A Translation of the New Edition of the *Suśrutasaṃhitā*

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Draft of 27th May 2022

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Introduction

This section begins with several lists of poisonous plants. The Sanskrit names for these plants are mostly not standard or familiar from anywhere in Sanskrit or ethnobotanical literature. It remains a historical puzzle why these particular names are so difficult to interpret. However, we are not the first to encounter these difficulties. In the twelfth century, the learned commentator on the text, Ḍalhaṇa, remarked,

> In spite of having made the greatest effort, it has been impossible to identify these plants. In the Himalayan regions, Kirātas and Śabaras are able to identify them.[1]

Ḍalhaṇa also recorded variant readings of these poison names from the manuscripts that he consulted of the lost commentary of Gayadāsa (fl. c. CE 1000). The identities of these poisons have been in doubt for at least a thousand years.[2] Identifications have in many cases been equally impossible for us today.

One path for exploration in this situation is to attempt to reverse-engineer some identifications by considering the known toxic plants of India.[3]

Translation

1 And now I shall explain what should be known about stationary poisons.[4]

3 It is said that there are two kinds of poisons, stationary (*sthāvara*) and mobile (*jaṅgama*). The former dwells in ten sites, the latter in sixteen places.

4 Traditionally, the ten are: root, leaf, fruit, flower, bark, milky sap (*kṣīra*), pith (*sāra*), resin (*niryāsa*), the elements (*dhātu*), and the tuber.

5 In that context,

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1 After *Suśrutasaṃhitā*, *kalpasthāna* 2.5 (Su 1938: 564). From the view of Sanskrit authors, Kirāṭas and Śabaras were tribal peoples. The eleventh-century author Bhikṣu Govinda, however, cast his treatise as a dialogue with a Kirāṭa king called Madana who was a master of the alchemical art (HIML: IIA, 620).

2 See Wujastyk 2003: 80–81.

3 Valuable reference sources on Indian plant toxicology in general include Pillay 2013: chs. 10, 11 and Barceloux 2008: parts 1.II, 3 and 4.

4 No reference is made to Dhanvantari (see Birch, Wujastyk, Klebanov, Parameswaran, et al. 2021). "Stationary" here is a term contrasted with "moving," and signifies plants as opposed to animals and insects.

- the eight root-poisons are:
  1. liquorice (?),[5]
  2. sweet-scented oleander,[6]
  3. jequirity,[7]
  4. false daisy (?),[8]
  5. *karaṭā*,[9] and ending with
  6. leadwort (*vidyutśikhā* → *agni- or rakta-śikhā?*)[i, 10]
  7. 'endless' (*ananta*)[ii], and
  8. *vijayā*,[11]
- the leaf-poisons include:
  - 'poison-leaf' (*viṣapatrikā*)[iii],

Expected (Pillay 2010): Croton tiglium, L. = Naepala, Jayapala, kanakaphala, titteriphala (NL #720); Calotropis spp.; Citrullus colocynthus (colocynth); Ricinus communis (castor);

Note about Gayī's edition.

5 Liquorice eaten in excess can be poisonous, but it is unlikely to be the plant intended here. Singh and Chunekar (1972: 124) noted that the poisonous root mentioned in this passage, "remains to be idenitified."

6 The roots of sweet-scented oleander are highly toxic, as are most parts of the plant (Pillay and Sasidharan 2019).

7 Jequirity contains a dangerous toxin called Abrin in its seeds and to a lesser extent in its leaves, but apparently not in its roots or bulb. Abrin is not harmful if eaten, but an infusion of the bruised (not boiled) seeds injected or rubbed in the eyes can be fatal (NK: # 6). The dose can be quite small.

8 The plant is usually called just *bhaṅgurā* without the prefix *su-* "good." However, there is no reported toxicity associated with *E. prostrata.*

9 This poisonous root cannot at present be identified. Similar-sounding candidates include *karkaṭaka*, *karaghāṭa* (emetic nut), and *karahāṭa*, but since this is a prose passage, there would be no reason to alter the word to fit a metre. Monier-Williams et al. (MW: 255) cite an unknown lexical source that equates *karaṭa* (mn.) with safflower (*Carthamus tinctorius*, L.), but this plant does not have a poisonous root.

10 The roots of both rose and white leadwort are very toxic.

11 Meulenbeld (1989: 61, n. 3) argued that our text read a masculine or neuter noun *vijaya*, which never signifies cannabis. However, unlike the vulgate, the unanimous readings of the Nepalese manuscripts give feminine *vijayā*. Nevertheless, even this form only started to signify *Cannabis sativa* L. after the end of the first millennium (Meulenbeld 1989; Wujastyk 2002; McHugh 2021). The *Sauśrutanighaṇṭu* gives a number of synonyms for *vijayā*, almost none of which have any poisonous parts (Suvedī and Tīvārī 2000: 5.77, 10.143). But one of them, *viṣāṇī* (also *meṣaśṛṅgī*), is sometimes equated with *Dolichandrone falcata (DC.) Seemann* (Sivarajan and Balachandran 1994: 518), a plant used as an abortifacient and fish poison (Nadkarni 1982*a*: #862). This identification is tenuous.

i Plumbago zeylanica (or rosea?), L.; see NK #1966, 1967

ii ?; see ?

iii unknown; see ?

    - 'drum-giver' (*lambaradā*)[iv],
    - thorn apple (*karambha*)[v], and
    - 'big thorn apple' (*mahākarambha*)[vi];
- the fruits of items like: jequirity (*guñjā*)[vii], rūṣkara ()[viii], viṣa ()[ix], and vedikā ()[x], are
    - kumudavati (*kumadavati*)[xi],
    - reṇuka (*?*)[xii],
    - kurūkaka (*?*)[xiii],
    - 'little bamboo' (*veṇuka*)[xiv],[12],
    - thorn apple (*karambha*)[xv],
    - 'big thorn apple' (*mahākarambha*)[xvi],
    - 'pleaser' (*nandanā*)[xvii],
    - 'crow' (*kāka*)[xviii],
- the flower-poisons include those of:
    - rattan (*vetra*)[xix],
    - wild chinchona (*kādamba*)[xx],
    - black pepper (*vallīja* → *marica*)[xxi],
    - thorn apple (*karambha*)[xxii], and

12 Not poisonous.

iv unknown; see ?
v Datura metel, L.; see AVS 2.305 (cf. Abhidhānamañjarī), NK #796 ff., Potter 292 f., ADPS 132.
vi Datura metel, L.?; see AVS 2.305 (cf. Abhidhānamañjarī), NK #796 ff., Potter 292 f., ADPS 132.
vii ; see
viii ; see
ix ; see
x ; see
xi unknown; see ?
xii ?; see Piper aurantiacum Wall. (NK: #1924) is not poisonous.
xiii ?; see ?
xiv Bambusa bambos, Druce?; see NK #307
xv Datura metel, L.; see AVS 2.305 (cf. Abhidhānamañjarī), NK #796 ff., Potter 292 f., ADPS 132.
xvi Datura metel, L.?; see AVS 2.305 (cf. Abhidhānamañjarī), NK #796 ff., Potter 292 f., ADPS 132.
xvii ?; see ?
xviii?; see ?
xix Calamus rotang, L.; see AVS 1.330, NK #413
xx Anthocephalus cadamba, Miq.; see NK #204
xxi Piper nigrum, L.?; see NK #1929; Rā.6.115, Dha.4.85, Dha.2.88
xxii Datura metel, L.; see AVS 2.305 (cf. Abhidhānamañjarī), NK #796 ff., Potter 292 f., ADPS 132.

    - big thorn apple (*mahākarambha*)[xxiii];
- the seven bark, pith (*sāra*) and resin (*niryāsa*) poisons are:
    - 'gutboiler' (*antrapācaka*)[xxiv],
    - 'blade' (*kartarīya*)[xxv],
    - wild mustard (*saurīyaka*)[xxvi],
    - emetic nut (*karaghāṭa* → *karahāṭa?* → *madana*)[xxvii],
    - thorn apple (*karambha*)[xxviii],
    - wild asparagus (*nandana* → *bahuputrā?*)[xxix], and
    - munj grass (*nārācaka*)[xxx];[13]
- the three milky sap (*kṣīra*)-poisons are:
    - purple calotropis (*kumudaghnī* → *arka?*)[xxxi],[14]
    - oleander spurge (*snuhī*)[xxxii], and
    - 'web-milk' (*jālakṣīri*)[xxxiii];
- the two element (*dhātu*)-poisons are:
    - 'foam-stone' (*phenāśma*)[xxxiv], and

13 The bark of wild asparagus (*Asparagus racemosus*, Willd.) is toxic.

14 The name of this poison, *kumuda-ghnī*, means 'lotus killer'. In Sanskrit literature, the *kumuda* lotus is associated with the moon, since it blossoms by night. Since the sun causes this lotus to close, it is therefore an 'enemy' of the lotus. One of the chief words for the sun, *arka*, is also the name of *Calotropis gigantea*, which indeed has a milky juice which is a violent purgative, poison and abortifacient.

xxiii Datura metel, L.?; see AVS 2.305 (cf. Abhidhānamañjarī), NK #796 ff., Potter 292 f., ADPS 132.
xxiv unknown; see ?
xxv unknown; see ?
xxvi Cleome viscosa, L.? (cf. Rā.4.144); see AVS 2.116, NK #615
xxvii Randia dumetorum, Lamk.; see NK #2091
xxviii Datura metel, L.; see AVS 2.305 (cf. Abhidhānamañjarī), NK #796 ff., Potter 292 f., ADPS 132.
xxix Asparagus racemosus, Willd.; see ADPS 441, AVS 1.218, NK #264, IGP 103, IMP 4.2499ff., Dymock 482ff.
xxx Saccharum bengalense, Retz.?; see NK #2184
xxxi Calotropis gigantea, (L.) R. Br.; see ADPS 52, AVS 1.341, NK #427, Potter 63
xxxii Euphorbia neriifolia, L., or E. antiquorum, L.; see ADPS 448, AVS (2.388), 3.1, NK #988, IGP 457b
xxxiii unknown; see ?
xxxiv unknown; see ?

    - orpiment (*haritāla*)[xxxv];[15]
- the thirteen tuber-poisons are:
    - jequirity (*kālakūṭa*)[xxxvi],[16]
    - wolfsbane (*vatsanābha*)[xxxvii],
    - Indian mustard (*sarṣapa*)[xxxviii],
    - leadwort (*pālaka* → *citraka*)[xxxix],
    - 'muddy' (*kardama*)[xl], the
    - 'Virāṭa's plant' (*vairāṭaka*)[xli],
    - nutgrass (*mustaka*)[xlii],
    - atis root (*śṛṅgīviṣa*)[xliii],
    - sacred lotus (*prapuṇḍarīka*)[xliv],
    - radish (*mūlaka*)[xlv],
    - 'alas, alas' (*hālāhala*)[xlvi],
    - 'big poison' (*mahāviṣa*)[xlvii], and

15 Dutt (1922: 38–42) conjectured that 'foam-stone' may be impure white arsenic obtained by roasting orpiment.

16 The much later (perhaps sixteenth century) alchemical *Rasaratnasamuccaya* of pseudo-Vāgbhaṭa (21.14) says that the *kālakūṭa* poison, here translated as 'jequirity', is similar to '*kākacañcu*' or 'Crow's Beak', which is indeed a name for the plant jequirity or *Abrus precatorius*, L., more commonly called *guñjā* (not to be confused with *gañjā*). The black seed-pod is described as having a 'sharp deflexed beak' in botanical descriptions, so the Sanskrit name is quite graphic and appropriate. The poisonous scarlet seeds of *A. precatorius* can have a distinct black dot or tip, which could perhaps be translated '*kāla-kūṭa*', or 'Black Tip'.
The *Rājanighaṇṭupariśiṣṭa* (9.35) gives *kālakūṭaka* as a synonym for *kāraskara*, or *Strychnos nux-vomica*, L., whose seeds are notoriously poisonous.

xxxv Arsenii trisulphidum; see NK v. 2, p. 20 ff.
xxxvi Abrus precatorius, L.? Cf. RRS 21.14.; see AVS 1.10, NK #6, Potter 168.
xxxvii Aconitum napellus, L.; see AVS 1.47, NK #42, Potter 4 f.
xxxviii Brassica juncea, Czern. & Coss.; see AVS 1.301, NK #378
xxxix Plumbago zeylanica (indica? rosea?), L.; see Rā. 6.124, ADPS 119, NK #1966, 1967
xl unknown; see ?
xli unknown; see ?
xlii Cyperus rotundus, L.; see ADPS 316, AVS 2.296, NK #782
xliii Aconitum heterophyllum, Wall. ex Royle; see AVS 1.42, NK #39
xliv Nelumbo nucifera, Gaertn.; see Dutt 110, NK #1698
xlv Raphanus sativus, L.; see NK #2098
xlvi unknown; see Cf. Soḍhalanighantu p.43 (sub bola) = stomaka = vatsanābha
xlvii unknown; see ?

- galls (*karkaṭa*)[xlviii].[17]

Thus, there are fifty-five stationary poisons.

6 There are believed to be four kinds of wolfsbane, two kinds of *mustaka*, and six kinds of Indian *sarṣapa*. But the rest are said to be unique types.

The effects of poisons

7–10 People should know that root-poisons cause writhing (*udveṣṭana*), ranting (*pralāpa*), and delirium (*moha*), and leaf-poisons cause yawning, writhing, and wheezing (*śvāsa*).
Fruit-poisons cause swelling of the scrotum, a burning feeling and writhing.
Flower-poisons will cause vomiting, distension (*ādhmāna*) and sleep (*svāpa*).
The consumption of poisons from bark, pith (*sāra*) and resin (*niryāsa*) will cause foul breath, hoarseness (*pāruṣya*), a headache, and a discharge of phlegm (*kapha*).[18]
The milky sap (*kṣīra*)-poisons make one froth at the mouth, cause loose stool, and make the tongue feel heavy.[19] The element (*dhātu*)-poisons give one a crushing pain in the chest, make one faint and cause a burning feeling on the palate.
These poisons are classified as ones which are generally speaking lethal after a period of time.

11–17 Symptoms of tuber poisoning

The tuber-poisons, though, are severe. I shall talk about them in detail.

17 Leadwort root is a powerful poison. Nutgrass is tuberous, but non-toxic. Atis has highly toxic tuberous roots. Neither sacred lotus nor galls are toxic. The 'alas, alas' poison (*hālāhala*) is the mythical poison produced from the churning of the ocean at the time of creation: it occurs in medical texts such as the present one, and commentators identify it with one or other of the lethal poisons such as wolfsbane or jequirity. Agrawala (1963: 126) makes the intriguing suggestion that the word *hālāhala*, possibly to be identified with Pāṇini's *hailihila* (P.6.2.38), may be of Semitic origin, although his evidence seems uncertain (Steingass (1930: 1506a) cites Persian *halāhil* 'deadly (poison)' as a loan from Sanskrit). Mayrhofer 1953–72: iii.585 also cites a claim for an Austro-Asiatic origin for the word.

18 At 1.2.6 (Su 1938: 11), Ḍalhaṇa glosses hoarseness (*pāruṣya*) as *vāgrūkṣatā*, "a rough, dry voice."

19 At 6.54.10 (Su 1938: 773), Ḍalhaṇa glosses loose stool (*viḍbheda*) as *dravapurīṣatā*, "having liquid stool."

xlviiRhus succedanea, L.; see NK #2136

With jequirity (*kālakūṭa*)[xlix], there is numbness and very severe trembling. With wolfsbane (*vatsanābha*)[l], there is rigidity of the neck, and the faeces, and urine become yellow.

With sārṣapa (*sārṣapa*),[20] the wind becomes defective (*vātavaiguṇya*), there is constipation (*ānāha*), and lumps (*granthi*) start to appear. With leadwort (*pālaka* → *citraka*)[li], there is weakness in the neck, and speech gets jumbled.[21]

With the one called 'muddy' (*kardama*)[lii], there is a discharge (*praseka*), the faeces pour out, and the eyes turn yellow. The 'Virāṭa's plant' (*vairāṭaka*)[liii] causes pain in the body and illness in the head. Paralysis of one's arms and legs and trembling are said to be caused by mustaka (*mustaka*).[22]

15b With great aconite (*mahāviṣa*) one's limbs grow weak, there is a burning feeling and swelling of the belly.[23]

16a With puṇḍarīka (*puṇḍarīka*), one's eyes go red, and one's belly becomes distended.[24]

16b With mūlaka (*mūlaka*), one's body is drained of colour and the limbs are paralysed.[25]

-> ativiṣa

Look up the ca. reference.

20 *Sārṣapa* would normally mean "connected with mustard," and excessive consumption of mustard oil can be harmful. However, the *Sauśrutanighaṇṭu* (156) gives *rakṣoghnā* as a synonym for *sarṣapā*. This can be *Semecarpus anacardium*, L.f., which has some poisonous parts.

21 The verse in the Nepalese version ends with a plural verb that does not agree with the dual of the sentence subject.

22 The substitution in MS NAK 5-333 affecting 15cd is caused by an eye-skip to the word *viṣeṇa* in 2.17. *Mustaka* commonly refers to Cyperus rotundus, L.; the root is used in āyurveda but is not poisonous. However other dictionaries list *mustaka* amongst serious poisons, for example *Rājanighaṇṭu* (22 v. 42) and *Rasaratnasamuccaya* 16, v. 80. However, its ancient identity is still doubtful.

23 The poisonous root great poison (*mahāviṣa*) is not clearly identifiable, although *viṣa* is commonly aconite. Verse 6 above notes that there are several kinds of aconite.

24 The word *puṇḍarīka* very commonly means sacred lotus, Nelumbo nucifera, Gaertn. The entire plant is edible and cannot be the poison intended here. Singh and Chunekar (1972: 252) noted that this poison is unidentified and that it is also listed as a poison in *Carakasaṃhitā*ci.23.12.

25 The word *mūlaka* very commonly means the radish, *Raphanus sativus*, L. The root is edible and cannot be the poison intended here. Singh and Chunekar (1972: 317) noted that this poison is unidentified.

xlix Abrus precatorius, L.? Cf. RRS 21.14.; see AVS 1.10, NK #6, Potter 168.

l Aconitum napellus, L.; see AVS 1.47, NK #38, Potter 4 f.

li Plumbago zeylanica (indica? rosea?), L.; see Rā. 6.124, ADPS 119, NK #1966, 1967

lii unknown; see ?

liii unknown; see ?

17a With hālāhala (*Aconite*), a man turns a dark colour (*dhyāma*), and gasps.[26]

17b With atis root (*śṛṅgīviṣa*)[liv], one gets violent knots (*granthi*) and stabbing pains in the heart.[27]

18a With markaṭa (*monkey*), one leaps up, laughs, and bites.[28]

18b-19a Experts have said that one should know that the thirteen highly potent tuber-poisons, which are mentioned here, have ten qualities (*guṇa*).

19b–20a The ten are:

- dry (*rūkṣa*),
- hot,
- sharp,
- rarified (*sūkṣma*),
- fast-acting,
- pervasive (*vyavāyin*),
- expansive (*vikāsin*),
- limpid (*viśada*),
- light, and
- indigestible.

20b Because of dryness, it may cause inflammation of the wind; because of heat it inflames the choler and blood. Because of the sharpness it unhinges the mind, and it cuts through the connections with the sensitive points (*marman*). Because it is rarified it can infiltrate and distort the parts of the body.[29]

22 Because it is fast-acting it kills quickly, and because of its pervasiveness it affects one's whole physical constitution (*prakṛti*).[30] Because of its expansiveness it enters into the humour (*doṣa*)s, bodily constiuents (*dhātu*)s, and

26 Identification of *hālāhala* is uncertain. It may simply be a mythical poison, or its specific identity may have been lost over the centuries. Late *nighaṇṭu*s identify it as *stomaka* = *vatsanābha*, i.e., *Aconitum napellus*, L. (*Soḍhalanighantu* p.43). Ḍalhaṇa on 5.2.17 (Su 1938: 564) interprets our "gasps" as "the man laughs and grinds his teeth." But this gloss is probably displaced and intended to apply to verse 2.18.

27 Singh and Chunekar (1972: 407) noted that *vatsanābha* and *śṛṅgīviṣa* are two different varieties of poisonous Aconites that are difficult to distinguish.

28 Singh and Chunekar (1972: 299) said of *markaṭa*, "an unidentified vegetable poison." Cf. Suvedī and Tīvārī 2000: v.36 for synonyms that lead to the non-toxic jujube tree.

29 We read the active *vikaroti* with Ḍalhaṇa against the transmitted passive *vikriyeta*, since it must be the parts of the body that are distorted, not the poison.

30 Ḍalhaṇa on 5.2.22 (Su 1938: 565) explained this as "takes the form of pervading the whole body (*akhiladehavyāptirūpam*)."

liv Aconitum heterophyllum, Wall. ex Royle; see AVS 1.42, NK #39

even the impurities. Because it is limpid it overflows, and because it is light it is difficult to treat. Because it is indigestible it is hard to eliminate. Therefore, it causes suffering for a long time.

24 Any poison that is instantly lethal, whether it be stationary, mobile, or artificial, will be known to have all ten of these qualities.

Slow-acting poison

25cd–26 A poison that is old or destroyed by anti-toxic medicines, or else dried up by blazing fire, wind, or sunshine, or which has just lost its qualities by itself,[31] becomes a slow-acting poison (*dūṣīviṣa*).[32] Because it has lost its potency it is no longer perceived. Because it is surrounded by phlegm (*kapha*) it has an aftermath that lasts for a very long time.

27 If he is suffering from this, the colour of his stools changes, he gets sourness and a bad taste with great thirst. Stammering and close to death, wandering about, he may feel faint, giddy, and aroused.[33]

28 If it lodges in his stomach (*āmāśaya*), he becomes sick because of wind and phlegm; if it lodges in his intestines (*pakvāśaya*), he becomes sick because of wind and choler. A man's hair and limbs fall away and he looks like a bird whose wings have been chopped off.

29a–c If it lodges in one of the body tissues such as chyle (*rasa*), it causes the diseases arising from the body tissues, that have been said to be wrong.[34] and it rapidly becomes inflamed on days that are nasty because of cold and wind.

29d–31 Listen to its initial symptoms (*liṅga*): it causes heaviness due to sleep, yawning, disjunction (*viśleṣa*) and horripilation (*harṣa*) and a bruising of the limbs (*aṅgamarda*).[35] Next, it causes intoxication from food (*annamada*) and indigestion, loss of appetite (*arocaka*), the condition of having a skin disease (*koṭha*) with round blotches (*maṇḍala*),[36] dwindling away (*kṣaya*) of flesh,

31 Ḍalhaṇa specified that this refers to the ten qualities that are mentioned above (5.2.26 (Su 1938: 565)).

32 Ḍalhaṇa cited this verse at 1.46.83 (Su 1938: 222) while explaining *dūṣīviṣa*.

33 Similar symptoms of slow-acting poison are described at 2.7.11–13 (Su 1938: 296) in the context of contamination dropsy (*duṣyodara*). This this may explain why the vulgate inserted reference to this disease at this point.

34 The expression *ayathāyathoktān* "stated to be unsuitable" is hard to understand here, but is clearly transmitted in the Nepalese version.

35 Ḍalhaṇa 5.2.30ab (Su 1938: 565) glossed "disjunction" as the loss of function of the joints in regard to movement.

36 The last ailment could perhaps be ringworm.

swelling of the feet, hands, and face, the fever called *pralepaka*, vomiting and diarrhoea.[37] The slow-acting poison might cause wheezing, thirst and fever, and it might also cause distension of the abdomen.

32 These various disorders are of many different types: one poison may produce madness, while another one may cause constipation (*ānāha*), and yet another may ruin the semen. One may cause emaciation, while another pallid skin disease (*kuṣṭha*).

33 Something is "corrupted" by repetitively keeping to bad locations, times, foods, and sleeping in the daytime. Or, traditionally, "corrupting poison" (slow-acting poison (*dūṣī-viṣa*)) is so called because it may corrupt (*dūṣayet*) the body tissue (*dhātu*)s.

34- The stages of toxic shock

In the first shock of having taken a stationary poison, a person's tongue becomes dark brown and stiff, he grows faint, and panics.

35 In the second, he trembles, feels exhausted, has a burning feeling, as well as a sore throat. When the poison reaches the stomach (*āmāśaya*), it causes pain in the chest (*hṛd*).

36 In the third,his palate goes dry, he gets violent pain (*śūla*) in the stomach (*āmāśaya*), and his eyes become weak, swollen and yellow.

37 In the fourth shock, it causes the intestines and stomach to be exhausted (*sāda*), he gets hiccups, a cough, a rumbling in the gut (*antra*), and his head becomes heavy too.

38 In the fifth he dribbles phlegm (*kapha*), goes a bad colour, his ribs crack (*pārśvabheda*), all his humours are irritated, and he also has a pain in his intestines (*pakvādhāna*).

39a In the sixth, he loses consciousness and he completely loses control of his bowels.

39b In the seventh, there are breaks in his shoulders, back and loins, and he stops breathing.[38]

37 The *pralepaka* fever was described by Ḍalhaṇa, at 6.39.52 (Su 1938: 675), as an accumulation of phlegm in the joints. Its symptoms are described in 6.39.54

38 Here at 5.2.24 (Su 1938: 566) Ḍalhaṇa glossed *sannirodha* as "complete cessation, i.e., of breath" (*sannirodhaḥ samyaṅnirodhaḥ, ucchvāsasya iti śeṣaḥ*). The manuscripts all read *skanda* where *skandha* must be intended; this confusion is known from Buddhist Hybrid Sanskrit (Edgerton 1953: 608).

Remedies for the stages of slow poisoning

40 In the first shock of the poison, the physician should make the man, who has vomited and been sprinkled with cold water, drink an antidote (*agada*) mixed with with honey and ghee.

41a In the second, he should make the man who has vomited and been purged drink as before;

41b on the third, drink an antidote and a beneficial nasal medicine (*nasya*) as well as an eye salve (*añjana*).

42a In the fourth, the physician should make him drink an antidote that is salt with a little oil.[39]

42b In the fifth, he should be prescribed the antidote together with a decoction (*kvātha*) of honey and liquorice (*madhuka*)[lv].

43 In the sixth, the cure (*siddhi*) is the same as for diarrhoea. And in the seventh, he perishes.[40]

44 In between any one of these shocks, once the above treatment has been done, he should give the patient the following cold gruel (*yavāgū*) together with ghee and honey, that will take away the poison.

45–46 A gruel (*yavāgū*) made of the following items in a stewed juice (*niḥkvātha*) destroys the two poisons: gourd (*kośavatī*),[41] wild celery (*agnika*),[42]

39 At 6.52.30 (Su 1938: 769) Ḍalhaṇa noted that *sindhu* can be interpreted as salt (*saindhava*).

40 The vulgate text here is quite different, recommending that the patient have medicated powder blown up his nose. It may be possible to detect the evolution of the Nepalese अवसीदेत् to the vulgate's अवपीडश्. The vulgate version is hard to construe, and we see Ḍalhaṇa struggling to interpret it in his commentary on 5.2.43ab (Su 1938: 566). This sternutatory is, however, recommended in the Nepalese version at 5.5.30ab (Su 1938: 576), for the seventh shock of poisoning by a rājimat (*striped snake*) snake. It is possible the text migrated from that location to this.
Another difference at this point is that the Nepalese version also does not support the vulgate's passage on the crow's foot (*kākapada*) therapy (Wujastyk 2003: 145, n. 106). The same is the case at 5.5.24 (Su 1938: 575) and the clear description at 5.5.45 (Su 1938: 577), in neither of which is the therapy supported in the Nepalese version. This therapy seems unknown in the Nepalese version. Perhaps the therapy migrated into the *Suśrutasaṃhitā* from the *Carakasaṃhitā* (6.23.66–67 (Ca. 1941: 574)).

41 At 4.10.8 (Su 1938: 449) Ḍalhaṇa glosses *kośavatī* as *devadālī* and at 4.18.20 (Su 1938: 472) as *kaṭukośātakī*, vocabulary pointing to *Cucumis cylindrica*, *Cucumis actangula* or *Luffa echinata* (Singh and Chunekar 1972: 207, 121; Sivarajan and Balachandran 1994: 252–253).

42 A plant often cited in *Suśrutasaṃhitā*, but rarely in *Carakasaṃhitā* (Singh and Chunekar 1972: 4). Ḍalhaṇa glossed it here, 5.2.45 (Su 1938: 566), as wild celery (*ajamodā*), *Apium grave-*

lv Glycyrrhiza glabra, L.; see AVS 3.84, NK #1136

velvet-leaf (*pāṭhā*),[43] 'sun-creeper' (*sūryavallī*),[44] heart-leaved moonseed (*amṛtā*),[45] myrobalan (*abhayā*),[46] siris (*śirīṣa*)[47], and selu plum (*śelu*)[48] white siris (*kiṇihi*),[49] the two turmerics (*haridrā*),[50] and the two Indian nightshades (*bṛhatī*),[51] hogweed, peas, the three heating spices, the Indian sarsaparillas (*sārive*)[52] and water-lily (*utpala*).[53]

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olens, L., but noted that others consider it to be *moraṭa*, *Marsdenia tenacissima* (Roxb.) Wight et Arn. There is considerable complexity surrounding the identification of *moraṭa/mūrvā* and related synonyms (Singh and Chunekar 1972: 314-316). Taking *agnika* as a short reference to *agnimantha*, often identified with *Premna corymbosa*, Rottl., might be plausible, since that is antitoxic or anti-inflammatory (Sivarajan and Balachandran 1994: 21; Nadkarni 1954: #2025; Warrier et al. 1994–6: 4, 348), but such a short reference is not known elsewhere.

43 *Cissampelos pariera*, L., Sivarajan and Balachandran 1994: 366; Nadkarni 1954: #592; Singh and Chunekar 1972: 243–244; Warrier et al. 1994–6: 2.277.

44 At 5.2.45 (Su 1938: 566) Ḍalhaṇa said that this plant has leaves like the *paṭola*, *Trichosanthes dioica* Roxb. Singh and Chunekar (1972: 280, 443) argued plausibly that this is a synonym for *arkapuṣpī*, *Holostemma ada-kodien*, (Roxb.) Schult., as Ḍalhaṇa also stated in 1.45.120 (Su 1938: 206), and the leaves of Holostemma and Trichosanthes are indeed strikingly similar. The appearance of the plant, a creeper with sun-like flowers, fits the name. But there remains much controversy about the identities of these candidates (e.g., Sivarajan and Balachandran 1994: 195–198).

45 *Tinospora cordifolia*, (Willd.) Hook.f. & Thoms. (Singh and Chunekar 1972: 141–143; Sivarajan and Balachandran 1994: 38–40)Nadkarni 1954: #2472 and #624.

46 *Terminalia chebula*, Retz. (Sivarajan and Balachandran 1994: 172; Nadkarni 1954: #2451; Singh and Chunekar 1972: 15).

47 *Albizia lebbeck*, Benth. (Warrier et al. 1994–6: 1.81; Nadkarni 1954: #91; Singh and Chunekar 1972: 399–400).

48 *Cordia myxa*, L. non Forssk. (Warrier et al. 1994–6: 2.180; Nadkarni 1954: #672; Singh and Chunekar 1972: 408, 413–414).

49 *Albizia procera*, (Roxb.) Benth. (Nadkarni 1954: #93; Singh and Chunekar 1972: 98).

50 *haridrā* and *dāruharidrā* Singh and Chunekar 1972: 465–466.

51 Poison berry (*bṛhatī*), *Solanum violaceum*, Ortega, and yellow-berried nightshade (*kṣudrā*), *Solanum virginianum*, L. (Singh and Chunekar 1972: 277–278; Sivarajan and Balachandran 1994: 100; Nadkarni 1954: #2329; Warrier et al. 1994–6: 5.151, 164).

52 country sarsaparilla (*anantā*) Hemidesmus indicus, (L.) R. Br. ADPS 434, AVS 3.141–5, NK #1210 and black creeper (*pālindī*) Ichnocarpus frutescens, (L.) R.Br. or Cryptolepis buchanani, Roemer & Schultes AVS 3.141, 3.145, 3.203, NK #1283, #1210, ADPS 434.

53 *Nymphaea stellata*, Willd. GJM 528, IGP 790; Dutt 110, NK #1726. Ḍalhaṇa was aware of this reading 5.2.46 (Su 1938: 566).

The ‘invincible’ ghee

47–49 There is a famous ghee called “Invincible” (*ajeya*). It rapidly destroys all poisons but is itself unconquered. It is prepared with a mash (*kalka*) of the following plants: liquorice, crape jasmine, costus, deodar, peas, Indian madder, cardamom and cherry, cobra’s saffron, water-lily, sugar, embelia, sandalwood, cassia cinnamon, beautyberry, rosha grass, the two turmerics,[54] the two Indian nightshades,[55] Indian sarsaparilla and beggarweed, and country mallow.

Curing the ‘slow-acting’ poison

50–52 Someone suffering from “slow-acting poison (*dūṣīviṣa*)” should be well sweated, and purged both top and bottom. Then he should be made to drink the following eminent antidote which removes “slow-acting poison:”
Take long pepper, rosha grass, spikenard, lodh tree, cardamom, natron, scented pavonia, red chalk, as well as gold, and pondweed
This antitoxin, taken with honey, eliminates slow-acting poison. It is called the “enemy of slow-acting poison (*dūṣīviṣāri*),” and it is not prohibited in other situations.

53–54 If there are any other side-effects (*upadrava*), such as fever, a burning feeling, hiccups, constipation (*ānāha*), depletion of the semen, distension, diarrhoea, fainting, skin problems, bellyache (*jaṭhara*), madness, trembling, then one should treat each one in its own terms, using anti-toxic medicines.

55 For a prudent person, the slow-acting poison can be cured (*sādhya*) immediately. It is treatable (*yāpya*) if it is of a year’s standing. Other than this, it should be avoided for the person who eats unwholesome things.

54 turmeric and Indian barberry.
55 poison berry and yellow-berried nightshade.

Abbreviations

Ah 1939 — Kuṃṭe, Aṇṇā Moreśvara, Navare, Kṛṣṇaśāstrī, and Parādkar, Hariśāstrī (1939) (eds.), श्रीमद्वाग्भटविरचितम् अष्टाङ्गहृदयम्, श्रीमदरुणदत्तविरचितया सर्वाङ्गसुन्दराख्यया व्याख्यया, हेमाद्रिप्रणीतया आयुर्वेदरसायनाह्वया टीकया च समुल्लसितम् = *The Astāngahṛidaya* (6th edn., Muṃbayyām: Nirṇayasāgara Press), ark:/13960/t3tt6967d.

Anup — *Anup Sanskrit Library* (n.d.).

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AS — *Asiatic Society* (n.d.).

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BL — *British Library* (n.d.).

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HIML — Meulenbeld, Gerrit Jan (1999–2002), *A History of Indian Medical Literature*, 5 vols. (Groningen: E. Forsten), ISBN: 9069801248.

KL — *Kaiser Library* (n.d.).

MW — Monier-Williams, Monier, Leumann, E., Cappeller, C., et al. (1899), *A Sanskrit–English Dictionary Etymologically and Philologically Arranged, New Edition* (Oxford: Clarendon Press); 1970 reprint.

NAK — *National Archives of Kathmandu* (n.d.).

NCC — Raghavan, V. et al. (1949–), *New Catalogus Catalogorum, an Alphabetical Register of Sanskrit and Allied Works and Authors*, 39 vols. (Madras University Sanskrit Series; Madras: University of Madras); v.1: revised edition, 1968.

NGMCP — NGMCP (2014), 'Nepal-german Manuscript Cataloguing Project. Online Title List and Descriptive Catalogue', Universität Hamburg and Deutsche Forschungsgemeinschaft, URL.

NK — Nadkarni, K. M. (1982*a*), *Dr. K. M. Nadkarni's Indian Materia Medica, with Ayurvedic, Unani-tibbi, Siddha, Allopathic, Homeopathic, Naturopathic & Home Remedies, Appendices & Indexes ... in Two Volumes*, ed. A. K. Nadkarni, 2 vols. (3 ed., revised and enlarged by A. K. Nadkarni, Bombay: Popular Prakashan), ISBN: 8171541429, URL.

RORI — *Rajasthan Oriental Research Institute* (n.d.).

Su 1889 — Bhaṭṭācāryya, Jīvānanda Vidyāsāgara (1889) (ed.), सुश्रुतः. सूत्र-निदान-शारीर-चिकित्सा-कल्पोत्तर-तन्त्र-कल्पित आयुर्वेद. भगवता धन्वन्तरिणोपदिष्टः सुश्रुतनामधेयेन तच्छिष्येण विरचितः (3rd edn., Calcutta: Saratī Press), ark:/13960/t1nh6j09c; HIML: IB, 311, edition b.

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TMSSML *Tanjore Maharaja Serfoji Saraswati Mahal Library* (n.d.).

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Glossary

Glossary of Medical Substances

beautyberry śyāmā → priyaṅgu. Callicarpa macrophylla, Vahl. See AVS 1.334, NK #420. 15

beggarweed aṃśumatī. Desmodium gangeticum (L.) DC (Dymock 1.428, GJM 602, NK #1192; ADPS 382, 414 and AVS 2.319, 4.366 are confusing) 15

cardamom elā. Elettaria cardamomum, Maton. See AVS 2.360, NK #924, Potter 66. 15

cassia cinnamon patra. Cinnamomum tamala, (Buch.-Ham.) Nees. See AVS 2.84, NK #. 15

cherry elavāluka. Prunus cerasus, L.?. See BVDB 58, NK #2037, Singh and Chunekar 1972: 58. 15

cobra's saffron nāgapuṣpa. = nāgakeśara. Mesua ferrea, L. See NK #1595, Singh and Chunekar 1972: 220 15

costus kuṣṭha. Saussurea costus, Clarke. See NK #2239. 15

country mallow balā. Sida cordifolia, L. See ADPS 71, NK #2297. 15

crape jasmine crape jasmine. Tabernaemontana divaricata (L.) R.Br. ex Roem. & Schultes. See GJM 557, AVS 5.232. 15

deodar bhadradāru. Cedrus deodara, (Roxb.ex D.Don) G. Don. See AVS 41, NK #516. 15

embelia viḍaṅga. Embelia ribes, Burm. f. See ADPS 507, AVS 2.368, NK #929, Potter 113. 15

false daisy (?) (su)bhaṅgura = bhṛṅga? Eclipta prostrata (L.) L. See Singh and Chunekar 1972: 288. 4

gold hema. gold. 15

hogweed punarnavā. Boerhaavia diffusa, L. See ADPS 387, AVS 1.281, NK #363. 14

Indian barberry dāruharidrā. Berberis aristata, DC. See Dymock 1.65, NK #685, GJM 562, IGP 141. 15

Indian madder mañjiṣṭhā. Rubia cordifolia, L. See IGP, GIMP 215, Singh and Chunekar 1972: 289. 15

Indian sarsaparilla sārivā. anantā (Hemidesmus indicus, (L.) R. Br.ADPS 434, AVS 3.141–5, NK #1210) and black creeper (pālindī. Ichnocarpus frutescens, (L.) R.Br. or Cryptolepis buchanani, Roemer & Schultes AVS 3.141, 3.145, 3.203, NK #1283, #1210, ADPS 434). 15

jequirity guñjā. Abrus precatorius, L. See AVS 1.10, NK #6, Potter 168. 4

liquorice (?) klītaka. Glycyrrhiza glabra, L.? Singh and Chunekar 1972: 123–124 discuss the many difficulties in identifying this plant 4

liquorice madhuka. Glycyrrhiza glabra, L. See AVS 3.84, NK #1136. 15

lodh tree lodhra. Symplocos racemosa, Roxb. See GJM 597, ADPS 279f. 15

long pepper pippalī. Piper longum, L. See ADPS 374, NK #1928. 15

natron suvarcikā. Sodium carbonate. NK 2, p. 101. Ḍalhaṇa identifies *suvarcikā* with svarjikṣāra 4.8.50 (Su 1938: 441) 15

peas hareṇu = satīna. Pisum sativum, L. Singh and Chunekar (1972: 419–420, 467–468) notes that two plants are usually meant under this name, but there is no agreement on the identity of the second 14, 15

poison berry bṛhatī. Solanum violaceum, Ortega. See ADPS 100, NK #2329, AVS 5.151. 15

pondweed paripelavā. Normally a neuter noun. Singh and Chunekar (1972: 238, 264–265, 409) argued that *plava* and *śaivāla* are the same thing, and may be either Zannichellia palustris, L., or Potamogeton pectinatus, L. 15

red chalk gairika. 15

rosha grass dhyāmaka. Cymbopogon martinii (Roxb.) Wats. See AVS 2.285, NK #177. 15

sandalwood candana. Santalum album, L. See ADPS 111, NK #2217. 15

scented pavonia bālaka. Pavonia odorata, Willd. See ADPS 498, NK #1822. 15

spikenard māṃsī. Nardostachys grandiflora, DC. See NK #1691. 15

sugar sitā, sugar. Ḍalhaṇa makes this equation at 1.37.25 (Su 1938: 162). 15

sweet-scented oleander aśvamāraka. Nerium oleander, L. See ADPS 223, NK #1709. 4

three heating spices śuṇṭhī (Dried ginger) Zingiber officinale, Roscoe. ADPS 50, NK #2658, AVS 5.435, IGP 1232, pippalī (long pepper) Piper longum, L.ADPS 374, NK #1928, and marica (black pepper) Piper nigrum, L.ADPS 294, NK #1929. 14

turmeric rajanī. Curcuma longa, L. ADPS 169, AVS 2.259, NK #750. 15

water-lily utpala. Nymphaea stellata, Willd. See GJM 528, IGP 790; Dutt 110, NK #1726. 15

yellow-berried nightshade kṣudrā. Solanum virginianum, L. See ADPS 100, NK #2329, AVS 5.164. 15

Appendix

On digital critical editions

- Price, Kenneth M. (2013), 'Electronic Scholarly Editions', in Ray Siemens and Susan Schreibman (eds.), *A Companion to Digital Literary Studies* (Chichester, UK: John Wiley & Sons, Ltd), 434–50. DOI: 10.1002/9781405177504.ch24, URL, accessed 04/07/2021.
  A survey of the field in 2013, with a focus on the presentation of electronic texts rather than on critical editing as such.
- Moureau, Sébastien. (2015), 'The Apparatus Criticus', in Alessandro Bausi et al. (eds.), *Comparative Oriental Manuscript Studies: An Introduction* (Hamburg: Tredition), 348–52, ISBN: 978-3-7323-1768-4, URL, accessed 04/07/2021.
  Useful discussion about the *apparatus criticus* in general, and an evaluation of the plus and minus points of positive and negative apparatuses.
- Burghart, Marjorie (2016), 'The TEI Critical Apparatus Toolbox: Empowering Textual Scholars through Display, Control, and Comparison Features', *Journal of the Text Encoding Initiative*, 10/Issue 10. DOI: 10.4000/jtei.1520, URL, accessed 12/12/2017.
  Discussion of a software tool, including the handling of positive and negative apparatus. Makes the assumption that online displays are notational variants only.
- Burghart, Marjorie (2017), 'Textual Variants', in Marjorie Burghart et al. (eds.), *Digital Editing of Medieval Texts: A Textbook* (DEMM), URL, accessed 04/07/2021.
  Discussion of how to express various kinds of apparatus in TEI.
- Bausi, Alessandro et al. (2015), *Comparative Oriental Manuscript Studies. An Introduction* (Hamburg: Tredition). DOI: 10.5281/ZENODO.46784.
  A huge book that disappointingly says nothing at all about Sanskrit manuscripts. Nevertheless there are many interesting case studies and remarks applicable to the Indian manuscript tradition.

Todo list