A Translation of the Nepalese Text of the *Suśrutasaṃhitā*

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Sūtrasthāna

Sūtrasthāna 1: The Origin of Medical Knowledge

Literature

Meulenbeld offered an annotated overview of this chapter and a bibliography of earlier scholarship to 2002.[1]

Translation

1 Now I shall narrate the chapter on the origin of this knowledge.[2]

2 Now, as is well-known, Aupadhenava, Vaitaraṇa, Aurabhra, Puṣkalāvata, Karavīra, Gopurarakṣita, Bhoja, Suśruta and others addressed Lord Divodāsa, king of Kāśi, the best of the immortals, who was in his ashram surrounded by an entourage of sages.[3]

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1 HIML: IA, 203–204.

2 Ḍalhaṇa understood the word "knowledge (*veda*)" as specifically "medical knowledge." He said that the word "longevity" (*āyur*) had been elided. After this opening statement, later manuscripts and commentaries include the attribution, "as the venerable Dhanvantari stated." The absence of this statement in the early Nepalese manuscripts is highly significant because it removes the outer narrative frame of the *Suśrutasaṃhitā* (Wujastyk 2013*b*: 148; Klebanov 2021*a*: § 3.1.2; Rai 2019; Birch, Wujastyk, Klebanov, Parameswaran, et al. 2021). On the figure of Dhanvatari in medical literature, see HIML: IA 358–361.

3 On these persons, see HIML: IA 361–363, 369 ff. The authority Bhoja does not appear in the list as published in the vulgate edition (Su 1931: 1), and was not included in HIML amongst "authorities mentioned in the *Suśrutasaṃhitā*." Meulenbeld gathered textual evidence about Bhoja at HIML: IA 690–691. Klebanov (2021*b*) has discussed these authors in the context of an anonymous commentary on the *Suśrutasaṃhitā* that cites them.

3 "O Lord, distress arose in our minds after witnessing people thrashing about with cries, assailed by different kinds of pain and injury (*vedanābhighāta*), feeling helpless in spite of having friends, because of diseases arising from the body, the mind and external sources.

4 "To quell the illnesses of those who seek happiness and for our own purpose of prolonging life, we desire the science of life (*āyurveda*) that is being taught. Welfare, both in this world and in the next, depends upon it. Therefore, we have come to the Lord in pupillage."

5 The Lord said to them:
"Welcome to you! My children, all of you are beyond reproach and worthy to be taught.

6 "As is well known, Ayurveda is the name of what is said to be the subsidiary part of the Atharvaveda. Before creating people, Svayambhū composed it in hundreds of thousands of verses and a thousand chapters and, after observing the short lifespan and low intelligence of people, he presented it again in eight parts.[4]

7 "Surgery, treatment of body parts above the clavicle, general medicine, knowledge of spirits, care of children, and the disciplines of antidotes, rejuvenation and aphrodisiacs.

8 "Now, a collection of the characteristics of each component of Āyurveda.

9 "Among them, [the component] called surgery has the goal of extracting various grasses, wood, stone, dust, iron (?), soil, bone, hair, nails, discharge of pus, malignant wounds and foreign bodies inside the womb, and of determining the application of surgical instruments, knives, caustics and fire by means of sixty definitions.

10 "[The component] named the doctrine of treating body parts above the clavicles has the aim of curing diseases situated above clavicles that is, diseases located in ears, eyes, mouth, nose and so on.

11 "[The component] called general medicine has the goal of curing illnesses established in the whole body and [diseases] such as fever, tumour, swelling, hemorrhagic disorders, insanity, epilepsy, urinary diseases, diarrhoea and the like.

12 "[The component] called knowledge of spirits is for appeasing demons by pacification rites and making food offerings for those whose minds

4 Svayambhū is another name for Brahmā, the creator.

have been possessed by gods, their enemies,[5] Gandharvas, Yakṣas, demons, deceased ancestors, Piśācas, Vināyakas, [6] Nāgas and evil spirits that possess children.

13 "[The component] called care of children is for bearing children and purifying defects in a wet-nurse's milk, and curing diseases that have arisen from bad breast milk and demons.

14 "[The component] called the discipline of toxicology is for [knowing] the signs of poison from snake and insect bites and for neutralising various combinations of poisons.[7]

15 "[The component] called the discipline of rejuvenation is maintaining youth, bringing about a long life and mental vigour and for curing diseases.

16 "[The component] called the discipline of aphrodisiacs brings about the increase, purity, accumulation and production of semen for those whose semen is minimal, bad, depleted, and dry [respectively] and for inducing an erection.

17 "Thus, this Āyurveda is taught with eight components."
"Among these [components], tell us which is for whom."

18 They said, "After you have conveyed the knowledge of surgery, teach us everything."

19 He said, "so be it."

20 They then said, "Having considered the view of all of us, when we are unanimous, Suśruta will question you. We too will learn what is being taught to him."

21 He said, "so be it.

22 "Now, as is well-known, the aim of Āyurveda is eliminating the disease of one who have been assailed by disease and protecting the healthy; āyurveda is [that knowledge] in which they find a long life, or that by which long life is known. Learn its best component (i.e., surgery),

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5 Dānavas. The insertion marks (*kākapada*s) below the text at this point appears to be by the original scribe.

6 The vulgate doesn't have *vināyaka*s but does add *asura*s, probably under the influence of Ḍalhaṇa. Cite Paul Courtright, Ganesha book.

7 The scribal insertion marks (crosses) above the line at this point in MS K appear to be in a later hand and their referent is lost in the damaged part of the folio. Although MSS MS Kathmandu NAK 1-1079 and MS Kathmandu NAK 5-333 include spiders (*lūtā*) and creepy-crawlies (*sarīsṛpa*) in the list, it does seem that MS K had a shorter list, and the vulgate edition adds rodents (*mūṣika*).

which is being taught in accordance with tradition, perception, inference and analogy.

23 "For this component is first, the most important, because it is referred to first; it cures wounds and joins together the most important thing, Yajña's head. For, just as it has been said of old, 'the head that had been cut off by Rudra was joined again by the two Aśvins.'

24 "And also, of the eight disciplines of Āyurveda, [surgery] alone is the best because of the quick action of its procedures (*kriyā*), its application of blunt instruments, knives, caustics and fire, and it is common to all disciplines.

25 "Therefore, [surgery] is eternal, meritorious, leads to heaven, brings renown, bestows a long life, and affords a livelihood.

26 "Brahmā said this, 'Prajāpati learned it. From him, the Aśvins. From the Aśvins, Indra. From Indra, I. In this world, I will transmit to those who desire it for the benefit of people.'
[There a verse about this.].[8]

27 *For, I (i.e., Brahmā) am Dhanvantari, the first god, the remover of*
old age, pain and death of mortals.
Having understood surgery, the best of the great knowledge systems,
I arrived on earth again to teach it here.

28 In this context, as far as this discipline is concerned, a human being (*puruṣa*) is called an amalgam of the five elements and the embodied soul. This is where procedures (*kriyā*) apply. This is the locus.
Why?
Because of the duality of the world, the world is twofold: the stationary and the moving. Its nature (*ātmaka*) is twofold, depending on the preponderance of Agni and Soma.[9] Alternatively, it can be considered as being fivefold. The multitude of beings in it are fourfold: they are termed "sweat-born, stone-born, caul-born and egg-born".[10] Where they are concerned, the human being is the main thing; others are his support. Therefore, the human being (*puruṣa*) is the locus.

29 Diseases are said to be the conjunction of the person and suffering (*duḥkha*). There are four of them: invasive, bodily, mental and inherent.

8 This is an expansion of the scribe's abbreviation *bha* for *bhavati cātra ślokaḥ* "There is a verse about this" (sometimes plural).

9 See Wujastyk 2004.

10 This fourfold classification of beings is paralleled with closely-related vocabulary in *Bhelasaṃhitā* 4.4.4 (Bhela 2000: 206; Bhela 1921: 81).

The invasive ones are caused by an injury. The bodily ones are based on food, caused by irregularities (*vaiṣamya*) in wind, bile, phlegm and blood.[11]
The mental (*mānasa*) ones, caused by desire (*icchā*) and hatred (*dveṣa*), include: anger (*krodha*), grief (*āśoka*), misery (*dainya*), overexcitement (*harṣa*), lust (*kāma*), depression (*viṣāda*), envy (*īrṣyā*), jealousy (*asūyā*), malice (*mātsarya*), and greed (*lobha*).
The inherent (*svābhāvika*) ones are hunger, thirst, old age, death, sleep and those of the temperament (*prakṛti*).
These too are located (*adhiṣṭhāna*) in the mind and body.
Scarification (*lekhana*), nourishment (*bṛṃhaṇa*), purification (*saṃśodhana*), pacification (*saṃśamana*), diet (*āhāra*) and regimen (*ācāra*), properly employed, bring about their cure.

30 Furthermore, food is the root (*mūla*) of living beings as well as of strength (*bala*), complexion (*varṇa*) and vital energy (*ojas*). It depends on (*āyatta*) the six flavours (*rasa*). Flavours, furthermore, have substances as their substrate (*āśrayin*). And substances are remedies (*oṣadhī-*).[12] There are two types: stationary (*sthāvara*) and moving (*jaṅgama*).

31 Of these, there are four types of stationary ones: fruit trees (*vanaspati*), flowering trees (*vṛkṣa*), herbs (*oṣadhi*) and shrubs (*vīrudh*).[13] Amongst these, the "fruit trees" have fruit but no flowers.[14] The "flowering trees" have flowers and fruit. The "herbs" die when the fruit is ripe. "Shrubs" put out shoots.

32 As is well known, moving remedies are also of four types: those born in in a caul (*jarāyuja*), those born from eggs (*aṇḍaja*), those born of sweat

11 Note that four humoral substances are assumed here.

12 Pāṇini 6.3.132 provides that the final vowel of the noun *oṣadhi* may be lengthened (→*oṣadhī*) under certain conditions. These conditions require that the word be used in a Vedic mantra and not in the nominative. Neither condition is met in this passage, yet the author uses the form *oṣadhī*. This form is in fact not uncommon in medical literature as well as in epics, purāṇas, smṛtis, and other parts of Sanskrit literature.

13 Ca.sū.1.71–72 also describes these four types of medicinal plant in similar terms but with slightly differing names: *oṣadhi* is a plant that ends after fruiting, *vīrudh* is a plant that branches out, *vanaspati* is a tree with fruit, and *vānaspatya* is a tree with fruit and flowers.

14 The MSS agree in reading *phalavantyaḥ* "having flowers" which is grammatically non-standard. This form is also found in the *Viṣṇudharmottarapurāṇa* (1.92.27, 1.92.27 Viṣṇudh.: 56r).

(*svedaja*), and shoots (*udbhid*). Amongst these, those born in a caul include animals (*paśu*), humans, and wild animals (*vyāla*). Birds, creepy-crawlies (*sarīsṛpa*) and snakes are "born of eggs." Worms (*kṛmi*), small insects (*kunta*) and ants (*pipīlika*) and others are born of sweat.[15] Shoots include red velvet mites (*indragopa*) and frogs (*maṇḍūka*).[16]|

33 In this context, among the stationary remedies, skin (*tvak*), leaves (*patra*), flowers (*puṣpa*), fruits (*phala*), roots (*mūla*), bulbs (*kanda*), sap (*kṣīra*), resin (*niryāsa*), essence (*sāra*), oil (*sneha*), and juice extract (*svarasa*)[17] are useful; among the moving remedies pelt (*carman*), hair, nails, and blood (*rudhira*) and so forth.

34 And earth products (*pārthiva*) include gold and silver.[18]

35 The items created by time (*kālakṛta*) are clusters (*samplava*) as far as wind and no wind (*nivāta*), heat and shade, darkness and light and the cold, hot and rainy seasons (*varṣā*) are concerned. The divisions of time are the blink of the eye (*nimeṣa*), a trice (*kāṣṭhā*), minutes (*kalā*), three-quarters of an hour (*muhūrta*), a day and night (*ahorātra*), a fortnight (*pakṣa*), a month (*māsa*), a season (*ṛtu*), a half-year (*ayana*), a year (*saṃvatsara*), and yuga (*yuga*).[19]

36 These naturally cause accumulation (*sañcaya*), irritation (*prakopa*), pacification (*upaśama*) and alleviation (*pratīkāra*) of the humours (*doṣa*). And they have practical purposes (*prayojanavat*).

[There are verses about this:][20]

37 *This fourfold category is taught by physicians as a cause for the agitation and quelling of bodily diseases.*[21]

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15 The word *kunta*, though marked as "lexical" in most dictionaries, is in fact found in literature, commonly as a compound with *pipīlika*; the compound sometimes seems to be understood a type of ant (*tatpuruṣa* compound) rather than as a pair of insects (*dvandva* compound).

16 On *indragopa*, see Lienhard 1978.

17 On juice extract (*svarasa*) see CS 1.1.73, 1.4.7; Ḍalhaṇa on 4.10.12 (Su 1938: 450).

18 The flow of concepts in the treatise seems to be interrupted here.

19 These units are presented at 1.6.5 (Su 1938: 24) and discussed by Hayashi (2017: § 59).

20 See footnote 8.

21 On the topic of the "group of four," the commentator Ḍalhaṇa considers them to be "food, behaviour, earthen products and items created by time." He refers to the author of the lost commentary entitled *Pañjikā*, and to Jejjaṭa (HIML: IA, 372–3, 192). In his view, these early commentators do not agree that the fourfold grouping (*caturvarga*) refers to the quartet of stationary (*sthāvara*), moving (*jaṅgama*), earthen products (*pārthiva*) and items created by time (*kālakṛta*) (Su 1938: 9a).

38 *There are two kinds of invasive diseases. Some certainly*[22] *affect* (ni$\sqrt{}$ pat) *the mind, others the body. Their treatment* (kriyā) *is of two kinds too.*

39 *For those that affect the body there is physical* (śārīravad) *therapy, whereas for those that affect the mind there is the collection* (varga) *of desirable sensory experiences like sound that bring comfort* (sukha).

40 Along these lines (*evam*), this brief explanation of the four factors (*catuṣtaya*) is given:

- human being (*puruṣa*),
- disease (*vyadhi*),
- remedies (*oṣadhi*),
- the time for therapies (*kriyākāla*).

In this context,

- from the mention of the word "human," the collection of substances that arise from it, such as the elements, and the particulars (*vikalpa*) of its major and minor parts (*aṅga*) such as skin (*tvak*), flesh (*māṃsa*), ducts (*sirā*), sinews (*snāyu*), bones (*asthi*) and joints (*sandhi*) are meant.
- From the mention of "diseases," all diseases caused by wind, bile, phlegm, congested humours (*sannipāta*), external factors (*āgantu*) and inherent factors (*svabhāva*) are intended (*vyākhyāta*).
- From the mention of "remedies," there is the teaching of substances, tastes, potencies, post-digestive tastes.
- From the mention of "procedures (*kriyā*)," therapies (*karman*) such as oiling and excision (*chedya*) are taught.
- From the mention of the word "time," every single teaching about the times for procedures is meant.

[There is a verse about this:][23]

41 *This seed of medicine has been declared in brief. Its explanation will be given in one hundred and twenty chapters.*[24]

22 The text uses an archaic interjection here, *ha*.

23 See footnote 8.

24 This is the number of chapters in the first five sections of the work, namely the *Sūtra-, Nidāna-, Śārīra-, Cikitsā-* and *Kalpa-sthāna*s. These have 46, 16, 10, 40 and 8 chapters respectively. The *Uttaratantra* has 66 chapters.

42 There are one hundred and twenty chapters in five sections (*adhyāya*).[25] In that regard, having divided them, according to their subject matter, into the Ślokasthāna, the Nidāna, the Śārīra, the Cikitsita and the Kalpa, we shall mention this in the Uttaratantra.[26]

[There is a verse about this:][27]

43 *Someone who reads this eternal proclamation of the King of Kāśī, that was declared by Svayambhu, will have good karma on earth, will be respected by kings and upon death will achieve the world of Śakra.*

25 On *viṃśa* in the sense of "greater by 20" see P.5.2.46 *śadantaviṃśateś ca*.

26 The end of this sentence reads oddly. The vulgate edition adds an object: "[we shall mention] the remaining topics [in the Uttara]" which smooths out the difficulty, but this is supported in none of the Nepalese MSS. At the start of the Uttaratantra (Su 1938: 1.3–4ab) there is indeed a statement that picks up the point about there being 120 chapters.

27 See footnote 8.

Sūtrasthāna 2: The Initiation of a Student

Literature

HIML: IA, 204; Preisendanz 2007; Wujastyk 2012: 82–83, *et passim*.

Translation

1

Sūtrasthāna 13: On Leeches

Literature

Meulenbeld offered an annotated overview of this chapter and a bibliography of studies on Indian leeches and their application.[28]

A Persian version of this chapter of the *Suśrutasaṃhitā* was included in *Sikandar Shāh's Mine of Medicine* (*Ma'din al-shifā' i Sikandar-Shāhī*) composed in 1512 by Miyān Bhūwah b. Khawāṣṣ Khān.[29]

More recently, Brooks has explored the sense of touch in relation to leeching and patient-physician interactions.[30]

Translation

1 And now we shall explain the chapter about leeches.

3 The leech is for the benefit of kings, rich people, delicate people, children, the elderly, fearful people and women. It is said to be the most gentle means for letting blood.

4 In that context, one should let blood that is corrupted by wind, bile or phlegm with a horn, a leech, or a gourd, respectively. Or, each kind can be be made to flow by any of them in their particular way.[31]

28 HIML: IA, 209; IB, 324, n. 131.

29 Siddiqi 1959: 96–109; Azeez Pasha 1971; Storey 1971: 231–232; HIML: IB, 324, n. 128; Speziale 2019: 8–9.

30 Brooks 2020*a*,*b*; 2021*a*,*b*.

31 This sentence is hard to construe grammatically, although its meaning seems clear. In place of विशेषस्तु, Cakrapāṇidatta and Ḍalhaṇa both read विशेषतस्, which helps interpretation (Su 1939: 95, Su 1938: 55). It is notworthy that the critical syllable स्तु is smudged or corrected in both MS Kathmandu NAK 1-1079 and in 1-1146, a much later Devanāgarī manuscript.

5x And there are the following about this:

1.13.5 The horn of cows is praised for being unctuous, smooth, and very sweet. Therefore, when wind is troubled, that is good for bloodletting.[32]

1.13.5a Having a length of seven fingers and a large body the shape of a half moon, should first be placed into a cut. A strong person should suck with the mouth.[33]

6 A leech lives in the cold, is sweet and is born in the water. So when someone is afflicted by bile, they are suitable for bloodletting.[34]

7 A gourd is well known for being pungent, dry and sharp. So when someone is afficted by phlegm it is suitable for bloodletting.

8 In that context, at the scarified location one should let blood using a horn wrapped in a covering of a thin bladder, or with a gourd with a flame inside it because of the suction.[35]

9 Leeches are called "*jala-ayu-ka*" because water (*jala*) is their life (*āyur*).[36] "Home" (*okas*) means "dwelling;" their home is water, so they are called "water-dwellers (*jalaukas*)."

10 There are twelve of them: six are venomous and just the same number are non-venomous.

There is an insertion in the text, printed in parentheses in the vulgate at 1.13.4 (Su 1938: 55) as विशेषतस्तु विस्राव्यं शृङ्गजलौकालाबुभिर्गृह्णीयात्. This insertion is not included in the earlier edition of the vulgate, but is replaced by स्निग्धशीतरूक्षत्वात् (Su 1931: 54). Ḍalhaṇa noted that, "this reading is discussed to some extent by some compilers (**निबन्धकार**), but it is definitely rejected by most of them, including Jejjhaṭa."

32 The vulgate replaced "smooth" with "hot."

33 This passage is not found in the vulgate, but it is similar to the passage cited by Ḍalhaṇa at 1.13.8 (Su 1938: 56) and attributed to Bhāluki. Bhāluki was the author of a *Bhālukitantra* that may have predated Jejjaṭa and might even have been one of the sources for the *Suśrutasaṃhitā* (HIML: IA, 689–690 *et passim*). The editor Ācārya was aware of this reading in the Nepalese manuscripts; see his note 4 on 1.13.5 (Su 1938: 55, note 4).

34 Note that the particular qualities (*guṇa*s) of the leech in this and the following verses counteract the quality of the affliction. See Brooks 2018: 113, table 1.

35 There are questions about the wrapping or covering of the horn. Other versions of the text, and the commentator, propose that there may be two coverings, or that cloth may be a constituent. Comparison with contemporary horn-bloodletting practice by traditional Sudanese healers suggests that a covering over the top hole in the horn is desirable when sucking, to prevent the patient's blood entering the mouth (PBS 2020). Our understanding of this verse is that the bladder material is used to cover the mouthpiece and then to block it, in order to preserve suction in the horn for a few minutes while the blood is let.

36 This is a folk etymology.

11 Here is an explanation of the venomous ones, together with the therapy:

- Black (*kṛṣṇā*)
- Mottled (*karburā*)
- Sting-gush (*alagarddā*)[37]
- Rainbow (*indrāyudhā*)
- Oceanic (*sāmudrikā*)
- Cow-praising (*govandanā*)[38]

Amongst these,

- The one called a Black is the colour of kohl and has a broad head;
- The one called Mottled is like the Indian mottled eel, long with a segmented (*chinna*), humped belly.
- The one called Sting-gush is hairy, has large sides and a black mouth.
- The one called Rainbow is coloured like a rainbow, with vertical stripes.
- The one called Oceanic is slightly blackish-yellow, and is covered with variegated flower patterns.
- The one called Govandana is like a cow's testicles, having a bifurcated form on the lower side, and a tiny mouth.

When someone is bitten by them, the symptoms are: a swelling at the site of the bite, excessive itching and fainting, fever, a temperature, and vomiting. In that context the Great Antidote (*mahāgada*) should be applied in drinks and liniments (*ālepana*), etc.[39] A bite by the Rainbow leech is not treatable. These venomous ones have been explained together with their remedies.

12 Now the ones without venom.[40]

- Tawny (*kapilā*)
- Ruddy (*piṅgalā*)

37 Treating गर्दा as गल्दा and translating as in RV 8.1.20, with Jamison and Brereton (2014: 1023, verse 20 and cf. commentary). But if गर्द is to be taken from √गर्द् then we might have "crying from the sting."

38 The manuscripts all read गोवन्दना against the vulgate's गोचन्दना.

39 The "Great Antidote" is described in the Kalpasthāna, at 5.5.61–63ab (Su 1938: 578). Ḍalhaṇa and the vulgate included errhines in the list of therapies, and Ḍalhaṇa added that "etc." indicated showers and baths too.

40 The translations of the names of these leeches are slightly whimsical, but give a sense of the original; *sāvarikā* remains etymologically puzzling.

- Dart-mouth (*śaṅkumukhī*)
- Mouse (*mūṣikā*)
- Lotus-mouth (*puṇḍarīkamukhī*)
- Sāvarikā (*sāvarikā*)

Amongst these,

- The one called Tawny has sides that look as if they are dyed with realgar and is the colour of glossy mung beans on the back.[41]
- The one called Ruddy is a bit red, has a round body, is yellowish, and moves fast.
- The one called Dart-mouth is the colour of liver, drinks fast and has a long mouth.
- The one called Mouse is the colour and shape of a mouse and has an undesirable smell.
- The one called Lotus is the colour of mung beans and has a mouth that looks like a lotus.
- The one called Sāvarikā has the colour of a lotus leaf and is eighteen centimetres long. But that one is used when the purpose is an animal.

The non-venomous ones have been explained.

13 Their lands are Yavana, Pāṇḍya, Sahya, Potana and so on.[42] Those in

41 The compound स्निग्धमुद्ववर्ण्णा is supported by all the manuscript witnesses and is translated here. Nevertheless, the reading of the vulgate, that separates स्निग्धा, f., "slimy" as an adjective for the leech, seems more plausible: "it is slimy and the colour of a mung bean."

42 This passage is discussed by Karttunen (2015: 109–110, 388–389). At the time of the composition of the *Suśrutasaṃhitā*, Yavana would most likely have referred the Hellenistic Greek diaspora communities in Bactria and India (Law 1984: 136–137; Mairs 2013; 2014). Unproblematically, the Pāṇḍya country is the extreme south-eastern tip of the Indian subcontinent (Schwartzberg, Bajpai, et al. 1978: E8, p. 20 *et passim*), and Sahya refers to the Western Ghats (Schwartzberg, Bajpai, et al. 1978: D5–7, p. 20 *et passim*). The vulgate reading "Pautana" is not a known toponymn. Potana was the ancient capital of the Aśmaka Mahājanapada mentioned in Pali sources and in inscriptions at Ajāntā and elsewhere, and identified by Law (1984: 142, 179) and P. Gupta (1989: 18) with Pratiṣṭhāna, modern Paithan on the Godavari river. The recurring ancient epithet describing the Aśmaka kingdom is that it was on the Godāvarī, and Paithan is flanked to the south west and south east by this river.
Some scholars have identified the name with modern Bodhan in Telangana (Sircar 1971: 189; Schwartzberg, Bajpai, et al. 1978: E6, p. 14, 140 *et passim*; Sen 1988: 102), but this implausible identification is traceable to a speculative suggestion by

particular have large bodies and are strong, they drink rapidly, consume a lot, and are without venom.

14 In that context, the venomous leeches are those originating in decomposing venomous insects, frogs, urine, feces and in polluted water.[43] The , non-venomous ones originate in decomposing sacred lotus, blue water-lily, white water-lily, fragrant lotus, pondweed and in pure waters.

15 There is a verse on this:

> *These ones move about in sweet-smelling habitats that are abundant with water. Traditionally, they do not behave in a confused manner or lie in the mud.*[44]

16 They can be caught with a fresh hide or after being caught in other ways.[45]

17 Then these should be put into a large new pot furnished with mud and the water from lakes or wells. One should provide what they need to eat. One should grind up pondweed, dried meat, and aquatic tubers, and one should give them grass and aquatic leaves to lie on, and every

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Raychaudhuri (1953: 89, n. 5, 143) based on a variant form "Podana" found in some early manuscripts of the *Mahābhārata*: "This name reminds one of Bodhan in the Nizam's dominions," "possibly to be identified with Bodhan."
Ḍalhaṇa on 1.13.13 (Su 1938: 57) anachronistically identified "Yavana" as the land of the Turks (तुरुष्क) and "Pautana" as the Mathurā region. He also noted, as did Cakrapāṇidatta (Su 1939: 97), that this passage was not included by some authorities on the grounds that the habitats of poisonous and non-poisonous creatures are defined by other criteria.

43 The vulgate on 4.13.14 (Su 1938: 57) includes fish in this list.

44 Ḍalhaṇa on 1.13.14 (Su 1938: 57) discussed why the leeches would not "behave in a confused manner" (सङ्कीर्णचारिन्), saying that they do not "eat a diet that is unwholesome because of poison etc." (विषादिविरुद्धाहारभुजः). The use of विरुद्ध is odd here, but cf. Ḍalhaṇa's suggestion at 4.23.4 (Su 1938: 485) that विरुद्ध refers to the chapter on wholesome and unwholesome foods (हिताहिताध्याय, 1.20 (Su 1938: 94–99)).

45 "Fresh hide" (आर्द्रचर्मन्) may suggest that the animal skin still includes meat or blood that is attractive to a leech.
The Nepalese witnesses all read गृहीत्वा "having (been) caught" for the vulgate's गृह्णीयात् "one may grasp (by other means)." This is hard to construe clearly.
Ḍalhaṇa on 1.13.15 (Su 1938: 57) quoted "another treatise" (तन्त्रान्तरवचनात्) that said that autumn is the time to collect leeches. He also explained that "other methods" of collecting leeches included smearing a leg or other limb with cream, butter or milk, etc., or using a piece of flesh from a freshly killed animal.

three days water and food. Every week, one should transfer them into a different pot.

18 And on this:

> *One should not nurture those that are thick in the middle, that are injured,*[46] *or thin, those that are not born in the proper habitat, those that will not attach, that drink little or those that are venomous.*

19 First of all, get the patient who has an ailment that is treatable by leech-bloodletting to sit or lie down. Then, dry any diseased opening with powders of earth and cow-dung. Then make them free from impurities, with their bodies smeared with Indian mustard and turmeric and moving about in the middle of a cup of water. After all this, the physician should make them attach to the site of the ailment. Now, for those that are not attaching, he should provide a drop of milk or a drop of blood. Alternatively, one should make some śastrapada (*marks with a knife*).[47] And if it still will not attach, make other ones attach.

20 He can know that it is attached when it fixes on, hunching its neck and making a mouth like a horse's hoof. Then, he should cover it with a wet cloth and keep it there.

21 Now, if the physician knows, from the arising of pricking and itching at the bite, that clean blood is being taken, he should take it off. Then, if it does not release because of the scent of blood one should sprinkle its mouth with powdered rock salt.

22 Then he should coat it with rice-grain chaff, rub its mouth with sesame oil and salt and cause it to vomit by holding its tail in his left hand and very slowly rubbing it with the thumb and finger of his right hand in the proper direction, as far as the mouth, until it is properly purged.[48] A properly purged leech placed in a goblet of water moves about, wanting to eat. If it sinks down, not moving, it is badly purged; one should make it vomit once again.

A badly purged leech develops an incurable disease called Indrapada.[49]

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46 *Pace* Ḍalhaṇa on 1.13.18 (Su 1938: 57) who glossed अमनोज्ञदर्शन as "nasty looking."

47 On पद as a "mark," "imprint," or "place of application," cf. 4.1.29 (Su 1938: 399), 5.4.15 (Su 1938: 571), etc. See footnote 286.

48 The expression शालितण्डुलकाण्डन, "rice-grain chaff" could be read as "unhusked rice, rice grains and chaff" but this seems unlikely in the context.

49 The Nepalese witnesses read इन्द्रपद/इन्द्रापद, but the vulgate reads इन्द्रमद, a term that is found in other texts such as the *Mānasollāsa* 6.641 (vol. 1, 87), where it is a fever

One that protects its deflated head with its body, suddenly curls up and makes the water warm is traditionally said to have Indrapada.
Thus, one should keep such a one as before.[50]

23 After observing the proper or improper flow of the blood, one should rub the opening made by the leech with honey.[51] Alternatively, one may bind it up and smear it with ointments that are astringent, sweet, oily and cold.

24 And about this there is the following:

> *When the leeches have just drunk, one should pour ghee on it. And one should pour on to the blood things that are capable of stopping the blood.*

25 > *Someone who knows habitats, the capture, feeding and bloodletting of leeches is worthy to treat a king.*

affecting fish, and the *Garuḍapurāṇa* 1.147.3 (tr. A Board of Scholars 1957: 2, 425) where it is fever affecting clouds; see further Brooks forthcoming.

50 The vulgate includes "well purged" as the object in this sentence, which makes better sense.

51 In the Nepalese witnesses, the object of this passage is जलौकामुखम् "the mouth of the leech," that we have interpreted, perhaps freely, as "opening made by the leech." Logically and as transmitted in the vulgate, this passage should be about managing the wound on the patient that has been made by the leech.

Sūtrasthāna 14: On Blood

Previous scholarship

Meulenbeld offered both an annotated summary of this chapter as well as a study specifically on the place of blood in Ayurvedic theory.[52]

Translation

1 Now we shall explain the chapter about blood.

3 Food is of four types.[53] It is endowed with six tastes and is made of the five elements.[54] It has either two or eight potencies, and is endowed with many qualities. [55] Chyle (**रस**) is the most intangible essence of this food that is properly transformed. It is of the nature of fire.

Chyle is situated in the heart. From the heart, it enters into the twenty-four arteries—ten upward arteries, ten downward, and four sideways—and doing so day after day owing to the reaction of past

52 HIML: IA, 209–210 and Meulenbeld 1991. Meulenbeld's footnotes on this chapter in Meulenbeld (HIML: IB, 325 ff.) refer often to "Hoernle's note." This appears to be a reference to Hoernle's copious notes to his translation of this chapter (Hoernle 1897: 87–98). Meulenbeld (1990) discussed Sanskrit veterinary texts in the light of their standard theory of four humours, including blood.

53 Ḍalhaṇa on 1.14.3 (Su 1938: 59) said that the four types of food refer to eatable, breakable, chewable, lickable, and drinkable (**पेयलेह्यभोज्यभक्ष्य**). The main text of the *Carakasaṃhitā* is explicit about these categories, 4.3.4(1) (Ca 1941: 308): **पानाशनभक्ष्यलेह्य**। "things drunk, eaten, chewed or licked." On the distinction of **भक्ष्य**/**भोज्य**, see Yagi 1994; for further background on foods, see Olivelle 2001.

54 *Idem*, Earth, water, fire, air, space

55 Ḍalhaṇa related these qualities to the twenty standard **गुण** of āyurveda; see, e.g., their listing by Vāgbhaṭa, translated by Wujastyk (2003*b*: 207).

activities that are caused by the invisible,[56] it satisfies the entire body, enlivens it, prolongs it,[57] and makes it grow. The motion of the entity that flows throughout the body should be understood by inference. That motion causes deterioration and growth.
With regards to the chyle that flows through all the limbs, humours, body tissues, and impurities of the body, the question arises, "Is it moist or is it fiery?" It is understood to be moist because of its fluidity while flowing[58] and due to attributes such as mobility, lubrication, enlivening, satisfaction, and supporting.[59]

4 That watery chyle is then reddened after reaching the liver and spleen.

5 There are verses about this.

> *Experts know that blood is the untransformed fluid that is reddened by the pure fire element within the bodies of living beings.*

6 > *It is only due to chyle that women's blood called menses exists. It increases from the twelfth year and decreases after the fiftieth year.*

7 The menstrual blood, however, is called fiery.[60] That is due to the embryo being fiery and moist.

8 Others state the embryo as constituted of the five elements and the preceptors call it the living blood.

9 There are verses about this.

> *That is because blood exhibits the qualities of earth, etc. such as a fleshy smell, fluidity, redness, pulsation and thinness.*

10 > *Blood is formed from chyle, flesh from blood, lymph from flesh, bone from lymph, marrow from bone, semen from marrow, and progeny from semen.*

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56 अदृष्ट (unseen): Doing any righteous or unrighteous action produces good merit and demerit respectively. This good merit and demerit are called अदृष्ट (invisible) because it cannot be directly known but can only be assumed through logical deduction.

57 In the sense of prolonging its lifespan

58 The vulgate emends अनुसरणे to अनुसरण- against the Nepalese MSS. This is logical because mobility would seem to be one of the attributes. Although it is awkward, we read अनुसरणे as a locative absolute "while flowing."

59 The duality being discussed here is that of the essential qualities of Fire and of Soma (*agni* and *soma*). See further discussion by Wujastyk (2004) and Angermeier (2021).

60 Ḍalhaṇa comments that this is to distinguish the menstrual blood from regular blood that is gentle.

11 There, the essence (chyle) of food and drink is the nourisher of these body tissues.

12 There is a verse about this.

> *A living being should be known as born from chyle. One should diligently preserve*[61] *chyle by administering food and drink, being nicely disciplined with food*[62].

13 The verbal root *rasa* means movement.[63] Because it keeps moving day after day, it is called *rasa* (chyle).[64]

14 Chyle stays in every body tissue for 2548 ((25*100)+48) *kalās* and nine *kāṣṭhas*. As such, it becomes semen after a month. For women, it becomes menses.

15 There are verses about this.

> *According to similar and dissimilar treatises, the quantity of* kalās *in this group*[65] *is 18,090.*
>
> *This is the particular transformation period regarding chyle that lasts for a person with mild fire*[66]*. For a person with developed fire, one should know it to last for the exact same time*[67].

16 Resembling the expanse of sound, flame, and water, that entity moves along in a minute manner throughout the entire body[68].

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61 All three manuscripts have **रक्षेत** which is an incorrect form. **रक्षेत्** is the correct form.

62 **आहारेण** - The third case is used. The semantic property of the third case used here is unclear. Unclear regarding if there is any rule in the *Aṣṭādhyāyī* justifying this usage.

63 **kunj-1907**

64 In the list of verbal roots of Pāṇini, the verbal root **रस**(*rasa*) means taste and moistening. It does not mean movement.

65 duration of chyle in all the body tissues as a whole

66 Perhaps this refers to the digestive fire.

67 Although the vulgate does not have this verse, there is an argument presented in Ḍalhaṇa's commentary (Su 1938: 63) to Ch. 14 text no. 16 that for a person with intense fire, chyle becomes semen after eight days, and for a person with mild fire, chyle becomes semen after a month. Ḍalhaṇa says that this opinion is refuted by Gayadāsa Ācārya in many different ways. Ḍalhaṇa then says that the proper understanding is that for a person with a strong fire, chyle becomes blood in a little less than a month, and for a person with a mild fire, chyle becomes blood in a little more than a month

68 Ḍalhaṇa comments (Su 1938: 63) that the expanse of sound indicates the sideways movement of chyle, the expanse of flame indicates the upward movement of chyle, and the expanse of water indicates the downward movement of chyle.

17 The aphrodisiac medicines, however, being used like a purgative due to their excessively strong characteristics, evacuate the semen.

18 Just as it cannot be said that the fragrance in a flower bud is present in it or not, but accepting that there is the manifestation of existing entities[69], it,[70] however, is not experienced only due to its intangibility. That same entity is experienced at another time in the blossomed flower. In the same way regarding children also, the manifestation of semen happens because of the advancement of age[71]. For women, the manifestation is different as rows of hair, menses, etc.

19 That very essence of food does not nourish very old people due to their decaying bodies.

20 These entities are called body tissues (*dhātu-s*) because they bear the body[72].

21 Their decay and growth are due to blood. Therefore, I will speak about blood. In that regard: The blood that is foamy, tawny, black, rough, thin, quick-moving, and non-coagulating is vitiated by air. The blood that is dark green, yellow, green, brown, sour-smelling, and unpleasant to ants and flies is vitiated by bile. The blood that is orange, unctuous, cool, dense, slimy, flowing, and resembling the colour of flesh-muscles is vitiated by phlegm. The blood having all these characteristics is vitiated by the combination of all three of them. The blood that is extremely black is vitiated by blood[73] just as bile. The blood that has the combined characteristics of vitiations of two humours is vitiated by two humours.

22 The blood that is of the colour of insect cochineal, not thick, and not discoloured should be understood to be in its natural state.

23 I will speak of the types of blood that should be let out in another section.

24 Now, I speak of those that should not be let out. The swelling appearing

69 This is the doctrine of pre-existence of the effect (सत्कार्यवाद, *satkāryavāda*) first propounded by Sāṅkhya philosophers.

70 fragrance

71 Since chyle becomes semen in a month's time, a question arises "Why then is semen absent in young children?". The reply is given in this passage.

72 The etymological meaning of the Sanskrit word धातु (*dhātu*) is "that which bears [the body]". Thus, the body tissues are called *dhātu-s* because they bear the body. This means that the body tissues are the elements that make up the body and sustain it.

73 Y. T. Ācārya and N. R. Ācārya (Su 1938: 64) quote Cakrapāṇidatta in a footnote: "This is the symptom when the blood vitiated in one part of the body vitiates the blood in another part."

in all the limbs of the body of a weak person that happens due to consuming sour food. The swellings of people with jaundice, piles, large abdomen, emaciation, and those of pregnant women.

26 In that regard, one should quickly insert the surgical instrument that is simple, not very close, fine, uniform, not deep, and not shallow.

26a One should not insert the instrument into the heart, lower belly, anus, navel, waist, groins, eyes, forehead, palms, and soles.

26b In the case of swellings filled with pus, one should treat them in the same way as stated earlier.

27-27a There, when the swelling is not pierced properly, when phlegm and air have not been sweated out, after having a meal, and due to thickness, the blood does not ooze out or oozes out less. Here is a verse regarding it.

28ab-cd *Blood does not ooze out of humans when in contact with air, passing stool or urine, and when intoxicated, unconscious, fatigued, sleeping, or in cold surroundings.*

29 That vitiated blood when not taken out increases the disease.

30 The blood that is let by an ignorant physician in cases of very hot surroundings, profuse perspiration, and excessive piercing, flows excessively. That profuse bleeding causes the appearance of acute headache, blindness, and partial blindness, or it quickly causes subsequent wasting, convulsions, tremors, hemiplegia, paralysis in a limb, hiccups, coughing, panting, jaundice, or death.

31ab-cd The physician should let out the blood when the weather is not very hot or cold, when the patient is not perspiring or heated up, and after the patient has had a sufficient intake of gruel.

32ab-cd After coming out properly, when the blood stops automatically, one should know that blood to be pure and drained properly.

33ab-cd The symptoms of the proper drainage of blood are the experience of lightness, alleviation of pain, a complete end of the intensity of the disease, and satisfaction of the mind.

34ab-cd Defects of the skin, tumours, swellings, and all diseases caused by blood never arise for those who regularly drain their blood.

35 When the blood does not flow out, the physician should rub cardamom and camphor on the opening of the boil with three or four or all among crêpe ginger (Cheilocostus speciosus), butterfly gardenia (Ervatamia coronaria Stapf), *pāṭhā* (Stephania Hernandifolia), *bhadradāru* (Pinus deodora), *viḍaṅga* (Embelia ribes), *citraka* (Plumbago zeylanica), the

three spices (black pepper, long pepper, and dry ginger), *āgāradhūma*, turmeric, sprouts of *arka* (Calotropis gigantea), and fruit of the *naktamāla* (Pongomia glabra), according to availability, with excessive salt. By doing so, the blood flows out properly.

36 When there is an excessive flow of blood, the physician should sprinkle the opening of the boil with dry powders of *lodhra* (Symplocos Racemosa), liquorice, *priyaṅgu*, *pattāṅga*, red chalk, *rasāñjana*, seashell, barley, *māṣa*, wheat, and resin of the Sāla tree, and then press it with the tip of a finger. One should tightly bind it with powdered barks of Sāla, *sarja*, *arjuna*, *arimeda* (Sweet acacia), *granthi*, *dhava* (Anogeissus latifolia), and *dhanvana* (Camelthorn), or a linen cloth[74], or *vadhyāsita*, or bone of cuttlefish, or powdered lac, along with the binding materials mentioned. After the piercing, the physician should pierce it again. The physician should serve cool clothing, food, a dwelling place, a bath, cooling ointments, and plastering. Or, one can cauterize[75] it with heat. Or, as mentioned, one should give a decoction of *kākolī*, etc. sweetened by sugar and honey to drink. Or, one should consume the blood of black buck, deer, ram, buffalo, rabbit, or pig, accompanied by milk, green gram soup and meat soup[76]. The physician should treat the pains as mentioned.

36a Here are verses in this regard.

37ab-cd *When blood flows out due to the decay of body tissue, fire becomes weak[77] and the wind becomes highly agitated because of that endeavour.*

38ab-cd *The physician should serve the patient food that is not very cold, light in digestion, unctuous, increases blood, slightly sour or not sour at all.*

39ab-cd *This is the four-fold method of hindering blood: joining, coagulation, haemostasis[78], and cauterization.*

40ab-cd *The astringent substance joins the opening, the cold substance co-*

74 Su 1938: 66 has क्षौमेण वा ध्मापितेन - "with linen reduced to ashes". Presumably, it is this ash that is also referred to in item 40.

75 Cauterization: The use of heat to destroy tissues or close minute bleeding vessels.(Reference: https://medical-dictionary.thefreedictionary.com/cauterization)

76 Based on Ḍalhaṇa's comment as found in Su 1938: 66

77 This refers to the digestive fire.

78 Deliberate arrest of bleeding by local compression or clamping of bleeding vessels...(Reference: https://medical-dictionary.thefreedictionary.com/haemostasis)

agulates the blood, the ash stops the blood, and cauterization contracts the blood vessel.

41ab-cd *If the blood does not coagulate, the physician should employ joining. If the blood does not stop by joining the opening then he should employ haemostasis.*

42ab-cd *The physician should endeavour by employing these three methods according to the procedure. If these methods are unsuccessful then cauterization is highly desirable.*

43ab-cd *If the blood remains impure, the disease does not aggravate. The physician should then make the blood pure*[79] *and not drain blood in excess.*

44ab-cd *Blood is the basis of the body. It is sustained by blood only.*

44ef *Blood is called life. One should therefore save blood.*

45ab-cd *If the air in the person who underwent blood-letting is aggravated due to a cold shower, etc., the swelling with pricking pain should be sprinkled with lukewarm clarified butter.*

79 Ḍalhaṇa comments (Su 1938: 66) that one should purify the blood again by sedation, etc.

Sūtrasthāna 16: Repairing Pierced Ears

Previous literature

Meulenbeld offered an annotated overview of this chapter and a bibliography of earlier scholarship to 2002.[80] A book on this topic, arising out of the present project, with edition, translation and discussion of the Nepalese transmission is published by Wujastyk, Birch, Klebanov, et al. 2023.

Translation

1 Now we shall expound the method for piercing the ear.[81]

80 HIML: IA, 211–212317.

81 The topic of piercing the ear (कर्णव्यध) is not discussed in the *Carakasaṃhitā* (HIML: IB, 326, n. 175), but it is mentioned in some texts that followed the *Suśrutasaṃhitā*, such as the *Kaśāpyasaṃhitā* (HIML: IIA, 30). Also, the instrument for piercing the ear is described in the *Aṣṭāṅgahṛdayasaṃhitā* 1.26.26 (Ah 1939: 321). In the versions of the text known to Ḍalhaṇa (Su 1938: 76) and Cakrapāṇidatta (Su 1939: 125), the heading of this chapter is "the method of piercing and joining the ear" (कर्णव्यधबन्धविधि), instead of the Nepalese version's "the method of piercing the ear" (कर्णव्यधविधि). The topic of joining the ear (कर्णबन्ध) is discussed in passages 17–20 of the Nepalese version. However, it appears that only subsequent redactors reflected its importance by including it in chapter headings.
The Nepalese version also omits the opening remark on Dhanvantari that appears in subsequent versions of the text. For a discussion of the frame story in the Nepalese version, see Birch, Wujastyk, Klebanov, Parameswaran, et al. 2021.
When commenting on this statement, Ḍalhaṇa (Su 1938: 76) and Cakrapāṇidatta (Su 1939: 125) observed that only the ears of healthy people should be pierced, and they quoted the lost authority Bhoja to affirm this: "When piercing the ears of chil-

2 One may pierce a child's ears for the purpose of preserving and decorating. During the bright fortnight, when the child is in the sixth or seventh month, on renowned days, half days, hours and constellations, the physician, with a calming presence, sits the boy, who has received a benediction and the recitation of a blessing,[82] on the lap of a wet-nurse.[83] Then, he should pull the ear with his left hand and pierce straight through with his right hand at a naturally-occurring cleft.[84] For a boy, do the right ear first; for a girl, do the left one. Use a needle on a thin ear; an awl on a thick one.[85]

3 One may know that it was pierced in the wrong place if there is excess blood or too much pain. The absence of side-effects is a sign that it has been pierced in the right place.[86]

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dren who are free of disease at these times, their ear flaps and apertures, as well as limbs, increase" (1.16.1 (Su 1938: 76)).

Some texts use the adjective कर्ण-वेधनी rather than °व्यधनी.

82 The causative form व्यधयेत् is known in Classical Sanskrit (Whitney 1885: 166).

The compound कृतमङ्गलस्वस्तिवाचनं "who has received a benediction and the recitation of a blessing" is an emendation based on the similar text at 3.2.25 (Su 1938: 346). Cf. also 3.10.8, 24 (Su 1938: 388, 390) that have slightly different formulations.

83 The versions of 1.16.3 known to Cakrapāṇidatta (Su 1939: 126) and Ḍalhaṇa (Su 1938: 76) have the additional compound कुमारधराङ्के ("on the lap of one who holds the child") after धात्र्यङ्के. The gender of कुमारधर is made clear by Ḍalhaṇa's gloss "a man who holds the child." Also, both versions add बालक्रीडनकैः प्रलोभ्य ("having enticed with children's toys") to indicate that the child should be tempted with toys to stay on the assistant's lap. According to Ḍalhaṇa on 1.16.3 (Su 1938: 76), the toys include replica elephants, horses, bulls and parrots. Ḍalhaṇa further mentions that others read भक्ष्य-विशेषैर्वा ("or by special treats") before बालक्रीडनकैः, but we see no trace of these small kindnesses in our witnesses.

84 The versions of 1.16.3 of Cakrapāṇidatta (Su 1939: 126) and Ḍalhaṇa (Su 1938: 76) add that this naturally-occurring cleft is illuminated by a ray of sunshine (आदित्यकरावभासिते).

The syntax of this slightly long sentence is unusual because of the dual object तौ "the two (ears)" at the start of the sentence, which is remote from the main verb. The other singular accusatives referring to the ear being pierced are governed by absolutives.

85 Ḍalhaṇa on 1.16.3 (Su 1938: 76) clarifies that the awl is a shoe-maker's knife for piercing leather. He also cites the authority of "the notes of Lakṣmaṇa" (*Lakṣmaṇa-ṭippaṇaka*) on the issue of the thickness of the needle. *The Notes of Lakṣmaṇa* is not known from any earlier or contemporary sources and was presumably a collection of glosses on the *Suśrutasaṃhitā* that was available to Ḍalhaṇa in twelfth-century Bengal. See Meulenbeld (HIML: IA, 386).

86 At this point, MS Kathmandu KL 699 is missing a folio, so the rest of this chapter is

4 In this context, if an ignorant person randomly pierces a duct there will be fever, burning, swelling, pain, lumps, paralysis of the nape of the neck, convulsions, headache or sharp pain in the ear.[87]

5 Having removed the wick (वर्त्ति) because of the accumulation of humours or an unsatisfactory piercing at that location,[88] he should smear it with barley, liquorice, Indian madder, and the root of the castor oil tree, thickened with honey and ghee. And when it has healed well, he should pierce it again.[89]

6 He should treat the properly-pierced ear by sprinkling it with raw sesame oil. After every three days one should make a thicker wick and do the very same sprinkling.[90]

7 Once the ear is free from humours or side-effects, one should put in a light dilator (प्रवर्धनक) in order to enlarge it enough.[91]

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constructed on the basis of witnesses MS Kathmandu NAK 5-333 and MS Kathmandu NAK 1-1079.

87 This passage is significantly augmented in Cakrapāṇidatta's and Ḍalhaṇa's versions, to outline the specific problems caused by piercing three ducts called कालिका, मर्मिका and लोहितिका (1.16.4 (Su 1939: 126) and 1.16.5 (Su 1938: 77) respectively). In fact, the order of the problems mentioned in the Nepalese version has been retained in the other versions and divided between each duct. Cakrapāṇidatta's commentary on 1.16.4 (Su 1939: 126) cites several verses attributed to Bhoja on the problems caused by piercing these three ducts in the ear flap: 'लोहितिका, मर्मिका and the black ones are the ducts situated in the earflaps. Listen in due order to the problems that arise when they are pierced. Paralysis of the nape of the neck and convulsions, or sharp pain arise from piercing लोहितिका. Pain and lumps are thought to arise from piercing मर्मिका. Piercing कालिका gives rise to swelling, fever and burning.'

88 In addition to these reasons, Ḍalhaṇa at 1.16.6 (Su 1938: 77) added "because of piercing with a painful, crooked and unsatisfactory needle" (क्लिष्टजिह्माप्रशस्तसूचीव्यधात्) and "because of a wick that is too thick" (गाढतरवर्तित्वात्). Ḍalhaṇa was aware of the reading in the Nepalese version because in his commentary on 1.16.6 (Su 1938: 77) he noted that some read "because of the accummulation of humours" rather than "because of piercing with a painful, crooked and unsatisfactory needle or because of a wick that is too thick." On the concept of humoral accumulation (समुदाय), see the important analysis by Meulenbeld (1992).

89 The description of the drug is ambigious: the word "root" could be taken with each plant, or just with the last. The vulgate reads just "castor oil root" so we assume that is the traditional interpretation.

90 Describing ear and nose operations similar to those here, Celsus described the use of a quill (Latin *pinna*) where the Sanskrit authors use a cotton wick (*De Medicina* VII ¶10–11, Spencer 1935–38: 3, 366–367).

91 Cakrapāṇidatta on 1.16.6 (Su 1939: 127) and Ḍalhaṇa on 1.16.8 (Su 1938: 77) pointed

8 *A person's ear enlarged in this way can split in two, either as a result of the humours*[92] *or a blow.*
Listen to me about the ways of joining it can have.

9 Here, there are, in brief, fifteen ways of mending the ear flap.[93] They are as follows: Rim-join (नेमीसन्धानक), Lotus-splittable (उत्पलभेद्यक), Dried Flesh (वल्लूरक), Fastening (आसङ्गिम), Cheek-ear (गण्डकर्ण), Take away (आहार्य), Ready-Split (निर्वेधिम), Multi-joins (व्यायोजिम), Door-hinge (कपाटसन्धिक), Half door-hinge (अर्धकपाटसन्धिक), Compressed (संक्षिप्त), Reduced-ear (हीनकर्ण), Creeper-ear (वल्लीकर्ण), Stick-ear (यष्टीकर्ण), and Crow's lip (काकौष्ठ).[94]
In this context, among these,

Rim-join:	both flaps are wide, long, and equal.
Lotus-splittable:	both flaps are round, long, and equal.
Dried flesh:	both flaps are short, round, and equal.
Fastening:	one flap is longer on the inside.
Cheek-ear:	one flap is longer on the outside.[95]
Take-away:	the flaps are missing, in fact, on both sides.
Ready-split:	the flaps are like a dais (पीठ).
Multi-joins:	one flap is small, the other thick, one flap is equal, the other unequal.
Door-hinge:	the flap on the inside is long, the other is small.
Half door-hinge:	the flap on the outside is long, the other is small.

out that the dilator can be made of wood, such as that of the prickly chaff-flower, the neem tree and tree cotton. Ḍalhaṇa added that it can also be made of lead and should have the shape of the datura flower. The manuscripts have variant readings for लघुप्रवर्धनकमामुञ्चेत् at this point that include a scribal emendation, none of which construe plausibly. It is possible that the unusual verb form आ+√मुच् puzzled the scribes and caused the implausible scribal readings and emendations.

92 Ḍalhaṇa on 1.16.9 (Su 1938: 77) notes that the word दोष here can refer to either a humour, such as wind, as we have understood it, or a disease generated from a humour.

93 The Nepalese version uses the word सन्धान to refer to joining a split in an ear flap, which is consistent with the terminology in the verse cited above (8). However, 1.16.10 of Ḍalhaṇa's version (Su 1938: 77) uses the term बन्ध here and at the very beginning of the chapter (i.e., 1.16.1) to introduce the topic of repairing the ear.

94 For an artist's impression of these different kinds of joins in the ear flap, see Majno 1975: 290 (reproduced as Figure 3.2 in Wujastyk 2003*b*: 154).

95 For an artist's impression of this join, see Majno 1975: 291 (reproduced as Figure 3.3 in Wujastyk 2003*b*: 155).

These ten options for joins of the ear should be bound. They can mostly be explained as resembling their names.[96] The five from compressed (संक्षिप्त) on are incurable.[97] Among these, "Compressed" has a dry ear canal and the other flap is small. "Reduced ear" has flaps that have no base and have wasted flesh on their edges. "Creeper-ear" has flaps that are thin and uneven. "Stick-ear" has lumpy flesh and the flaps are stretched thin and have stiff ducts. "Crow-lip" has a flap without flesh with compressed tips and little blood. Even when they are bound up, they do not heal because they are hot, inflamed, suppurating, or swollen.[98]

10 A person wishing to perform a join of any of these should therefore have supplies specially prepared according to the recommendations of the "Preparatory Supplies" chapter.[99] And in this regard, he should particularly gather[100] top layer of fermented liquor, milk, water, fermented rice-water, and powdered earthenware crockery (कपालचूर्ण).[101]

96 Cakrapāṇidatta on 1.16.9–13 (Su 1939: 128–129) and Ḍalhaṇa on 1.16.10 (Su 1938: 77–78) provide examples of how the names of these joins describe their shapes. For example, the rim-join (नेमीसन्धानक) is similar to the join of the rim of a wheel (चक्रधारा).

97 Ḍalhaṇa on 1.16.10 (Su 1938: 77–78) mentions that some do not read the statement that only five are incurable, and they understand the causes of unsuccessful joins given below (i.e., heat, inflammation, suppuration and swelling) as also pertaining to the first ten when they do heal.

98 The version of 1.16.11–13 known to Ḍalhaṇa (Su 1938: 78) has four verses (श्लोक) at this point that are not in the Nepalese manuscripts. The additional verses iterate the types of joins required for ear flaps that are missing, elongated, thick, wide, etc. All four verses were probably absent in the version of the *Suśrutasaṃhitā* known to Cakrapāṇidatta. He cites the verses separately in his commentary, the *Bhānumatī* (Su 1939: 128–129), introducing each one as 'some people read' (के चित्पठन्ति). However, in Trikamajī Ācārya's edition of the *Sūtrasthāna* of the *Bhānumatī*, the root text is largely identical to the one commented on by Ḍalhaṇa (Su 1938), even in instances like this where Cakrapāṇidatta's commentary indicates that he was reading a different version of the *Suśrutasaṃhitā*. See further the discussion on p. **??** above.

99 *Suśrutasaṃhitā* 1.5 (Su 1938: 18–23), probably verse 6 especially, that lists the equipment and medications that a surgeon should have ready.

100 The reading in the Nepalese manuscripts of विशेषतश्चाग्रोपहरणीयात् has been emended to विशेषतश्चात्रोपहरेत् to make sense of the list of ingredients, which is in the accusative case. Also, the repetition of अग्रोपहरणीयात् in the Nepalese version suggests that its second occurrence, which does not make good sense here, is a dittographic error.

101 The term कपालचूर्ण is unusual. Ḍalhaṇa (Su 1938: 79) defines it as the powder of fragments of fresh earthen pots and Cakrapāṇidatta (Su 1939: 129) as the powder of earth-

Next, having made the woman or man tie up the ends of their hair, eat lightly and be firmly held by qualified attendants, the physician considers the joins and then applies them by means of cutting, splitting, scarification, or piercing.[102] Next, he should examine the blood of the ear to know whether it is tainted or not. If it is tainted by wind, the ear should be bathed with fermented rice-water and water; if tainted by choler, then cold water and milk should be used; if tainted by phlegm, then top layer of fermented liquor and water should be used, and then he should scarify it again.

After arranging the join in the ear so that it is neither proud, depressed, nor uneven, and observing that the blood has stopped, one should anoint it with honey and ghee, bandage each ear with tree cotton and gauze (श्लोत), and bind it up with a thread, neither too tightly nor too loosely. Then, the physician should sprinkle earthenware powder on it and provide medical advice (आचारिक). And he should supplement with food as taught in the "Two Wound" chapter.[103]

11 *One should avoid rubbing, sleeping during the day, exercise, overeating, sex, getting hot by a fire, or the effort of speaking.*

12 One should not make a join when the blood is too pure, too copious, or too thin.[104] For when the ear is tainted by wind, then it is obstructed by blood, unhealed and will peel. When tainted with choler, is becomes pinched (गाढ), septic and red. When tainted by phlegm, it will be stiff and itchy. It has excessively copious suppuration and is swollen. It has a small amount of wasted (क्षीण) flesh and it will not grow.[105]

13 When the ear is properly healed and there are no complications, one

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enware vessels.

102 There are syntactic difficulties in this sentence. We have adopted the reading in Ḍalhaṇa's version (Su 1938: 78), which has च कृत्वा following सुपरिगृहीतं. It is likely that a verb, such as कृत्वा, dropped out of the Nepalese transmission.

103 *Suśrutasaṃhitā* 4.1 (Su 1938: 396–408).

104 1.16.17 of Ḍalhaṇa's version (Su 1938: 79) reads "impure" for the Nepalese "too pure," which would appear to make better medical sense. Emending the text to नाशुद्ध- for नातिशुद्ध- in the Nepalese version would yield the same meaning as Ḍalhaṇa's version.

105 In his edition of *Suśrutasaṃhitā*, Ācārya (Su 1938: 79 n. 1) includes in parentheses the following treatment for these conditions, which according to a footnote is not found in the palm-leaf manuscript he used: 'One should sprinkle it with raw sesame oil for three days and one should renew the cotton bandage after three days' (आमतैलेन त्रिरात्रं परिषेचयेत्त्रिरात्राच्च पिचुं परिवर्तयेत्).

may very gradually start to expand it. Otherwise, it may be inflamed (संरम्भ), burning, septic or painful. It may even split open again.

14 Now, massage for the healthy ear, in order to enlarge it.
One should gather as much as one can the following: a monitor lizard, scavenging and seed-eating birds, and creatures that live in marshes or water,[106] fat, marrow, milk, and sesame oil, and white mustard oil.[107] Then cook the oil with an admixture of the following: purple calotropis, white calotropis, heart-leaf sida, country mallow, country sarsaparilla, Indian kudzu, liquorice, and hornwort.[108] This should then be deposited in a well-protected spot.

15 *The wise man who has been sweated should rub the massaged ear with it. Then it will be free of complications, and will enlarge properly and be strong.*[109]

16 *Ears which do not enlarge even when sweated and oiled, should be scarified at the edge of the hole, but not outside it.*[110]

17 *In this tradition, experts know countless repairs to ears. So a physician who is very intent on working in this way may repair them.*[111]

106 For such classifications, see the analyses by Zimmermann (1999) and Smith (1994).

107 Ḍalhaṇa's version of 1.16.19 (Su 1938: 79) includes ghee. However, Ḍalhaṇa's remarks on this passage and Cakrapāṇidatta's on 1.16.18 (Su 1939: 130) indicate that they knew a version of this recipe, perhaps similar to the Nepalese one, that did not include ghee. Ḍalhaṇa also noted that others simply read four oils, beginning with fat and without milk, whereas Cakrapāṇidatta said that some say it is made with four oils and milk.

108 The version of of this verse known to Ḍalhaṇa (vulgate (Su 1938: 79)) adds several ingredients to this admixture, including prickly chaff-flower, Withania, milk-white, sweet plants and Indian ipecac. Also, it has beggarweed instead of Indian kudzu. When commenting on 1.16.19, Ḍalhaṇa (Su 1938: 79) noted that some do not read sweet plants and Indian ipecac. Therefore, at his time there were other versions of this recipe circulating, with fewer ingredients, as seen in the Nepalese version.

109 For these aims (i.e., healing and enlarging the ear), the text known to Ḍalhaṇa (Su 1938: 79) had an additional verse and a half describing an ointment for rubbing the ear and sesame oil cooked with various medicines for massage. Cakrapāṇidatta (Su 1939: 131) did not comment on these verses, nor verse 15 of the Nepalese version, and so the version of the *Suśrutasaṃhitā* known to him may not have included them.

110 Dalhaṇa's version of 1.16.23 (Su 1938: 79–80) added another hemistich that stated more explicitly that the scarification should not be done on the outside of hole as it will cause derangement.

111 After verse 17, the 1938 edition of Ācārya (Su 1938: 80) has in parentheses nineteen verses on diseases of the ear lobes, treatments and complications. It is possible that these verses were in some of the witnesses used by Ācārya to construct the text as they occur in other manuscripts, such as MS Hyderabad Osmania 137-3(b). However, Cakrapāṇidatta (Su 1939: 132) and Ḍalhaṇa (Su 1938: 80) stated that some read about

18 *If an ear has grown hair, has a nice hole, a firm join, and is strong and even, well-healed, and free from pain, then one can enlarge it slowly.*[112]

19 *Now I shall describe the proper method of making a repair when a nose is severed. First, take from the trees a leaf the same size as the man's nose and hang it on him.*

20 *Next, having cut a slice of flesh* (वध्र),[113] *with the same measurements, off the cheek, the end of the nose is then scarified.*[114] *Then the undistracted physician, should quickly put it back together so that it is well joined.*

21 *Having carefully observed that it has been sewn up properly, he should then fasten it along with two tubes.*[115] *Having caused it to be raised,*[116] *the powder of sappanwood,*[117] *liquorice and Indian barberry should be sprinkled on it.*[118]

22 *The wound should be covered properly with tree cotton and should be moistened repeatedly with sesame oil. Ghee should be given to the man to drink. His digestion being complete, he should be oiled and purged in accordance with the*

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the diseases of the ear lobes in this chapter whereas others read about them in the chapter on various treatments (मिश्रकचिकित्स) (SS 5.25), which does indeed begin with a discussion of the disease परिपोट. Ḍalhaṇa went on to say that some believe that these verses were not composed by sages and, therefore, do not read them.

112 The order of verses 17 and 18 is reversed in Ḍalhaṇa's version (Su 1938: 80).

113 The version of 1.16.28b known to Ḍalhaṇa (Su 1938: 81) reads "bound, connected (बद्धम्)" instead of "slice of flesh (वध्र)." This is a critical variant from the surgical point of view. If the slice remains connected, it will have a continuing blood supply. This is one of the effective techniques that so astonished surgeons witnessing a similar operation in Pune in the eighteenth century (see Wujastyk 2003*b*: 67–70).

114 Or 1.16.20 could be mean, '... off the cheek, it is fixed to the end of the nose, which has been scarified.' Unfortunately, the Sanskrit of the Nepalese version is not unambiguous on the important point of whether or not the flap of grafted skin remains connected to its original site on the cheek. However, Ḍalhaṇa (Su 1938: 81) clarified the meaning of the vulgate here by stating that one should supply the word "flesh" when reading "connected," thus indicating that he understood the flesh to be connected to the face.

115 Ḍalhaṇa noted that the two tubes should be made of reed or the stalk of the leaf of the castor-oil plant (on 1.16.21 (Su 1938: 81)). They should not be made of lead or betel nut because the weight will cause them to slip down.

116 The Sanskrit term उन्नामयित्वा in 1.16.21 is non-Pāṇinian.

117 For पत्ताङ्ग (sappanwood), there are manuscript variants पत्त्राङ्ग (MS Kathmandu NAK 5-333) and पत्तङ्ग (MS Kathmandu NAK 1-1079). Also, MS Kathmandu KL 699 (f. 14r:1) has पत्त्राङ्ग in a verse in 1.14 (cf. 1.14.36 (Su 1938: 66)). The text known to Ḍalhaṇa has पतङ्ग (1.16.29 (Su 1938: 81)) and this term is propagated in modern dictionaries.

118 Ḍalhaṇa glossed अञ्जन as रसाञ्जन, elixir salve (Su 1938: 81).

instructions specific to him.[119]

23 *And once healed and really come together, what is left of that slice of flesh* (**वध्र**) *should then be trimmed.*[120] *If it is reduced, however, one should make an effort to stretch it, and one should make its overgrown flesh smooth.*[121]

119 The expression **स्वयथोपदेश** is ungrammatical but supported in all available witnesses.

120 The vulgate transmission has lost the word **वध्र** and replaced it with **अर्ध** "half," which makes little sense in this surgical context.

121 Ḍalhaṇa accepted a verse following this, 1.16.32 (Su 1938: 81), which pointed out that the procedure for joining the nose is similar to that of joining the lips without fusing the ducts. He noted that earlier teachers did not think this statement on the nose and lips was made by sages, but he included it because it was accepted by Jejjaṭa, Gayadāsa and others, although they did not comment on it because it was easy to understand. Cakrapāṇidatta also did not comment on this additional verse (Su 1939: 133).

Sūtrasthāna 28: Unfavourable Prognosis in Patients with Sores

Literature

Meulenbeld offered an annotated overview of this chapter and a bibliography of earlier scholarship to 2002.[122]

Translation

1 Thus, living creatures and their strength, complexion (वर्ण) and energy (ओजस्) are rooted in food. That (food) depends on the six flavours (रस). Thus, the flavours depend on substance (द्रव्य), and substances depend on medicinal herbs. There are two kinds of them (herbs): stationary and mobile.[123]

122 HIML: IA, 219.
123 1.1.28 (Su 1938: 7), tr. P. V. Sharma 1999–2001: 1, 21.

Nidānasthāna

Nidānasthāna 1: The Diagnosis of Diseases Caused by Wind

Literature

Meulenbeld offered an annotated overview of this chapter and a bibliography of earlier scholarship to 2002.[124]

Translation

1 And now we shall explain the chapter about diagnosis of diseases caused by wind[125].

2

3 Dhanvantari, the foremost of the upholders of righteousness, who emerged with nectar, Suśruta asks after touching/holding his feet.

4 O King[126]! (Perhaps divodāsa) the best of the orators! Let us know about the naturalized and disordered form of wind, its places in the body and types of the diseases caused by its contamination.

5–9ab On hearing his words, the venerable sage replied that being independent, constant and omnipresent this wind is revealed as self-born and supreme being. It is situated in the form of life-force in all beings and worshiped by all worlds. It is the cause of origin, continued existence and destruction of beings. It is unmanifest though manifests in/through action, cold, dry, light in weight, variable, moving horizontally with two

diseases caused by wind. Don't use modern interpretative terminology. But what you can do is have that discussions about terminology in a footnote or in your introductory remarks.

subject-verb-object

Don't put guesses in the main text. Footnote them.

124 HIML: IA, 234.

125 Appropriate word for vātavyādhi? Diseases caused by wind or rheumatism?

126 H and N both mss read भूपते instead of कौपनैः in the vulgate.

attributes i.e., sound and tangibility[127]. Having all chief qualities which are sattva, rajas and tamas but predominated by rajas. It has inconceivable power. It is inducer of humours[128] and distinguished in the group of diseases[129]. ***It moves quickly, moves again and again,*** stays in stomach and intestine.

9cd Now, listen to the description of wind which moves inside the body.

10 Unvitiated wind makes possible objects of senses connect with intellect. It maintains a state of equilibrium between the humours, semen/7 fluids? and Gastric fluid and actions done by body, speech and intellect bring to one's right place[130].

11 Just as the five types of bile have been described based on their name, place and their actions, similarly, one type of air is of five types based on name, place, action and diseases.

12 Five types of wind:

1. Vital wind (*prāṇa*)
2. *udāna*
3. *samāna*
4. *vyāna*
5. *apāna*

above five types of wind remain in their equilibrium and hold the body[131].

13–14ab The wind that flows through the mouth is called the vitality (prāṇa), which holds the body. It propels down food inside the stomach and

127 According to Ḍalhaṇa, it has power to divide humours, fluids, feces etc. moving inside the body and it is the cause to the disease in the limbs. It carries humours, chyle, semen/7 fluids? and feces further in the body. The wind which is moving outside is holding the earth and body. (सा चास्य शक्तिः शरीरदोषमूत्रपुरीषादिविभागोऽवयवसंस्थानका(क)रणं दोषधातुमलसंवहनादिश्च, शरीराद्बहिस्तु संचरतो धरणीधारणादिः Su 1938:257)

128 Ḍalhaṇa suggests नेता=प्रेरक (Su 1938:257)

129 Ḍalhaṇa suggests राट्=राजते not राजा

130 According to Ḍalhaṇa, सम्पत्तिः=सम्पन्नता at 1.6.3 (Su1938:23). Ḍalhaṇa commented that Gayadāsa reads `इन्द्रियार्थोपसंप्राप्तिऽ but not written here because of being detailed. (गयदासाचार्यस्तु इमं श्लोकं `इन्द्रियार्थोपसंप्राप्तिऽ इत्यादि कृत्वा पठति, स च विस्तरभयान्न लिखितः) But H and N mss suggest 'इन्द्रियार्थोपसम्पत्तिः'

131 Ḍalhaṇa suggests स्थान=साम्य, यापयन्ति=धारयन्ति (The manuscripts all read प्राणोदानः समानश्च व्यानोपानस्तथैव च । against the vulgate's प्राणोदानौ समानश्च व्यानश्चापान एव च । I think प्राणोदानौ, व्यानापानौ or व्यानश्चापान एव च should be read)

engages with the gastric fluid[132]. Unvitiated Vital wind mostly causes hiccups, asthma etc. diseases.

14cd–15 The wind which flows upwards in the body, the best among all five winds is called udāna. Singing, speech etc. individual things done by the same wind. Unvitiated udāna wind mostly causes diseases above the collar bone e.g., nose, eyes, head and ears[133].

16–17ab The samāna wind flows in stomach and duodenum. It helps gastric fluids in the digestion of food and separates the substances produced from it e.g., chyle, impurities, urine and feces. Unvitiated samāna wind causes diseases like a chronic enlargement of spleen (gulma), weak digestion, and diarrhea.

17cd–18 The vyāna wind moves inside the whole body and circulates chyle and expels sweat and blood outside the body. It helps in the movements of limbs in every way. Contaminated vyāna wind causes all diseases occurring in the body.

19–20ab Staying in the abdomen, the apāna wind propels wind of body, feces, urine, semen, womb and menstruation to come out of the body at their proper time. Contaminated apāna wind causes terrible diseases that occur in the bladder and anus.

132 Ḍalhaṇa suggests head, chest, throat and nose as locations of prāṇa. (Sus1938:259) Gayadāsa suggests अग्नि for प्राण.

133 Ḍalhaṇa suggests it also causes diseases like cough etc. (चकारादन्यादपि प्राणोदानौ, व्यानापानौ कासादीन् करोति ।)

Śārīrasthāna

Śārīrasthāna 2: On Semen and Menstrual Fluid

Literature

Meulenbeld offered an annotated overview of this chapter and a bibliography of earlier scholarship to 2002.[134] Das (2003: chs 6–8) also studied topics of this chapter.

Translation

1 ...
2 ...

134 HIML: IA, 244–246.

Cikitsāsthāna

Cikitsāsthāna 4: On the Treatment of Wind Diseases

Literature

Meulenbeld offered an annotated overview of this chapter and a bibliography of earlier scholarship to 2002.[135]

Translation

1 ...
2 ...

135 HIML: IA, 265–266.

Cikitsāsthāna 5: on the Treatment of Serious Wind Diseases

Literature

Meulenbeld offered an annotated overview of this chapter and a bibliography of earlier scholarship to 2002.[136]

Translation

1 ...
2 ...

136 HIML: IA, 266.

Cikitsāsthāna 15: On Difficult Delivery

Literature

Meulenbeld offered an annotated overview of this chapter on fetal malpresentation and a bibliography of earlier scholarship to 2002.[137] Das (2003: 517) made observations about the afterbirth (अपरा) that is mentioned in 4.15.17 (Su 1938: 432).

Translation

1 ...
2 ...

137 HIML: IA, 271–272.

Kalpasthāna

Kalpasthāna 1: Protecting the King from Poison

Introduction

The first chapter of the Kalpasthāna of the *Suśrutasaṃhitā* addresses the topic of protecting a king from those who would assassinate him using poison. The king's kitchen is presented as the site of greatest vulnerability. The staff in the kitchen must be vetted carefully and watched for signs of dissimulation. The description of the body-language that tells a poisoner (verses 18–25) are engaging and vivid. These verses are closely parallel in sense to a passage in the *Arthaśāstra* that says,

> The signs of a poisoner, on the other hand, are as follow: dry and dark look on the face, stuttering speech, excessive perspiration and yawning, trembling, stumbling, looking around while speaking, agitation while working, and not remaining in his place.[138]

Next, the text discusses the signs of poison in toothbrushes, in food, drink, massage oil and other items that are likely to come into physical contact with the king. In passages that are again paralleled in the *Arthaśāstra* the work describes how poisoned food kills insects and crackles in a fire, flashing blue and the reactions of various birds to poison are described.[139]

The work then moves on to the various symptoms experienced by the king after being poisoned, and remedies appropriate to each case. Poison

138 *Arthaśāstra* 1.21.8 (Kangle 1969: 1, 30), translation by Olivelle (2013: 97).
139 Cf. *Arthaśāstra* 1.21.6, *ibid.*, Olivelle (2013: 96).

exhibits characteristic signs when added to milk and other drinks.[140] Further forms of poisoning, their symptoms and treatments are described and finally the king is advised to live amongst trusted friends and to protect his heart by drinking various ghee compounds. He should eat the meat and soup made from various animals, including peacock, mongoose, alligator, deer. The chapter ends with the description of an emetic.

Literature

A brief survey of this chapter's contents and a detailed assessment of the existing research on it to 2002 was provided by Meulenbeld.[141] Translations of this chapter since Meulenbeld's listing have appeared by Wujastyk (2003*b*: 131–139), P. V. Sharma (1999–2001: 3, 1–15), and Srikantha Murthy (2000–02).[142]

More recently, a discussion of the fourth chapter of this section in the light of the Nepalese manuscripts was published by Harimoto.[143] After a close comparative reading of lists of poisonous snakes, Harimoto concluded that, "the Nepalese version is internally consistent while the [vulgate] editions are not." Harimoto showed how the vulgate editions, had been adjusted textually to smooth over inconsistencies, and gave insights into these editorial processes.[144]

Manuscript notes

- MS Kathmandu NAK 5-333 has foliation letter numerals, for example on f. 323a, that are similar to MS Cambridge Add. 1693,[145] dated to 1165 CE noted in Bendall's chart of Nepalese letter-numerals Bendall 1883: Lithograph V, after p. 225

140 Cf. *Arthaśāstra* 1.21.6 again.
141 HIML: IA, 289–290.
142 For a bibliography of translations to 2002, including Latin (1847), English (1877), Gujarati (1963) and Japanese (1971), see HIML: IB, 314–315.
143 Harimoto 2011: 101–104.
144 The two editions that Harimoto noted, Su 1938 and Su 1889, present identical texts.
145 Scan at cudl.lib.cam.ac.uk/view/MS-ADD-01693/1.

Translation

1–2 And now I shall explain the procedures for safeguarding food and drink, as were declared by the Venerable Dhanvantari.[146]

3 Divodāsa, the king of the earth, was the foremost supporter of religious discipline and virtue. With unblemished instruction he taught his students, of whom Suśruta was the leader.[147]

[Threats to the king]

4–5 Evil-hearted enemies who have plucked up their courage, may seek to harm the king, who knows nothing of it. He may be assailed with poisons by or by his own people who have been subverted, wishing to pour the poison of their anger into any vulnerability they can find.[148]

6 Therefore, a king should always be protected from poison by a physician.

7 The racehorse-like fickleness of men's minds is well known. And for this reason, a king should never trust anyone.[149]

146 MS H adds in the margin अथ खलु वत्स सुश्रुतः "Now begins Vatsa Suśruta." This phrase has been copied here by the scribe from the beginning of the *Suśrutasaṃhitā* chapter in the *sūtrasthāna* on the rules about food and drink (1.46.3 (Su 1938: 214)). The scribe presumably felt, not unreasonably, that this section had common subject matter with the present chapter. Further, SS 1.46.3 is the only place in the Nepalese transmission of the *Suśrutasaṃhitā* that names Dhanvantari and integrates him into the narrative of the *Suśrutasaṃhitā* as the teacher of Suśruta.
The mention of Dhanvantari here is the only other time in the Nepalese transmission that this authority is cited as the source of Ayurvedic teaching, and the unique occurrence of this actual phrase, "as was declared by the Venerable Dhanvantari." See the discussion by Klebanov (2021*a*: 28–32), who concludes that the earliest recoverable recension of the *Suśrutasaṃhitā* may have had the phrase only at this point and not elsewhere in the work. See the further discussion by Birch, Wujastyk, Klebanov, Parameswaran, et al. (2021).

147 This is a quite different statement from the vulgate which has Dhanvantari as the teacher, and calls him the Lord of Kāśī (काशिपति) (Su 1938: 559). Ḍalhaṇa followed the vulgate but explicitly noted the reading before us with small differences: दिवोदासः क्षितिपतिस्तपोधर्मश्रुताकरः "Divodāsa, the king of the earth, was a mine of traditions about discipline and virtue."

148 Verses about the use of Venemous Virgins as a weapon do not appear in the Nepalese manuscripts. Cf. Wujastyk 2003*b*: 81 f., 132. This material is present in the commentary of Gayadāsa.

149 The verb √ śvas is conjugated as a first class root in the Nepalese manuscripts.

8–11 He should employ a doctor in his kitchen (महानस) who is respected by experts, who belongs to a good family, is orthodox, sympathetic, not emaciated, and always busy.

12–13 The kitchen should be constructed at a recommended location and orientation. It should have a lot of light,[150] have clean utensils and be staffed by men and women who have been vetted.[151]

17–18ab The chefs, bearers (वोढार), and makers of boiled rice soups and cakes and whoever else might be there, must all be under the strict control of the doctor.[152]

18cd–19ab An expert knows people's body language (इङ्गित) through abnormalities in voice, movement and facial expression. He should be able to identify a poisoner by the following signs.

Cf. Arthaśāstra 1.21.8.

19cd–23 Wanting to speak, he gets confused, when asked a question, he never arrives at an answer, and he talks a lot of confused nonsense, like a fool. He laughs for no reason, cracks his knuckles and scratches at the ground. He gets the shakes and glances nervously from one person to another. His face is drained of colour, he is grimy (ध्याम) and he cuts at things with his nails.[153] A poisoner goes the wrong way and is absent-minded.

25–27 I shall explain the signs to look for in toothbrush twigs, in food and drink as well as in massage oil (अभ्यङ्ग) and combs (अवलेखन); in dry rubs (उत्सादन) and showers, in decoctions (कषाय) and massage ointment (अनुलेपन); in garlands (स्रज्), clothes, beds, armour and ornaments; in slippers and footstools, and on the backs of elephants and horses; in nasya (स्नुff), inhaled smoke (धूम), eye make-up (अञ्जन), etc., and any other things which are commonly poisoned. Then, I shall also explain the remedy.

28 Flies or crows or other creatures that eat a poisonous morsel (बलि)

150 We read महच्छुचिः with the Nepalese manuscripts and against the vulgate's महच्छुचि. We understand शुचिस् as a neuter noun meaning "light" following Apte (Apte: 1050a).

151 Verses detailing the ideal staff are omitted in the Nepalese manuscripts. Cf. Su 1938: 560; Wujastyk 2003*b*: 132.

152 The word सौपोदनैकपूपिक "chefs for the boiled rice soups and cakes" is grammatically interesting. The term सूपोदन (as opposed to सूपौदन) is attested in the *Bodhāyanīya-gṛhyasūtra* 2.10.54 (Shastri 1920: 68). More pertinently, perhaps, सूपोदन is attested in the Bower Manuscript, part II, leaf 11r, line 3 (Hoernle 1893–1912: vol. 1, p. 43).

153 The word ध्याम is glossed by Ḍalhaṇa (in a variant reading) as someone who is the colour of dirty clothes 5.1 (Su 1938: 560).

served from the king's portion, die on the spot.

29 Such food makes a fire crackle violently, and gives it an overpowering colour like a peacock's throat.

30–33 After a chukar partridge looks at food which has poison mingled with it, its eyes are promptly drained of colour; a peacock pheasant drops dead. A koel changes its song and the common crane rises up excitedly.[154] It will excite a peacock and the terrified parakeet and the hill myna screech. The swan trembles very much, and the racket-tailed drongo churrs.[155] The chital deer sheds tears and the monkey releases excrement.[156]

34cd Vapour rising from tainted food gives rise to a pain in the heart, it makes the eyes roll, and it gives one a headache.[157]

35, 36cd In such a case, an errhine and a collyrium that are costus, ??, spikenard and honey (मधुस्); [158] a paste of sandalwood on the heart may also provide relief.[159]

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154 The verb अर्च्छति "rises up" is a rare form best known from epic Sanskrit (see Oberlies 2003: 212, §7.6.1). The transmitted form क्रोञ्च is obviously a colloquial version of Sanskrit क्रौञ्च. Commenting on 1.7.10 (Su 1938: 31), Ḍalhaṇa interestingly gives the colloquial versions of several Sanskrit bird names, even singling out pronunciation in the specific location of Kānyakubja. For क्रौञ्च he says that people pronounce it कुरञ्ज and कोंचि. The form कोञ्च is found in Pāli (see Cone 2001: 731, who notes that Ardhamāgadhī has the same form). Elsewhere, Ḍalhaṇa calls the bird क्रौञ्चिर, क्रौञ्चि, and कैचर (1.46.105 (Su 1938: 223), 6.31.154 (Su 1938: 684) and (6.58.44 (Su 1938: 790) respectively).

155 Ḍalhaṇa seemed confused about the racket-tailed drongo (भृङ्गराज). He called it a generic drongo (भ्रमरक), a word that can also mean "bee," (Dave 1985: 62), and then said that it is like the black drongo (धूम्याट) (for a nice explanation of this name, see Dave 1985: 62–63) and that people call it "the king of birds."

156 MS Kathmandu KL 699 reads "bull (वृषभ)" for "Chital deer (पृषत)." The latter may perhaps be mistaken for the former in the Newa script, although the reading of MS Kathmandu KL 699 is hard to read at this point.

157 "Tainted" translates उपक्षिप्त. The word's semantic field includes "to hurl, throw against," and especially "to insult verbally, insinuate, accuse." The commentator Ḍalhaṇa glossed the term as, "spoiled food given to be eaten" (विदूषितस्यान्नस्य भोक्तुं दत्तस्य), but he noted that some people read "उखाक्षिप्त" or "thrown into a pan." Other translators have commonly translated it as "served," perhaps influenced by Ḍalhaṇa's "given (दत्त)."

158 The vulgate supplies another phrase and verb at this point that is not present in the Nepalese transmission, but that makes the text flow more easily.

159 **sing-1972** discussed the difficulties in identifying लामज्ज, a plant cited more often in the *Suśrutasaṃhitā* than in the *Carakasaṃhitā*; Ḍalhaṇa adopted the common view that it is

37 Held in the hand, it makes the hand burn, and the nails fall out. In such a case, the ointment (प्रलेप) is beautyberry, velvet-mite, soma and blue water-lily.[160]

38–39 If he eats that food, through inattention or by mistake, then his tongue will feel like a pebble (अष्ठीला) and it will lose its sense of taste. It stings and burns, and his saliva (श्लेष्मन्) dribbles out.[161] In such a case, he should apply the treatment recommended above for vapour (बाष्प), and what will be stated below under "toothbrush twigs".[162]

40 On reaching his stomach, it causes stupor (मूर्च्छा), vomiting, the hair stands on end, there is distension, a burning feeling and an impairment of the senses.[163]

41 In this case, vomiting must quickly be induced using the fruits of emetic

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a type of *uśīra* or vetiver grass. The grammatical neuter form मधुस् "sweetness" of the Nepalese manuscripts is less common than neuter मधु "honey, sweetness, liquorice."

160 "Beautyberry" (*Callicarpa macrophylla* Vahl.) is one identification of श्यामा, but vaidyas and commentators have different ideas about the plant's identity (see glossary).
On translating इन्द्रगोप as "velvet-mite," see Lienhard 1978. Ḍalhaṇa's remarks show that he had a reading इन्द्रागोपा before him, and he tries to explain इन्द्रा and गोपा as separate plants. But he also says that some people read इन्द्रगोप.
Ḍalhaṇa curiously parsed the name सोमा (f.) out of the compound; this feminine noun is almost unknown to Ayurvedic literature. Some dictionaries and commentators consider it a synonym for गुडूची, others for ब्राह्मी or चन्द्रतरु. Ḍalhaṇa also mentioned that some people think the word refers to the soma creeper (सोमलता), which might explain his choice to take the word as feminine. But the compounded word is far more likely to be सोम (m.), the well-known mystery plant (see Wujastyk 2003*b*: 76–78, 125). If this can be taken as rue (*Ruta graveolens*, L.), as some assert, one can point to a pleasing passage in Dioscorides where rue plays an antitoxic role: "...it is a counterpoison of serpents, the stinging of Scorpions, Bees, Hornets and Wasps; and it is reported that if a man be anointed with the juice of the Rue, these will not hurt him; and that the serpent is driven away at the smell thereof when it is burned; insomuch that when the weasel is to fight with the serpent she armeth herself by eating Rue, against the might of the serpent" (cited from Potter: 262; not found in Osbaldeston and Wood 2000).

161 The word अष्ठीला is normally feminine. The Nepalese manuscripts read it with a short अ- ending. Gayadāsa noticed that some manuscripts read अष्ठील with a short -अ ending (MS Bikaner RORI 5157, f. 5v:7–8) and Ḍalhaṇa reproduced his observation. The vulgate reading "from his mouth (चास्यात्)" is more obvious (*lectio facilior*), but is not attested in the Nepalese manuscripts.

162 Poisoned toothbrushes are discussed in verses 48 ff. below.

163 I translate मूर्च्छा in the light of the metaphors discussed by Meulenbeld (2011), that include thickening and losing consciousness.

nut, gourd, red gourd, and luffa, taken with milk and watered buttermilk, or alternatively with rice-water.

42 Reaching the intestines (पक्वाशय), it causes a burning feeling, stupor, diarrhoea, thirst, impairment of the senses, flatulence (आटोप) and it makes him pallid and thin.

43 In such a case, purgation with the fruit of indigo (नीली), together with ghee, is best. And 'slow-acting poison antidote (दूषीविषारि)' should be drunk with honey and curds (दधि).[164]

44 When poison is in any liquid substances such as milk, wine or water, there are various streaks, and foam and bubbles form.

45 And no reflections are visible or, however, if they can be seen once more, they are distorted, fractured, or tenuous and distorted too.[165]

46 Vegetables, soups, food and meat are soggy and tasteless. They seem to go stale suddenly, and they have no aroma.

47 All edibles lack aroma, colour or taste. Ripe fruits rapidly rot (प्र√कुथ्) and unripe ones ripen.[166]

48 When a toothbrush twig has poison on it, the bristles are corroded and the flesh of the tongue, gums and lips swells up.[167]

49 Then, once his swelling is lanced, one should rub (प्रतिसारण) it with fire-flame bush flowers jambul, mango stones and chebulic myrobalan fruit mixed with honey.[168]

50 Alternatively, the rubbing (प्रतिसारण) can be done with either the roots of sage-leaved alangium, the bark of blackboard tree or siris seeds.[169]

I'm still unhappy about this verse.

Mention this in the introduction as an example of the scribe knowing the vulgate.

fn about sadyas+

164 The 'slow-acting poison' is discussed at 5.2.25 ff. (Su 1938: 565).

165 Both Nepalese witnesses read विकृत (distorted) twice, which is tautologous. In the first occurrence both read विकृता without proper termination. One might read the sandhi in the second occurrence as or not distorted (वाविकृता), but this gives no better sense. The scribe of MS Kathmandu NAK 5-333, apparently the original hand, added in the margin the alternate reading "double (यमला)" as in the vulgate. Perhaps the scribe too was troubled by the tautology. It is also evidence that he was aware of a witness with variant readings similar to the vulgate. We emend for grammar but retain the *lectio difficilior*.

166 The root √कुथ् "stink, putrify, rot" is apparently known only from its few uses in the *Suśrutasaṃhitā*.

167 Gayadāsa and Ḍalhaṇa pointed out that "enclosure of a tooth (दन्तवेष्ट)" and "flesh of the tooth (दन्तमांस)" have the same meaning (2.16.14–26 (Su 1938: 331–332)).

168 This recipe is different from the vulgate.

169 The spelling of the name अङ्कोल्ल varies अङ्कोट, अङ्कोठ, अङ्कोल (GVDB: 5); Ḍalhaṇa noted that the form अङ्कोल्ल is a colloquialism (1.37.12 (Su 1938: 161)). The sentence is awk-

51ab One should give advice about a poisoned tongue-scraper or mouth-wash (कवल) in the same way as for a toothbrush twig.

51cd Massage oil that has been laced with poison is slimy, thick and discoloured.

52 When the massage oil has been contaminated with poison, boils arise, pain, a discharge (स्राव), inflammation of the skin, and sweating.[170] And the flesh (मांस) splits open.

53–54 In such a case, sandalwood, crape jasmine, costus, and cuscus grass, bamboo leaves, heart-leaved moonseed and heart-leaved moonseed, white clitoria, sacred lotus, and Indian barberry should be made into an ointment (अनुलेपन) for the patient, who has been sprinkled with cold water. That is also recommended as a drink with the juice and leaves of wood apple.[171]

55 In the case of a dry rub (उत्सादन), a shower (परीषेक), an infusion, a massage ointment (अनुलेपन), or in beds, clothes, or armour, the physician should understand that it is the same as for oil massage (अभ्यङ्ग).[172]

56–58 When a comb has poison in it, the hair falls out, the head aches and blood oozes from the follicles (ख) and lumps (ग्रन्थि) appear on the head. In such a case, one should repeatedly apply an ointment of black earth soaked with bear's bile, [173] ghee, beautyberry,[174] black creeper, and amaranth. Good alternatives are either the fluid extract of cow-dung, or the juice of jasmine, the juice of woodrose, or household soot.[175]

Bear's bile instead of deer's bile.

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ward and we have emended शिरीषमाषक to be a plural, as in the vulgate, rather than the ablative singular of the Nepalese witnesses. We follow Ḍalhaṇa in interpreting the compound to refer to the distinctive bean-like siris seeds, rather than to mung beans (5.1.50 (Su 1938: 562)).

170 The feminine स्फोटा for "boils" is unattested.

171 This compound could be interpreted as "wood apple juice and cassia cinnamon." Note that this recipe is differs from that of the vulgate, which requires urine.

172 See verse 52 above.

173 Ḍalhaṇa comments here that 'bile is that fluid which goes along inside the tube attached to the liver' (कालखण्डलग्नलिकामध्यगतजलं पित्तम्) 5.1.57 (Su 1938: 562).

174 See note 160.

175 The plant identifications in this passage follow Ḍalhaṇa's glosses, although he noted a difference of opinion on the identity of woodrose (lit. "mouse-ear").
The expression धूमो वागारसंज्ञितः '...or the smoke termed "house" ' is commonly interpreted by translators and in Ayurvedic dictionaries as 'household soot,' and this does seem to be the meaning, in context. The term was comprehensively discussed by Meulenbeld (2008: 443). Cf. note 269, p. 99.

59 If either massage oil for the head, or a helmet for the head, in a wash, turban, or garlands that are contaminated with poison, then one should treat it in the same way as a comb.

60–61 When face make-up is poisoned, the face becomes dark and has the symptoms found with poisoned massage oil. It is covered with spots (कण्टक) that are like lotus-spots (पद्मिनीकण्टक).[176] In this case, the drink is honey and ghee, and the ointment (प्रलेप) is sandalwood with ghee, curds, honey, verbena, scarlet mallow and hogweed.[177]

punarṇṇavā in the N & K MSS

62–63ab Elephants and the like become ill and they dribble saliva. And the rider gets spots (स्फोट) and a discharge on his scrotum, penis, and rectum. In this case, one prescribes the same therapy as for poisoned massage oil for both the rider and the mount.

63cd–65ab When there is poison in snuff (नस्य) or smoke, the symptom (लिङ्ग) is blood coming out of the apertures of the head (ख), a headache, a flow of mucus (कफ) and impairment of the senses.
In such a case, ghee of cows etc., boiled up with their milk and Himalayan monkshood, is prescribed, with henna, as a cold drink or errhine.

śrita for śṛta

65cd–66 Flowers lose their fragrance and colour, and wilt. On smelling them, he gets a headache and his eyes fill with water. In this case, the treatment is what was proposed above for vapour (बाष्प) and that which is traditional for face make-up.

67–68 When it is in ear-oil, there is degeneration in the ear, and painful swelling. There is also a discharge from the ear and in such a case it needs to be irrigated (प्रतिपूरण) promptly with ghee and honey. Extracted juice (स्वरस) of wild asparagus and very cold juice of white cutch tree are also recommended as something good.[178]

explain more

69 When poison is mixed in with eye make-up (अञ्जन), he gets tears and rheum (उपदेह), with a burning feeling, pain, faulty vision (दृष्तिविभ्रम),

176 See the description of this condition at 2.13.40 (Su 1938: 323), where the skin on the face is characterized as having pale circular patches that are itchy and have spots.

177 The common plant-name पुनर्नवा is read as पुनर्ण्णवा in both Nepalese witnesses. This unusual form is technically-speaking legal according to Pāṇini 8.4.3, but is not attested in published texts. पुनर्णवा is found rarely in some other Nepalese manuscripts such as the *Brahmayāmala* (a.k.a. *Picumata*, 44.81, transcription thanks to Shaman Hatley), and elsewhere (e.g., in Gaṇapatiśāstrī 1920–25: 20, where it is the name of a constellation.

178 The syntax of the Nepalese version is slightly unclear, but the vulgate has smoothed out the difficulties.

and possibly even blindness.[179]

70–71 In this case, one must immediately drink ghee and have it also in an eyewash (तर्पण) with long pepper. One should have an eye ointment (अञ्जन) of the juice of periploca of the woods and have the extract (निर्यास) of three-leaved caper, wood apple and periploca of the woods and the flower of marking-nut tree.

Medical difference from Sharma.

72–73 Because of poisoned slippers there will definitely be a swelling, numbness (स्वाप), a discharge (स्राव) and an outbreak of spots (स्फोट) on the feet. One should clean (प्र√साध्) footstools together with slippers.

example where the vulgate clarifies that these should be used separately; appears to be a gloss inserted into the vulgate text.

74 Ornaments lose their lustre, and they do not shine as they used to. They damage their respective locations with burning, sepsis (पाक), and fissuring (अवदारण).[180]

75ab One should apply the stated procedure for massage oil (अभ्यङ्ग) to poisoned slippers and ornaments.

75cd–76 In the case of the affliction (उपसर्ग) by poison which has been described above, starting from 'vapour' and ending with 'ornaments,' the physician should observe the side-effects (उपद्रव) and then prescribe the therapy called the Great Fragrance (महासुगन्ध) antidote, which I shall describe.[181]

77–78ab He should prescribe it in drinks, liniments (आलेपन), errhines (नस्य), and in eye ointment (अञ्जन). Also, he should use sharp purgatives and emetics. If bleeding is present, he should have the indicated veins pierced.

The two uses of prāpta are hard to translate. prāptāḥ → kṣipraṃ is an example of the vulgate banalizing the Sanskrit text to make sense of a difficult passage.

78cd–79ab If either purging nut or a fern is tied on to the King's wrist, then all food that is mixed with poison will be rendered free of poison.[182]

√ vyadh not √ vedh (also elsewhere and for the ears), causative optative.

79cd–80 He should always keep his heart protected (हृदयावरण) when amongst

179 The term translated as "faulty vision" could also mean "rolling eyes." "Eye make-up" is normally made of Indian barberry.

180 The reading अवदारुण in MS Kathmandu KL 699 is not attested elsewhere in Sanskrit literature. On "sepsis" for पाक, see Wujastyk 2003*b*: xlv–xlvi.

181 This antidote is indeed described later, in dramatic terms, at 5.6.14–27 (Su 1938: 581). A recipe with eighty-five ingredients including cow's bile, it is praised as chief of all antidotes, one that can drag the patient back from the very jaws of death, from even the poisonous fangs of Vāsuki.

182 In early Ayurvedic literature, the plant अजरुहा is mentioned only here and its identity is unknown. It may be a fern of the Nephrodium family, according to T. B. Singh and Chunekar (GVDB: 7). Ḍalhaṇa, on 5.1.78 (Su 1938: 563), cited a description of the two plants from the little-known authority Uśanas (HIML: IA, 660 et passim) who described अजरुहा as a white root with spots on it that looks like collyrium when it is split; when drunk with sandalwood it causes poison to be digested.

people who are not his friends.[183] Before eating he should drink the kinds of ghee called 'Invincible' and 'Immortal'.[184] He should drink ghee (सर्पिष), honey, curds (दधि), milk (पयस), or cold water.

opposite of the vulgate Same as 1.8.89a (As 1980: 79).

81 He should consume monitor lizard, peacock, mongooses, chital deer, and blackbuck too, that destroy poison, and their juices.

82 As discerning person should add well-crushed black creeper,[185] liquorice, and sugar to the meats of monitor lizardmonitor lizard, mongoose and blackbuck too.

83 Add sugar and Himalayan monkshood to peacock flesh, together with ginger And for meat from a chital deer, he should add long pepper, with ginger.

84ab A cold neem broth with honey and ghee is wholesome too.

84cd A discerning person should partake of hard and soft foods that counteract poison.[186]

85 If poison might have been drunk, a person who has protected his heart should make himself vomit using long pepper, liquorice, honey, sugar, sugarcane juice and water.

The first chapter in the Kalpas.

183 The *Carakasaṃhitā* described 'protecting the heart' as drinking several sweet, oily drinks to surround the heart and keep it safe (6.23.46 (Ca 1941: 574)). Ḍalhaṇa explained it as taking a number of anti-toxic medicines, including those listed in the present passage, in order to cover or hide (प्रच्छादन) the heart 5.1.79–81 (Su 1938: 563).

184 These ghee compounds are described in later chapters: see 5.2.47–49 (Su 1938: 566) and 5.6.13 (Su 1938: 581).

185 Or some say turpeth.

186 On this expression, see Yagi 1994.

Kalpasthāna 2: Poisonous Plants

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.[187]

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.[188] 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.[189]

187 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).

188 See Wujastyk 2003*b*: 80–81.

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

Literature

Meulenbeld offered an annotated overview of this chapter and a bibliography of earlier scholarship to 2002.[190]

Translation

1 And now I shall explain what should be known about stationary poisons.[191]

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

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

5 In that context,

- the eight root-poisons are:[192]
  1. liquorice (?),[193]
  2. sweet-scented oleander,[194]
  3. jequirity,[195]
  4. false daisy,[196]

190 HIML: IA, 290–291.

191 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.

192 Some South Asian plants with poisonous roots that we would have expected to see in this list include *Croton tiglium*, L., *Calotropis* spp., *Citrullus colocynthus* L. Schrad., and *Ricinus communis* L. (CIPP).

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

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

195 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.

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

5. *karaṭā*,[197] and ending with
6. leadwort (*vidyutśikhā* → *agni- or rakta-śikhā?*)[i],[198]
7. country sarsaparilla (?),[199] and
8. medhshingi,[200]

- the leaf-poisons include:
  - 'poison-leaf' (*viṣapatrikā*)[ii],
  - 'drum-giver' (*lambaradā*)[iii],
  - thorn apple, and
  - big thorn apple;
- the fruits of items like: jequirity (*guñjā*)[iv], rūṣkara ()[v], viṣa ()[vi], and vedikā ()[vii], are
  - kumudavati (*kumadavati*)[viii],

197 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.

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

199 The text reads masculine *ananta*, which is not a plant name. Gayī's commentary on 5.2.5 (Su 1938: 564) noted a variant reading of feminine *anantā* in place of *gargaraka*, earlier in the compound. But the feminine *anantā*, country sarsaparilla, is not a poisonous plant.

200 Meulenbeld (1989: 61, n. 3) argued that our text reads 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 the feminine form only started to signify *Cannabis sativa* L. after the end of the first millennium (**mchu-2021a**; Meulenbeld 1989; Wujastyk 2002). 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* (ADPS: 518), a plant used as an abortifacient and fish poison (**nadk-1982**). This identification is tenuous.

i Plumbago zeylanica (or rosea?), L.; see NK #1966, 1967
ii unknown; see ?
iii unknown; see ?
iv ; see
v ; see
vi ; see
vii ; see
viii unknown; see ?

  - reṇuka (*?*)[ix],
  - kurūkaka (*?*)[x],
  - 'little bamboo' (*veṇuka*)[xi],[201],
  - thorn apple (*karambha*)[xii],
  - 'big thorn apple' (*mahākarambha*)[xiii],
  - 'pleaser' (*nandanā*)[xiv],
  - 'crow' (*kāka*)[xv],
- the flower-poisons include those of:
  - rattan (*vetra*)[xvi],
  - wild chinchona (*kādamba*)[xvii],
  - black pepper (*vallīja* → *marica*)[xviii],
  - thorn apple (*karambha*)[xix], and
  - big thorn apple (*mahākarambha*)[xx];
- the seven bark, pith (**सार**) and resin (**निर्यास**) poisons are:
  - 'gutboiler' (*antrapācaka*)[xxi],
  - 'blade' (*kartarīya*)[xxii],
  - wild mustard (*saurīyaka*)[xxiii],
  - emetic nut (*karaghāṭa* → *karahāṭa?* → *madana*)[xxiv],

201 Not poisonous.

ix ?; see Piper aurantiacum Wall. (NK: #1924) is not poisonous.
x ?; see ?
xi Bambusa bambos, Druce?; see NK #307
xii Datura metel, L.; see AVS 2.305 (cf. Abhidhānamañjarī), NK #796 ff., Potter 292 f., ADPS 132.
xiii Datura metel, L.?; see AVS 2.305 (cf. Abhidhānamañjarī), NK #796 ff., Potter 292 f., ADPS 132.
xiv ?; see ?
xv ?; see ?
xvi Calamus rotang, L.; see AVS 1.330, NK #413
xvii Anthocephalus cadamba, Miq.; see NK #204
xviii Piper nigrum, L.?; see NK #1929; Rā.6.115, Dha.4.85, Dha.2.88
xix Datura metel, L.; see AVS 2.305 (cf. Abhidhānamañjarī), NK #796 ff., Potter 292 f., ADPS 132.
xx Datura metel, L.?; see AVS 2.305 (cf. Abhidhānamañjarī), NK #796 ff., Potter 292 f., ADPS 132.
xxi unknown; see ?
xxii unknown; see ?
xxiii Cleome viscosa, L.? (cf. Rā.4.144); see AVS 2.116, NK #615
xxiv Randia dumetorum, Lamk.; see NK #2091

  - thorn apple (*karambha*)[xxv],
  - wild asparagus (*nandana* → *bahuputrā?*)[xxvi], and
  - munj grass (*nārācaka*)[xxvii];[202]
- the three milky sap (क्षीर)-poisons are:
  - purple calotropis (*kumudaghnī* → *arka?*)[xxviii];[203]
  - oleander spurge (*snuhī*)[xxix], and
  - 'web-milk' (*jālakṣīri*)[xxx];
- the two element (धातु)-poisons are:
  - 'foam-stone' (*phenāśma*)[xxxi], and
  - orpiment (*haritāla*)[xxxii];[204]
- the thirteen tuber-poisons are:
  - jequirity (*kālakūṭa*)[xxxiii],[205]

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

203 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.

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

205 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

xxv Datura metel, L.; see AVS 2.305 (cf. Abhidhānamañjarī), NK #796 ff., Potter 292 f., ADPS 132.

xxvi Asparagus racemosus, Willd.; see ADPS 441, AVS 1.218, NK #264, IGP 103, IMP 4.2499ff., Dymock 482ff.

xxvii Saccharum bengalense, Retz.?; see NK #2184

xxviii Calotropis gigantea, (L.) R. Br.; see ADPS 52, AVS 1.341, NK #427, Potter 63

xxix Euphorbia neriifolia, L., or E. antiquorum, L.; see ADPS 448, AVS (2.388), 3.1, NK #988, IGP 457b

xxx unknown; see ?

xxxi unknown; see ?

xxxii Arsenii trisulphidum; see NK v. 2, p. 20 ff.

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

- wolfsbane (*vatsanābha*)[xxxiv],
- Indian mustard (*sarṣapa*)[xxxv],
- leadwort (*pālaka* → *citraka*)[xxxvi],
- 'muddy' (*kardama*)[xxxvii], the
- 'Virāṭa's plant' (*vairāṭaka*)[xxxviii],
- nutgrass (*mustaka*)[xxxix],
- atis root (*śṛṅgīviṣa*)[xl],
- sacred lotus (*prapuṇḍarīka*)[xli],
- radish (*mūlaka*)[xlii],
- 'alas, alas' (*hālāhala*)[xliii],
- 'big poison' (*mahāviṣa*)[xliv], and
- galls (*karkaṭa*)[xlv].[206]

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.

'*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.

206 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. Agrawal (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). KEWA: iii.585 also cites a claim for an Austro-Asiatic origin for the word.

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xxxiv Aconitum napellus, L.; see AVS 1.47, NK #42, Potter 4 f.
xxxv Brassica juncea, Czern. & Coss.; see AVS 1.301, NK #378
xxxvi Plumbago zeylanica (indica? rosea?), L.; see Rā. 6.124, ADPS 119, NK #1966, 1967
xxxvii unknown; see ?
xxxviii unknown; see ?
xxxix Cyperus rotundus, L.; see ADPS 316, AVS 2.296, NK #782
xl Aconitum heterophyllum, Wall. ex Royle; see AVS 1.42, NK #39
xli Nelumbo nucifera, Gaertn.; see Dutt 110, NK #1698
xlii Raphanus sativus, L.; see NK #2098
xliii unknown; see Cf. Soḍhalanighantu p.43 (sub bola) = stomaka = vatsanābha
xliv unknown; see ?
xlv Rhus succedanea, L.; see NK #2136

The effects of poisons

7–10 People should know that root-poisons cause writhing (उद्वेष्टन), ranting (प्रलाप), and delirium (मोह), and leaf-poisons cause yawning, writhing, and wheezing (श्वास).

Fruit-poisons cause swelling of the scrotum, a burning feeling and writhing. Flower-poisons will cause vomiting, distension (आध्मान) and sleep (स्वाप).

The consumption of poisons from bark, pith (सार) and resin (निर्यास) will cause foul breath, hoarseness (पारुष्य), a headache, and a discharge of phlegm (कफ).[207]

The milky sap (क्षीर)-poisons make one froth at the mouth, cause loose stool, and make the tongue feel heavy.[208] The element (धातु)-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. With jequirity (*kālakūṭa*)[xlvi], there is numbness and very severe trembling. With wolfsbane (*vatsanābha*)[xlvii], there is rigidity of the neck, and the faeces, and urine become yellow.

With sārṣapa (सार्षप),[209] the wind becomes defective (*vātavaiguṇya*), there is constipation (आनाह), and lumps (ग्रन्थि) start to appear. With

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

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

209 *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.

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

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

leadwort (*pālaka* → *citraka*)[xlviii], there is weakness in the neck, and speech gets jumbled.[210]

With the one called 'muddy' (*kardama*)[xlix], there is a discharge (प्रसेक), the faeces pour out, and the eyes turn yellow. The 'Virāṭa's plant' (*vairāṭaka*)[l] 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 (मुस्तक).[211]

-> ativiṣa

15b With great aconite (महाविष) one's limbs grow weak, there is a burning feeling and swelling of the belly.[212]

16a With puṇḍarīka (पुण्डरीक), one's eyes go red, and one's belly becomes distended.[213]

Look up the ca. reference.

16b With mūlaka (मूलक), one's body is drained of colour and the limbs are paralysed.[214]

17a With hālāhala (अचोनिते), a man turns a dark colour (ध्याम), and gasps.[215]

17b With atis root (*śṛṅgīviṣa*)[li], one gets violent knots (ग्रन्थि) and stabbing

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

211 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.

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

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

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

215 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.

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

xlix unknown; see ?

l unknown; see ?

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

pains in the heart.[216]

18a With markaṭa (मोन्केय्), one leaps up, laughs, and bites.[217]

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

19b–20a The ten are:

- dry (रूक्ष),
- hot,
- sharp,
- rarified (सूक्ष्म),
- fast-acting,
- pervasive (व्यवायिन्),
- expansive (विकासिन्),
- limpid (विशद),
- 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.[218]

22 Because it is fast-acting it kills quickly, and because of its pervasiveness it affects one's whole physical constitution (*prakṛti*).[219] Because of its expansiveness it enters into the humour (दोष)s, bodily constiuents (धातु)s, and 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.

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216 T. B. Singh and Chunekar (GVDB: 407) noted that *vatsanābha* and *śṛṅgīviṣa* are two different varieties of poisonous Aconites that are difficult to distinguish.

217 T. B. Singh and Chunekar (GVDB: 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.

218 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.

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

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,[220] becomes a slow-acting poison (*dūṣīviṣa*).[221] Because it has lost its potency it is no longer perceived. Because it is surrounded by phlegm (कफ) 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.[222]

28 If it lodges in his stomach (आमाशय), he becomes sick because of wind and phlegm; if it lodges in his intestines (पक्वाशय), 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 (रस), it causes the diseases arising from the body tissues, that have been said to be wrong.[223] and it rapidly becomes inflamed on days that are nasty because of cold and wind.

29d–31 Listen to its initial symptoms (लिङ्ग): it causes heaviness due to sleep, yawning, disjunction (विश्लेष) and horripilation (हर्ष) and a bruising of the limbs (अङ्गमर्द).[224] Next, it causes intoxication from food (अन्नमद) and indigestion, loss of appetite (अरोचक), the condition of having a skin disease (कोठ) with round blotches (मण्डल),[225] dwindling away (क्षय) of flesh, swelling of the feet, hands, and face, the fever called *pralepaka*, vomiting and diarrhoea.[226] The slow-acting poison might cause wheezing, thirst and fever, and it might also cause distension of the abdomen.

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

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

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

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

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

225 The last ailment could perhaps be ringworm.

226 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

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

33 Something is "corrupted" by repetitively keeping to bad locations, times, foods, and sleeping in the daytime. Or, traditionally, "corrupting poison" (slow-acting poison (दूषी-विष)) is so called because it may corrupt (*dūṣayet*) the body tissue (धातु)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 (आमाशय), it causes pain in the chest (हृद्).

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

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

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

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.[227]

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 (अगद) mixed with with honey and ghee.

227 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).

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 (नस्य) as well as an eye salve (अञ्जन).

42a In the fourth, the physician should make him drink an antidote that is salt with a little oil.[228]

42b In the fifth, he should be prescribed the antidote together with a decoction (क्वाथ) of honey and liquorice.

43 In the sixth, the cure (सिद्धि) is the same as for diarrhoea. And in the seventh, he perishes.[229]

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

45–46 A gruel (यवागू) made of the following items in a stewed juice (निःक्वाथ) destroys the two poisons: luffa gourd,[230] wild celery,[231] velvet-leaf,

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

229 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 striped snake (राजिमत्). 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 (काकपद) therapy (Wujastyk 2003*b*: 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 to the Nepalese transmission. Perhaps the therapy migrated into the vulgate *Suśrutasaṃhitā* from the *Carakasaṃhitā* 6.23.66–67 (Ca 1941: 574).

230 At 4.10.8 (Su 1938: 449) Ḍalhaṇa glossed कोशवती as देवदाली and at 4.18.20 (Su 1938: 472) as कटुकोशातकी, vocabulary pointing to *Cucumis cylindrica*, *Cucumis actangula* or *Luffa echinata*. See glossary under luffa.

231 A plant often cited in *Suśrutasaṃhitā*, but rarely in *Carakasaṃhitā* (GVDB: 4). Ḍalhaṇa glossed it here, 5.2.45 (Su 1938: 566), as *ajamodā*, wild celery, but noted that others consider it to be *moraṭa*, rajmahal hemp. There is considerable complexity surrounding the identification of *moraṭa*/*mūrvā* and related synonyms (GVDB: 314-316). Taking *agnika* as a short reference to *agnimantha*, often identified as migraine tree, might be plausible, since that is antitoxic or anti-inflammatory, but such a short reference is not known elsewhere.

sunflower,[232] heart-leaved moonseed, myrobalan siris, and selu plum, white siris, the two kinds of turmeric,[233] and the two kinds of poison berry,[234] hogweed, peas, the three heating spices, the two kinds of Indian sarsaparilla[235] and blue water-lily.

232 At 5.2.45 (Su 1938: 566) Ḍalhaṇa said that this plant has leaves like the *paṭola*, pointed gourd, T. B. Singh and Chunekar (GVDB: 280, 443) argued plausibly that this is a synonym for *arkapuṣpī*, panacea twiner, 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., ADPS: 195–198).

233 I.e., turmeric and Indian barberry.

234 I.e., poison berry and yellow-berried nightshade.

235 I.e., country sarsaparilla and black creeper.

The invincible ghee

47–49 There is a famous ghee called "Invincible" (अजेय). It rapidly destroys all poisons but is itself unconquered. It is prepared with a mash (कल्क) of the following plants: liquorice, crape jasmine, costus, deodar, peas, Indian madder, cardamom and cherry, cobra's saffron, blue water-lily, sugar, embelia, sandalwood, cassia cinnamon, beautyberry, rosha grass, the two turmerics,[236] the two Indian nightshades,[237] the two kinds of Indian sarsaparilla,[238] beggarweed, and heart-leaf sida.

Curing the 'slow-acting' poison

50–52 Someone suffering from "slow-acting poison (दूषीविष)" 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 (दूषीविषारि)," and it is not prohibited in other situations.

53–54 If there are any other side-effects (उपद्रव), such as fever, a burning feeling, hiccups, constipation (आनाह), depletion of the semen, distension, diarrhoea, fainting, skin problems, bellyache (जठर), 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 (साध्य) immediately. It is treatable (याप्य) if it is of a year's standing. Other than this, it should be avoided for the person who eats unwholesome things.

236 I.e., turmeric and Indian barberry.
237 I.e., poison berry and yellow-berried nightshade.
238 I.e., country sarsaparilla and black creeper.

Kalpasthāna 3: Poisonous Insects and Animals

Literature

Meulenbeld offered an annotated overview of this chapter and a bibliography of earlier scholarship to 2002.[239]

Translation

1 And now we shall explain the rule (कल्प) that is the required knowledge about mobile poisons.[240]

Come back to the issue of "kalpa". Look up passages in the Kośa.

3 The full explanation about the sixteen carriers (अधिष्ठान) of the mobile poisons, that have been mentioned by me in brief, will be stated.[241]

4 In that context, they are:[242]

- gaze and breath,
- teeth, nails, and bites
- urine and faeces,
- menstrual blood,
- semen,
- tail,
- contact with saliva,
- nipping with the mouth (मुख-

239 HIML: IA, 291–292.

240 In contrast to stationary, plant poisons. No reference is made to Dhanvantari (see Birch, Wujastyk, Klebanov, Parameswaran, et al. 2021).

241 "Carrier" for base, foundation (अधिष्ठान) aims to capture the idea that the author will describe the creatures in which poisons inhere.

242 The content of this section is presented as a table, for clarity for the contemporary reader and mindful of the theoretical issues surrounding notational variation, including the "symbolic rewriting" and the modification of "expressive capacities" discussed by Sarukkai (2016: 321 ff). For further discussion, see Wujastyk 2021*a*: 81–83.

243 This interpretation comes from Ḍalhaṇa on 5.3.4 (Su 1938: 567), but he reads विशार्धित.

संदंशा),
- fart (अवशार्धित),[243]
- anus,[244]
- bones,
- bile,
- bristles (शूक), and
- corpses.

5 In that context,

location of the poison	*creatures*[245]
in their breath and gaze	divine snakes
in their fangs	the ones on earth[246]
in their nails, mouths and fangs	cats, dogs, monkeys, men (नर),[247] crocodiles, frogs, 'cook-fish' (पाकमत्स्य),[248] monitor lizards, cone snails (शम्बूक), 'poisonous snakes' (प्रचलाक),[249] geckos (गृहगोडिका),[250] four-footed insects and others
in their urine and faeces	lice (किटिप), 'flat insects' (पिच्चिटा), 'orange-dwellers' (कषायवासिक), 'pepper snakes' (सर्षपक), 'angry beetles' (तोटक), dung beetles (वर्चःकीट), and 'pot insects' (कौण्डिन्य)
in their semen	mice

244 Ḍalhaṇa on 5.3.4 (Su 1938: 567) noted this reading.
245 Many of these names are mere dubious placeholders.
246 Ḍalhaṇa on 5.3.5 (Su 1938: 567) cited the otherwise unknown authority Sāvitra on the topic of poisonous snakes (HIML: ???, ???).
247 Probably dittography from the previous word, monkey (वानर). But it is supported in both Nepalese witnesses, so it must go back to an earlier exemplar.
248 MS KL 699 separates the words पाक and मत्स्य with a daṇḍa, indicating that the scribe thought they were separate terms. Ḍalhaṇa thought this was a kind of fiery insect (5.3.5 (Su 1938: 567)).
249 *Arthaśāstra* 14.1.14, 23 (Olivelle 2013: 448), where it might also be a chameleon, but the latter are not venomous.
250 The scribe of MS NAK 5-333 noted in the margin that some of his sources read गल-गोडिका, which is the name of a snake known also in the *Carakasaṃhitā* and elsewhere in literature. Hemacandra's *Abhidhānacintāmaṇi* (4.364) mentions that गृहगोधिका and गृहगोलिका are synonyms (Rādhākāntā Deva 1876: 691a, *sub māṇikyā*).

location of the poison	*creatures*
in their stings (शूल)	scorpions, 'earth scorpions' (विश्वम्भर), wasps (वरकि),[251] fish, crabs (उच्चिटिङ्ग), and 'wing-scorpions' (पत्रवृश्चिक)
in their saliva, nails, urine, feces, blood, semen and fangs	spiders
in the bites of their mouths	flies, wasps (कणभ) and leeches
in the bites of their mouths, in their fangs, faces, †, farts, anuses and feces	'speckle-heads' (चित्रशीर्ष), 'lids' (शारव), 'bellied' (कुक्षित), 'wood-enemies' (दारुकारि), 'liquors' (मेदक), and 'darts' (शारिका).

Table 2: Passage 5, expressed in tabular format.

6 The enemies of the king pollute the waters, roads and foodstuffs in enemy territory. The experienced physician, who has learned how to purify things, should clean up those polluted things.

7 Polluted water is slimy and smells of tears.[252] It is covered with froth and covered with streaks. The frogs and fish die, the birds are crazed and, along with the wetland creatures, they wander about aimlessly.

8 Men, horses and elephants who swim in it experience vomiting, delu-

251 वरटी is a wasp; वरकि in the Nepalese MSS may be an alternant of this word. Ḍalhaṇa on 5.3.5 (Su 1938: 568) remarked that some interpreted वरकिमत्स्य as two items, "wasp and fish," others as a single one, "wasp-fish."

252 अस्र normally means "tears," but rarely means "blood."

sion, fever, swelling and sharp pains.[253] He should try to purify that polluted water, after curing their ailments.

9 And so, he should burn axlewood and garjan oil tree, as well as corky coral tree, with crimson trumpet-flower tree and small-flowered crape myrtle and weaver's beam tree, and with golden shower tree and white cutch tree. Then he should sprinkle that ash, cold, on the waters.

10–11 And in the same way, putting a handful of the ash in a pot, one may also purify water that one wants.

If any one of the limbs of cows, horses, elephants, men or women, touch a place on the ground that enemies have spoiled with poison, or a ford or rock or a flat surface, then it swells up and burns and its hair and nails fall out on that place.[254]

12 In that situation, he should grind up country sarsaparilla together with all the aromatic items, with alcoholic drinks. And then he should sprinkle the paths that need to be used with waters mixed with mud.[255] And if there exists another path, he should go by that.[256]

13 When grasses and foods are polluted, people collapse, fall unconscious. And others vomit. They get loose stool (विड्भेद) or they die. One should apply to them the therapy as described.

14–15 Alternatively, one should wipe various musical instruments with antidotes that remove poison and then play them. What is called the most excellent paste for a musical instrument is certain minerals[257] together

253 On the polysemy of elephant/snake (नाग), see Semeka-Pankratov 1979.

254 "Swells up" translates an unclear reading that was probably शूयति, which may be an irregular form of √शू, श्वा, श्वि (see Whitney 1885: 175–176).

255 Our "alcoholic drinks" translates सुरा. For a discussion of this term at our period see **mchu-2021a**.

256 Ḍalhaṇa on 5.3.12 (Su 1938: 568) cited a similar reading for the fourth pāda, but with a negative particle, "and if there is no other way, one should go by that."

257 "Certain minerals" translates तारावितार, the unanimous reading of the Nepalese witnesses. But the meaning of this expression is not clear and may even refer to plants, like the other ingredients. The vulgate reads तारः सुतारः, which is also not very clear. However, Ḍalhaṇa on 5.3.14 (Su 1938: 568) identified these as "silver" and "mercury." This is highly unlikely to be a correct understanding of the passage. Historically, mercury is not naturally present in the South Asian peninsula (Watt$_{Dict}$: 5, 233) and the word पारद that Ḍalhaṇa used is probably a loan-word from Persian (sub *paranda, parranda* Steingass 1930: 244b). Mercurial compounds are not reliably attested in South Asia until two or three centuries after the composition of the *Suśrutasaṃhitā* at the earliest. The currently available "śāstric" recension of the *Arthaśāstra* that is datable to 175–300 CE (Olivelle 2013: 29–31) does not mention mercury (*ibid*, 534). See further

with gold and sarsaparilla, and a portion of of nutgrass equal to that, together with the bile called "brown cow".[258] By the sound of the musical instrument, even terrible poisons that may be present at that place are destroyed.

16 If there is smoke or wind that is affected by poison then birds are dazed and fall to the ground. People get coughs, colds, and head illnesses, and acute eye diseases.[259]

17 The smoke and air can be purified by putting into the air: lac, turmeric, Himalayan monkshood, and myrobalan, with Himalayan mayapple, costus, cardamom,[260] and peas, and beautyberry.

write footnote: don't repeat ativiṣā; vulgate similar to H.

The origin of poison

18 As it is told, the arrogant demon called Kaiṭabha created an obstacle for lotus-born Brahmā, at the very time that he was creating these creatures.[261]

19 Pitiless Fury took a body and burst out of the mouth of furious Brahmā's store of fiery energy.[262]

20 He burned that great, thundering, apocalyptic demon. Then, after bringing about the annihilation of that demon, his amazing fiery energy increased.

21 And so, there was a sinking down (*viṣāda*) of the Daityas. Observing that, it was named "poison (*viṣa*)" because of it's ability to produce a "sinking down."

22 After that, the Lord created beings and subsequently made that fury enter into creatures still and moving.

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the study by Wujastyk (2013*a*: 17, *et passim*).

258 सुरेन्द्रगोप and कुरुविन्द are both uncertain, see index. Ḍalhaṇa's opinion has been followed here, but it seems fair to say that all commentators were guessing.

259 The syntax of this verse is somewhat loose; the vulgate has regularized it, smoothing out the difficulties.

260

261 At this point, the text seems to make a new beginning to the topic of toxicology, as if starting a new chapter. It is notable that no reference is made here to the famous origin story of poison in the churning of the primal milk ocean; for discussion of the sources of this account, see Bedekar 1967. For reflections on this passage, connecting it with Rudra and the *Śatapathabrāhmaṇa*, see Mānasa-taraṅgiṇī 2019.

262 "Fury" is here anthropomorphised.

23–24 Water that falls from the sky to the earth has no obvious flavour. The savour of the different places it lands on enters into it. In the same way, whatever substance a poison reaches, it establishes itself there and by its nature it takes on that substance's savour.[263]

25 Generally speaking, in a poison, all the qualities are really sharp. For this reason, every poison is known to irritate all of the humours.

26 Irritated and afflicted by the poison, they leave their natural functions. Poison does not get digested, so it blocks the breaths.[264]

27 Breathing is obstructed because its pathway is blocked by phlegm. Even if life continues, a man remains without consciousness.

28 Similar to semen, the poison of all angry snakes pervades the whole body, and goes to the limbs like semen because of being stirred up.

29 The fang of snakes is like a hook. When it gets there, it sticks inside them. That is why the unagitated poison of a snake is not released.

30 Sprinkling with very cold water is traditional for all cases of poisoning, because poison is declared to be extremely hot and sharp.[265]

31 Poison in insects is slow and not very hot, having a lot of wind and phlegm. So in cases of insect poisoning, sweating is not forbidden.

32cd In cases of a strike or a bite, the poison may, of its own accord, stay there.

33–35ab †Having come upon a body,[266] in the case of corpses that that have been pierced by a poisoned arrow and bitten by a snake, someone who eats the poisoned flesh of a recent corpse out of carelessness will suffer with illness according to the poison, or even die. And therefore, the flesh of those should not be eaten when they have just died.
It is admissable after three quarters of an hour, but without the poisoned arrow and the snakebite.

35.1 [At this point an Upajāti verse is added in the margin of K but is not fully legible; the version of the text in H is also incomplete and not fully comprehensible.] [267]

263 The scribal emendation in MS Kathmandu NAK 5-333 of नियच्छति to निगच्छति suggests that the scribe had more than one manuscript before him, one of them representing the reading of the vulgate recension.

264 Probably a reference to the five breaths. Ḍalhaṇa referred to winds (वात), but this does not seem correct since it is a reference to humours rather than breaths.

265 The verb पठ् "is declared, read aloud" here could possibly suggest that the author is working within a written, not oral, tradition.

266 "Having come upon" translates प्रख्याप्य, which is hard to interpret unless it is a rare form connected with the sense "to see."

267 *Mādhavanidāna*, 69.20–21 (MN$_1$: 480) has verses that are directly parallel to this sec-

35.3 †When, in a wound, the poison that is connected with these qualities runs, …Therefore, not everything that is damaged by poison and eaten causes death.
[268]

35.1 [ślokas in the MSS that aren't in the vulgate. The first line doesn't scan. Witness K adds a part of the start of this in the bottom margin. This material is repeated at 3.39.2 in MS H.]

35cd & 36cd One designates a person who has diarrhoea of feces looking like soot (गृहधूम) with wind,[269] and who vomits foam, as "someone who has drunk poison."

37 Therefore, fire burns a heart that is pervaded by poison. For, having pervaded of its own accord the location of consciousness, it abides.[270]

Patients beyond help

38 Patients who should not be accepted include: those who have been bitten under a peepul tree, in a temple, in a cemetery, at an ant-hill, at dawn or dusk, at a crossroads, under Yama's asterism,[271] under the Great Bear and people who have been bitten in lethal spots.

39 The poison of cobras kills rapidly. They all gain twice the intensity in those who have indigestion, those who are afflicted by bile or wind, old people, children and the hungry.

39.1 In those whose who are mad or intoxicated, or who suffer from anxiety, or who are unable to tolerate its various strengths, it becomes sharp. †…

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tion:
darvīkarāṇāṃ viṣam āśughāti sarvāṇi coṣṇe dviguṇībhavanti ajīrṇapittātapapīḍiteṣu bāleṣu vṛddheṣu bubhukṣiteṣu 20
kṣīṇakṣate mohini kuṣṭhayukte rūkṣe 'bale garbhavatīṣu cāpi
śastrakṣate yasya na raktam eti rājyo latābhiś ca na saṃbhavanti 21. This passage is the only occurrence in the ayurvedic text corpus that relates to the Nepalese version of the *Suśrutasaṃhitā* at this point. This suggests that Mādhavakara (fl. ca. 700, Bengal) knew and used the Nepalese version.

268 At this point, witness H inserts a marginal Indravajrā verse about diseases that afflict immoral women.

269 गृहधूम is not a plant in this context *pace* MW: 362. See the discussion in note 175, p. 74.

270 Ḍalhaṇa said that someone who has died from drinking poison has a heart that cannot be burned because it is pervaded by poison (5.3.37 (Su 1938: 570)). But the sense of the Nepalese MSS is the opposite.

271 याम्ये means "southerly" but Ḍalhaṇa on 5.3.38 (Su 1938: 570) interpreted it as "in Yama's direction" as "under the seventh asterism."

material corresponds to SS.1.45.205ab, where it describes how alcohol affects the body.

39.2

3.40cd–3.41 One should reject someone overcome by poison who does not bleed when cut with a knife, where weals do not appear as a result of lashes,[272] or where there is no horripilation because of cold water, whose mouth is crooked, whose hair is falling out of his head. A man who is fatigued and those who stammer,[273]

3.42 one who has a black and red swelling at the site of the bite, with lockjaw, should be avoided. The same goes for someone who has a solid plug emerge from their mouth and someone who has blood running from above and below and

3.43ab The physician should also avoid a person who has fangs that have not fallen out quickly.[274]

272 Ḍalhaṇa, on 5.3.40 (Su 1938: 570), glossed लताभिस् "by means of whips," as "when the body is struck by whips."

273 nāsāvasāda & plural sakaṇṭhabhaṅgāḥ

274 The grammatical verb-form परिवर्जयीत "he should avoid," opt., 3rd, sg., is unusual. Renou (1940: 10 ff) documented such forms from the *Aitareyabrāhmaṇa* onwards. Oberlies (2003: ¶6.3.3 "Peculiar optative endings", pp. 176–177) showed that the form is well-documented in *manuscripts* of the *Mahābhārata*, but has been edited out of the printed critical edition in almost all cases. Cf. also Kulikov 2006.
The concern about a patient who "has fangs that have not fallen out" is hard to understand. The word दंष्ट्रा does not mean human teeth (दन्त). We therefore prefer to interpret this as a patient where the fangs of a venemous creature remain in the bite-wound. This requires construing the expression as a *bahuvrīhi* compound: दंष्ट्रा or दंष्ट्र + अनिपातः.

Kalpasthāna 4: Snakes and Invenomation

Introduction

The fourth chapter of the Kalpasthāna of the *Suśrutasaṃhitā* addresses the topic of snake bites and snake venom. Unusually for the Nepalese version of the *Suśrutasaṃhitā*, the discussion is framed as a question from Suśruta to the wise Dhanvantari. Suśruta's questions are about the number of snakes, how they are classified, the symptoms of their bites and the pulses or stages of poisoning experienced by a victim of snakebite and related topics. The taxonomy of snakes is presented in a presentational variant form in Figures 1 and 2.

Literature

A brief survey of this chapter's contents and a detailed assessment of the existing research on it to 2002 was provided by Meulenbeld.[275] There also exists a herpetological literature from colonial India as well as more recent studies of snakes in the context of cultural and religious life.

The ophiological literature of the colonial period begins with Fayrer (1874), whose work included striking colour paintings of snakes.[276] Fayrer provided a biological taxonomy of snakes as well as chapters on mortality statistics during the nineteenth century, treatment and effects of poison, and experimental data. Ewart (1878) included descriptions of appearance and behaviour of poisonous snakes and sometimes their local names;

275 HIML: IA, 292–294.
276 The first edition of Fayrer's work was published two years earlier, in 1872.

he also distinguished his publication by fine colour illustrations.[277]. Wall (1913: 75–124) provided a useful analysis of the medical effects of snake envenomation in India arranged by the varied symptomology of different snakes. He also discussed the difference between the symptoms of toxicity and fright (69–75) and also the difficulties arising out of uncertainty aabout the effects of snake-bite (124–126). Wall (1921) provided a wealth of detail of the snakes of Sri Lanka, including line drawings.

Doniger (2015) provided a good survey of snakes as protagonists in religious literature from the *Atharvaveda* through the epics, *Purāṇas* and Buddhist literature. Slouber (2016: 31–33 *et passim*) discussed the *Suśruta-saṃhitā*'s *Kalpasthāna* as a precursor and influence on later Tantric traditions of snake-bite interpretation and therapy. Semeka-Pankratov (1979) traced semiotics of the term *nāga* through Vedic, Pali and Sanskrit literature.

A discussion of this chapter specifically in the light of the Nepalese manuscripts was published by Harimoto.[278] After a close comparative reading of lists of poisonous snakes, Harimoto concluded that, "the Nepalese version is internally consistent while the [vulgate] editions are not." Harimoto showed how the vulgate editions had been adjusted textually to smooth over inconsistencies, and gave insights into these editorial processes.[279]

Translation

1 Now we shall explain the procedure (कल्प) about what should be known concerning the venom in those who have been bitten by snakes.[280]

3 Suśruta, grasping his feet, questions the wise Dhanvantari, the expert in all the sciences.

4 "My Lord, please speak about the number of snakes, and their divisions, the symptoms of someone who has been bitten, and the knowledge about the successive shocks (वेग) of poisoning".[281]

277 Calling his work a supplement to Fayrer (1874), but also being cited by Fayrer, Ewart 1878 evidently also collected local knowledge from his "snake-man" (p. 22)

278 Harimoto 2011: 101–104.

279 The two editions that Harimoto noted, Su 1938 and Su 1889, present identical texts.

280 The *Sarvāṅgasundarī*, commenting on 1.16.17 (Ah 1939: 246), glossed कल्प as प्रयोग.

281 The expression "successive shocks" translates वेग, which is other contexts may mean

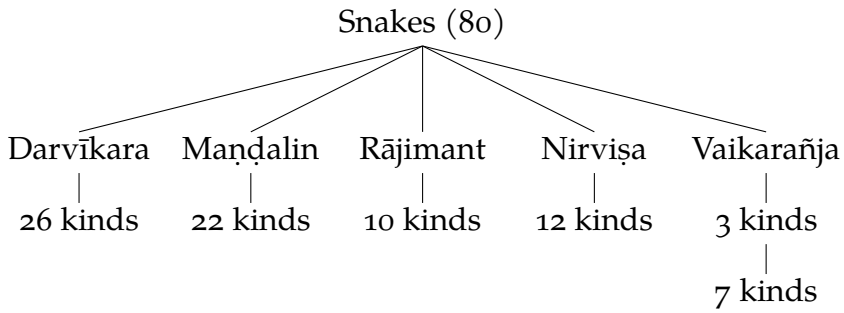

Figure 1: The taxonomy of snakes in the vulgate, 5.4.9–13ab (Su 1938: 571).

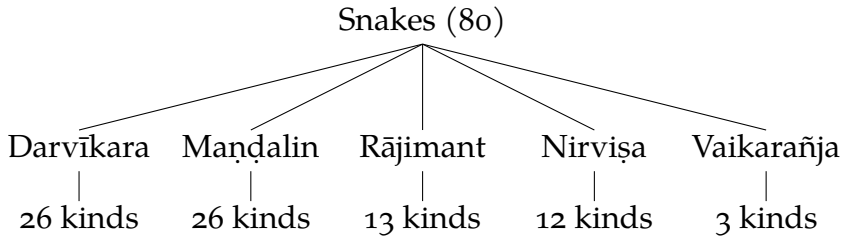

Figure 2: The taxonomy of snakes in the Nepalese version.

5 On hearing his query, that distinguished physician spoke.
"The venerable snakes such as Vāsukī and Takṣaka are uncountable.

6–9ab "They are snake-lords who support the earth, as bright as the ritual fire, ceaselessly roaring, raining and scorching. They hold up the earth, with its oceans, mountains and continents. If they are angered, they can destroy the whole world with a breath and a look. Honour to them. They have no role here in medicine.
"The ones that I shall enumerate in due order are those mundane ones with poison in their fangs who bite humans.[282]

9cd–10 "There are eighty kinds of snakes and they are divided in five ways:

"(natural) urge." Here, it is rather the discrete stages or phases of physiological reaction to envenomation. Cf. the symptoms of cobra poisoning described by Wall (1913: 80).

282 The next few verses are discussed in detail by Harimoto (2011: 101–104), who shows that in the taxonomy of snakes, the Nepalese version of the *Suśrutasaṃhitā* has greater internal coherence than the vulgate recension.

Darvīkaras, Maṇḍalins, Rājimats, and Nirviṣas. And Vaikarañjas that are traditionally of three kinds.[283]

11 "Of those, there are twenty and six hooded snakes, and the same number of Maṇḍalins are known. There are thirteen Rājīmants.[284]

Or "There are 20 phaṇins and 6 maṇḍalins. The same number are known. There are 13 Rājīmants." Or even, "there are 20 Phaṇins and six of them are Maṇḍalins." Are phaṇins really the same as darvīkaras?

12 "There are said to be twelve Niriviṣas and, according to tradition, three Vaikarañjas.

13–14ef "If they are trodden on, ill-natured or provoked or even just looking for food, those very angry snakes will bite. And that is said to happen in three ways: serpented (सर्पित), torn (दरित) and thirdly without venom (निर्विष). Some experts on this want to add "hurt by the snake's body".[285]

15–16 "The physician can recognize the following as "ophidian (सर्पित)": Where a rearing snake makes one, two or more puncture-marks of its teeth, when they are deep and without much blood,[286] accompanied by a little ring of spots (चुञ्चुमालक),[287] lead to degeneration, and are close together and swollen.

17 Where there are streaks with blood, whether it be blue or white, the physican should recognize that to be "torn (दरित)," having a small amount of venom.

18

283 Harimoto (2011) translated these names as "hooded," "spotted," "striped," "harmless," and "hybrid." Figure 1 shows the taxonomy described in the vulgate text; Figure 2 shows the different and more logical division of the Nepalese version of the *Suśrutasaṃhitā*.

284 The phrasing of this śloka is awkward.

285 This might refer to constriction. The phrase reads like a commentarial addition rather than the main text of the *Suśrutasaṃhitā*.

286 The word उद्वृत्त "aroused" was glossed by Ḍalhaṇa at 5.4.15 (Su 1938: 571) as उन्मोट्य, a word not found as such in standard dictionaries (MW; KEWA; AyMahā; Apte). Semantic considerations suggest that the word is not related to √*muṭ* "break" or *mūta*/*mūṭa* "woven basket." Perhaps it is related to the Tamil மோடி (*mōṭi*,) whose meanings include "arrogance, grandeur, display" (DED$_2$: #5133) or to faintly-documented forms like *moṭyate* "is twisted" (CDIAL: #10186). Ḍalhaṇa's उन्मोट्य may thus mean "twisting up" or "making an arrogant display."
Note that पद "puncture-mark" (more literally, "footprint") is being used in the same sense as in 1.13.19 (Su 1938: 57) when describing the marks on the body where a knife scarifies the skin before leeching. See footnote 47.

287 The usual dictionary lexeme is चञ्चु, not चुञ्चु as in the Nepalese witnesses. We translate "spots" following Ḍalhaṇa and Gayadāsa on 5.4.15 (Su 1938: 571), where they described a group of spots or swellings at the site of the bite. On the history of the word मालक, see Kieffer-Pülz 1996.

Uttaratantra

Uttaratantra 17: Preventing Diseases of the Pupil

Literature

Meulenbeld offered an annotated overview of this chapter and a bibliography of earlier scholarship to 2002.[288]

The history of couching in India has been discussed since the nineteenth century,[289]

Translation

1 Now I shall explain the counteraction (प्रतिषेध) of diseases located in the pupil (दृष्टि).

2 There are three curable (साध्य), three incurable (असाध्य), and six mitigatible (याप्य) diseases located in peoples eyes. Among these, three are curable (साध्य). Amongst these three, the remedy (प्रतीकार) has been stated for the one called "seeing smoke (धूमदर्शिन्)".[290]

3–5ab When the eye is inflamed (विदग्ध) by bile and when it is inflamed by phlegm, one should apply the method for removing bile and phlegm, using nasal medicines (नस्य), irrigation (सेक), application of collyrium (अञ्जन), liniment (आलेप), and medicines cooked in a crucible (पुटपाक),

288 HIML: IA, 305–306.

289 Scott 1817; Breton 1826; Jack 1884; Hendley 1895; Elliot 1918; Śāstrī 1940; V. Deshpande 1999; 2000; Wujastyk 2003*b*; Fan 2005; Leffler et al. 2020.

290 This disease and its cure are described earlier (SS.6.7.39 and SS.6.10.16 (Su 1938: 609 and 614) respectively). The latter part of this verse is hard to construe and the text here may have been altered at an early period.

where is cutting with a knife related to removing bile or phlegm.

together with an eyewash (तर्पण),[291] but not cutting with a blade (शस्त्रक्षत).[292]

One should drink ghee (सर्पिस्) prepared with the three fruits (त्रिफला) and in the first [case where the problem is bile], and prepared with turpeth (त्रैवृत) in the latter [case, of phlegm].

And ghee prepared with tilvaka (तैल्वक) is wholesome in both cases, or else aged ghee on its own.

5cd–7ab In a collyrium, these four compounds (योग) are beneficial in both cases:

maṣī burned charcoal. Find refs.

- ochre (गैरिक), Sind salt (सैन्धव), long pepper (कृष्णा) and the black soot (मषी) from cow's teeth;
- Cow's flesh (गोमांस), black pepper (मरिच), siris (शिरीष) and red arsenic (मनःशिला);
- stalk (वृन्त) from a wood apple (कपित्थ) with honey (मधु);[293]
- or the the fruits of the velvet bean (स्वयंगुप्त).

8 The physician should make a collyrium with ground up metal (कुप्यक),[294] Asoka tree (अशोक), Sal tree (शाला), mango (अम्र), beautyberry (प्रियंगु), Indian lotus (नलिन), blue lotus (उत्पल), together with hareṇu (हरेणु), emblic (आमलक), myrobalan (पथ्या), long pepper (पिप्पलि). It should be combined with ghee and honey (क्षौद्र).

9–10 Also, when bile and phlegm have developed, the physician should apply hareṇu (हरेणु) with the expressed juice (स्वरस) of the flowers from mango (अम्र) and Jambu (जम्बू) trees.

Then this collyrium, matured (विपक्व) with ghee and honey (क्षौद्र), should then be applied.

10–11ab Filaments (किञ्जल्क) of Indian lotus (नलिन) and blue lotus (उत्पल), with ochre (गैरिक), and the juice of cow-dung (गोशकृत्) are a collyrium in the form of a pill (गुडिका). This is good for both day and night blindness.

11cd–12ab Elixir-salve (रसाञ्जन), honey (क्षौद्र), ghee, scramberry (तालीश), together

291 These therapies are described in SS.6.18 (Su 1938: 633–640).

292 Dalhaṇa interpreted this as blood-letting (सिरावेध), which is discussed in SS.1.14 (Su 1938).

293 Wood apple (कपित्थ) in this verse is ablative singular or accusative plural, neither of which construe obviously.

294 A metal other than gold or silver, according to V. Jośī and N. H. Jośī (AyMahā: 1.217). Perhaps lead, which is used in making contemporary collyrium.

with gold and ochre, with the juice of cow-dung (गोशकृत) are for an eye afflicted with bile.

12cd–13 Alternatively, wise physician should first grind together elixir-salve (शीत) and stibnite (सौवीरक), infused (भावित) with the blood of birds and animals (रस).[295] Then he mixes it with the bile of a tortoise or with extract of rohu carp (रौहित). It should always be used with powdered collyrium to quell the bile.

14 Thus, a collyrium of white teak (काश्मरी) flowers, liquorice (मधुक), tree turmeric (दार्वी), lodh tree (लोध्र) and elixir salve (रसाञ्जन) is always good as a collyrium in this case.

15 Alternatively, for those who cannot see during the day, this pill (गुडिका), with sandalwood, is recommended: salt (नदीज), conch shell and the three spices, collyrium, realgar (मनःशिला), the two turmerics (रजन)[296] and liver extract (यकृद्रस).[297]

16 One should grind up kohl (स्रोतोज),[298] and Sind salt (सैन्धव) and long pepper and also hareṇu (हरेणु). Such wicks with goats urine are good in a collyrium for night blindness (क्षणदान्ध्य).

17–18ab Alternatively, in such a case, grind together Indian sarsaparilla (काला-नुसारिव)[299] long pepper, dried ginger (नागर) and honey, the leaf of the scramberry (तालीशपत्र), the two turmerics (रजन), a conch shell and liver extract (यकृद्रस). Then shade-dried wicks take away illness (रुज्).

18cd–19ab Wicks made of red arsenic (मनःशिला), chebulic myrobalan (अभया), the three spices (व्योष). Indian sarsaparilla (सारिव), cuttlefish bone (समुद्रफेन), combined with goat's milk are good.

19cd–21ab One should cook a honey collyrium (क्षौद्राञ्जन) either in the juices of cow's urine (गोमूत्र), and bile, spirits (मदिरा), liver (यकृत्), and emblic (धात्री) or

295 This was Ḍalhaṇa's preferred interpretation of *rasa* "juice" in this context. He also noted that some take elixir-salve (शीत) to be camphor.

296 Turmeric (Curcuma longa *Linn.*) and tree turmeric (Berberis aristata DC). The term *rajana* is unusual; the normal term is *rajanī*. *Rajana* occurs in *Suśrutanighaṇṭu* 158 in the sense of Ferula asafoetida, Linn.

297 This verse appears as no. 27 in the vulgate.

298 Glossed by Ḍalhaṇa as a kind of collyrium. Cf. **nadk-1954** and P. V. Sharma 1982: 197–198

299 There are two forms of *sārivā* mentioned widely in Āyurvedic literature, the white and the black. Ideas on the identity of the black form are particularly fluid. See Sivarajan and Balachandran (ADPS: 434–438) for a clear discussion.

else in the juice of the liver (यकृत्) of something different, or else with the extract of the three fruits (त्रिफला). One of these should be mixed with cow urine, ghee and cuttle fish (अर्णवमल)[300] with long pepper, honey and box myrtle (कट्फल). It is placed in sea salt and stored in a bamboo tube.

21cd–22 One should cook the liver of a sheep, the ghee of a goat, with long pepper and Sindh salt, honey and the juice of emblics. Then one should store it properly in a catechu box. Prepared thus, the honey collyrium is good.

23 Alternatively, a collyrium that is hareṇu (हरेणु) mixed with long pepper (मागधी), the bone and the marrow of a goat, cardamom (एला) and liver, together with liver extract, is good for eyes afflicted by phlegm.[301]

24 Over a fire, one should cook the liver (यकृत्) of a monitor lizard (गोधा) prepared with entrails (अन्त्र) and stuffed with long pepper (मागधि). As is well known, liver (यकृत्) which is used (निषेवित) with collyrium certainly destroys night blindness.

25 After preparing both a spleen (प्लीहन्) and a liver on a spit, one should eat them both with ghee and oil.[302]

25cd–26ab As is well known, there are six diseases that can be alleviated (याप्य); in those cases (तत्र) one should release the blood by bloodletting.
And for the sake of wellbeing one should also purge using aged ghee combined (उपहित) with purgative aids (अङ्ग).

26cd–27 When an eye-disease is caused by wind (पवनोद्भव) they say that castor oil

300 At SS 6.12.31, Ḍalhaṇa glossed *arṇavamala* as cuttlefish bone (समुद्रफेन). It may be worth considering whether the unusual term *arṇavamala* "ocean-filth" might refer to ambergris.

301 On the identities of *elā* and *hareṇu*, Watt (Watt$_{Comm}$: 511 ff) described the former as "true" or "lesser" or "Malabar" cardamom, *Elettaria cardamomum*, Maton & White. In contrast, the "greater" cardamom is *Amomum subulatum* (that Watt discussed on p. 65) that is commonly used as an inferior substitute for *E. cardamomum*. T. B. Singh and Chunekar (GVDB: 467 f) provided an interesting discussion of *hareṇu*, noting that the term refers to two substances, first the *satīna* pulse (*Pisum sativum*, Linn.), and second an unknown fruit such as perhaps a *Vitex*. They noted, "None of the text commentators have attempted to disclose the nature of its source plant," although Ḍalhaṇa described it as aromatic and identical to *reṇukā* (SS.ci.2.75).

302 We read the locative as if an instrumental; if the locative were intended then it would be the spit that would be coated with oil and ghee.

(पञ्चाङ्गुलतैल) mixed with milk is good.[303] In the case of diseases of blood (शोनित) and bile (पित्त), one should drink ghee with the three fruits; it is particularly cleansing.[304] In the case of phlegm, a purgative by means of turpeth (त्रिवृत्) is recommended. In the case of all three humours, sandal (सुगन्धि) in oil is prepared with it (turpeth).[305]

28 In cases of partial blindness (तिमिर), aged ghee is recommended. It is good if it is kept in an iron vessel.

28cd–29ab One should know that ghee with the three mylobalans is always good, and it is made with what is called periploca of the woods (मेषविषाण).
A man who is suffering from partial blindess should lick the finely-ground three fruits mixed with ghee off his hand (सपाण).[306]

29cd Alternatively, someone afflicted by phlegm should apply them (the three fruits) mixed with oil and steeped (प्रगाढ) in honey.

30 The very best oil, well-cooked with a decoction of cow-dung, is good in cases of partial blindness, taken as an errhine.
In cases caused by bile, ghee by itself is good, as is oil when it arises from wind and blood.

31 And in the case of wind one should apply turpeth (त्रिवृत्) based on strong mallow (अतिबला), and country mallow (बला) in an errhine (नस्य).[307]
Ghee which has been extracted from milk cooked with the meat of aquatic creatures and those from marshlands should be prescribed.

32 †An enclosed roasting (पुटाख्य) with Sindh salt and the product of the meat of a carnivore (क्रव्यभुज्) and a deer (एण), is combined with honey and ghee.[308]

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303 Ḍalhaṇa said that the unexpressed topic of this recipe is partial blindness (तिमिर).

304 Blood-bile (शोनित-पित्त, रक्त-पित्त) is a widely-recognized disease in ayurveda, but the compound here is definitely dual, which rules out that interpretation. One would expect blood-bile because the previous verse

305 The expression "the fragrant one in oil (तैलसुगन्धि)" is puzzling. The word *sugandhi* has different referents in the *Nighaṇṭu* literature but is not common as a noun in the extant literature. "Sandal" is just one of its possible meanings.

306 "Off his hand" translates the adverbial *sapāṇam*, an unusual word. Ḍalhaṇa reproduced a reading close to the Nepalese recension but says that Jejjaṭa rejects it and so he also does (Su 1938: 627).

307 "Based on" translates *-āśrita* "depending on" which does not construe easily here. The vulgate has *śṛta* "cooked" which makes easier sense but is not supported by the Nepalese MSS.

308 Ḍalhaṇa noted (Su 1938: 628a) that *puṭāhvaya* (see verse 35 below) is a synonym for

Fat (वसा) from a horse, a vulture, a snake, and a cock (ताम्रचूड), combined with mahua (मधूक) is always good in a collyrium.†[309]

33 Having prepared (निषेवित) a collyrium made of kohl (स्रोतस्) and gradually combine it with juices (रस), milk and ghee.[310]
For thirty days, this collyrium is put in the mouth of a black snake that is covered with kuśa grass (कुश).

34 Next, a collyrium that is milk containing long pepper (मागधी), lye (क्षारक) and Sindh salt (सैन्धव) that has been repeatedly prepared with the mouth of a black snake, is good in the case of bloodshot blindness (रागिन् तिमिर).[311]

35 They say that ghee may be produced from that and combined with sweet herbs is good as an errhine for eye-diseases caused by bile.
And here, an eyewash (तर्पण) is good that is a combination that is the flesh of wild animals taken hot (पुटाह्वय).[312]

36 And realgar (मनःशिला) mixed with elixir salve (रसाञ्जन) and honey is a liquid collyrium (द्रवाञ्जन) which is, in this case, combined with mahua (मधूक).[313]
Alternatively, experts on this say that finely ground blue vitriol (तुत्थ)

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puṭapāka, and that the process is described in the *Kriyākalpa* chapter, i.e., SS.6.18.33–38 (Su 1938: 635). On the *puṭa* process in the *Suśrutasaṃhitā*, which is earlier and different than that of *rasaśāstra* literature, see the discussion by Wujastyk (2019: 83):

> The term 'enclosed roasting' (*puṭapāka*) does occur in the *Suśrutasaṃhitā* in the context of eye treatments, but designates a method of obtaining juice from substances by wrapping them in leaves pasted with earth and cooking the bolus on charcoal to finally extract a juice.

309 This verse contain irresolvable difficulties. There are no significant variants in the Nepalese MS transmission, but the text is ungrammatical. The vulgate reads substantially differently but we have nevertheless made some emendations in line with it and read the verse as two sentences.

310 Ḍalhaṇa specified that the juices are meat soups of various animals (Su 1938: 628).

311 Ḍalhaṇa described this blindness as a type of *kāca* disease caused by wind (Su 1938: 628). The expression "bloodshot blindness" is an attempt to capture the idea of a blind eye that is dyed or coloured (not colour-blindness). This verse is quite different from the vulgate and also syntactically challenging.

312 The expression taken hot (पुटाह्वय) is a guess.

313 The expression liquid collyrium (द्रवाञ्जन) is only known from Ḍalhaṇa's comments on 6.17.11ab (Su 1938: 626). The recipe in the present collyrium is different from that discussed by Ḍalhaṇa.

extracted from a gold mine is the "same collyrium (समाञ्जन)".[314]

37 Conch mixed with equal parts of sheep's horn and stibnite (अञ्जन) removes the impurity of the glassy opacity (काच) because of the application of collyrium (अञ्जन).[315]

The extracts (रस) produced from aflame of the forest (पलाश), Rohīta tree (रोहीत),[316] mahua (मधूक), ground with the supernatant layer (अग्र) of the spirits (मदिर) is applied.

38 Alternatively, one should cook an errhine with cuscus grass (उशीर), lodh tree (लोध्र), the three fruits (त्रिफला), beauty berry (प्रियङ्गु) to pacify eye diseases caused by phlegm.[317]

One should apply smoke of the bark of embelia (विदङ्ग), velvet leaf (पाथा), white siris (किनिही), and desert date (इङ्गुदी); and cuscus grass (उशीर) alone.

39 A ghee that is cooked (भावित) from a decoction of a non-flowering tree (वनस्पति)[318] as well as turmeric (हरिद्रा) and spikenard (नलद) is good in a eyewash (तर्पण).

Alternatively, one may have an enclosed roasting (पुटपाक) done with arid-land animals (जाङ्गल)[319] and a plentiful amount of long pepper (मागध), Sindh salt and honey.

40 A treatment (क्रिया) with realgar (मनःशिला), the three spices, conch, honey, along with Sindh salt, green vitriol (कासीस) and elixir salve (रसाञ्जन).[320]

They say that an elixir salve (रसाञ्जन) combined with myrobalans, treacle

314 On *tuttha*, which may also be identified with zinc oxide or as crushed sea-urchin shells, see Falk (1991: 112 ff.); zinc oxide is a component of skin-balms but is not recommended for application in the eyes themselves. The expression "same collyrium (समाञ्जन)" is a hapax legomenon glossed inexplicably by Ḍalhaṇa as "a collyrium with an equal amount of fermented barley" (*tulyasauvīrāñjana*) (Su 1938: 628).

315 The ablative "from collyrium" is hard to construe, but Ḍalhaṇa used this term and phrase in his commentary on 6.17.41ab (Su 1938: 629).

316 Probably *Soymida febrifuga* A. Juss.

317 Ḍalhaṇa invoked a general rule (परिभाषा) to indicate that this mixture should be cooked with sesame oil.

318 These are fig trees. The *Sauśrutanighaṇṭu* (252) specifies the Uḍumbara. Cf. the classification in CS.1.1.71–72, 1.8, *et passim*.

319 On this term, see SS.1.35.42 (Su 1938: 157) and the discussion by Zimmermann (1999: 25–31).

320 Ḍalhaṇa glossed treatment (क्रिया) specifically as inspissation (रसक्रिया) (Su 1938: 629).

and dried ginger is good.[321]

find ref.

41 Alternatively, a collyrium that has been prepared many times in the eight types of urine[322] is put into water with the three fruits. Having stored it in the mouth of a nocturnal creature (निशाचर)[323] one should place it in a conch (सलिलोत्थित) for two months.[324]

42 One should apply that collyrium together with the flowers of mahua (मधूक) and horseradish tree (शिग्रु) when [the disease] is caused by all [the humours].

Check out these refs.

But alternatively, all treatments apply when blood is the cause. The procedure that removes bile is good when there is blue dot cataract (म्लायिन्).[325]

43 For one who has a humour, the physician should consider the rule in all humoral cases and then smear the ointment on the face.[326]

The treatment that is good for removing watery eye (स्यन्द) should be properly applied in all these humoral cases, according to the individual.[327]

44 The physician should not employ substances in errhines etc., when the humours intensify, and also when disease spreads. And further, in the *Kalpa*, there is a good deal more said about collyriums, and that should be considered and then applied.[328]

meaning of kalpa

45 Someone who uses matured ghee, the three fruits, wild asparagus, as well as mung beans, emblic and barley has nothing to fear from cases of severe blindness (तिमिर).

46 Blindness is dispelled by milk prepared with wild asparagus or in emblics, or again cooked barley (यवौदन) followed by the water of three

321 We emend हिते to हितम्, against the MSS.

322 See *Suśrutasaṃhitā* mūtravarga

323 Ḍalhaṇa glossed nocturnal creature (निशाचर) as "vulture," although elsewhere in the *Suśrutasaṃhitā* it is more commonly interpreted as a spirit or demon. In the present context, following verses 33 and 34, it is probably a snake.

324 We interpret "water-born (सलिलोत्थित)" as "conch" in line with *jalodbhava*, but the term is uncertain.

325 The vulgate follows Ḍalhaṇa in glossing *mlāyin* as *parimlāya*. The description of this condition at SS.6.7.27–28 appears to refer to "blue dot" or "cerulean" cataract. √*mlai* derivatives can mean "dark" or "black."), which is normally a different ailment.

326 The vulgate edition omits part of this verse (ab) combining earlier and later passages.

327 The term watery eye (स्यन्द) refers to the specific disease *abhiṣyanda*. See SS.6.6.5, 1.46.51, etc.

328 Ḍalhaṇa noted that *Kalpa* means the Uttaratantra adhyāya 18 (Su 1938: 633 ff).

fruits with plenty of ghee.

47 When there is bloodshot blindness (रागिणि तिमिरे), the wise physician should not cut a vein. A humour injured (उत्पीडित) by the instrument rapidly destroys vision.

48 Non-bloodshot blindness (अरग तिमिर) in the first layer (पटल) is treatable. And bloodshot blindness (रागिणि तिमिरे) in the second layer, with difficulty. And in the third layer it can be mitigated (याप्य).[329]

49 I shall explain the therapy for success when there is a cataract (लिङ्गनाश) caused by phlegm. It may be white, like a full moon, an umbrella, a pearl (मुक्ता) or a spiral (आवर्त).

50 Or it may be uneven, thin in the middle, streaked or have excessive shine (प्रभ). A humour (दोष) in the pupil may be characterized as being painful or having blood.[330]

51–52 At a time that is neither too hot or too cold, the patient who has been oiled and sweated is restrained and seated, looking symmetrically at his own nose.

The wise physician should separate (मुक्त्वा) two white sections from the black part (कृष्ण) and from the outer corner of the eye (अपाङ्ग). Then he should press (पीड्-) properly into the eye,[331] at the naturally-occurring (दैवकृते) opening (छिद्र) with a probe (शलाका) made of copper or iron, with a tip like a barley-corn, held by a steady hand with the middle finger, forefinger and thumb, the left one with the right hand and the other one contrariwise.

When the piercing is done properly, there is the issue of a drop of liquid and a sound.[332]

55 The expert should moisten the exact place of piercing with a woman's breast-milk. Then he should scratch the circuit of the pupil (दृष्टिमण्डल)

329 Although the text says with difficulty (कृच्छ्र), the implication is that it is untreatable (असाध्य) (cf. 6.17.2 (Su 1938: 625) above). The three categories, treatable, untreatable and possibly mitigated are standard categories of triage.

330 In the vulgate, and in parallel passages in the AS, the reading "it may be (भवेत्)" is replaced with the negative "if, then not (न चेद्)" (cf. utt.17.1–3a (As 1980: 712)). These characteristics are then read as conditions that preclude surgery; for the Nepalese recension, they are simply descriptions of the appearance of a cataract.

331 We understand the locative *nayane* as the place of pressing; other interpreters take it as an accusative dual. The idea is that the eye is held steady by the surgeon.

332 Ḍalhaṇa remarked on 6.17.61ab (Su 1938: 630) that when the piercing is not correctly done, blood issues and there is no sound.

with the tip of the probe (शलाका).[333]

56 Without injuring, gently pushing the phlegm in the circuit of the pupil against the nose, he should remove it by means of sniffing (उच्छिङ्गन).[334]

57 Whether the humour is solid (स्त्यान) or liquid (चल), one should apply sweating to the eye externally, with leaves (भङ्ग) that remove wind, after fixing the needle (सूची) properly.[335]

58 But if the humour cannot be destroyed or if it comes back, one should apply the piercing (व्यध) once again, with appropriate oils and so on.

59 Now the pupil (दृष्टि) shines like the sun (हरि) in a cloudless sky; then, when objects become visible, one may slowly remove the probe (शलाका).[336]

60 Having smeared ghee on the eye, one should cover it with a bandage. Then, he must lie down supine in a house free from disturbances.[337]

61 At that time, he should not belch, cough, sneeze, spit or shiver. Afterwards there should be restrictions (यन्त्रणा) as in the case of someone who has drunk oil.[338]

62 Every three days one should wash it with decoctions (कषाय) that remove wind. After three days, one should sweat the eye externally because of the danger of wind.

63 Having restrained himself in this way for ten days he should thereafter take a beneficial regimen (कर्म) that clears the pupil (दृष्टि) and also he should take light food in measure.

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333 The anatomy of the eye is described in 6.1.14–16 (Su 1938: 596). The disks or *maṇḍala*s are the circuits or disks of the eye.

334 Ḍalhaṇa described sniffing (उच्छिङ्गन) at 6.19.8 (Su 1938: 641), clearly intending inward sniffing.

335 We interpret *bhaṅga* as leaves, following the usage elsewhere in this sthāna 4.32.9, 6.11.5 (Su 1938: 513, 614) where *bhaṅga* means shoots (पल्लव). A similar procedure is described at 6.17.25a (As 1980: 716a), where sweating of the eye is done by means of the leaves of a castor-oil plant.

336 There are many problems with the MS readings and interpretation of this half-verse. We have inferred "sky" and emended from "free from the point (अग्रमुक्त)" to "free from clouds (अभ्रमुक्त)". The latter meaning is supported (in different words) by the vulgate and occurs elsewhere in Sanskrit literature.

337 Ḍalhaṇa explained disturbances specifically as dust, smoke, drafts and sunlight 6.17.67 (Su 1938: 631a).

338 Ḍalhaṇa glossed "restrictions (यन्त्रणा)" as having a controlled diet and the other restrictions appropriate to someone who is taking oil as a preparation before further therapy (6.17.68 (Su 1938: 631)). These restrictions are also described at 6.18.28 (Su 1938: 635) and 1.16.25cd (Ah 1939: 249).

[Complications]

64 When there is a misshapen eyeball (विलोचन), the eye may fill because of the release of blood from a vein.[339]
A hard probe leads to shooting pain (शूल), a thin to unsteadiness of the humours (दोषपरिप्लव),[340]
65 a thick-tipped probe leads to a large wound, and a sharp one may cause harm in many ways; a very irregular one may cause a discharge of water, a rigid (स्थिरा) one brings about a loss of function (क्रियासङ्ग).[341]
66 Therefore, one should make a good probe that is free from these defects.

[Characteristics of the probe]

The probe should be eight finger-breadths long and in the middle it is wrapped with thread and is as thick as a thumb joint. It is shaped like a bud at both ends (वक्र).
67 A commendable probe should be made of silver, iron or gold (शातकुम्भी).[342]

[Complications]

Redness, swelling, lumps, driness (चोष), bubbling (बुद्बुद),[343] pigs' eye (सूकराक्षिता),[344], irritation (अधिमन्थ), etc. and other diseases arise from faults in the piercing,
69–70 or even from bad behaviour. One should treat them each accordingly.
Listen to me once again about compounds for painful red eyes.

339 The condition of "misshapen eye" is referred to briefly in 6.61.9 (Su 1938: 800), where Ḍalhaṇa glossed it as "bent brow and eye (वक्रभ्रूनेत्र)." The vulgate's reading of "with blood (शोनितेन)" is easier to construe.

340 There is a medically significant difference here from the vulgate, which reads "a rough (खर) probe" not a "thin" probe.

341 This translation of loss of function (क्रियासङ्ग) is given on the basis of Ḍalhaṇa's gloss of *kriyāsaṅgakarin* at 3.8.19 (Su 1938: 382) as "causing the destruction of actions such as moving (गमनादिक्रियाविनाशकरी)."

342 The vulgate reads "copper (ताम्र)" in place of "silver."

343 Ḍalhaṇa glossed "bubbling (बुद्बुद)" as "prolapse (मांसनिर्गम) that looks like bubbles."

344 The expression "pigs' eye" appears to be a *hapax*. It was glossed as "downward vision (अधोदृष्टित्व)" by Ḍalhaṇa.

Red chalk (गैरिकः), Indian sarsaparilla (शारिवा), panic grass (दूर्वा), and ghee ground with barley.

71 This face ointment is to be used for quelling pain and redness. Or else it may be taken combined with the juice of citron (मातुलुङ्ग) with sesame gently fried, mixed with white mustard (सिद्धार्थक).[345] This is immediately beneficial when someone is looking for relief.

72 A paste with Holostemma (पयस्या),[346] Indian sarsaparilla (शारिवा), cassia cinnamon (पत्र), Indian madder (मञ्जिष्ठा), and liquorice (मधुकैर्) stirred with goat's milk, pleasantly warmed, is said to be healthy.[347]

73 Alternatively, it can be made in this way with Himalayan cedar, Himalayan cherry (पद्मक) and dried ginger. Or, in the same way, with grapes, liquorice and the Lodh tree mixed with Sindh salt.

74 Alternatively, goats' milk with the Lodh tree, Sindh salt, red grapes and liquorice, cooked, should be used in irrigation because it removes pain and redness.

75 Having cooked it with liquorice, water-lily, and costus, mixed with grapes (द्राक्षा), lac (लाक्षा), white sugar (सिता), with wild asparagus, Hare Foot Uraria (पृथक्पर्णी),[348] nutgrass (मुस्ता), liquorice, Himalayan cherry (पद्मक), and Sindh salts, one should apply it [irrigation] gently warm.

76cd–77ab Ghee that has been cooked in four times the amount of milk that has itself been cooked with drugs that destroy wind.[349] This has an admixture of cottony jujube (काकोली) etc., should be prescribed in all treatments.[350]

77cd–78ab If pain does not end in this way, one should administer blood-letting to

345 On the adverbial use of gently (मृदु), see Gombrich 1979.

346 The identity of *payasyā* is debated (GVDB: 538), and was already in doubt at the time of Ḍalhaṇa but likely candidates may be those suggested by Ḍalhaṇa, who suggests either *arkapuṣpī* or *kṣīrakākolī*, that may be *Holostemma adakodien* Schult. and *Leptadenia reticulata* (Retz.) Wight & Arn. (ADPS: 195-196). The *Sauśrutanighaṇṭu* glosses it as *kṣīrikā* or *arkapuṣpikā* (Suvedī and Tīvārī 2000: v. 307).

347 The expression "stirred with goat's milk (अजाक्षीरार्दित)" is difficult. It may be connected with the rare root *ard* documented by Whitney (1885: 15). Cf. √*ard gatau* (*Dhātupāṭha* 1.56).

348 Suvedī and Tīvārī 2000: 18.

349 Ḍalhaṇa mentioned that these drugs include Deodar (भद्रदारु) and other wind-destroying drugs. The *vātasaṃśamana* group is listed in *Suśrutasaṃhitā sūtrasthāna* 1.39.7.

350 Ḍalhaṇa noted that this would include errhines, ointments, etc.

the vein of someone who has previously been oiled and sweated. Then the wise physician should apply cauterization in the advised manner.[351]

78cd–80ab Now listen to two excellent collyriums for making the pupils clear. After grinding the flowers of perploca of the woods (मेषशृङ्ग), siris (शिरीष), axelwood (धव) royal jasmine (जाती), pearl and beryl (वैडूर्य) with goat's milk, one should put it in a copper pot for seven days.

80cd–81 Having made it into wicks (वर्त्ति), the physician should apply it as a collyrium. Alternatively, one should make kohl (स्रोतोज), coral (विद्रुम), cuttlefish bone (फेन), and realgar (मनःशिला) and peppers into wicks as before. One should apply these wicks, which are good in a collyrium, to steady the pupil.

or a dual?

82 I shall again discuss the foremost collyriums at length in the *Kriyākalpa* section. Those various methods may be applied here too.

351 The vulgate reads *vāpi* for *cāpi*, so Ḍalhaṇa saw blood-letting and cautery as alternatives, not a sequence of treatments. Ḍalhaṇa listed the places that cauterization may be applied, such as the brow, forehead, etc.

Uttaratantra 38: Diseases of the Female Reproductive System

Summary of the Content

The chapter talks about various diseases of the female reproductive system and, in doing so, combines both aspects that go into a representation of diseases in āyurvedic literature: signs, symptoms and pathogenesis (*nidāna*), on the one hand, and medical treatment (*cikitsā*), on the other. In chapters of the *Uttaratantra*, these two aspects are sometime dealt with in two different chapters X-*vijñānīya* and X-*pratiṣedha*. There are, however, many examples where this distinction is not made.

The chapter is summarized, with notes on vocabulary and references to further research literature, in HIML: IA, 313.

Placement of the Chapter

In the vulgate text (Su 1938) the current chapter, 6.38, is found after the Uttaratantra's subsection on paediatrics, the *Kumāratantra*, see Table 3.[352] But in the Nepalese version, this is chapter 6.58 of the Uttaratantra. And it is also counted as chapter 23 of the subsection *Kāyācikitsā*.

Several things are noteworthy in this regard:

- In the placement of the vulgate, this chapter follows upon 6.37 *Grahotpatti* (6.35 in the Nepalese version), a chapter that talks about the origination of nine demons (ग्रह) that are responsible for all children's diseases described in previous chapters of the

352 Or *Kumārabhṛtya* as this section is named in MS Kathmandu KL 699.

Table 3: Subdivisions of the Uttaratantra, in the vulgate.

Section	Chapters	Internal count
Śālakyatantra	1–26	1–26
Kumāratantra	27–38	1–12
Kāyacikitsātantra	39–59	1–21
Bhūtavidyātantra	60–62	1–3
Tantrabhūṣaṇādhyāya	63–66	1–4

Kumāratantra. In this way, the current chapter retains the general focus on the child bearing (कौमारभृत्य), but, at the same time, marks a change to a distinct, less mystical approach to the topic at hand (that could originate in a cultural milieu different from that of the preceding eleven chapters). Ḍalhaṇa explained how the chapter fits its context in the following way:

> It is appropriate that, for the sake of treating the disorders of the female reproductive system, the chapter called "Countermeasures Against Disorders of the Female Reproductive System" is taught immediately after the chapter called "The Origination of Demons (ग्रह)." It is because (1) there is an explicit mention of the word "*yoni*" in the statement "born in the womb (योनि) of animal and human" [in 6.37.13bc (Su 1938: 667)] and because (2) the disorders of the female reproductive system are the causes for the inborn disorders of children.[353]

- In the placement of the Nepalese version,
  - 6.*Yonivyāpatpratiṣedha* is preceded by
  - 6.56 *Mūtrāghātapratiṣedha* (6.58 in Su 1938) and
  - 6.57 *Mūtrakṛcchrapratiṣedha* (6.59 in Su 1938), two chapters dealing with the diseases of the urinary tract.

The current chapter carries on with the topic of diseases that affect genitalia. In its Nepalese version, the chapter opens with two verses

353 Ḍalhaṇa on 6.38.1 (Su 1938: 668): ग्रहोत्पत्त्यध्यायानन्तरं 'तिर्यग्योनिं मानुषं च' इति वचनेन योनेर्नामसंकीर्तनात् कुमारजन्मविकारकारणत्वाच्च योनेर्व्यापच्चिकित्सितार्थं योनिव्यापत्प्रतिषेधाध्यायारम्भो युज्यत […]।

that explain the reasons for treating the particular set of diseases. These lack any reference to the inborn disorders of children, mentioned by Ḍalhaṇa, and instead highlight the importance of curing female diseases for the satisfaction of male partner.

- SS.1.3 in both Su 1938 and the Nepalese version lists the chapter at the place where it is found in the vulgate.[354]
- Parallel chapters in the *Aṣṭāṅgasaṃgraha* and the *Aṣṭāṅgahṛdayasaṃhitā* form a part of the *Śalyatantra* section of each text.

Parallels

The current chapter is parallel in its content to *Aṣṭāṅgasaṃgraha* 6.38 and 6.39 as well as *Aṣṭāṅgahṛdayasaṃhitā* 6.33 and 6.34 (*Guhyarogavijñāna* and *Guhyarogapratiṣedha* respectively).

A close literary parallel to the first part of the chapter is found in *Mādhavanidāna* (MN_3) 62, or at least its version printed in Y. T. Ācārya (MN_3: 361). The readings of the MN_3 as it stands now usually side with the vulgate version rather than with the Nepalese. In addition to the basic text, there are several valuable pointers made in the *Madhukośa*, an early commentary on the MN_3. This part of the text is authored by Śrīkaṇṭhadatta, who was most like a direct student of Vijarakṣita. The latter wrote the first part of the *Madhukośa*, up to chapter 32, and, what is more, can be dated to the late eleventh or early twelfth centuries.[355]

Another most interesting parallel is found in *Carakasaṃhitā* 6(Ci).30.

Philological notes

Metrical alterations

The first two verses in the Nepalese version, 6.38.2.1 and 6.38.4.1, are written in a classical variety of the *upajāti* metre: ⏑ _ ⏑ _ _ ⏑ ⏑ _ ⏑ _ _ In content, they are only approximately parallel to three hemistichs in *anuṣṭubh* metre

354 See 1.3.37ab (Su 1938: 15): नैगमेषचिकित्सा च ग्रहोत्पत्तिः सयोनिजा॥.
355 Meulenbeld 1974*b*: 22–26.

found in the vulgate.[356] The latter verses lack the apologetic explanation concerning the reasons for this chapter being taught.

The original opening verses

From verse *Suśrutasaṃhitā* 6.38.5.1 onwards, the Nepalese version of the text continues with three hemistichs in the same classical *upajāti* metre (the syllabic pattern above).[357] By contrast, the vulgate contains two complete verses (four hemistichs) in the *anuṣṭubh* metre, again with only loosely-related content.[358] The three final hemistichs of this group are borrowed verbatim from the *Carakasaṃhitā*.[359] We can be sure of the direction of borrowing because one of these shared verses says that the twenty kinds of diseases of the female reproductive system "have already been indicated in the *Compendium of Diseases* (**रोगसंग्रह**)".[360] This statement does not make any sense in the context of the *Suśrutasaṃhitā*, where no such Compendium exists.[361] By contrast, in the *Carakasaṃhitā* this reference points back to chapter 1.19 (Ca 1941: 109–112), which calls itself "The Compendium of Diseases".[362] This Compendium lists all the diseases dealt with in later sections of the text, and specifically mentions the twenty diseases of female reproductive system.[363] Even the vocabulary and wording of this passage is identical to the later verses. It is beyond doubt that this passage originated in the *Carakasaṃhitā* and was borrowed by the editors of the vulgate text of the *Suśrutasaṃhitā*.[364]

356 *Suśrutasaṃhitā* 6.38.3–4ab (Su 1938: 668).

357 The metre of these verses is not perfect.

358 *Suśrutasaṃhitā* 6.38.4cd–6ab (Su 1938: 668).

359 *Carakasaṃhitā* 6.30.7cd–8 (Ca 1941: 634).

360 *Suśrutasaṃhitā* 6.38.5ab (Su 1938: 668): **विंशतिर्व्यापदो योनेर्निर्दिष्टा रोगसंग्रहे॥** ← *Carakasaṃhitā* 6.30.7cd (Ca 1941: 634).

361 The remark was not commented on by Ḍalhaṇa.

362 *Carakasaṃhitā* 1.19.9cd (Ca 1941: 112): **रोगाध्याये प्रकाशिताः**.

363 *Carakasaṃhitā* 1.19.3 (Ca 1941: 110): **विंशतिर्योनिव्यापदः।**

364 The above three hemistichs in *anuṣṭubh* are also repeated in the MN_3 62.1–2ab. Given that the subsequent verses in the MN_3 stem from the *Suśrutasaṃhitā*, it is likely that MN_3 62.1–2ab too was borrowed from from the *Suśrutasaṃhitā* and not from its original location in the *Carakasaṃhitā*).

Translation

1 And now I shall explain the countermeasures against disorders of the female reproductive system (योनिव्यापत्).[365]

*3 Since for good men, a woman is the most pleasurable thing, therefore a physician should diligently attend to the diseases located in the female reproductive system (योनि), because he is entirely devoted to it (that is, to curing these diseases) for the sake of (people's) happiness.[366]

*4 A corrupted female reproductive system (योनि) cannot consume semen (बीज), and therefore, the woman cannot take a fetus (that is, become pregnant). She gets severe prolapses (अर्शस्), abdominal lump (गुल्म) and similarly many other diseases (रोग).

*5 Humours (दोष), wind (वात), etc., corrupted due to faulty medical treatment (मिथ्योपचार),[367] sexual activity, fate, and also defects (दोष) of menstrual blood (आर्तव) and semen (बीज), produce various diseases in the female reproductive organ (योनि). These 20 diseases are taught here dis-

365 On this broad understanding of the term *yoni* as "female reproductive system" see Das 2003: pp. 572–5.

366 As our translation indicates, the sentence construction does not allow an unambiguous identification of who or what is the referent of the pronoun *tad* in the compound form *tadadhīna* 'devoted to it.' Our current understanding is that *tad* refers to the 'most pleasurable thing' mentioned in pāda a. It could, however, also refer to 'them,' that is, the 'good men.'

367 In our translation of the compound मिथ्योपचार, we decided for the technical meaning of the term उपचार, that is, "medical application" or "treatment." The combination मिथ्या+उप-√चर् is attested several times in medical literature. At least once, at *Carakasaṃhitā* 3.3.38 (Ca 1941: 245), it is given an explicit gloss by Cakrapāṇidatta: मिथ्योपचरितानिति असम्यक् चिकित्सितान् "... given improper therapy". In the *Suśrutasaṃhitā* (Su 1938), it is used once in a passage (6.18.30 (Su 1938: 635)) where it refers specifically to the wrong application of irrigation (तर्पण) and roasting (पुटपाक), both of which are mentioned in the previous verse. Another use of the compound in a similar meaning is found in a citation from Bhoja's work quoted by Gayadāsa at *Suśrutasaṃhitā* 2.5.17 (Su 1938: 287): श्वित्रं तु द्विविधं प्रोक्तं दोषजं व्रणजं तथा। तत्र मिथ्योपचाराद्धि व्रणस्य व्रणजं स्मृतम्॥ "... arises from wrong treatment of the wound." In contrast to this, the parallel verse in *Suśrutasaṃhitā* 6.38.5ab (Su 1938: 668) = *Carakasaṃhitā* 6.30.8 (Ca 1941: 634) = MN_3 62.1 reads मिथ्याचार "wrong conduct." All commentators (Cakrapāṇidatta on the *Carakasaṃhitā*, Śrīkaṇṭhadatta on the MN_3, and Ḍalhaṇa on the *Suśrutasaṃhitā*) explain that the wrong conduct stands here specifically for unwholesome diet. The parallel in *Aṣṭāṅgahṛdayasaṃhitā* 6.33.27 (Ah 1939: 895) = *Aṣṭāṅgasaṅgraha* 6.38.34a (As 1980: 829) plainly reads दुष्तभोजन "corrupted food" instead.

tinctly and one by one along with their treatment (भेषज), causes (हेतु) and signs (चिह्न).

*6.1 Because of wind (वात), female reproductive organ (योनि) becomes:

1. udāvartā (उदावर्ता),
2. called Infertile (वन्ध्या), and
3. Sprung (प्लुता),
4. Flooded (परिप्लुता), and
5. Windy (वातला).

*6.2 And because of choler (पित्त), occur:

1. With bloodloss (रक्तक्षया),
2. Vomiting (वामिनी), and
3. Causing a Fall (स्रंसनी),
4. Child-murderess (पुत्रघ्नी), and also
5. Bilious / Choleric (पित्तला).

*7.1 And because of phlegm (कफ) occur:

1. Extremely Excited (अत्यानन्दा),
2. Protuberant (कर्णिनी), and
3. & 4. two Caraṇī (चरणी), and
5. other Phlegmatic (श्लेष्मला).

*7.2 And similarly there are other (kinds of morbid female reproductive system) involving all *doṣa*s:

1. Impotent (शण्ढी),
2. With testicles (अण्डीनी),
3. two Huge (महती),
4. With a needle-like opening (सूचीवक्त्रा),
5. Sarvātmikā (सर्वात्मिका).

Uttaratantra 39: On Fevers and their Management

Literature

Meulenbeld offered an annotated overview of this chapter and a bibliography of earlier scholarship to 2002.[368]

Translation

1 ...
2 ...

368 HIML: IA, 313–317.

Uttaratantra 65: Rules of Interpretation

Literature

Meulenbeld offered an annotated overview of this chapter and a bibliography of earlier scholarship to 2002.[369] Earlier explorations of this topic include Nārāyaṇa 1949; Dasgupta 1952; Oberhammer 1967–68; Muthuswami 1976; Lele 1981; Scharfe 1993; Mejor 2000; A. Singh 2003. Manevskaia 2008 gave examples of the use of tantrayuktis in Buddhist commentarial literature.

Translation

1 ...
2 ...

369 HIML: IA, 331.

Editions and 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*.
Apte	Apte, Vaman Shivaram (1992), *The Practical Sanskrit-English Dictionary* (Kyoto: Rinsen Book Company), ISBN: 4-653-00038-7; Reprinted from Gode and Karve 1957–59.
AS	*Asiatic Society*.
As 1980	Āṭhavale, Anaṃta Dāmodara (1980) (ed.), **अष्टाङ्गसङ्ग्रहः श्रीमद्वृद्धवाग्भटविरचितः इन्दुव्याख्यासहितः** [= *Vāgbhaṭa's Aṣṭāṅgasaṅgraha with Indu's Commentary*] (Puṇe: M. A. Āṭhavale, Śrīmad Ātreya Prakāśanam), ark:/13960/s25bwqsd0n7.
AyMahā	Jośī, Veṇīmādhavaśāstrī, and Jośī, Nārāyaṇa Harī (1968), **आयुर्वेदीय महाकोशः अर्थात् आयुर्वेदीय शब्दकोशः संस्कृत–संस्कृत** (Muṃbaī: Mahārāṣṭra Rājya Sāhityta āṇi Saṃskṛti Maṃḍaḷa), ark:/13960/t22c41g8t.
Bhela 1921	Mookerjee, Ashutosh, and Ananta Krishna Shastri, Vedantabisharad (1921) (eds.), *The Bhela Samhita. Sanskrit Text* (Calcutta: University of Calcutta), ark:/13960/t3sv3157j; Based on two copies made of the Thanjavur codex unicus (MS Thanjavur TMSSML 10773, Burnell 1880: 63–4, P. P. S. Sastri 1933: #11085).

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

IOLR — Eggeling, Julius, et al. (1887–1935), *Catalogue of the Sanskrit Manuscripts in the Library of the India Office* (London: Secretary of State for India), ark:/13960/s2kbk5zcrg9.

KEWA — Mayrhofer, Manfred (1953–72), *Kurzgefaßtes etymologisches Wörterbuch des Altindoarischen; a Concise Etymological Sanskrit Dictionary* (Heidelberg: Carl Winter, Universitätsverlag).

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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*.

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. Searchable at https://vmlt.in/ncc/.

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RORI — *Rajasthan Oriental Research Institute*.

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TMSSML *Tanjore Maharaja Serfoji Saraswati Mahal Library*.

Viṣṇudh. Śarman, Madhusūdana, and Śarman, Mādhavaprasāda (1912) (eds.), **विष्णुधर्मोत्तरपुराणम्** = [*Viṣṇudharmottarapurāṇa*] (Mumbai: Khemarāja Śrīkṛṣṇadāsa at the Śrīveṅkaṭeśvara Steam Press), ark:/13960/t6qz6fr23; Lithograph format. Edited on the basis of a manuscript belonging to the astrologer Śudhākaraśarman of the Varanasi Sanskrit Pāṭhaśālā.

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Numbers after the final colon refer to pages in this book.

amaranth (*taṇḍulīyaka*) Amaranthus hypochondriacus, L. See King 321, NK: 1, #144, Potter$_{rev}$: 15. Cf. AVS: 1, 121 : 76

axlewood (*dhava*) Anogeissus latifolia (Roxb. ex DC.) Wall. ex Guill & Perr. See AVS: 1, 163 f, Chopra: 20 : 98

bamboo leaves (*veṇupatrikā*) Bambusa bambos, Druce. See NK: 1, #307 : 76

beautyberry (*priyaṅgu*) → *śyāmā*. Callicarpa macrophylla, Vahl. See AVS: 1, 334, NK: 1, #420. Some say also Setaria italica Beauv. GVDB: 263–264. See also GVDB: 413 : 94, 99

beautyberry (*śyāmā*) Callicarpa macrophylla, Vahl. See AVS: 1, 334, NK: 1, #420 : 74, 76

beggarweed (*aṃśumatī*) Desmodium gangeticum (L.) DC (Dymock: 1, 428, GJM1: 602, NK: 1, #1192; ADPS: 382, 414 and AVS: 2, 319, 4.366 are confusing) : 94

beggarweed (*vidārigandhā*) → *śālaparṇī*. Desmodium gangeticum (L.) DC. See Dymock: 1, 428, GJM1: 602, cf. NK: 1, #1192; ADPS: 382, 414 and AVS: 2, 319, 4.366 are confusing : 43

black creeper (*pālindī*) Ichnocarpus frutescens, (L.) R.Br. or Cryptolepis buchanani, Roemer & Schultes. See AVS: 3, 141, 3.145, 3.203, NK: 1, #1283, 1210, ADPS: 434 : 76, 79, 93, 94

blackboard tree (*saptachada*) Alstonia scholaris R. Br. GVDB: 420 : 75

blackbuck (*hariṇa*) Antilope cervicapra, L. See BIA: 270 IW: 95, 165, *et passim* : 78, 79

blue water-lily (*utpala*) Nymphaea stellata, Willd. See GJM1: 528, IGP 790; Dutt: 110, NK: 1, #1726 : 25, 74, 93, 94

cardamom (*elā*) Elettaria cardamomum, Maton. See AVS: 2, 360, NK: 1, #924, Potter$_{rev}$: 66 : 94, 99

cassia cinnamon (*patra*) Cinnamomum tamala, (Buch.-Ham.) Nees. See AVS: 2, 84, NK: 1, #589 : 76, 94

castor oil tree (*gandharvahasta*) → *eraṇḍa*. GVDB: 135, K&B: 3, 2277 : 39

castor-oil (*eraṇḍa*) Ricinus communis, L. See NK: 1, #2145, Chopra: 214 : 44

certain minerals (*tārāvitāra*) Unknown. It is not even certain that these are minerals. The variant reading in the vulgate, *tāraḥ sutāraḥ* was glossed by Ḍalhaṇa on 5.3.14 (Su 1938: 568) as follows *tāro rūpyaṃ, sutāraḥ pāradaḥ*, "tāra means silver; sutāra means mercury." : 98

chaff (*kāṇḍana*) The word *kāṇḍana* is not found in dictionaries; *kaṇḍana* is threshing, separating the chaff from the grain in a mortar. Cf. Hemādri's *Caturvargacintāmaṇi* (PWK: 2, 8) (Śiromaṇi 1873: 1, 138: 21, citing the

mung beans (*mudga*) Phaseolus radiatus L. GVDB: 310–311 : 116

mung beans (*māṣaka*) Phaseolus mungo Linn. GVDB: 308 : 75

myrobalan (*abhayā*) Terminalia chebula, Retz. See ADPS: 172, NK: 1, #2451, Potter$_{rev}$: 214 : 92, 99

natron (*suvarcikā*) Sodium carbonate. NK: 2, #45. Ḍalhaṇa identifies *suvarcikā* with svarjikṣāra 4.8.50 (Su 1938: 441) : 94

neem tree (*nimba*) Azadirachta indica A. Juss. GVDB: 226 : 39

nutgrass (*kuruvinda*) Unknown. Ḍalhaṇa on 5.3.15 (Su 1938: 568) glossed the term as nutgrass, but noted other opinions that it was a whetstone or a very special metallic gem. T. B. Singh and Chunekar (GVDB: 108) added that it could be a variety of rice, *ṣaṣṭika dhānya* : 98

nutgrass (*mustā*) Cyperus rotundus, L. See ADPS: 316, AVS: 2, 296, NK: 1, #782 :

panacea twiner (*arkapuṣpī*) → *arkaparṇī*, Tylophora indica (Burm. f.) Merr. GVDB: 23–24. Maybe identical to Indian ipecac, giant potato and similar sweet, milky plants. See GVDB: 24, 127, 238, 441, 443 for discussion. For discussion in the context of Holostemma creeper, see ADPS: 195 and AVS: 3, 171. The etymology of the name suggests Helianthus annus Linn., but this plant is native to the Americas : 92

peas (*hareṇu*) hareṇu = satīna. Pisum sativum, L. T. B. Singh and Chunekar (GVDB: 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 : 93, 94, 99

peepul tree (*aśvattha*) Ficus religiosa, L. See ADPS: 63 : 101

periploca of the woods (*meṣaśṛṅga*) Gymnema sylvestre (Retz.) R. Br. See AVS: 3, 107, NK: 1, #1173 : 77

plants like asthma plant and Gulf sandmat (*kṣīriṇī*) various milky plants, perhaps including Euphorbia hirta Linn. (asthma plant) and E. microphylla Heyne (Gulf sandmat) (GVDB: 127) :

plumed cockscomb (*indīvara*) Uncertain; possibly Celosia argentea Linn. But see the useful discussion in GVDB: 44–45. Possibly another name for thorn apple (*karambha*), q.v. :

pointed gourd (*paṭola*) Trichosanthes dioica, Roxb. GVDB: 232–233 : 92

poison berry (*bṛhatī*) Solanum violaceum, Ortega. See ADPS: 100, NK: 1, #2329, AVS: 5, 151 : 93, 94

pondweed (*paripelavā*) Normally a neuter noun. T. B. Singh and Chunekar (GVDB: 238, 264–265, 409) argued that *plava* and *śaivāla* are the same thing, and may be either Zannichellia palustris, L., or Potamogeton pectinatus, L : 94

pondweed (*śevāla*) Zannichellia palustris L. See horned pondweed : 25

prickly chaff-flower (*apāmārga*) Achyranthes aspera, L. See GJM1: 524 f, AVS: 1, 39, ADPS: 44 f, AVS: 3, 2066 f, Dymock: 3, 135 : 39, 43

purging nut (*mūṣikā*) Jatropha curcas, L. See AVS: 3, 261, NK: 1, #1374 : 78

purple calotropis (*arka*) Calotropis gigantea, (L.) R. Br. See ADPS: 52, AVS: 1, 341, NK: 1, #427, Potter$_{rev}$: 57, Chopra IDG: 305–308 : 43

purple roscoea (*kṣīrakākolī*) GVDB: 89 notes that many physicians use *Roscoea procera* Wall. in this context. But the identification is uncertain. Possibly connected to milk-white or giant potato :

rajmahal hemp (*moraṭa*) → *mūrvī*, Marsdenia tenacissima (Roxb.) Wight et Arn. Good discussion at GVDB: 314–316, 324 : 92

red chalk (*gairika*) gairika : 94

red gourd (*bimbī*) Coccinia indica, W. & A. See PVS 1994.4.715; NK: 1, #534 : 74
rice grains (*taṇḍula*) Oriza sativa, Linn. Same as unhusked rice (*śāli*) GVDB: 174; or just "grains" : 26
rice-grain chaff (*śālitaṇḍulakāṇḍana*) See chaff : 26
rock salt (*saindhava*) See NK: 2, M#48, Watt_{Comm}: 963–971 : 26
rosha grass (*dhyāmaka*) Cymbopogon martinii (Roxb.) Wats. See AVS: 2, 285, NK: 1, #177 : 94
sacred lotus (*padma*) Nelumbo nucifera, Gaertn. See NK: 1, #1698 : 25, 76
sage-leaved alangium (*aṅkolla*) Alangium salvifolium (Linn. f.) Wang. GVDB: 5–6 : 75
sandalwood (*candana*) Santalum album, L. See ADPS: 111, NK: 1, #2217 : 94
sappanwood (*pattāṅga*) Also *pattaṅga*. Caesalpinia sappan, L. AVS: 1, 323, K&B: 2, 847 f, GVDB: 234 : 44
scarlet mallow (*bandhujīva*) Pentapetes phoenicea, L. NK: #1836, GVDB: 268 : 77
scented pavonia (*bālaka*) Pavonia odorata, Willd. See ADPS: 498, NK: 1, #1822 : 94
scutch grass (*dūrvā*) Cynodon dactylon (Linn.) Pers. (GVDB: 205) :
selu plum (*śelu*) Cordia myxa, L. non Forssk. See GJM1: 529 (2), IGP: 291b, cf. AVS: 3, 1677 f; cf. AVS: 2, 180 (C. dichotoma, Forst.f.), NK: 1, #672 (C. latifolia, Roxb.) : 92
sesame oil (*taila*) Sesamum indicum L. GVDB: 183 : 43
siris (*śirīṣa*) Albizia lebbeck, Benth. See AVS: 1, 81, NK: 1, #91 : 92
siris seeds (*śirīṣamāṣaka*) Albizia lebbeck, Benth. See AVS: 1, 81, NK: 1, #91 : 75
small-flowered crape myrtle (*sidhraka*) Lagerstroemia parviflora Roxb. See GVDB: 432 : 98
spikenard (*māṃsī*) Nardostachys grandiflora, DC. See NK: 1, #1691 : 94
spikenard (*nalada*) → māṃsī. Nardostachys grandiflora, DC. See NK: 1, #1691 : 73
sugar (*sitā*) Ḍalhaṇa makes this equation at 1.37.25 (Su 1938: 162) : 94
sunflower (*sūryavallī*) → *ādityavallī*, *sūryamukhī*, Helianthus annūs Linn. GVDB: 35, 443 : 92
sweet plants (*madhuravarga*) The sweet plants are enumerated at *Suśrutasaṃhitā* 1.42.11. See also GVDB: 127 : 43
sweet-scented oleander (*aśvamāraka*) Nerium oleander, L. See ADPS: 223, NK: 1, #1709 : 82
Tellicherry bark (*kuṭaja*) Holarrhena pubescens Wall. ex G.Don, with Wrightia tinctoria and W. arborea considered GVDB: 101–102, ADPS: 267–270 :
thorn apple (*karambha*) Datura metel, L. See GVDB: 76 for useful discussion. Also, AVS: 2, 305 (cf. Abhidhānamañjarī), NK: 1, #796 ff. Potter_{rev}: 292 f, ADPS: 132. Possibly the same plant as plumed cockscomb (*indīvara*) (GVDB: 76, 44–45) : 83
three heating spices (*tryūṣaṇa*) śuṇṭhī (Dried ginger) Zingiber officinale, Roscoe. ADPS: 50, NK: 1, #2658, AVS: 5, 435, IGP 1232, pippalī (long pepper) Piper longum, L.ADPS: 374, NK: 1, #1928, and marica (black pepper) Piper nigrum, L.ADPS: 294, NK: 1, #1929 : 93
three-leaved caper (*varuṇa*) Crataeva magna (Lour.) DC. See AVS: 2, 202; cf. NK: 1, #696 : 77
top layer of fermented liquor (*surāmaṇḍa*) K&B: 2, 502, NK: 2, appendix VI, #49, McHugh 2021: 39 : 41, 42
tree cotton (*kārpāsa*) G. arboreum L. ADPS: 231. Pace the identifications of T. B. Singh and Chunekar (GVDB: 92, 247), since G. barbadense L. is native to

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