected upon it, drops of water of nectar-like potency are shed by it.
Properties of Sun-stone.

The Sun-stone is warm, clear, and rasayanam (preventer and curer of senility and diseases). It pacifies an excess of vayu and kapha (phlegm), and increases memory. The planet sun (i.e., its presiding Deity) is propitiated, if this stone is kept carefully.

Properties of the Moon-stone.

The moon-stone is cool, appearing to be smeared with oil, pacifier of racta-pittam (hemorrhage) and inflammation. It is pleasing to Siva—the Great Deity, and is a remover of the malignant influence of the planets * and misfortune.

Properties of Moon-stone water.

This water is absolutely pure and curer of excess of pittam.

* Properly speaking, the planets do not exert any influence, good or bad, on human destiny. What they actually do is to indicate good or bad luck to human beings (by their peculiar configuration).
PRAVALAM (CORAL).

Its varieties.

The best of the corals is reddish-white in colour, like the blood of a hare. It is soft, with a surface appearing to be smeared with oil, beautiful, and is capable of being easily perforated. The second class of the corals is as red as red vermillion or the java,
bandhuka, or pomegranate flower. Such a coral is stiff and its surface does not appear to be smeared with oil. It is difficult to be perforated. The third class in merit of the corals is yellowish-red like palasha or pâtala flower. It has a beautiful colour, but very little glaze. Its surface does not appear to be smeared with oil. The fourth class of corals, which is the least meritorious, is blackish-red like the petals of a red lotus flower. It is hard and its lustré does not last for a long time. It is very difficult to be perforated.

**Characteristics of good corals.**

These are:—(1) redness, (2) appearing to be smeared with oil, (3) capacity for being perforated, (4) globular shape, (5) lastingness of the lustré, (6) thickness, and (7) smoothness of surface.
Characteristics of bad corals.

Bad corals are pale-white, grey-coloured, small, rough-surfaced, full of cavities, light, and copper-coloured.

नायसोक्षिक्यते रत्नं मौक्किकं विन्दु मं विना ॥

Softness of corals.

Of all the gems, only corals and pearls can be scratched upon by iron.

Properties of corals.

Pravala is efficacious in phthisis, hemorrhage, cough, eye-disease, poison, and evil influences exerted by ghosts, etc. It is light and digestive.

श्री कर्केतम् ।
कर्केतमं च कर्केतं नक्षमणिश्च कथ्यते ।
कर्केतं श्रीप्रदं सम्यक् स्पष्टं जगरनाशनम् ॥

Karketam (chrysoberyl or chrysolite).

Used internally as a drug, or externally as an article of jewellery, it brings to its user all sorts of
fortune and beauty. It is an antidote against infe-
tion from taking contaminated food or association
with diseased persons.

रज्य तदनुचिरसोमसमप्रकाशमातापीतदहनो-
ज्ञवितं विभाति ।
नीलं पुनः खलु सितं परशं विभिन्नं मेदादिदोष-
हरणेन नं तद्विभाति ।

Varieties of karketana.

Karketanam is of the following colours:—(1) blood-red, (2) moon-white, (3) honey-coloured, (4) having a tinge of the colour of copper, (5) yellow, (6) fire-coloured, (7) blue, and (8) pure white.

Of these, the last two, viz. blue and pure white, are coarse and full of cracks. They cannot therefore look bright even after removal of their defects.
Characteristics of good karketana.

Karketanas of the following description are commendable:—(1) oily-surfaced, (2) not mixed with foreign matters, (3) of uniform colour (4) having a tinge of yellow, (5) heavy, (6) having a play of more than one colour, and (7) devoid of such defects as crack, etc. (see page 169).

Properties of karketana.

A bright karketana, if put on with a golden foil, causes the cure of diseases, does away with the possibility of troubles and anxieties, and increases longevity, children, and happiness.

Those who put on such a good gem acquire respect from people, riches, many friends, beauty, and good health.
अथ पुष्परागः

पीताश्रम गुरूरं च वाचस्पतिप्रियस्तथा।
पीतरलं ग्राहणामौ मन्जुमणिश्च पीतकम्।
पुष्परागो हरिद्रार्म पिन्नस्फटिकमेव च।
पुष्परागमणिद्रित्वः प्राप्तवयो ज्ञाते बुधः।
पद्मरागाकरे कठित्ति कठिनः ताच्योपपलाकरे।
ईशु पीतं च वज्रार्म स्वच्छं कान्त्यं मनोहराम्।
पुष्परागगमिति प्रोक्तं चन्द्रसेनमहीर्षवञ्जा।
पुष्पचन्द्रप्रद: पुष्प: पुष्परागमणिद्रित्व:।

PUSHPARAGA (TOPAZ).

Pushpa-raga can be obtained in two different kinds of mines, viz. in mines of ruby and in those of emeralds. Pushparaga, according to king Chandra Sena, the chemist,* is yellowish, transparent, and bright like a diamond. It brings son and wealth to its wearer.

रञ्जान्तरेऽः पुष्परागमय विसेदः।

आपीतपाण्डुरुचिः पाण्या: पुष्परागसंज्ञस्तु।
कौरण्टकनामा स्यात स एव यदि लोहितापीतः।

* For a brief history of Indian Chemistry, see Chapter III, page 46 of the author's book entitled "Indian Civilization and its Antiquity."—(Price Rs. 2. India).
Distinction of pusparaga from the other gems.

The stone which is yellowish-pale and bright is called "pusparaga". It is called "kaurantaka", if it is yellowish-red in colour. It is called "kashaya", if it is reddish-yellow and transparent. It is "somalaka", if it is bluish white and smooth. The stone which is very red is a ruby, and that which is deep-blue is a sapphire.

Sub-colours of Topazes.

They are (1) white, (2) yellow, (3) pale-white, and (4) black.

Characteristics of good Topaz.

A good topaz is heavy, transparent, appearing to have its surface smeared with an oily substance,
thick, well-shaped, soft, having the colour of a karnikara flower, and smooth.

वशालपुष्परागस्य लक्षणम्।

(१)
क्रुष्णाकिन्द्रं कितं रुद्रं धवलं मलिनं लघु।
विच्छायं शार्कारागारं पुष्परागं सदोषकम्॥

(२)
निस्स्रमं कर्कशं रुद्रं पीतं श्यामं नतोद्दातम्।
कपिशं कपिलं पारंदु पुष्परागं परिलघ्जेत्॥

Characteristics of a bad Topaz.

(1)
A defective topaz has got black spots on its surface, is rough, white, devoid of lustre, light, devoid of a sub-colour, and has sugar-like spots.

(2)
A bad topaz is devoid of lustre; it is coarse, rough, yellow, black, having an undulating surface, brown or reddish brown, tawny, and pale-white.
Properties of pushpa-raga.

Pusppa-raga is efficacious in poison, nausea, excess of phlegm and vayu, loss of digestive power, inflammation, leprosy, and hemorrhage. It is easy to digest.

अष्ठ राजावर्तः ॥

(1)
राजावर्तोऽल्पकोल्हलिकामिश्रितप्रभः ॥
गुरुक्ष मर्गायः अर्द्धस्तदन्यो मध्यमः स्मृतः ॥

RAJAVARTA (QUARTZ AMETHYST—LAPIS LAZULI).

(1)
The best type of this stone (which is a kind of quartz) has a blue colour with an admixture of slight red. It is heavy and smooth. Rajavartas of different description are inferior to these.

(2)
निर्गीरसिनितमस्तुर्यां नोलं गुरु निर्मलं वहुच्छायम् ॥
शिल्किरगठसमस्तोऽयं राजावर्तं वदन्ति जात्यमणिः ॥

(2)
A genuine rajavarta is devoid of dirt, devoid of whiteness, smooth, blue, heavy, clear, having various sub colours, and beautiful like the neck of a pea-cock.

* एष एव स्फटिकस्वर्णः ॥ २३६ पृष्ठ इत्यादि ॥
Rajavarta is efficacious in gonorrhoea, waste, piles, anemia, phlegm, and vayu. It increases the power of digestion; is nutritious and curer and preventer of diseases and senile decay.

Rajavarta is heavy, smooth, cool, and pacifier of pittam. It brings fortune to its wearer.
Purification of Rajavarta.

First process.
Rajavarta and similar stones are purified, if they are boiled for two or three times with lemon juice mixed with cow's urine and ksharas.

Second process.
Rajavarta is purified, if it is subjected to bhavana with the juice of shirishaka flower mixed with ginger juice, or if it is boiled with the same liquid.

Incineration of Rajavarta.
Rajavarta is incinerated, if it is powdered and subjected to heat by putam for seven times, after having been rubbed each time with the juice of matulunanga and sulphur.
Extraction of essence of Rajavarta.

Powdered rajavarta, mixed with manas-shila, clarified butter, borax, cow's milk, cow's curd, cow's urine, and cow's stool, is to be boiled with a sufficient quantity of buffalo's milk in an iron pot and made into a lump. This is to be heated by means of a fire made of khadira wood, resulting in essence of rajavarta coming out of the lump.

In this way, essences of yellow and red colour respectively, can be obtained from gairika (red ochre) and vimala (red pyrites).
BHISMA-MANI (A KIND OF ANTI-POISONOUS QUARTZ).

The man who wears a pure bhisma-mani, obtained from the Himalayas, acquires all sorts of objects of desire. The wearer of this gem becomes free from the effects of all sorts of poison. such ferocious animals as lion, snake, etc. can do him no mischief. He has nothing to fear from water, fire, robbers, and enemies.

Bhismamani, unfit for use.

Bhismamani of the following description are to be avoided:—(1) Those which have the colour of moss; (2) those which have the colour of the balakahka bird (a kind of crane); (3) rough, (4) yellowish, (5) devoid of lustre, (6) black-lustred, and (7) discoloured.
Properties of sapphire.

A sapphire, duly incinerated, is a curer of asthma and cough. It is nutritious, pacifier of the three doshas, increaser of power of digestion, and destroyer of visama-jwara (malaria, black fever, etc.) piles, and vicious tendencies of the mind.

Uparatnas (Amorphous stones).

There are innumerable minor or amorphous stones. The best of all these are the following:—
(1) palanka (onyx), (2) rudhiram (carnelian) (3)

* पत्तत्वेऽःं २२० छुँ छुँ महानिष्ठ्यमित्वत् वाणिक्षरं सन्निवेश्यम् परस्यन्
प्रमादात् न तद् साधितम्।

† This should have been inserted in page 220, after “maha-nila” or great sapphire.

‡ द्वाति प्रक्ष्य 'बणित' सचिवालय द्वाति भ Ashton 253
puttika (peridot), (4) turkshajam (turquoise—biraja or peroja *), (5) pilu (jade) (6) upalam (opal, chalcedony, and agate), and sugandhikam (spinel).

All of these are amorphous or uncrystallized in shape. They are to be incinerated carefully, and applied in mercurial operations as well as in medicines.

अथ पालक्कुम् ।

श्वेतलेखासमन्नितं क्रष्णं पाणायकं हि यत् ।
लिङ्गं हि मस्त्र्यां चैव पालक्कुं तत। प्रकीर्णयते ॥
श्रसितस्निताभासं तथा च धूमवर्गकम् ।
पालक्कुं निर्विंधं ततू संयुतं श्वेतरेखया ॥
रेखाणां केवलाःथवा बहुः तत्र प्रदश्यते ।
धारणात् प्रचुरां श्रियं दत्ते स प्रस्तरः खलु ॥

PALANKA (ONYX).

Palanka is a black stone with a white line drawn upon it. Its surface is smooth and appears to be smeared with oil. Palanka is of three different kinds, viz. black, pale-black, and ash-coloured. Each of them has a white and rope-like line drawn upon it. Sometimes there are more than one of such white lines.

* The Persian epithet "peroja" is evidently a contraction of the Sanskrit "biraja", meaning green as "biraja" (durva grass).
ऋथ नरिमः।
इन्द्रगोपनिम् रक्षं शुकवक्षसमं रूचो।
मध्येन्दुपारं गुं शक्रनीलाभपलं तथा॥
गृहीतवधुमूर्चिकं विशुद्धवर्गसंयुक्तम्॥
प्रकटपीलुवण मानादु नरिमारायं हि रत्कम्॥
ऐश्वर्यकान्तिमूलिनां दाता तत् खल्परलकम्।
पकृसेत्वदु भवेदु वज्रसद्युखमुदरच्छवि॥

RUDHIRAM (CARNELIAN).

Rudhiram is as red as an insect, named indragopa (mukmuli), or the mouth of a shuka bird (a kind of parrot). The inner part of this gem is as white as the moon, and the sides have the colour of an indra-nilam. It has a pure colour, and it can be given several shapes. It has the weight of a fully grown pilu fruit. This stone, when fully developed, may take the colour of a diamond.

It brings wealth and beauty to its wearer.

ऋथ पृतिका।
हरिदुर्वर्णा च पीताभा मरकतानुकारिणी।
पृतिका पृतिका सा च कोमला च प्रभान्तिता॥
चौमेशा वाससा धृष्टा दीर्घा लज्जि पृतिका।
दीर्घिमरकरस्त्य हि धृष्ट्या चौमेशा वच्छर्ते॥

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PUTTIKA (PERIDOTE).

Puttiika is yellowish-green, and resembles emerald in colour. It is soft and bright. It can be distinguished from emerald by being rubbed with a silken cloth, which reduces its lustre, whereas an emerald becomes brighter, if rubbed in this way.

तार्किका हरितश्यामं भस्माभिरितं तथा।
तदेवातिकायं च मधुरं दीपनं परम्।।
स्थावरं जंगमं चैव तथा संयोगजं विषमं।।
तत्सः नाशयेत् तथा शूलं भूतादिपीड़नम्।।

TURKHAJA (TURQUOISE—BIRAJA).*

Turkhaja is of two kinds, viz. greenish-black, and ash-coloured green. It is astringent, sweet, and digestive. It removes all sorts of poisons, organic, or inorganic, and is efficacious in colic and troubles due to evil spirits.

पीलु।

मरकतसमो वर्षात् तत्प्रभारहितो मणिः।
पीलुनामास विज्ञे चैनजाप्रियो मतः।।

* Originally obtained from Turkey. The Persian name péroja is a contraction of Sanskrit, "biraja", 256
PILU (JADE).

This resembles an emerald in colour but not in brightness. The Chinese and the Japanese are specially fond of this stone. It is a giver of wisdom, intelligence, and stability of mind. Incinerated pilū, taken in doses of one racti a day, cures colic.
UPALAM (CHALCEDONY, OPAL, AND AGATE.)

It is a general name given to three different kinds of stones, viz. marmarashman (chalcedony), baropala (opal), and rudhira-palanka (agate.)—all of these are amorphous or uncrystallized.

Chalcedony as well as opal has one uniform colour, but the former has no sub-colour or radiance, whereas opal has various sub-colours. Agate has several colours and several layers. It has no sub-colours, but it has variety of colours and figures impressed upon it. Chalcedony or marble stone has only one of the following colours:—White-black, smoky, green, white, etc. White variety of chalcedony is called “karpura-mani” or camphor-stone. Opal has any of the following colours:—White, bluish-white, black, red, rain-bow-colour. Each opal may have one or more of these as sub-colour.

The black variety of all the amorphous stones is called “bhramara-mani” or black-bee stone.
SUGANDHIKAM (SPINEL).

Sugandhikam is of various colours, viz. blue, black, red, etc. Each of these stones has a yellowish sub-colour. It is transparent, beautiful, and of the shape of a diamond. It grows in mines of rubies and emeralds.

उपरबानां सामान्यगुणां: ।
उपरलं वरं यतं तु तत्र किमित् सूयते फलम्।
ईष्टुसब्धम् ततं तु विभर्तीति विद्या मतम्॥८

*General Properties of Amorphous Stones.*

The amorphous stones, if devoid of defects, are regarded to have a part of the properties of the gems (see page 195).
पश्चमोद्ध्यायः ।

अथ चाराः ।

चरति यो मलं शीघ्रं तत्वचार इति उच्यते ।
चारत्वं समाश्च्यातं यावशंकिः कर्तकनम् ॥
टेकनोपरं चापि यवचारश्र खर्जिका ।
चारत्वुपश्यने मेतदु परिचितं सदा मृगिः ॥
पलाशमोचकचारो यवचारः मुचिंचिका ।
तिलनालोकः चारश्चैवतानि चारपश्चकम् ॥
खर्जिकं कर्तकनमूपरं त्रितं भौममुच्यते ।
लभ्यते तानि मृत्युमध्यात् चारपाककियारः ॥
अन्ये नु सकलाः चारा भस्मसांज्ञिताः खलु ।
नवसारोपिं विज्ञेयं चारोत्तमो मनोष्षिभि: ॥
द्रव्याद्विं पच्चमानात् तवाज्यते इति पाकिमः ।
मृत्युयुक्षां शृंगारपंक्तु स एवोपरसो मतः ।
पलाशाध्वस्तमोचजा धवस्नूहीमयुराः ।
चन्द्रबत्ताक्ष्यक्ष्यकं चिंचाङ्गफलकोषोऽवः ॥
CHAPTER V.

*Kshāras (Alkalis).*

The word “kshāra” is derived from the root “kshar”, meaning “to remove”. The word is so named, simply because it removes dirt.

The following are the three kshāras:—(1) java-kshāra (a potassium carbonate prepared from the ashes of barley-ears), (2) swarji (refined natron), and (3) tankana (borax).

The following are the four kshāras:—(1) swarji (refined natron), (2) ushara (sora—saltapetre—a sodium nitrate), (3) java-kshāra, and (4) tankana.

The following are the five kshāras:—(1) kshara prepared from palasha wood, (2) that from mokshaka (ghanta pātali) wood, (3) java-kshāra, (4) swarji kshara, and (5) the kshara obtained from the tila (sesamum) plant.
Of all the ksharas, only swarji, tankana, and ushara are obtained from the earth. The rest of the ksharas are extracted from ashes of wood, leaves, etc. of trees, plants, creepers, shrubs, and grass.

Nava-sara (sal-ammoniac) is also a kshara but it is generally classed with the uparasas, simply because it possesses, to a certain extent, some of the properties of mercury (See page 215, vol. II). It is also called "pakima!" (from root "pach", meaning to putrefy), simply because it is obtained from materials in a state of putrefaction or decomposition.

Ksharas obtained from the following are also well-known and widely used:—trees or plants of the name of palasha, aswattha, ghanta-patali, dhava, snuhi, apamarga, chanaka-plant, arka, covers of tamarind beans, sesamum plant, ears of barley, basaka, duralabha, kantikari, mulaka (raddish), chitraka, punarnava, and ardraka (ginger).

There are many other trees, plants, shrubs, creepers, and grass from which ksharas may be prepared by the method to be described below.

Of all the ksharas, the most widely known are the following:—(1) java-kshara, (2) swarji (refined natron), (3) usara (nitre *), (4) nava-sara, and (5) tankana (borax).

* The colloquial Indian name for nitre is sora or soraka, which are the corrupted forms of the sanskrit usara and usaraka, respectively, all of these words being synonymous. Now, usara (or usaraka) is a word which has been in use in its present sense even from the pre-historic times. This word is to be found in every sanskrit dictionary, modern or ancient, and even in sushruta.
In this connection, it would be amusing to note how some of the Indinn Allopaths, and their sympathisers, not conversant with sanskrit, which was the language of their fore-fathers and not caring to study the Indian system of medicine, sometimes rush into opinions which are simply ridiculous. Let us quote here a few lines from Dr. U. C. Dutt's "Materia Medica of the Hindus" (pp. 89—90) :—

"Nitre was unknown to the ancient Hindus. There is no recognized name for it in sanskrit. * * * Some ancient sanskrit formulas for the preparation of mineral acids containing nitre mention this salt under the name of "soraka". This word, however, is not met with in any sanskrit dictionary and is evidently sanskritized from the vernacular "sora", a term of foreign origin. The manufacture of nitre was therefore most probably introduced into India after the adoption of gun-powder as an implement of warfare."

These are the remarks made by an Indian Allopath who wrote a book on the materia medica of the Hindus, without acquiring an adequate knowledge of the subject. This indicates a state of things which occurs probably in India alone.

The donga that nitre was unknown to the ancient Hindus is not based on facts. It will be evident from a passage (quoted by Dr. Sir P. C. Roy in his History of Hindu Chemistry, (Vol. I—pp. 184-185, footnote) in a work entitled. "The Travels of John Albert de Mandelso from Persia into the East Indies, London 1669," that salt-petre used to be manufactured in the middle ages, at the latest, in large scales in India whence it was brought into Europe.

We propose to prove elsewhere that the use of gun-powder was quite known to the Hindus even at the time of the composition of the oldest portion of the Vedas.
General Properties of the ksharas.

(1)

The ksharas are acrid, warm, increasers of appetite, light, moistening, causing inflammation, reducers of phlegm, destroyers of worms, openers of boils, and cleansers and healers of sores.

The man who is conversant with the mercurial operations knows that ksharas give rise to hunger in mercury. The ksharas are efficacious in gulma, piles, chronic diarrhoea, diabetes, and stone disease. They are digestive and increaser of hemorrhage.

(2)

The ksharas are better than surgical instruments in as much as the former, like the latter, can serve
the purpose of incision, tapping, and scratching; and unlike the latter, can remove the three doshas, and have several other utilities as well. The ksharas may be remover of the three doshas owing to their being combined with the necessary drugs. They, on account of their being prepared from several herbs with fiery qualities, are pungent, warm, strong, digestive, remover of tissues, etc., purifier of sores, causing granulation in sores, drier up, causing steadiness, reducer of fat; and destroyer of worms, mucus, phlegm, leprosy, poison, and fat. They also destroy manly vigour, if taken in excess.

मस्यज्ञाननिरीक्षणस्य सामान्यविधि:।
चारवृच्छादिजं काथमथवा पत्रारशिकम्।
शुष्कं सर्वं समाहलयं वहीः प्रज्वालयेत् सुभोः॥
नौत्त्रा तत्त्वसम्म भृतपात्रे प्रस्थ्रेक्षोपि मिस्तं खलु॥
तत्र विपक्ष जलं शुष्कं दोषाणां विलोक्येत्॥
ततस्तदु धार्येद्व रात्रौ प्रातरच्छं जलं नयेत्॥
तजलं चावेदः यवात् सतश: प्रभुवासस्ता॥
तशीरं काथयेदु वही यवात् सर्वं विशुष्ण्यति।
तत्: पात्रात् समुख्विल्ल्य चारो यवाद्: सितप्रभः॥
चूर्णाभः प्रतिपार्थः: स्तात् पेयः स्तात् काथवत्रस्थितः।
इति चारदयं धीमान् युक्तकार्यं योजयेत्॥

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General Process of manufacturing kshara *
from ashes.

The wood, leaves, etc. of an alkaline tree, plant, etc. are to be burnt to ashes. One prastha (64 tolas) of these ashes is to be dissolved with 16 times its weight of water which is to be allowed to settle for about 12 hours. The clearest part of the solution is next to be filtered for seven times through a piece of thick cloth. The water, thus filtered, is next to be heated till the whole thing gets dried up. The white-coloured solid product is then to be taken out and kept carefully. The solution, just before it is solidified, is a liquid alkali, used for drinking (in special diseases according to directions found in Sushruta). The solid product is an alkali to be used for external application (according to the instructions given in Sushruta) and as an ingredient of medicines.

यवचारः ।
अक्ष्य नामानि ।

यवचारामिथः स हि चारोत्तमम् कथ्यते
यवायजो यवापत्यं यवजो यवलासकः ।
पाक्यः यवशुकज यवश्रः यवनालजः ॥

* The word kshara has undergone a gradual process of transformation as follows:—khara—khari—kali—kili—alkili—alkali.
Its preparation.

Ashes of the ears of barley are to be dissolved with water, which is to be filtered and condensed by heating in the afore-said way. The product is java-kshara.

Its properties.

Java-kshara is pungent, soft, light, capable of easily spreading through all parts of the system, digestive, laxative, discharger of urine, and pacifier of vayu and kapha. It is efficacious in the following diseases:—intestinal obstruction, chronic diarrhoea, anemia, tumour in the belly, piles, asthma, colic, enlargement of the spleen, heart diseases, and mucus.
It does away with semen and has the properties of fire.

Properties of pakima (nava-sara).
It reduces fat and purifies the kidneys.

KSHARAS OBTAINED FROM THE EARTH.

(1) USARA OR SORA (SALT-PETRE).

Earth, taken out from the banks of the Ganges, or any other salty earth is to be dissolved with pure water and then filtered through a piece of
thick cloth. This water is next to be kept in an earthen pot for about 12 hours to settle. The clearest part of the solution is then to be taken out and heated till it gets condensed. The product, which is of white colour, is then to be taken out. It is called ushara or sora. It is the same thing as ushara shilajatu (vide page 104, Vol. II).

\[ \text{Its names.} \]

Ushara or sora is also called “sauvarchala” salt, on account of its being of saline taste. It is both a kshara as well as a salt. It is called “ushara”, simply because it grows out of ushara (salty) soil.

\[ \text{Use of the drug:} \]

\[ \text{Uṣṇoṇिनिश्च: प्रक्लेद उष्णचारो बलापह:} \]
\[ \text{रोचको भेदक: स्निग्ध: सूर्यमश्च पित्तलो लघु:} \]
Its properties.

Ushara is a pacifier of vayu. It is moistening, destroyer of strength, increaser of appetite, laxative, soft, easily capable of spreading throughout the whole system, a little increaser of pittam, light, increaser of laugh, disgestive, and purifier of elching winds.

It is also efficacious in the following:—constipation, intestinal obstruction, colic, gulma, mucus, worms, and, especially, wind moving upwards.

Mixed kshara.

Manufacturers of kshara sometimes mix with the mud, referred to above, a sufficient quantity of ashes of grass in order to increase the quantity of the kshara to be produced. The distilled solution of mud and ashes is to be heated, and condensed into a mixed kshara, in the manner described above.
(2) SWARJI KSHARA (REFINED NATRON).

In certain hills or in places adjacent to hills, layers of alkaline soil are to be found in abundance. This soil is called swarji-mrit (natron). It contains alkaline mud with foreign matters. Some quantity of this earth is to be dissolved with four times its weight of water. The solution is next to be

* सांविमादीति माणा |
distilled for several times through a piece of thick cloth. The solution, thus distilled, is next to be heated and condensed into solid alkaline substance, called swarji-kashara.

Its properties.

Swarji, like java-kshara, has the properties of fire. It is pungent, warm, and acrid. It pacifies kapha, and vayu, and is efficacious in gulma, flatulence of the stomach, diseases of the belly, boils, worms, asthma, intestinal obstruction, enlargement of the spleen and the liver. It impairs semen.

Artificial swarji-kshara.

In the absence of swarji-kshara, as manufactured in the way stated above, physicians sometimes use,
as its substitute, a kshara prepared from the ashes of duralabha or small duralabha.*

(3) तंकनम् ।

सूत्रिका तंकलाह्या तंकनमिथिता या हि ।
प्राप्यते सा कदाचिद् वै शुष्कजलाशयोदरे ॥
समाहृत्य मृदं तत् तु जलेन सह मेलयेत् ।
सजलं तंकनं ततः काथयेत् तीर्थवहिना ॥
यावदु विशुष्पति सवं ततः चारं समाहरेत् ।
सदाम † तंकनाह्यं सितप्रभं मनोहरम् ॥

(3) TANKANA (BORAX).

A kind of mud containing borax is found in the beds of dried lakes (in upper India and Tibet). This mud is called ‘tankal’. It is to be dissolved with water, filtered in the usual way, and dried up by heat, leaving crystals of borax deposited at the bottom of the pot.

टंकनय नामानि ।

टंकः च टंकनं चैव मालतीतीरसम्भवम् ।
रक्षद रसशोधनं पाचनकं रसाधिकम् ॥

* The small variety grows in abundance in barren tracts of land, and especially in the Punjab where it is called “lana” (contraction of “lavana”, meaning saltish).

† द्राज्जा सह चत्तरमान सदाम | द्रामतु हाना इति भाषा |
रसजलनिविष:—तृतीयबण्डम्।

लोहद्रावी रसाय च सौभाग्यं वर्तुङ्गं तथा।
कनकक्षारनामं च मौलनं धातुवज्ञभम्।
लोहश्लेष्यां चैव टंकनचार एव च।
द्राङ्कं रक्षा: सुभंगं सर्गा: पाचकम्।
लोहशुच्चिंकरं चैव टंगानं च तदुच्चते।

टंकनचय भेकः।

टंकनं द्विविधं ज्ञेयं पिएडास्यं च सदामकम्।
पिएडास्यं मलिनश्वेतं सदाम हि सितप्रभम्।

Varieties of tankana.

Tankana is of two kinds, viz. pinda (lump) tankana, and crystal tankana. The former is not pure white, whereas the latter is pure white.

टंकनचय गुणा:।

कटृष्णरुङ्गवहिक्तं कफस्यो वायुपिन्तक्तं।
काश्वासरजोरोधस्थारविषजितं तथा।
पिएडास्यं टंकनं ज्ञेयं हीरं ततू सितटंकनात।
कटृष्णक्षिप्ततीत्वायं हि सितं भद्दि वल्ललाम।
पाचकं श्लेष्मवातस्य चयामविषदोषह्नत।
पिएडास्यात् तु सितं श्रेष्ठं शुच्चतरं हि तन्नसमम्।

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Properties of tankana.

Lump tankana is pungent, warm, rough, increaser of digestive power, destroyer of kapha, and increaser of vayu and pittam. It is efficacious in cough, asthma, dismenorrhea, and inorganic poison. It is inferior to crystal tankana.

White or crystal tankana is pungent, warm, soft, acrid, white, laxative, strengthening, digestive, destroyer of kapha and vayu, and efficacious in waste, mucus, and poison.

The white borax is purer than the lump borax.

Purification of tankana.

Tankana is purified, if it is made to burst into white ashes by the application of heat.
Two kinds of ksharas—liquid and solid.

Ksharas are of two kinds, viz. solid and liquid. Solid ksharas are meant for external application and for use as ingredients of medicines, whereas liquid ones are for drinking in several diseases with kanji, wine, curd, milk, butter milk, or decoction of kulattha.

Liquid kshara is obtained by heating distilled solution of ashes mixed with water up to the time when the solution grows red, clear, acrid, and sticky. Further heating of this liquid kshara results in the solidification of the solution into hard kshara.

Diseases in which solid kshara is to be applied.

Hard kshara may be applied in the following diseases:—leprosy in general, kitima (keloid), dadru
(ring-worm), kilasa (leucoderma), mandala (lepra), bhagandara (fistula in ano), arbuda (a kind of tumour), dusta-brana (unhealthy ulcers), nali-brana (sinus), charmaka-kila (condyloma), tila-kalaka (mobs), nyachha (chloasma), byanga (black spots on the face), mashaka (warts), bahya-bidradhi (external tumours), krimi (worms), bisha (poison), piles, upajihva (ranula), adhijihva (tumour on the tongue), upakusa (inflammation of the gum), danta-vaidarbh (inflammation of the gum from injury), and three sorts of rohini (diptheria).

Use of liquid Kshara.

The liquid kshara is used in toxin, gulma, udara, indigestion, colic, loss of appetite, intestinal obstruction, diabetes, stone disease, internal tumour, worms, and piles.

It is injurious in hemorrhage, fever, biliousness, diseases of children, old men, and weak men.

* Allopathic classification of diseases is so vague and general that it is impossible to find a corresponding allopathic name for every name of diseases mentioned in the Hindu science of medicine.
giddiness, after-effects of drinking wine, loss of eye-sight, etc.

सर्वश्चारस्य निर्माणविचि: ।

सर्वचारां चिकित्स: शरदि गिरिसानुजं शुचि: प्रशस्तेःहि प्रशस्तदेशजातमनुपहतं मध्यमवयसं महान्तमसितमोचकं पाठचित्रयितं। खळ्डश: प्रकधामानपाय पिररं देशे निचितं कुला सुधा-शर्कराश्रय प्रचित्य तिलनालेरादीपयेदथोपशान्ते उऽ तद्भमस प्रथगु गुढ़ीयादृः भसमशर्कराश्रय। अधानेनैव विधानेन कुटजपलाशाश्रयकार्यपारिभ्रम्याविभीतकात- गुर्धालकरस्त्रूव्यपामार्गपाललान कमाल वृष्णकड़ली चित्रकपरीकेन्द्रवचास्फोताश्रयारकसत्चारहृदिमन्य- गुजाश्चतसं शोऽ कोषातको: समूलपलपशाश्रया दहेत। तत: चारद्रोशामुदक्षोऽष: प्राप्तिरालेवय मूनैव यथोक्तेरेकविंशिविशिवारानू विश्वाय महति कटाहे शनैः विधानू प्राप्तेत। स यदा भववच्चो रक्षसीर्ष: पिच्छिल्लश्रय तमादाय महति वस्त्रे परिशाल्वतरं विन्द्र्य च पुनराभाविशिष्येत।

तत एव च चारोदकातु कुड़मध्यच्र मायुयोऽपत्तेत।

तत: कटशर्कराभसमशर्कराहृदोपावकश्चुनामीररसि- वणोः: कुल्लायसे पात्रे तस्मात्रेव चारोदके लिषिच्य
पिद्धा तेनेव दिद्रोगोःपपलसंसिद्धं शशुनाभ्यादिनां
प्रमाणं प्रतिवाप्य सततमप्रमत्तचैनमवध्यनूः
विपचेत। स यथा नातिसान्द्रो नातिरक्षच भवति
तथा प्रयतेत। ऋरुकनागतपाकमवतायांनृस्ततम-
मायासे कुम्भे संघातमुऽे निद्ध्वादेष मध्यमः। एष
प्रतीवापः पकः संघ्योहिमो मुदुः। प्रतीवापे
यथालांभं दल्नी द्रवन्ती चित्रकलाक्ष्णकीपतिके-
प्रवालतालपश्रीविड्स्कस्मविकाकनकचेरीहिष्कुवचाविषा:
समा: भञ्चच्चार्मृत्वा: शुक्लप्रमाणः: प्रतिवापः।
स एव सप्रतीवापः पकः पाक्यस्तीच्छास्तेषां यथा-
भ्याधिबलसमेष्टोः। चीणेबले तु चारोदकमावपेदे
बलकर्मणांनं।
एष सर्वंचारः सुध्रुतोकविधानेन प्रतिसारांगां
नियोक्लयो न तु विषयान्तरे।

Process of preparing swarva-kshara.

A middle-aged black mokshaka tree growing in a
valley of a mountain is to be cut into pieces, sometime
in the two months following the rains, and kept
in a heap in a place protected from drafts of air.
Some lime stone (or balls of lime-mud dried up,
genерally known by the name of “ghuting”) is
also to be kept inside the heap of wood, which is
to be burnt by fire made of sesamus plant. The ashes of the wood are then to be separated from the burnt lime-stone, as well as from the burnt soil upon which the act of burning takes place.

In the same way, ashes will have to be prepared from the following trees (or plants, as the case may be):—kutaja, palasha, asva-karna (a kind of shala), paribhadra, bibhitaki, aragbadha, lodhra, arka, snuhi, apamarga, patali, bisha-karanja, basaka, kadali, chitraka, putika (rama-karpura), kutaja, asphota (bhadra-ball),* karabira, saptaparni, agnimantha, gunja, and four kinds of ghosha (including deva-dali).

Two thirds of a drona of the ghanta-patali kshara and one third of a drona of the kshara prepared from kutaja and the other trees, referred to above, are to be dissolved with water or cow’s urine, six dronas in weight, and filtered for 21 times. The solution is next to be subjected to heat till it becomes clear, red, acrid, and sticky, when it will have to be filtered again, rejecting the dregs. The solution, thus filtered, may be used as a liquid kshara, if necessary.

Take one kuraba or $1\frac{1}{2}$ kuraba of this solution, and rub it with 8 palas of all these combined:—burnt lime, burnt sand obtained from the spot where the wood was burnt, oyster shells burnt, and nabhishankha (a kind of conch shell)—each equal in quantity, and previously made red-hot by heating in an iron

* Bengali, “hapharmali”. Asphota may also mean red arka.
cauldron. The paste, thus prepared, is to be boiled with two dronas of the liquid kshara, referred to above, turning it, all the while, by an iron ladle in such a way as to make the product neither solid nor liquid. The kshara, thus prepared, is of moderate strength. It would be mild, if prepared in the above way without the mixture of the paste, referred to above. It can be rendered the strongest, if prepared with the addition of four tolas in weight of the fine powder of each of the following, mixed in course of the heating:—danti, dravanti, chitraka, langalaki, leaves of nata-karanja, tala-muli, bira-salt, swarji-kshara, swarna-kshiri, hingu, bacha, and ati-visha.

These ksharas are to be kept in jars with their mouths covered.*

**The two ksharas.**

Swarjika and java-kshara combined are called the two ksharas.

* For details see, Chapter XI, Sutra-sthanam, and XXXXII, uttaratantra, Sushruta.
The eight ksharas.

The following eight are called the eight ksharas:—ksharas prepared from (1) palasha, (2) snuhi, (3) apamarga, (4) chincha, (5) arka, (6) tila plant, (7) ears of barley and (8) swarji kshara.

These are like fire and are curer of gulma and colic.
CHAPTER VI.

Lavanas (salts).

There are six different kinds of salts, viz. (1) samudra (marine), (2) saindhava (rock-salt found in the Punjab and sind), (3) bira (an artificial salt), (4) sauvarchala (salt-petre), (5) romaka (salt obtained from the lake, sambar, in Rajputana), and (6) chulika (nava-sara or sal-ammoniac).

सामान्येन छवणानां शुणा: ।
लवण: शोभनो रूच्य: पाचन: कफपिरचिद: ।
पुष्पवातहर: कायशेथिल्यमृदुताकर: ॥
बलप्र भास्तजलद: कपोलगलदाहकृत ॥
Properties of salts in general.

Salt is purifier, increaser of relish in food, digestive, increaser of kapha and pitta, destroyer of manliness and of vayu. It slackens and softens the body, impairs strength, induces shedding of water through the mouth, and causes inflammation in the cheek and the neck.

Properties of salt taken in excess.

Salt, taken in excess, causes opthalmia, racta-pitta, intestinal ulcer, falling off of teeth, greyness of hair, baldness, leprosy, erysipelaus, and thirst.

(1) samudra lavana (sea.salt).

It is digestive, acrid, light, increaser of appetite, laxative, having some of the properties of alkalis, increaser of kapha and pitta, and pacifier of vayu.
(2) SAIMHAVA (ROCK-SALT).

Saindhava is a rock-salt found in the sind and the Punjab. It is digestive, producing a cooling effect in the system, saltish-sweet in taste, light, soft, increaser of power of digestion and liking for food, beneficial to eye-sight, increaser of semen, pacifier of the three doshas, capable of entering everywhere into the system, and destroyer of constipation and boils.

(3) बिड्रम।

बिड्रम च बिड्रगवन्यं च काललवशाकं तथा ।
खरां द्राबिड्रकं चैव बिड्रलवशामासुरम् ॥
खराणलवशाकं धूतं क्रतकं चारमेव च।
क्रत्रिमकं सुपाक्यं च वेयकलवशात् तथा ॥

* कृतिशिविनिति शीतं शीतबीयं शिवं लघणिति। सर्वेषां लघणां मध्ये केवलं सैन्यवं शीतविनित्यं ॥
(3) BIRA (AN ARTIFICIAL SALT).

Bira is saline in taste, warm in its effect on the system, acrid, alkaline, light, digestive, coarse, increaser of appetite, causing nausea, pacifier of kapha and vayu, increaser of pittam, and laxative. It is efficacious in colic, indigestion, constipation, flatulence, intestinal obstruction, abdominal tumour, heaviness of the heart, and spermatorrhoea.
Preparation of bira salt (black salt),

First process.

Eighty two parts of sea-salt and one part each of haritaki, amalaki, and sarji (refined natron)—all powdered well, are to be heated strongly in an earthen vessel, till they are fused together into one lump.

Second process.

Eight parts of sea-salt and one part of powdered amalaki are to be mixed together, kept in an earthen vessel, and then subjected to a strong heat till the two materials are fused together. The product, when cooled of itself, is called bira salt or black salt.
(4) SAUVAR CHALA (SALT-PETRE).

It is the same as ushara kshara or salt-petre. It is both an alkali and a salt. For the preparation of salt-petre, see page 268.

Preparation of artificial sauvarchala.

An equal quantity of powdered swarji (natron) and saindhava (rock-salt) are to be mixed together and dissolved with water in an earthen vessel which is to be heated strongly till the solution melts well and then dried up. The heat is to be continued for some time after the drying up of the product.

The product may be used as sauvarchala salt, and not as sauvarchala kshara.
(N.B.—The salt, thus prepared, may be used in lieu of salt-petre, where the emphasis is laid on the word ‘salt’, but where there is a stress on the word “kshara”, only salt-petre, and not its substitute, should be used.)

(५) रोमकसः

अवस्य नामानि

रोमकं रोमलोपां च साम्बरं सम्बरोऽज्ञवम्।
शाकम्भरीहद्दोज्जवं गड़ाख्यं लवणं हि ततू।

अवस्योऽपि सिद्धम्।

जयपुराभिधे राज्ये रोमोठ्ठति लोतनीरशुक्।
नाम्या शाकम्भरी सोज्यं साग्नतं सम्बराभि
लवणां जलं तस्य सागरनीरसंतरम्भम्।
तज्जलावृत्त जायते लोतं † रोमकार्त्ति तदेव हि।
रोमाच्छ नदी तस्माद् रोमात् पुरा प्रवाहिता।
लवणं तज्जलोपम् च संज्ञितं रोमकं पुरा।
आसीत् पुरा पुरी तत्र रोमाध्या हि यशस्तः।
साम्प्रतं वष्ट्ये तत्र जयपुराभिधा पुरी।
सम्बरान्तस्म्वराध्यं हि ले तत्र पुरान्तरम्।

* रोमं: गर्तं जलाशायहस्पं: तस्माद् जायते इति रोमकम्।
† लोतनीति लवणम्।
(5) ROMAKA (SAMBAR-SALT.)

In the province of Jayapura (in Rajputana), there is a salt-water lake, named Shakambhara, now called Sambar. Its water is as saline as sea-water. The salt, produced from the water of this lake, is called "romaka". In ancient times, a river named "Romavati" (now extinct) flowed from this lake. The salt which was produced from the water of this river was also called 'romaka' salt. In the vicinity of this lake, there was, in ancient times, a famous town, called 'Roma'. It was perhaps located somewhere near the modern town of Jaypore (built by king Jaysinha). There is another town in the neighbourhood, named Ambar, which is a corrupted form of Sambar (the modern name of the lake).

Addya Gurana:

रोमकं कटुतिक्कं च तीच्योणां लावणां लघु ।
दीपकं भेदकं चैव पित्तदाहिण्यप्रदत्तं ।
अभिष्यन्ति तथा सूदमर्षोनुद वायुनाशशनम् ॥

Its properties.

Romaka or sambar salt is bitter, pungent, and saline. It is acrid, warm, light, digestive, and laxative. It gives rise to pittam, inflammation, and waste. It helps the emission of phlegm (through nostrils and eyes). It is capable of passing even through the finest and minutest passages of the system, and is a pacifier of vayu.
(6) CHULIKA SALT.

It is the same as nava-sara (or sal-ammoniac).†

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* द्वितीयकाठम् २१४ पृष्ठ तथा दूसरीकाठम् २६० पृष्ठ प्राच्यम् *

† See page 215, Vol. II, and page 262 Vol. III.
CHAPTER VII.

Poisons.

Poisons are of three kinds, viz. inorganic, organic, and artificial. The first is of ten different kinds, and the second of sixteen. The third is toxin arising mainly out of the eating together of different kinds of food-stuff which are not compatible with one another (e.g. milk and fish or meat; milk and sour things, etc.).
INORGANIC POISON.

Inorganic poisons are of ten different forms, viz. (1) roots, (2) leaves, (3) fruits, (4) flowers, (5) barks, (6) milk of plants or tree, (7) wood (8) exudations, (9) metals, and (10) tubers.

Of these, poisons in the form of tubers are the best. Such poisons are of eighteen different kinds, viz. (1) saktuka, (2) mustaka, (3) shringi, (4) baluka, (5) sarshapa, (6) batsa-nabha, (7) kurma, (8) sweta-shringi, (9) kalakuta, (10) mesha-shringi, (11) halahala, (12) dardura, (13) karkata, (14) markata, (1) granthi, (16) haridra, (17) racta-shringa, and (18) keshara.

Of these eighteen, the first eight are to be used according to directions, whereas the last ten (viz. from kalakuta to keshara) are to be avoided altogether.
Descriptions of tuber poisons.

(1) Saktuka.

Saktuka or pundarika is that kind of poisonous tuber, the interior of which appears to be made of saktu (dried and powdered barley), and is of white colour. The tuber itself is as attractive as that of a lily. It gives the appearance of saktu (dried and powdered barley) when pestled well. The poison acts very swiftly and is very strong.

(2) Mustaka.

Mustaka poison is slow in action. It cures diseases and has the appearance of mustaka (cyperus rotandas).

* चिन्तमिथि मनोहरम् *

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(3) Shringi.

This poisonous tuber, if tied up with the horns of a cow, makes it yield milk of blood-red colour. This tuber is of a blackish-tawny colour.

(4) Baluka (saikata).

Baluka tuber appears to have its inner part filled with sand, as it were. It cures fever and other diseases.

(5) Sarshapa.

Sarshapa tuber is yellow in colour, and is a curer of fever. It has got hair-like shoots which only are poisonous. The holes or pores where these hair-like shoots grow, are full of particles having

\[2.2-3\]
the appearance of mustard seeds. Some of these particles are big, and the rest are small. Some of them are white, whereas the others are yellow. The tuber itself is, therefore, very attractive to look at.

(6) वत्सनामः।

(क)
वत्सनामितिः कन्दे न दीर्घः पश्चाकारुऽलात्।
स्थूलतरो न गोस्तनाः द्विविधो वत्सनामकः।
आश्चर्यार्थर लघु स्त्यागीय शुद्धः कुष्ठोपचारा भवेत्।
प्रयोज्यो रोगहरणे वत्सनामितिः मत्तम्।

(ब)
निर्गुंडीपत्रवंश्युग्र वत्सनामितिः।
यत्पाश्चेत न तरोडः क्षिति वत्सनामः स शातुः।

(6) Batsa-nabha (aconite).

The tuber, named batsa-nabha, has the appearance of a cow’s udder. It is not more than five angulis in length; neither is it thicker than cow’s udder. It is of two varieties, viz. white and black. The first variety is swift in its action, light, and laxative. The black variety possesses opposite properties. Both the varieties are used in medicines as well as in rasayana.

(b)

Batsa-nabha (or aconite) has the colour of nirgundi leaves. It resembles the navel of a calf.
Trees and plants growing around it do not thrive at all. It is pale-white in colour.

Properties of Aconite.

Aconite is bitter and pungent. It causes perspiration and discharge of urine. It is digestive, remover of pain, causing depression, and curer of colic and pain due to percussion. It is efficacious in erysipelas, diseases due to an excess of kapha and vayu, fever due to an excess of the three doshas, rheumatism, and heart disease.

(6) कूर्मः।
कूर्मवद्ध दर्शये यत्रु तत्र कूर्मं इति भाषितम्।

(7) Kurma.

The tuber poison, which resembles a tortoise in appearance, is called kurma.
ङ्कड़बनिधि—दुतीयबाणपद्म।

(8) स्रेवतम्भः।
श्रेवतम्भः गं विजानीयात् प्रायशः। स्रेवतम्भः।
श्रुण्डितमिव तदू हुम्यं रञ्जयति गवां खलु।
फणाकारं कथयितु तदतो दिविकमुच्चते॥

(8) *Sweta shringa.*

Sweta-shringa or darvika is like a white horn or snake’s hood in appearance. Like shringi, it makes a cow yield milk of blood-red colour, if it is tied up with its horns.

(9) कालकुट:।

श्रस्ति विषतः: कालक्रद्वस्थसंनिमः खलु।
निर्यास: कालकूटोऽस्य मुनिभः: परिकौयितः॥
कालकूटज्ज्ञुनिमो वर्णाक्षितिभ्यां ज्यायते हि सः।
ङ्कट: कन्द्रो भवेद्य जम्बीरसन्निमातिसः॥
कालकूटं विजानीयाद् धातमान्त्र मृतिप्रदमृ॥

(9) *Kala-kuta.*

There is a poisonous tree of the appearance of an aswattha. Exudation of this tree is called kala-kuta. This resembles a crow’s eye in appearance and in colour.

The tuber of this tree is globular and black, like a lime fruit. This tuber is so strongly poisonous that even its odour is sufficient to take
away the life of a human being. This tree grows in the provinces, named “shringabera,” “Konkan” and the “malaya” hills in the Deccan.

(10) Mesha-shringi.

It resembles a ram’s horn in appearance. It also makes a cow yield milk of blood-red colour, if it is tied up with its horns.

(11) Halahala.

The tree named ‘halahala’ has fruits like cow’s udder. The bunch of its fruits has the appearance of an umbrella made of palm leaves. No tree, plant,
etc. grows in the vicinity of this poison tree. It grows generally in kiskindhya, the Himalayas, the south-sea coast, and kankana. Its tuber has the appearance of the tuber of atibisha. The halahala tuber is blue inside and white in the outside.

(12) Dardura.

It grows in the hill named 'Dardura' situated near the Malaya mountain. It is also called brahma-putra and kardama. It is tawny in colour and is like mud in appearance. It is strongly poisonous and grows in the Dardura and the Malaya hills.

(13) कर्कट कर्कोट वा ।

कर्कोटं कपिच्छः स्यात् कर्कोटकसः प्रभम् ।
तदेव विषमं विषं रेखाभ्यन्तरतो घृदु ॥

# मध्याच्छलसिंहों दंडृः नामम् गिरिरस्ति। तथा हि—
स्तनाभिव बिंगस्तथा: शैली मध्यवृंडुदेव। [ रघुवंशम् ४.५१ ।]

† कर्कोटक इत्यय: स्यं कर्कोटक इत्यय: सम्माचितपाठ्य
साधुपरतापि छुहीमिरिबिच्छाया।
(13) Karkata or Karkota.

It has the colour of a monkey. It resembles a karkota fruit (or karkata—a crab). It is soft only underneath the stripes found upon its surface. (Elsewhere it is hard).

(14) Mulaka.

Mulaka is a white tuber. It has the appearance of dog’s teeth and also of mulaka (raddish). It is also called markata, jama-danstra, and saurastrika. The last-mentioned name has been given to it, on account of its growing in the province of surat.

(15) Granthi.

The tuber of granthi plant has knots like those found in tubers of turmeric. It is black in colour, and is terribly poisonous.
Haridra or vairata.

The tuber of this plant is like that of turmeric. It is also called “vairata”, simply because it grows mainly in the province of Virata. Both the extremities of this tuber are well-rounded. It is broad-shaped, and is yellow inside. It has a fine skin or covering. Each of the parts of this tuber between one knot and the nearest is smooth or appearing to be smeared with oil. This tuber (like saktuka) resembles, when pestled and made into a paste, shaktu or fried and powdered barley.

Racta-shringi.

This tuber, if thrown upon the horns of a cow, causes the shed of blood through its nostrils. This tuber is light in weight and has the appearance of cow’s udder.
(18) Pradipana or Mahabisha.

It has the appearance of a dried ginger tuber, kept in the midst of filaments or blossoms of a flower. It is red and resembles fire in colour. It causes a terrible inflammation on that part of the body which comes in contact with this poison.

(18) शुष्कादः इव किंजळकमध्ये ततै केशरं विदुः।
वर्षतो लोहितः स स्यादु दीतिमानु दहनमभः॥
महादाहकरः पूवः कथितः स प्रदीपनः।
महाविषाण्यश्रासों केशराभापि कथ्यते॥

धातुवादे विषाधें च चेमकार्यें पक्षत दृष्ट।
युज्यते कालकूटादि न भेषज्ये रसायने॥
सकुकादिं प्रजुक्तं सर्वं रसायने।
विप्रोदिजातिभेदेन यथाविधि सुशोधितम॥

* क्षेमकार्यस्मिति रसादिना नागवकृतीनां खण्डः वा रूपेये
कपातरीकरणम्। पद्मे वेघनकार्य्यमापि कथ्यते। तदाहि राधाकृष्णनुङ्गामर्यस्मिन्यन्यागाणिकायः—
रसविद्या विषया प्रोक्तान्तवाद्यिक्तिन्द्रितम॥
दुर्लभा क्षेमविद्या च सबविचारसु ता वरः॥
चिकितसा हित्विषये व्याधिनां जरसत्तथाः।
जराव्याचिनाहिनी चिकितसा हि रसायनमू॥
Use of tuber-poisons.

The ten kinds of poisons beginning with kala-kuta may be used sometimes for the purposes of metallurgy, preparation of poison, and kshema operations or alchemy*; but they should never be used in medicines of any kind.

Only the eight tuber-poisons beginning with saktuka should be used, well-purified and as prescribed in the medical treatises. In using these eight in medicines, care should be taken to see that their use is decided upon with reference to the caste or class of poisons to which a particular member of this group belongs (see below).

* The science of kshema or khema deals with transformation of base metals into gold. The term khema has been contracted into the Persian “kimia” or al-chemia. Vide page 100 of the author’s work, “Indian civilization and its Antiquity.”
(२) चीरं संपूर्णं भागेदंपि विरं दल्लं विलचयेत्।
यद्वर्गं जायते चीरं तेन जातं विनिर्दिष्टं॥
शुक्कं रक्तं तथा पीतं क्रृष्णं चेति चतुर्विधम।
वर्णानि ब्राह्मणादीनां जायन्ते भिषजान वरेः॥
जितं दुर्गेव विरं बैधो जानीयात् कस्मशो यदि।
श्वेतं रक्तं तथा पीतं क्रृष्णं चोष्मं तदेव च॥
ब्राह्मणः चत्रियो वैश्यः शूद्रः हि यथाक्समम्॥

Caste or classification of the eight poisons
referred to above.

(१)

Brahmana, kshatriya, vaisya, and shudra are
generally of the following colours, respectively:—
(1) white, (2) red, (3) yellow, and (4) black.

A poison is of the Brahmana or wise caste, if
it is white or tawny, is sweet or saltish in taste,
and has got hair-like shoots over its body. The
kshatriya (or warrior class) of the poisons is red
in colour. The vaisya (merchant class) is yellow or
grey and somewhat sweet in taste. The shudra (or the
agricultural and serving class) is black in colour.

(२)

The caste of a poison may also be ascertained by
throwing it into milk. If the milk into which the
poison has been immersed assumes a white colour, the poison is of the Brahmana caste; if the milk turns red in colour, the poison is of the kshatriya caste; if the milk is of yellow colour, the poison is of the vaisya caste; and if the milk is of black colour, the poison is of the shudra caste. The milk also grows warm at the touch of the poison.

Properties of poisons, according to caste.

The Brahmana (white-coloured) poison is a curer and preventer of diseases and senile decay. The kshatriya (red-coloured) is used in mercurial operations. The vaisya (yellow-coloured) is a curer of leprosy, and the shudra (black-coloured) is giver of death.

The Brahmana variety of poisons is to be used in diseases; the kshatriya variety to be given to a patient who has swallowed some poison; the vaisya variety is to be used in diseases of minor importance, and the shudra variety to be given to a man who has been bitten by a poisonous snake.
सामायिक विषयावली के तत्त्वतर्कित निष्प्रायाप्त रूप में प्रकट होते हैं। रूचिमुद्रा तथा तीच्छ भुजस्त्र भुजस्त्र भूवामाणि च।
विकाशिप्रतिरूप चैव लघुपाक तत्र स्वरूपम्।
तद्वृत्तरूपात्तकोपयेद्व वायुमौलिकयात् पिंचं सूचिकं।
मानससं मोहयेत् तात्त्पर्यादाहन्या श्रीसंहस्तिकं।
शरीरावर्त्तान्तैनि नौक्षायित्व प्रविषेधं विकरोतिः।
व्यास्यां तत्प्रतिक्षात् अष्टकक्षस्य च लघुवात्त।
दुर्जयं चाविपाकात् तस्मात् क्लेशयते विषम्।
स्थावरं जंगमं दश्तर थ्रिमं चापि यानिकतः।
सत्यो व्यापारधेयत् तत्र ज्ञेयं दशुगुणान्वितम्।

* पूर्वा व्याप्तानि कायं तत् यथा पारं व गजङ्ग्लित।
व्यवाहि तद्भ यथा भ्रक्ता फैलयवार्तिस्मृद्धभयम्।
फैलमार्ग निर्यातसं: भ्रमीति बहिनाम गुलम न तु सर्वं।
† विकाशिति भोज:शोषणपूर्वक्षतिनिष्प्रायाप्तक्षतिर्।
विसरीमिति भेदकम्।
‡ प्रकटितमिति ब्रत्मावतीतिनिष्प्रायाप्तक्षतिर्।
सेविति व्याप्तमाव।

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Evil properties of the poisons in general.

The following are the demerits of poisons in general:—(1) capacity for drying up the oily or fatty substance in the system, (2) causing heat, (3) violence, (4) capacity to enter into the minutest part of the body, (5) quickness of action, (6) capacity to spread through the whole of the system without being digested, (7) capacity to dry up the vital fluid which pervades the whole system, and to slacken the joints of the different limbs, (8) capacity to split up (9) lightness, and (10) incapacity for being digested.

A poison has the following functions on account of its possessing the ten demerits mentioned above, respectively:—It (1) increases vayu, (2) increases pittam and vitiates blood, (3) deprives the mind of consciousness and slackens the cohesion of the different limbs to one another, (4) spreads even through the minutest parts of the body and deranges them, (5) can take away life very quickly, (6) attacks the whole of the physical body without being digested at all, (7) destroys the three doshas (vayu, pittam, and kapha), the seven dhatus (chyle, blood, semen, flesh, bone, marrow, and fat), and the dirt (urine, stool, etc.), (8) causes much purgation, (9) is too light to be easily caught hold of and neutralized by medicines, and (10) incapacity for being digested which is the cause of the duration of the trouble due to it.

Any poison, whether organic, inorganic, or artificial, if endowed with all these demerits, has the power to kill life in a short time.
Special Troubles due to inorganic poison,

These are:—fever, hiccough, tickling and irritating sensation in the teeth, swelling of the neck and throat, coming out of froth from the mouth, nausea, aversion to food, difficult respiration, and loss of consciousness.

Troubles due to a sudden entrance of poison into the system.

Eight different stages follow the entrance of poison into a human system. In the first stage, there is a discoloration of the skin; in the second, there is shivering; in the third, inflammation; in the fourth, disfigurement of the whole body; in the fifth,
coming out of froth from the mouth; in the sixth, breaking of the shoulders; in the seventh, loss of movement of the limbs; and the eighth stage is the stage of death.

Having regard to all these, a physician should treat the patient.

विषज्ञानिकार्य चिकित्सा ।

(1) ।

श्रद्धात्रां विशे भुक्ते बमनं कारयेत् तदा ।
श्रजाधुर्गं प्रद्यास्व यावदू वान्तिनं जायते ॥
तददुग्धं दोषयते पुनः पुनर्वेव चमे: परम् ।
न देयं तत् पुनर्वारं यदा वान्तिगमिष्यति ॥
श्रजाधुर्गं यदा देहेः स्थिरवभवति देहिनः ।
विषवेगं तदोत्तरेऽजानोयात् कुशलो भिषक् ॥

Treatment of poison.

(1)

On the entrance of poison into a human system, the patient is to be made to vomit. He is to drink goat’s milk so long as he does not commence vomiting. Then he is to continue drinking the same milk after each act of vomiting, till the vomiting stops altogether. The strength of the poison is to be considered nullified as soon as the drinking of goat’s milk is followed no more by vomiting. In other words, no more milk is to be drunk by the patient.
when it is found that the last draft of milk is not vomited out.

( २ )
अतिमात्रे विषे पीते प्रतिकार्य हि सत्वरम्।
पित्तान्तं वमनं कार्यमजादुगंधस्य पानतः॥
अथवा राजिकाचूर्णलवणवारिशिलनात्।
मदनस्य फलेन वा मोनघौतामबुनांपि वा॥
रेचनं हि तदा कार्य कफान्तं कविशेषः।
गोघुंतं च पिलेत् ततो विषमं जीवनप्रदम्॥

( २ )
Poison, taken in an excessive quantity, should be remedied at once. The patient is first of all to be made to vomit till he vomits pittam (or bile). The vomiting is to be effected by means of drinking goat's milk; or water mixed with powdered raji (rye seeds) and saindhava salt; or madana fruit pestled with water; or water with which fish has been washed off. After vomiting, the patient is to be purged till kapha or mucus comes out without stool. He is next to drink some cow's ghrita (clarified butter), which is a destroyer of poison and giver of vitality.

( १ )
विषं हन्यादू रसः पीतो रजनीमेघनाद्योः।
सर्पाछो टकनं वापि घृतेन विषहत्त्व परम्॥
The following may be used for the purpose of destroying poison:—(a) drinking of the juices of turmeric tuber and meghanada (tanduliya); or (b) gandha-nakuli or tankana, mixed with clarified butter; or (c) kernel of the fruit of putranjiva, drunk with lemon juice, and the same pestled with water and used as a plaster upon the skin and as a collyrium for the eyes.

The following group of vegetable drugs is a destroyer of poison:—jati (jessamine), nili (indigo plant), iswari mula, saindhava (rock-salt), kaka-machi, aparajita, triphala, karabira, kushtha, jasthi-madhu, jira, barks of kshira trees, (such as, aswattha, vata, etc.), and ela (cardamoms).
Cow's butter (clarified) is also a destroyer of poison.

(५)
श्वरिमांशे विषे पीते पेयू घृतमनन्तरम्।
सम्बार्गीद्विधिधृमोत्सारिवालेकालियकम्।
शागारधृममहिष्यायण्यायः समन्वितम्॥

(5)
If poison is taken in excess, cow's ghrita (clarified butter), mixed with bhargi, dadhi (curd), vajrakshara (kshara prepared from snuhi plant), anantamula, tanduliya, soot (smoke condensed), manjista, and jastimadhu, should be swallowed by the patient.

(६)
विषाचों मधुसपिंभ्यां चूर्णमार्जुनवचः।
टंकां मेघनादेन मधुना सह वा पिबेत॥

(6)
One who has taken poison in excess should take powdered bark of arjuna, mixed with honey and clarified butter; or he should take purified tankana mixed with honey and the juice of tanduliya roots.

प्रशस्तविंश्च सुपान।
युक्तियुक्तं विषं ज्ञेयं प्रायादायि रसायनम्।
योगवाहि चिद्रोपश्चं बुंहं वीर्यवश्च नम्॥

313
Merits of good poisons.

Poison, if taken in the prescribed way, is an increaser of vitality and curer and preventer of diseases and senility. It is an increaser of the properties, good or evil, of a thing which is taken with it. It pacifies the three doshas, is nutritious, and increases semen. The demerits of salutary poisons are removed by their purification (in the way to be described later). Poisons are, therefore, to be duly purified, before they are used as medicine.

How tuber-poison is to be procured.

Tuber poisons (of course, only those of them which are commendable) are to be taken out only when their fruits have ripened; when they are still fresh and heavy; and have not yet been deteriorated by such antipoisonous agencies as wind, etc. Thus procured, they are to be kept wrapped up in clothes saturated with the oil of red mustard seeds.
Purification of tuber poisons.

First process.

These are purified, if they are cut into pieces of the size of chanakha grams, and kept immersed for three days in a pot containing cow’s urine, which is to be replaced by fresh urine after every 24 hours. The pieces are then to be dried by the strong heat of the sun. They are next to be powdered, and sifted through a piece of cloth. The poison, thus purified, may be used in medicines.

Second process.

Tuber poisons of beneficial nature are purified, if they are boiled, by means of a Dola-Jantram, with decoction of triphala and goats’ milk, for 24 hours at a stretch.
Third process.
Poisons are purified, if they are boiled for 24 hours in a Dola-Jantram, filled with cow’s urine.

Killing of tuber poison.
Purified tuber poison is killed, if it is rubbed with an equal quantity of tankana. It may then be used in medicines without producing any disturbance in the system.
Persons fit to take poison.

Purified poison, which is an increaser of the properties of materials with which it is taken internally, should be used as an ingredient of medicines, meant for the cure of diseases only and of those meant for the cure and prevention of disease and senility. It may be applied in all sorts of diseases to one who takes clarified butter, salutary diet, milk, and observes the rules and regulations prescribed for taking a rasayanam.

Poison should not be administered to patients of the following description:—those who are irritable; those who have an excess of pittam; those who are impotent; members of a royal family; those who are worn out by hunger, thirst, physical strain, perspiration, and travels; those who have got consumption; pregnant women, children, old men, and those whose skin and other parts of the body appear to be rough and devoid of oily substance.

Neither should poison be given or taken when there is a quarrel between the physician and the patient. In order to convince the disciple of the wholesomeness of poison, the preceptor himself should take it in the presence of the former.
Directions for taking poison.

One who wants to take poison as a medicine should take, first of all, a decoction of aswa-gandha, gojihva, and triphala, mixed with mercury (either incinerated or in a state of compound with sulphur), and should commence taking poison from the next day. One who takes poison should observe the following directions during the period he takes the poison:—(1) He should abstain from sexual intercourse; (2) should take his diet without any perturbation of the mind; (3) should take cow’s milk and clarified butter, with rice of shali paddy; (4) should drink cold water, meat of jangala animals, goat’s blood, madgura fish, sugar, honey, and milk—
everything cold; and (5) whatever he should take should be salutary according to the Ayurveda.

The man who wishes to prevent or cure diseases as well as senility may take poison every day (in doses to be described below). Such a man should be of pure character, and should have previously refined his system by drinking clarified butter and taking salutary diet. Poison should be taken in the winter and spring. In cases of emergency, it may also be taken in summer, but should never be taken in the rainy season and in a bad weather.
Doses in which poison is to be taken.

The dose in which good and purified poisons are to be taken is one sarshapa on the first day; two sarshapas a day on the second, third, and fourth days; three sarshapas on the fifth, sixth, seventh, and eighth days; four sarshapas on the ninth day. The dose is to be increased by one sarshapa a day till it reaches one gunja or 36 sarshapas. A healthy man should not take more than one java or six sarshapas a day, but a leper should take one gunja in the maximum.

One month’s use of poison, in the prescribed way, cures kushtha (leprosy) of eight different kinds, viz. pundarika, kushtha with bisphota, white kushtha or leucoderma, audumbara, chhinnā-bhinnā, kapala, klinna, and shavagandhi.*

Six month’s use of poison makes a man beautiful. One year’s use cures all sorts of diseases. Two year’s use makes a man have a very beautiful complexion.

Taken in proper doses, poison acts like nectar. On the other hand, nectar or poison, taken all on a sudden, causes all sorts of troubles and even death.

* These should be compared with those given in Madhava Nidanam etc.
Diets considered salutary at the time of taking poison.

The following are considered beneficial to one who takes poison:—

Clarified butter, milk, sugar, honey, wheat, rice prepared from boiling paddy and then drying it up and removing the husk in the usual way, maricha (black pepper), rock-salt, raisin, sweet and cold water, abstinence from sexual indulgence, residing in cold country, cold weather, and cold water.
Restrictions in diet in poison.

The following are to be avoided during the time poison is taken, even if one gets accustomed to it:—pungents, sours, saline food, oil, sleeping in day time, and heat of fire and of the sun. The man who, while taking poison, takes his diet without clarified butter being mixed with it, suffers from derangement of the eye-sight, diseases of the ears, and many other diseases due to the excess of vayu. Taking of poison by one who suffers from indigestion may lead even to one's death.

विषय प्रयोगः

वातज्वरे विषं पेयं मस्तुना सहितं तथा।
चौरेण सहितं तथु पातवं पित्तजे ज्वरे।।
कफजे छागमूत्रेण सवंजे त्रिफलाम्भसा।
रोधचन्दनष्टू गन्धारणकरागृहंतमाणिककः।।
चौरेण च विषं युक्तं जीयंज्वरहरं परम्।
निकुम्भकुम्भत्रिफलासपिंमधुविषेः क्रृतः।।
निहन्ति मोदको जीयंज्वरमेहात्त्वगामयान।
शिविकणिरसोपेतं विषमञ्ज्वरजिज्ञु विषम्।।

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Uses of inorganic poison.

Inorganic poison of a benefic nature (such as aconite) and duly purified, cures fever due to vayu, if taken with mastu (butter-milk). It cures fever due to pittam, if taken with milk, and that due to kapha, if taken with goat's urine. Fever due to the three doshas is cured by poison taken with triphala water. Jeerna-jwara (a kind of remittent fever) is cured by poison, taken with lodhra, chandana, bacha, sugar, ghrita, honey, and milk. Jeerna-jwara, prameha, and skin diseases are cured by poison, taken with root of danti, root of trivrit, triphala, ghrita, and madhu (honey). Poison cures vishama-jwara (Malaria, kala-azar, etc.), if taken with the juice of shikhi-karna (nila-kantha vasaka).

Racta-pitta is cured, if poison is taken with jastimadhu, rasona, ushira, and root of utpala (water lily), all rubbed with water dissolved with powdered rice.
Asthma and cough are cured, if poison is taken with rasona, viranga, triphala, deva-daru, trikatu, padma wood, and guruchi. Asthma and hiccough are cured, if poison is taken with sugar, mercury, milk, ashes of pravala (coral), and jasti-madhu. Poison cures nausea, if taken with milk, ushira, madhu, java-kshara, haridra, and bark of kutaja. It cures phthisis, if taken with chyavana prasa (a well-known medicine to be described in a subsequent volume).

Musta, indra-java, patha, chitraka root, trikatu, ati-visha, dhataki flower, mocha-rasa (exudation of kapock tree), kernel of the stone of a mangoe fruit, and poison, all combined, cure chronic diarrhoea. Poison, haritaki, chitraka roots (or bhallataka ?), danti roots, draksa (raisin), haridra, and vasaka, all mixed together, can cure difficulty in urination. Shilajatu, poison, and trikatu, mixed together, can cure ashmari and udavarta.
Cow’s urine, java-kshara, saindhava salt, tuber poison, all mixed with the juice of pashana-bhedi can cure stone disease. Tuber-poison, mixed with triphala and swarji-kshara, can cure gulma (tumours in the belly). Tuber-poison with pippali roots can cure colic. Dravanti, madhuka, draksha, rasna, shathi, pippali, ati-visha, biranga, mishreyi (ani-seed) and java-kshara, all mixed with tuber-poison, can cure gulma and enlargement of the spleen. Sulpha, biranga, and tuber-poison, taken with milk, can cure enlargement of the spleen. Tuber-poison, taken with the decoction of the roots of kaka-machi, is a curer of leprosy.

Leprosy is cured, if tuber-poison is taken with decoction of arka-puspi, arag-badha, trayamana, bakuchi, bala, rohitaka, and gaja-pippali.
ORGANIC POISON.

There are sixteen different sources of organic poisons, viz. eye-sight, respiration, teeth, nails, urine, stool, semen, saliva, mense-blood, sting, a peculiarly ugly sound made by the rectum, rectum, bone, bile, bristles, and carcases. (For details, see Chapter III, Kalpa-sthanam, Sushruta).

Of all the organic poisons, only poison of snakes is to be utilized for medicinal purposes. The poison obtained from a youthfull black serpent (cobra) is preferable to that obtained from other serpents. This poison also has a great healing property. It gradu-
ally pacifies the three doshas. It increases enormously the power of digestion, as soon as it is taken internally (of course, in the manner to be prescribed in vol. IV and the subsequent volumes). In curing diseases due to the abnormal excess of the three doshas, it is the master of all the drugs. Duly applied, it also acts like nectar, and is a reviver of the dead in cholera and in fever due to the three doshas.

सप्तविच्छय सशोधनम्।
प्रथमविचित्रः।

नागोद्रवं यथाप्रात् विषं गोमृतसंयुतम्।
ञा तपे त्रिदिनं शुष्कं निहितं बीयर्धूगम् भवेत्॥

_Purification of serpent poison._

First process.

Snake poison, in whatever way it may be obtained, is rendered powerful by mixing it with cow’s urine and drying it up by sun’s rays for three days.

हितोत्वोचित्रः।

सर्वपतेलसंप्रृतं सर्वविषं विशुच्यति॥

Second process.

Snake-poison is purified, if it is mixed with mustard oil.
Third process.

Snake poison is purified, if it is subjected to bhavana, for three times each, with the juice of tambula, juice of the leaves of vaka, juice of the tulasi leaves, and decoction of kustha.

Symptoms due to organic poison.

These are sleep, drowsiness, fatigue, inflammation, coming out of froth from the mouth, standing of hair on end, swelling, and diarrhoea.
Remedy of snake-bite.

Kernel of jayapala seed (previously purified) is to be subjected to bhavana for 21 times with lemon juice. It is then to be made into pills. Such a pill, rubbed with man's saliva, is to be put into the eyes, as a collyrium, of the man who has been bitten by a poisonous snake. By this, the man will be able to overcome snake-poison.*

* The subject will be dealt with elaborately in a subsequent volume in the chapter on treatment of poison.
CHAPTER VII.

UPABISHA (SEMI-POISONS).

The following are considered semi-poisons:—Snuhi, arka, langali, gunja, karabira, visha-musti, dhattura, jayapala, bhallataka, nirvisha, ativisha, ahiphena, and jaya (bhanga). These thirteen are also killers of life, if taken in excess.

Rubbed with poisons and the semi-poisons, mercury becomes deprived of its wings, and grows hungry. It is then able to swallow and digest metals (without increasing in weight).↑

↑ See page 76, Vol. I.
Purification of semi-poisons in general.

All the semi-poisons are purified, if subjected to bhavana with the pancha-gavya (milk, curd, clarified butter, urine, and dung of cow).

They are also purified by being boiled with milk by means of a Dola-Jantram.

(१) स्नुही

सेहुएङः सिंहुएङः स्यादवज्ञी वज्रः मोडपि च।
शुभा समस्तहृथा च स्नुक तथा स्याद स्नुही गुडः।
सेहुएङः रेचनस्तीच्यों दीपनो कटुको गुहः।
शुलामाणीलिकाधामानक्षयुक्तो मुदरानिलान।
उन्मादमेहकुदारेशः शोथमेदोः क्षमपापः तुताः।
ब्रह्मशोधकर्णीरचिच्युर्विषविषे हरेत्।
उपशावीयं स्नुहीच्छीरं स्निग्धं च कटुकं लघुः।
गुल्मन्त्र कुठिनां वापि तथैवोदर्रोगिणाम।
हितमेददु विनेकारयं ये चान्ये दोषरोगिणाः।

* श्रीरं दुष्च तथा बाज्रं मूर्तं गोमयमेव च। इति पञ्चग्राम।
† दूषीविषक्षेत्स्मितं गर्वित।
(1) Snuhi.

Snuhi is laxative, strong, increaser of hunger, pungent, and heavy. It cures colic, mucus, asthila (growth of a lump of flesh alongside the navel), swelling of the belly by wind, kapha, gulma, wind in the stomach, insanity, sperma-torrhoea, leprosy, piles, dropsy, obesity, stone-disease, anemia, boils, fever, enlargement of the spleen, poison, and artificial poison.

The milk of snuhi is warm in effect, soothing, pungent, and light. It is effective for the purpose of moving the bowels to those who suffer from gulma, leprosy, udara-rogas, or some other chronic diseases.

Purification of the milk of snuhi.

One tola of the juice of the leaves of chincha, filtered by means of a piece of cloth, is to be mixed with eight tolas of the milk of arka. The liquid is then to be dried by the heat of the sun. Thus dried, the milk of arka becomes purified, and may then be used, where necessary.
(2) आर्कः।
श्वेताको मणारूपः स्थानः मन्दारो वसुकोशिपः च।
श्वेतपुष्पः सदापुष्पः स चालकः प्रतापसः।
रक्तवर्धकनामा स्वादार्कपणों विकृतिः।
रक्तपुष्पः शुक्रक्षेत्रविभासोऽः प्रकृतिः।
अर्कद्रव्यं सरं वातकुशकरजुष्पिविषव्यानुः।
निहृत्य श्रीहवलमार्शः श्लेष्मोदरश्ण्टूक्रित्विमीन्।
अर्ककुःसुम व्रज्यं लघु दीपनपाचनम्।
अरोचकप्रसेकार्थः कासवासनिवारणम्।
रक्तकुपुष्पं मधुरं सतिकं
कुशक्रिमिग्नं कफनाशणं च।
वशोविषं हन्ति च रक्तपिंचं
संघाहि गुल्मे व्यायथो हितं तत्।
ञोरमकस्य तितकोष्णं विरं लघु।
कुशयुल्मोदरहरं श्रेष्ठमेतदु विरेचनम्।

(2) Arka.

Arka is of two kinds, viz. white and red. Both of them are laxative, and cure diseases due to vayu, leprosy, itches, poison, carbuncle, enlargement of the spleen, gula, piles, phlegm, udara-rogas, and worms in the stool.

Flower of white arka is nutritious, light, digestive,
and curer of aversion to food, emission of phlegm, piles, cough, and asthma.

Flower of red arka is sweet, bitter, and curer of leprosy, worms, phlegm, piles, poison, and racta-pitta. It is increaser of appetite and power of digestion, and beneficial in gulma and dropsy.

The milk of arka is bitter and warm, soothing, saltish, and light. It cures leprosy, gulma, udararoga, and is a laxative.

(3) लांगली।
हलिनी कलिहारी च शक्कुष्यि च लांगली।
विशल्यासमिशिक्षासनंता वधिक्रो च गर्भ्युत्॥
कलिहारी सरा कुष्ठोफारोवश्च शूलजित।
सचारा श्लेष्मजित् तिक्ता कटुका तुवरापिच च॥
तीजागोष्णा क्रिमिक्ष्ठल लघ्वी पित्तला गर्भपातिनी॥

(3) Langali.

Langali is laxative. It is efficacious in leprosy, dropsy, piles, boils, and colic. It contains kshara (alkali). It cures cough and worms. It is bitter, pungent, astringent, strong, warm, and light. It increases pitta and can cause abortion.

लांगली शोधनम्।
लांगली शुद्धिमायाति दिनं गोमून्त्रसंस्थिता।
Purification of Langali.

Langali is purified, if kept immersed for one day in cow's urine.

(4) गुज्या।
श्वेता गुज्योश्चत्र प्रोक्ता कुष्याला चापि सा स्मृता।
रक्ता सा काकचिन्द्री स्यात् काकणंति च रक्तिका॥
कुष्याला काकतिका च सांगुष्ठा च शिखिरिणी।
रक्ता च काकज्ञहा च काकुचिचि काकुचिज्ञका॥
काका च काकिनी सौम्या काश्ची कुष्यालकस्तथा।
काकजिया शिखिरिणी च कम्बोजी भिषभूषण॥
चूङ्गामणिस्तथासृष्टा शोभपकी च तास्त्रिका।
रक्ताः श्यामलचूड़ा च वन्या च कुष्याचूड़िका।
काकादनी काकपीलुः सा स्मृताङ्कालवर्धरी॥
गुज्यायं तु केष्यं स्यात् वातपिन्च्यरापहम्।
मुखशोष्धम्रव्यसतुष्यालम्बिनाशनम्॥
नेत्रामस्सरं वृत्त्यं बल्यं कराहृत्यं हरेतु॥
क्रिमिन्द्रलुपकृष्णनि रक्ता च धवलास्पि च॥
वामकं तास्त्रिकामूलमुच्छराविज्ञकं तथा॥
उच्चरापत्रकं हितं बशीकारं विशेषं॥
पत्रं गुज्यायस्य हि हितं शूले तथा विषे॥

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Gunja is of two kinds, viz. white and red. Both of them are beneficial to hair and pacifier of vayu, pittam, and fever. They cure dryness of the mouth, giddiness, asthma, thirst, intoxication, and eye-diseases. They are nutritious, strengthening, and curer of boils growing out of itches, worms, baldness, and leprosy.

Roots of both kinds of gunja and seeds of white gunja cause vomiting. Leaves of white gunja are especially efficacious in attracting affection of others. Leaves of both kinds of gunja are efficacious in colic and poison.

Purification of Gunja.

It is purified, if boiled with kanji for 3 hours.

Use of white gunja.

Wounds due to poisonous instruments are healed up by their being washed with the juice of the leaves of white gunja, and by a paste made of the same leaves used as a plaster.
(5) Karavira.

Karavira is of five different kinds, according to the colour of its flower. viz. (a) white (b) red, (c) yellow, (d) black, and (e) violet.

All of them are bitter, astringent, pungent, and are efficacious in ulcers, irritation of the eyes, leprosy, and boils. They are warm in their effect on the system. They cure worms and itches. They are to be used in the same way as poisons.

The white, yellow, and black varieties of karavira are killers of horses. The violet variety is a pacifier.
of head-ache, and diseases due to kapha and vayu. The root of a white karavira proceeding east-ward is efficacious in snake-poison.

Purification of karavira.
Karavira is purified, if boiled with milk by means of Dola-Jantram.

(६) विषमुदि:

विषमुदिर्जलदश कुचिला दीर्घपत्रकः
कुपीलुः कुलकः काकतिन्तुकः काकपीलुकः
कारस्करः कुपाकथ्र कालपाकथ्र रम्यकः
काकेन्द्रविषपितिन्तुकः तथा मर्केतिन्तुकः
कुपीलुः शीतलं तित्तं वातलं मदङ्कल्ल लघु
परं न्यथाहारं गाहि न कफपितास्वाशन्नाशनम्

(६) Visha-musti (kuchila).
Kuchila (nox-vomica) produces a cooling effect on the system. It is bitter, increaser of a slight vayu, intoxicating, light, highly remover of pain,

★ दीपन पाचकः यत् स्याडुप्पल्लवाः द्रवशोषणम्
गाहि तत्र च यथा शुष्के शोष्यन्ते गरजपिपली
दीपननिमिति जटराश्रेृ दीपन पाचन-
मिति आमपचनम्
increaser of hunger, digestive, and destroyer of phlegm, pitta, blood, and (necessarily racta-pitta).

Purification of visha-musti.
First process.

Visha-musti (kuchila) is purified, if is is boiled with kanji for six hours by means of a Dola-Jantram, and then fried well with a little of clarified butter (till it is reduced to charcoal).

Second process.

Visha-musti is purified, if it is boiled by means of a Dola-Jantram with cowdung mixed with water, then with milk, and then fried with clarified butter (till it is reduced to char-coal).
Dhustura (strammonium)

Dhattura increases intoxication, complexion, hunger, and vayu. It cures fever and leprosy. It is astringent, sweet, bitter, warm, and heavy. It destroys lice, boils, phlegm, itches, worms, and poisons.

Purification of dhattura.

Seeds of dhattura are purified, if they are kept immersed, for 12 hours, in cow’s urine, and then deprived of their husks, by being thrashed with an iron rod in an iron mortar.
Jayapala is heavy, remover of coarseness of the body, highly purgative, and pacifier of pitta and kapha. It takes away life, if taken unpurified and in excessive quantity. It should be taken purified, and in doses not exceeding one fourth of a racta a day.

Purification of Jayapala.

First process.

Jayapala seeds are purified, in the following way:—They are first of all to be boiled with the pancha-gavya (see page 331). Scale-like tissues, which are found inside the seeds, are then to be removed. The seeds are then to be treated (i.e. boiled or subjected to bhavana) with the amla-varga (vegetable acids) for ten times, with the ksharas for three times, with the juice of kanya for once only,
and with the solution of a kshara prepared from kodrava (a kind of paddy), for once only. Thus purified, jayapala seeds do not cause vomiting or inflammation.

Second process.

Jayapala seeds are first of all to be deprived of their skins, internal scales, and of their juices by being washed off with water. They are then to be kept concealed in the dung of buffalo for three days. They are next to be washed off with hot water and cleansed. Then they are to be rubbed with a piece of rag (which is meant to soak the oil) in a mortar. Next, they are to plaster the surface of a new earthen basin (which is to soak the rest of the oil). The jayapala is thus deprived of oil, and appear like dust. It is then to be subjected to bhavana for several times with lemon-juice. Thus purified, jayapala become excellent in quality.
Third process.

Jayapala seeds (deprived of their skins and scales) are purified, if they are boiled for three hours with the juice of buffalo stool.

Fourth process.

Jayapala seeds are purified, if they are deprived of their skins and internal scales, and then boiled with milk by means of a Dola-Jantram.

(६) महात्मकः

भस्मकं चित्तुः प्रोक्तमरस्त्कोपर्ष्करोपिकः

तथेवाभिमुली भस्मी वीरबुधश्च शोभहृतः

वीरर्वोनलाह्यो अश्वहुद्भूतनाशकः

अन्तःसत्त्वाहलाशेखवीजो निर्देहनस्तथा

क्रिमिग्रंस्तपनश्रेव वातारि: स्फोटवीजकः

महातीव्यः पुष्पगुब्धीजो बीजबुधो भूतस्तहः

* चित्तु दति चित्तु विकृतु}

25-3
Ripe fruits of bhallataka are sweet when digested, light, astringent, digestive, soothing, acrid, warm, reducer of fat, purgative, increaser of retentive faculties, and increaser of hunger. They destroy phlegm, vayu, sores, udara-roga, leprosy, piles, chronic diarrhoea, gulma, dropsy, intestinal obstruction, fever, and worms.

Stems of bhallataka fruits are sweet, pacifier of pittam, beneficial to hair, and increaser of power of digestion.

Oil or marrow of bhallataka (which are generally used in medicines) are astringent, sweet, light, nutritive, warm, increaser of semen, pacifier of vayu and kapha. It destroys all sorts of udara-roga, intestinal obstruction, leprosy, piles, chronic diarrhoea.
hoea, gulma, fever, leucoderma, loss of digestive power, worms and carbuncles.

**Extraction of the essence (oil) of bhallataka fruits.**

For the purpose of extraction of oil or essence of bhallataka fruits, only those which are ripe and sink in water are to be selected. These fruits are first of all to be denuded of the kernel surrounding
the seeds, by means of being rubbed with powdered bricks. The seeds are then to be cut into pieces and boiled with water in an iron cauldron. Thus boiled, the seeds will let out their essence of black colour, which will collect gradually upon the surface of the water. The essence or oil, thus extracted, will have to be taken up carefully. The heating will have to be discontinued when all the essence has been taken up.

The essence of the bhallataka seeds, cut into pieces, may also be extracted by means of the Patala Jantram (see foot-note, page 127, Vol. II.)

(१०) निरिंशा: ||

निरिंशा मुस्तकाकारा सा हि तृप्त विषापहम् ।
चेत्राल्यादिस्थले सैव जायते हि विशेषतः ॥
श्रविष्णुविष्णु सा तु निरिंशी विषाहारपि च ।
विषाभावा विषहन्त्री निरिंशा विषवैरियिः ॥
निरिंशा कटुशीतला ऋणानां रोपिका तथा ।
कप्तवातविषायायां नितरां शान्तिदायिका ॥
शिरोन्यथा निन्हन्त्याशु ललाटस्पर्शनात् त्रिधा ।
शद्वात् सत्येतरस्माच सत्यश्राहांतकं हि सा ॥

* श्यामकांकुलां इति भाषा।
† श्यामककांकुलां इति भुवोत्तापिरि कर्णलक्ष्योत्तीर्थविवेक अस्तित्वममूणि सार्वाकृति चतुरोमार्क्ये चेलावाहे।
(10) *Nirvīsa*.

It is a kind of grass of the appearance of mustaka. It generally grows in such places as landmarka of agricultural fields.

This grass is pungent, cool, and healer of ulcers. It pacifies kapha, vayu, impurities of the blood, and various kinds of poison. It cures head-ache immediately, if it is made to touch the skin of the fore-head by being drawn across it for three times beginning with the side of the left ear to that of the right ear.

(11) *Ativisha*.

Ativisha is warm, pungent, bitter, digestive, and increaser of hunger. It cures kapha, pittam, diarrhoea, mucus, poison, cough, vomiting, and worms.

(12) *Aśhīrṇavak*.

Aśhīrgulmograhav phalā khastphalā c kakhyate.

Viññāyaśte Aśhīrṇaveśa nirāsattattatāphalāḥ hi.
Opium is bitter, intoxicating, inducer of sleep, remover of pain and spasm, destroyer of sensibility, kapha, and asthma, digestive, increaser of hunger, increaser of vayu and pittam, destroyer of the dhatus, depriving the body of its oily substance, and causing inflammation and spermatorrheoa. It is efficacious in diarrhoea, acute as well as chronic, if taken in small quantities. No one who desires to live a healthy, happy, and long life should take opium for a long time.
Purification of Opium.

Opium is purified, if subjected to bhavana with inger juice for twenty one times.

(13) Juya.

Bhanga is a destroyer of kapha. It is bitter, increaser of hunger and power of digestion, light, strong, warm, increaser of pittam, spermatorrhoea,
intoxication, power of speech, sexual desire, sleep, and laugh. It is efficacious in titanus, hydrophoboea, cholera, and after-effects of alchohol and hæmorrhage after child-birth.

Purification of jaya.

First process.

Jaya is purified, if it is boiled with the decoction of the bark of babbula, then dried, and again subjected to bhavana with cow’s milk.

Second process.

Jaya is purified, if it is boiled with milk, then dried, and fried with clarified buttter.
Ganja (cannabis Indica.)

Ganja is a flower of a kind of jaya. It possesses, in excess, all the merits and demerits of jaya. One who wishes to live a happy life should not take (drink or smoke) ganja.

The exudation, juice, or tincture of ganja is commonly called “charas”. It is horribly injurious and should be avoided altogether.

Urviṣṭikārāṇaṃ śāntiḥ: ।

Aḥīfēṇavīṣya śāntiḥ: ।

(१)

Brūhaḥ bhrūtastuṇuḥ: palaṃatraṇuḥ durgheṇa sevānātū ।

Aḥīfēṇavīṣya śīghraṃ nirākṛtāṃ bhavetu ṛu vamū ॥

Remedy of Semi-poisons.

Opium.

(१)

Poison of opium is speedily counteracted, if four tolas of the juice of the larger variety of small ambu (karaballi? or thorny tanduliyaka?) is taken with milk.
Poison of opium is destroyed, if saindhava (rock-salt), pippali, and kernel of madana fruit are pestled together and drunk with hot water.

Tankana and tutthaka are to be taken with clarified butter. This causes vomiting and thereby removes opium poison from the system.

Poison of dhustura is nullified by drinking four tolas of the juice of seeds of egg fruits (brinjals).
(2) Poison of dhatura is destroyed by drinking the decoction of flowers of cotton combined with their stones. Drinking of saline water also serves the same purpose.

(3) One prastha (64 tolas) of cow's milk and eight tolas of sugar, drunk together, counter-act the poison of dhastura.

Remedy of Bhallataka poison.

(1) Swelling, due to bhallataka poison, is remedied by the external application of a plaster made of butter and juice of meghanada.
Troubles, due to bhallataka, are removed by the external application of devadaru, sarshapa (mustard seeds), musta, and butter, pestled together.

Swelling and irritation, due to bhallataka poison, is pacified by the external application of butter, sesamus (tila), milk, and khanda gurh (molasses purified and condensed into a tawny-coloured lump).

Remedy of bhanga poison.

Troubles due to bhanga poison are remedied by drinking shunthi, mixed with cow's curd.

Punarvasanaṃ Jayāvīṃ prasāmyati.
Troubles due to bhang poison are remedied by the juice of the leaves of panasa tree, taken internally.

Remedy of gunja poison.

Troubles due to gunja poison are remedied by drinking the juice of meghanada, mixed with sugar, and then drinking milk.

The following removes speedily the troubles due to gunja poison:—honey, dates, grapes, tamarind, sour pomegranates, parusha fruits, and amalaki, all rubbed together and taken internally.
Remedy of karabira poison.

Sugar-candy, mixed with buffalo’s milk, or curd, or bark of arka plant, taken internally, removes troubles due to karabira poison.

Remedy of snuhi poison.

Troubles due to snuhi poison are removed by drinking cold water, mixed with sugar-candy, and by being treated with cooling fan and resorting to a cool and shady place. Tamarind leaves, pestled with water, should also be taken in such cases.

Water, mixed with red ochre (see page 146, vol. II), removes troubles due to the poisons of snuhi and arka.
Remedy of arka poison.

(See Remedy of snuhi poison, No. 2.)

Jayamalabikāraśyam śaśānti: I

Dhanvākaṁ sitaṁ yucṣam pītaṁ daṁśa samāntitam II

Jayapalabāṁ dṛṣṭam duṁrīkaraṁti niśrīcchitam II

Remedy of jayapala poison.

Dhanya (coriander seeds), pestled with curd and sugar, removes troubles due to croton seeds.

Purification of some materials requiring purification.

The seeds of vṛiddha-dara are purified, if dried in the sun, after having been saturated with a solution made of water and a little of rock-salt. They may also be purified, by being boiled with (or subjected to bhavana with) the decoction of apamarga; or by being boiled with milk by means of Dola Jantram.
 Seeds of nimba (nimboo, according to another text) are purified by the decoction of apamarga. Seeds of shigru, karpasa (cotton), and apamarga are purified only by being dried in the sun. Seeds of aragbadha are purified by the decoction of indrarbaruni. Seeds of jayapala (crotone) by the decoction of the root of kanya, and the seeds of dhustura by the decoction of uttarabaruni including its roots.

 Seeds of katuki, koshataki, danti, patola, indrabaruni, katu-tumbi, deva-dali, white gunja, and mahakala—all of these are purified by the juice of amalaki. Seeds of karanja and karani (visa-karanja) are purified by the juice of bhringa-raja.

* Nimbujojiramiti Paddantam ।
Gunja and the other seeds are purified by human urine, not mixed with salt. Seeds of vilba and bhallataka are purified by cocoa-nut water.

Purification of Guggulu.

Guggulu is purified, if it is dissolved with a decoction of dasha-mula, and then filtered through a piece of cloth, and dried in the intense heat of the sun.

Guggulu may also be purified, if boiled with the decoction of guruchi by Dola Jantram, and then dried in the sun.
Guggulu may also be purified by being boiled with milk or decoction of triphala by the Dola Jantar.

चिरंतनी जलौकां हि ताम्रपात्रे सुरचयेत ।
चतुर्माण्य निशाचूर्णां जलाष्ट्रकपले चिपेतु ॥
तस्मिन् चिपेतु जलौकां तां खं वालां परित्यजेतु ।
व्यक्तलाला जलौका हि प्रयोज्या रक्तमोचणी ॥
कपिला रोमपुष्ट्च च रक्तरेखा च दुर्बला ।
वर्जनीया विशेषेण भिषजा कीर्तिमिच्छता ॥

Purification of Leeches.

A leech, which is sufficiently old, is to be kept in a copper pot. It is to be immersed in 32 tolas of water, mixed with one fourth of a tola of powdered haridra (turmeric). Thus treated, it will give out its saliva. Purified in this way, the leech may be applied for the purpose of blood-sucking.

A leech of the following description is to be avoided:

(1) A leech which has got furs on its body, or (2) one which is of tawny colour; or (3) one which has got red lines on its body; or (4) one which is weak.

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CHAPTER IX.

EXTRACTION OF OIL FROM SEEDS OF ANY KIND.

Any kind of seed, known or unknown, is to be powdered very finely, and subjected to bhavana with the juice of green leaves of arka. The seed is then to be kept, tightly confined in a piece of cloth, and placed upon a pot in the sun. Oil will come out of the bundle containing the seed.

* खुप इति पाठान्तरम् *

† Ripe, according to another text.
Oil can be extracted from oil-seeds, of sufficient quantity, by means of the well-known machine used by oilmen.

Seeds of any kind are to be powdered very fine, and sifted through a piece of cloth. They are then to be rubbed with the decoction of uttara-baruni with its roots, and made into a paste with which is to be smeared the internal surface of a bell-metal pot, kept in the intense heat of the sun. Thus heated, the paste will yield oil which is to be filtered by means of a piece of cloth.
Oil can be extracted by means of the Patala Jantram from all sorts of seeds, bones, and flesh, dried and pounded over and over again.*

Seeds of ankolla, pestled with kanji, are to be kept one night, and then made into a lump which is to be heated by means of the kanduka Jantram or Swedani Jantram (see page 251, vol. I), for two hours. It is then to be confined tightly in a piece of tough cloth, and pressed by means of a strong piece of wood resulting in the extraction of oil.

Oil can thus be extracted from all sorts of seed.

* See foot-note, page 127, vol. II.
† प्रथमकश्यपे २५१ यूष्ट द्रष्टान्यम् ।
Extraction of oil from seeds, in particular.

Root of uttarabaruni is to be pestled with kanji with which is to be mixed seeds of ankolla, pestled very fine. The whole thing is to be mixed well. The inner surface of a bell-metal pot is to be smeared with this paste and kept in the sun. The thick oil, which will come out of the paste, is to be filtered by means of a fine piece of cloth,

Leaves of uttara-baruni and petakari are to be rubbed with kanji and made into a paste. Powdered seeds of ankolla are to be rubbed with this paste, which is then to be confined in a piece of thin cloth and kept hanging in the sun over a pot meant to con-
tain the oil which is to fall, drop by drop, upon it. This oil cures Leucoderma.

यथा धुस्तुरजं तेलं काथाद्र घरं समुद्रोऽर्हने ||
तथा सर्बं तेला नि संश्राद्यम् यौषधांश्च यती ||
ञ्ज्ञोटस्या पि तेलं स्त्राद्र कान्तुकाह्या समूलया ||
वाकुच्या देवदाल्याँश ककोरीमूलतो भवेत् ||
ञ्ज्ञोमार्गक्षायेण तेलं स्त्राद्र विषतिन्द्रुज्म ||
मूलकाथः कुमार्यांश्च तेलं जैपाललं भवेत् ||

Oil can be extracted from the ankota seeds by being rubbed with the decoction of gunja plant with its roots, in the same way as from the seeds of dhus-tura, rubbed with the decoction of uttara-burani. Oil can similarly be extracted from the seeds of bakuchi and devadali, separately, by being rubbed with the decoction of karkoti; from the seeds of kuchila, being rubbed with the decoction of apamarga; from seeds of jayapala (croton), being rubbed with the decoction of the roots of kanya.

रक्तापार्गसंकाथ्येवाकुच्यीतीलमाहरेत् ||
काथेन चेन्द्रवाह्न्यास्तैलमार्गवधस्य च ||

In the same way, oil can be extracted from bakuchi seeds, rubbed with the decoction of red apamarga; and from aragbadha seeds, rubbed with the decoction of indrabaruni;
Seeds of katu-tumbi are to be rolled with cow-dung. When dried, they are to be husked along with dry husks of paddy in a mortar. The seeds are next to be separated from the husks, and pestled with the juice of bhringa-raja. The paste, thus prepared, is next to be heated in the sun, and pressed, confined in a piece of cloth, so that oil comes out of it.

Seeds of black as well as of white gunjas are to be powdered. This powder is to be commingled with powdered load stone, the whole thing being kept inside a heap of paddy for sometime. It is then to be rubbed with the decoction of apamarga, and oil to be extracted from it in the afore-said way.
Powdered seeds of pashana (?) are to be subjected to bhavana with the juice of amalaki for one day, and then oil is to be extracted from them by means of the ghurni machine.

Powdered gunja as well as karanja seeds are to be subjected to bhavana with human urine for seven times. The inner surface of a bell-metal pot is next to be smeared with the paste, thus prepared, and heated for sometime in the sun. The paste is next to be confined in a piece of cloth, heated in the sun, and pressed so that oil comes out of it.

Powdered seeds of jyotismati are to be pestled with aranala of one year's standing, and subjected to bhavana with the same liquid. The paste is next to be heated in the sun, and oil extracted, as before.
Powdered seeds of putranjiba as well as of agasti are to be made into a lump of the shape of amrataka or hog plum (by being rubbed with water or decoction of uttara-baruni), and then pressed, as before, for extraction of oil. Powdered seeds of vilba are to be subjected to bhavana with coconut water for one day, before oil is extracted from them by means of the oil-machine (ghurni).

Mouths of ankola seeds, previously separated from their husks, are to be rubbed a little. Each of them is then to be kept on a bell-metal pot, and smeared all round with chanaka grams made into a paste. The mouth of each of these is to be smeared with a paste made of powdered borax (tankana). All of these seeds are then to be placed in the strong heat of the sun. Oil, coming out of the mouths of these seeds, is then to be collected.
Powdered seeds of shami are to be pestled very finely and kept inside a pot having a hole at its bottom. This pot is to be put upon another pot. The hole in the upper pot is to be stopped by means of hair. Some water is to be poured into the upper pot. (The lower part and that part of the upper pot which contains the hair are to be kept in a pit made in the ground). A fire is to be made covering the upper pot, with the result that water will fall, first of all, into the lower pot, followed by oil; (This is only a kind of Patala Jantram).
CHAPTER X.

Sandhanas are of three different kinds, viz. (1) alcoholic, (2) non-alcoholic but fermented drugs, such as asavas, aristas, etc., and (3) non-alcoholic but fermented, drinks, sometimes used as ingredients of medicines (such as kanji).

Of these, the first two are practically everlasting, and increase in quality every day; whereas the third does not last for a very long time.

(१) मदिरः सन्धानः (मधम् )।
मयः बहुविष्यं प्रोकं तज्जाम मदिरः खुरा।
इरा च कारणं तत्त्वं महानन्दः च माणिकः॥
(1) Alcoholic Liquors (wine).

Wine is of various kinds. Of these, the following eight are well-known:—(a) gouri, (b) madhvi, (c) paisti, (d) kadamvari (e) varuni, (f) madhuki (g) maireyi and (h) mardi.

Wine may be undistilled as well as distilled. It may be distilled by means of the Tejo-Jantram, Nadika Jantram, Baruni Jantram, and Baka Jantram (see pages 280-85, vol. I).

(क) गौड़ी।

धातकोगुड़मुख्य या गौड़ी सा मदिरोच्चते।
तीच्छिथ्या मधुरा गौड़ी वातस्वी बलपिन्नः।
कान्तित्वस्तिकरी पथ्या वहिकामप्रदीपनी॥

* प्रथमबंधेण २८०—८९ पृष्ठावि दशव्यावि।
(a) Gouri.

Wine, named gouri (from gurh—molasses), is prepared mainly from dhataki flower and gurh. It is acrid, warm, sweet, pacifier of vayu; increaser of strength, pittam, and brightness of complexion. It is agreeable to taste, nutritious, and increaser of power of digestion and sexual desire.

(b) Madhvi.

It is made of honey, and other ingredients. It is not very warm. It is sweet, and destroyer of pittam, vayu, jaundice, anemia, gulma, piles, gonorrhoea, and enlargement of the spleen.

(c) Paisti.

It is made of paddy of various kinds. It is pungent, sour, destroyer of vayu and kapha, and acrid like gouri.
(d) Kadambari.
Kadambari is prepared from kadamba fruits and many other materials. It is sweet and remover of fatigue and pittam.

(e) Varuni.
It is the fermented juice of date tree and palm tree. Liquor, prepared from other materials with the help of the said juice, is also called varuni.

(f) Madhuki.
It is made of madhuka (mahua) flowers, and is intoxicating, strengthening, nutritious, and increaser of sexual desire.
(g) Maireyi.

It is a liquor prepared by the fermentation of vilba roots, plum fruits, and sugar. It pacifies vayu, cures fever, and increases strength and hunger.

(h) Mardwika.

It is wine prepared from grapes. It does not give rise to heat, acidity, and indigestion in the system. It is sweet.

There is no objection, therefore, to its being prescribed even in cases of hemorrhage (which is due to an excess of pittam or heat and vayu causing contraction of the nerves, arteries, etc.) It is light in digestion, laxative, and efficacious in visama jwara (Malaria, kala-azar, etc).
Different parts of undistilled wine.

The upper part of the scum of wine is called prasanna. Kadamvaja is denser than that. That part of the wine which is denser than kadamvaja is called jagala. Medaka is denser than jagala. In other words, Medaka is the densest part of the wine before it is filtered or distilled. The wine from which all its essence has been taken out (by distillation) is called bakkasa, or the seed of wine, or kinvaka.
Properties of wine in general.

New wine causes the discharge of phlegm (through the nostrils, the eyes, etc.). It increases the three doshas and is laxative. It is harmful to the heart, nutritious, and causing inflammation in the system.

It has bad smell, is clear, and heavy. Old wine is increaser of appetite; and destroyer of worms, phlegm, and vayu. It is agreeable to taste and yields a good odour. It is wholesome, light in digestion, and purifier of the internal passages.

In spite of the various merits attending wine, it is to be avoided altogether. Its demerits predominate over its merits. Wine is sometimes prescribed by way of medicine, but otherwise, it is unworthy of drinking, receiving from others, and being given to others.

(2) अमदृतं सन्धानम्।
सन्धानं मदिराहीनं बहुविरं चृच्छंते।
तेषुं हि द्रादशं बहुविदितं धर्मार्थितले॥
आत्मवर्ष्णगृहीवं शूचयान्यायस्काशिकम्।
गुड़शुद्धं तथा चुकं तुपाम्बु यवनिमित्तम्।
लौवीरमारानालं च शिर्डाको भेषजोचितम्॥

(2) Non-alcoholic but fermented Liquids.

Fermented but non-alcoholic liquids are of various kinds. Of these, the following thirteen are well-known:—(a) asava, (b) arista, (c) sidhu, (d) shukta,
(e) gura-shukta, (f) chukra, (g) tushamboo, (h) dhanyamla, (i) kanji, (j) sauvira, (k) aranala, and (l) shindaki.

All of these are used as ingredients of medicine.

(क) असाव स्तुत (ख) अरिष्ट: ।

द्रवेष्टु चिरकालस्थं द्रव्यं यत् सहििं भवेत् ।
आसवारिष्टमेदेस्तत् प्रोच्यते भेषजोचितम् ॥

यदपकोषाधास्यं सुसंहििं स आसव: ।
अरिष्ट: कायसंहििं तयोर्मां पलोन्मितम् ॥

(a) *Asava* and (b) *Arista*.

Asava is a fermented liquid prepared from several drugs immersed for a sufficiently long time in water, which does not require any heating and boiling.

Arista is also a fermented liquid, prepared from several drugs, immersed, for a sufficiently long time, in decoction of prescribed drugs.

The dose of both of these is one pala or four tolas (to be taken twice a day).

(The difference between arista and asava is that the former is to be fermented in a decoction of drugs prescribed differently in different cases, whereas the latter is a fermentation in cold water of drugs, prescribed differently in different cases. Both asavas and aristas form a class of important medicines.)
Proportion of materials in an Arista.

Where there is no specific mention of the quantities of the materials to be used in a certain arista, they are to be taken as follows:—The quantity of the decoction (of the materials to be mentioned in each case) is one drona (16 prasthas or 16 × 64 tolas); that of gurh is four hundred tolas (or 6½ prasthas); and of honey 200 tolas (or 8½ prasthas); and that of the materials to be kept immersed is one tenth of the gurh (molasses).

(ग) सोधूः ।

स्थापयेद्र ग्रहणस्ते नवे कबिन्न मिल्यूँ सुधीः ।
मुखं तस्य पियातन्यं शराबेण प्रयवरतः ॥
स्थापयेद्रातपे ततू तु यावत् तनू नैति संहितिम् ।
आपसार्य शराबुं तु द्रवपूर्युस्थितं मलं ॥
मोचयेद्रन्तरान्वते पुनर्मेकं च रोधयेत् ॥
ञ्जनेन संहितं सम्यक् सीध्विति कथयते जनेः ॥
सोधू हि द्विविधो ज्ञेयः पक्षापक एव च ।
पकलमिष्ट्रवाजातः सोधुर्मोहः हि कथयते ।
आपकम्बुर्मक्रवाजः जातकु शीत एव हि ॥
(c) Sidhu (a kind of vinegar).

Keep some sweet liquid in a new earthen vessel, covered with an earthen basin. Place the vessel in the sun every day, till the liquid gets fermented. Take out, every now and then, the dirty scum collected on the surface of the liquid, and then close the mouth of the vessel, as before. When sufficiently fermented in this way, (i.e., when there will be no more scum gathered on the surface of the liquid), the liquid will be called Sidhu.

Sidhu is of two kinds, viz. boiled and unboiled. That which is prepared by fermenting a boiled liquid of sweet taste is called "pakva" or boiled sidhu; and that which is prepared from unboiled liquid of sweet taste is called "apakva" or unboiled sidhu.

(०) शुक्लः *

(२० लाखे २६ चौटे पाटटीका द्रष्यम्)

(d) Suktam*

(See foot note, page 28, vol. II.)

(५) धार्यामिलम् (तुषामिलम्)।

प्रस्थं पश्चिमान्यस्य नीरप्रस्थद्वये विपेत।

ब्राह्माण्डादृं संस्थभूमें निवाप्यत॥

पञ्चान्ते तत्समुद्रत्व वज्रपूतं च कार्यत॥

धान्यामिलं कारतं तत् तु तुषामिलं च तदेव हि॥

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One prastha (64 tolas) of shasti paddy is to be thrown into two prasthas of water, contained in an earthen (or made of chinese clay) vessel, which is to be kept underground with its mouth closed. This is to be taken out after a fortnight, and the liquid is to be filtered. This is called dhanyamla or tushamla.

Dhanyamla may also be prepared from powders of such paddies as shali and kodrava. It is agreeable to taste, light for digestion, and increaser of hunger. It is beneficial in aversion for food, and diseases due to vayu, and commendable for the purpose of being used for douche.
(f) Kanji.

One tula (400 tolas) in weight of the rice of shasti paddy, duly prepared, is to be immersed in one drona (16 prasthas or $16 \times 64$ tolas) of water, for seven days, in a vessel closed all the while. The water is then to be filtered. It is called kanji.

It is strong; light; digestive; curer of fever with inflammation, and excess of kapha and vayu; laxative, increaser of liking for food and of appetite; and curer of constipation, colic, and loss of power to digest.

Kanji may also be prepared in the same way from boiled wheat or chanaka, etc.

Jali (water turned sour by boiled rice being immersed in it constantly for a few days) may be used, in lieu of kanji, where the latter is not available.

(४) गुड़शुकम्

कन्दमूलफलादिभि: सत्तेहलवणाम्बिभि: ।

गुड़ं यत्राभिपूयन्ते गुड़शुकं तदैव हि ।

पदमेवेचुशुकं स्यादृ गुड़ीकासंवं तथा ॥

* कुल्माप द्वित यदेश्वर्धा गोधुमाध्यकादिः ।

† जातिवित मिष्टान्नप्रलक्षनमुत्सत्मः जन्मः । भाषानिति

मायाः ॥
(g) **Gura-shuktam.**

It is a fermented liquid prepared from water, gurh (molasses), certain tubers, roots, fruits, oil, salt, etc.

Such drinks may also be prepared from the juice of sugar-cane, as well as from the juice of grapes, substituted for gurh.

(h) **Chukram.**

Wine, spoiled and grown sour, as well as sweet liquid, fermented, is called chukram.

(i) **Tushambu and (j) Sauvira.**

Tushambu is a liquid, prepared from powdered, unhusked, and unboiled barley, fermented with water only, whereas sauvira is a liquid, prepared from powdered, husked, and boiled barley, fermented with water only.
(k) Aranala.

It is a liquid, prepared from powdered and husked wheat, boiled or unboiled, and fermented with water only.

It has the same properties as sauvira.

(l) Shindaki.

It is water fermented with mulaka (raddish), mustard seeds, etc.
Copper is to be killed with makshika (pyrites) for ten times and revived each time. Pure lead is also to be similarly treated. Two palas each of these two metals are to be taken and combined. This amalgam is to be killed with nilanjanam for seven times
and revived each time. The amalgam, thus purified, is called, “Sulva-naga” (Copper-lead).

Mercury consolidated with this amalgam, and kept in the mouth, cures all sorts of spermatorrhoea and gonorrhoea in one month only. Keeping it in the mouth for one year, with the observance of salutary diet, makes a man free from senile decay and all sorts of diseases. It improves especially eye-sight and helps all-round development of the body.

वर्लोहम्।
तात्र तोङ्गःसमायुक्तं दुःतं निवित्त्वय भूरिशः।
सगन्धलक्ष्रुच्छा निर्गतं वर्लोहकम्॥

Vara-loha.

Copper, combined with an equal quantity of tikshna (steel), is to be melted and immersed, for several times, in a solution of sulphur and the sour juice of a lakuchia fruit. The amalgam turns, by this process, into an excellent metal.

घोषाक्ष्यतान्म्।
खल्यतालयुतं कांस्यं वंकनालेन ताल्लितम्।
मुक्कर्षं हि तत्त्रात्रं घोषाक्ष्यमुदाहतम्॥

Copper extracted from Bell-metal.

Bell-metal, mixed with a little haritala, is to be subjected to fire blown by a blow pipe. The tin will, in this way, be burnt away, leaving only the
copper. This copper is ghosa-krista (i.e. extracted from bell-metal).

वरनागम्

तीच्छां नीलाज्ञानोपेतं ध्मातं हि बहुशो द्रढ़म्।
म्रुदु कुष्णां द्रु तद्वरावं वरनांग तदुच्चयते॥

Bara-naga (Excellent Lead).

Tikshna iron, mixed with nilanjanas (see page 202, vol. II), and heated for several times, becomes soft, black, and quickly liquefiable. This is called bara-naga (excellent lead).

पत्प्रिरागस्तुःक्रागासः

पत्प्रिरक्तों जाता लोहे तारत्वहेमताः।
दिनानि कतिचिद्र स्थित्वा यातासो चुंबकका मता॥
रक्षितान्िि चिरं लोहाद्वु ध्माताद्वु वा चिरकालमः।
विनिर्यासः + स सन्निद्धः पत्प्रिरागसंज्ञः॥

Patangi-raga and chullaka-raga.

The colour of gold which base metals may assume for a short time, by a mercurial preparation being thrown into it, when melted, is called “chullaka”

* पत्प्रिरक्त: हि पत्प्रि पार्वत: अस्प्रासतिः पत्प्रि तत्वः
क्लकः साधितद्रव्यम्।
† विनिर्यासः हि बहिरागमः।
colour, whereas the colour of a base metal, permanently transformed into gold or silver is called patangi-raga.

आवापः

दृढ़ते द्रव्यान्तरचेपो लोहादृशि कियते हि यः।
स आवापः प्रतीवापस्तदेवाच्छादनं मतम्॥

Abapa.

The act of throwing some thing into a liquefied metal is called “abapa”, “pratibapa”, or “achchadana”.

अभिशेकका निर्वापम्

दृढ़ते वसहिःथिते लोहे विरेखाध्रुवभिमेयकम्।
सलिलस्य परिचेपः सोविशेषके व्रति समुत्।
तस्तस्याप्तु विनिचेपो निर्वापः स्थपनं च तत्॥

Abhisheka and nirbapa.

Abhisheka is the act of sprinkling water upon liquefied metal, a few seconds after it is got down from the furnace.

Nirbapa or snapanam is the act of immersing hot metal immediately from fire into water.
Suddhavarta and Vijavarta.

Suddhavarta is that condition of a metal which is so heated by a strong fire that the latter emits white flames. That is the time of essence coming out of the metal.

Vijavarta is that condition of a metal, which, while heated with the object of being melted, makes the fire emit flames of the colour of the metal itself, which shows a heaving tendency at the time.

It is only on a melted and suddhavarta metal that an ābapā is to be resorted to.

Swanga-shitala and Bahis-shitala.

A heated substance is called swanga shitala, when it is cooled of itself without being removed from the oven.

A heated substance is called bahis-shitala, if it is cooled after removal from the fire place.
Names of well-known chemists.

Of the innumerable chemists, most of whom have passed into oblivion, the names of the following are still remembered:—(1) king Nandi, (2) Shukra, the sage, (3) Adima, (4) Chandra-sena (5) Ravana (king of Lanka), (6) king Rama-Chandra of Ajodhya (7)

त्वूर्दंद्तब्रह्मसंभारस्तदंग्राविपतो मया।
त्विदिच्छाचालितत्स्य मे ममतं क महेश्वरि॥

श्रुति सिद्धवैधान्यङ्गैःकृतेदेवशर्मोवरिचितरसज्ञानिनाम-
महामन्त्रस्य तुतीयवंद समातम्॥

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