

Draft Translation of the Nepalese Version of the *Suśrutasaṃhitā*

Dominik Wujastyk
Paras Mehta
Deepro Chakraborty

Jason Birch Lisa A. Brooks
Madhusudan Rimal
Harshal Bhatt Jan Gerris
et alii

Draft of 4th July 2025
© The Authors

Contents

Introduction	11
The date of the Suśrutasamhitā	11
The Nepalese Version	14
The vulgate	14
The Translation	16
Part 1. Sūtrasthāna	19
Sūtrasthāna 1: The Origin of Medical Knowledge	21
Literature	21
Translation	21
In praise of surgery	24
Sūtrasthāna 2: The Initiation of a Student	29
Literature	29
Translation	29
Sūtrasthāna 3: The Table of Contents	31
Literature	31
Translation	31
Sūtrasthāna 10: Diagnosis	33
Sūtrasthāna 11: Preparing and using caustics	35
Sūtrasthāna 13: On Leeches	37
Literature	37
Translation	37

Sūtrasthāna 14: On the Properties of Blood	45
Previous scholarship	45
Translation	45
Sūtrasthāna 16: Repairing Pierced Ears	53
Previous literature	53
Translation	53
Sūtrasthāna 28: Unfavourable Prognosis in Patients with Sores	63
Literature	63
Translation	63
Sūtrasthāna 46: The Rules about Food and Drink	65
Introduction	65
Part 2. Nidānasthāna	67
Nidānasthāna 1: The Diagnosis of Diseases Caused by Wind	69
Literature	69
Subject matter	69
Translation	69
Symptoms of diseases that arise because of a combination of the five breaths with bile and phlegm	74
Part 3. Śārīrasthāna	83
Śārīrasthāna 2: On Semen and Menstrual Fluid	85
Literature	85
Translation	85
Diagnosis by humours	86
Therapies for menstrual blood	89
During menstruation	90
Types of persons	93
Birth irregularities	95

Śārīrasthāna 3: On Conception and the Development of the Embryo	99
Literature	99
Translation	100
Conception	100
Pregnancy	102
Fetal development	103
Effects of the mother's experiences on the unborn child	104
Part 4. Cikitsāsthāna	111
Cikitsāsthāna 4: On the Treatment of Wind Diseases	113
Literature	113
Translation	113
Cikitsāsthāna 5: On the Treatment of Serious Wind Diseases	121
Literature	121
Translation	121
Cikitsāsthāna 15: On Difficult Delivery	133
Literature	133
Translation	133
Part 5. Kalpasthāna	137
Kalpasthāna: Introduction	139
The Sequence of Chapters	139
The Spread of Indian Toxicological Lore to Medieval Islamic Au- thors	140
The <i>Kalpasthāna</i> 's diffusion	140
Kalpasthāna 1: Protecting the King from Poison	143
Introduction	143
The meaning of "kalpa"	143
Chapter 1 of the Kalpasthāna	143
Literature	144
Manuscript notes	145
Translation	146

[Threats to the king]	146
Kalpasthāna 2: Poisonous Plants	155
Introduction	155
Shock	156
Literature	157
Translation	158
The effects of poisons	161
Slow-acting poison	163
Kalpasthāna 3: Poisonous Insects and Animals	169
Literature	169
Introduction	169
Translation	171
Pollution of the environment	173
The origin of poison	175
The working of poison	175
Patients beyond help	177
Kalpasthāna 4: Snakes and Envenomation	179
Introduction	179
Literature	180
The Seven Stages of Toxic Shock	181
Translation	182
[The Taxonomy of Snakes]	182
[Behaviours]	184
[Enumeration of Snakes]	186
[Breeding and Gender]	188
[Symptoms of snakebite]	189
[Summary Verses]	192
Kalpasthāna 5: Therapy for those Bitten by Snakes	195
Introduction	195
Literature	195
Translation	196
The application of mantras	197
Blood letting	198
Internal medications	198

Therapies at each pulse of toxic reaction	199
Subsequent therapies	201
Kalpasthāna 6: Rats and Rabies	207
Introduction	207
Mouse or Rat?	207
Literature	209
Translation	210
The types of rat	210
Detailed symptoms	212
The bites of wild animals	216
Kalpasthāna 7: Beating Drums	219
Introduction	219
Literature	219
Translation	219
Kalpasthāna 8: Poisonous insects	225
Introduction	225
Insect names	225
Literature	226
Translation	228
Taxonomy of insects	228
Taxonomy of scorpions	235
Spiders	239
Concluding remarks	247
End of the Kalpasthāna	248
Part 6. Uttaratantra	251
Uttaratantra 17: Preventing Diseases of the Pupil	253
Literature	253
Translation	253
[Complications]	263
[Characteristics of the probe]	263
[Complications]	264

Uttaratana 38: Diseases of the Female Reproductive System	267
Introduction	267
Literature	267
Placement of the Chapter	267
Parallels	269
Philological notes	270
Metrical alterations	270
The original opening verses	270
Translation	272
Uttaratana 65: Rules of Interpretation	275
Literature	275
Early Sources	275
The <i>Arthaśāstra</i>	276
The <i>Yuktidīpikā</i>	276
Tamil literature	277
The <i>Viṣṇudharmottarapurāṇa</i>	277
The <i>Saddanīti</i>	278
Āyurvedic literature	284
<i>Tantrayukti</i> -inventories	290
Earlier Listing	290
Later Listing	290
Terminology	291
1. <i>adhikarāṇa</i>	292
2. <i>yoga</i>	294
3. <i>padārtha</i>	296
3. <i>hetvartha</i>	300
5–6. <i>uddeśa</i> and <i>nirdeśa</i>	302
Notes on Significant Variants	305
...द्वितीये पादे...	305
यत्र तु स्नेहस्वेदाभ्यञ्जनेषु...पूर्वापरयोगसिद्धो भवति ।	305
सामवेदादयश्च वेदाः	305
...विद विन्द इत्येतयोश्च धात्वोः.	306
...धात्वोरेकार्थः । पश्चात् पदं भवति...	307
यदुक्तं साधनं भवति स हेत्वर्थः	309
...तथा माषदुग्धप्रभृतिभिर्व्रणः क्लिद्यते	309
समासवचनं समुद्देशः ।	310
Characteristics of the Manuscript Transmission	310

Translation	311
Editions and Abbreviations	317
Index of Manuscripts	325
General Bibliography	327
Materia Medica	359
Abbreviations	359
Flora	362
Fauna	387
Minerals	394
Glossary	395

Introduction

What follows is a draft translation of selected chapters of the *Compendium of Suśruta* (*Suśrutasamhitā*). This differs from former translations, being based on the text that survives in the oldest known manuscripts of the work.¹ These old manuscripts are located in Nepal, so we refer to this as “the Nepalese version” of the work, although future research may show that this old version was more widely known.²

The date of the *Suśrutasamhitā*

In a previous publication, I discussed evidence showing that the *Suśrutasamhitā* as we have it now began to be assembled in the late centuries BCE, and was heavily revised and supplemented in the period before CE 500.³ The more detailed reflections by Meulenbeld support this dating.⁴ But we also now know, as a result of the Suśruta Project, that the work was subject to at least one further editorial campaign after the ninth century.⁵ Another recently-discovered factor affects older arguments about the dating of the work. The name “Dhanvantari” that is associated with the vulgate version of the *Suśrutasamhitā* is not tied in the same way to the older, Nepalese version of the text.⁶ In the late ninth century, the *Suśrutasamhitā* was read as a work delivered by Divodāsa, King of Kāśī, not the god Dhanvantari. The

¹ See Wujastyk et al. 2023 for an introduction to the Nepalese text and Wujastyk et al. 2021– for background on the Suśruta Project, 2021–2024.

² For more discussion of this issue, see Wujastyk et al. 2023: Introduction and ch. 2.

³ Wujastyk 2003b: 63–64.

⁴ HIML: 1A, 333–352.

⁵ Wujastyk et al. 2023: 16–26.

⁶ Wujastyk 2013b; Birch, Wujastyk, Klebanov, Parameswaran, et al. 2021; Birch, Wujastyk, Klebanov, Rimal, et al. 2021; Wujastyk et al. 2023.

text was thoroughly re-edited after the ninth century, adding the narrative frame of the Dhanvantari attribution as well as verses from the *Carakasamhitā* and other material. It may be that at least some of this editorial work was performed by the author Candraṭa (fl. 900–1050), since several manuscript colophons of the *Suśrutasamhitā* include the statement,

The correction of textual readings in the treatise of Suśruta was done by Candraṭa the son of the doctor Tīsaṭa, after studying the commentary of Jejjata.⁷

The disassociation of Dhanvantari from the *Suśrutasamhitā* affects several historical arguments that were summarized by Meulenbeld about the relationship of the work to the *Carakasamhitā* and other works.

Furthermore, other former arguments for the priority of the *Carakasamhitā* to the *Suśrutasamhitā* can no longer stand, since the Nepalese version does not include many of the passages from the *Carakasamhitā* on which these arguments rest. A particularly striking example of this occurs in the *Sūtrasthāna*.

Chapter ten of the *Sūtrasthāna* is dedicated to the topic of becoming a professional physician.⁸ The fourth passage of the chapter, describes how a physician takes note of omens on the way to a patient's home, and then how he diagnoses the patient:

Then he should approach the house of the sick person according to the favourableness of the messenger, the reason given, omens, and good-luck signs. After sitting down, he should have a good look at the sick person, he should palpate them and interrogate them. Diseases are mostly understandable through these three means of gaining knowledge. That is what some people say, but it is not correct. There are six means of gaining knowledge about diseases, i.e., by the five senses, hearing etc., and by interrogation.⁹

⁷ Wujastyk 2024.

⁸ See p. 33 below and Wujastyk 2025 for discussion.

⁹ दूतनिमित्तशकुनमङ्गलानुलोभ्येनातुरगृहमभिगम्य, उपविश्य, आतुरमभिपश्येत्सृशेत्पृच्छेद्वा; त्रिभिरतैर्विज्ञानोपाये रोगाः प्रायशो वेदितव्या इत्येके; ततु न सम्यक्, षट्विधो हि रोगाणां विज्ञानोपायः, तद्यथा — पञ्चभिः श्रोत्रादिभिः प्रश्नेन चेति ॥४॥

As we see, the text first proposes a three-part method of diagnosis and then immediately distances itself from that statement and provides a different six-part procedure. One has the sense of hearing two voices.

Who were the “some people” being referred to? The three-part diagnostic procedure is found in the *Carakasamhitā* (Ca.ci.25.22). For that reason, this passage has been taken as evidence that the authors of the *Suśrutasamhitā* knew the Caraka text and were responding to it. This is one of the pieces of evidence that is used to argue that the *Suśrutasamhitā* is chronologically later than the *Carakasamhitā*. In the Nepalese version of the *Suśrutasamhitā*, however, the passage is much simpler and omits this second, distancing, voice:

Then, arriving at the house of the sick person according to the favourableness of the messenger, the reason given, omens, and good-luck signs, he should sit down. Then, he should have a good look at the sick person, he should palpate them and interrogate them. Through these three means of gaining knowledge it can be known whether life will be long or life will be short.¹⁰

The passage referring to the *Carakasamhitā* is absent.

Luckily, for this part of the *Suśrutasamhitā*, the learned commentary of Cakrapāṇidatta (fl. 1075, Bengal) survives. It was edited and published in 1939 by Yādavaśarman T. Ācārya. Commenting on the passage, Ācārya stated that this extra passage was not known to Cakrapāṇidatta.¹¹ Thus, we can say that it was added to the text of the *Suśrutasamhitā* some time between the oldest Nepalese manuscript (878 CE) and Cakrapāṇidatta’s time, i.e., the eleventh century.

The fact that this reference to the *Carakasamhitā* is not present in the early Nepalese version of the *Suśrutasamhitā* means that the argument about chronological priority cannot be sustained.

Evidently, Candraṭa or some other editor added material from the *Carakasamhitā* to the *Suśrutasamhitā* after the ninth century. A piece of evidence that remains independent of the above issues is the remark by the Cakrapāṇidatta that Drḍhabala (fl. ca. 300–500 CE) knew and made use

¹⁰ ततो दूतनिमित्तशकुनमङ्गलानुलोप्येनातुरगृहमागम्योपविश्यातुरमभिपश्येत्पृश्च त्रिभिरेतैर्विज्ञानोपायैः दीर्घमायुषोल्पायुषो वेदितव्यः ।

¹¹ अयं पाठश्च चक्रासंगतः ।

of the *Suśrutasamhitā*.¹² This provides a latest date for the *Suśrutasamhitā* in the period before Dr̥ḍhabala. This also shows that much of the text of the *Carakasamhitā* in its present form, as reconstructed by Dr̥ḍhabala, postdates the *Suśrutasamhitā*.

The Nepalese Version

The Nepalese version has been reconstructed on the basis of three manuscripts from Kathmandu,

1. MS Kathmandu KL 699 (siglum K),
2. MS Kathmandu NAK 1-1079 (N), and
3. MS Kathmandu NAK 5-333 (H).

The first of these MSS is the oldest, dated to CE 878.¹³ It covers most of the *Suśrutasamhitā*, but lacks the *Nidānasthāna* and the *Śārīrasthāna* (see Fig. 1). The second is undated but is datable on palaeographical grounds to the twelfth or thirteenth centuries.¹⁴ It contains the *Sūtrasthāna* and *Nidānasthāna* but breaks off shortly afterwards. The third manuscript, H, is the most complete, supporting the text of the whole of the *Suśrutasamhitā*. It is dated CE 1513.¹⁵ The text of manuscript H follows K very closely but is probably not a direct apograph.¹⁶ I conjecture that it was either copied from an intermediary that followed K very closely or from a ancestor of K.¹⁷

The vulgate

The version of the *Suśrutasamhitā* that we refer to as “the vulgate” is the version of the text that circulates in print today in multiple editions. The

¹² Cakrapāṇidatta *ad Carakasamhitā* 8.12.39 (Ca 1941:735) (see also HIML: 1A, 132, 350–351).

¹³ Klebanov 2021a: 15.

¹⁴ Klebanov 2021a: 17–18.

¹⁵ I follow the arguments of Klebanov (2021a: 21–26) on the interpretation of the colophon although, as he pointed out, some interpret the date as CE 1573.

¹⁶ Chakraborty 2022.

¹⁷ “...as neither my own research ... nor the study undertaken in Harimoto ... could determine any linear connection between any of the Nepalese manuscripts of the SS, one may assume that [there exists] an older common ancestor of both of the manuscripts K and H.” (Klebanov 2021b: 21).

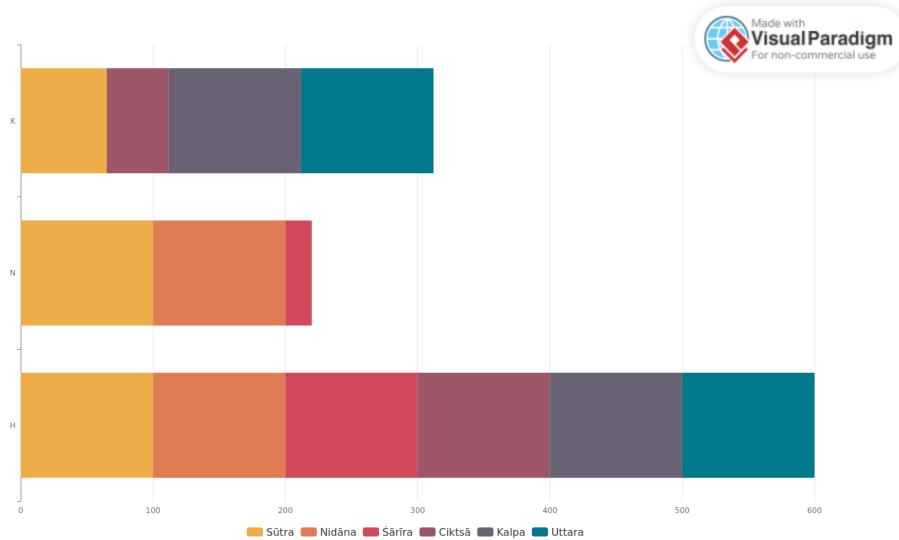


Figure 1: Coverage of the text by MSS K, N and H.

most careful and authoritative edition is that of Y. T. Ācārya and N. R. Ācārya ([Su 1938](#)).¹⁸ It is telling that this edition includes the commentary of Ḟalhaṇa (b. ca. 1175) and, for the *Nidānasthāna*, also that of Gayadāsa (fl. ca. 1000). These important authors commented on a text that is, broadly speaking, what we call “the vulgate.” But they both mentioned quite often that the manuscripts they were consulting contained other versions of the text and in a high number of cases, these variations match the Nepalese version.¹⁹ It is possible that Gayadāsa and Ḟalhaṇa, through their commentarial work on the text, participated in shaping “the vulgate.”

The scholar Rudolph Hoernle was also aware of this cleavage in the transmission-history of the *Suśrutasaṃhitā*. But with the more limited materials available to him at the turn of the twentieth century he drew the line a little differently. He referred to the text of the *Śāriṇasthāna* of the *Suśrutasaṃhitā*, transmitted in the printed editions of his day, as “the Traditional Recension.”

The recension which is found in Jīvānanda’s and all other

¹⁸ This and the following issues have been discussed by Wujastyk et al. ([2023: 2](#) and ch. 3).

¹⁹ E.g., see the discussion in footnote [176](#) below.

prints,²⁰ and which, in the sequel, will be referred to as the Traditional Recension, has in its favour not only all available manuscripts, but also all ancient commentaries on the Compendium of Suśruta, Or, shortly, the Traditional Recension is supported by the whole body of existing witnesses.²¹

However, Hoernle was unfortunately not aware of the Nepalese manuscripts of the *Suśrutasamhitā*, which at the time he was writing were in Nepalese libraries that had not yet been explored by scholars of the time. The contrast that Hoernle was drawing was between the Traditional Recension and the *Śārīrasthāna* of the *Carakasamhitā* as printed by the influential Bengali scholar, Kavirāja Gaṅgādhara Ray (1798–1885).²²

The Translation

The translation follows the methods of rigorous philological care and modern principles of translation theory.²³ Major differences in sense from the vulgate text are marked **in this manner**, but the differences are so pervasive and fine-grained that most have not been explicitly marked.

The text-historical state of the *Suśrutasamhitā* bears many resemblances to other early textual transmissions in South Asia. The situation was articulated particularly clearly for the case of Pāli by von Hinüber (1978), in the opening of his chapter,

...we cannot go back beyond the council of Aluvihāra (Ālokavihāra) under Vaṭṭagāmaṇī Abhaya (29–17 B.C.) where the Pāli canon was written down for the first time in Ceylon. This is the very starting point of our tradition handed down to us by the monks of the Mahāvihāra. About recensions of the Pāli canon

²⁰ Hoernle listed four, S. M. Gupta 1835–36; *Su* 1889; Virasvāmi 1900–09; Govindjī et al. 1901.

²¹ Hoernle 1907: 68.

²² Ray 1868–70. Hoernle's evaluation of this edition was not entirely kind: "I have not been able to discover for it any authority whatsoever. ... it is probably that the recension of Gangādhar is a reconstruction of his own to meet those of the difficulties which he had noticed" (Hoernle 1907:70). For a full account of the genesis of this edition, see Pecchia 2022.

²³ See Wujastyk 2003b: intro. and Wujastyk 2021: 81–83 for an overview.

different from the Mahāvihāra tradition and deviating from its wording... we scarcely have any knowledge at all.

Similarly, the manuscript evidence for the *Suśrutasamhitā* that is available today allows us to reconstruct a version of the work after it was consolidated into a text of five parts with a sixth or “later” (*uttara*) and somewhat different part already appended to the first five. The prehistory of the work before this form is tantalizingly unknown to us. That the work was assembled from diverse sources and that many hands were involved is without doubt. The oldest surviving manuscript, MS Kathmandu KL 699, gives us physical evidence for the state of the text in the ninth century. We little insight into the formational processes affecting the text before that time. But what we can see plainly is that the text was edited pervasively after that time, being influenced especially by the commentators Jejjāṭa, Candraṭa, Gayadāsa and Cakrapāṇidatta and the editor Candraṭa. However, a clear picture of how these later editorial processes took place will only be possible as a result of further research into a wider manuscript base.

Part 1. Sūtrasthāna

Sūtrasthāna 1: The Origin of Medical Knowledge

Literature

Meulenbeld offered an annotated overview of this chapter and a bibliography of earlier scholarship to 2002.²⁴

Translation

- 1 “Now I shall narrate the chapter on the origin of this knowledge.”²⁵
- 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.”²⁶

²⁴ [HIML](#): IA, 203–204.

²⁵ Dālhaṇa 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 2013b: 148; Klebanov 2021a: § 3.1.2; S. K. Rai 2019; Birch, Wujastyk, Klebanov, Parameswaran, et al. 2021). On the figure of Dhanvatari in medical literature, see [HIML](#): IA 358–361.

²⁶ 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 (2021b) 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 (*vedanābhīghāta*), 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.²⁷ 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.²⁸
- 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.
- 8.1 “Now, a collection of the characteristics of each component of Āyurveda.
- 8.1a “Among them, the one called surgery has the goal of extracting various grasses, wood, stone, dust, iron,²⁹ 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.
- 8.2 “The one 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.
- 8.3 “The one 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.

²⁷ On the careful wording of this statement, that makes the Atharvaveda connection “something that people say,” see Wujastyk 2022: 400–401.

²⁸ Svayambhū is another name for Brahmā, the creator.

²⁹ The identity of the metal in such early literature is somewhat moot. For discussion, see Wujastyk 2019.

- 8.4 "The one called "knowledge of spirits" is for appeasing demons by pacification rites and making food offerings for those whose minds have been possessed by gods, their enemies,³⁰ Gandharvas, Yakṣas, demons, deceased ancestors, Piśācas, Vināyakas,³¹ Nāgas and evil spirits that possess children.
- 8.5 "The one 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.
- 8.6 "The one called "the discipline of toxicology" is for [knowing] the signs of poison from snake and insect bites and for neutralising various combinations of poisons.³²
- 8.7 "The one called "the discipline of rejuvenation" is maintaining youth, bringing about a long life and mental vigour and for curing diseases.
- 8.8 "The one 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.
- 9 "In this way, this Āyurveda is taught with eight components."
"Among these [components], tell us which is for whom."
- 10 They said, "After you have made the whole knowledge of surgery accessible, teach it to us, Lord".³³
- 11 "So be it," he said.
- 12 They then said, "After probing our opinion, we are unanimous: Suśruta will question you. We too will take in what is being taught to him."
- 13 "So be it," he said.

Cite Paul
Courtright,
Ganesha
book.

³⁰ Dānavas. The insertion marks (*kākapadas*) below the text at this point appears to be by the original scribe.

³¹ The vulgate doesn't have *vināyakas* but does add *asuras*, probably under the influence of Dalhana.

³² 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 (*sarīsrpa*) in the list, it does seem that MS K had a shorter list, and the vulgate edition adds rodents (*mūṣika*).

³³ For discussion of the text-critical significance of this passage, see Harimoto 2013. I have read the passage as including the word अलङ्कृत्वा in the sense "make accessible" (cf. MW: 94, *sub* अलं विज्ञातुम्).

In praise of surgery

- 14–16 “Now, as is well-known, the aim of Āyurveda is eliminating the disease of one who has been assailed by disease and protecting the healthy; Āyurveda is, “where they find a long life,” or “that by which long life is known.” You should take in its best component (*aṅga*), which is being taught without conflicting with tradition, perception, inference or analogy.
- 17 “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.’
- 18 “And also, of the eight disciplines of Āyurveda, 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.
- 19 “Therefore, it is eternal, meritorious, leads to heaven, brings renown, bestows a long life, and affords a livelihood.
- 20 “This is what Brahmā said: ‘Prajāpati learned it. From him, the Aśvins. From the Aśvins, Indra. From Indra, I. In this world, I will transmit it to students, for the benefit of people.’
- 21 “There a verse about this:

*For I 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.*³⁴

- 22 “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.³⁵ Alternatively, it can be considered as being fivefold. The multitude of beings in it are fourfold: they are

³⁴ Note that this verse about the origin of surgery is the first place that the name “Dhanvantari” is introduced in the Nepalese version of the work. Dhanvantari is here identified with Brahmā, the creator of the world. For discussion, see Birch, Wujastyk, Klebanov, Parameswaran, et al. 2021.

³⁵ See Wujastyk 2004.

termed “sweat-born, stone-born, caul-born and egg-born”.³⁶ Where they are concerned, the human being is the main thing; others are his support. Therefore, the human being (*puruṣa*) is the locus.

- 23–26 “Diseases are said to be the conjunction of the person and suffering (*duḥkha*). There are four of them: invasive, bodily, mental and inherent. The invasive ones are caused by an injury. The bodily ones are based on food, caused by irregularities (*vaiśamya*) in wind, bile, phlegm and blood.³⁷
- “The mental (*mānasa*) ones, caused by desire (*icchā*) and hatred (*dvesa*), include: anger (*krodha*), grief (*āśoka*), misery (*dainya*), overexcitement (*harṣa*), lust (*kāma*), depression (*viśāda*), 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 (*adhisthāna*) in the mind and body.
- 27 “Scarification (*lekhana*), nourishment (*bṛ̥ṇhāṇa*), purification (*saṃśodhana*), pacification (*saṃśamana*), diet (*āhāra*) and regimen (*ācāra*), properly employed, bring about their cure.
- 28 “Furthermore, food is the root (*mūla*) of living beings as well as of strength (*bala*), complexion (*varṇa*) and vital energy (*ojas*). It depends on (*āyattha*) the six flavours (*rasa*). Flavours, furthermore, have substances as their substrate (*āśrayin*). And substances are remedies (*oṣadhi-*).³⁸ There are two types: stationary (*sthāvara*) and moving (*jaṅgama*).
- 29 “Of these, there are four types of stationary ones: fruit trees (*vanaspati*), flowering trees (*vṛkṣa*), herbs (*oṣadhi*) and shrubs (*vīrudh*).³⁹ Amongst

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

37 Note that four humoral substances are assumed here.

38 Pāṇini 6.3.132 provides that the final vowel of the noun *oṣadhi* may be lengthened (→*oṣadhi*) 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 *oṣadhi*. This form is in fact not uncommon in medical literature as well as in epics, purāṇas, smṛtiś, and other parts of Sanskrit literature.

39 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.

these, the “fruit trees” have fruit but no flowers.⁴⁰ The “flowering trees” have flowers and fruit. The “herbs” die when the fruit is ripe. “Shrubs” put out shoots.

- 30 “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 (*svedaja*), and shoots (*udbhid*). Amongst these, those born in a caul include animals (*paśu*), humans, and wild animals (*vyāla*). Birds, creepy-crawlies (*sarīṣṛpa*) and snakes are “born of eggs.” Worms (*kṛmi*), small insects (*kunta*) and ants (*pipīlīka*) and others are born of sweat.⁴¹ Shoots include red velvet mites (*indragopa*) and frogs (*maṇḍūka*).⁴² |
- 31 “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*)⁴³ are useful; among the moving remedies pelt (*carman*), hair, nails, and blood (*rudhira*) and so forth.
- 32 “And earth products (*pārthiva*) include gold and silver.⁴⁴
- 33 “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 (*varsā*) 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 (*r̥tu*), a half-year (*ayana*), a year (*saṃvatsara*), and yuga (*yuga*).⁴⁵
- 34 “These naturally cause accumulation (*sañcaya*), irritation (*prakopa*), pacification (*upaśama*) and alleviation (*pratikāra*) of the humours (*dosa*). And they have practical purposes (*prayojanavat*).
- 35 “There are verses about this:

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

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

42 On *indragopa*, see Lienhard 1978.

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

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

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

This fourfold category is taught by physicians as a cause for the agitation and quelling of bodily diseases.⁴⁶

- 36 *There are two kinds of invasive diseases. Some certainly⁴⁷ affect (ni√ pat) the mind, others the body. Their treatment (kriyā) is of two kinds too.*
- 37 *For those that affect the body there is physical (śārīravād) therapy, whereas for those that affect the mind there is the collection (varga) of desirable sensory experiences like sound that bring comfort (sukha).*
- 38 “Along these lines (evam), this brief explanation of the four factors (catuṣṭaya) 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 (*māṇisa*), 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.

46 On the topic of the “group of four,” the commentator Dalhana considered them to be “food, behaviour, earthen products and items created by time.” He referred to the author of the lost commentary entitled *Pañjikā*, and to Jejaṭa (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).

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

- From the mention of the word “time,” every single teaching about the times for procedures is meant.

39 “There is a verse about this:

*This seed of medicine has been declared in brief. Its explanation will be given in one hundred and twenty chapters.*⁴⁸

40 “There are one hundred and twenty chapters in five sections (*adhyāya*).⁴⁹ In that regard, having divided them, according to their subject matter, into the *Slokasthāna*, the *Nidāna*, the *Śarīra*, the *Cikitsita* and the *Kalpa*, we shall mention this in the *Uttaratatantra*.⁵⁰

41 “There is a verse about this:

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.

48 This is the number of chapters in the first five sections of the work, namely the *Sūtra-*, *Nidāna-*, *Śarīra-*, *Cikitsā-* and *Kalpa-sthānas*. These have 46, 16, 10, 40 and 8 chapters respectively. The *Uttaratatantra* has 66 chapters.

49 On *viṁśa* in the sense of “greater by 20” see P.5.2.46 *śadantaviṁśatēś ca*.

50 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 *Uttaratatantra* (Su 1938: 1.3–4ab) there is indeed a statement that picks up the point about there being 120 chapters.

Sūtrasthāna 2: The Initiation of a Student

Literature

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

Translation

Sūtrasthāna 3: The Table of Contents

Literature

Translation

¹
54 ⁵¹

⁵¹ Bronkhorst 2016: 167.

Sūtrasthāna 10: Diagnosis

11 52 content

52 See p. 220 below.

Sūtrasthāna 11: Preparing and using caustics

7 ⁵³
11 ⁵⁴ content

53 See p. 211 below.

54 See p. 220 below.

Sūtrasthāna 13: On Leeches

Literature

Meulenbeld offered an annotated overview of this chapter and a bibliography of studies on Indian leeches and their application.⁵⁵

A Persian version of this chapter of the *Suśrutasamhitā* was included in *Sikandar Shāh's Mine of Medicine* (*Ma'din al-shifā' i Sikandar-Shāhī*) composed in 1512 by Miyān Bhūwah b. Khawāss Khān.⁵⁶

More recently Brooks has examined this chapter and leech therapy more broadly terms of leeches and classification, multispecies agencies, and the tactile and intersensory dynamics of leech therapy.⁵⁷

Translation

- 1 And now we shall explain **the chapter** about leeches.
- 2 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.
- 3 In relation to that, 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 made to flow by any of them in their particular way.⁵⁸

55 HIMAL: IA, 209; IB, 324, n. 131.

56 Siddiqi 1959: 96–109; Azeez Pasha 1971; Storey 1971: 231–232; HIMAL: IB, 324, n. 128; Spezzale 2019: 8–9.

57 Brooks 2020a,b; 2021a,b.

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

- 4 And there are the following about this:

*A cow's horn is praised for being unctuous, smooth, and very sweet.
Therefore, when wind is troubled, that is good for bloodletting.⁵⁹*

- 5 *A horn shaped like a half-moon, with a large body the length of seven fingers , should first be placed on the incision. A strong person should suck with the mouth.⁶⁰*
- 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.⁶¹*
- 7 *A gourd is well known for being pungent, dry and sharp. So when someone is afflicted 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.⁶²
- 9 Leeches are called “*jala-āyu-ka*” because their life (*āyu-*) is in water (*jala*).⁶³ “Home” (*okas*) means “dwelling;” their home is water, so they are called “water-dwellers (*jalaukas*).”

Devanāgarī manuscript.

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

- 59 The vulgate replaced “smooth” with “hot.”
- 60 This passage is not found in the vulgate, but it is similar to the passage cited by Dalhaṇa at 1.13.8 (Su 1938: 56) and attributed to Bhāluki. Bhāluki was the author of a *Bhālukitantra* that may have predated Jejjhaṭa and might even have been one of the sources for the *Suśrutasamhitā* (HML: 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).
- 61 Note that the particular qualities (*guṇas*) of the leech in this and the following verses counteract the quality of the affliction. See Brooks 2018: 113, table 1.
- 62 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. 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.
- 63 The lexeme -*āyu-* is known almost exclusively from the *Rgveda*.

- 10 There are twelve of them: six are venomous and just the same number are non-venomous.
- 11 Here is an explanation of the venomous ones, together with the therapy:
 - Black (*kṛṣṇā*)
 - Mottled (*karburā*)
 - Sting-gush (*alagardā*)⁶⁴
 - Rainbow (*indrāyudhā*)
 - Oceanic (*sāmudrikā*)
 - Cow-praising (*govandana*)⁶⁵

Among 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 appearance 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.⁶⁶ 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.⁶⁷

⁶⁴ Treating गर्द 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 √गर्द then we might have “crying from the sting.”

⁶⁵ The manuscripts all read गोवन्दना against the vulgate's गोचन्दना.

⁶⁶ Dalhaṇa and the vulgate included errhines in the list of therapies, and Dalhaṇa added that “etc.” indicated sprinkling and immersion too. The “Great Antidote” is described in the Kalpasthāna, at 5.5.61–63ab (Su 1938: 578).

⁶⁷ The translations of the names of these leeches are slightly whimsical, but give a sense of the original; सावरिका remains etymologically puzzling.

- Tawny (*kapilā*)
- Ruddy (*piṅgalā*)
- Dart-mouth (*śaṅkumukhī*)
- Mouse (*mūṣikā*)
- Lotus-mouth (*puṇḍarīkamukhī*)
- Sāvarikā (*sāvarikā*)

Among 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.⁶⁸
- 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.⁶⁹ Those in

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

69 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

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

- 14 In reference to that, venomous leeches are those originating in decomposing venomous insects, frogs, urine, feces and in polluted water.⁷⁰ 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 abound in water. Tradition teaches that they do not behave in a confused manner or lie in the mud.*⁷¹

- 16 They can be caught with a fresh hide or one may catch them by other means.⁷²

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 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 (तुर्स्क) and “Pautana” as the Mathurā region. He also noted, as did Cakra-pāṇidatta (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.

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

71 Ḍalhaṇa on 1.13.14 (Su 1938: 57) discussed why non-venomous leeches would not “behave in a confused manner” (सङ्कीर्णचारिन्), saying that they do not “eat a diet that is contra-indicated because of poison etc.” (विषादिविरुद्धाहारभुजः). On the use of the term विरुद्ध in the sense of “incompatible,” see 4.23.4 (Su 1938: 485). Ḍalhaṇa there noted that such foods are explained in the chapter on wholesome and unwholesome foods (हिताहिताध्याय, 1.20 (Su 1938: 94–99)).

72 “Fresh hide” (आर्द्रचर्मन्) may suggest that the animal skin still includes meat or blood that is attractive to a leech.

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.

The Nepalese witnesses all read गृहीत्वा “having (been) caught” for the vulgate’s गृहीयात् “one may grasp (by other means).” The Nepalese reading is hard to construe and we have emended to the vulgate’s reading.

- 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 three days water and food. After seven nights one should transfer them to a different pot.
- 18 And on this:

*One should not **nurture** those that are thick in the middle, that are injured,⁷³ or **small**, 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, if the patient has an ailment that is treatable by bloodletting with leeches, get them to sit or lie down. Then, dry **any place** (*avakāśa*) **that is diseased** with powders of earth and cow-dung.⁷⁴ Then the leeches, free from impurities, with their bodies smeared with **Indian mustard** and **turmeric**, moving about in the middle of a cup of water, should be made to attach to the site of the ailment. Now, for one that is not attaching, one should provide a drop of milk or a drop of blood. Alternatively, one should make some marks with a knife (*śastrapada*).⁷⁵ And if it still will not attach, make a different one attach.
- 20 One can know that it is attached when it fixes on, making its mouth like a horse's hoof and hunching its neck. Then, one should cover it with a wet cloth and keep it there.
- 21 Now, if one knows, from the arising of pricking and itching at the bite, that clean blood is being taken, one 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**.

73 *Pace* Ḑalhaṇa on 1.13.18 (*Su* 1938: 57) who glossed परिक्षिष्ट “injured” as अमनोजदर्शन “disagreeable looking.”

74 Ḑalhaṇa on 1.13.19 (*Su* 1938: 57) read अरुजम् (n.), against the vulgate’s अरुजः; Cakra-pāṇidatta on this verse (*Su* 1939: 98) read अरुजः. Both commentators specified that the *Suśrutasaṅhitā* said this procedure should only be applied when there is no wound or opening, for fear of exacerbating the condition. The Nepalese text is saying, differently, that the desiccating powders should be applied to a diseased wound.

75 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 610.

- 22 Then one 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 the left hand and very slowly rubbing it with the thumb and finger of the right hand in the proper direction, as far as the mouth, until it is properly purged.⁷⁶ 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.⁷⁷

- 23 *One that protects its deflated head with its body, suddenly curls up and makes the water warm is traditionally said to have Indrapada.*⁷⁸

Thus, one should keep such a one as before.⁷⁹

- 24 After observing the proper or improper flow of the blood, one should rub the opening made by the leech with honey.⁸⁰ Alternatively, one may bind it up and smear it with ointments that are astringent, sweet, oily and cold.

- 25 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.

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

76 The expression शालितण्डुलकाण्डन, “rice-grain chaff” could be read as “paddy rice, rice grains and chaff” but this seems unlikely in the context.

77 At this point, 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 affecting fish, and the *Garudapurāṇa* 1.147.3 (tr. A Board of Scholars 1957: 2, 425) where it is fever affecting clouds; see further Brooks *in press*.

78 At this point, witness H, the latest MS, reads इन्द्रपद as before, but the older witnesses K and N have muddled readings, इदमदः and इद्रमदः. The scribes may have been responding to a -पद I-मद confusion about the name of this condition.

79 The vulgate includes “well purged” as the object in this sentence, which makes better sense.

80 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 the Properties of 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.⁸¹

Translation

The draft translation of this adhyāya is presented by Paras Mehta.

- 1 Now we shall declare the chapter about blood.
- 2
- 3 Food is of four types.⁸² It is endowed with six tastes and is made of the five elements.⁸³ It has either two or eight potencies, and is endowed

81 HIMAL: IA, 209–201 and Meulenbeld 1991. Meulenbeld's footnotes on this chapter in HIMAL: 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) also discussed Sanskrit veterinary texts in the light of their standard theory of four humours, including blood.

82 Dalhana on 1.14.3 (Su 1938: 59) said that the four types of food are those that can be drunk, licked, eaten and chewed (पेयलेह्वभोज्यभक्ष्य). The main text of the *Carakasamhitā* is explicit about these categories at 4.3.4(1) (Ca 1941: 308): पानाशनभक्ष्यलेह्व । "things drunk, eaten, chewed or licked." Yagi (1994) discussed the distinction between भक्ष्य and भोज्य; for further Indological background on foods, see the studies by Olivelle (1995; 2001) and the classic reference works by Achaya (1994; 1998). The long, final adhyāya of the *Suśrutasamhitā*'s sūtrasthāna (ch. 46) amounts to a distinct treatise on food in āyurveda.

83 *Idem*, earth, water, fire, air, space

with many qualities.⁸⁴ Chyle (*rasa*) 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 activities that are caused by the invisible,⁸⁵ it satisfies the entire body, enlivens it, prolongs it,⁸⁶ 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 flowing⁸⁷ and due to attributes such as mobility, lubrication, enlivening, satisfaction, and supporting.⁸⁸

- 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.⁸⁹ That is due to the embryo being fiery and moist.⁹⁰

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

85 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.

86 In the sense of prolonging its lifespan

87 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.”

88 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).

89 Ḑalhaṇa commented that this is to distinguish the menstrual blood from regular blood that is gentle.

90 Ḑalhaṇa commented here that the embryo is called such because the menstrual blood is fiery and the semen is gentle (सौम्य). On the fiery/moist distinction (आग्रेय | सौम्य), see Wujastyk 2004; Angermeier 2021.

- 8 Others state that 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.*
 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 preserve⁹¹ chyle by administering food and drink, being nicely disciplined with food⁹².

- 13 The verbal root *rasa* means movement.⁹³ Because it keeps moving day after day, it is called *rasa* (chyle).⁹⁴
 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 Here are verses about this.

*According to similar and dissimilar treatises, the quantity of *kalās* in this group⁹⁵ is 18,090.*

This is the particular transformation period regarding chyle that lasts for a person with mild fire⁹⁶. For a person with developed fire, one should know it to last for the exact same time⁹⁷

91 All three manuscripts have रक्षेत् which is an incorrect form. रक्षेत् is the correct form.

92 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.

93 Kunjalal Bhishagrata 1907–16: 109

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

95 The duration of chyle in all the body tissues as a whole.

96 Perhaps this refers to the digestive fire.

97 Although the vulgate does not have this verse, there is an argument presented in

- 16 Resembling the expanse of sound, flame, and water, that entity moves along in a minute manner throughout the entire body.⁹⁸
- 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 entities⁹⁹, it,¹⁰⁰ 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 age¹⁰¹. 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 body¹⁰².
- 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 characteris-

Ḍalhaṇa's commentary on 1.14.16 (*Su 1938*: 63) 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 said that this opinion is refuted by Gayadāsa Ācārya in many different ways. Ḍalhaṇa continued 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.

⁹⁸ 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. On अणुना विशेषण “in a minute manner” see footnote 272.

⁹⁹ This is the doctrine of pre-existence of the effect (सत्कार्यवाद, *satkāryavāda*) first propounded by Sāṅkhya philosophers.

¹⁰⁰ fragrance

¹⁰¹ 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.

¹⁰² 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.

ics is vitiated by the combination of all three of them. The blood that is extremely black is vitiated by blood¹⁰³ 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 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

¹⁰³ 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."

- 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), **velvet-leaf**, **deodar**, **embelia**, **leadwort**, the three spices (black pepper, long pepper, and dry ginger), soot from the chimney (*āgāradhūma*), turmeric, sprouts of **purple calotropis**, and fruit of the **Indian beech**, 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 **lodh tree**, liquorice, **foxtail millet**, **sappanwood**, red chalk, **elixir salve**, seashell, barley, **green gram**, 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*, **white dammer tree**, **arjun**, **white-bark acacia**, *granthi*, **axlewood**, and *dhanvana* (Camelthorn), or a linen cloth¹⁰⁴, 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 it with heat. Or, as mentioned, one should give a decoction of *kākoli*, 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 soup¹⁰⁵. The physician should treat the pains as mentioned.
- 36a Here are verses about this.
- 37ab-cd *When blood flows out due to the decay of body tissue, fire becomes*

¹⁰⁴ Su 1938: 66 has क्षैमेण वा ध्मापितेन - "with linen reduced to ashes". Presumably, it is this ash that is also referred to in item 40.

¹⁰⁵ Based on Dalhaṇa's comment as found in Su 1938: 66

- weak¹⁰⁶ 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. and cauterization.*
- 40ab-cd *The astringent substance joins the opening, the cold substance coagulates 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 pure¹⁰⁷ 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.*



¹⁰⁶ This refers to the digestive fire.

¹⁰⁷ Dalhana 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 2002.¹⁰⁸ A book on this topic, arising out of the present project, with edition, translation and discussion of the Nepalese transmission is published by Wujastyk et al. 2023.

Translation

1 Now we shall expound the method for piercing the ear.¹⁰⁹

¹⁰⁸ HML: IA, 211–212317.

¹⁰⁹ The topic of piercing the ear (*kṛṇavyadha*) is not discussed in the *Carakasamhitā* (HML: IB, 326, n. 175), but it is mentioned in some texts that followed the *Suśrutasamhitā*, such as the *Kaśāpyasamhitā* (HML: IIA, 30). Also, the instrument for piercing the ear is described in the *Aṣṭāṅgahṛdayasamhitā* 1.26.26 (Ah 1939: 321). In the versions of the text known to Ḏalhaṇa (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, Ḏalhaṇa (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,¹¹⁰ on the lap of a wet-nurse.¹¹¹ Then, he should pull the ear with his left hand and pierce straight through with his right hand at a naturally-occurring cleft.¹¹² 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.¹¹³
- 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.¹¹⁴

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.

- ¹¹⁰ 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.
- ¹¹¹ The versions of 1.16.3 known to Cakrapāṇidatta ([Su 1939: 126](#)) and Ḏalhaṇa ([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 Ḏalhaṇa'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 Ḏalhaṇa on 1.16.3 ([Su 1938: 76](#)), the toys include replica elephants, horses, bulls and parrots. Ḏalhaṇa further mentions that others read भक्ष्यविशेषैर्वा ("or by special treats") before बालक्रीडनकैः, but we see no trace of these small kindnesses in our witnesses.
- ¹¹² The versions of 1.16.3 of Cakrapāṇidatta ([Su 1939: 126](#)) and Ḏalhaṇa ([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.
- ¹¹³ Ḏalhaṇa 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" (*Lakṣmaṇatippaṇaka*) 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 *Suśrutasamhitā* that was available to Ḏalhaṇa in twelfth-century Bengal. See Meulenbeld ([HIML: IA, 386](#)).
- ¹¹⁴ 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.¹¹⁵
- 5 Having removed the wick (*vartti*) because of the accumulation of humours or an unsatisfactory piercing at that location,¹¹⁶ 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.¹¹⁷
- 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.¹¹⁸
- 7 Once the ear is free from humours or side-effects, one should put in a light dilator (*pravardhanaka*) in order to enlarge it enough.¹¹⁹

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

¹¹⁵ This passage is significantly augmented in Cakrapāṇidatta's and Dālhaṇa'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.'

¹¹⁶ In addition to these reasons, Dālhaṇa at 1.16.6 (Su 1938: 77) added "because of piercing with a painful, crooked and unsatisfactory needle" (क्षिणजिह्वाप्रशस्तसूचीव्यधात्) and "because of a wick that is too thick" (गाढतर्वर्तिल्वात्). Dālhaṇa 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 accumulation 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 (*samudāya*), see the important analysis by Meulenbeld (1992).

¹¹⁷ The description of the drug is ambiguous: 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.

¹¹⁸ 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).

¹¹⁹ Cakrapāṇidatta on 1.16.6 (Su 1939: 127) and Dālhaṇa on 1.16.8 (Su 1938: 77) pointed out that the dilator can be made of wood, such as that of the **prickly chaff-flower**,

- 8 A person's ear enlarged in this way can split in two, either as a result of the humours¹²⁰ 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.¹²¹ They are as follows: Rim-join (*nemīsandhānaka*), Lotus-splittable (*utpalabhdhyaka*), Dried Flesh (*vallūraka*), Fastening (*āsaṅgima*), Cheek-ear (*gaṇḍakarṇa*), Take away (*āhārya*), Ready-Split (*nirvedhima*), Multi-joins (*vyāyojima*), Door-hinge (*kapāṭasandhika*), Half door-hinge (*ardhakapāṭasandhika*), Compressed (*samikṣipta*), Reduced-ear (*hīnakarṇa*), Creeper-ear (*vallīkarṇa*), Stick-ear (*yaṣṭīkarṇa*), and Crow's lip (*kākauṣṭha*).¹²²

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. ¹²³
Take-away:	the flaps are missing, in fact, on both sides.
Ready-split:	the flaps are like a dais (<i>pīṭha</i>).
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.

the neem tree and tree cotton. Ḏalhaṇa added that it can also be made of lead and should have the shape of the *datura* flower. The manuscripts have variant readings for लघुप्रवर्धनकमामुच्चेत् 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.

120 Ḏalhaṇa 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.

121 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 Ḏalhaṇa'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.

122 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 2003b: 154).

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

These ten options for joins of the ear should be bound. They can mostly be explained as resembling their names.¹²⁴ The five from compressed (*samksipta*) on are incurable.¹²⁵ 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.¹²⁶

- 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.¹²⁷ And in this regard, he should particularly gather¹²⁸ top layer of fermented liquor, milk, water, fermented rice-water, and powdered earthenware crockery (*kapālacūrṇa*).¹²⁹

¹²⁴ Cakrapānidatta on 1.16.9–13 (Su 1939: 128–129) and Ḏalhaṇa 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 (*nemīsandhānaka*) is similar to the join of the rim of a wheel (*cakradhārā*).

¹²⁵ Ḏalhaṇa 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.

¹²⁶ The version of 1.16.11–13 known to Ḏalhaṇa (Su 1938: 78) has four verses (रळोक) 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 *Suśrutasanhitā* known to Cakrapānidatta. 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 Ḏalhaṇa (Su 1938), even in instances like this where Cakrapānidatta’s commentary indicates that he was reading a different version of the *Suśrutasanhitā*. See further the discussion on p. ?? above.

¹²⁷ *Suśrutasanhitā* 1.5 (Su 1938: 18–23), probably verse 6 especially, that lists the equipment and medications that a surgeon should have ready.

¹²⁸ 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.

¹²⁹ The term कपालचूर्ण is unusual. Ḏalhaṇa (Su 1938: 79) defines it as the powder of fragments of fresh earthen pots and Cakrapānidatta (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.¹³⁰ 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 (*plota*), 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 (*ācārika*). And he should supplement with food as taught in the “Two Wound” chapter.¹³¹

- 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.¹³² For when the ear is tainted by wind, then it is obstructed by blood, unhealed and will peel. When tainted with choler, it becomes pinched (*gāḍha*), 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 (*kṣīṇa*) flesh and it will not grow.¹³³
- 13 When the ear is properly healed and there are no complications, one may very gradually start to expand it. Otherwise, it may be inflamed

enware vessels.

¹³⁰ There are syntactic difficulties in this sentence. We have adopted the reading in Dalhaṇa'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.

¹³¹ *Suśrutasamhitā* 4.1 (Su 1938: 396–408).

¹³² 1.16.17 of Dalhaṇa'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 Dalhaṇa's version.

¹³³ In his edition of *Suśrutasamhitā*, 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 परिषेचयेत्तिरात्राञ्च पिच्छुं परिवर्तयेत्).

- (*sañrambha*), 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 Indian monitor lizard, scavenging and seed-eating birds, and creatures that live in marshes or water,¹³⁴ fat, marrow, milk, and sesame oil, and white mustard oil.¹³⁵ 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.¹³⁶ 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.*¹³⁷
- 16 *Ears which do not enlarge even when sweated and oiled, should be scarified at the edge of the hole, but not outside it.*¹³⁸
- 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.*¹³⁹

¹³⁴ For such classifications, see the analyses by Zimmermann (1999) and B. K. Smith (1994).

¹³⁵ Dalhaṇa's version of 1.16.19 (Su 1938: 79) includes ghee. However, Dalhaṇa'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. Dalhaṇa 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.

¹³⁶ The version of of this verse known to Dalhaṇa (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, Dalhaṇa (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.

¹³⁷ For these aims (i.e., healing and enlarging the ear), the text known to Dalhaṇa (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 *Suśrutasaṅghitā* known to him may not have included them.

¹³⁸ 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.

¹³⁹ 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 Dalhaṇa (Su 1938: 80) stated that some read

- 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.¹⁴⁰
- 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 (vadhra),¹⁴¹ with the same measurements, off the cheek, the end of the nose is then scarified.¹⁴² 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.¹⁴³ Having caused it to be raised,¹⁴⁴ the powder of sappanwood,¹⁴⁵ liquorice and Indian barberry should be sprinkled on it.¹⁴⁶
- 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

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

¹⁴⁰ The order of verses 17 and 18 is reversed in Ḏalhaṇa's version (Su 1938: 80).

¹⁴¹ The version of 1.16.28b known to Ḏalhaṇa (Su 1938: 81) reads "bound, connected (*badham*)" instead of "slice of flesh (vadhra)." 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 2003b: 67–70).

¹⁴² 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, Ḏalhaṇa (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.

¹⁴³ Ḏalhaṇa 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.

¹⁴⁴ The Sanskrit term उत्तामपित्वा in 1.16.21 is non-Pāṇinian.

¹⁴⁵ For पत्ताङ्ग (sappanwood), there are manuscript variants पत्ताङ्ग (MS Kathmandu NAK 5-333) and पत्तङ्ग (MS Kathmandu NAK 1-1079). Also, MS Kathmandu KL 699 (f. 14r:1) has पत्ताङ्ग in a verse in 1.14 (cf. 1.14.36 (Su 1938: 66)). The text known to Ḏalhaṇa has पतङ्ग (1.16.29 (Su 1938: 81)) and this term is propagated in modern dictionaries.

¹⁴⁶ Ḏalhaṇa glossed अञ्जन as रसाञ्जन, elixir salve (Su 1938: 81).

- instructions specific to him.*¹⁴⁷
- 23 *And once healed and really come together, what is left of that slice of flesh (vadhra) should then be trimmed.*¹⁴⁸ *If it is reduced, however, one should make an effort to stretch it, and one should make its overgrown flesh smooth.*¹⁴⁹

¹⁴⁷ The expression स्वयथोपदेश is ungrammatical but supported in all available witnesses.

¹⁴⁸ The vulgate transmission has lost the word वध्र and replaced it with अर्ध “half,” which makes little sense in this surgical context.

¹⁴⁹ Dalhana 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 Jejjāta, Gayadāsa and others, although they did not comment on it because it was easy to understand. Cakrapānidatta 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 2002.¹⁵⁰

Goswami studied the commentaries of Ḑalhaṇa and Cakrapāṇidatta on this and the following adhyāyas up to 32, focussing on the topic of omens (*arīṣṭa*). He concluded that both authors were influenced by the Indriyasthāna of the *Carakasaṃhitā* in their commentaries on this topic.¹⁵¹

Translation

- 1 Thus, living creatures and their strength, complexion (*varṇa*) and energy (*ojas*) are rooted in food. That (food) depends on the six flavours (*rasa*). Thus, the flavours depend on substance (*dravya*), and substances depend on medicinal herbs. There are two kinds of them (herbs): stationary and mobile.¹⁵²

¹⁵⁰ [HIML](#): IA, 219.

¹⁵¹ Goswami 2011.

¹⁵² 1.1.28 ([Su 1938: 7](#)), tr. P. V. Sharma 1999–2001: 1, 21.

Sūtrasthāna 46: The Rules about Food and Drink

Introduction

•
83 ¹⁵³

¹⁵³ This is the first place at which the term दूषीविष occurs in the *Suśrutasamhitā*. The term दोष was given important discussion by Meulenbeld 1991; 1992; 2011. See also Das 2003: 548–550.

Part 2. Nidānasthāna

Nidānasthāna 1: The Diagnosis of Diseases Caused by Wind

Literature

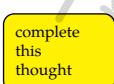
Meulenbeld offered an annotated overview of this chapter and a bibliography of earlier scholarship to 2002.¹⁵⁴

Subject matter

It is notable that this nosological part of the *Suśrutasamhitā* opens with a chapter on diseases of wind (*vāta*). In all other major Āyurvedic works, including the *Carakasamhitā*, the first chapter in the section on nosology deals with the symptoms of fever (*jvara*). This is almost a defining feature of works on nosology. But in the *Suśrutasamhitā*, fever is not addressed at all in the first five sections of the work, but only in the thirty-ninth chapter of the Uttaratantra, which is exceptionally long at about three hundred verses.

The present chapter describes the diseases caused by vitiated wind and wind's mixing with other humours. Contemporary Ayurvedic physicians consider these diseases to include rheumatism.

We have not translated the terms *prāṇa* ...because the text defines them.



Translation

- 1 And now we shall explain the chapter about the aetiology of wind diseases.

¹⁵⁴ HML: IA, 234. (Ruben 1954) studied the wind doctrines in the *Carakasamhitā*.

add foot-note here

add refs to
Divodāsa as
king

- 3 After holding the feet of Dhanvantari, the foremost of the upholders of righteousness who emerged out of nectar, Suśruta makes this enquiry.¹⁵⁵
- 4 O King! O best of orators! Explain the location and types of diseases of the wind, whether in its natural state or disordered.¹⁵⁶.
- 5–9 On hearing his words, the venerable sage spoke. This lordly wind is declared to be self-born because it is independent, constant and omnipresent. It is worshipped by the whole world. Amongst all beings, it is the self of all. During creation, continued existence and destruction, it is the cause of beings.
It is unmanifest though its actions are manifest; it is cold, dry, light, and mobile. It moves horizontally, has two attributes and is full of dust (*rajas*).¹⁵⁷ It has inconceivable power. It is the leader of the humours¹⁵⁸ and the ruler of the multitude of diseases.
It moves fast, it moves constantly, it is located in the stomach and in the rectum.¹⁵⁹
- 9cd Now, learn from me the characteristics of wind as it moves inside the body.¹⁶⁰
- 10 Wind connects the senses and the sense objects. Uninitiated, it maintains a state of equality between the humours (*dōṣa*), the bodily tissues (*dhātu*) and heat (*agni*) and the rightness (*ānulomya*) of actions.¹⁶¹

¹⁵⁵ Explain the nectar myth.

¹⁵⁶ MSS H and N both read भूपते instead of कोपनैः: in the vulgate: instead of addressing the king, the vulgate is saying “by irritations of the wind....” The vulgate also has Suśruta asking about कर्म, whereas in the Nepalese version he asks only about the types of diseases. Note that Dhanvantari is here addressed as king, a title associated elsewhere with Divosdāsa.

¹⁵⁷ According to Dalhaṇa on 2.1.8 (Su 1938: 257), the two qualities are sound and tangibility. The word रजस् could also refer to the quality of activity in the three-quality (*guṇa*) theory, which is how Dalhaṇa interpreted it. On the semantic field of रजस्, see Das 2003: 14 note 26 and ff.

¹⁵⁸ Dalhaṇa on 2.1.8 (Su 1938: 257) interpreted नेता “leader” as प्रेरक “impeller.”

¹⁵⁹ MS H read आशुचारी, which we have translated (“moves fast”), but MS N and the commentators of the vulgate read आशुकारी, “quick-acting.”

¹⁶⁰ Dalhaṇa and Cakrapāṇidatta both interpreted मे as an ablative (2.1.8 (Su 1938: 258)).

¹⁶¹ According to Dalhaṇa on 1.6.3 (Su 1938: 23), सम्पत्तिः=सम्पन्नता. According to Dalhaṇa, Gayadāsa read इन्द्रियार्थोपसंप्राप्तिः but Dalhaṇa did not accept this on the grounds that it was too verbose: गयदासाचार्यस्तु इमं श्लोकं ‘इन्द्रियार्थोपसंप्राप्तिः इत्यादि कृत्वा पठति, स च विस्तरभयान्न लिखितः। But witnesses H and N suggest the reading इन्द्रियार्थोपसम्पत्तिः.

The expression “qualities” is used advisedly. It is almost universal practice to refer to

- 11 Just as the fire is divided into five types by name, place and their actions, similarly, one type of air is divided into five types based on name, place, action and diseases.
- 12 Five types of wind:¹⁶²
1. prāṇa,
 2. udāna,
 3. samāna,
 4. vyāna,
 5. apāna.¹⁶³

The above five types of wind remain in their state of equality and support the body.¹⁶⁴

- 13–14ab The wind that flows through the mouth is called the vital wind (*prāṇa*), the sustainer of the body. It causes food to enter within and supports the breaths.¹⁶⁵ It mostly causes diseases like hiccups and wheezing (*śvāsa*).
- 14cd–15 Since it is the one that flows upwards, that highest of winds is called udāna.¹⁶⁶ Special acts like speech and singing are all initiated by it. It particularly causes diseases above the neck (*jatru*).¹⁶⁷
- 16–17ab The samāna wind flows in the receptacles of raw and of digested matter.¹⁶⁸ Assisting the digestive fire (*agni*), it cooks food and separates out

“balance” or “equilibrium” in such contexts, but this misrepresents the metaphor that the Sanskrit sources are using. As the commentators on *Aṣṭāṅgahṛdayasaṃhitā* 1.1.20 (Ah 1939: 14) make abundantly clear, the expression *doṣasāmya* means “equality of humours,” as in *quantitative* equality, not balance.

¹⁶² See Zysk 1993. Zysk (2007: S110) translated the following descriptions of the winds.

¹⁶³ We use the Sanskrit terms which are generally recognizable to English readers.

¹⁶⁴ According to Dalhaṇa on 2.1.12 (Su 1938: 259), स्थानःसाम्य, यापयन्ति=धारयन्ति. All the manuscripts read प्राणोदानः समानश्च व्यानोपानस्तथैव च | against the vulgate’s प्राणोदानौ समानश्च व्यानश्चापान एव च |.

¹⁶⁵ According to Dalhaṇa on 2.1.13–14ab (Su 1938: 259), प्राण also resides in the throat and nose.

¹⁶⁶ The sentence plays on the sound उत्- |ऊर्ध्- in the qualifiers (उदान, ऊर्ध्वम्, उत्तम). According to Dalhaṇa on 2.1.14cd–15 (Su 1938: 260), the places of udāna wind are not mentioned here, but it also flows in the navel, stomach and throat. In yoga literature, it is more common for prāṇa to be called the principle breath.

¹⁶⁷ Dalhaṇa noted that “above the *jatru*” would include eyes, nose, ears, face, and head. Meulenbeld cited discussions on the difficulties of interpreting the term जत्रु (Meulenbeld 1974b: 465). Hoernle (1907: §§62, 98) translated *jatru* as “neck, windpipe”. See also Hoernle’s notes on the expression “above the *jatru*” (idem, 237–238).

¹⁶⁸ The “receptacle of raw matter” (आमाशय) is described at 1.21.12 (Su 1938: 102) as one

- the substances produced from it.¹⁶⁹
- It mainly causes abdominal swelling (*gulma*), diminished digestive fire (*agnisaṅga*) and diarrhoea.¹⁷⁰
- 17cd–18 The vyāna moves everywhere in the body, active in making chyle (*rasa*) flow. It also makes sweat and blood flow as well as causing movement **in every respect**.¹⁷¹ Angered, it causes diseases that generally exist throughout the whole body.
- 19–20ab The apāna resides in the place of digested food and, at the right moment, it draws wind, urine, and feces, as well as semen, fetus and menstrual blood downwards. Angered, it causes terrible diseases located in the bladder and rectum.
- 20cd–21ab Irritated vyāna and apāna winds cause defects of semen and urinary diseases (*prameha*). Simultaneously aggravated, they surely destroy the body.¹⁷²
- 21cd–22ab From here, I shall describe all the diseases, located in the various places of the body, that are caused by wind that is irritated in various ways.
- 22cd–24 Aggravated wind in the stomach causes diseases like vomiting, as well as disorientation (*moha*), fainting, thirst, heart-seizure (*hṛdgṛaha*), and pain in the flanks.¹⁷³ It also causes rumbling of the bowels, gripes (*śūla*), swollen belly, painful urine and feces, constipation, and pain in the sacrum (*trika*).¹⁷⁴ Aggravated wind in the ears etc., destroys the senses.
- 25abc–29 Located in the skin, it causes discolouration (*vaivarṇya*), throbbing,

of the locations of phlegm, and the place where food arrives, just above the location of bile, and where the food is moistened and broken down for easy digestion. The “receptacle of digested matter” (*पक्वाशय*) is described at 1.21.6 (Su 1938: 100) as being located below the navel and above the pelvis and rectum.

¹⁶⁹ Gayadāsa had the same reading सहायवान् as the Nepalese version (Su 1938: 260, note 1 and the text of the *Nyācacandrikā*). This suggests that it is the samāna that cooks food, while the vulgate reading involves the equal participation of digestive fire.

¹⁷⁰ Dalhaṇa on 1.11.8 (Su 1938: 46) described अप्रिसङ्ग as “the fire is stuck, dissolved.”

¹⁷¹ The vulgate text reads पञ्चधा “in five ways,” and Dalhaṇa listed five kinds of movement (Dalhaṇa on 2.1.18 (Su 1938: 260)).

¹⁷² Dalhaṇa on 2.1.21ab (Su 1938: 261) clarified that this refers to all five winds being aggravated at once.

¹⁷³ On “disorientation,” Dalhaṇa on 2.1.23ab (Su 1938: 261) noted that the condition was नैवात्यन्तं चित्तनाशः “not the complete loss of awareness.”

¹⁷⁴ Hoernle (1907: 140) attributed the quite different interpretation of त्रिक by Dalhaṇa on 1.21.14 (Su 1938: 102) to “the decay of anatomical knowledge subsequent to the time of Suśruta.”

dryness, numbness (*supti*), itching (*cumucumāyana*), and pricking pain.¹⁷⁵ Located in the flesh, painful lumps.¹⁷⁶ Located in the fat, it causes slightly painful lumps that are not wounds.

Located in the ducts, it causes acute pain, contraction and filling up of the duct.¹⁷⁷ When it reaches the sinews, it paralyses the network of sinews, and causes them to tremble. Located in the joints, it destroys the joints and it causes sharp pain and swelling. It causes a splitting of the bones, when it acts there, and dryness as well as sharp pain; and when it is in the marrow, it causes an sickness that never abates. Wind located in the semen, it causes the non-production or faulty production of semen.¹⁷⁸

- 30–31ab Wind moves incrementally from the hand to the foot, the head, and the bodily tissues. Or it may pervade people's entire bodies, causing stiffness, convulsion, numbness (*svāpa*), swelling, and acute pain everywhere.

¹⁷⁵ Maas (2008) definitively clarified the contrasting त्वक्-first and (usually) रस-first models of the bodily elements (*dhātu*) as distinct historical formulations in the earliest medical literature. Das 2003: 267–282 also explored this issue, including the observation that the *Bhedasamhitā* seems to have taught that रस “chyle” was the sources of menstrual blood, in contrast to the *Kāśyapasamhitā* that assigned this role to त्वक् “skin.” In their comments on this passage, Gayadāsa and Ḏalhaṇa both tried to square the circle of these contrasting models by suggesting that त्वक् “skin” should be understood to mean रस “chyle” (on 2.1.25 (Su 1938: 262)). Gayadāsa explained in more detail that chyle is located in the skin and therefore, the expression त्वकस्य “located in the skin” should, by extension, be read as रसस्य “located in the chyle.” He proposed the parallel with the well-known grammatical example of figurative meaning, गङ्गायां घोषः “the village on the Ganges,” which means, really, “the village on the bank of the Ganges” (on this example of figurative meaning, *lakṣaṇā*, see Kunjunni Raja 1963: ch. 6; Jhalakikar 1978: 698–699).

¹⁷⁶ At this point, the vulgate has a passage that is not present in the Nepalese witnesses. It gives more symptoms of wind in the skin and then addresses wind in the blood: “(wind in the skin) may cause prickling, splitting of the skin and peeling; and when it is in the blood, it causes wounds” (Su 1938: 261). The commentators Gayadāsa and Ḏalhaṇa were aware that this passage was missing in some of their manuscripts. Gayadāsa said that this was because some authors noticed that वातरक्त “wind-blood” would be discussed later in the chapter. But they both thought this absence was incorrect (Su 1938: 262).

¹⁷⁷ According to Ḏalhaṇa सिराकुञ्जन् is also known as कुटिला सिरा (Su 1938: 262), which may refer to varicose veins.

¹⁷⁸ Ḏalhaṇa and Gayadāsa both suggest that a faulty production विकृतां प्रवृत्तिम् is too fast, too slow, knotty and discoloured Su 1938: 262.

Symptoms of diseases that arise because of a combination of the five breaths with bile and phlegm

- 31cd–32ab In the stated locations, wind that is compounded causes compounded afflictions.¹⁷⁹ And located in the limbs, it can cause a multitude of diseases.¹⁸⁰

Prāṇa

- 34cd–35ab Prāṇa covered by bile causes vomiting and a burning sensation and when covered by phlegm it causes weakness, exhaustion, lassitude and loss of the sense of taste.¹⁸¹

Udāna

- 35cd–36ab When udāna is joined with bile there is bewilderment (*moha*), fainting (*mūrchā*), dizziness (*bhrama*) and exhaustion. And when covered by phlegm there is exhilaration and an absence of perspiration, slow digestion, and coldness.¹⁸²

Samāna

- 36cd–37ab When samāna is combined with bile there is perspiration, a burning sensation, a temperature and fainting (*mūrchā*). When in contact with phlegm there is horripilation of the limbs during feces and urine.

¹⁷⁹ Ḑalhaṇa on 2.1.31cd (*Su 1938*: 262) explained “wind that is compounded” as wind being mixed with bile and phlegm.

¹⁸⁰ The Nepalese version omits passages 2.1.32cd–33ab which are about the diseases that arise when contaminated wind mixes with bile and phlegm (*Su 1938*: 263). See p. 201 below, where the Nepalese text inserts this material.

¹⁸¹ वैरस्य “loss of the sense of taste” may refer to ageusia. The vulgate reads वैवर्ण्य “loss of colour” (*Su 1938*: 263). The vulgate’s footnote 1 says that the palm-leaf manuscript reads वैश्वर्य but this is not correct. The palm-leaf manuscript whose readings were sent to Trivikrama Ācārya was witness N, which reads वैरस्य.

¹⁸² The expression “exhilaration and an absence of perspiration” translates the Nepalese version’s अस्वेदहर्षः as if it were a dvandva. The vulgate has the easier dvandva, अस्वेदहर्षो “lack of sweating and also exhilaration” 2.1.36ab (*Su 1938*: 263). Perhaps the Nepalese reading is an Epic form of m. sing. dvandva as described by Oberlies (2003: 361–362, n. 3).

Apāna

- 37cd–38ab When apāna is associated with bile there is a burning sensation, a temperature and blood in the urine.¹⁸³ When covered with phlegm there is a feeling of heaviness in the lower body and coldness.

Vyāna

- 38cd–39.1 When vyāna is covered by bile there is a burning sensation (*dāha*), shaking of the limbs and fatigue.¹⁸⁴ When covered by phlegm there is paralysis, stiffening (*uddanḍaka*), and swelling with pain.¹⁸⁵
- 40–41 In general, wind-blood causes inflammation in those who are delicate and enjoy inappropriate food, and because of the torment of the **humours**,¹⁸⁶ the roads, intoxication from wine, and lack of exercise,¹⁸⁷ from the inversion of the seasons and locales, from the consumption of uncongenial (*asātmya*) foods, and because of the **lack of exercise** taken by an overweight person.¹⁸⁸

¹⁸³ The This probably describes hematuria. Again we have an Epic m. sing. dvandva.

¹⁸⁴ The next vulgate verse is absent in the Nepalese version. It describes diseases caused by contaminated vyāna mixed with cough and phlegm (Su 1938: 264). Instead of this verse, Nepalese version has the following sentence about phlegm.

¹⁸⁵ The word उद्धण्डक “being like a vertical stick” is rare or unknown as a medical term (unrelatedly, it is the name of an ascetic group listed in works such as the *Cāturāśramyadharma* of Kāṇvāyana (NCC: 3, 306)). Some of these symptoms are in common with Stiff Person Syndrome.

¹⁸⁶ “Wind-blood” is described in the *Suśrutasaṅhitā* as the combination of corrupted blood obstructing the path of inflamed wind and causing simultaneous pain due to wind and blood at once (4.5.4 (Su 1938: 423)). The *Carakasaṅhitā* describes it as increased wind being blocked in its passage by increased blood (6.29 (Ca 1941: 627–634)). See also references at *Mahākośa*: 1, 740–741. Interpreted as leprosy by Sen-gupta (1901: 1, 256–260). Several symptoms described below are similar to those of diabetic neuropathy.

¹⁸⁷ Probably, the “torment of the roads” refers metonymically to excess travel. “Lack of exercise” could be read as just “exercise,” and while that may sound like torment, the former interpretation better fits the context. Note that the sequence -प्रमदामद्य- in the vulgate separates “confusion” and “wine” while the Nepalese version’s “wine-confusion” is a more obvious reading. Dalhaṇa read मिथ्याहारविहारिन् as a dual “inappropriate food and recreation” (Dalhaṇa on 2.1.40 & 4.5.5 (Su 1938: 263 & 423)).

¹⁸⁸ Instead of “lack of exercise” the vulgate reads “lack of sexual intercourse,” which makes little sense.

Dalhaṇa on 2.1.40–41 (Su 1938: 263) commented that some scholars did not read these two verses here because these are read later, at Cikitsāsthāna 4.5.5 (Su 1938: 424). In

Wind-blood (*vātarakta*)

- 42–44 The wind may become aggravated by riding elephants, horses, camels and for other reasons.¹⁸⁹

By consuming vegetables that are pungent, hot, sour, or alkali and by strong, habitual anguish (*santāpa*), the blood rapidly becomes liquid and that quickly blocks the pathway of the quick-moving wind;¹⁹⁰ irritated by the obstruction of the pathway, it goes wrong. That blood, mixed with corrupted wind is called “wind-blood” because of the wind’s force.

Similarly, bile may be tarnished by corrupted blood.¹⁹¹

- 45–46 Because of wind-blood, the feet have an aversion to touch, as well as pricking, splitting, dryness, and a loss of sensation. Contaminated bile mixed with blood causes a sharp burning sensation, excessive heat, a red swelling and a softening of the feet.

When blood is contaminated by phlegm, the feet get itchy, cold and white, swollen, thick and stiff. Furthermore, when blood is contaminated by all of them, the humours display their respective signs in the feet.

- 48 Residing in the soles of the feet, and sometimes in the hands, this disease creeps through that body like angry rat poison.¹⁹²

- 49ab, 50ab Wind-blood (*vātarakta*) that bursts out (*sphuṭita*) as far as the knees, and that is split and oozing, is incurable, and that which has lasted for a year can be mitigated (*yāpya*).¹⁹³

fact, at that location, only 2.1.40ab and 2.1.41cd are read.

The word दोष appears in the Nepalese version of 2.1.40cd, but not in the vulgate (which reads रोग). Therefore, when Gayadāsa said दोषप्रहणं तु विशेषार्थमिति “the use of the word दोष is for the purpose of specificity,” at the end of his comment on 2.1.32–39 (Su 1938: 263), it is likely that he had the Nepalese version of at least part of the text before him, *pace* the comment, “Gayadāsa did not accept this reading” by Y. T. Ācārya and N. R. Ācārya (गयदासासंस्मतोऽयं पाठः Su 1938: 263, note 2).

189 Dalhaṇa exemplified “other reasons,” as carrying loads, etc.

190 The word सन्ताप, “anguish” can mean physical as well as emotional pain.

191 The Nepalese version omits the vulgate’s similar statement about phlegm being affected by blood.

192 The commentators Gayadāsa and Dalhaṇa both read “the whole body” (सद्देहम् for तद्देहपूर्, interpreting सद् as सकलपूर् (Su 1938: 264)). The subject, “this disease,” is not expressed in the Sanskrit sentence.

193 The sentence appears to describe the condition of the skin, but the word “skin” is not expressed.

Convulsions and seizures

- 50cd–51 When aggravated wind enters into all the ducts (*dhamanī*), the wind, which moves repeatedly, makes the body convulse (*ākṣip*) quickly and repeatedly. Because of the repeated convulsing (*ākṣipāṇa*) it is traditionally called “The Convulsor (*ākṣepaka*).”
- 52–56 Since a person blacks out (*apatāmyate*) completely, it is known as a seizure (*apatānaka*).¹⁹⁴
- 52cd–53ab If wind that is mixed with a lot of phlegm is present in the ducts (*dhamanī*), it is called Stick Seizure (*daṇḍāpatānaka*) because it makes one paralyzed like a stick.¹⁹⁵
- 54ab The one that bends the body like a bow is technically termed Bow Paralysis (*dhanuhstambha*).
- 54cd–55cd When wind is agitated and located in the fingers, ankles, abdomen, heart, chest, or throat and attacks the network of sinews, the person has paralyzed eyes and a stiff jaw, their flanks are bent and they vomit phlegm.¹⁹⁶
- 56 When a person is caused to bend inwards like a bow,¹⁹⁷ then the strong wind causes internal tension (*abhyantarāyāma*).
- 57 And when the wind is located in the network of external sinews it causes external tension (*bāhyāyāma*), that breaks the chest, hips, and thighs. That is untreatable, say experts.

¹⁹⁴ Explaining अपतानक by reference to अपताम्यते is a folk etymology, since the words have different etymological roots.

Gayadāsa, in his commentary on 2.1.52 (Su 1938: 265) discussed the reading अपताम्यते, which is also the reading supported by witness N but not the vulgate. This word seems to be unattested elsewhere. Gayadāsa defined अपतानक as a situation in which a person sees darkness and loses consciousness (तमो दृश्यते मोह्यते). Gayadāsa presented a detailed and interesting discussion of these terms, including citations from earlier commentators and the texts of Caraka and Dr̥ḍhabala. Ḏalhaṇa took up Gayadāsa’s discussion and also cited the commentators Jejjata and Brahmadeva. Brahmadeva was cited often by Ḏalhaṇa and lived after Gayadāsa and before Cakrapāṇidatta, i.e., in the eleventh century (HIML: 1A, 373–374).

¹⁹⁵ Against Ḏalhaṇa on 2.1.52 (Su 1938: 265), we read the intensifier भूषाम् with कफान्वित rather than the transitive verb तिषुति, for sense.

A verse added in the vulgate at this point asserts that trismus also occurs.

¹⁹⁶ Perhaps the bent flanks, भग्रपार्श्व, are meant to echo the image of the bow, like a scoliosis.

¹⁹⁷ It is not clear what the qualifier “inwards” is meant to indicate, medically; perhaps a form of emprosthotonus. The verb नाम्यति is a causative, perhaps passive in sense.

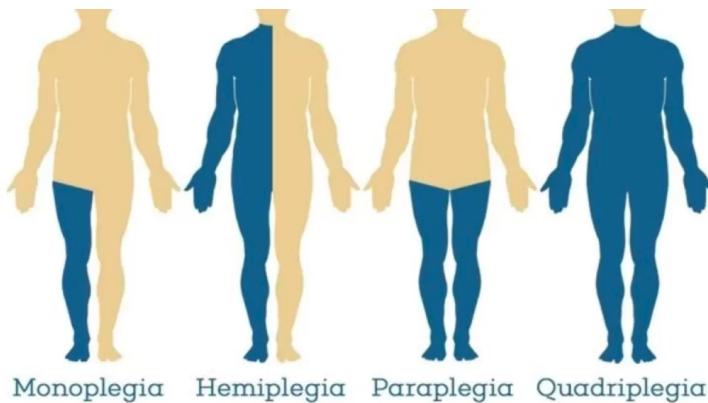


Figure 2: Types of paralysis. Image courtesy of Chiro Sciences.

- 58 The wind, mixed with phlegm and bile, or even the wind on its own, causes another, fourth convulsion (*ākṣepaka*) that is caused by trauma (*abhīghāṭa*).¹⁹⁸
- 59 A seizure (*apatānaka*) that arises because of miscarriage, excessive bleeding and trauma cannot be cured.¹⁹⁹
- 60–61 When wind that is extremely irritated and strong, proceeds to the downwards, upwards and horizontal pipes (*dhamani*), then, loosening the bonds of the joints of one side of the body or another, it destroys that flank. Expert physicians call this paralysis (*pakṣāghāṭa*).²⁰⁰
- 62 If someone is damaged by wind, the whole side of their body is incapacitated and without feeling (*acetana*). Then they rapidly fall down or even die.
- 32cd–33ab When wind is full of bile, heat, anguish and fainting can occur. And when it is full of phlegm, there is coldness, swelling and heaviness.²⁰¹

¹⁹⁸ Ḑalhaṇa again cited Brahmadeva's opinion on this passage; see note 194 above.

¹⁹⁹ According to Ḑalhaṇa on 2.1.59 (Su 1938: 266), convulsion (*ākṣepaka*) is also known as अपतानक. He further mentioned that even if, fortunately, it is cured, it nevertheless cripples the limb.

²⁰⁰ In the *Carakasamhitā*, 6.28.55 (Ca 1941: 619), पक्षघात "paralysis" was described as illness of one limb (*ekāṅgaroga*), which may sometimes have corresponded to the contemporary condition monoplegia. Thus, paralysis (*pakṣāghāṭa*) may sometimes correspond to conditions that Modern Establishment Medicine terms "hemiplegia." Cf. Figure 2.

²⁰¹ In the vulgate, this text appears thirty verses earlier in the chapter (see footnote 180 above). Its context at that point seems awkward. It fits slightly better in the context at this point.

- 63 Experts know that a flank struck by uncontaminated wind is extremely hard to cure. It is curable when mixed with another, and it is incurable when caused by wasting (*kṣaya*).²⁰²

[Draft:]

Vitiated wind entered in the arteries and bends the body like a bow, it is called धनुःस्तम्भ Tetanus. When vitiated wind accumulated in the regions of finger, ankle, abdomen, heart, chest, and throat swiftly attack on the group of vain and ligaments, it gets a person's eyes stuck, chin stuns, side breaks and vomiting phlegm he moves inwards like a bow and this situation is known as emprosthotonos (*antarāyāma*). When vitiated wind attacks on outside ligaments, body of a person will stretch forward like a bow. In this situation, if the chest, hip or thigh break, wise men call it incurable.

- 58 Aggravated phlegm and bile mixed with wind or only vitiated wind causes fourth convulsive disease due to trauma.
- 59 Convulsions due to miscarriage, excessive bleeding, and injury are incurable ²⁰³.
- 60--62 When excessively agitated and strong wind flows in the arteries which spread downward, upward, and sideways, it loses the joints and kills the other side of body. The best of physicians calls it paralysis (*pakṣāghāta*).²⁰⁴ Then half of his entire body becomes inefficient and unconscious. Afflicted by wind he suddenly falls or dies.
- 62.1 Bile integrates with wind causes burning sensation, affliction, and infatuation. When it integrates with phlegm causes coldness, morbid swelling, and heaviness.²⁰⁵

²⁰² This verse is hard to understand. Dalhaṇa on 2.1.63 (Su 1938: 266) explained “another” as meaning one of the other humours. The reference to wasting is obscure in this context, and the comments of Gayadāsa (Su 1938: 266) do not help.

²⁰³ According to Dalhaṇa convolution (*ākṣepaka*) is also known as अप्तानक (Su 1938:266). He further mentions that even if fortunately, it is cured, it cripples the limb.

²⁰⁴ In the ca.6.28.55 पक्षाघात is described as monoplegia (*ekāṅgaroga*). In that case it damages one of the limbs. In the medical terms paralysis (*paksāghāta*) is known as hemiplegia.

²⁰⁵ This verse is not available in vulgate. It deals with the symptoms when bile and

- 63 A paralysis (*pakṣāghāta*) caused by wind ²⁰⁶ is curable with most difficulty. It becomes curable when caused by bile and phlegm mix with the wind. It becomes incurable when caused by the loss of bodily constituents.
- 64--66 Verses from 64--66 are not found in the Nepalese manuscripts. These verses discuss the term spasmodic contradiction (*āpatantraka*) which is the same as अप्तानक. Ḏalhaṇa commented on ni.1.64-66 (Su 1938:267) that because of having the similar condition in both situations, some scholars do not read the अपतन्त्रक. In the verse ni.1.59 Ḏalhaṇa commented that the आक्षेपक and अप्तानक is same (Su 1938:266) and again he suggested that the अप्तानक and अपतन्त्रक both are similar condition. Therefore, आक्षेपक, अप्तानक and अपतन्त्रक should be the same. Gayadāsa further commented that the Caraka has not read आक्षेपक as अप्तानक and therefore described the अपतन्त्रक separately (Su 1938:267).
- 67 This verse also not found in the Nepalese Manuscripts. The verse describes rigidity of neck (*manyāsthambha*). According to Ḏalhaṇa, rigidity of neck is a prior symptom of spasmodic contradiction.
- 68--72 By speaking very loudly, eating hard foods, excessively laughing and yawning, lifting heavy loads and sleeping in an awkward position, vitiated wind lodges into face painfully and produces paralysis of the jaw-bones (*ardita*) disease. In that case, half of the face and neck become curved, head trembles, speech hindrances, deformity occurs in the eyes, eyebrows and cheeks.²⁰⁷ Experts in diseases call this disease spasm of the jaw-bones (*ardita*).
- 73 Spasm of the jawbones cannot be cured when it stays in a person for three years, who is very weak, stays without blinking, trembles, and constantly speaks gibberish.
- 74 Arteries of Heel and toes stricken by vitiated wind prevents stretching of thighs. This disease is known as sciatica (*grdhrasī*).

phlegm mix with the wind. It is already discussed in su.2.1.38.

206 Here the term शुद्धवात suggests the meaning of the wind that is devoid of bile and phlegm.

207 Ḏalhaṇa suggests नेत्रादीनाम् इत्यादि शब्दात् भूगण्डादि उपसङ्गहः

- 75 Arteries which run to the tips of fingers from behind the roots of the upper arm affected by vitiated wind terminates all activities of arms and back. This disease is called paralysis of arms and back (*viśvañci*). ²⁰⁸
- 76 Vitiated wind and blood in the joint of knee causes synovitis of knee join (*krostukasīrsa*). In this extremely painful situation, the shape of swelling in knee joints seems like a head of Jackal.
- 77 Vitiated wind resides in the waist attacks on the arteries of thigh causes limpness (*khañja*) and when it attacks on both the thighs a person becomes lame (*pāngu*).
- 78 A person who trembles at the beginning of walking or walks limping and whose foot joint has become loose is called lathyrism (*kalāyakhañja*).
- 79 Vitiated wind residing in the ankle-joint causes pain when one steps on uneven ground. This disease occurs is called वातकण्टक.
- 80 Vitiated wind mixed with bile and blood cause burning sensation in feet. It should be declared as burning sensation in feet (*pādadāha*).
- 81 A person whose feet tingle and become insensible due to vitiation of phlegm and wind is called पादहर्ष.
- 82 Vitiated wind lying in the shoulder dries the shoulder joints and it is called अंसशोष. It also bends the arteries of shoulder, and this disease is called अवबाहुक. ²⁰⁹
- 83 Vitiated wind singly or mixed with phlegm cover the channel of ears causes deafness.
- 84 Vitiated wind saturated with phlegm covering the arteries which conduct the sound of speech makes a person inactive (*akriya*), dumb (*mūka*). He mumbles (*mimmira*) through the nose and stammers (*gadgad*). ²¹⁰

²⁰⁸ Both the MSS N and H read विश्वञ्जि instead of the vulgate reading विश्वाची. There is no such word found in other Āyurveda texts.

²⁰⁹ Dalhaṇa and Gayadāsa both have defined two diseases i.e., अंसशोष and अवबाहुक respectively.

²¹⁰ Nepalese Manuscripts read मिर्मिर instead of the Vulgate's reading मिन्मिण. Dictionary of MW suggests the meaning of मिर्मिर = having fixed unwinking eyes which is not relevant to the disease of tongue.

- 85 Vitiated wind penetrating into the cheekbones, temporal bones, head and neck causes piercing pain in the ears. It is called ear-ache (*karpaśūla*).²¹¹
- 86--87 The pain that arises from the bladder or feces goes down as if it were breaking the rectum and..... ? is called तूनी, whereas the pain, rising upward from the rectum extending up to the region of the intestines, is called प्रतितूनी.
- 88--89 Retention of vitiated wind inside abdomen causes distension of the stomach and flatulence and intense pain and rumbling inside, is called tympanites (*ādhmāna*). Vitiated wind mixed with phlegm causes प्रत्याध्मान. It rises in the stomach and causes pain in the heart and sides. ²¹²
- 90--91 A knotty stone-like tumour caused by wind appearing in the stomach having an elevated shape and stretched upward direction which obstructing the passage of faeces and urine should be known as वाताष्टीला. A tumour of similar shape rose obliquely in the abdomen obstructing the passage of wind, faeces and urine should be known as प्रत्याष्टीला.
- Names of diseases discussed in the chapter 2.1
 Gout (*vātarakta*) convulsion (*ākṣepaka*) paralysis of one side (*paksāghāta*) paralysis of the jaw-bones (*ardita*) sciatica (*grdhrasī*) paralysis of arms and back (*viśvañci*) synovitis of knee join (*kroṣṭukaśīrṣa*) lathyrism (*kalāyakhañja*) vātakanṭaka (*vātakanṭaka*) avabāhuka (*avabāhuka*) tūnī (*tūnī*) pratitūnī (*pratitūnī*) tympanites (*ādhmāna*) pratyādhmāna (*pratyādhmāna*) vātāṣṭhīlā (*vātāṣṭhīlā*) pratyāṣṭhīla (*pratyāṣṭhīla*)

²¹¹ In the medical terms, this disease is known as Otitis.

²¹² There's an addition in MS N. नाभेरधस्तात् संजातः संचारी यदि वाऽचलः

Part 3. Śārīrasthāna

Śārīrasthāna 2: On Semen and Menstrual Fluid

Literature

Meulenbeld offered an annotated overview of this chapter and a bibliography of earlier scholarship to 2002.²¹³ Das (2003: chs 6–8) also studied topics of this chapter and in chapter 13 provided an overview of the conceptual background of ayurveda on the topics discussed in this chapter.

Translation

- 1 We shall now explain the anatomy that is the purification of sperm (*śukra*) and blood (*śoṇita*).
- 3 Semen (*retas*)²¹⁴ is incompetent to produce offspring if it is [characterized by] wind, bile, phlegm, blood (*śoṇita*),²¹⁵ decomposition (*kunapa*), clumps (*granthi*),²¹⁶ stinking pus (*pūtipūya*), low volume (*kṣīṇa*), urine, or feces.

²¹³ [HIML](#): IA, 244–246.

²¹⁴ The Nepalese version has *-रेतांसि* “semen” (in the plural) as the subject of the sentence: “seeds are unable to produce offspring....” In the vulgate, *-रेतसः* is a masculine bahuvrīhi, making “men whose semen has...” the subject of the sentence.

²¹⁵ Note that the list begins with the four entities, wind, bile, phlegm and blood, hinting at a four-humour system (see Wujastyk 2000: 485–486).

²¹⁶ Modern Establishment Medicine (MEM) understands that normal ejaculate contains coagula which, however, dissolve after about half an hour. But coagula that do not dissolve may sometimes be a sign of an underlying disorder (see, e.g., Lamming and Marshall 1990: 2, 614–615; Cohen 1990).

Diagnosis by humours

- 4 • When the dysfunction is caused by wind, there is a colour and a type of pain that typically goes with wind problems.
- If caused by bile the colour and the pain are typical of bile afflictions. If caused by phlegm the discolouration and suffering are characteristic for phlegm disease.
 - And if caused by blood (*śoṇita*) there will be a colouration due to blood and a sensation of a bile affliction. Moreover, when caused by blood (*rakta*) there is the smell of decomposition (*kunapa*).²¹⁷
 - Phlegm with wind causes the appearance of clumps.
 - Bile with blood (*śoṇita*) causes the appearance of foul-smelling pus (*pūtipūya*).
 - Bile with wind (*māruta*) cause a weakening of semen.
 - Humoral colligation (*sannipāta*) causes the smell of urine and faeces.²¹⁸

Cases of foul-smelling sperm, sperm with clumps, and when it reeks of pus are hard to treat. But when sperm contains urine or faeces there is no treatment.²¹⁹

- 5 Moreover, seasonal blood (*ārtava*) too can become afflicted (*upasṛṣṭa*), seedless (*abīja*) because of the three humours, and blood as the fourth, taken individually, in pairs or triples or all together.²²⁰

This can also be known by means of the humour, colour and pain. In these cases, that which displays decomposition (*kunapa*), clumps and the putrid smell of pus is incurable (*asādhya*). And otherwise it is curable (*sādhya*).

Among these, the kind which shows decomposition, or coagula, or putrid pus is incurable. The other types, however, can be treated.

²¹⁷ Note that the text mentions both शोणित and रक्त. This raises the question of whether the author considered these to be different, or whether it is an artefact of textual transmission.

²¹⁸ The expression “humoral colligation,” translating सन्निपात, refers to the simultaneous disorder of three humours at the same time, a condition that is difficult to treat (see Wujastyk 2016b: 38 *et passim*).

²¹⁹ Note that the above characterizations presuppose the direct inspection of an ejaculate. The process of collection is not described in the sources in this chapter.

²²⁰ This translates the text of the oldest surviving witness, N, and the vulgate. But MS H, that normally follows K very closely, has a negative particle, न, reversing the sense of the sentence.

6 And there is a verse on this.

*An expert should overcome the first three of these sperm pathologies with special treatments such as unction and sweating, as well as by means of a urethral instillation (uttarabasti).*²²¹



Therapies by humour

- 6.1 In that context, when the sperm is of the nature of wind, there is an enema (*āsthāpana*) consisting of Bengal quince, Indian kudzu and milk.²²² In the urethral instillations one should use sesame oil well cooked with mahua, grey orchid, deodar, and chir pine. One can also make the patient drink clarified butter with ripe pomegranate, citron fruit, rock salt, a caustic (*kṣāra*), and two kinds of salt.²²³
- 6.2 When the sperm is of the nature of bile, there is an enema of milk cooked with curds, Malay beechwood and liquoricek. One should also apply a paste (*kalka*) of white dammer tree and axlewood in the vagina. There is an oily enema (*anuvāsana*) of sesame oil cooked with liquorice; in the same way, it should only be applied as a urethral instillation.²²⁴ One should make him swallow ghee cooked with wild sugar cane, common smilax, heart-leaved moonseed, white teak, false daisy, and the five roots.
- 6.3 When the sperm is of the nature of phlegm, there is an enema (*āsthāpana*) consisting of a decoction (*kaṣāya*) of golden shower tree. And one should also apply an oily enema (*anuvāsana*) of sesame oil cooked with long pepper, embelia and honey; and it should only be applied as a urethral instillation.
One should make him drink a ghee cooked with hairy bergenia, white teak, emblic myrobalan, long pepper, bearded premna, and prickly chaff-flower.

²²¹ Dalhaṇa on 3.2.6 (*Su* 1938: 345) noted that “unction and sweating” indicates the “five treatments”: वमन, विरेचन, अनिरुह, अनुवासन and उत्तरबस्ति. He noted that the explicit mention of urethral enema in the verse was for the purpose of highlighting its priority. However, a natural reading of the verse does not suggest that these distinctions were in the author’s mind.

²²² These three recipes are not present in the vulgate text of the *Sūrutasamhitā*.

²²³ -विपक्ष “well cooked with...” might be interpreted as “with ripe...”.

²²⁴ By specifying “upper (i.e., urethral) instillation” the author is clarifying that this is not a rectal enema.

3.2.7 And there are verses about this.

When there is blood in the sperm, the physician should give the person ghee cooked with flowers of the fire-flame bush, catechu, pomegranate, and arjun.

3.2.8 *When it smells like a corpse, he should drink ghee cooked with the sal group of trees. †When clumps appear, it is cooked with stones, or also in ash from a flame-of-the-forest.²²⁵*

9 *And also, when it resembles pus, it is treated with items such as phalsa and banyan. When the sperm is deficient it should be treated as was stated before and also as will be described.²²⁶*

10 *When it looks like feces, he should be made to drink ghee together with leadwort, vetiver and devil's dung.*

10.1 *In these six cases, a wise person should carry out the sequence that starts with oleation.²²⁷*

10.2–3 *It deteriorates as a result of not having sex with women for a long time as well as from the use of actions, and from overusing the drugs that are astringent, spicy and sharp, that are acidic (amla), salty, sere (rūkṣa), sour (śukta) or stale (paryuṣita), and because of suppressing (vegāghāta) the impulses in vaginas and from intercourse (gamana).²²⁸*

10.4 *When there is a defect (doṣa) in the menstrual blood (ārtava) one should advise the therapy starting with oleation.*

And one should use a urethral instillation (uttaravasti) exactly as was described before.

²²⁵ The Nepalese text and translation of this sentence are uncertain. The vulgate text reads, 3.2.8 (*Su 1938*: 345): ग्रन्थिभूते शटीसिद्धं पालारो वा ॥पि भम्नि “If clumps appear, it is cooked with śatī or in ash from a *palāsa*.” The vulgate edition notes in a footnote that some vulgate manuscripts add an extra line, सेहादिश्च क्रमः षड्वेतासु विजानता. The Nepalese manuscripts read this line two verses further down.

²²⁶ Dalhana on 3.2.9 (*Su 1938*: 345) noted that “what was stated before” refers to the स्वयोनिवर्धन section, i.e., *Suśrutasaṃhitā* 1.15.10 (*Su 1938*: 69), and that “what will be described” refers to *Suśrutasaṃhitā* 4.26 (*Su 1938*: 496), the chapter on weakness and strength (क्षीणबलीय).

²²⁷ It is difficult to know which six cases the author intended. Dalhana on 3.2.10 (*Su 1938*)

²²⁸ This passage is hard to interpret and there are no parallels, commentary or meaningful alternate readings.



to what?

And there is a verse about this:

To purify the menstrual blood (ārtava), one should apply the procedure that finishes with a urethral installation.

From

Therapies for menstrual blood

- 12cd For purifying the menstrual blood one should follow the procedure, the last of which is a urethral instillation (*uttarabasti*).²²⁹
- 13 One should use a paste (*kalka*) as well as cloths and a salutary lavages (*ācamana*).²³⁰
- 14 In case of a bad smell and the appearance of pus, or the appearance of marrow in the blood.
- 15 He should drink a decoction (*kvātha*) of white sandalwood or a decoction of red sandalwood.²³¹
- 14ab When clumps (*granthi*) appear, he should drink velvet-leaf, three heating spices, and Indrajao.²³²
- 14a He should drink a decoction (*nīlakvātha*) that is the extracted juice (*surasa*) of a caustic (*kṣāra*), dried ginger, and devil's dung.
- ...
24 Thus a man has unblemished semen and a woman has pure menstrual blood.²³³

²²⁹ The “procedure ending with a urethral instillation” probably refers to verse 6 above (see page 87).

²³⁰ The word आचमन, normally “sipping water from the palm” is here translated “lavage” following the context and Dalhaṇa on 3.2.13 (Su 1938: 345), who described it as “water for washing the vagina” (योनिप्रक्षालनोदक). This treatment may be intended for the condition mentioned in 12cd, but in the vulgate text there is a preceding half verse stating that the treatment is for the “four disorders of menstrual blood.”

²³¹ The name चन्दन may refer to several types of sandalwood; presumably one is meant here that is different from white sandalwood, i.e., perhaps Pterocarpus santalinus Linn. f. The vulgate has an extra half-śloka here.

²³² On ग्रन्थि, see note 216.

²³³ On this and the following texts, cf. Smets 2010: 389 et passim.

During menstruation

- 25 During the season (*ṛtu*), starting from the first day onwards, the chaste woman (*brahmacāriṇī*) foregoes bathing, anointments, ornaments and grooming (*vilekhana*).²³⁴ She should abstain from sleeping during the day, collyriums, weeping tears (*aśrupāta*), massages, cutting her nails, taking showers, laughing, telling stories, hearing too much noise and from exertion.²³⁵

For what reason? By sleeping during the day, the fetus becomes **deaf**.²³⁶ From collyrium he becomes blind. From weeping, his vision is impaired. From bathing and anointing, he becomes badly behaved. From massage with oil he gets a pallid skin disease (*kuṣṭha*).²³⁷ From cutting the nails he gets ugly nails (*kunakha*). From smearing an unguent he becomes bald. From habitually exercising in the open air he goes mad. For this reason one should avoid these.

For three days of ritual food, the husband should protect (*✓rakṣ*) the woman. She lies on a layer of **halfa grass**, and eats a different kind of food from the palm of her hand, or from a plate or from a leaf.²³⁸

On the forth day, one should show to the husband the woman who has had a purifying bath, is wearing unstitched clothes, is ornamented and who has chanted a benediction and recited a blessing.²³⁹

What is the reason for that?

- 26 And there is a verse on this.

A woman has a bath after her period. The type of man she sees after that determines the type of son to whom she will give birth. She may then show her son to her husband.

²³⁴ The word ऋतु “season” in āyurvedic texts can, according to context, refer either to the period of menstruation or else to the period of fecundity following menstruation (Das 2003: 15 ff., note 27, *et passim*). Dalhana on 3.2.25 (Su 1938: 347) noted that the woman’s abstention should last three days from the first appearance of her menses.

²³⁵ On the similar prohibitions relating to a menstruating woman as described in Dharmasāstra literature, as well as the similar defects accruing from disobedience (see Leslie 1989: 284–287).

²³⁶ Here, the vulgate reads स्वप्नशीलः “he tends to sleep.”

²³⁷ On translating कुष्ठ in Āyurvedic texts, see Emmerick 1984: 96 ff.

²³⁸ This sentence is hard to construe because हविष्यं “ritual food” cannot agree with - भोजिनीं.

²³⁹ See Wujastyk et al. 2023: 58 and fn. 167.

- 27 Next, the priest (*upādhyāya*) should perform the appropriate ritual for producing a son. At the end of the ritual, the expert (*vicakṣāṇa*) should anticipate the following procedure.
- 28 Next, after the man has eaten a rice porridge with ghee and milk in the afternoon, having been celibate for a month, at night he should sexually approach the woman who has had a diet rich in oil and mung beans. He then soothes her in a friendly way and he may go to her optionally on the fourth, sixth, eighth, tenth or twelfth day.²⁴⁰
- 31 Henceforth, he should approach after a month
[At this point there is a misplaced folio in MS N]
- 32 **And when conception has occurred in this way**
During one of these nights, the pregnant woman should press three or four drops of juice from one or other of the following: *convolvulus*, *banyan*, *Indian bat tree*, *country mallow*, *carray cheddie*. Then she should administer them in the right nostril if she desires a son and in the left if she wants a girl, and she should not sneeze them out.²⁴¹
- 33 For certain, in the presence of these four, a fetus that follows the rules will come into being, just like a sprout is from a combination of field, seed, water and grass.²⁴²
- 34 Children born in this manner are beautiful, of noble character and enjoy long lives.²⁴³ They provide release from obligation (*r̥ṇa*) and they

29, 30 missing?

Problematic passage in the edition.

240 In the Nepalese version, this text presents a general rule for lovemaking on even days. In the vulgate, the word पुत्रकाम् is added, making this a specific rule for conceiving a male child. After this text, sections 29, 30 and 31 of the vulgate are not present in the Nepalese version. These verses state that the above-mentioned special days are beneficial, that odd days lead to the conception of a girl child, and finally the vulgate gives a list of the consequences of conceiving a child with a menstruating woman.

241 There is a textual problem at the start of this passage.

242 The Nepalese version reads क्षेत्रवीजोदकतृणाम् “of field, seed, water and grass” in contrast to the vulgate’s ऋतुक्षेत्रामुबीजानाम् “of season, field, water and seed.” This gives the two versions quite different meanings. In the Nepalese version, the author is referring to the four plants mentioned in the previous verse, *convolvulus*, *banyan*, *Indian bat tree*, *country mallow*, and *carray cheddie*. Then the author presents a simple agricultural simile. In the vulgate version, the words of the compound each have a double meaning: they can refer to the agricultural simile, but they can also be construed to mean “menstrual season, womb, nourishing bodily fluids, and male and female semen,” a parallelism not present in the Nepalese transmission. This is how Dalhana interpreted the verse.

243 We translate महासत्त्वाः as “noble character;” Dalhana, commenting on the vulgate

- themselves have children, benefitting their parents.²⁴⁴
- 35 In that context, the element of heat (*tejas*) is the most important factor as far as complexion (*varṇa*) is concerned. That being granted, at the moment the fetus is formed, when the food has water as its chief element, then the fetus is fair.²⁴⁵ When earth is the predominant element, it is dark (*kṛṣṇa*). When earth and ether are the chief elements, it is dark brown (*śyāma*).²⁴⁶ Some people say that the newborn (*prasava*) has the same colour as the colour of the food that the pregnant woman commonly eats. Similarly, creatures like snakes, scorpions and **large geckos** that inhabit black, yellow or white habitats are black, yellow or white.²⁴⁷
- In that context, congenital blindness (*jātyandha*) is caused by the element of brilliance (*tejas*) not reaching the location of eye (*dṛṣṭi*). Similarly, red eyes are a consequence of blood, white eyes are a consequence of phlegm, yellow eyes are a consequence of bile, and dysfunctional eyes (*vikṛtākṣa*) are a consequence of wind.²⁴⁸
- 35.1–4 And on this, there are the following:²⁴⁹

If a pure wind affects someone's eyes, they become sunken, blue and dark.

When bile mixed with phlegm, with no impurity, goes into someone's eyes, their eyes are termed "yellowish-red."

reading सत्त्वबन्तः, refers to the गुणस्, interpreting the expression as “not strongly influenced by रजस् and तमस्.”

²⁴⁴ Children born in this manner fulfil their parent's obligation to have children and they themselves have children, thus continuing the family. The three debts are normally understood as being to the gods, the ancestors and to sages. But Ḍalhana's phrasing is odd in that he says पितृणामृणत्रयमोक्षणशीलः: “behaving so as to provide release from the three debts to the ancestors.”

²⁴⁵ The food of the mother, that is.

²⁴⁶ The terms कृष्ण and श्याम often mean more or less the same, a dark blue or black colour. The latter can shade into brown or dark green.

²⁴⁷ Cf. also n., p. 231. Cf. **HIML**: IA, 70 and notes on these poisonous animals as described in the *Carakasāṃhitā*, and Meulenbeld 1974b: 455–456 on the names *kṛkalāsa*/*kṛkalāśaka*, *śaya* and *saraṭa* and the confusion surrounding this topic and the indigenous names of some species such as *tiktikī*, *jyeṣṭhi*, *jyaisthī*, *girgit*.

²⁴⁸ The term विकृताक्ष was known to Kātyāyana (*Mahābhāṣya* on P.6.3.3, (*Mahābhāṣya*: 3, 142)).

²⁴⁹ The next four verses are absent in the vulgate; they were reproduced by the editor in a footnote (*Su 1938*: 348a, n. 3).

The phrase “and here are some verses” appears in the vulgate before 3.2.36.

*When phlegm that is free of any impurity moves to the eyes, their eyes shine with a white circle within a circle.*²⁵⁰

When blood mixed with phlegm moves into the eyes, those people have eyes that become pigeon-blue, or else bloodshot.

- 3.2.36 Just as the ghee in a pot placed on a fire melts, so the menstrual blood of a woman may flow out after sex with a man.²⁵¹
- 3.2.37 But when the wind splits the seed (*bīja*), two lives (*jīva*) come into the belly (*kukṣi*). They are called “twins (*yama*),” being created from preceding virtue (*dharma*) or its opposite.²⁵²
 - 3.2.37.1 *When the mixing is happening, if the man’s semen (retas) is plentiful and pure then the pregnant woman gives birth to two boys.*
 - 3.2.37.2 *When the mixing is happening, if the woman has a lot of semen (śukra) then the pregnant woman gives birth to two girls. There is no doubt about this.*

Types of persons

- 3.2.38 The term for men and women who have diminished seed is *Āsekya*.²⁵³ Without doubt, after eating something white (*śukla*), his flag is raised.²⁵⁴

²⁵⁰ Perhaps this describes the appearance of arcus senilis.

²⁵¹ It is difficult to know what the author means here, since menstruation is not physiologically caused by intercourse.

Note that the text actually says “a pot of ghee ... melts.” But it’s not the pot that melts, but the ghee. This may explain the vulgate reading घृतपिण्ड “a lump of ghee.” The reviser did not like the imprecise idea of a pot melting.

²⁵² Note the adverbial -पुरा at the end of a Bahuvrīhi.

The commentator Gayadāsa (cited here by Dalhaṇa) disagreed with this interpretation. He preferred to understand धर्मेत्तर not as “dharma and its opposite,” but as “the opposite of dharma.” He explained that according to both scripture and tradition, twins are the result of अधर्म “sin,” and that is why penances are necessary after the birth of twins (on 3.2.27 (Su 1938: 348)).

The next two verses are absent in the vulgate; they were reproduced by the editor in a footnote (Su 1938: 348b, n. 3).

²⁵³ Etymologically, “to be poured into.” On this and the following typologies, see the brief treatment by Meulenbeld (1997: 216–217).

²⁵⁴ Dalhaṇa on 3.2.38 (Su 1938: 348) made it clear that this is a metaphor for having a penile erection.

- 39 Someone who is born in a foul womb is termed a *Saugandhika*. That person gains strength from smelling a vagina and a penis.²⁵⁵
- 40abc A man, who has activity in his own anus because of being celibate and then has activity amongst his own women is known as a *Kumbhīka*.²⁵⁶
- 40d–41abc Hear about the next one, the *Īrsyaka*. Someone who has sexual activity after seeing the copulation of other people is termed an *Īrsyaka*.²⁵⁷

“Eating something white” may refer to शुक्र “sperm,” as the vulgate reads. But note that works on aphrodisiacs and fertility (वाजीकरण) in āyurveda and rasaśāstra routinely recommend white substances such as milk for strengthening reproductive ability. See, for example, *Suśrutasanhitā* 4.26.27–31ab ([Su 1938](#): 498) and *Carakasamhitā* 6.2, all of sub-chapter 2 ([Ca 1941](#): 392–394).

The vulgate has a different reading for the first half of this verse, stating that such a man is a product of parents with deficient seed. Ḏalhaṇa also gave a detailed description of a man eating the semen ejaculated by another man, and he stated that the terms षण्ड and मुखयोनि were synonyms for such a person.

The term आसेक्य is given in [MW](#): 161 as “impotent, a man of slight generative power.” This is wrong. It is the referent of the term, not its meaning. Cf. [Mahākośa](#): 1, 98.

Some of the features referred to by the term षण्ड | षण्ड may have included conditions today covered by Mayer-Rokitansky-Küster-Hauser syndrome and Morris syndrome. The central idea in the Sanskrit usages was that such a person cannot produce children.

²⁵⁵ Etymologically, “Sweet Smelling.”

²⁵⁶ The vulgate adds an avagraha before ब्रह्मचर्याद्, meaning “because of *not* being celibate.” Ḏalhaṇa on 3.2.40abc ([Su 1938](#): 348–349) read the text this way, paraphrasing अब्रह्मचर्यात्, thus inverting the meaning but not clarifying what he thought it meant. But he then cited a passage from “others” that read ब्रह्मचर्यात्, i.e., the anal sex followed or was caused by celibacy, ब्रह्मचर्यात् कैव्यवशसंजाताप्रवृत्तिलात् “because of celibacy, that is, because of being unable to perform because of the effect of impotence.” These unnamed commentators also referred explicitly to erectile dysfunction, शिथिलेनैव मेहनेन, as the result of this celibacy and proposed that a man could get an erection through abnormal (विप्रकृत्या) means and as a result could have sex as a male with a woman. Ḏalhaṇa also stated that the origin of a person with such a condition was described “in another book” (तन्त्रान्तरे), and proceeded to cite *Carakasamhitā* 4.2.20 ([Ca 1941](#): 303). Ḏalhaṇa then also cited another verse from Gayadāsa, who himself ascribed it to Kāśyapa ([HIML](#): IA, 164–166), saying that, “A Kumbhila (*sic*) is born when a man with phlegm for semen has sex with a woman who is not passionate (or not menstruating) during her season, when the love is attached to another.” (Also cited in [Mahākośa](#): 1, 220a–b.)

It is noteworthy that the *Suśrutasanhitā* is factual and descriptive in these passages, as befits a medical work, while the commentators introduce a moralistic and critical tone.

²⁵⁷ Etymologically “one who envies.”

Here again, Ḏalhaṇa on 3.2.40–41 ([Su 1938](#): 349) cited the opinion of “another book”

- 41d–42 Hear about the fifth, the *Sāndhaka*. A man who, out of delusion, has sexual activity with a young girl (*kaumārī*) during her season as if he were a woman. In such a case, a male is born who looks and behaves like a woman. He is termed a *Sāndha*.²⁵⁸
- 43 Moreover, if a woman, during her season, has sexual activity like a man, then if a girl is born she will have the behaviours of a man.
- 44 The *Āsekya*, the *Sugandhin*, the *Kumbhīka* and the *Īrṣyaka* are known to have semen. The man with no semen is termed a *Sāndha*.²⁵⁹
- 45 In both of these cases, they have a semen-carrying vessel that dilates as a result of unnatural excitement.²⁶⁰ Then the flag may be raised.²⁶¹

Birth irregularities

- 46 The **appearance**, behaviour and mentality that is associated with a man and a woman is also the same as that which their **offspring** (*garbha*) has.²⁶²

and cited a passage from *Carakasaṃhitā* 4.2.20 (Ca 1941: 303) that covers similar ground. The description of the *Carakasaṃhitā* is causally framed in terms of the factors वायु and अग्नि.

²⁵⁸ The vulgate's भार्या "woman, wife" for the Nepalese version's कौमारी "girl" is probably bowdlerization.

²⁵⁹ It remains a question as to whether the authors meant the absence of an ejaculate or the clinical observation of childlessness even in the presence of an ejaculate. For a discussion of the present passages and further literature on पण्ड, see Das 2003: 581–584; on आसेक्य, see ibid., 527. See also M. J. Sweet and Zwilling 1993: 593–597, et passim; Zwilling and M. J. Sweet 2000; Zwilling and M. J. Sweet 2010.

²⁶⁰ Dalhana on 3.5.45 (Su 1938: 349) cited the expression नरनारीषण्डौ from the *Carakasaṃhitā* (Ca 4.2.17303, reads -नारि) to establish that women too may have these unnatural excitements.

We have emended the Nepalese verb to the singular, because witness H clearly has शुक्रवहा सिरा "semen-carry vessel" in the singular. Does Ayurvedic anatomy have a single vessel or many? *Carakasaṃhitā* 3.5.8 (Ca 1941: 250) has a plural, शुक्रवहानां स्रोतसां. But the *Suśrutasaṃhitā* 3.9.12 (Su 1938: 3.9.12) has a clear statement that there are two ducts (*srotas*) that carry semen: शुक्रवहे द्वे तयोर्मूलं स्तनौ वृषणौ च "there are two vessels that carry semen. They are rooted in the breasts and the testicles." The Ayurvedic Man painting has a single शुक्रमार्ग (Wujastyk 2008: 233, 243). The Jaina *Tandulaveyāliya* lists 10 sperm-carrying vessels (दस सिराओं सुक्रवधारिणीओं, Schubring 1969: 145 ff; Caillet 2019: 5; I am grateful to Jan Gerris for this reference).

²⁶¹ On this euphemism, see footnote 254 above.

²⁶² The vulgate has "food" for the Nepalese version's आकार "appearance," and "son" for "offspring." The Nepalese version seems more perceptive on this point of heredity.

unsolved
problem

- 47 Whenever a woman and a woman have sex together, they release semen on each other. Then a being without bones comes into being.²⁶³
- 50 **Offspring** (*garbha*) of a deformed shape like a gourd, a scorpion or a snake and others of the same type are known to be often brought about by sin.²⁶⁴
- 51 Offspring that is *vimānitali* by irritation of wind and by pregnant longing may become hunchbacked, have a shrivelled hand (*kūni*), be lame, mute or have a stutter.²⁶⁵
- 52 The newborn may have abnormalities because of the bad behaviour of its mother and father and because of bad actions from the past, by means of the irritation of wind etc.²⁶⁶
- 53 The child in the womb does not make wind, urine and feces because it has little impurity and because the wind in the stomach is not functioning.
- 54 The child in the womb does not cry out because the movement of the wind is obstructed since the mouth is covered by the caul and the throat is surrounded by phlegm.

²⁶³ The grammar of the Nepalese and vulgate versions of this verse are quite different. This striking verse has been discussed by several scholars (e.g., Smets 2006: 232–233). The concept of a being born with flesh but no bone and vice versa occurs in *Jaiminīy-abrāhmaṇa* 1.259 and *Śādvinīśabrāhmaṇa* 2.1.1 (Kolhatkar 2005) and later in Purāṇic literature (O’Flaherty 1980).

The Nepalese version of the *Suśrutasaṃhitā* does not have the following two verses that occur in the vulgate. Dalhana on 3.2.48–48 (Su 1938: 349) said that Jejjāṭa did not read these two verses. Thus, the Nepalese version is the same as Jejjāṭa’s version, as far as this omission is concerned.

²⁶⁴ The vulgate version of this text says that it is sinful behaviour of women that causes abnormalities. The Nepalese version is quite different, simply attributing deformity to sin and not blaming women at all.

²⁶⁵ The Nepalese version has कूनि while the vulgate reads कुणि. Dalhana on 3.2.51 (Su 1938: 349) felt the need to explain the unusual term, saying कुणिः विकल्पाणिः “having a crippled hand,” but Y. T. Ācārya and N. Śarman (Su 1939: footnote 5) noted a variant विकृतपाणिः, suggesting some instability in the interpretation of this term. Cakrapāṇidatta on 8.2.21 (Su 1939: 690) gave the meaning कुञ्जितकरः “having a hunched hand” (where there is also a variant reading नष्टकरः), cf. *Mahākośa*: 1, 216. The Tamil lexemes *kūṇi* means “bend, curve, hump on the back, humpback” and *kūṇi* means “... become hunchbacked” (DED₂: #1927). It seems likely that this is a Dravidian word that has been absorbed into Ayurvedic terminology at an early period.

²⁶⁶ Dalhana on 3.2.52 (Su 1938: 349) took the position that the bad actions were those of the parents, not the child.

- 55 The inward and outward breathing, movement and sleep that the fetus adopts conform to the inward and outward breathing, movement and sleep of the mother.
- 56 The composition of the body parts, the descent and appearance of the teeth, the absence of hair on the palms all happen by themselves.²⁶⁷
- 57 Those cultivated people who in previous embodiments were constantly aware of the scriptures are rich in sattva and have memory of their previous births.²⁶⁸

Here ends the second chapter that is the anatomy.

²⁶⁷ The text reads शरीराणाम् “of the bodies” that we have translated “of the body parts,” following Ḑalhaṇa’s interpretation. He also said that “palms” included the soles of the feet.

²⁶⁸ The vulgate text adds a final verse about how the karma of a previous embodiment follows a person to his new life. Witness L adds yet another verse that says the lack of hair on the palms is because they come from the mother, while the areas of the body from the father have much hair.

Śārīrasthāna 3: On Conception and the Development of the Embryo

Literature

Meulenbeld offered an annotated overview of this chapter and a bibliography of earlier scholarship to 2002.²⁶⁹ Important subsequent studies of the chapter include those of Das and of Kritzer.²⁷⁰

²⁶⁹ HIMAL: IA, 247–247.

²⁷⁰ Das 2003: ch. 8, et passim; Kritzer 2009; 2013; see also the valuable terminological study by Suneson (1991).

Translation

- 1 We shall now explain the anatomy that is the descent of the embryo.

Conception

- 3 Semen is of the nature of Soma (*saumya*) and menstrual blood is of the nature of Agni (*āgneya*).²⁷¹ Furthermore, in this context there also exists a proximity of the other elements (*bhūta*), by way of a minute special property, because they help one another and they enter into one another.²⁷²
- 4 In this case, when there is a union of a **husband and wife**, the wind from the body stimulates the heat (*tejas*).
In that case, because of the colligation (*sannipāta*) of fire and wind, the semen that is ejaculated finds its way to the vagina.
It is commingled with menstrual blood (*ārtava*), then because of the joining together of Agni and Soma, what is being mingled together arrives in the receptacle of the fetus.
He is referred to by names that express synonyms such as, the knower of the field, the sentient, the toucher, the smeller, the seer, the hearer, the taster, the human, the goer, the witness, the creator, the speaker, **the one who is, “who is the one that is life at the start?”**²⁷³

²⁷¹ On the Saumya–Agni classification, see Das 2003: 521–527; Wujastyk 2004; Angermeier 2021. The fiery nature of menstrual blood is already stated in 1.14.7 (Su 1938: 59), "...but menstrual blood is of the nature of Agni, because the embryo is of the nature of fire and water."

²⁷² Dalhaṇa on 3.3.3 (Su 1938: 350) glossed अणुना विशेषण “by way of a minute special property” as सूक्ष्मप्रकारेण “in an attenuated manner.” I am grateful to Christèle Barois for drawing attention to the treatment of this topic, and specifically the परस्परोपकार “mutual support” between atoms, by the Buddhist author Śubhagupta (fl. 720–780) Saccone 2015: 126.

Dalhaṇa on 3.3.3 (Su 1938: 350) drew attention to 3.1.21ab (Su 1938: 343) where the idea of this interpenetration (अनुप्रवेश) is mentioned.

²⁷³ The last phrase is awkward. It translates यः कोऽसावाद्य आयुरिति, which could be paraphrased, “the one who is the answer to the question ‘who is the one who is life at the outset?’” or “...‘who is that first one who is life?’.” The text differs from he vulgate’s यः कोऽसाव इति, that omits आद्य आयुर् (3.3.4 (Su 1938: 350)). Most other early editions print योऽसाविति (e.g., S. M. Gupta 1835–36: v. 1, 320; Su 1889: 313; M. Śarmā 1895–99: v. 2, 635; Bhaṭṭācārya 1908–11: v. 3, 30. Ghāṇekara (1936–41: v. 2, 65) read यः कोऽसावित्य्). No other translators translate this phrase, nor does Dalhaṇa gloss it.

Driven by fate, and impelled by wind, the imperishable, unchanging, inconceivable elemental self (*bhūtātman*) enters into the uterus (*garbhāśaya*) together with sattva, rajas and tamas, gods and demons, and other entities.²⁷⁴

- 5 In that context, a predominance of sperm leads to a male, a predominance of menstrual blood leads to a female, and equality of the two leads to a person who is neither male nor female (*napumsaka*).

- 6ab In that context, there is a twelve-night period that is the season (*ṛtu*).²⁷⁵

- 3.3.6.1 †In that context, approaching a woman in season for intercourse during the first day is not conducive to long life (*anāyusya*); a man comes into being.²⁷⁶ To the extent that the fetus is deposited at that time, because of being expelled it is lost.²⁷⁷ †

And on the third day, similarly, the body is incomplete and has little duration of life. For that reason, one should avoid the third night. And seed and menses do not develop the proper quality as expected. †Just as an object thrown into a river against the flow does not come back.† Sperm should be seen the same way. Therefore the restricted third night should be avoided. In this context, after seeing the twelve nights of the season, she has no menses.

- 6cd Some call such women, “having invisible menses.”

- 3.3.9 And on this:

When the day is over, the lotus inevitably closes. In the same way, when the season is over, the woman’s uterus closes.²⁷⁸

²⁷⁴ In the vulgate, भूतात्मन् “elemental self” is not the subject of the sentence, which then reads less clearly overall.

²⁷⁵ Slaje (1995) clarified the misconception in early Indological scholarship that ऋतु referred to the period of the menses rather than this longer period of menses and ovulation.

²⁷⁶ This passage appears in the Nepalese version at this point, and is absent from the vulgate version. MS H is the sole witness to the Nepalese version at this point and it is damaged, making the interpretation of this passage difficult. In this sentence, a nominative would read better than the accusative अनायुष्यम्.

²⁷⁷ In this and the following sentences, parts of witness H are damaged and impossible to read.

²⁷⁸ The √*kuc* “close, contract” appears in this sense in the *Dhātupāṭha* (1.199 संकोचने) but it is not common in literature. The more common word in this sense would be from √*kuñc* “contract,” although *kuc* is probably the primary IE form (EWA: 1, 361). “Given by the grammarians as two distinct roots, not without some justification,” Whitney 1885: 19.

- 3.3.7–8 One may know that a woman has her season because she has a full, clear face, a moist body, mouth and teeth, she desires a man, she speaks nicely, and she has relaxed belly, eyes, and hair. Her arms, breasts, loins, navel, thighs, hips and bottom are vibrant and she has the utmost excitement and eagerness.
- 3.3.10 At the right time, what has accumulated over a month and has come via the two pipes (*dhamanī*) is led by wind towards the mouth of uterus.²⁷⁹ It is slightly dark and smells.²⁸⁰
- 3.3.11 From twelve years onwards, blood is present periodically. It ceases after fifty amongst those whose bodies are old and aged.
- 3.3.12 It is declared that there will be a male on even days and a female otherwise. Therefore a clean man who wants descendants should approach the woman at the time of her flower.²⁸¹

Pregnancy

- 3.3.13 In that context, women who have recently become pregnant experience tiredness, fatigue, thirst, heaviness of the legs, flatulence, clogging of semen and blood, and a rough pulsation of the vagina.
- 3.3.14ab And about this, there is the following:
- The sign of a pregnant woman is said to be: both nipples become dark and a row of hair appears, there is nausea and tiredness.
- 3.3.16 From that moment onwards, she should not practice intercourse, exertion, excessive dieting, sleeping by day, waking at night, grief, riding in

²⁷⁹ “Pipes” (धमनी) are defined in the *Suśrutasamhitā* at 3.9.8–11 (Su 1938: 385). This verse was discussed by Das (2003: 64–66) (see some corrective remarks by C. Vogel (2005).) On the “pipes” and other conduits in the āyurvedic body, see also Wujastyk 2022: 404–406.

²⁸⁰ The reading of the vulgate text contains the object of the sentence, menses (*ārtava*), explicitly. The commentators take “at the right time” to indicate the onset of menses in a young woman.

²⁸¹ “Flower” referring to the twelve-day period that has been discussed earlier.

Dalhaṇa on 3.3.12 (Su 1938: 352) noted the conflict between the idea presented in passage 5 above and the present idea about odd and even days. He quoted passages by the ancient authorities Videha (see footnote 667) and Bhoja (footnote 26) that squared the circle by asserting that there are greater amounts of semen on even days, and greater amounts of menstrual blood on odd days, etc. See tr. by P. V. Sharma (1999–2001: 2, 143).

a vehicle, fear, excessive coughing, or therapies like oleation or blood-letting while alone and at the wrong time.²⁸²

Fetal development

- 18 In that connection, in the first month, a *kalala* comes into being.²⁸³ In the second, ripening by means of blood, heat and air, a conjunction of the great elements becomes a *ghana*.²⁸⁴ If it is a *granthi* (*knot*), it is a male; it is a woman if it is a *peśī*; it is a neuter if it is an *arbuda*. In the third, the hands feet and head develop into five bulges (*pitaka*).²⁸⁵ And the distinction of the limbs and minor body parts (*pratyanga*) is minute. In the fourth, the distinction of the limbs and minor body parts (*pratyanga*) become apparent (*pravyakta*). In the fifth, the distinction of the limbs and minor body parts (*pratyanga*) become even more apparent (*pravyaktatara*). The element of consciousness (*cetanādhātu*) becomes manifest (*abhivyakta*) because of the fact that the heart of the fetus becomes apparent.²⁸⁶ How so? Because it (the consciousness) is located there.²⁸⁷

²⁸² The vulgate passage 3.3.17, which is not present in the Nepalese version, presents the doctrine that if a part of the pregnant woman's body is assailed by a humour, that same part of the child's body in the womb will be damaged. A similar idea is presented in 3.3.21 below and previously in 3.2.25 (p. 90).

²⁸³ On *kalala*, see the useful historical notes by Das (2003: 535–536), that may suggest a meaning such as “slime.” For a discussion of these terms in Buddhist and other contexts, and further literature references, see Suneson 1991; Agostini 2004; Kritzer 2009; 2013.

²⁸⁴ The word घन in the sense “coagulate, lump” is normally masculine in this sense, but is neuter in the Nepalese version.

²⁸⁵ The word पिटक “bulge” usually means “basket.” Here, perhaps, it suggests a small upside-down basket. MW:652 cites the word from the *Carakasamhitā* in the sense “blister.” The vulgate normalizes the word to पिण्डक “lump.”

²⁸⁶ The Nepalese version of this passage is interestingly different from the vulgate and, as usual, contains some puzzles.

²⁸⁷ The word कस्मात् “how so?” could, because of sandhi, be read अकस्मात् “for no reason, suddenly.” This would radically change the meaning of the passage: “The element of consciousness suddenly (or “for no reason”) becomes manifest because of the fact that the heart of the fetus becomes apparent.”

During the fourth month the fetus develops intentionality (*abhiprāya*) with respect to the objects of sense. And the woman starts to have two hearts; she perceives its purposes (*nimitta*).²⁸⁸ If the dual-hearted nature of the woman is ignored, she will give birth to a hunchback with a withered arm, a man with no semen (*śanda*), a dwarf with dysfunctional eyes (*vikṛtākṣa*), or someone eyeless.²⁸⁹ Therefore she should be given whatever she wants. With her dual-hearted nature being acknowledged, she will give birth to someone heroic and long-lived.

- 19 The physician should gather and give to the pregnant woman whatever objects of sense she wishes to experience, because of the danger of damaging the fetus.
- 20 A woman whose pregnant cravings have been satisfied will give birth to a son full of good qualities. And a woman whose pregnant cravings have not been satisfied causes danger for the fetus or herself.²⁹⁰

Effects of the mother's experiences on the unborn child

- 21 When a woman, sharing her heart with the fetus (*dauḥṛda*), is slighted in respect of one of the objects of sense, she will bring forth a son who suffers pain in that selfsame sense organ.²⁹¹
- 22 A woman who has a pregnant longing (*dauḥṛda*) to see a king gives birth to a son who is wealthy and very fortunate.
- 23 A woman sharing her heart with the fetus (*dauḥṛdā*), who is in fine raiment, undergarments, silk and decoration, will produce a charming son who likes ornamentation.

²⁸⁸ The subject of the sentence, “she,” probably refers to the woman, but may refer to the fetus, “it reveals its goals.” It is not clear why the focus of events has jumped back to the fourth month.

²⁸⁹ The term षण्ड is discussed on p. 94 above.

²⁹⁰ The गर्भ “fetus” could also mean “the womb.” आत्मन् “(danger for) herself” could mean “for the body (of the fetus).”

²⁹¹ Note the historical and scribal confusions of forms connected with द्विहृद् “two-heart” and दोहृद् “pregnant longing” (from two-heartedness with the fetus) as opposed to derivatives of दुर्हृद् “bad-heart,” such as दौर्हृद् “bad-heartedness.” The lexeme दौहृद् “having pregnant longings (from two-heartedness),” is a false Sanskritization of the MIA दोहळ, itself < *द्वैहृद् (Lüders 1940: 46, 183 n. 2). Cf. further notes, parallels and confusions in CDIAL: #6690. The expression “morbid cravings,” appearing in translations and dictionaries, is the result of conflating the two distinct historical forms.

- 24 When she is in an ashram, she gives birth to one who is self-restrained and habituated to virtue.
 If she gives birth in the presence of an image of a deity, her child is like one who gives joy.²⁹²
 If she is within sight of wild species of animals then she gives birth to one who has violent habits.
- 25 The son of a woman who eats Indian monitor lizard has an inclination to sleep and a murderous nature.²⁹³ If she eats the meat of cattle, he is born strong and tolerant of all suffering.
- 26 Because of pregnant craving for buffalo meat, the son is a hero, has red eyes and is hairy.²⁹⁴
- 28 Therefore, as regards things that have not yet been mentioned, if a woman concentrates on feminine pregnant cravings she will cause a son to be born who is the same, in terms of body, diet and behaviour.
- 29 What will happen, impelled by the person's karma, recurs repeatedly. In the same way, the effect of fate generates pregnant craving (*dauhṛda*) in her heart.
- 30 In the fifth month, the mind becomes more awakened. In the sixth, the intellect. In the seventh, the body becomes pravyakta (*differentiated*) in all parts. In the eighth month the vital energy (*ojas*) is unstable; one born at that time does not survive.²⁹⁵
 Then, a ritual offering (*bali*) of meat and boiled rice should be given for him as tribute (*bhāgadheya*) because tribute is due to Nairṛta.²⁹⁶
 The birth happens on any of the ninth, tenth, eleventh or twelfth months. If it is different than this, there will be something wrong with him.
- 31 As a matter of fact, the fetal conduit (*garbhanādī*) is connected to

292 The reading of the vulgate, पार्षद्- “is like an attendant,” makes better sense than the Nepalese हर्षद्- “one who gives joy.”

293 The noun सुषुप्त् m., “sleepy,” is nominative when it should be accusative (as in the vulgate). Perhaps we have a change of gender as documented for epic Sanskrit by Oberlies 2003: xxxviii–xl, et passim.

294 At this point, The Nepalese version does not include the vulgate's passages on eating boar, deer, and partridge and their consequences for the child.

295 On the concept of ओजस् and its translation as “vital energy,” see Das 2003: 530–535; Wujastyk 2003b: xl, et passim.

296 Nairṛta is a demoness who threatens children. In his commentary on this passage, Dalhāṇa cited a passage from the *Kumāratantra* (Su 1938: 353). On this work and its genre, see Filliozat 1937; Bagchi 1941; Wujastyk 1999: 261–264.

mother's navel that supplies chyle (*rasa*).²⁹⁷ It supplies his mother's strength (*viryā*) that comes from the essence (*rasa*) of food.²⁹⁸ Due to this infusion (*upasneha*), it grows bigger. That causes it to live, even before the differentiation of the limbs has begun, because of the infusion of the criss-crossing ducts (*dhamanī*) that carry chyle (*rasa*) and that from conception onwards run through the whole body.

The formation of the embryo

- 32 And now, the formation of the embryo.²⁹⁹
 "The head comes into being first of all," says Śaunaka, "because it is the root of it".³⁰⁰
 "Amongst the chief organs of sense, the heart is first," says Kṛtavīrya, "because it is the location of the intellect and the mind".³⁰¹

297 In the vulgate text, the umbilical is connected to the mother's नाडी not नाभि. Also, the vulgate is explicit that the umbilicus is connected to the fetus's navel.

From the contemporary physiological view it is the mother's placenta, not navel, that connects with the umbilical cord. In contemporary usage, a navel can only be a post-delivery anatomical region, and the fluid flowing in the cord is blood, not chyle.

298 Or "it supplies the mother's tastes (*rasa*) and strength (*viryā*) that come from food." The option here is whether the terms रस and वीर्य should be taken in the technical pharmacological sense (रस, वीर्य, विपाक, प्रभाव, see Meulenbeld 1987), or as generic adjectives. Dalhaṇa did not comment on this issue.

299 For a parallel discussion in the *Carakasaṃhitā*, compare 4.6.21 (Ca 1941: 334).

300 I.e., the root of the fetus. The तन् in the compound तन्मूलत्वं "the root of it" could refer to the head, and that is indeed the reading of the vulgate text. We take it as picking up the genitive गर्भस्य at the start of this passage.

On the medical author (Bhadra)Śaunaka, see HML: IA, 150–152. The Śaunaka who has an opinion about fetal formation appears in the *Carakasaṃhitā*, here in the *Suśrutasaṃhitā*, and in the *Bhelasaṃhitā*. His views in the *Suśrutasaṃhitā* and the *Bhelasaṃhitā* concur but differ from the view expressed in the *Carakasaṃhitā*. In the *Carakasaṃhitā*, this view about the head is proposed by Kumāraśīrā Bharadvāja (4.6.21 (Ca 1941: 334)).

301 The phrase "amongst the chief organs of sense" could be read with the previous phrase about the primacy of the head. MS Kathmandu NAK 5-333 has a *dandā* before the phrase, suggesting that it is part of Kṛtavīrya's view, but scribal practice gives this low significance. Dalhaṇa does not mention this phrase; Y. T. Ācārya and N. R. Ācārya (Su 1938: 353, note 3) recorded a variant reading देहेन्द्रियाणाम् "amongst the body and the organs of sense."

On Kṛtavīrya, see HML: 1A, 370–371; note that the view of the *Suśrutasaṃhitā* is attributed to Kāñkāyana the Bactrian in the *Carakasaṃhitā* and to Parāśara in the *Bhelasaṃhitā*.

"It is the navel," says Pārāśarya, "from that, the breath of the embodied person expands".³⁰²

"It is the hand and foot," says Mārkaṇḍeya, "because they are the root of its motion".³⁰³

In this context, Subhūtigautama says, "it is the embryo's torso," because of the fact that all the limbs originate from a connection with it.³⁰⁴

But this is not correct. The limbs and smaller body parts appear at the same time. Because of the smallness of the embryo at that moment in time they cannot be perceived.³⁰⁵

It is like the sprout of a bamboo or the fruit of a mango. Just as in a ripe mango fruit, the fibres, flesh, stone and its core (*majjan*) can be seen separately because of the progression of time, so in the same way, those same things are not perceptible at an early stage (*taruṇa*) because they are so small.³⁰⁶ It is time that reveals these tiny things such as fibres. In this same way the sprout of the bamboo can be explained.

Thus, although in the early stage of the embryo all the limbs and smaller parts cannot be perceived even though they are present, with the

³⁰² The reading of the Nepalese version, giving breath as the reason for Pārāśarya's view, is more coherent than the vulgate's version.

On Pārāśarya, see [HIML](#): 1A, 174 et passim. Once again, this person is associated with a different view in the *Bhelasamhitā*. In the *Carakasamhitā*, the navel argument is attributed to Bhadrakāpya.

³⁰³ On Mārkaṇḍeya, see [HIML](#): 1A, 170, 1B: 267 et passim. Mārkaṇḍeya, like Cyavana, is often an archetype of longevity and is cited as such in the Bower manuscript (Hoernle 1893–1912: 106–108) and in the alchemical *Rasendramanīgala* (*Kakṣapuṭa* 71: कथयामि न सन्देहो मार्कण्डेयेन यत्कृतम् । दीर्घायुःकारकं भूमे रससिद्धे रसायने ।). But this archetype does not seem to be at work in the present passage. In the *Carakasamhitā*, this view about the hands and feet is attributed to Badiśa.

³⁰⁴ On Subhūtigautama, see [HIML](#): 1A, 158 et passim. His view is not represented in the *Carakasamhitā*.

³⁰⁵ Note that the vulgate attributes this final summary view to Dhanvantari ([HIML](#): 1A, 247), while the Nepalese version does not. Ḏalhaṇa apparently did not have this attribution in the text before him, suggesting that it may have been added after the twelfth century. However, in the *Carakasamhitā*, this view is attributed to Dhanvantari. It seems likely that the name Dhanvantari was here added to the *Suśrutasaṃhitā* because of the passage in the *Carakasamhitā*.

As has been noted in another context, the phrase तत् तु न सम्यक् "But this is not correct," can signal the inclusion of a passage from the *Carakasamhitā* in the vulgate text of the *Suśrutasaṃhitā* (Wujastyk 2025). It is possible that the present passage entered the *Suśrutasaṃhitā* under the influence of the *Carakasamhitā* before the ninth century.

³⁰⁶ The list of a mango's parts parallels the parts of the body.

progression of time they too become clearly manifest.³⁰⁷ There is no connection between earlier and later time, they say. It is solely because of the smallness that they are not revealed. At the proper time, they become manifest.

- 33 In that context, we shall explain the features present in the body that originate from the father, the mother, chyle, the self, essence (*sattva*), and suitability (*sātmya*).

Thus, the items that originate from the father include the hair, moustache, teeth, nails, body hair, bones, and semen. The soft items that originate from the mother include the muscles, blood, fat, marrow, the heart, the navel, the liver, the spleen, the intestines, and the anus. The items that come from chyle include the build-up of the body, the growth of strength and the preservation and loss of the complexion (*varṇa*). The items that belong to the self include the senses, knowledge, life, happiness and pain. We shall explain the items that are born of essence (*sattva*) later on. The items that come from suitability (*sātmya*) are valour, health, strength, complexion, and intelligence.

- 34 In this context, if milk appears first in her left breast, and if her right flank is larger, and lifts her right thigh first,³⁰⁸ and if she often has pregnancy cravings regarding objects that have masculine names, and if she only dreams about items like **sacred lotus**, **blue water-lily**, **white water-lily**, **mango** and **hog plum**, that have masculine names, and if she has a glowing face and complexion, then one may say, "She will give birth to a boy." And in the opposite case, a girl. If both her flanks droop, and her abdomen protrudes forwards, and if she has other signs mentioned be-

307 Dalhaṇa on 3.3.32 (Su 1938: 354) cited a passage from the author Bhoja at this point:
 गर्भो रुणद्वि स्रोतांसि रसरक्तवहनि वै । रक्ताज्जरायुर्भवति नाडी चैव रसात्मिका ॥ सा नाडी गर्भमाप्नेति तया
 गर्भस्य वर्तनम् । यद्यदश्वाति मातास्य भोजनं हि चतुर्विधम् ॥ तस्मादन्नाद्रसीभूतं वीर्यं त्रेधा प्रवर्तते । भागः
 शरीरं पुष्णाति स्तन्यां भागेन वर्धते ॥ ॥ गर्भः पुष्णति भागेन वर्धते च यथाक्रमम् ॥ गर्भं कुल्येव केदारं नाडीप्री-
 णाति तर्पित । "The embryo blocks the conduits that carry chyle and blood. From blood
 comes the placenta and the umbilicus (*nāḍī*) that consists of chyle. That umbilicus
 goes to the embryo and the embryo is nourished by it. Whatever food the mother
 eats is of four kinds. From that food, potency, transformed into chyle, proceeds in
 three ways. One part nourishes the body, one part increases the breast milk, and one
 part nourishes the embryo, respectively. The umbilicus, being filled up, supplies the
 embryo, just like an irrigation canal supplies a field." On the author Bhoja, see foot-
 note 26, p. 21; on the four kinds of food, "things drunk, eaten, chewed or licked," see
 footnote 82, p. 45.

308 Or perhaps, her right thigh is larger or more prominent.

fore, one may know that there will be a child of the third gender (*napum-saka*). If there is a depression in her waist and her belly is like a barrel, she will give birth to twins.

- 35 And there is a verse on this.

Women who are devoted to gods and brahmans, who are pure, who consume a healthy, measured diet, give birth to girls of great virtue. When the opposite is true, the girls are void of virtue.³⁰⁹

- 36 The development of the major and minor limbs arises spontaneously. Whatever qualities and faults the major and minor limbs may have should be understood to arise from causes that are the meritss (*dharma*) and demerits of the fetus.

This is the end of the third chapter.

³⁰⁹ In MS Kathmandu NAK 5-333, the compounds महागुणा: and निर्गुणा: are f. pl. nom. or f. acc.; the vulgate reads masculine accusatives in both cases, “children of great virtue ...void of virtue”.

Part 4. 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 2002.³¹⁰

Translation

- 1 Now we shall describe the treatment of wind diseases.
weight
- 3 When the wind enters the stomach, one should sequentially give to the patient, **who has vomited**, the formulation (*yoga*) with six-units (*sad-dharana*), together with tepid water, for seven nights.³¹¹

³¹⁰ HIML: IA, 265–266.

³¹¹ The vulgate has the reading छर्दयित्वा which means “after making [him] vomit”. Thus, vomiting is a part of the treatment. Whereas छर्दित in the H manuscript is ambiguous: vomiting may be part of the treatment or a symptom of the ailment.

The expression “six units” refers to the six ingredients listed in the next passage. Dalhana on 4.4.3 (Su 1938: 420) noted that धरण in this context means a particular weight characterized as equivalent to 21 medium-sized **hyacinth beans**. P. V. Sharma (1999–2001: 303) proposed that that the formulation contains six ingredients each the weight of a *dharana*. See 4.31.7 (Su 1938: 508) where the term धरण is defined in terms of other weights. (In epigraphical Sanskrit, a धरण may be a silver or gold coin (Sircar 1966: 91).)

Aṣṭārigahrdayasamhitā 4.21.14 (Ah 1939: 723) is the same verse, mutatis mutandis, but the editor noted (f.n. 6) a variant reading षट्करण in the commentary of Śrīkanṭha. There seems to be some confusion about this expression.

Dalhana also noted that सुखाम्बु (“pleasant water”) means “slightly warm water.”

- 4 “Six-unit” is traditionally the formulation that is **leadwort**, **Indrajao**, **velvet-leaf**, **kutki**, **Indian aconite**, and **myrobalan**. It cures serious diseases.
- 5 When the wind has entered the abdomen (*pakvāśa*) one should treat it with an oil purge. One should also treat it with cleansing enemas and very salty foods.
- 6 When the wind has entered the bladder, a cleansing enema method should be carried out. And once an inflamed wind is in the ears and the like, a procedure that destroys wind should be done.
- 7 When the wind has reached the skin, flesh, and **blood**, one should do an oil rub (*abhyāṅga*), apply a poultice (*upanāha*), rubbing (*mardana*) and ointments (*ālepana*). One should also perform blood-letting.³¹²
- 8 When the wind has got into the ligaments, joints, and bones, an expert should apply oleation (*sneha*), a poultice (*upanāha*), cauterization (*agnikarma*), binding, and rubbing (*unmardana*).
- 9 When the wind is deep within the bone, then a strong physician should insert a tube (*nāḍī*) into the bone, which has been split open by manual agitation (*pāṇimantha*), and suck out the wind.³¹³
- 10ab When the wind has reached the semen, one should perform the treatment for the defects of the semen.³¹⁴
- 10cd-11 When the wind has reached the whole body, an intelligent person should conquer it by means of immersion, sauna (*kuṭī*), trench sweating (*karsū*), blanket sweating (*prastara*), oil massage, enema, and blood-letting.³¹⁵ Or, if is located in a single limb and is stuck there, a

³¹² On the translation of methods of medical touch, such as अश्यङ्ग and संवाहन, see Brooks 2021b: 122–131. मर्दन, उन्मर्दन mean “pressing or vigorous rubbing.” The vulgate includes ducts (*sirā*) as an added place that wind can enter.

³¹³ The expression “which is split” could be construed with “wind.” The word order is not obvious. Dalhaṇa on 4.4.9 (Su 1938: 420) interpreted पाणिमन्य as the name of a particular awl and described the bone being pierced by this awl so that a double-headed tube can be inserted into the resulting opening.

This verse is in *na* *vipulā* metre.

³¹⁴ Dalhaṇa comments (Su 1938: 421) that this treatment for the defects of the semen is mentioned [earlier] as the शुक्रशोणितशुद्धि, the purification of the semen and the blood. This is the Śārirasthāna Ch. 2, शुक्रशोणितविशुद्धि.

³¹⁵ These forms of sweating treatment are described in the *Carakasamhitā* (1.14.39–63 (Ca 1941: 90–92)).

Regarding blood-letting, Dalhaṇa on 4.4.11 (Su 1938: 421) commented that because the verse has the plural form सिरामोक्षैः, five blood vessels have to be drained of blood

- thoughtful physician may conquer it with cow-horns.³¹⁶
- 12 Or, if it is mingled with phlegm (*balāsa*), bile, and blood, the physician should treat it with non-hostile remedies.³¹⁷ However, when the wind is inactive, he should perform blood-letting many times.³¹⁸
- 13 And one should lick the milk cooked in ?? together with salt and soot from the chimney (*āgāradhūma*), mixed with oil and also a juice (*rasa*) that has the sourness of a fruit.³¹⁹
- 14–15 Alternatively, cereal soup with a good amount of ghee is a wholesome food that repels wind. However, “*Sālvala*” is well-known to be a luke-warm and very salty substance that is the **cottony jujube** group combined with an item that repels wind and together with all the sour drugs and the meat of creatures from marshes and water that have all the oils.³²⁰
- 16ab One should always apply a bandage with that to people who are ill with wind.
- 16cd-18ab One should tightly bind someone who is bent, afflicted by pain, or whose limbs are stabdha (*numb*), with a *pattā* (*strip of cloth*) made of bark, cotton or wool (*ūrṇa*).
 Alternatively, one should put it into a skin sack
 Or, after massaging the affected body part and applying the *sālvala*³²¹

if the wind is not pacified by oil massage, etc.

316 शङ्खं “cow-horns” refers to bloodletting by horn; see the description at *Suśrutasaṃhitā* 1.13.5 (*Su* 1938: 55).

317 The word बलास is used here in the slightly unusual meaning “phlegm;” see Dalhaṇa on 1.45.70, 6.61.33 (*Su* 1938: 202, 802) and *Mahākośa*: 553.

318 We read सुसवाते with witness H, but Dalhaṇa glossed सुप्ति-, the reading of the vulgate, “it is wind characterized by drowsiness (*supti*) caused by a covering of blood.”

319 The vulgate reading दिह्वात् for the Nepalese लिह्वात् changes the meaning to “one should smear.”

Dalhaṇa on 4.4.13 (*Su* 1938: 421) glossed पञ्चमूर्णी as optionally the first or the second five roots. On this therapy, cf. Cakrapāṇi’s commentary on 1.5.3 (*Ca* 1941: 36) for a similar therapy.

The “juice” (रस) was glossed by Dalhaṇa as specifically being a meat broth (*māmsarasa*). He said that the sourness may come from fruits such as pomegranate. रसाम्ल may mean a vinegar made from fruit (*MW*: 70), so the expression फलाम्ले रसः in the text here may mean a vinegar made from sour fruit. Cf. धान्याम्ल.

320 Cf. साल्वण “sweat from a poultice” in *Mahākośa*: 898. *Aṣṭāṅgasaingraha* 1.26.3a (*As* 1980: 188) describes a poultice called “*sālvala*” made with numerous ingredients (the commentator Indu elaborates, p. 189).

321 This seems to be the correct spelling as against the unclarity in the earlier verses.

poultice on it, one should insert it into a sack made of the hide of a cat, mongoose, *udra*³²², or deer.

- 18cd-19 Vomiting and an errhine done skilfully alleviate the wind that has entered the chest, between the shoulder-blades (*trika*), the shoulders, or the nape of the neck.³²³ The wind located in the head is defeated by blood-letting and by the application of oil to the head (*śirobasti*).
- 20-21ab In that context, one should let the oil remain carefully for a one thousand measures (*mātrā*).³²⁴ Only an enema (*basti*) can curtail the wind, whether it is throughout the whole body or in just one limb. Its force (*vega*) is like the wind.³²⁵
- 21cd-26 Oils, perspiration, oil massage, enema, unctuous purging of the bowels, *śirobasti*, oiling the head, unctuous smoke, gargling with lukewarm water, *nasya*, unctuous paste, milks, meats³²⁶, soups, oils³²⁷, any unctuous substance, unctuous and salty meals that are made sour by fruits, bathing with lukewarm water, massages, saffron, agarwood, malabathrum, costus, cardamom, crape jasmine, garments made of silk, wool, and fur, soft cotton garments, inner rooms with sunlight, no wind flow, and a soft bed, taking the warmth of fire, and celibacy, etc. are to be collectively employed for patients with wind diseases.

Perhaps
kalka here
could also
mean the
Terminalia
Bellerica
(विभीतक).

Draft tr. from here

- 21cd-26 Oils, perspiration, oil massage, enema, unctuous purging of the bowels, *śirobasti*, oiling the head, unctuous smoke, gargling with lukewarm water, *nasya*, unctuous paste, milks, meats³²⁸, soups, oils³²⁹, any unctuous substance, unctuous

322 some aquatic animal

323 On त्रिक्, see *Mahākośa*: 1, 387, citing Dalhaṇa on 3.6.26 (*Su 1938*: 374) “the junction between the shoulder-blades and the neck.”

324 Dalhaṇa on 4.2.20 (*Su 1938*: 422) interpreted मात्रा as a measure of time, citing an unattributed verse defining it as the time of a blink, a snap of the fingers or the utterance of a single vowel. The expression might possibly be taken to refer to a measure of the oil’s volume.

325 This phrase is awkward. The idea here seems to be that an enema decisively stops the wind. The vulgate revised this to make it more obvious: “only an enema can block the force of the wind, like a mountain.”

326 The plural indicates milk and meat from various animals.

327 This is the second occurrence of the word सेहा: in this sentence. This seems to be an anomaly.

328 The plural indicates milk and meat from various animals.

329 This is the second occurrence of the word सेहा: in this sentence. This seems to be an anomaly.

Perhaps
kalka here
could also
mean the
Terminalia
Bellerica
(विभीतक).

and salty meals that are made sour by fruits, bathing with lukewarm water, massages, saffron, agarwood, *malabathrum*, *costus*, cardamom, crape jasmine, garments made of silk, wool, and fur, soft cotton garments, inner rooms with sunlight, no wind flow, and a soft bed, taking the warmth of fire, and celibacy, etc. are to be collectively employed for patients with wind diseases.

- 27 One should take *akṣa* quantities of unguent pastes³³⁰ of turpeth,³³¹ red physic nut, ??, ??, the three myrobalans, and embelia, a Bengal quince fruit equivalent measure of viburnum-root and kumkum tree, two *pātra* quantities of both *triphalā*-decoction³³² and yogurt, and one *pātra* measure of ghee.³³³ One should mix these ingredients all at once and cook the mixture properly. This (resultant) is viburnum-ghee. Unctuous purging of bowels is prescribed for treating wind disorders.³³⁴

This procedure of making viburnum-ghee should also be referred for making Asoka tree-ghee and ??-ghee.³³⁵

- 28 One should collect the wooden logs of the instruments that have been used for a long time for extracting oil from sesame seeds. One should then have them chopped into very tiny pieces and then pound those pieces. Next, one should put them in a big vessel, submerge them in water, and boil them. Thereafter, one should collect the oil from the surface of the water with a goblet or by hand. Thereafter, one should properly cook wind-alleviating herbs with this oil that was effectively cooked.³³⁶ This is the *anutaila*

330 कल्क also means an unguent paste. Refer to Apte's dictionary.

331 In H, perhaps it should have been निवृद् instead of तृवृत्.

332 त्रिफलारस is here taken to mean a decoction of *triphalā*.

333 The exact measurements of *akṣa* and *pātra* are given in Dalhana's commentary in Su 1938: 422.

334 It should be understood here that the unctuous substance to be used for purging the bowels is the viburnum-ghee.

335 अशोक and रम्यक are the Ashoka and Chinaberry respectively.

336 In H, the word दन्तप्रतीवाय in the compound word वातसौषधदन्तप्रतीवाय does not appear to make sense. Perhaps the syllable य should be प, thus making the word प्रतीवापं that refers to an admixture of substances to medicines either during or after decoction. Refer to Monier-Williams's Sanskrit dictionary.

(अनुतैल) ³³⁷ that is mentioned in wind disorders. It is called *anutaila* because it is produced from tiny oily objects. ³³⁸

- 29 Alternatively, one should burn a great amount of ??-wood on the ground for one night. When the fire gets extinguished the ash should be removed. Then, the ground that is relieved of the fire should be soaked with a hundred pots of oil cooked with ??, ??, and other herbs, and left in that condition for one night. Thereafter, one should take all the earth that is oily³³⁹ in a big vessel and totally cover it with water.³⁴⁰ The oil that rises up in that vessel should be taken out with both hands and kept nicely covered. Thereafter, one should properly cook that oil for as long as possible³⁴¹ with one thousand parts of each of the following---a decoction of wind-alleviating herbs, meat soup, milk, and *kāñjika*³⁴²---and thus prepare the *sahasra-pāka* (that which is cooked with thousands). The admixture added to the oil contains the *hemavata* herbs³⁴³, herbs of the southern region, *Withania*, and other wind-alleviating herbs.

While the oil is being cooked, conchshells should be blown loudly, umbrellas should be held, huge drums should be resounded, and whisk fans should be waved.³⁴⁴ Thereafter, the perfectly cooked oil should be poured into a golden or silver pot and stored. This *sahasra-pāka* is the oil possessing undiminishing potency and is fit for kings.

337 The न् should be read ण्.

338 The word अनु in the compound word अनुतैलद्रव्येभ्यः should be read अणु.

339 In H, the word यावन् should have been यावान्.

340 The reading in H, कटाहेभ्यः सिंचेत् does not make sense here. Thus, we have accepted the vulgate reading कटाहे भ्यासिचेत् for the translation.

341 The phrase “यावता कालेन शक्त्यात् पक्तुम्” appears as a part of a new sentence in H. But, we should take it to be a part of the earlier sentence for it to make proper sense.

342 Dalhaṇa comments (Su 1938: 423) that the word अम्ल here means काञ्जिक which is the water drained after boiling rice and is a little fermented. Refer Monier Willams's Sanskrit Dictionary.

343 The word should be हैमवताः as in the vulgate. It means “the herbs of the snowy mountains”. Dalhaṇa comments (Su 1938: 423) that हैमवताः refers to the herbs that grow in the northern region.

344 These activities are a symbolic way of showing reverence.

Thus, that which is cooked with a thousand parts is called *sahasra-pāka*.

- 30 One should collect fresh leaves of *castor oil tree*, ??, ??, *weaver's beam tree*, *Indian beech*, ??, and *leadwort*.³⁴⁵ These leaves should be completely pounded along with salt in a mortar. This mixture should be put in a pot filled with oil³⁴⁶. It (pot) should be smeared³⁴⁷ with cow-dung. Thereafter, the pot should be heated.³⁴⁸ This (resultant) is the *patra-lavana* (leaf-salt) that is mentioned in wind disorders.
- 31 In the same way, one should pound the stalks of *oleander spurge* and eggplants smeared with salt and fill a pot with it.³⁴⁹ In that pot, one should add ghee, oil, fat, and marrow. Then, one should smear it³⁵⁰ and heat it as earlier. This (resultant) is the *sneha-lavana* (fat-salt) that is mentioned in wind disorders.
- 32 One should collect the fresh fruits, roots, leaves, and branches of all the twenty [herbs]: ??, *flame-of-the-forest*, *Tellicherry bark*, *Bengal quince*, purple calotropis, *oleander spurge*, ??, *weaver's beam tree*, *corky coral tree*, ??, ??, ??, ??, ??, ??, *Indian beech*, ??, *hairy-fruited eggplant*, ??, *marking-nut tree*, *Asoka tree*, ??.. One should then mix them with salt and heat them as earlier.³⁵¹ The oil on top should be poured out completely with the salty mixture intact [at the bottom]. This mixture should be cooked thoroughly. The admixture added to it consists of *long pepper*, etc. This (resultant) is the salt called *kalyāṇaka* that is mentioned in wind disorders and in meals and drinks

Euphorbia
An-
tiquorum
(Antique
spurge)

345 In H, the ending नाम् should be पाम् due to sandhi.

346 सेहघट can also mean a pot filled with ghee

347 The H or vulgate do not specify with words that it is the pot to be smeared. But, it is to be understood.

348 The word दाह्येत् usually refers to burning, but sometimes it can refer to heating.

349 In H, there should be a *visarga* after लवणा.

350 As earlier, the pot should be smeared with cow-dung.

351 It is to be understood that all these fresh branches, leaves, fruits, and roots of the herbs should be completely pounded together with salt. The mixture should then be put into a pot filled with oil or ghee. The pot should be smeared with cow-dung and then heated.

for the patients troubled by *plihagnisamga*, indigestion, loss of appetite, and piles.
Thus ends the fourth chapter on the treatment of wind diseases.

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 2002.³⁵²

Translation

- 1 Now we shall describe the treatment of serious wind diseases.
- 2
- 3 One group says that the blood afflicted by wind (wind-blood) (*vātarakta*) is of two types: spreading out over a surface (उत्तान) and deep (अवगाढ).³⁵³ However, this is not correct.³⁵⁴ Why? Just as leprosy, after spreading over a surface it (afflicted blood) becomes deeply situated. Therefore, its being of two different types is refuted.
- 4 When the wind is aggravated by fighting a strong person, etc.³⁵⁵, one's corrupted blood caused by eating heavy or hot food before the last meal is digested blocks the path of the aggravated wind. It then combines with the wind and simultaneously creates pain due to the wind-blood.

³⁵² HIML: IA, 266.

³⁵³ Dalhana commented (Su 1938: 424) that उत्तान refers to being situated in the skin and flesh, and अवगाढ refers to being situated internally.

³⁵⁴ In H, the word तन् should be तत्.

³⁵⁵ These factors that aggravate the wind are mentioned in *Nidānasthāna*, Ch. 12, text 6.

This [condition] is called wind-blood (*vāta-śoṇita*). At first, it is situated in the hands and feet.³⁵⁶ Later, it spreads throughout the body. Its early forms are pricking pain, burning, itching, ulcer, trembling³⁵⁷, roughness of the skin, pulsation in the blood vessels, tendons, and tubular vessels³⁵⁸, weakness of the thighs, as well as the sudden appearance of dark brown, tawny, or red spots on the soles of the feet, fingers, ankles, and wrists. The disease becomes fully manifest in the person who does not undertake the means to revert the disease or applies a wrong treatment. Its symptoms have been mentioned. Among them, weakness occurs for the one who does not counter the disease.

- 5 Generally, wind-blood occurs in those who are very delicate, those who eat the wrong foods and enjoy improperly, those who are fat, and even in those who indulge in pleasure.
- 6 In that regard, one should treat the patient who is not degenerating due to wasting of life air, thirst, fever, unconsciousness, dyspnea, trembling, and loss of appetite, is not oppressed by the contraction [of limbs], is strong, composed, and has the means.
- 7 In the treatment, at the beginning itself one should do blood-letting of the wind-affected body part little by little and more than once. That (slow blood-letting) is because of the danger of further aggravation of wind. One should avoid doing blood-letting of the part hardened or weakened by excessive wind.³⁵⁹ Thereafter, one should make the patient do the remedies of vomiting, etc. If the wind that is mixed [with blood] or separated is very aggravated then one should make him consume aged ghee or goat-milk. Or, [one can give him] half a measure of oil added with an *akṣa* of liquorice and cooked with hare foot *uraria*³⁶⁰, or the oil that is sweetened by sugar and honey and cooked with dried ginger and bulrush. Or, one should boil milk with an eight times volume of the decoction of the following herbs: beautyberry, grey orchid, ??, hare foot *uraria*³⁶¹, toothbrush tree, wild asparagus, ??, and ???. This milk should then be used to cook oil with the admixture of

356 In H, the word तन् should be तत्.

357 In H, there should not have been the स् after स्तम्भ.

358 In addition to blood vessels, it would also include the nerves.

359 In H, the reading अस्त्रान् does not make sense given the context. Therefore, we have accepted the vulgate reading म्लान् for the translation.

360 Dalhaṇa glossed (Su 1938: 425) śṛgālavinnā as *prśniparṇī*.

361 According to Dalhaṇa, śṛgālavinnā is *prśniparṇī*.

pastes of ??, ??, ??, ??, deodar, sweet flag, and ?. This (resultant) should be utilised in drinks, etc. Or, one should use the oil that is cooked with a decoction of wild asparagus, prickly chaff-flower³⁶², ??, liquorice, giant potato, heart-leaf sida, country mallow, and ??³⁶³, with the admixture of cottony jujube, etc. Or, one should use the heart-leaf sida-oil that is cooked as *śatapāka*.³⁶⁴ Or, [the affected body part] should be moistened with milk that is boiled with the roots of wind-alleviating herbs, or it should be moistened with sour things.³⁶⁵ In that regard, five remedies prepared with milk are described. For preparing a poultice, milk should be cooked in ghee, oil, fat, marrow, and *dugdha*³⁶⁶ separately with each of these powdered grains or pulses—barley, wheat, sesame, mung beans, or green gram—that is mixed with unctuous pastes of cottony jujube, purple roscoea, ??, ??, heart-leaf sida, country mallow, hare foot uraria³⁶⁷, ??, ??, sugar, bulrush³⁶⁸, ??, and sweet flag. Or, the essence of unctuous fruits³⁶⁹ can be used as a poultice. Or, a *veśavāra*³⁷⁰ prepared from the flesh of a fat *cilicima* fish³⁷¹ can be used in-

362 Dalhana glossed (*Su* 1938: 425) *mayūraka* as *apāmārga*.

363 Dalhana commented (*Su* 1938: 425) that halfa grass, wild sugarcane, tall reed, halfa grass, ??, and ?? are called *trna* (grass).

364 *Śatapāka* seems to be an oil that is prepared with a hundred parts of some things similar to *sahasrapāka* that is prepared with one thousand parts of some herbs. Refer *Cikitsāsthāna* Ch. 4 text 29 for the preparation of *sahasrapāka*.

365 Dalhana commented (*Su* 1938: 425) that the sour things (*amla*) are ??, Indian jujube, ??-water, etc. *Surā* is some kind of liquor, *sauvīraka* is perhaps the fruit of the jujube tree, and *tusa* is perhaps *Terminalia Bellerica* (विभीतक).

366 In the *Suśrutasaṃhitā*, the word for milk is *kṣīra* or *payas* but not *dugdha*. Therefore, the word *dugdha* here can mean the sap of plants or something that is extracted.

367 *śrgālavinnā*

368 For *kaśerukā*

369 Dalhana commented (*Su* 1938: 425) that the unctuous fruits mentioned here are sesame, castor, flax, ??, etc.

370 In H, the reading वैशवारो does not make sense. It should have been वेशवारो, as shown in the vulgate, which is the reading we have accepted here.

Veśavāra is boneless meat minced, steamed, and added with spices, ghee, etc. Refer to 'Ayurveda Medical Dictionary' by Ranganayakulu Potturu.

Perhaps the word वैशवार is an earlier form of the word वेशवार.

371 H has the compound word नलपीनमत्त्य. नलमीन is a particular fish known as *cilicima* (चिलिचिमः). See *Amarakośa*. Also, if the name is नलमत्त्य then the word पीन (fat) within the name is not according to proper Sanskrit. But, it can be allowed because the word मत्त्य (fish), instead of being a part of the name, can be considered to mean fish in general and thus the word पीन becomes its modifier. Thus, नलपीनमत्त्य can mean "a

The webpage
<https://hindi.shabd.in/vairagya-shatakam-bhag-acharya-arjun-tivari/post/117629>
 says that this verse belongs to the *Nitiratna*. I could not find this text.

- stead. Or, [one can use] the poultice containing Bengal quince-rind³⁷², crape jasmine, deodar, ??, grey orchid, peas, costus, ??, liquor, yogurt, and whey. Or, [one can use] the ointment prepared by mixing citron, amla³⁷³, salt, and ghee with honey and horseradish tree-root. Or else, [one can use] the unctuous sesame paste.
- 8 When the [condition of wind-blood] has a predominance of bile, the patient should be made to drink a decoction of grapes, ??-fruit, Indian ipecac, liquorice, sandalwood, and white teak. This decoction is sweetened with honey and sugar before consumption. Or, the decoction of wild asparagus, pointed gourd, malabathrum, triphalā, ??, and heart-leaved moonseed should be given. [The patient should be administered] ghee that is prepared with sweet, bitter, and astringent [remedies].³⁷⁴
- [The patient] should be sprinkled with a decoction of ??, lotus stalk, white sandalwood, and wild Himalayan cherry mixed with goat-milk³⁷⁵, or with rice water that is mixed with milk, sugarcane juice, honey, and sugar, or with whey and sour rice gruel mixed with a decoction of grapes and sugarcane. Or else, [the patient] should be sprinkled with ghee that is prepared with *jīvaniya*³⁷⁶ or sprinkled with ghee that is purified for one hundred times.
- The poultice [to be applied] should be made of rice flour or of the paste of sour rice gruel mixed with tall reed, Indian willow, scamberry³⁷⁷, ??, turmeric, horned pondweed, sacred lotus, etc. The poultice should be mixed with ghee.

fat fish that is a नल (*cilicima*)".

Dalhaṇa says in his comment (Su 1938: 425) that नलमीन is a type of रोहित (*rohita*). Monier Williams says that *rohita* is a kind of fish: *Cyprinus Rohitaka*. Regarding the *rohita* fish, there is a *subhāṣita*: अगाधजलसञ्चारी न गर्व याति रोहितः | अङ्गुष्ठोदकमात्रेण शफरी

फर्करायते || This indicates that *rohita* is a deep water fish.

372 The word पेसिका in H should be read पेशिका.

373 Perhaps it could mean vinegar or sour curds. Refer to Monier Williams Sanskrit Dictionary.

374 Dalhaṇa commented (Su 1938: 425) that the sweet remedies are cottony jujube, etc., bitter remedies are pointed gourd, etc., and astringent remedies are *triphalā*, etc.

375 The compound word ending with कषायेण is taken to be a *bahuvrīhi* for अजाक्षीरेण (goat-milk).

376 *Jīvaniya* seems to be a group of medicinal herbs. There is an Ayurvedic preparation called *jīvaniya-ghṛta*. Refer to the *Āyurvedīya Śabdakośa* vol. 1.

377 तालीस should be read तालीश

- 9 The [condition of wind-blood] with a predominance of blood should be treated in the same way. Also, blood-letting should be done repeatedly.
- 10 However, when the [condition of wind-blood] has a predominance of phlegm, the patient should be made to consume a decoction of **emblic myrobalan** and **turmeric** that is sweetened with honey, or a decoction of *triphalā*, or a paste of **liquorice**, ??, **chebulic myrobalan**, and ?. He should be made to drink **chebulic myrobalan** with water mixed with a little urine. He should be sprinkled with oil, urine, salty water, and liquor that are acidic³⁷⁸. Or, he should be sprinkled with a decoction of **golden shower tree**, etc.

The patient should be massaged with ghee cooked with sour cream, urine, liquor, ??³⁷⁹, **liquorice**, ??³⁸⁰, and **wild Himalayan cherry**.

The poultice should be made of either the paste of white mustard, or the paste of sesame and **Withania**, or the paste of ??³⁸¹, **Indian cherry**, and **wood-apple**, or the paste of honey, **horseradish tree**, and **hogweed**,³⁸² or the paste of dry ginger, long pepper, black pepper,³⁸³ **hare foot uraria**, and **hairy-fruited eggplant**.³⁸⁴ These five poultices are prepared with salty water. Thus, they have been described.

- 11 In case of combined aggravation of two humours or simultaneous aggravation of all three humours, the stated methods of treating those aggravations should be combined.³⁸⁵
- 12 In all [aggravations], one should consume **chebulic myrobalan** with jaggery. Or, one should have a diet of rice cooked in milk for ten days and should drink a mixture of **long peppers** crushed in milk, with increasing by five **long peppers** each night. Then one should reduce them again by the order of five more [each night].³⁸⁶ In this way, one should

The provisional edition should be modified accordingly.

378 Reading the word सुक्त in H as शुक्त

379 Monier Williams states Rumex Vesicarius for śuktā

380 DCS has this entry: Cryptolepsis buchananii Roem. et Schult. (Surapāla (1988), 453)
Decalepis hamiltonii Wight et Arn. (Surapāla (1988), 453)

381 According to V. S. Apte, दारु can mean देवदारु.

382 H has a short अ at the end instead of the long आ.

383 व्योषतिका refers to the group of these three pungent spices. Also see *Sūtrasthāna* 14.35.

384 In H, the Sanskrit syntax does not match up with what the author is trying to say. The name of the fifth paste should also have been in the nominative case, as the other four pastes.

385 It means that the respective methods of treating the aggravation of individual humours should be combined.

386 In H, the letter ज् in भूयञ्च should have been श्.

[reduce] all the long peppers. This is called *Pippalīvarddhamānakam* (Increasing Long Peppers). It indeed cures wind-blood, intense fever,³⁸⁷ loss of appetite, jaundice, abdominal affection, piles, heavy breathing, cough, wasting disease, weak digestion, and heart disease.

The poultice is a paste of bluebell barleria, sandalwood, rajmahal hemp, ??, wild asparagus, bulrush,³⁸⁸ country mallow, wild Himalayan cherry, liquorice, Indian dill, ??, ??, ??, heart-leaf sida, country mallow, and Holostemma creeper mixed with milk. Or it is a paste of white teak, liquorice, and ?? mixed with ghee and cream. Or it is olibanum cooked with milk that is mixed with ??, ??, resin of white dammer tree, liquorice and the group of sweet herbs.

Old ghee that is cooked with emblic myrobalan and chir pine and sweetened with sugar and honey is for drinking. Old ghee that is cooked with *jīvanīya* or that is cooked with a decoction of ?? is for sprinkling. Cooked heart-leaf sida oil is for sprinkling, bathing, enema, and eating³⁸⁹. One should eat food preparations made of rice, ??, barley and wheat accompanied with milk, meat soup, or mung beans soup that is not sour. Blood-letting also [should be done]. The treatments of vomiting, purging of bowels, enema, and oily enema should be conducted when the humours are highly aggravated.

13

14 There are verses in this regard.³⁹⁰

There is immediate relief by the application of remedies such as these by which the physicians cure the chronic condition of wind-blood.

15-16

Poultice, sprinkling [oil], plaster, oil massage,³⁹¹ spacious and comfortable rooms³⁹² with no wind, soft pillows, comfortable beds, and soft massages are recommended in the condition of wind-blood.

³⁸⁷ Perhaps विषमज्वर could mean irregular fever.

³⁸⁸ H has कशेरुका.

³⁸⁹ Perhaps it means that one should eat foods cooked in that oil.

³⁹⁰ The word भवति in H should have been भवन्ति.

³⁹¹ In H, the part व्यजनानिला: does not make proper sense in the verse. Emending it to व्यजनानि च could be a consideration, but fanning (व्यजन) a patient with wind-blood is not good, as understood from the recommendation that such a patient should stay in a non-windy room. Therefore, we have accepted the vulgate reading for the first half of this verse.

³⁹² In H, read the स सरणानि as शा.

- 17 Exercise, mating, anger, eating hot, sour, or salty foods, sleeping during the day, and food that is slimy or heavy should be avoided.
- 18 One should treat the person who is affected with spasmodic contraction,³⁹³ who does not have droopy eyes and crooked eyebrows, whose fingers have not become rigid, who is not perspiring or trembling, who is not in a state of delirium, who is not bed-ridden,³⁹⁴ and who is not restrained externally. There at the beginning itself,³⁹⁵ after rubbing the patient with oil and making him perspire, one should treat him with a strong *avapīda*³⁹⁶ in order to clear his head. Then, the patient should be made to drink filtered ghee that is properly cooked with a decoction of **beggarweed** and other herbs, sugarcane juice, milk, and yogurt. In that way, the wind does not spread exceedingly. Thereafter, one should gather wind-alleviating herbs such as **deodar**, etc. and other constituent parts, along with **barley**, ??, and **horse gram**, and the flesh of a freshwater aquatic creature all at one place and prepare a decoction of them. One should take this decoction and mix it properly with sour substances and milk, and then cook the *pratīvāpa*³⁹⁷ of **liquorice** in this mixture along with ghee, oil, body fat, and bone marrow. This is *trivṛt* that should be recommended in treatments of sprinkling, oil massage, applying a poultice, oral consumption, oily enema, and errhine for patients having spasmodic contractions. The patient should then be made to sweat by the methods described earlier. If the wind is stronger then the patient should be immersed in [a vessel] filled with lukewarm fluid used for sprinkling (*trivṛt*). Or he should be kept in the hot fireplace of a blacksmith.³⁹⁸ Or else he should be made to sweat by [a mixture of] ??, *veśavāra*,³⁹⁹ and milk.

There,
Dalhana
commented
that de-
liberation
on *avapīda*
had been
done earlier
when it
was men-
tioned.
Find that
description
to know
more de-
tails.

393 In H, the reading अपत्ताकिनम् should have been अपत्तानकिनम्.

394 V. S. Apte has खट्टयति. The *Āyurvedīya Śabdakośa* has the entry खट्टापातिन् which means “one who is inclined to fall from bed.” Perhaps the reading in H has an error of the letter या which should have been पा.

395 In H, प्रागैव should have been प्रागेव.

396 The *Āyurvedīya Śabdakośa* has the entry अवपीड that means administering an oily paste through the nose. Refer SS *Cikitsāsthāna* Ch. 40 text 44 for a better understanding of *avapīda*.

397 It refers to an admixture of substances to medicines either during or after decoction. Refer to Monier-Williams's Sanskrit dictionary.

398 H has the reading रथाकारचुल्याम् that means “fireplace shaped like a chariot”, but the vulgate reading रथकारचुल्याम् makes more sense here. Thus, we have accepted it.

399 Refer the above text no.7 for *veśavāra*. In H, the syllable वै should have been वे.

Oil cooked with the juice of radish, ??, ??, spurge, and ?? should be used in sprinkling, etc. for patients with spasmodic contractions.⁴⁰⁰ Sour yogurt mixed with black pepper and drunk on an empty stomach alleviates spasmodic contractions. Or else, ghee, oil, body fat, or bone marrow [can be consumed on an empty stomach].

This procedure of treatment thus described is for spasmodic contractions caused only by wind. When mixed humours cause it then the treatment should also be mixed. And when the spasms subside the patient should be given *avapiḍa*-s. One should also consider the fats of cock, crab, black fish, and porpoise.⁴⁰¹ Milk prepared with wind-alleviating medicines. Gruel prepared with barley, ??, horse gram, radish, yogurt, ghee, and oil.

One should treat this recurring spasm for ten nights with oil massage, purging of bowels, enemas, and oily enemas. One should also look up the treatment of diseases caused by wind. One should also undertake preventive measures.

- 19 One should treat the paralytic (hemiplegic) patient whose limbs are not languid, who is in pain, and who is self-composed. There, at the beginning itself the patient should be massaged with oil and made to sweat. After cleansing the patient with a mild purifier,⁴⁰² he should be administered with an oily enema and then a non-oily enema. Then at the appropriate time, he should be treated with special enemas of the brain and the head according to the method prescribed in the treatment of *ākṣepaka*.⁴⁰³ *Anutaila* should be used for massage.⁴⁰⁴ *Sālvala* should be used for poultice.⁴⁰⁵ heart-leaf sida oil should be used for oily enema. In this way, the unremitting patient should take the treatment for three to four months.

20

21

Search for the section where the treatment of *ākṣepaka* is described.

Make the first letter of sentence capital.

⁴⁰⁰ The word तैलम् is not present in H but is present in the vulgate. We have accepted it.

⁴⁰¹ H has the reading रसान् which means "juices". It seems unrealistic that juice would be extracted by crushing these whole animals. Vulgate has the reading वसा: instead of रसान् which appears to be the more probable reading. Thus, we have accepted it.

⁴⁰² According to P. V. Sharma, this refers to mild evacuatives (purgatives).

⁴⁰³ Refer *Nidānasthāna* 1.50-51 for *ākṣepaka*.

⁴⁰⁴ For the procedure of preparing *anutaila*, refer *Cikitsāsthāna* 4.28.

⁴⁰⁵ For the procedure of preparing *sālvala*, refer *Cikitsāsthāna* 4.14-15.

- 22 One should treat the patient with *ardita*⁴⁰⁶ who is strong and possesses the means with the method prescribed in treating wind diseases. The unique thing is the treatment with enemas of the brain and the head, errhine, smoke, poultice, and steam bath through tubes. Then, one should take the great five roots (*pañcamūlī*) with grass and prepare its decoction in milk mixed with twice the water. Then, the decoction with the milk remaining⁴⁰⁷ should be brought down [the stove] and filtered. It should then be mixed with a *prastha*⁴⁰⁸ of oil and again placed over fire and cooked thoroughly. Then, the oil mixed with milk should be brought down [the stove] and then churned after it cools down. This is called *kṣīrataila* that should be used in drinks, etc. for patients with *ardita*.
- 23 In the diseases of *grdhrasī*, *viścañcī*, *kroṣṭukaśīrṣa*, *paṅgukalāya*, lameness, *vātakanṭaka*, burning sensation in the foot, numbness of the foot, *avabāhuka*, deafness, and *dhamanīvāta*, one should pierce the blood vessel as described earlier and, barring the case of *avabāhuka*, one should look up the treatment for wind diseases.
- 24 However, in the case of *karnamūla*,⁴⁰⁹ lukewarm juice of ??⁴¹⁰ mixed with liquorice, oil, and salt should be put into the ears.⁴¹¹ Or else one can use goat urine, liquorice, and oil. Or else one can use oil that is cooked with citron, pomegranate, ?? juice, and urine.⁴¹² Or else one can use oil that is cooked with sour liquor, buttermilk, and urine. One should also make the patient sweat with a steam bath through tubes. One should also look up the treatment for wind diseases. More will be said later.
- 25 In the case of *tūnī* and *pratitūnī*, one should make the patient drink ghee and salt with hot water. Or else one should administer the powder of

406 Refer *Nidānasthāna* 1.71-72 for *ardita*.

407 It means that the water has evaporated.

408 Dalhana commented (*Su* 1938: 425) that a *prastha* is a measure of weight that is equal to 32 *pala-s*.

409 The vulgate has the reading कर्णशूले which appears to be a more credible reading according to the context.

410 शृङ्खवेर appears to be a name of ginger. Refer to the Sanskrit dictionary of Monier Williams.

411 In H, the reading रसैः does not seem to make sense here. Hence we have accepted the vulgate reading रसम्.

412 In H, the word तैल should have been तैलम् to make proper sense. The vulgate has this reading. Thus we have accepted it.

- long pepper and other herbs with hot water. Or else one should make the patient drink ghee that is made thick with asafoetida and barley ash.⁴¹³ One should also treat the patient with enemas.
- 26 In the case of *ādhmāna*,⁴¹⁴ however, one should do *avatarpaṇa*,⁴¹⁵ heating the hands, *phalavartikriyā*,⁴¹⁶ stimulation of digestion, and [administer] digestives. One should also employ the purging of bowels and enemas. In the case of *pratyādhmāna*,⁴¹⁷ one should employ vomiting, fasting, and stimulation of digestion.
- 27 In the case of *aṣṭhīlā* and *pratyāṣṭhīlā*,⁴¹⁸ the procedure is that of *gulma* and internal abscess.
- 28 The beneficial asafoetida, the three pungent spices (long pepper, black pepper, and dry ginger), *sweet flag*, ?? grains, *wild spider flower*, *pomegranate*, ??, *velvet-leaf*, *leadwort*, ??, *rock salt*, ??, ??, *barley ash*, *natron*, *long pepper root*, ??, ??, ??, ?? (juniper berry), and ?? (cumin seeds) should be powdered. This powder should be mixed with a lot of *citron* juice. Then it should be made into pills each weighing one *akṣa*. Thereafter the patient of wind disease should consume one pill every morning. This medicine indeed cures *gulma*, rapid breathing, cough, loss of appetite, heart disease, *ādhmāna*, *pārśvadara*, *bastiśūla*, *anāhamūtra*, painful piles, *plihodara*, and *pāṇḍuroga*. Also, this medicine is excessively used in cases of *tūnī* and *pratitūnī*.
- 29 There are verses in this regard.

The wind that has entered into the body tissues should be correctly understood as either pure or vitiated by humours⁴¹⁹ and should be

413 यवक्षार is an alkali prepared from the ashes of burnt green barleycorns. Refer to the Sanskrit dictionary of Monier Williams.

414 Refer to *Nidānasthāna* 1.88. V. S. Apte explains it as “swelling of the belly”. P.V. Sharma has translated it as flatulence.

415 We are unclear about its meaning. The vulgate has the reading अपतर्पण that means fasting.

416 The entry फलवर्ति has the meaning “suppository” in the Sanskrit dictionary of Monier Williams. The Cambridge dictionary explains suppository as “a small, solid pill containing a drug that is put inside the anus, where it dissolves easily.” Refer to the link <https://dictionary.cambridge.org/dictionary/english/suppository>. Last accessed 30-Oct-2023.

417 Refer to *Nidānasthāna* 1.89. According to the Sanskrit dictionary of Monier Williams, it is a kind of tympanites or wind-dropsy.

418 Refer to *Nidānasthāna* 1.90 and 1.91.

419 In H, the reading लक्षणोन्यामूश्व does not make sense. Hence I cannot translate it. Per-

cured accordingly.

- 30 The wind that is accompanied by fat causes a swelling that is painful, hard, and cold. The physician should properly treat it like a treating a swelling.
- 31 When the wind accompanied by phlegm and fat enters the thighs, it causes pain in and immobility of the thighs due to numbness, pain, and fever.
- 32 Also, the thighs become pained, stiff, cold, and do not quiver due to sleep. They become heavy and as if belonging to someone else.⁴²⁰
- 33 That is called *ūrūstambha*. Others call it *ādhyavāta*. In that case, one should drink the *sañdharaṇa* powder with cool water.
- 34 Similarly, consuming the powder of *long pepper* and other herbs with hot water is beneficial. Or else, one should consume the powder of *triphalā* with *honey* and *kutki*.
- 35-38 Or else, one should drink the best *Indian bdellium-tree* or ?? with urine. Such a person cures the wind that is afflicted by phlegm and accompanied by fat, as well as heart disease, loss of appetite, *gulma*, and internal abscess.
 One should employ salty urine [therapy], sudation, and hard rubbing. One should also apply [the paste of] mustard and *pongame oiltree* fruits mixed with urine.⁴²¹
 One should eat old ??s, *koda millet*, ??, etc. along with uncooked⁴²² flesh of wild animals and unsalted vegetables that are beneficial.
- 39 When the phlegm and fat become amply reduced one should again employ the treatment of oil massage, etc. for the patient.

haps the correct reading could be लक्षणात्याच्. This would connect with the two conditions of the wind as stated in the verse.

420 In H, the verb वर्तते should have been in the dual. Also, the word आस्थिरौ does not make sense. The vulgate has the sensible reading अस्थिरौ which we have accepted here.

421 The word दिहेत् in H is not a proper Sanskrit word. We have taken its proper form दिह्वात् as given in the vulgate.

422 The vulgate has the reading अचृतैः that means without ghee.

Cikitsāsthāna 15: On Difficult Delivery

Literature

Meulenbeld offered an annotated overview of this chapter on fetal malpresentation and a bibliography of earlier scholarship to 2002.⁴²³ Das made observations about the afterbirth (*aparā*) that is mentioned in 4.15.17 (Su 1938: 432).⁴²⁴ Selby has explored gyencological narratives in ayurveda.⁴²⁵

Translation

- 1 And now we shall explain the difficult delivery medically treated.
- 3 Nothing else is more difficult than the extraction of a foetus since it has to be performed in the region of vagina, liver, spleen, intestines and the uterus. Actions like pushing up, pulling down, cutting off, incising, removing, pressing and straightening must be done using one hand, without hurting the foetus or the pregnant woman, Therefore, having considered that and obtaining permission, one should proceed with care.
- 4 Eight types of the positions of difficult foetus have earlier been mentioned briefly. Even if, in the natural birth process also the large / wrong way of the head, shoulders or hips of a foetus / child cling firmly in the passage.

⁴²³ HIML: IA, 271-272.

⁴²⁴ Das 2003: 517.

⁴²⁵ Selby 2005a,b.

- 5 In the case of a live foetus, the delivering ladies should attempt to deliver it. And, during this process, they should be made to hear the sacred verses repeatedly meant for expulsion of a foetus.
- 6 *O beautiful woman, may the divine nectar and the moon and the sun and Uccaiśravas reside icumbhalakan your house.*
- 7 *O lady, may this nectar extracted from the water release this tiny foetus of yours. May the fire, wind, sun and Indra together with the ocean bestow upon you the peace.*
- 9 And, as mentioned before (3.10.16-20) the medicine should be administered. In the case of a dead fetus, (the physician) having inserted (his) hand lubricated with the *dhanvaka*, *mṛttikā* – soil, the *sālmalī*- the *seemul* and ghee into the vagina of a woman lying on her back, whose thighs are bent with the elevated waist with the support of the cloth of *cumbhalaka* should take away the fetus. In the case, the fetus coming out with both the thighs, should be stretched out in a normal way. If the fetus has reached with only one thigh, spreading out its other thigh it should be taken out. If the fetus is coming out with its buttocks portion, squeezing the buttocks upward, spreading the thighs it should be taken out. A fetus having come in a transverse position like an oblique (तिर्यक्चीनस्य ?) iron club, lifting upward its half of the lower part from behind, straightening its half of the upper part, bringing it to the passage of vagina, it should be taken out. The last two positions of the dead fetus cannot be accomplished. Thus, in this state, instrument should be employed / surgery should be undertaken.
- 10 But, the live fetus should not be torn apart in any case. As, the live fetus may kill the mother and self soon.
- 12 Next, assuring safety to the lady, cutting the head of the fetus with the instrument that has disc on the top (मण्डलाघ) or finger shaped instrument (अङ्गुलिशस्त्र); removing the skull, the fetus should be taken out holding the forceps at its chest and armpit. If the head of the fetus is not separated, the fetus should be drawn out from its orbital regions or cheek (with the forceps); if the shoulders are stuck up in the passage, the fetus should be taken out by cutting its arm / arms at the shoulder region; tearing the abdomen when bloated with wind just like a stretched leather bag used for holding water, casting off the intestine,

the loosened fetus should be taken out. Or else, if its thighs are adhered to the passage, the bones of the thighs should be cut and fetus is removed.

- 13 The fetus is adhered to the passage from whichever its body part, the physician by separating that part should remove the fetus carefully and by all means the woman should be protected.
- 14 For, irritated wind causes different movements of the fetus. In this situation, the wise physician should act intelligently.
- 15 And, the learned physician should not delay even for moment in removing the dead fetus as it kills mother in no time like a breathless animal.
If impacted with hip, the hip bones should be cut and then delivered.

Part 5. Kalpasthāna

Kalpasthāna: Introduction

The *Kalpasthāna* of the *Compendium of Suśruta* is one of the most important treatises on toxicology surviving from the ancient world.⁴²⁶ Other treatises, such as the *θηριακά* (*On Beasts*) and *Ἀλεξίφαρμακα* (*Antidotes*) of Nicander of Colophon (fl. second century BCE) or the *Περὶ τῶν ἰοβολῶν θηρίων καὶ δηλητηρίων φαρμάκων* (*On Venomous Beasts and Poisonous Drugs*) by Aelius Promotus (fl. ca. first century BCE– first century CE) do not approach the *Kalpasthāna* in length, taxonomic detail or organization.⁴²⁷

The Sequence of Chapters

The Nepalese version of the *Suśrutasamhitā* reverses the sequence of chapters six and seven (see Table 2). This difference in sequence does not have an immediately obvious significance, but it appears to be the most original known sequence of chapters, since it was already known to Jejāṭa.⁴²⁸

⁴²⁶ Liu (2021) provides a valuable overview of poison treatises in the ancient world, inexplicably omitting mention of the *Kalpasthāna*.

⁴²⁷ On Nicander, see Gow and Scholfield 1953 and the facsimile of MS Paris BNF Greek suppl. 247 published by Touwaide et al. (1997). On Aelius Promotus, see W. Smith 1870: 29; Gostomiris 1897: 363–368; Ihm 1995.

⁴²⁸ See note 691 below.

Table 2: Chapters of the *Kalpasthāna*.

<i>Chapter title</i>	<i>Nepalese</i>	<i>vulgate</i>
Annapānarakṣākalpa	1	1
Sthāvaraviśavijñāna	2	2
Jāngamaviśavijñāna	3	3
Sarppadaśṭavijñāna	4	4
Sarppadaśṭacikitsita	5	5
Mūṣikākalpa	6	7
Dundubhisvana	7	6
Kīṭakalpa	8	8

The Spread of Indian Toxicological Lore to Medieval Islamic Authors

The *Kalpasthāna*'s diffusion

From the late eighth century onwards, the *Kalpasthāna*, or parts of it, began to circulate beyond the Indian subcontinent and to influence medical literature in early Persia, Tibet and Cambodia.

In the late eighth century, the *Kalpasthāna*, as part of the *Suśrutasaṃhitā*, was translated into Persian and Arabic at the Abbasid court of Baghdad by an Indian physician who is often known by the name Mankah.⁴²⁹ The principle source of information about this translation is the ‘Uyūn al-anbā’ fī ṭabaqāt al-āṭibbā of Ibn Abī Uṣaybi‘ah (ca. 1201–1270).⁴³⁰ Ibn Abī Uṣaybi‘ah mentioned that al-Rāzī used the *Suśrutasaṃhitā*, among other Indian works, and that it had been translated into Arabic at the orders of the Barmakid Yaḥyā ibn Khālid.⁴³¹ The *Suśrutasaṃhitā* passages used by al-Rāzī

⁴²⁹ On the name and its variants, see HIMAL: IB, 202, notes 2, 3. For an account of this translation process see the account of Kahl (2015: 14–18) and especially his useful reconstruction of likely historical events (16–17).

⁴³⁰ On Ibn ‘Abī Uṣaybi‘ah, see Hilooowala 2019. This author based his information on the earlier authors Abū Ḥafṣ al-Kirmānī (fl. ca. 800) and on an-Nadīm (d. 990). Al-Kirmānī’s treatise is unfortunately lost to history and known only through citations in other authors (see Bosworth 1994; van Bladel 2011).

⁴³¹ Savage-Smith et al. 2019: 3.2, 987. Ibn Abī Uṣaybi‘ah said the work consisted of ten

have been identified and printed in parallel with the Arabic translation by Kahl.⁴³²

Ibn Abī Uṣaybiṭah gave a detailed description of the translation in Baghdad of a work that was almost certainly the *Kalpasthāna*:

Shānāq was the author of several books, notably: 1. On poisons, in five parts. Mankah al-Hindī translated it from Sanskrit into Persian, and a man by the name of Abū Ḥātim al-Balkhī was assigned the task of transcribing it in Persian writing; he then expounded upon it to Yahyā ibn Khālid ibn Barmak. The work was subsequently translated [into Arabic] for the caliph al-Ma'mūn by his client, al-Ṭabbāṣ ibn Sa'īd al-Jawharī. The latter was also assigned the task of reading it aloud to al-Ma'mūn.⁴³³

There are several interesting features of this account, some of which have been discussed elsewhere.⁴³⁴ As the pioneering work of Strauss showed, the *Poison Book* of "Shanaq" contained material directly translated from the first chapter of the *Kalpasthāna*.⁴³⁵ The reception of these materials from the *Suśrutasamhitā* under the name "Shanaq" remains a historical puzzle.⁴³⁶

chapters, which does not match the six books of the known *Suśrutasamhitā*. He listed separately a work on poisonous snakes that could have been the *Kalpasthāna* (*ibid*, 989). On the transmission of Sanskrit medical knowledge to Baghdad through the influence of the Barmakids, see van Bladel 2011; Shefer-Mossensohn and Hershkovitz 2013; Kahl 2015; Wujastyk 2016a.

⁴³² Kahl 2015: 76–82. Unfortunately, Kahl (p. 14) accepted the impossible dating of a medical author Suśruta to the sixth century BCE, in spite of citing Meulenbeld, *HIML*, amongst his references. However, his remarks dating the redaction of the *Suśrutasamhitā* to the period third-sixth century CE are not incorrect.

⁴³³ Savage-Smith et al. 2019: 3.2, 990.

⁴³⁴ E.g., in the notes to the translation of Savage-Smith et al., in *HIML*: IA, 352 and elsewhere. It has not been remarked before that the interpreter Abū Ḥātim al-Balkhī was from Balkh, the original home of the Buddhist Barmakid family.

⁴³⁵ The passages cited by Strauss (1934: 14–19) include quite literal translations of *Kalpasthāna* 1.37, 1.40, 1.42, 1.29–34cd, 1.47, 1.51cd–52, 1.69, and the famous characterization of a poisoner at 1.19cd–23 (see above, p. ??). The translator of this Arabic work may only have been aware of chapter 1 of the *Kalpasthāna*.

⁴³⁶ Most scholars agree that this is a Perso-Arabic reception of the Sanskrit name Cānakya, but that name was associated not with the *Suśrutasamhitā*, but with the *Arthaśāstra* during or after the time of the Gupta empire (Olivelle 2013: 33–36). The suggestion that it may be "Śaunaka" is not supportable *HIML*: 1A, 150–152.

Several other Islamic authors knew and cited the *Suśrutasamhitā*.⁴³⁷

The *Suśrutasamhitā* was also a formative source for later Arabic works on toxicology. One of the earliest mentions of Shanaq is made in ibn Wahshiya's *Book on Poisons* (ca. 950). He refers to Shanaq's book as great and important. This statement is attested to by the fact that much of Shanaq's work was used by ibn Wahshiya.⁴³⁸

The author Suśruta was also cited as a famous authority in Tibetan lexicographical literature of the early ninth century.⁴³⁹

Shortly after this time, inscriptional evidence by King Yaśovarman I (r. 889–910) shows that the *Suśrutasamhitā* was known in Cambodia.⁴⁴⁰

⁴³⁷ Listed with references in HIMAL: 1A, 352.

⁴³⁸ Levey 1966: 6.

⁴³⁹ HIMAL: IA, 352.

⁴⁴⁰ *Idem*.

Kalpasthāna 1: Protecting the King from Poison

Introduction

The meaning of “kalpa”

What does “*kalpa*” mean in the context of this section of the *Suśrutasamhitā*? In medical contexts, this polysemic term can mean an appropriate drug recipe, a suitable medication, or any proper therapy. The present section of the *Suśrutasamhitā* deals with poisonous herbs, animals and insects, so one might expect the term to refer to antidotes or at least drugs. However, the usage here points more to the sense “procedure,” or “formal procedure,” a sense that, in a secular context, echoes the *kalpa* of the *Kalpasūtras*, the “formal procedures” of Vedic ritual.⁴⁴¹ The twelfth-century author Arunadatta,⁴⁴² glossed कल्प simply as प्रयोगः “procedure” and as योजनम्.⁴⁴³

Chapter 1 of the Kalpasthāna

The first chapter of the Kalpasthāna of the *Suśrutasamhitā* 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.

⁴⁴¹ Winternitz (1981–85: 252) translated कल्प in the Vedic context simply as “ritual.” He went on to describe the *Kalpasūtras* as, “born out of the necessity to compile the rules for the sacrificial ritual...for the practical purposes of the priests.” Gonda (1977: 467) also used “ritual practice,” giving useful further notes from classical authors in footnote 8.

⁴⁴² “A learned man with a great command of a number of sciences,” (HIML: 1A, 661).

⁴⁴³ *Sarvāṅgasundarī* on *Aṣṭāṅgahṛdayasaṃhitā* 1.16.17ab (Ah 1939: 246) and 5.1 *gadyasūtre* 2 (Ah 1939: 735) respectively.

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.⁴⁴⁴

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.⁴⁴⁵

The work then moves on to the various symptoms experienced by the king after being poisoned, and remedies appropriate to each case. Poison exhibits characteristic signs when added to milk and other drinks.⁴⁴⁶ 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.⁴⁴⁷ Translations of this chapter since Meulenbeld's listing have appeared by Wujastyk (2003b: 131–139), P. V. Sharma (1999–2001: 3, 1–15), and Srikantha Murthy (2000–02).⁴⁴⁸

⁴⁴⁴ *Arthaśāstra* 1.21.8 (Kangle 1965: 1, 30), translation by Olivelle (2013: 97).

⁴⁴⁵ Cf. *Arthaśāstra* 1.21.6, *ibid.*, Olivelle (2013: 96).

⁴⁴⁶ Cf. *Arthaśāstra* 1.21.6 again.

⁴⁴⁷ [HIML](#): IA, 289–290.

⁴⁴⁸ For a bibliography of translations to 2002, including Latin (1847), English (1877), Gujarati (1963) and Japanese (1971), see [HIML](#): IB, 314–315. Singhal and Dwivedi (1976) translated this sthāna.

Manuscript notes

- MS Kathmandu NAK 5-333 has foliation letter numerals, for example on f. 323a, that are similar to MS Cambridge CUL Add.1693,⁴⁴⁹ dated to 1165 CE.⁴⁵⁰

⁴⁴⁹ Scan at cudl.lib.cam.ac.uk/view/MS-ADD-01693/1.

⁴⁵⁰ See Bendall's chart of Nepalese letter-numerals (Bendall 1883: Lithograph V, after p. 225).

Translation

Is Dh. the
teacher of
Su. else-
where?

- 1–2 And now I shall explain the procedure (*kalpa*) for safeguarding food and drink, as were declared by the Venerable Dhanvantari.⁴⁵¹
- 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.⁴⁵²

[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.⁴⁵³
- 6 Therefore, a king should always be protected from poison by a physician.

⁴⁵¹ 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 *Suśrutasamhitā* 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 one of the few places in the Nepalese transmission of the *Suśrutasamhitā* that names Dhanvantari and integrates him into the narrative of the *Suśrutasamhitā* as the teacher of Suśruta.

The mention of Dhanvantari here is one of the few times 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 (2021a: 28–32), who concluded that the earliest recoverable recension of the *Suśrutasamhitā* 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). “Dhanvantari” is mentioned in the Nepalese version at 1.1.21, 1.19.37, 1.46.3, 1.29.71, 1.34.1.1, 2.1.3, 2.7.3, 3.19.13.3, 4.2.3, (5.1.2, note), 5.4.3, 6.60.2, 6.64.84.

⁴⁵² This is a quite different statement from the vulgate which has Dhanvantari as the teacher, and calls him the Lord of Kāśī (*kāśipati*) (Su 1938: 559). Ḑalhaṇa 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.”

⁴⁵³ Verses about the use of Venemous Virgins as a weapon do not appear in the Nepalese manuscripts. Cf. Wujastyk 2003b: 81 f., 132. This material is present in the commentary of Gayadāsa.

- 7 The racehorse-like fickleness of men's minds is well known. And for this reason, a king should never trust anyone.⁴⁵⁴
- 8–11 He should employ a doctor in his kitchen (*mahānasa*) 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,⁴⁵⁵ have clean utensils and be staffed by men and women who have been vetted.⁴⁵⁶
- 17–18ab The chefs, bearers (*vodhāra*), and makers of boiled rice soups and cakes and whoever else might be there, must all be under the strict control of the doctor.⁴⁵⁷
- 18cd–19ab An expert knows people's body language (*iingita*) through abnormalities in voice, movement and facial expression. He should be able to identify a poisoner by the following signs.
- 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 (*dhyāma*) and he cuts at things with his nails.⁴⁵⁸ 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 (*abhyāṅga*) and combs (*avalekhana*); in dry rubs (*utsādana*) and showers, in decoctions (*kaśāya*) and massage ointment (*anulepana*); in garlands (*sraj*), clothes, beds, armour and ornaments; in slippers and footstools, and on the backs of elephants and horses; in snuff (*nasya*), inhaled smoke (*dhūma*), eye make-up (*añjana*), etc., and any other things which are commonly poisoned. Then, I shall

Cf.
Arthasāstra
1.21.8.



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

455 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).

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

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

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

- also explain the remedy.
- 28 Flies or crows or other creatures that eat a poisonous morsel (*bali*) 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* partridge looks at food which has poison mingled with it, its eyes are promptly drained of colour; *grey peacock-pheasant* drops dead. A *koel* changes its song and the *common crane* rises up excitedly.⁴⁵⁹ It will excite a *Indian peafowl* and the terrified *parakeet* and the *common myna* screech. The *swan* trembles very much, and the *racket-tailed drongo* churrs.⁴⁶⁰ The *bull* sheds tears and the monkey releases excrement.⁴⁶¹
- 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.⁴⁶²
- 35, 36cd In such a case, an *errhine* and a *collyrium* that are *costus*, *lemongrass*, *spikenard* and *honey* (*madhus*);⁴⁶³ a paste of sandalwood on the heart

⁴⁵⁹ The verb अच्छति “rises up” is a rare form best known from epic Sanskrit (see Oberlies 2003: 212, §7.6.1). The transmitted form क्रोञ्चि is obviously a colloquial version of Sanskrit क्रौञ्च. Commenting on 1.7.10 (Su 1938: 31), Dalhaṇa interestingly gave the colloquial versions of several Sanskrit bird names, even singling out pronunciation in the specific location of Kānyakubja. For क्रौञ्चि he said that people pronounce it कुरञ्जि and कोञ्चि. The form कोञ्चि is found in Pāli (see Cone 2001: 731, who notes that Ardhāmāgadhi has the same form). Elsewhere, Dalhaṇa called 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).

⁴⁶⁰ Dalhaṇa seemed confused about the *racket-tailed drongo* (*bhṛṅgarāja*). He called it a generic drongo (भ्रमरक), a word that can also mean “bee” (Dave 1985: 62), and then he said that it is like the *black drongo* (*dhūmyāṭa*) (for a nice explanation of this name, see Dave 1985: 62–63) and that people call it “the king of birds.”

⁴⁶¹ MS Kathmandu KL 699 reads “*bull* (*vṛṣabha*)” for “*chital deer* (*prṣata*).” 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.

⁴⁶² “Tainted” translates उपक्षिप्. The word’s semantic field includes “to hurl, throw against,” and especially “to insult verbally, insinuate, accuse.” The commentator Dalhaṇa glossed the term as, “spoiled food given to be eaten” (विदूषितस्यान्नस्य भोक्तुं दत्तस्य), but he noted that some people read “उखाक्षिप्” or “thrown into a pan.” Other translators have commonly translated it as “served,” perhaps influenced by Dalhaṇa’s “given (दत्त).”

⁴⁶³ 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.

- may also provide relief.⁴⁶⁴
- 37 Held in the hand, it makes the hand burn, and the nails fall out. In such a case, the ointment (*pralepa*) is **beautyberry**, **velvet-mite**, **soma** and **blue water-lily**.⁴⁶⁵
- 38–39 If he eats that food, through inattention or by mistake, then his tongue will feel like a pebble (*asthilā*) and it will lose its sense of taste. It stings and burns, and his saliva (*ślesman*) dribbles out.⁴⁶⁶ In such a case, he should apply the treatment recommended above for vapour (*bāspa*), and what will be stated below under “toothbrush twigs”.⁴⁶⁷
- 40 On reaching his stomach, it causes stupor (*mūrcchā*), vomiting, the hair stands on end, there is distension, a burning feeling and an impairment of the senses.⁴⁶⁸

⁴⁶⁴ Singhal et al. (1972–82: 350) discussed the difficulties in identifying लमज्जा, a plant cited more often in the *Suśrutasamhitā* than in the *Carakasamhitā*; Dalhana adopted the common view that it is 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.”

⁴⁶⁵ “Beautyberry” (*Callicarpa macrophylla* Vahl.) is one identification of र्यामा, but vaidyas and commentators have different ideas about the plant’s identity (see glossary). On translating इन्द्रगोप as “velvet-mite,” see Lienhard 1978. Dalhaṇa’s remarks show that he had a reading इन्द्रागोप before him, and he tries to explain इन्द्रा and गोप as separate plants. But he also says that some people read इन्द्रगोप.

Dalhana 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. Dalhana 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 2003b: 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).

⁴⁶⁶ The word अष्टीला is normally feminine. The Nepalese manuscripts read it with a short अ- ending. Gayadāsa noticed that some manuscripts read अष्टील with a short -अ ending (MS Bikaner RORI 5157, f. 5v:7–8) and Dalhaṇa reproduced his observation. The vulgate reading चास्यत् “and from his mouth” is more obvious (*lectio facilior*), but is not attested in the Nepalese manuscripts.

⁴⁶⁷ Poisoned toothbrushes are discussed in verses 48 ff. below.

⁴⁶⁸ I translate मूच्छी in the light of the metaphors discussed by Meulenbeld (2011), that

- I'm still unhappy about this verse.
- Mention this in the introduction as an example of the scribe knowing the vulgate.
- fn about sadyas+
- 41 In this case, vomiting must quickly be induced using the fruits of emetic nut, gourd, red gourd, and ??, taken with milk and watered buttermilk, or alternatively with rice-water.
 - 42 Reaching the intestines (*pakvāśaya*), it causes a burning feeling, stupor, diarrhoea, thirst, impairment of the senses, flatulence (*āṭopa*) and it makes him pallid and thin.
 - 43 In such a case, purgation with the fruit of indigo (*nīlī*), together with ghee, is best. And ‘slow-acting poison antidote (*dūṣīviṣāri*)’ should be drunk with honey and curds (*dadhi*).⁴⁶⁹
 - 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.⁴⁷⁰
 - 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 (*pra√kuth*) and unripe ones ripen.⁴⁷¹
 - 48 When a toothbrush twig has poison on it, the bristles are corroded and the flesh of the tongue, gums and lips swells up.⁴⁷²
 - 49 Then, once his swelling is lanced, one should rub (*pratisāraṇa*) it with fire-flame bush flowers jambul, mango stones and chebulic myrobalan fruit mixed with honey.⁴⁷³
 - 50 Alternatively, the rubbing (*pratisāraṇa*) can be done with either the roots of sage-leaved alangium, the bark of blackboard tree or siris

include thickening and losing consciousness.

469 The ‘slow-acting poison’ is discussed at 5.2.25 ff. (Su 1938: 565).

470 Both Nepalese witnesses read विकृत् (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 (*vāvikṛtā*), 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 (*yamalā*)” 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*.

471 The root √कु॒थ् “stink, putrify, rot” is apparently known only from its few uses in the *Suśrutasamhitā*.

472 Gayadāsa and Ḟalhaṇa pointed out that “tooth socket (दन्तवेष्ट)” and “gum (दन्तमांस)” have the same meaning (2.16.14–26 (Su 1938: 331–332)).

473 This recipe is different from the vulgate.

- seeds.⁴⁷⁴
- 51ab One should give advice about a poisoned tongue-scraper or mouth-wash (*kavala*) 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 (*srāva*), inflammation of the skin, and sweating.⁴⁷⁵ And the flesh splits open.
- 53–54 In such a case, sandalwood, crape jasmine, costus, and vetiver, bamboo leaves, heart-leaved moonseed and heart-leaved moonseed, white clitoria, sacred lotus, and Indian barberry should be made into an ointment (*anulepana*) 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.⁴⁷⁶
- 55 In the case of a dry rub (*utsādana*), a shower (*parīṣeka*), an infusion, a massage ointment (*anulepana*), or in beds, clothes, or armour, the physician should understand that it is the same as for oil massage (*abhyāṅga*).⁴⁷⁷
- 56–58 When a comb has poison in it, the hair falls out, the head aches and blood oozes from the follicles (*kha*) and lumps (*granthi*) appear on the head. In such a case, one should repeatedly apply an ointment of black earth soaked with bear's bile,⁴⁷⁸ ghee, beautyberry,⁴⁷⁹ black creeper, and amaranth. Good alternatives are either the fluid extract of cow-dung, or the juice of royal jasmine, the juice of purging nut tree, or household soot.⁴⁸⁰



Bear's bile
instead of
deer's bile.

⁴⁷⁴ The spelling of the name अङ्कोल् varies अङ्कोट, अङ्कोठ, अङ्कोल (GVDB: 5); Dalhaṇa noted that the form अङ्कोल् is a colloquialism (1.37.12 (Su 1938: 161)). The sentence is awkward and we have emended शिरीषमाषक to be a plural, as in the vulgate, rather than the ablative singular of the Nepalese witnesses. We follow Dalhaṇa in interpreting the compound to refer to the distinctive bean-like siris seeds, rather than to mung beans (5.1.50 (Su 1938: 562)).

⁴⁷⁵ The feminine स्फोटा for "boils" is unattested.

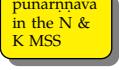
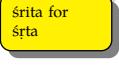
⁴⁷⁶ This compound could be interpreted as "wood apple juice and malabathrum." Note that this recipe is differs from that of the vulgate, which requires urine.

⁴⁷⁷ See verse 52 above.

⁴⁷⁸ Dalhaṇa comments here that 'bile is that fluid which goes along inside the tube attached to the liver' (कालखण्डलग्रन्थिकामध्यगतजलं पित्तम्) 5.1.57 (Su 1938: 562).

⁴⁷⁹ See note 465.

⁴⁸⁰ The plant identifications in this passage follow Dalhaṇa's glosses, although he noted

-  punarnavā in the N & K MSS
-  śrīta for śrīta
-  explain more
- 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 (*kantaka*) that are like lotus-spots (*padminikantaka*).⁴⁸¹ In this case, the drink is honey and ghee, and the ointment (*pralepa*) is sandalwood with ghee, curds, honey, *verbena*, *scarlet mallow* and *hogweed*.⁴⁸²
- 62–63ab Elephants and the like become ill and they dribble saliva. And the rider gets spots (*sphoṭa*) 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 (*nasya*) or smoke, the symptom (*liṅga*) is blood coming out of the apertures of the head (*kha*), a headache, a flow of mucus (*kapha*) and impairment of the senses. In such a case, ghee of cows etc., boiled up with their milk and **Indian aconite**, is prescribed, with **henna**, as a cold drink or errhine.
- 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 (*bāṣpa*) 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 (*pratipūraṇa*) promptly with ghee and honey. Extracted juice (*svarasa*) of **wild asparagus** and very cold juice of **white cutch tree** are also recommended as something good.⁴⁸³

a difference of opinion on the identity of **purging nut tree** (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 (2008b: 443). Cf. note 583, p. 177.

481 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.

482 The common plant-name पुनर्नवा is read as पुनर्णवा 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 *Ganapatiśāstrī* 1920–25: 20, where it is the name of a constellation).

483 The syntax of the Nepalese version is slightly unclear, but the vulgate has smoothed

- 69 When poison is mixed in with eye make-up (*añjana*), he gets tears and rheum (*upadeha*), with a burning feeling, pain, faulty vision (*dr̥stivibhrama*), and possibly even blindness.⁴⁸⁴
- 70–71 In this case, one must immediately drink ghee and have it also in an eyewash (*tarpaṇa*) with long pepper. One should have an eye ointment (*añjana*) of the juice of periploca of the woods and have the extract (*niryāsa*) of three-leaved caper, wood-apple and periploca of the woods and the flower of marking-nut tree.
- 72–73 Because of poisoned slippers there will definitely be a swelling, numbness (*svāpa*), a discharge (*srāva*) and an outbreak of spots (*sphoṭa*) on the feet. One should clean (*pra✓ sādh*) footstools together with slippers.
- 74 Ornaments lose their lustre, and they do not shine as they used to. They damage their respective locations with burning, sepsis (*pāka*), and fisinguring (*avadāraṇa*).⁴⁸⁵
- 75ab One should apply the stated procedure for massage oil (*abhyāṅga*) to poisoned slippers and ornaments.
- 75cd–76 In the case of the affliction (*upasarga*) by poison which has been described above, starting from ‘vapour’ and ending with ‘ornaments,’ the physician should observe the side-effects (*upadrava*) and then prescribe the therapy called the Great Fragrance (*mahāsugandha*) antidote, which I shall describe.⁴⁸⁶
- 77–78ab He should prescribe it in drinks, liniments (*ālepana*), errhines (*nasya*), and in eye ointment (*añjana*). Also, he should use sharp purgatives and emetics. If bleeding is present, he should have the indicated veins pierced.
- 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.⁴⁸⁷

out the difficulties.

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

485 The reading अवदारण in MS Kathmandu KL 699 is not attested elsewhere in Sanskrit literature. On “sepsis” for पाक, see Wujastyk 2003b: xlv–xlvi.

486 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. A useful survey of the meanings of उपसर्ग (“affliction”) was given by HIML: IB, 332

487 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

Medical difference from Sharma.

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

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

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

- 79cd–80 He should always guard his heart when amongst people who are not his friends.⁴⁸⁸ Before eating, he should drink the kinds of ghee called “Invincible” and “Immortal”.⁴⁸⁹ He should drink ghee (*sarpis*), honey, curds (*dadhi*), milk (*payas*), or cold water.
- 81 He should consume monitor lizard, peacock, mongoose, chital deer, and blackbuck too, that destroy poison, and their juices.
- 82 As discerning person should add well-crushed black creeper,⁴⁹⁰ liquorice, and sugar to the meats of Indian monitor lizard, mongoose and blackbuck too.
- 83 Add sugar and Indian aconite 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.⁴⁹¹
- 85 If poison might have been drunk, a person who has protected his heart should make himself vomit using long pepper, liquorice, honey, sugar, sugar cane juice, and water.

The first chapter in the Kalpas.

Chunekar (GVDB:7). Dalhana, 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.

488 The *Carakasamhitā* described “protecting the heart” (हृदयावरण) as drinking several sweet, oily drinks to surround the heart and keep it safe (6.23.46 (Ca 1941: 574)). Dalhaṇa on 5.1.79–81 (Su 1938: 563) 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. Note that the Nepalese version reads the opposite of the vulgate: one should guard one’s heart when amongst enemies, not friends. This is far more logical; it is also the reading known to the 1.8.89a (As 1980: 79).

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

490 Dalhaṇa on 5.1.82 (Su 1938: 563) equated this with turpeth.

491 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 eleventh century, Cakrapāṇidatta commented on a similar list of poisons in the *Carakasamhitā*, and referred to the *Suśrutasamhitā* on the topic.⁴⁹² He also noted that,

In assigning the names to these plants, the main authorities are the Kirātas and Śabaras, who know about these things because they can explain these matters on the basis of a succession of teachers.⁴⁹³

About a century later, the learned commentator on the *Suśrutasamhitā*, Ḏalhaṇa, 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.⁴⁹⁴

From the view of Sanskrit authors, Kirātas and Śabaras were tribal peoples.⁴⁹⁵

⁴⁹² Cakrapāṇidatta on 6.23.11 ([Su 1939](#): 571).

⁴⁹³ Cakrapāṇidatta on *Carakasamhitā* 6.23.11 ([Su 1938](#): 571).

⁴⁹⁴ After *Suśrutasamhitā*, *kalpasthāna* 2.5 ([Su 1938](#): 564).

⁴⁹⁵ Both communities are mentioned in Sanskrit literature from antiquity. The Kirātas

Interestingly, the author Bhikṣu Govinda (tenth or eleventh century), cast his alchemical treatise as a dialogue with a Kirāta king called Madana who was a master of the alchemical art.⁴⁹⁶ So there was an awareness amongst Sanskrit medical and alchemical authors of that period that socially different populations were a source of specialized knowledge in these domains, and the Sanskrit authors were open to these sources and indeed depended on them.

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 thus been in doubt for at least a thousand years.⁴⁹⁷ Firm identification has 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.⁴⁹⁸

Shock

An important new topic introduced in this chapter (34–39) is that of “toxic shock” (*vega*). When a patient has been poisoned, the effect of the toxin is expressed in their body in seven waves or pulses, *vegas*. At each stage, symptoms are slightly different and a different therapeutic regime is prescribed (40–44).

The Sanskrit term *vega* has a range of uses, from “impulse” to “urge, jerk, rush, speed,” or “impetus.” It appears in the well-known passage in

are associated especially with Eastern Nepal, the Himalayan and north-eastern regions of South Asia, while the Śabara people are mainly associated with Odisha and West Bengal. Representative studies on these communities include Elwin (1955), Roy (1970), Chatterji (1974), G. P. Singh (1990), Subba (1999), G. P. Singh (2008), and R. Rai (2019).

⁴⁹⁶ HIML: II A, 620.

⁴⁹⁷ See Wujastyk 2003b: 80–81.

⁴⁹⁸ Valuable reference sources on Indian plant toxicology in general include Pillay 2013: chs. 10, 11 and Barceloux 2008: parts 1.II, 3 and 4. More generally Bown (NEH: 41 et passim) comments usefully of herbs in general that “it goes without saying that if they can do good, they must contain substances that in excess can poison.”

the *Carakasamhitā* about avoiding illness not ignoring or suppressing “natural urges,” *vegas*, such as the desire to urinate.⁴⁹⁹

According to the author of the *Aṣṭāṅgasaṅgraha*, Ālambāyana was the ancient authority who declared that the seven pulses (*vega*) of toxic shocks affect, successively, the seven substrata (*āśraya*) of the body, from blood to semen, and Dhanvantari originated the idea that this applied to victims of snake-bite.⁵⁰⁰

The commentator Indu (fl. 1000–1150) cited verses by Ālambāyana asserting that the pipes in the body carry poison to the heart, but that the heart can be protected by ghee.⁵⁰¹

Literature

Meulenbeld offered an annotated overview of this chapter and a bibliography of earlier scholarship to 2002.⁵⁰²

499 See *Carakasamhitā* 1.7 (Ca 1941: 49–55), discussed and translated in Wujastyk 2003b: 7–8, 15–17.

500 *Aṣṭāṅgasaṅgraha* 6.40.35a (As 1980: 844): सपेति वेगा मूर्छाद्या विदेहपतिना स्मृताः ॥३४ ॥ रक्तमां-सवसासायु तथाऽस्थ्याद्यास्तयः क्रमात् । आश्रयाः सप्त सप्तानामित्यालम्बायनोऽब्रवीत् ॥३५ ॥. The following verse named Dhanvantari as the originator of the idea that toxic pulses are experienced specifically by a person bitten by a snake (वेगान्धन्वन्तरिस्तद्वत्सर्पदष्टस्य मन्यते । 36ab). The commentator Indu noted that Dhanvantari was the teacher of Suśruta, i.e., that “Dhanvantari” was shorthand for *Suśrutasamhitā*. On Ālambāyana, see p. 210, note 713.

501 *Aṣṭāṅgasaṅgraha* 6.40.60a (As 1980): याः सिराः सर्वगात्रेषु हृदये सम्प्रतिष्ठिताः । ताभिरस्य विषं सर्वं हृदयं सम्प्रधावति ॥ घृतेन तु प्रतिच्छन्नं विषं नाति प्रपीडयेत् । निवाणजननं सर्पिः प्राणिनां प्राणवर्द्धनम् ॥

502 HIML: IA, 290–291.

Translation

- 1 And now I shall explain required knowledge (*vijnānīya*) about stationary poisons.⁵⁰³
- 3 It is said that there are two kinds of poisons, stationary (*sthāvara*) and mobile (*jaṅgama*). The former dwells in ten sites, the latter in sixteen places.
- 4 Traditionally, the ten are: root, leaf, fruit, flower, bark, milky sap (*ksīra*), pith (*sāra*), resin (*niryāsa*), the elements (*dhātu*), and the tuber.
- 5 In that context,
 - the eight root-poisons are:⁵⁰⁴
 1. liquorice (?),⁵⁰⁵
 2. sweet-scented oleander,⁵⁰⁶
 3. jequirity,⁵⁰⁷
 4. false daisy,⁵⁰⁸
 5. emetic nut (?),⁵⁰⁹ and ending with
 6. leadwort,⁵¹⁰

⁵⁰³ 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.

⁵⁰⁴ Some South Asian plants with poisonous roots that we would expect to see in this list include *Croton tiglium*, L., *Calotropis* spp., *Citrullus colocynthus* L. Schrad., and *Ricinus communis* L. (CIPP).

⁵⁰⁵ 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 identified.”

⁵⁰⁶ The roots of sweet-scented oleander are highly toxic, as are most parts of the plant (Pillay and Sasidharan 2019).

⁵⁰⁷ 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.

⁵⁰⁸ The plant is usually called just *bhaṅgurā* without the prefix *su-* “good.” However, there is no reported toxicity associated with *E. prostrata*. The vulgate reads सुगन्धा (snakeroot).

⁵⁰⁹ This poisonous root cannot at present be securely identified. Similar-sounding candidates include *karkaṭaka*, *karahāṭa* (emetic nut), and *karaghāṭa*, 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.

⁵¹⁰ The roots of both rose and white leadwort are very toxic.

7. country sarsaparilla (?),⁵¹¹ and
8. medhshingi,⁵¹²

- the leaf-poisons include:
 - aconite leaf (?),
 - drum-giver (?),
 - thorn apple, and
 - big thorn apple;
- the fruits of items like: *jequirity*, *marking-nut tree*, and *poison-altar* (?) are
 - water snowflake (?),
 - pollen (?),
 - bluebell barleria,
 - unknown fruit poison,
 - thorn apple
 - big thorn apple (?)
 - spurge (?),
 - crow (?),
- the flower-poisons include those of:
 - musk mallow,
 - Indian fumitory,⁵¹³
 - thorn apple, and
 - big thorn apple (?).

⁵¹¹ 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.

⁵¹² 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 (Meulenbeld 1989; Wujastyk 2002; McHugh 2021). The *Sauśrutanighāṇṭu* gives a number of synonyms for *vijayā*, almost none of which have any poisonous parts (Suvedī and Tivārī 2000: 5.77, 10.143). But one of them, *viṣāṇī* (also *meṣāśṛṅgī*), is sometimes equated with *Dolichandrone falcata* (DC.) Seemann (ADPS: 518), a plant used as an abortifacient and fish poison (NK: #862). This identification is tenuous.

⁵¹³ रेणु and रेणुका are different plants. MS K reads the first; the scribe of MS H added an additional -क in the margin.

- the bark, pith (*sāra*) and resin (*niryāsa*) of:
 - gourd,
 - emetic nut,
 - thorn apple, and
 - munj grass;
- the milky sap (*kṣīra*) of:
 - water snowflake (?),⁵¹⁴
 - red physic nut,
 - oleander spurge, and
 - luffa
- the mineral (*dhātu*) poisons include:⁵¹⁵
 - orpiment,
 - cuttle-fish bone (?),
 - ashes, and
 - vermillion.⁵¹⁶
- the tubers poisons are:
 - jequirity,
 - Indian aconite,
 - Indian mustard,
 - leadwort,
 - muddy (?),
 - 'Virāṭa's plant',
 - nutgrass,
 - atis root,
 - long-stamen *Wendlandia* (?),
 - radish,
 - 'alas, alas' (?),
 - big poison (?), and
 - galls (?)

⁵¹⁴ While the identity of this plant is uncertain, the Nepalese version of the *Suśrutasamñhitā* does not present the hopeless problem of the vulgate's reading कुमुदमी.

⁵¹⁵ These identifications are more than usually uncertain. Note that the vulgate text specifies that there are two mineral poisons.

⁵¹⁶ If this identification as vermillion (cinnabar) is correct, it is an unexpectedly early mention of the substance.

The effects of poisons

Symptoms of root poisoning

- 7–10 People should know that root-poisons cause writhing (*udveṣṭana*), ranting (*pralāpa*), and delirium (*moha*), and leaf-poisons cause yawning, writhing, and wheezing (*śvāsa*).
 Fruit-poisons cause swelling of the scrotum, a burning feeling and writhing. Flower-poisons will cause vomiting, distension (*ādhmāna*) and sleep (*svāpa*).
 The consumption of poisons from bark, pith (*sāra*) and resin (*niryāsa*) will cause foul breath, hoarseness (*pāruṣya*), a headache, and a discharge of phlegm (*kapha*).⁵¹⁷
 The milky sap (*ksīra*)-poisons make one froth at the mouth, cause loose stool, and make the tongue feel heavy.⁵¹⁸ The element (*dhātu*)-poisons give one a crushing pain in the chest, make one faint and cause a burning feeling on the palate.
 These poisons are classified as ones which are generally speaking lethal after a period of time.

11–17 **Symptoms of tuber poisoning**

The tuber-poisons, though, are severe. I shall talk about them in detail.⁵¹⁹

With **jequirity**, there is numbness and very severe trembling.
 With **Indian aconite**, there is rigidity of the neck, and the faeces, and urine become yellow.
 With **marking nut tree (?)**, the wind becomes defective (*vātavaiguṇya*), there is constipation (*ānāha*), and lumps (*granthi*) start to appear.
 With **leadwort**, there is weakness in the neck, and speech gets jumbled.⁵²⁰

⁵¹⁷ At 1.2.6 (Su 1938: 11), Dalhaṇa glossed hoarseness (*pāruṣya*) as *vāgrūkṣatā*, “a rough, dry voice.”

⁵¹⁸ At 6.54.10 (Su 1938: 773), Dalhaṇa glossed loose stool (*viḍbheda*) as *dravapurīṣatā*, “having liquid stool.”

⁵¹⁹ See Dalhaṇa’s comments on the impossibility of identifying the following plants, p. 155 above.

⁵²⁰ The verse in the Nepalese version ends with a plural verb that does not agree with the dual of the sentence subject.

With the one called **muddy** (?), there is a discharge (*praseka*), the faeces pour out, and the eyes turn yellow.

The 'Virāṭa's plant' (*vairāṭaka*) 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 **nutgrass**.⁵²¹

- 15b With **big poison** (?), one's limbs grow weak, there is a burning feeling and swelling of the belly.⁵²²
- 16a With **white lotus**, one's eyes go red, and one's belly becomes distended.⁵²³
- 16b With **radish**, one's body is drained of colour and the limbs are paralysed.⁵²⁴
- 17a With 'alas, alas' (?), a man turns a dark colour (*dhyāma*), and gasps.⁵²⁵
- 17b With **atis root** one gets violent knots (*granthi*) and stabbing pains in the heart.⁵²⁶
- 18a With **monkey** (?), one leaps up, laughs, and bites.
- 18b-19a Experts have said that one should know that the thirteen highly potent tuber-poisons, which are mentioned here, have ten qualities (*guna*).
- 19b-20a The ten are:

⁵²¹ 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.

⁵²² The poisonous root **big poison** (?) (*mahāviṣa*) is not clearly identifiable, although *viṣā* is commonly aconite. Verse 6 above notes that there are several kinds of aconite.

⁵²³ The word *puṇḍarīka* very commonly means white lotus. 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 *Carakasaṃhitāci*.23.12.

⁵²⁴ 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.

⁵²⁵ Identification of *hālāhala* is uncertain. It may simply be a mythical poison, or its specific identity may have been lost over the centuries. Late *nighaṇṭus* identify it as *stomaka* = *vatsanābha*, i.e., *Aconitum napellus*, L. (Sodhalanighaṇṭu p. 43).

Đalhaṇa on 5.2.17 (Su 1938: 564) interpreted our "gasps" as "the man laughs and grinds his teeth." But this gloss is probably displaced and intended to apply to verse 2.18.

⁵²⁶ T. B. Singh and Chunekar (GVDB: 407) noted that *vatsanābha* and *śṛṅgīviṣa* are two different varieties of poisonous Aconites that are difficult to distinguish.

Look up
the ca. ref-
erence.

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

- 20b Because of dryness, it may cause inflammation of the wind; because of heat it inflames the choler and blood. Because of the sharpness it unhinges the mind, and it cuts through the connections with the sensitive points (*marman*). Because it is rarified it can infiltrate and distort the parts of the body.⁵²⁷
- 22 Because it is fast-acting it kills quickly, and because of its pervasiveness it affects one's whole physical constitution (*prakṛti*).⁵²⁸ Because of its expansiveness it enters into the humour (*doṣa*)s, bodily constituents (*dhātu*)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.

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 spontaneously lost its features,⁵²⁹ becomes a slow-acting poison (*dūṣīviṣa*).⁵³⁰ Because it has lost its potency it is no longer perceived. Because it is surrounded by phlegm (*kapha*) it has an aftermath that lasts for a very long time.

⁵²⁷ We read the active *vikaroti* with Dalhaṇa against the transmitted passive *vikriyeta*, since it must be the parts of the body that are distorted, not the poison.

⁵²⁸ Dalhaṇa on 5.2.22 (Su 1938: 565) explained this as “takes the form of pervading the whole body (*akhiladehavyāptirūpam*).”

⁵²⁹ Dalhaṇa specified that this refers to the ten qualities that are mentioned above (5.2.26 (Su 1938: 565)).

⁵³⁰ Dalhaṇa cited this verse at 1.46.83 (Su 1938: 222) while explaining *dūṣīviṣa* (see p. 165).

- 27 If he is suffering from this, the colour of his stools changes, he gets a sour, bad taste and is very thirsty. Speaking nonsensically and close to death, wandering about, he may feel faint, giddy, and aroused.⁵³¹
- 28 If it lodges in his stomach (*āmāśaya*), he becomes sick because of wind and phlegm; if it lodges in his intestines (*pakvāśaya*), he becomes sick because of wind and cholera. A man's hair and limbs fall away and he looks like a bird whose wings have been chopped off.
- 29a–c If it lodges in one of the body tissues such as chyle (*rasa*), it causes the diseases arising from the body tissues, that have been said to be wrong.⁵³² and it rapidly becomes inflamed on days that are nasty because of cold and wind.
- 29d–31 Listen to its initial symptoms (*linga*): it causes heaviness due to sleep, yawning, disjunction (*viślesa*) and horripilation (*harṣa*) and a bruising of the limbs (*aṅgamarda*).⁵³³ Next, it causes intoxication from food (*annamada*) and indigestion, loss of appetite (*arocaka*), the condition of having a skin disease (*koṭha*) with round blotches (*maṇḍala*),⁵³⁴ **dwindling away (*kṣaya*) of flesh**, swelling of the feet, hands, and face, **the fever called *pralepaka***, vomiting and diarrhoea.⁵³⁵ The slow-acting poison might cause **wheezing, thirst and fever, and it might also cause distension of the abdomen**.
- 32 These various disorders are of many different types: one poison may produce madness, while another one may cause constipation (*ānāha*), and yet another may ruin the semen. One may cause **emaciation**, while another pallid skin disease (*kuṣṭha*).
- 33 Something is “corrupted” by repetitively keeping to bad locations, times, foods, and sleeping in the daytime. Or, traditionally, “corrupting poison” (slow-acting poison (*dūṣī-viṣa*)) is so called because it may corrupt (*dūṣayet*) the body tissue (*dhātu*)s.

⁵³¹ Similar symptoms of slow-acting poison are described at 2.7.11–13 (Su 1938: 296) in the context of contamination dropsy (*dusyodara*). This this may explain why the vulgate inserted reference to this disease at this point.

⁵³² The expression *ayathāyathoktān* “stated to be unsuitable” is hard to understand here, but is clearly transmitted in the Nepalese version.

⁵³³ Dalhaṇa 5.2.30ab (Su 1938: 565) glossed “disjunction” as the loss of function of the joints in regard to movement.

⁵³⁴ The last ailment could perhaps be ringworm.

⁵³⁵ The *pralepaka* fever was described by Dalhaṇa, at 6.39.52 (Su 1938: 675), as an accumulation of phlegm in the joints. Its symptoms are described in 6.39.54

34- The stages of toxic shock

- In the first shock of having taken a stationary poison, a person's tongue becomes dark brown and stiff, he grows faint, and panics.
- 35 In the second, he trembles, feels exhausted, has a burning feeling, as well as a sore throat. When the poison reaches the stomach (*āmāśaya*), it causes pain in the chest (*hṛd*).
 - 36 In the third, his palate goes dry, he gets violent pain (*śūla*) in the stomach (*āmāśaya*), and his eyes become weak, swollen and yellow.
 - 37 In the fourth shock, it causes the intestines and stomach to be exhausted (*sāda*), he gets hiccups, a cough, a rumbling in the gut (*antra*), and his head becomes heavy too.
 - 38 In the fifth he dribbles phlegm (*kapha*), goes a bad colour, his **ribs crack** (*parśvabhedā*), all his humours are irritated, and he also has a pain in his intestines (*pakvādhāna*).
 - 39a In the sixth, he loses consciousness and he completely loses control of his bowels.
 - 39b In the seventh, there are breaks in his shoulders, back and loins, and he stops breathing.⁵³⁶

Remedies for the stages of slow poisoning

- 40 In the first shock of the poison, the physician should make the man, who has vomited and been sprinkled with cold water, drink an antidote (*agada*) mixed with honey and ghee.
- 41a In the second, he should make the man who has vomited and been purged drink as before;
- 41b on the third, drink an antidote and a beneficial nasal medicine (*nasya*) as well as an eye salve (*añjana*).
- 42a In the fourth, the physician should make him drink an antidote that is salt with a little oil.⁵³⁷
- 42b In the fifth, he should be prescribed the antidote together with a decoction (*kvātha*) of honey and liquorice.

⁵³⁶ Here at 5.2.24 (Su 1938: 566) Dalhaṇa glossed *sannirodha* as "complete cessation, i.e., of breath" (*sannirodhah samyainirodhah, ucchvāsasya iti śesah*). The manuscripts all read *skanda* where *skandha* must be intended; this confusion is known from Buddhist Hybrid Sanskrit (Edgerton 1953: 2, 608).

⁵³⁷ At 6.52.30 (Su 1938: 769) Dalhaṇa noted that *sindhu* can be interpreted as salt (*saindhava*).

- 43 In the sixth, the cure (*siddhi*) is the same as for diarrhoea. And in the seventh, he perishes.⁵³⁸
- 44 In between any one of these shocks, once the above treatment has been done, he should give the patient the following cold gruel (*yavāgū*) together with ghee and honey, that will take away the poison.
- 45–46 A gruel (*yavāgū*) made of the following items in a stewed juice (*nih-kvātha*) destroys the two poisons: luffa,⁵³⁹ wild celery,⁵⁴⁰ velvet-leaf, sunflower,⁵⁴¹ heart-leaved moonseed, myrobalan siris, and Indian cherry, white siris, the two kinds of turmeric,⁵⁴² and the two kinds of hairy-fruited eggplant,⁵⁴³ hogweed, peas, the three heating spices, the

538 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 Dalhaṇa 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 (*rājimat*). It is possible the text migrated from that location to this.

Another difference at this point is that the Nepalese version also does not support the vulgate's passage on the crow's foot (*kākapada*) therapy (Wujastyk 2003b: 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. The therapy may have migrated into the vulgate *Suśrutasamhitā* from the *Carakasamhitā* 6.23.66–67 (Ca 1941: 574).

539 At 4.10.8 (Su 1938: 449) Dalhaṇa glossed कोशवती as देवदाली and at 4.18.20 (Su 1938: 472) as कट्टकोशातकी, vocabulary pointing to *Cucumis cylindrica*, *Cucumis angula* or *Luffa echinata*. See glossary under ??.

540 A plant often cited in *Suśrutasamhitā*, but rarely in *Carakasamhitā* (GVDB: 4). Dalhaṇa 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.

541 At 5.2.45 (Su 1938: 566) Dalhaṇa 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 *arkapuspi*, panacea twiner, as Dalhaṇa 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).

542 I.e., turmeric and Indian barberry.

543 I.e., hairy-fruited eggplant and yellow-berried nightshade.

two kinds of Indian sarsaparilla⁵⁴⁴ and blue water-lily.

The Invincible Ghee

- 47–49 There is a famous ghee called “Invincible”. It rapidly destroys all poisons but is itself unconquered. It is prepared with a mash (*kalka*) of the following plants: liquorice, crape jasmine, costus, deodar, peas, Indian madder, cardamom and cherry, cobra’s saffron, blue water-lily, sugar, embelia, sandalwood, malabathrum, foxtail millet, rosha grass, the two turmerics,⁵⁴⁵ the two Indian nightshades,⁵⁴⁶ the two kinds of Indian sarsaparilla,⁵⁴⁷ beggarweed, and heart-leaf sida.

Curing the ‘slow-acting’ poison

- 50–52 Someone suffering from “slow-acting poison (*dūṣīviṣā*)” 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 ochre, as well as gold, and pondweed.
 This antitoxin, taken with honey, eliminates slow-acting poison. It is called the “enemy of slow-acting poison (*dūṣīviṣāri*),” and it is not prohibited in other situations.
- 53–54 If there are any other side-effects (*upadrava*), such as fever, a burning feeling, hiccups, constipation (*ānāha*), depletion of the semen, distension, diarrhoea, fainting, skin problems, bellyache (*jaṭhara*), madness, trembling, then one should treat each one in its own terms, using anti-toxic medicines.
- 55 For a prudent person, the slow-acting poison can be cured (*sādhya*) immediately. It is treatable (*yāpya*) if it is of a year’s standing. Other than this, it should be avoided for the person who eats unwholesome things.

⁵⁴⁴ I.e., country sarsaparilla and black creeper.

⁵⁴⁵ I.e., turmeric and Indian barberry.

⁵⁴⁶ I.e., hairy-fruited eggplant and yellow-berried nightshade.

⁵⁴⁷ 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 2002.⁵⁴⁸

Introduction

The Sanskrit names of the creatures, especially insects, described in this chapter present a special challenge.⁵⁴⁹ In particular, in the early passages of this chapter, there are long compound words containing lists of insect-names and it is not obvious where word-division should take place. For example, the Nepalese version of 5.3.5 ([Su 1938](#): 567), has the compound *citraśīrṣaśarāvakurdiśatadārukārimedakaśārikā*. The first name is not hard: *citraśīrṣa* “Speckle-head.” But should the second insect be called *śarāva*, followed by *kurdiśata*, or *śarāvakurdi* followed by *śatadārukā*, or *śatadārukāri*, etc. No past translators have given serious attention to this problem. In 1844, Hessler ([1844–55](#): 219) thought the list was to be divided thus: *śarāva*, *kurdi*, *śatadāruka*, *arimeda*, and “*Gracula religiosa*,” i.e., *śārikā* (see Table 3). In 1907, Kunjalal Bhishagratna ([1907–16](#): v. 2, 696) used *śarāva*, *kurdiśata*, *dāruka*, *arimedaka*, and *śārikā-mukha*. Singhal and Dwivedi ([1976](#): 56) chose similarly, but preferred *dārukārika* and *medaka*. P. V. Sharma ([1999–2001](#): v. 3, 27) preferred *dārukāri* and *medaka*, as did Valiathan ([2007](#): 608). None of these authors attempted translation or

⁵⁴⁸ [HIML](#): IA, 291–292.

⁵⁴⁹ This is discussed in more detail on p. [225](#) below.

1884	<i>sarāva</i>	<i>kurdi</i>	<i>śatadāruka</i>	<i>arimedaka</i>	<i>śārika</i>
1907	<i>sarāva</i>	<i>kurdiśata</i>	<i>dāruka</i>	<i>arimedaka</i>	<i>śārikāmukha</i>
1976	<i>sarāva</i>	<i>kurdiśata</i>	<i>dārukārika</i>	<i>medaka</i>	<i>śārikāmukha</i>
1999	<i>sarāva</i>	<i>kurdiśata</i>	<i>dārukāri</i>	<i>medaka</i>	<i>śārikāmukha</i>

Table 3: Variant word-division of creature names.

identification of the insects, and it seems clear from the randomness of their choices that none of them had concentrated on this problem. In such a case, one hopes for help from the medieval commentators, but Ḑalhana did not comment on these names either. As mentioned below (p. 225), he abdicated responsibility insect names, delegating the topic to the “people who lived in various localities.”

In dealing with these names, I have mostly been guided by dictionaries. Thus, Monier-Williams et al. (MW) have the lexemes *śarāvakurda*, *śatadārukā* and *arimedaka*, so that is how I have divided the compound.⁵⁵⁰ This evidence is somewhat flimsy; it would be much better to have some parallels from Indo-European on one side, or MIA or NIA languages on the other.⁵⁵¹ But unfortunately, dictionary searches of these languages have so far not helped. The only other source of help is the scribe of MS Kathmandu NAK 5-333 (fl. ca. 1543), who inserted daṇḍas between the compound words. These correspond to the word-division of Monier-Williams et al. (MW), above.

⁵⁵⁰ References to the *Suśrutasaṃhitā* in Monier-Williams et al. (MW) are taken from PW, which cited the *editio princeps* of S. M. Gupta (1835–36) (PW: 1, xi and Gildemeister 1847: 149–150).

⁵⁵¹ Could *kurda* be related to *kuṇa* “louse”? The lexeme *śarāva* puzzled even Mayrhofer (KEWA: 3, 307, EWA: 2, 617).

Translation

- 1 And now we shall explain the formal procedure (*kalpa*) that is the required knowledge about mobile poisons.⁵⁵²
- 3 The full explanation about the sixteen carriers (*adhiṣṭhāna*) of the mobile poisons, that have been mentioned by me in brief, will be stated.⁵⁵³
- 4 In that context, they are:⁵⁵⁴

1. gaze	10. tail,
2. breath,	11. contact with saliva,
3. fangs,	12. nipping with the mouth,
4. nails,	13. farts, ⁵⁵⁵
5. mouth,	14. anus ⁵⁵⁶
6. urine,	15. bones,
7. feces,	16. bile,
8. menstrual blood,	17. bristles, and
9. semen,	18. corpses. ⁵⁵⁷
- 5 In that context⁵⁵⁸

⁵⁵² In contrast to stationary, plant poisons. No reference is made to Dhanvantari (see Birch, Wujastyk, Klebanov, Parameswaran, et al. 2021).

⁵⁵³ “Carrier” for base, foundation (*adhiṣṭhāna*) aims to capture the idea that the author will describe the anatomical parts in which poisons inhere in different creatures. Meulenbeld (HIML: 1A, 291) paraphrased this difficult passage, giving important notes on most of the creatures mentioned.

⁵⁵⁴ The content of this section is presented as tables, 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: 81–83.

⁵⁵⁵ This interpretation, farts (*avaśardhita*), comes from Dalhaṇa on 5.3.4 (Su 1938: 567), but he read *viśardhita*.

⁵⁵⁶ Dalhaṇa on 5.3.4 (Su 1938: 567) noted this reading, anus (*guda*), but did not include it in his text of the *Suśrutasaṅhitā*.

⁵⁵⁷ This list has grown in transmission by two items.

⁵⁵⁸ The sequence of the following texts is not the same in the Nepalese version as in the vulgate. The numbering below represents the Nepalese version; in the vulgate, 5.7 and 5.6 are reversed, and also 5.9 and 5.8.

Table 4: Passage 5, expressed in tabular format.

	<i>creatures</i>	<i>location of the poison</i>
5.1	divine snakes	in their breath and gaze
5.2	earthly snakes ⁵⁵⁹	in their fangs
5.3	cats, dogs, monkeys, men (<i>nara</i>), ⁵⁶⁰ crocodiles, frogs, cook-fish insect, ⁵⁶¹ monitor lizards, cone snails, ??, house geckos, ⁵⁶² four-footed insects and others	in their nails, mouths and fangs
5.4	lice (<i>kitipa</i>), 'flat insects' (<i>picciṭā</i>), 'orange-dwellers' (<i>kaṣāyavāsika</i>), 'mustard snakes' (<i>sarṣapaka</i>), 'angry beetles' (<i>toṭaka</i>), dung beetles (<i>varcalkiṭa</i>), and 'pot insects' (<i>kauṇḍinya</i>)	in their urine and faeces
5.5	rats	in their semen
5.6	scorpions, wasps, scorpion-fish, ⁵⁶³ crickets, and wing-scorpions	in their stings (<i>śūla</i>)
5.7	spiders	in their saliva, nails, urine, feces, blood, semen and fangs
5.8	bees, hornets and leeches	in the bites of their mouths
5.9	speckle-heads, dish-creepers, hundred-woodys, enemy-liquors, and common mynas	in the bites of their mouths, their fangs, their stings (<i>asi</i>), piles, farts, anuses and feces

⁵⁵⁹ Dalhaṇa on 5.3.5 (Su 1938: 567) cited the otherwise unknown authority Sāvitra on the topic of poisonous snakes (HIML: IA, 377, IB 497, n. 105).

⁵⁶⁰ Perhaps dittography from the previous word, monkey (*vānara*). But it is supported in both Nepalese witnesses, so it must go back to an earlier exemplar.

⁵⁶¹ The scribe of MS Kathmandu KL 699 separated the words पाक and मत्त्य with a danda, indicating that they were separate terms (see 229).

⁵⁶² The scribe of MS Kathmandu NAK 5-333 noted in the margin that some of his sources read गलगोडिका, which is the name of a snake known also in the *Carakasamhitā* and elsewhere in literature (cf. note 247, p. ??).

⁵⁶³ Dalhaṇa on 5.3.5 (Su 1938: 568) remarked that some interpreted वरकिमत्त्य as two items, "stinger and fish," others as a single one, "stinger-fish."

	<i>creatures</i>	<i>location of the poison</i>
5.10	the bones of one killed by poison, and the bones of snakes, fish-bone , and scorpion-fishes	in their bones
5.11	??, ??, ??	have poison in their bile
5.12	??, ??, ??, ??, valabhikas , ??, and bees	have poison in their bristles;
5.13	the lifeless bodies of ??, and ??,	have poison in their corpses;
5.999	continue	continue

Pollution of the environment

- 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.⁵⁶⁴ 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, delusion, fever, swelling and sharp pains.⁵⁶⁵ 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**, and **small-flowered crape myrtle** and **weaver's beam tree**, and with **golden shower tree** and **white cutch tree**.⁵⁶⁶ 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.⁵⁶⁷

564 अस normally means “tears,” but rarely means “blood.”

565 On the polysemy of elephant/snake (*nāga*), see Semeka-Pankratov 1979.

566 Cf. with the recipe at *Sūsrutasamhitā* 5.6.3 (*Su* 1938: 580) for a paste to put on drums etc., p. 219 below.

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

- 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.⁵⁶⁸ **And if there exists another path, he should go by that.**⁵⁶⁹
- 13 When grasses and foods are polluted, people collapse, fall unconscious. And others vomit. They get loose stool or they die.⁵⁷⁰ One should apply to them the therapy as described.
- 14–15 Alternatively, one should smear 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**⁵⁷¹ together with **gold and sarsaparilla**, and a portion of **nutgrass** equal to that, together with the bile called “brown cow”.⁵⁷² 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.⁵⁷³

⁵⁶⁸ Our “alcoholic drinks” translates सुरा. For a discussion of this term at our period see McHugh 2021: 37–39 *et passim*.

⁵⁶⁹ Dalhaṇa 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.”

⁵⁷⁰ In “they get loose stool,” the verb आर्चन्ति (√ऋ), transmitted in both Nepalese manuscripts, has an irregular initial strong vowel. Alternatively, and perhaps more likely, it is a combination of आ+√ऋ, conjugated unusually as a class 6 verb, but with an appropriate sense of “to fall into (misfortune).”

⁵⁷¹ “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, Dalhaṇa 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 Dalhaṇa used is probably a loan-word from Persian (sub *paranda*, *paranda* 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 the study by Dagmar Wujastyk (2013a: 17, *et passim*).

⁵⁷² सुरेन्द्रगोप and कुरुविन्द are both uncertain, see index. Dalhaṇa’s opinion has been followed here, but it seems fair to say that all commentators were guessing.

⁵⁷³ The syntax of this verse is somewhat loose; the vulgate has regularized it, smoothing out the difficulties.

- 17 The smoke and air can be purified by putting into the air: lac, turmeric, Indian aconite, and myrobalan, with Himalayan mayapple, costus, cardamom,⁵⁷⁴ as well as peas, and foxtail millet.

write foot-note: 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.⁵⁷⁵
- 19 Pitiless Fury took a body and burst out of the mouth of furious Brahmā's store of fiery energy.⁵⁷⁶
- 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 (*viśāda*) of the Daityas. Observing that, it was named "poison (*viśa*)" because of its ability to produce a "sinking down."
- 22 After that, the Lord created beings and subsequently made that fury enter into creatures still and moving.

The working of poison

- 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.⁵⁷⁷
- 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.

574

575 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 2009.

576 "Fury" is here anthropomorphised.

577 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.

- 26 Irritated and afflicted by the poison, they leave their natural functions. Poison does not get digested, so it blocks the breaths.⁵⁷⁸
- 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.⁵⁷⁹
- 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,⁵⁸⁰ in the case of corpses 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 admissible 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 MS Kathmandu KL 699 but is not fully legible; the version of the text in MS Kathmandu NAK 5-333 is also incomplete and not fully comprehensible.]⁵⁸¹
- 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.⁵⁸²

⁵⁷⁸ Probably a reference to the five breaths. Dalhaṇa referred to winds (वात), but this does not seem correct since it is a reference to humours rather than breaths.

⁵⁷⁹ The verb पठ् “is declared, read aloud” here could possibly suggest that the author is working within a written, not oral, tradition.

⁵⁸⁰ “Having come upon” translates प्रस्वाप्य, which is hard to interpret unless it is a rare form connected with the sense “to see.”

⁵⁸¹ *Mādhavanidāna*, 69.20–21 (MN₁: 480) has verses that are directly parallel to this section: दर्वीकराणां विषम् आशुधाति सर्वाणि चोषे द्विगुणीभवन्ति ॥ अजीर्णपित्तातपपीडितेषु बालेषु वृद्धेषु बुभुक्षितेषु ॥२० ॥ क्षीणक्षते मोहिनि कुष्ठयुक्ते रूक्षे इबले गर्भवतीषु चापि ॥ शस्त्रक्षते यस्य न रक्तम् एति राज्यो लताभिश् च न संभवन्ति ॥२१ ॥. This passage is the only occurrence in the Ayurvedic text corpus that relates to the Nepalese version of the *Suśrutasamhitā* at this point. This suggests that Mādhavakara (fl. ca. 700, Bengal) knew and used the Nepalese version.

⁵⁸² At this point, MS Kathmandu NAK 5-333 inserts a marginal Indravajrā verse about

- 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 Kathmandu NAK 5-333]
- 35cd & 36cd One designates a person who has diarrhoea of feces looking like soot (*gr̥hadhūma*) with wind,⁵⁸³ 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.⁵⁸⁴

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,⁵⁸⁵ 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. †...
⁵⁸⁶
- 39.2 3.40cd–3.43ab 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,⁵⁸⁷ 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

diseases that afflict immoral women.

583 गृहधूम is not a plant in this context, *pace* MW: 362. See the discussion in note 480, p. 152 above.

584 Ḑalhaṇa 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.

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

586 Material corresponds to SS.1.45.205ab, where it describes how alcohol produces intoxication because it is fine, hot and sharp and travels through the vessels disturbing the senses and the mind and intoxicating the potency.

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

and those who stammer,⁵⁸⁸ 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. The physician should also avoid a person who has fangs that have not fallen out quickly.⁵⁸⁹

⁵⁸⁸ nāśāśāda & plural sakaṇṭhabhaṅgāḥ

⁵⁸⁹ The grammatical verb-form परिकर्जयीत “he should avoid,” opt., 3rd, sg., is unusual. Renou (1940: 10 ff) documented such forms from the *Attareyabrahmāya* 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 दंष्रा does not mean human teeth (दन्त). We therefore prefer to understand this as describing a patient where the fangs of a venomous creature remain in the bite-wound. This requires construing the expression as a *bahuvrīhi* compound: दंष्रा or दंष्र + अनिपातः.

Kalpasthāna 4: Snakes and Envenomation

Introduction

The fourth chapter of the Kalpasthāna of the *Suśrutasamhitā* addresses the topic of snake bites and snake venom. Exceptionally for the Nepalese version of the *Suśrutasamhitā*, 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 toxic shock experienced by a victim of snakebite, and related topics. The taxonomy of snakes is presented in tabular form in Figures 3 and 4.⁵⁹⁰

The *Carakasamhitā* also addressed this topic of snake taxonomy, but only included the first three of the *Suśrutasamhitā*'s five types, namely Darvīkara, Maṇḍalī and Rājimān.⁵⁹¹ These three categories of snakes were framed within a humoral scheme, aggravating wind, bile and phlegm respectively, a scheme that was carried forward into symptoms and therapy.⁵⁹² The *Suśrutasamhitā* did not use this snake–humour parallelism. By contrast, the system of seven pulses or toxic shocks (*vega*) that was central to the *Suśrutasamhitā*'s understanding of envenomation is absent from the *Carakasamhitā*.⁵⁹³

590 On the idea of notational variants in scientific translation, see Elshakry 2008; Sarukkai 2016; Wujastyk 2021: 81–83.

591 6.23.124 ff. (Ca 1941: 577).

592 *Carakasamhitā* 6.23.165–176 (Ca 1941: 579). Note that the *Carakasamhitā* then described symptoms and therapies without reference to the three-humour scheme: 6.23.177–254 (Ca 1941: 579–582).

593 One mention of the term in the *Carakasamhitā* refers to the peak of a tertian fever

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.⁵⁹⁴ There also exists a substantial herpetological literature from colonial India as well as more recent studies of snakes in the context of cultural and religious life.

Chevers (1870) gave a characteristically evidential and gripping nineteenth-century account of death by snakebite in the context of homicide. He discussed the specific species of snake most associated with envenomation and their common geographical distribution. He also provided numerous vivid case histories of envenomation as well as murder and execution by deliberate snakebite.⁵⁹⁵

The properly ophiological literature of the colonial period began in the late nineteenth century with the work of Fayrer, whose publication included striking colour paintings of snakes.⁵⁹⁶ 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 and reproducing Fayrer's illustrations.⁵⁹⁷ Wall (1913: 75–124) provided a useful analysis of the medical effects of snake envenomation in India arranged by the varied symptomatology 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 about the effects of snake-bite (124–126). The *Suśrutasamhitā* too recognized the emotional and somatic effects of fright (see note 612 below). Wall (1921) provided a wealth of detail of the snakes of Sri Lanka, including line drawings.

(6.3.70 (Ca 1941: 404). In other contexts, it had the ordinary-language meaning of a natural “impulse” or “pressure” that should not be suppressed (1.25.40 et passim (Ca 1941: 131–132)).

⁵⁹⁴ HML: IA, 292–294. In addition to the translations mentioned by Meulenbeld (HML: IB, 314–315), a translation of this chapter was included in P. V. Sharma 1999–2001: 3, 35–45. The classic work of Jolly (1951: ¶93) offered a short but accurate overview of Indian toxicology.

⁵⁹⁵ Chevers 1870: 368–386.

⁵⁹⁶ Fayrer 1874, first published in 1872.

⁵⁹⁷ Calling his work a supplement to Fayrer (1874), but also being cited by Fayrer, Ewart 1878 evidently also collected local indigenous knowledge from his “snake-man” (p. 22).

Semeka-Pankratov (1979) traced semiotics of the term *nāga* through Vedic, Pali and Sanskrit literature. Doniger (2015) provided a good survey of snakes as protagonists in religious literature from the *Atharvaveda* through the epics, *Purāṇas* and Buddhist literature. Slouber (2016a: 31–33 *et passim*) discussed the *Suśrutasamhitā*'s *Kalpasthāna* as a precursor and influence on later Tantric traditions of snake-bite interpretation and therapy. In particular, the Tantric *Kriyākālaguṇottara* text that Slouber presented divided snakes into two basic categories, divine and mundane, as the *Suśrutasamhitā* does.⁵⁹⁸ But unlike the *Suśrutasamhitā*, in the *Kriyākālaguṇottara* the chief taxonomic principle for both groups is the four *varṇas*.

A discussion of this chapter specifically in the light of the Nepalese manuscripts was published by Harimoto.⁵⁹⁹ After a close comparative reading of lists of poisonous snakes, Harimoto concluded that, “the Nepalese version is internally consistent while the [vulgata] editions are not.” Harimoto showed how the vulgata editions had been adjusted textually to smooth over inconsistencies, and gave insights into these editorial processes.⁶⁰⁰



Include info
on Hidas
2019

The Seven Stages of Toxic Shock

A prominent feature the *Suśrutasamhitā*'s interpretation of envenomation symptoms is the concept of seven successive stages or pulses (*vega*) of toxic shock after a bite. This is interestingly coordinated with the *Suśrutasamhitā*'s concept of the *kalās*, which are either seven layers of skin that come into existence during embryonic development or seven interstitial tissues that separate the various parts of the body.⁶⁰¹

Contemporary clinical studies of snake envenomation and treatment do not show any awareness of such a seven-stage symptomatology as found in

⁵⁹⁸ Slouber 2016a: 144–145.

⁵⁹⁹ Harimoto 2011: 101–104.

⁶⁰⁰ The two editions that Harimoto noted, Su 1938 and Su 1889, present identical texts.

⁶⁰¹ The system of the कला is described at 4.4.4–20 (Su 1938: 355–357). Cf. *Mahākośa*: 1, 183–184, *Śabdasindhu*: 227–228, Kutumbiah 1962: 6, HIML: 1, 247–248 and notes. This system of dermal and interstitial कला was not known to the *Carakasamhitā* as such; rather, the *Carakasamhitā* mentioned six kinds of skin (त्वच) (4.7.4 (Ca 1941: 337)), with different names and characteristics, a contradiction discussed by the commentator Cakrapāṇidatta (*idem*). It appears in later works such as the fourteenth-century *Śāringadharasamhitā* (1.1.60 (Sāstrī 1931: 15)).

traditional Indian medicine.⁶⁰² Exceptionally, the studies by Barceloux and Özbulat et al., do identify and tabulate three stages of envenomation.⁶⁰³ The symptoms of these three stages are mainly characterized by increasing degrees of edema. This differs from the *Suśrutasamhitā*'s detailed characterization of changes in skin colour etc.⁶⁰⁴

Translation

- 1 Now we shall explain the procedure (*kalpa*) that is required knowledge (*vijnāṇīya*) concerning the venom in those who have been bitten by snakes.⁶⁰⁵
- 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 toxic reactions of poisoning”.⁶⁰⁶

[The Taxonomy of Snakes]

- 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.

⁶⁰² E.g., Ellenhorn 1997; Mehta and Sashindran 2002; Weinstein et al. 2009; Pillay 2013: 1747–1749; WHO 2019: 19; Hamza et al. 2021; A. M. Deshpande et al. 2022.

⁶⁰³ Barceloux 2008: 1017, Table 176.3, and Özbulat et al. 2021: 7, and Table 1, broadly following Barceloux.

⁶⁰⁴ I am grateful to Prof. Jan Gerris (U. Ghent) and Prof. Jan Tytgat (KU Leuven) for assistance in finding relevant toxicological literature.

⁶⁰⁵ The *Sarvāṅgasundarī*, commenting on *Aṣṭāṅgahṛdayasamhitā* 1.16.17 (Ah 1939: 246), glossed कल्प as प्रयोग.

⁶⁰⁶ The expression “toxic reactions” translates वैग, which in other contexts may mean “(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).

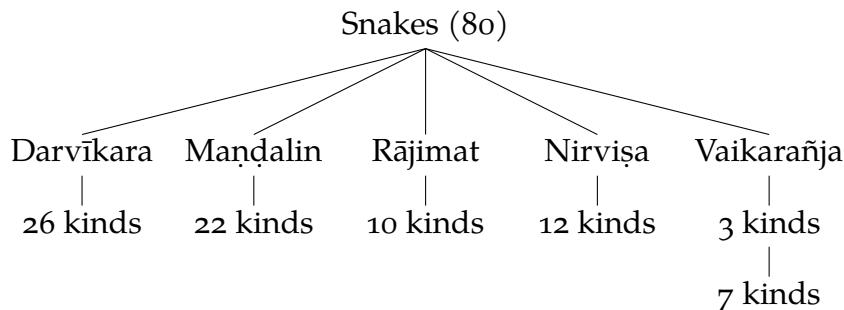


Figure 3: The taxonomy of snakes in the vulgate, 5.4.9–13ab ([Su 1938](#): 571).

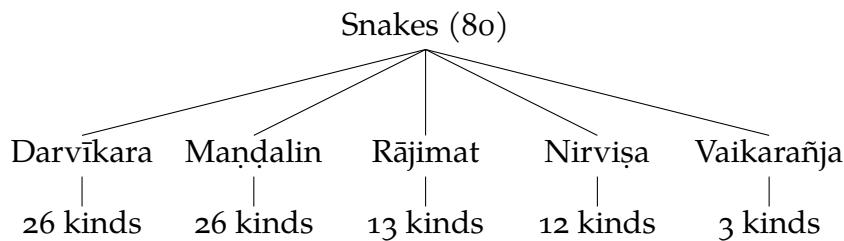


Figure 4: The taxonomy of snakes in the Nepalese version of the *Suśrutasamhitā*.

“The ones that I shall enumerate in due order are those mundane ones with poison in their fangs who bite humans.⁶⁰⁷

- 9cd–10 “There are eighty kinds of snakes and they are divided in five ways: Darvīkaras, Maṇḍalins, Rājīmats, and Nirviṣas. And Vaikarañjas that are traditionally of three kinds.⁶⁰⁸
- 11 “Of those, there are twenty and six hooded snakes, and the same number of Maṇḍalins are known. There are thirteen Rājīmats.⁶⁰⁹
- 12 “There are said to be twelve Nirviṣas and, according to tradition, three Vaikarañjas.

⁶⁰⁷ 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 *Suśrutasamhitā* has greater internal coherence than the vulgate recension.

⁶⁰⁸ Harimoto ([2011](#)) translated these names as “hooded,” “spotted,” “striped,” “harmless,” and “hybrid.” Figure 3 shows the taxonomy described in the vulgate text; Figure 4 shows the different and more logical division of the Nepalese version of the *Suśrutasamhitā*.

⁶⁰⁹ The phrasing of this śloka is awkward.

Or “There are 20 phanins and 6 maṇḍalins. The same number are known. There are 13 Rājīmats.” Or even, “there are 20 Phanins and six of them are Mandalins.” Are phanins really the same as darvikaras?

[Behaviours]

- 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 (*sarpita*), torn (*darita*) and thirdly without venom (*nirviṣa*). Some experts on this want to add “hurt by the snake’s body”.⁶¹⁰
- 15–16 “The physician can recognize the following as “ophidian (*sarpita*)”: Where a rearing snake makes one, two or more puncture-marks of its teeth, when they are deep and without much blood,⁶¹¹ accompanied by a little ring of spots (*cuñcumālaka*),⁶¹² lead to degeneration, and are close together and swollen.
- 17 Where there are streaks with blood, whether it be blue or white, the physician should recognize that to be “torn (*darita*)”, having a small amount of venom.
- 18 The physician can recognize the locations of the bites of a person in a normal state as being free from poison, when the location is not swollen, and there is little corrupted blood.
- 19 The wind of a timid person who has been touched by a snake can get irritated by fear. It causes swelling.⁶¹³ That is “hurt by a snake’s body.”



grammar

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

611 The word उद्भृत् “aroused” was glossed by Ḏalhaṇa at 5.4.15 (*Su* 1938: 571) as उच्चोट्य, a word not found as such in standard dictionaries (*MW*; *KEWA*; *Mahākōśa*; *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 மூடி (*mōṭi*), whose meanings include “arrogance, grandeur, display” (*DED*₂: #5133) or to faintly-documented forms like *motyate* “is twisted” (*CDIAL*: #10186). Ḏalhaṇa’s उच्चोट्य 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 75.

612 The usual dictionary lexeme is चञ्चु, not चुञ्चु as in the Nepalese witnesses. We translate “spots” following Ḏalhaṇa 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.

613 Wall (1913: 69) remarked on the difficulty of separating toxicity symptoms from the psychosomatic effects of terror:

The gravity of symptoms due to fright does not appear to me to be sufficiently recognised, though there is no doubt in my mind that fatal cases from this cause are abundant, especially among the timid natives of this country.

- 20 Locations bitten by sick or frightened snakes are known to have little poison. Similarly, a site bitten by very young or old snakes has little poison.
- 21 Poison does not progress in a place frequented by eagles,⁶¹⁴ gods, holy sages, **spirits**, and saints, or in places full of herbs that destroy poison.⁶¹⁵

[Characteristic Features of Snakes]

- 22 Darvīkara snakes are known to have hoods, to move rapidly, and to have rings, ploughs, umbrellas, crosses, and hooks on them.
- 23 Maṇḍalin snakes are known for being large and slow-moving. They are decorated with many kinds of circles. They are like a flaming fire because of their poisons.
- 24 Rājimat snakes are smooth and traditionally said to be, as it were, mottled with multicoloured streaks across and above.

[Classes of Snake]

- 25 Snakes that are shine like pearls and silver, and that are amber and that shine like gold, and smell sweet are traditionally thought of as being of the Brāhmaṇa caste.
- 26 Warrior snakes, however, are those that look glossy and get very angry. They have the mark of the sun, the moon, the earth, an umbrella and **bitumen**.
- 27 Merchant snakes may traditionally be black, shine like diamond or have a red colour or be grey like pigeons.

Wall went on to give several case studies in which patients experienced syncope or even died as a result of bites from toxicologically harmless creatures.

614 Dalhaṇa on 5.4.21 (Su 1938: 571) identified the सुपर्ण as a गरुड. On the bird called सुपर्ण, Dave (1985: 72 ff, 514) too noted that it may be a synonym for Garuḍa, and in some contexts may refer to the Golden Eagle, Golden Oriole, Lammergeyer, etc. Dave (1985: 199 ff, 492) noted again that the Garuda is a mythical bird but may refer to the Himalayan Golden Eagle and other species of eagle. He pointed out that historically, The original physical basis for गरुड as the नागाशी (snake-eater) was most probably the Sea-Eagle who picks up sea-snakes from the sea or sand-beach and devours them on a nearby tree... (Dave 1985: 201).

Dave continued with interesting reference to Śrīharṣa's *Nāgānanda*.

615 For "spirits" the Nepalese version has भूत while the vulgate reads यक्ष.

- 28 Any snakes that are coloured like a buffalo and a tiger, with rough skin and different colours are known as servants.⁶¹⁶
- 31 All snakes that are variegated (Rājīmats) move about during the first watch of the night. The rest, on the other hand, the Maṇḍalins and the Darvīkaras, are diurnal.⁶¹⁷
- 29 Wind is irritated by all hooded snakes; bile by Maṇḍalins and phlegm by those with many stripes.
- 30 Because of the two classes having greater, lesser or equal class, there is the characteristic of irritating two humours.
And he will explain the opposing view that is to be known as a result of the non-union of a male and female.⁶¹⁸

[Enumeration of Snakes]

- 34.1 In that context, here are the Darvīkaras.
- | | |
|---|--|
| 1. The Black snake (<i>kṛṣṇasarpa</i>); | (<i>parisarpa</i>); |
| 2. The Big Black (<i>mahākṛṣṇa</i>); | 12. The Break Hood
(<i>khaṇḍaphaṇa</i>); |
| 3. The Black Belly (<i>kṛṣṇodara</i>); | 13. The Kūkuṭa (<i>kūkuṭa</i>); |
| 4. The All Black (<i>sarvakṛṣṇa</i>); ⁶¹⁹ | 14. The Lotus (<i>padma</i>); |
| 5. The White Pigeon
(<i>śvetakapota</i>); ⁶²⁰ | 15. The Great Lotus
(<i>mahāpadma</i>); |
| 6. The Rain Cloud (<i>valāhako</i>); | 16. The Grass Flower (<i>apuspa</i>); |
| 7. The Great Snake
(<i>mahāsarpa</i>); | 17. The Curd Mouth
(<i>dadhimukha</i>); |
| 8. The Conch Keeper
(<i>śaṅkhapāla</i>); | 18. The Lotus Mouth
(<i>puṇḍarikamukha</i>); |
| 9. The Red Eye (<i>lohitākṣa</i>); | 19. The Brown Hut Mouth
(<i>babhrūkuṭīmukha</i>); |
| 10. The Gavedhuka (<i>gavedhuka</i>); | |
| 11. The Snake Around | |

⁶¹⁶ Presumably “different” from the earlier-mentioned castes.

The sequence of the following three verses is slightly different from the vulgate (5.4.29–31 (Su 1938: 572)).

⁶¹⁷ The readings of the vulgate, that Rājīmats are active in the early night, the Maṇḍalins in the later night, and Darvīkaras in the day, seem clearer.

⁶¹⁸ The sense of the last phrase here is quite different from the vulgate, which says only that “details” will be explained below.

⁶¹⁹ Not in the vulgate.

⁶²⁰ The vulgate adds The Big Pigeon (*mahākapota*).

- 20. The Variegated (*vicitra*); (*rjusarpa*);
- 21. The Flower Sprinkle Beauty (*puṣpābhikīrṇnābha*);
- 22. The Mountain Snake (*girisarpa*);
- 23. The Straight Snake
- 24. The White Rip (*śvetadara*);
- 25. The Big Head (*mahāśīrsa*); and
- 26. The Hungry Sting (*alagarda*);

34.2 Here are the Maṇḍalins

- 1. The Mirror Ring (*ādarśamaṇḍala*);
- 2. The White Ring (*śvetamaṇḍala*);
- 3. The Red Ring (*raktamaṇḍala*);
- 4. The Speckled (*prṣata*);
- 5. The Gift of God (*devadinna*);
- 6. The Pilindaka (*pilindaka*);
- 7. The Big Cow Snout (*vrddhagonasa*);
- 8. The Jackfruit (*panasaka*);
- 9. The Big Jackfruit (*mahāpanasaka*);
- 10. The Bamboo Leaf (*veṇupatraka*);
- 11. The Kid (*śiśuka*);
- 12. The Intoxicator (*madanaka*);
- 13. The Morning Glory (*pālindaka*);
- 14. The Stretch (*tantuka*);
- 15. The Pale as a Flower (*puṣpapāṇḍu*);
- 16. The Six Part (*sadaṅga*);
- 17. The Flame (*agnika*);
- 18. The Brown (*babhru*);
- 19. The Ochre (*kaṣāya*);
- 20. The Khaluṣa (*khaluṣa*);
- 21. The Pigeon (*pārāvata*);
- 22. The Hand Decoration (*hastābharaṇaka*);
- 23. The Tatra (*tatra*);⁶²¹
- 24. The Mark (*citraka*);
- 25. The Deer Foot (*eṇipada*).⁶²²

34.3 Here are the Rājīmats.⁶²³

- 1. The Lotus (*puṇḍarīka*);
- 2. The Stripe Speckle (*rājicitra*);
- 3. The Finger Stripe (*aṅgulirāji*);
- 4. The Two Finger Stripe (*dvyāṅgulirāji*);
- 5. The Drop Stripe (*bindurāji*);
- 6. The Mud (*kardama*);
- 7. The Grass Drier (*tr̥ṇaśoṣaka*);
- 8. The White Jaw (*svetahanu*);
- 9. The Grass Flower

⁶²¹ This seems implausible, but otherwise the list of Maṇḍalins would be short.

⁶²² The list is short by one item. Perhaps the one of the snakes named in the vulgate, *citramaṇḍala*, *gonasa* or *piṅgala*, should be considered here.

⁶²³ The following list is one item short. The vulgate text, however, has several names that do not appear in the Nepalese Rājīmat list, for example Sarṣapaka and Godhūmaka.

⁶²⁴ Also in the Darvīkara list.

⁶²⁵ Also in the Darvīkara list.

- (*darbhapuspa*);⁶²⁴
 10. The Red Eye (*lohitāksa*);⁶²⁵

11. The Ringed (*cakraka*);
 12. The Worm Eater (*kikkisāda*);

34.4 Here are the Nirviṣas.

1. The Rain Cloud (*valāhako*);⁶²⁶
2. Thei Snake Flag (*ahipatāka*);
3. The White Leaf (*śukapatra*);
4. The Goat Swallower (*ajagara*);
5. The Stimulator (*dīpyaka*);
6. The Ilikinī (*ilikinī*);
7. The Year-Snake (*varṣāhīka*);
8. The Two-day (*dvyāhika*);
9. The Milk Flower (*ksīrikāpuṣpa*);
10. The Flower All (*puṣpasakalī*);
11. The Chariot of Light (*jyotiṛatha*);
12. The Little Tree (*vṛksaka*);

[Breeding and Gender]

varṇa
means “colour” else-
where?

34.5 The Vaikarañjas originate out of contrary unions amongst the three **colours**.⁶²⁷ Thus:

1. The Mākuli (*mākuli*);
2. The Poṭa Throat (*poṭagala*);
3. The Oil Stripe (*snigdharāji*);

Amongst those, the Mākuli (*mākuli*); is born when a male Black Snake mates with a female Cow Snout (*gonasa*), or the reverse. The Poṭa Throat (*poṭagala*) is born when a male Rājila mates with a female Cow Snout (*gonasa*) or the reverse. The Oily Stripe (*snigdharāji*) is born when a male Black Snake mates with a female Rājimat, or the reverse. Their poison is like that of their father, because it is the superior one out of the two; but others say it is like the mother. Thus eighty of these snakes have been described.

35 Amongst them, males have large eyes, tongues and heads.⁶²⁸ Females

626 Also in the Darvīkara list.

627 The word *varṇa* in this chapter normally means “colour” not “class.” (“Class is expressed by “jāti.”) While *krṣṇasarpa* is clearly a colour-type, it is less obvious that *gonasi* is a special colour, and *rājimat* is a group of snakes.

628 The vulgate includes the snake’s mouth in this and the next list.

have small eyes, tongues and heads. Neuters have both characteristics, and are slow to exert themselves or be angry.⁶²⁹

- 36 In that context we shall give instruction in a general way about the sign of having been bitten by any of the snakes.

For what reason?

Because poison acts quickly, like a fire with an oblation, a honed sword, or a thunderbolt.⁶³⁰ And ignored for even a period of time, it can drag the patient away. There is not even an opportunity to follow the literature.⁶³¹

And when the symptom of being bitten is stated, there will be three ways of treating it because there are three kinds of snake. Therefore we shall explain it in three ways. “For this is good for people who are ill, and it removes confusion and in this very case it prevents all symptoms”.⁶³²

[Symptoms of snakebite]

- 37 In this context, the poison of a Darvīkara causes the skin, nails, eyes, mouth, urine, feces, and the bite-mark to be black; there is dryness, the joints hurt and the head feels heavy; the waist, back and neck feel weak; there is yawning, the voice becomes faint, there is gurgling, paralysis, dry throat, cough, wheezing, and hiccups; the wind goes upwards, the patient convulses with sharp pain, black saliva dribbles out, foam appears, the ducts (*srotas*) are blocked and every kind of pain that is due to wind.⁶³³

629 The reading मन्दचेष्टाक्रोधा is an awkward compound; possibly the original reading was मन्दचेष्टः + अक्रोधा and sandhi was applied twice.

630 Perhaps the image suggested by “a fire with an oblation” is that of the Pravargya, in which a large flame rises suddenly from the ritual fire.

631 The idea seems to be that there is no time to consult the verbose āyurvedic teachings. The “extensive meaning of the collection of statements (वाक्समूहार्थविस्तार)” is singled out as one of Āyurveda’s virtues in 5.8.142 (Su 1938: 594). Alternatively, perhaps the patient is unable to understand what the doctor is saying to him.

632 In the next passage, the symptoms of snake poisoning are indeed explained under three headings.

633 Cf. the similar symptoms of snake venom poisoning by the so-called Brahmin warriors of Harmatelia, described by the classical author Diodorus Siculus (fl. ca. 30–60 BCE) (Eggermont 1975: 108).

The poison of a Maṇḍalin causes the skin, nails, eyes, teeth, mouth, urine, feces, bitemark to be yellow; there is a desire for cold, a temperature, giving off fumes,⁶³⁴ a burning feeling, thirst, intoxication, fainting, fever, haemorrhaging (*śonitāgamana*), and the degeneration of the flesh and fat above and below. There is swelling, suppuration of the bite, metamorphopsia (*viparītadarśana*), anger caused by the suffering, and every kind of pain that is due to bile.⁶³⁵

The poison of a Rājīmat causes the skin, nails, eyes, teeth, mouth, urine, feces, and bitemark to be pale; there is a cold fever, the hair stands on end, there is stiffness and swelling of the limbs including the site of the bite. There is a discharge of viscous phlegm, vomiting, itchy eyes, and a rattling sound. The breath is obstructed and there is every kind of pain due to phlegm.

- 38 In that context, “someone bitten by a male gazes upwards, by a female horizontally, and by a neuter, downwards.” One bitten by a pregnant snake has a pale face and becomes swollen (*ādhmāta*). One bitten by a recently-delivered snake is afflicted with abdominal pain and urinates with blood. One bitten by a hungry snake craves food. Those bitten by an old snake have delayed and slow reactions. And one bitten by a young snake is fast and keen. One bitten by a non-venomous snake has the characteristic mark of non-poisoning.⁶³⁶ Some that are bitten by a blind snake become blind. A constrictor (*ajagara*) is deadly because it swallows, not because of poison.

[Toxic reactions]

- 39 In that context, all snake toxins have seven toxic reactions.⁶³⁷

⁶³⁴ The term “giving of fumes (परिधूपायन)” is not in MW: 596 as such, although परिधूपन, परिधूमन and परिधूमायन are cited and referred to the Suśrutasamhitā. “Giving off fumes (परिधूपन)” is listed at Suśrutasamhitā 2.6.13 (Su 1938: 291) amongst the symptoms of urinary disease caused by phlegm. The editors note a variant reading परिधूमायन but do not tell us in which manuscript (Su 1938: 291, n. 3). Dalhaṇa on 2.6.13 (Su 1938: 292) glossed परिधूपन as “hot all over (समन्ततस्तापः)” and in our current passage as “hot over the whole body (सर्वाङ्गसन्तापः)” (Su 1938: 573). See also Mahākośa: 1, 429: धूमायन “अङ्गानं धूमोद्भवनमिव” citing the Suśrutasamhitā.

⁶³⁵ Ghosh et al. (2023) describes visual disturbances due to snake envenomation.

⁶³⁶ The grammar of अविषलिङ्गम् is not quite right; it should be a masculine or plural bahuvrīhi.

⁶³⁷ Cf. the same concept in the context of plants, at 165

[*Darvīkaras*]

Thus, at the first pulse of the *Darvīkaras* the poison corrupts the blood. That corrupted blood turns black. Because of that, blackness and a feeling of ants crawling about on the body develop.⁶³⁸

In the second pulse, it corrupts the flesh. That causes extreme blackness and lumps.

In the third, it corrupts the fat. That causes a discharge at the bite, heaviness of the head and an eclipse of the vision.⁶³⁹

In the fourth, it penetrates the trunk of the body (*koṣṭha*). From there, it irritates the humors, particularly phlegm. That causes exhaustion and oozing phlegm, and dislocation of the joints.

In the fifth pulse, it penetrates the bones. That causes breaking of the joints, hiccups and burning.

In the sixth pulse, it penetrates the marrow. That causes humours in the seat of fire in the gut (*grahaṇī*), heaviness of the limbs, diarrhoea, pain in the heart and fainting.⁶⁴⁰

In the seventh, it penetrates the semen and greatly irritates the *vyāna* breath (*vyāna*), and causes the phlegm (*kapha*) to run imperceptibly out of the tubes (*srotas*). That causes the appearance of mucous (*ślesman*), breaking of the hips, back and shoulders, impediment to all movements and shortness of breath.

[*Mandalins*]

Thus, at the first pulse of the *Mandalins*, the poison corrupts the blood. Corrupted by that, it turns yellow. That causes a yellow appearance and a feeling of heat all over (*paridāha*).

In the second pulse, it corrupts the flesh. And that causes the limbs to be very yellow and an extreme feeling of heat all over (*paridāha*), and swelling at the bite.

In the third, it corrupts the fat. That causes a discharge at the black bite and sweating.

638 Strictly, we would expect a dual verb here, instead of the plural of the witnesses.

639 Dalhana on 5.4.39 (Su 1938: 574) glossed the last expression as “blockage of the vision (दृष्टवरोध).”

640 The “seat of fire in the gut (ग्रहणी)” is an ayurvedic organ in the digestive tract that does not correspond to any specific organ known to contemporary anatomy. For discussion, see *Mahākośa*: v. 1, 304; Meulenbeld 1974b: 619; Das 2003: 544–545.

In the fourth, it penetrates as before and brings on fever.
 In the fifth, it causes heat in all the limbs.
 In the sixth and seventh, it is the same as before.

[*Rājīmats*]

Thus, in the first pulse of the Rājīmats, the poison corrupts the blood. Corrupted by that, it turns yellow. It causes a person to have hair standing on end and a pale appearance.
 In the second pulse, it corrupts the flesh. That causes him to become pale and to become extremely benumbed (*jāḍya*).
 In the third, it corrupts the fat. That causes moistness of the bite and runny eyes and nose.
 In the fourth, it is the same as before. After penetrating, it brings on stiffness of the neck (*manyāstambha*) and heaviness of the head.
 In the fifth, speech is slurred and there is a cold fever.
 In the sixth and seventh, it is the same as before.

[Summary Verses]

40 There are verses on this.

*It is well known that there are seven al layers (kalā) in between the bodily tissues (dhātu). Poison passing through these one by one produces the toxic reaction (vega).*⁶⁴¹

41 *The interval taken by the deadly substance (kālakalpa), propelled (√ūh) by air (samīraṇa), to cut the layers of skin is known as the “pulse interval (vegāntara)”.*⁶⁴²

42 *In the first pulse, an animal has a swollen body, is distressed and broods.*⁶⁴³

641 See note 600 above.

642 Ḑalhaṇa on 5.4.41 (Su 1938: 574) glossed कालकल्प as मृत्युसदृशं विषं “the poison resembles death.”

643 The verb √प्रथै “meditate, be thoughtful, brood” is unexpected here and in the second class, an epic form. Ḑalhaṇa on 5.4.42 (Su 1938: 574) noted that some manuscripts did not include the text about animals from this point on. The fact that these verses are present in the Nepalese witnesses testifies to their antiquity.

In the second, it dribbles somewhat,⁶⁴⁴ the hair stands up on its body, and it has pain ($\sqrt{pīd}$) in the heart.

- 43 *The third stage brings headache and it breaks the ears and necks.⁶⁴⁵ In the fourth, the bewildered creature trembles and gnashing its teeth, it gives up life.*
- 44-45 *Some experts say that elephants have three toxic reactions.⁶⁴⁶ So, at the first toxic reaction, an bird becomes bewildered and is confused from that point on. At the second, the bird is distressed and, crying out, it dies. Some people claim that where birds are concerned, there is really just a single toxic reaction (vega) and that amongst animals like cats and mongooses, poison does not take much effect.⁶⁴⁷*

644 The Nepalese witnesses use लालि-, not लाला-, for "saliva."

645 The scribe of MS H emended the text to read कण्ठग्रीव with the vulgate. Intransitive use of pass. भञ्ज्.

646 On अन्तःस्वेद as "elephant," cf. *Arthaśāstra* 9.1.46 (Kangle 1965: v. 1, 219; Olivelle 2013: 351): हस्तिनो ह्यन्तःस्वेदाः कुष्ठिनो भवन्ति ॥ ४६ ॥.

647 See on this subject: Brunton and Fayerer 1909: 39-40; S. A. Minton and M. R. Minton 1969: 88-89 (references taken from [HIML](#): 1B, 399, n. 124).

Kalpasthāna 5: Therapy for those Bitten by Snakes

Introduction

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.⁶⁴⁸

⁶⁴⁸ [HIML](#): IA, 294–295. In addition to the translations mentioned by Meulenbeld ([HIML](#): IB, 314–315), a translation of this chapter was included in P. V. Sharma 1999–2001: 3, 35–45.

Translation

Passage numbers refer to the canonical numbering of the vulgate edition (Su 1938).

- 1 Now we shall explain the formal procedure (*kalpa*) that is the therapy for someone bitten by a snake.⁶⁴⁹
- 3 For a person bitten on a limb by any snake, one should first of all make a strong binding, at four fingers measure above the bite.⁶⁵⁰
- 4 Poison does not move around into the body if it is prevented by bandages (*ariṣṭā*) or by any other soft items of cloth (*plota*), leather (*carmānta*) or bark.⁶⁵¹
- 5 Where a bandage (*bandha*) is not suitable, one should **raise the bite up** and then cauterize it.⁶⁵² Suction, cutting and cauterizing are recommended in all cases.
- 6 Suction will be good after filling the mouth with **earth** (*pāṁśu*).⁶⁵³ Alternatively, the snake should be bitten **by the person who knows** that they have just been bitten.⁶⁵⁴

649 On कल्प, see note 604.

650 Application of a tourniquet is deprecated by modern establishment medicine, which relies on antivenom medications (e.g., Pillay 2013: 150–151 et passim in the literature). The vulgate introduces the word अरिष्टा at this point. This may be a borrowing from Ci.23.251cd (Ca 1941: 582).

651 It is hard to translate the word अरिष्टा otherwise than “bandage,” as referred to by ब्रीयात् in the previous verse, and apparently similar to items of cloth etc., and called a बन्ध in the next verse. But in general Sanskrit literature, including medical literature, the word (in masc. gender) means either “an alcoholic tonic” or “an omen of death,” (1.30.3 (Su 1938: 137)), or is a plant name. This raises a question mark over its unique meaning in the present context. The *Aṣṭāṅgahṛdayasaṇhitā* (Utt.36.42cd (Ah 1939: 910)) seems to be a gloss on अरिष्टा, saying “An expert in mantras may bind using a braid made of silk etc., empowered with mantras” (see also 5.5.8 (Su 1938: 575)). On problems that can arise from tying a bandage too tightly, see 5.5.56 (Su 1938: 577) below.

652 The vulgate reads उत्कृत्य “having excised” rather than translate उद्धृत्य “having raised up.”

653 The vulgate recommends cloth, not earth (5.5.6 (Su 1938: 574)).

654 The syntax is odd here, and the vulgate has removed the difficulties. Dalhana on 5.5.6 (Su 1938: 574) noted that one should hold the snake firmly and give a good bite to its head and tail (हस्ताभ्यामुपसंगृह्ण पुच्छे वक्रे च सर्पः सम्यग् दष्टव्यः). Our colleague Dr Madhu K. Paramesvaran reports that this procedure is known in Malayalam *viśavāaidya* treatises and is practiced in Kerala, though rarely: “this practice has been described as one of

- 7 Now, one should in no way cauterize someone bitten by a Maṇḍalin. Because of the over-abundance of poison in the bile (*pittavīsa*), that bite will be lethal as a result of cauterization.⁶⁵⁵

The application of mantras

- 8 An expert in mantras should tie on a bandage (*ariṣṭā*) too, with mantras. But they say that a bandage that is tied on with cords and so on causes the poison to be purified.⁶⁵⁶
- 9 Mantrās prescribed by gods and holy sages (*brahmarṣi*), that are imbued with truth and religious power (*tapas*) are inexorable and they rapidly destroy intractable poison.
- 10 Drugs cannot eliminate poison as quickly as the application of mantras imbued with religious power (*tapas*) and imbued with truth, holiness (*brahma*) and religious power.⁶⁵⁷
- 11 The mantras should be received by a person who is abstaining from women, meat and mead (*madhu*), who has a restricted diet, and who is pure and lying on a bed of halfa grass.
- 12 For the mantras to be successful, one should diligently worship the deity (*devatā*) with perfume, garlands, and oblations (*upahāra*), as well as sacrificial offerings (*bali*), and with mantra repetition (*japa*) and rituals.⁶⁵⁸

the first-response cares for snakebite in most of the Malayalam texts of Vishavaidya. I have never seen this happening in real life and my teachers used to consider it to be a method (albeit a bit outrageously dangerous) for self-reassurance by the patient." (Paramesvaran 2023). Cf. the Viṣavaidya text edited by Mahādeva Śāstrī (1958).

655 Verses 5.4.29, and 37 above note that the venom of Maṇḍalins particularly irritates the bile.

656 Ḏalhaṇa on 5.5.8 (Su 1938: 575) clarified that on the one hand the bandage must be accompanied with mantras, but on the other hand, it may also be used without mantras. The verse seems to put two points of view.

657 Ḏalhaṇa on 5.5.10 (Su 1938: 575) noted that mantras like "kurukullā" and "bherunḍā" are explained in other treatises and therefore not explained further in his commentary. These two mantras are the names of tantric Śaiva and Buddhist goddesses. For a study on this specific subject see Slouber (2016b). HIML: IIB, 151, n. 344 provides a bibliography to 2002 of studies on Kurukullā, who is mentioned in Māhuka's *Haramekhalā*, and Meulenbeld 2008a: 30–34 includes discussion of Bherunḍa as a bird, with related terms.

658 Ḏalhaṇa on 5.5.12 (Su 1938: 575) noted that उपहार includes incense, while बलि refers to sacrifice with an animal (सपशुनैवेद्य).

- 13 But mantras pronounced illicitly or that are deficient in accents (*svara*) and letters do not give success. So antitoxic (*agada*) procedures need to be employed.

Blood letting

- 14 A skilled physician should puncture a duct (*sirā*) which is located on the limb (*śākhāśrayā*), and comes from the bite and the general area. If the poison has spread, one on the forehead should be pierced.
- 15 The blood being drawn out draws away all the poison.⁶⁵⁹ Therefore one should cause blood to flow, for that is his very best procedure.
- 16 After incising (*pracchāna*) the area around the bite, one should smear it with antidotes and sprinkle it with water infused with sandalwood and vetiver.⁶⁶⁰

Internal medications

- 17 One should make him drink various antidotes together with milk, honey and ghee. If they are unavailable, the earth of black ants can be good.⁶⁶¹
- 18 Alternatively, he should consume orchid tree, siris and purple calotropis or white siris too. He should not drink sesame oil or horse gram, nor wine or Indian jujube.
- 19 But after drinking any other liquid at all, he should throw up after drinking it. For on the whole, poison is easily removed by means of vomiting.

⁶⁵⁹ The Nepalese version uses a present passive participle construction here, that is less common than the vulgate's locative absolute. The Nepalese version states that it is the blood coming out of the patient that carries away the venom; the vulgate text says merely that the venom emerges while the blood comes out.

⁶⁶⁰ प्रच्छान् is the second of the two methods of blood letting described in the vulgate text of the *Suśrutasamhitā* at 1.14.25 (Su 1938: 64); this verse does not appear in the Nepalese version of the *Suśrutasamhitā*.

⁶⁶¹ This refers to earth taken from an anthill. In South Asia, there is a long tradition of considering such earth to be beneficial and even holy (e.g., Irwin 1982).

Therapies at each pulse of toxic reaction

- 20 In the case of hooded snakes, when there is a toxic reaction (*vega*) first one should let blood. At the second, one should make him drink an antidote (*agada*) together with honey and ghee.⁶⁶²
- 21 At the third one should use errhines and collyrium (*añjana*) that destroy poison.⁶⁶³ At the fourth, when he has vomited, the physician should make him drink a gruel (*yavāgū*) that destroys poison.
- 22 At the fifth and sixth toxic reactions one should make the person drink something that aids cooling, that is cleansing and sharp (*tīkṣṇa*), and a well-regarded gruel too.
- 23 But at the seventh, one should purge (*✓sodh*) his head with a sharp sternutatory.⁶⁶⁴

In the case of Maṇḍalins

- 24 Amongst Maṇḍalins, the earliest toxic reaction (*vega*) should be treated in the same way as with Darvīkaras.⁶⁶⁵
- 25 At the second, one should make him drink ghee and honey and then make him vomit.⁶⁶⁶
- 26 At the third, one should give the purged patient healthy gruel. At the fourth and the fifth too, one should do the same as for the Darvīkara.

⁶⁶² This section reproduces some of the therapies from *Suśrutasan̄hītā* 5.2.40–43 (*Su* 1938: 566) on the stages of slow poisoning (*dūṣṭviṣa*) by plant poisons; see translation on p. 165 above.

⁶⁶³ The rare word नस्तः: “from or into the nose” in नस्तःकर्म “errhine” is supported by both Nepalese manuscripts. The term is more common in the *Carakasaṁhitā*, occurring eleven times, e.g., at 1.20.13 (*Ca* 1941: 114), 2.1.36 (*Ca* 1941: 203), *et passim*.

The *Carakasaṁhitā* describes how collyriums, especially रसाञ्जन, cause phlegm to flow, thus clearing the eyes (1.5.14–19 (*Ca* 1941: 38–39)). This could be appropriate in expelling poisons.

⁶⁶⁴ The vulgate adds a half-verse here recommending the application of a collyrium (*añjana*) to a cut made on the patient’s head.

⁶⁶⁵ The vulgate again adds a half-verse here, recommending the “crow’s foot” incision on the patient’s head. On this procedure, described in *Carakasaṁhitā* 6.23.66–67 (*Ca* 1941: 574), see Wujastyk 2003b: 145. This text is not supported here, as it was not in the Nepalese text at *Suśrutasan̄hītā* 5.2.43 (*Su* 1938: 566) either. See footnote 538, p. 166 above. As stated there, it appears that this procedure was known in the tradition of the *Carakasaṁhitā*, but not in the earliest text of the *Suśrutasan̄hītā*.

⁶⁶⁶ Again, the vulgate text differs substantively, adding another half-verse. But the general idea of the treatment is the similar.

- 27 At the sixth, wholesome things from the group of plants starting with **cottony jujube** should be drunk and a sweet antidote.⁶⁶⁷ And at the seventh, a wholesome antidote that destroys poison in a sternutatory (*avapiḍa*).⁶⁶⁸

In the case of Rājimats

- 28 Now, Amongst Rājimats, one should let blood at the first toxic shock.⁶⁶⁹
- 29 At the second, a patient who has vomited should be made to drink an antidote that destroys poison. At the third, fourth and fifth, the rule that applies to the Darvīkara is suitable.
- 30 At the sixth, use a very sharp collyrium (*añjana*), and at the seventh a sternutatory (*avapiḍa*). There is a prohibition on using blood-letting for pregnant women, children and the elderly.
- 31ab In those who are in pain because of poison, it is advised that the prescribed procedures be applied gently.

31ab In animals

- In goats and sheep, bleeding and collyriums are the same as for people.
- 32cd In cows and horses, that is twice as much; three times as much for buffalos and camels, four times for elephants and simply (*kevala*) for all birds.⁶⁷⁰⁶⁷¹

⁶⁶⁷ The “group of seventeen plants beginning with **cottony jujube**” (काकोल्यादि गण) is described at *Suśrutasamhitā* 1.38.35–36 (*Su* 1938: 167). These plants pacify the bile, blood and wind and increase phlegm, body-weight, semen and breastmilk.

⁶⁶⁸ The अवपीड is described at *Suśrutasamhitā* 4.40.44–45 (*Su* 1938: 556), where it is also recommended for victims of snakebite. It is a type of head-evacuant. Commenting on that passage, Ḑalhaṇa cited “other treatises” as saying that अवपीड treatment was suitable for restoring the consciousness of those who have been poisoned. He also quoted a text by an authority called Videha, that says the same. Videha was an author known to Drḍhabala (according to Cakrapāṇidatta) and often cited in the *Madhukośa* on the topic of eye diseases (HIML: IA, 132 *et passim*). See also *Mahākośa*: 1, 62–63.

⁶⁶⁹ The vulgate text says that the blood-letting should be done with a **gourd**. It also has an extra half-verse here, prescribing an antitoxin to be drunk together with honey and ghee.

⁶⁷⁰ Ḑalhaṇa on 5.5.32 (*Su* 1938: 576) explained “simply for all birds” as meaning that birds should receive just drugs, and not blood-letting or collyriums. See p. 193 for the toxic reactions in birds and other animals.

write note
on par-
isekān pra-
dehāms

Subsequent therapies

- 34 One should consider carefully with one's intellect the location, constitution (*prakṛti*), suitability (*sātmya*), the season, the poison, and the strength or weakness of the toxic reaction and then proceed with therapy.⁶⁷²
- 47–48ab One should eliminate this poison completely. It is extremely hard to overcome. For even a small amount remaining can strongly bring about a toxic reaction.⁶⁷³
- 48cd–49 Or it may lead to dejection, pallor, fever, cough and headaches, dessication, swelling, catarrh, poor vision, disinterest in food (*aruci*) or **rigidity** (*jādyatā*).⁶⁷⁴ And in such cases one should apply the cure **as appropriate**.⁶⁷⁵
- 50–51ab One should also treat the secondary ailments (*upadrava*) of a poisoned patient each as appropriate.
Now, after the bandage (*ariṣṭā*) has been removed and after the place

⁶⁷¹ The vulgate includes several verses after this sentence that give a recipe and also a list of specific items like place and constitution that should be given careful consideration. Dalhana on 5.5.33 (Su 1938: 576) cited the opinions of Gayadāsa and Jejāṭa on this recipe but stated that he preferred to follow the contrasting opinions of Vṛddhavāgbhaṭa (1.25.24cd–25aba (As 1980: 184)) and Suśruta (4.31.29cd–30ab (Su 1938: 511)) on this topic, as well as several citations “another work” (तन्त्रान्तर) that is unidentified.

⁶⁷² The vulgate here has twelve verses not found in the Nepalese version. These verses explicitly switch subject away from assessments according to toxic reactions and to the treatment of both mobile and immobile poisons, starting from physical symptoms such as swelling and discolouration as well as humoral theory. At the point where the vulgate summarizes the extra verses, saying that cases should be treated “according to their humors” (यथादोष), the Nepalese witnesses have “as is appropriate” (यथायोगं, 5.5.49cd (Su 1938: 577)). This suggests that the text has been edited to fit the insertion of the verses referring to humoral therapy. These verses also include therapies such as the crow's foot treatment (see footnotes 538 and 664, pp. 166, 199 above) and the beating of drums that have been smeared with antidotes, as discussed in *Suśrutasaṃhitā* 5.6 (Su 1938: 580–582) (see p. 219 below).

⁶⁷³ The word अवतिष्ठ “remaining” is hard to parse. It cannot be a णमुल् formation (Pāṇini 3.4.22 ff), because of the root's reduplication, and should not be a present participle because it is not neuter. However, lack of gender concord is not unknown in Epic Sanskrit; several of the examples cited by Oberlies (2003: § 10.2.1) even involve present participles without gender concord. Cf. Edgerton 1953: 1, § 6.12 for examples in BHS.

⁶⁷⁴ Dalhana on 5.5.49ab (Su 1938: 577) reported a reading from Jejāṭa of स्तैमित्य “immobility” instead of प्रतिश्याय “catarrh.”

⁶⁷⁵ The vulgate introduces दोष theory here, which is absent in the Nepalese version.

marked by it has been quickly incised (*pracchāna*) one may see poison that has leaked out there, and a toxic reaction may strongly result.

Treatment of secondary ailments

- 52.1 Once the poison has disappeared one can conquer irritated wind using items that restrain the wind.⁶⁷⁶
- 53 One can conquer bile using substances that remove bile-fever (*pittajvara*), with decoctions, oleation and purges, combined with substances that remove poison, with the exception of sesame oil (*taila*), wine, horse gram, and mangosteen.⁶⁷⁷
- 54 One can conquer phlegm with the group that starts with golden shower tree, together with honey.⁶⁷⁸

Formal verses

- 56 If the bandage (*aristā*) is bound tightly, or if it is incised (*pracchita*) with sharp ointment or with the remnants of the poison, then, when the limb swells up, the flesh weeps, smells a great deal and is is putrid (*śīrṇa*), it is designated “poison-stink (*visapūti*).”⁶⁷⁹
- 57–58ab One may be certain that a person has been struck by something poisoned (*digdha*) if their wound immediately starts to suppurate has black blood that flows and is inflamed, as well as having black, weeping and exceptionally foul-smelling flesh coming out of the wound and also someone who has thirst, fainting (*mūrcchā*), fever and a temperature.⁶⁸⁰
- 58.1–60 One who is known to have these exact symptoms may have poison in their wound that is † given by mistake.† And they may have a wound

⁶⁷⁶ This half-verse is not present in the vulgate, but has broadly the same sense as 5.5.52cd (Su 1938: 577), that is not present in the Nepalese version.

⁶⁷⁷ The vulgate reads “fish” in place of “wine.”

⁶⁷⁸ The आरग्वधगण is listed at *Suśrutasamhitā* 1.38.6 (Su 1938: 164). These herbs are there explicitly said to pacify phlegm and to remove poison, etc. (1.38.7 (Su 1938: 164)).

⁶⁷⁹ *Suśrutasamhitā* 5.5.16 (Su 1938: 575) (p. 198 above) suggests smearing an incised area with antidotes.

⁶⁸⁰ The Nepalese witnesses describe someone who has been struck or hurt (क्षत, आहत), while the vulgate describes someone who is pierced (विद्रु). Dalhana on 5.5.58ab (Su 1938: 576) interpreted the latter wording as being struck by a poison-smeared arrow.

that has been hit by something poisoned (*digdha*) and is full of poison. And others are sick because of a wound that stinks because of poison. The wise person debrides the excess flesh of such people and then, after removing the blood by means of leeches and after removing the humours from above and below, he should irrigate with cold bark decoctions from milky trees. And he should apply items that destroy poison such as cloths containing ointments together with cold liquids mixed with ghee.

- 61ab When the bone is injured by poisons, the very same rule should be followed as for bile poison.

Antitoxin drugs

- 61cd–63ab The following items are powdered, mixed with honey and stored in a horn: turpeth, weaver's beam tree, liquorice, the two kinds of turmeric, Indian madder and Himalayan mayapple,⁶⁸¹ and all kinds of salt.⁶⁸² This antidote, taken with drinks, collyrium (*añjana*), oil rubs (*abhyañjana*), errhines and drugs, destroys poison. With its relentless potency (*vīrya*) and as a destroyer of the toxic reaction (*vega*) to poison, it is called "mahāgada (*The Great Antidote*) and has great power.
- 63cd–65ab Very fine embelia, velvet-leaf, the three myrobalans, wild celery, and devil's dung, as well as Himalayan mayapple and the three pungent drugs, the whole group of salts, together with leadwort and honey should be placed in a cow's horn and covered with something made of cow's horn. It should be set aside for two weeks. This antidote is called "Unbeaten" because it conquers both stationary and mobile poisons.
- 65cd–68ab One should make a fine powder of the following items and place them in a horn, together with honey: long-stamen Wendlandia (?), deodar, grey orchid, black creeper, kutki, Himalayan yew, rosha grass, wild Himalayan cherry, Alexandrian laurel, ??, natron, sedge, cardamom, blue Indian symphorema, powdered ruffle lichen, costus, crape jasmine, foxtail millet, lodh tree, Indian bdellium-tree, red ochre, rock salt, long pepper, and dried ginger. This antidote (*agada*) is identified as "Garuḍa

681 There is no मञ्जिष्ठा group, but there is a plant वक्र.

682 There is a लवणवर्ग, (1.46.313–321 (Su 1938: 236–237)).

(*tārkṣya*).” It can even destroy the poison of the snake prince Takṣaka (*takṣaka*).

- 69cd–72ab One should make powder of the following items and place it in a horn: spikenard, peas, the three myrobalans, horseradish tree, Indian madder, liquorice, wild Himalayan cherry, embelia, ??, Indian sarsaparilla, cardamom, cinnamon, costus, Himalayan mayapple, sandalwood, verbena, bitter gourd, white siris, velvet-leaf, colocynth, hare foot uraria, black creeper, Asoka tree, mulberry, toothed-leaf limonia, and the flower that is the blossom (*prasūna*) born from the fruit of the marking-nut.⁶⁸³ The bile derived from boars, monitor lizards, peacocks, and porcupines is to be added, with honey, and the products of civet, chital deer and mongoose.⁶⁸⁴ This properly-prepared antidote is called “Bull.” Someone who has it in the house is called “Bull Amongst Men.” There will be no snakes there, nor even insects: they lose their potency and their toxins too.
- 72cd–73ab Drums and tabors smeared with this rapidly destroy poison when they are sounded. Smeared flags being looked upon easily and quickly overcome poison.
- 73ab–75ab One should make a powder of the following items and place the collection in a cow’s horn, mixed with turmeric, and mingled with honey and ghee. As before, there is a cover: lac, the two peass, spikenard, foxtail millet, Indian madder, liquorice and gummy gardenia. **It should then be used with collyrium (*añjana*), drinks and errhines.** This antidote is called “Resuscitator (*sañjīvana*)” because it brings to life the dead whose breath is almost gone.
- 75cd–76ab The best antidote for the poisons of Darvīkaras and Rājilas is Indian cherry,⁶⁸⁵ bayberry, citron, white clitoria, winged-stem canscora, white siris, and sugar, taken with amaranth.⁶⁸⁶
- 76cd–78ab The best antidote for the poison of Maṇḍalins is grapes, Withania, Indian frankincense, ground white clitoria, combined in equal amounts

⁶⁸³ Ḏalhaṇa on 5.5.70 (*Su 1938*: 579) glossed प्रसून more specifically as तुलसीपुष्प “the Tulasi flower.”

⁶⁸⁴ All three animals produce musk. Ḏalhaṇa on 5.5.71 (*Su 1938*: 579) remarked that some people thought शिखी was a cock, not a peacock. He also here glossed पृष्ठत as चित्तल.

⁶⁸⁵ Ḏalhaṇa on 5.5.75 (*Su 1938*: 579) noted the common name बहवार for श्लेष्मातकी.

⁶⁸⁶ राजिल appears to be a synonym for राजिमत्, a “striped” snake. Ḏalhaṇa on 5.5.76ab (*Su 1938*: 579) once again gives interesting local synonyms for these plant names.

and given with two parts of the leaves of holy basil, and those from wood-apple, Bengal quince and pomegranate, as well as one measure from those of white Indian symphorema sage-leaved alangium seed as well as red ochre.⁶⁸⁷

- 84ab–86 The following group is known as the One Essence (*ekarasa*):⁶⁸⁸ beauty-berry, hibiscus (?), weevil wort, and mango, as well as maloo creeper, Indian pennywort, three-leaved caper, spurge, hogweed, smooth angelica, croton tree, and Indian snakeroot as well; black earth (*bhūmi*),⁶⁸⁹ and bluebell barleria. Whether used separately or in pairs, it removes poison.⁶⁹⁰

687 After this passage, the vulgate has five and a half verses that do not appear in the Nepalese version.

688 The vulgate reads एकसर, “one run.” Dalhaṇa on 5.5.86 (Su 1938: 580) also read एकसर and glossed it as the proper name of a गण.

689 A hapax in this meaning *Mahākośa*: 1, 582. So glossed by Dalhaṇa on 5.5.86 (Su 1938: 580): भूमि: कृष्णमृतिका ||;

690 Das (1983: 55–56) discussed this passage, suggesting that भूमीकुरबक may be a plant-name.

Kalpasthāna 6: Rats and Rabies

Introduction

A notable macro-difference between the vulgate and the Nepalese versions of the *Suśrutasamhitā* is that this chapter and the next are reversed in the vulgate. In the Nepalese version, this is chapter six and the chapter on antitoxic drumming is chapter seven.⁶⁹¹ Jejjāta too read the chapters this way round, as reported by Dalhaṇa.⁶⁹²

Mouse or Rat?

In 2004, Umberto Eco published a characteristically subtle and enlightening book about translation entitled *Mouse or Rat?*.⁶⁹³ The title alluded to Eco's discussion of the example of translating words for mice and rats across several European languages that do not always distinguish these animals from each other, or confuse them in other ways. In Sanskrit too, *mūṣikā*, the subject and title of this chapter, does not distinguish between mouse and rat. The same is true for MIA and NIA derivatives.⁶⁹⁴ It is hard to know quite how to translate the term since "rodent" is too broad a term. In what follows, I have chosen "rat" for *mūṣikā* in order to produce a working translation of a text about an animal that is viewed as potentially toxic and threatening. "Mouse" does not have quite these connotations for a contemporary English speaker.⁶⁹⁵

691 See p. 139 above.

692 Dalhaṇa on 5.6.32 (Su 1938: 582): जेज्जटस्तु मूषिककल्पानन्तरं दुन्दुभिस्वनीयं कल्पं पठति.

693 Eco 2004.

694 CDIAL: #10258.

695 Kunjalal Bhishagratna made the same choice (Kunjalal Bhishagratna 1907–16: 2,728–736).

The rodents that may be described as mice or rats in contemporary South Asia and that are especially associated with the spread of disease include the house or black rat (*Rattus rattus*, L.), the brown rat (*R. norvegicus*, Berkenhout), the house mouse (*Mus musculus*, L.) and bandicoots (*Bandicota*).⁶⁹⁶ Also present in SA are the Indian desert gerbille (*Meriones hurrianae*, Jerdon), the Indian gerbille (*Tatera indica*, Hardwicke), the spiny field mouse (*Mus platythrix*, Bennett), the Indian field mouse (*M. booduga*, Gray), the Metad (*Millardia meltada*, Gray), the Indian bush rat (*Golunda ellioti*, Gray), the longtailed tree mouse (*Vandeleuria oleracea*, Bennett), Royle's vole (*Aticola roylei*, Gray), the Indian mole-rat (*Bandicota bengalensis*, Gray & Hardwicke),⁶⁹⁷ the bandicoot rat (*B. indica*, Bechstein), the shorttailed bandicoot (*Nesokcia indica*, Gray & Hardwicke), the whitetailed wood rat (*Madromys blanfordi*, Thomas), the bay bamboo rat (*Cannomys badius*, Hodgson), and other similar rodents.⁶⁹⁸ However, plausibly matching these creatures to the Sanskrit names listed in this chapter is hard to impossible.⁶⁹⁹ Almost no works engage directly with the representation or identity of rodents in pre-modern India.⁷⁰⁰

Rabies

Passages 43 ff. (p. 216) describe rabies fairly unambiguously, including the symptoms of hydrophobia.⁷⁰¹ As Meulenbeld noted, the idea that the bite-victim displays the behaviours of the creature that bit them is not unique to South Asia.⁷⁰²

A sympathetic description was given in the seventeenth century by Emperor Jahangir, in his *Memoirs* (*Tuzuk-e-Jahangiri*), of the death of two of his elephants resulting from the bites of a mad dog.⁷⁰³

696 BIA: 194.

697 "Recent studies...show that the mole-rat forms 98% of the total rodent population of Calcutta," BIA: 206.

698 BIA: ill. plates 45, 46 *et passim*. See also Menon 2014: *passim*.

699 Mouse-words that we do not see in this chapter include the *kirika*, *giri*, *girikā* group (EWA: 1, 353, 488, 566).

700 One of the few is van der Geer 2008: ch. 3.

701 For a short historical bibliography on rabies, see HML: IB, 400, note 163.

702 HML: IB, 400, note 164.

703 Alvi and Rahman 1968: 132–134; Thackston 1999: 145–146.

Literature

A brief survey of this chapter's contents and reference to the limited existing research on it to 2002 was provided by Meulenbeld.⁷⁰⁴

Chevers provided a characteristically vivid nineteenth-century discussion of injuries inflicted by wild animals, including details of those killed by wolves, tigers, dogs, jackals and other animals, and in his classic survey of the diseases of India, he discussed rabies specifically.⁷⁰⁵ The experiments with cannabis anesthesia conducted by William O'Shaughenessy in Calcutta earlier in the nineteenth century were largely aimed at palliative care for rabies patients, an incurable, lethal disease.⁷⁰⁶

A rich description of Indian rodents is available by Prater, including several useful illustrations.⁷⁰⁷ Unfortunately, Prater rarely provided Indian-language names for the animals he described.

In Sanskrit literature, the *Arthaśāstra* referred to the problem of rats more than once. For example, to rid a country of the threat of rats,

When there is a danger from rats, cats and mongooses should be released. If these are captured or killed, the fine is 12 Paṇas, as also for not keeping dogs confined, except in the case of foresters. He should strew grains smeared with the milk of the Snuhi-plant or mixed with secret compounds. Or, he should institute a rat tax; or thaumaturgic ascetics should perform a pacificatory rite. On the days of the moon's change ..., moreover, he should have rites of rat worship carried out.⁷⁰⁸

⁷⁰⁴ HML: IA, 295–296. In addition to the translations mentioned by Meulenbeld (HML: IB, 314–315), a translation of this chapter was included in P. V. Sharma 1999–2001: 3, 67–77. Sekhar Namburi (2023) omitted mention of this type of poisoning, although he discussed rabies, a subsection of this chapter.

⁷⁰⁵ Chevers 1870: 359–368; 1886: 426–440.

⁷⁰⁶ Wujastyk 2002: 50–55.

⁷⁰⁷ BIA: ch. 13, esp. 205–215.

⁷⁰⁸ Arthaśāstra 4.3.20–26, tr. Olivelle 2013: 230.

Translation

- 1 Now I shall explain the procedure (*kalpa*) relating to rats (*mūṣikā*).⁷⁰⁹
- 3 Learn concisely about aforementioned eighteen kinds of rats that have poison in their semen, according to their names, characteristics and the herbal treatments.⁷¹⁰

The types of rat

- 4–6 The eighteen rats are traditionally called,⁷¹¹

1. Fondling rat,	10. Invincible rat,
2. Sonny rat,	11. Fidgety rat,
3. Black rat,	12. Brown rat,
4. Gajpipul rat,	13. the one called Mole-rat and
5. Little rat,	14. Tawny rat,
6. House shrew	15. the large black rat,
7. Arala rat, ⁷¹²	16. White rat, together with the
8. Red-toothed shrew,	17. the large Brown rat,
9. Bad-marked rat,	18. and the Pigeon rat-like rat. ⁷¹³
- 7 If a part of the body has their sperm fall on it or if they touch it with their nails or teeth, etc., that have been touched by sperm, then the blood is corrupted.⁷¹⁴

⁷⁰⁹ The word मूषिका does not distinguish between rats and mice. See Introduction above.

⁷¹⁰ Rats with poisonous semen were mentioned in 5.3.5 (*Su* 1938: 567) (see p. 172 above).

⁷¹¹ Dalhaṇa on 5.6.4 (*Su* 1938: 582) gave no comment on any of these names. The identifications are mostly guesswork and sometimes whimsical. The glossary gives lexical discussion of individual names.

⁷¹² The word अरल् is a hapax legomenon and has not previously been identified as a lexeme because it did not appear in earlier editions of the *Suśrutasamhitā*. It is a loan-word from Dravidian (see glossary).

⁷¹³ The Nepalese list has वसिर (*Gajpipul rat*) for the vulgate's हंसिर. The terms आखु, मूषिका and उन्द्रुरु are here used as generic names of rat/mouse rodents.

⁷¹⁴ On this, Dalhaṇa on 5.7.7 (*Su* 1938: 582) quoted an authority called Ālambāyana who elaborated on this subject (see HIMAL: IA, 658 for references to this author of a lost treatise on toxicology). Dalhaṇa also cited Ālambāyana elsewhere on the topics of insects and spiders (HIMAL: IB, 722, note 5). See also the *Aṣṭāṅgasarīgraha*'s assertion that Ālambāyana was responsible for the doctrine of toxic pulses (*vega*), p. 157 above. Ālambāyana, who was already known as "the famous soul of compassion" in the *Mahābhārata* (13.18.4), was also known in Buddhist literature. Book 22, tale 543 of



Figure 5: “‘Little ears’ (*karnika*) look like the seed pod in the middle of a lotus — Ḏalhaṇa on 5.7.8 (Su 1938: 582).” Credit: Pexels, CC license.

8–10ab It happens that there are lumps (*granthi*), swellings, small ear-like growths (*karnika*) and rings, accumulations of severe **blisters** (*pīṭaka*), spreading rashes (*visarpa*) and dark, rough patches of skin (*kiṭibha*).⁷¹⁵ There are severe conditions such as pain in the joints, pain, fever, fainting, weakness, loss of appetite, exhaustion, nausea and

the Jātakas includes mention of an Ālambāyana who claimed to be a doctor and specialist in snakebite poisons: *nāham dijādhipo homi, na dīṭho garuḍo mayā, āśīvisena vitto ti vejjo maṇi brāhmaṇaṇi vidū ti* 793 (Fausbøll 1877–96: 6, 181, tr. Cowell et al. 1895–1907: 6, 95). In the same tale, there is a herbal “Ālambāyana mantra” given to an ascetic by a Garuḍa who has just caught and eaten a Nāga, thus invoking the Garuḍa-snake-poison motif (Cowell et al. 1895–1907: 6, 93–94). The Jātakas were translated into Chinese in the third century CE.

See further discussion by Slouber (2016a: 33–34), who calls the mantra “Alampāyana,” adopting the reading of the Burmese MS Bd against the Fausbøll’s critical reading “Ālambāyana” (see Fausbøll 1877–96: 2 & 3, Preliminary remarks 3 and 7).

⁷¹⁵ “Little ears” was strikingly described by Ḏalhaṇa on 5.7.8 (Su 1938: 582) as looking like the seed pod in the middle of a lotus (कमलमध्यबीजकोशाकृतिः), a graphic image (see also Ḏalhaṇa on 5.8.136 (Su 1938: 594)). See Figure 5. Perhaps similar to hypergranulation. The Nepalese version has पिटक “blisters” for the vulgate’s पीटक “boils” (itself perhaps a typo for पिटक). किटिभ “dark rash” was described by Ḏalhaṇa on 1.11.7 (Su 1938: 46) as a kind of कुष्ठ, which is variously a skin disease of pallor, leucoderma, or leprosy (Emmerick 1984). But it was described in the *Carakasamhitā* as being dark and as rough as a callous to the touch (6.7.21cd–22ab (Ca 1941: 451)) (*Mahākośa*: 1, 208).

horripilation.⁷¹⁶

This is a concise description of the appearance of someone who has been bitten. Now listen to a longer version.

Detailed symptoms

- 10cd–11ab The **Fondling rat** causes a flow of saliva, vomiting and hiccups. For that, one should lick a paste of **amaranth** with honey.
- 11cd–12 The **Sonny rat** causes the limbs to droop and creates a pale **beauty**,⁷¹⁷ and the body is heaped with lumps like the young of a rat.⁷¹⁸ One should lick **siris**, **odal oil plant** and **malabathrum** with honey.⁷¹⁹
- 13 The **Black rat** causes one to vomit blood, especially when the weather is bad. One should drink **siris** and **malabathrum**, with **costus** and **cardamom**, with the **flame-of-the-forest** ashes.⁷²⁰
- 14 The **Gajpipul rat** causes a person have a revulsion for food, to yawn, and makes their body-hair **leproous**.⁷²¹ They should drink items like **golden shower tree** and be quickly made to vomit.
- 15 The **Little rat** causes headache, swelling, hiccups and nausea. One should have thorough emesis using decoctions of **luffa**, and he should drink the juice of **sage-leaved alangium**.

⁷¹⁶ पर्वभेद “pain in the joints” was glossed by Dalhaṇa on 5.7.9 (Su 1938: 582) as “spots on the joints” (सन्धे: स्फोटः). This seems unlikely, since symptoms on the surface of the body were described in the previous verse, and also because of the obvious etymological meaning of the compound.

⁷¹⁷ The expression -वलु “beauty” in the Nepalese MSS, for the vulgate’s simpler -वण “complexion,” is unusual.

⁷¹⁸ The grammar here is very loose. शिशुर् cannot stand outside the compound, which should read मूषिकशिसुसंस्थितैः. The vulgate text has the simpler and grammatical आखुशावकसन्निभैः: “resembling the offspring of a rat.”

⁷¹⁹ Dalhaṇa on 5.7.11–12 (Su 1938: 582) here cited a passage by an unknown author called Nāgārjuna, about the visible symptoms of a bite by this kind of rat (cf. P. V. Sharma 1982: 45–46, HIML: IB, 497, note 100) as well as variant readings by Gayadāsa and Jejjīṭa on the exact formulation of the lickable medication.

⁷²⁰ Dalhaṇa on 5.7.13 (Su 1938: 583) explained “with the ashes of **flame-of-the-forest**” as “water with the ashes of **flame-of-the-forest**.”

⁷²¹ The qualifier कुष्टता (रोम्णा) is odd; the vulgate’s हर्षण “horripilation” reads more easily. कुष्ट has a lesser-known meaning “prominent part, mouth or opening” which might perhaps be considered here, though it is hard to see how.

- 16cd–ab The **House shrew** causes constipation, paralysis of the neck, and gasping (*vijrmbhikā*).⁷²² In this case, one should administer a caustic made of **barley ash** and **velvet bean** as well as the two **hairy-fruited eggplants**.⁷²³
- 18cd–19 The **Arala rat** causes stiffness of the neck and pain in the area of the bite. In that case, one should lick The Great Antidote (*mahāgada*), that is of great potency (*vīrya*), together with honey.⁷²⁴
- 19cd–20ab The **Red-toothed shrew** causes sleep and especially emaciation. In that case, one should lick the sap and seeds of **siris** with honey.⁷²⁵
- 20cd–21ab The **Bad-marked rat** causes pains, swelling and lines up to the area of the bite. In that case, one should lick the two kinds of **bluebell barleria**, together with **Indian symphorema** and honey.
- 21cd–22ab The **Invincible rat** causes nauseous fainting, heart-seizure (*hrdgraha*) and blackness of the limbs. In that case, one should lick **Indian madder** mixed with the milky latex of **oleander spurge** and honey.
- 22cd–23ab The **Fidgety rat** causes vomiting and fainting together with thirst. One should drink **the three myrobalans** with wood-ash, **spikenard** and honey.
- 23cd–24ab The **Brown rat** causes a wound, hives (*kotha*), fever, and an out-

⁷²² विजृम्भिका is one of the eighty wind diseases listed in the *Kāśyapasamhitā* and glossed by Hemarājaśarman as “yawning” (Hindī जंभाई, 1.27.19–28 (Hemarājaśarman 1938: 41–42)). However, in the *Carakasamhitā* it is a term for one of the disorders of an improperly treated post-partum umbilical cord (glossed by Ḏalhaṇa as मुहुर्मुहुर्वृद्धिमती “growing larger moment by moment,” 4.8.45 (Ca 1941: 348–349)) and translated by P. Sharma (1994: 1, 480) as “umbilical hernia.” Cf. *Mahākośa*: 1, 756.

⁷²³ Note that half-verses 16cd and 16ab are reversed compared to the vulgate edition. This makes the caustic a remedy for the bite of the **House shrew**, while the earlier **luffa** remedy is for the **Little rat**, which makes better sense.

The vulgate has text at this point, 17 and 18ab, that are not present in the Nepalese version. They are about further symptoms and treatment of stiffness of the neck, anosmia, etc., presumably arising from the bite of the **House shrew**. Ḏalhaṇa on 16cd–17 (Su 1938: 583) recorded different readings from Gayadāsa’s commentary here (see edition notes); it seems these verses became slightly confused at an early period. We would expect symptoms of the bite of the **Arala rat** at this point in the text, and the Great Antidote treatment in the next line would be its therapy.

⁷²⁴ “The great antidote” recipe is described at *Suśrutasamhitā* 5.6.63 (p. 203 above).

⁷²⁵ The difficult expression शिरीषस्य सारमाषकान् probably accounts for the easier version of the vulgate, with its dvandva सारफलत्वचः. Taking सारमाषकान् as a dvandva, we can read माषक as in the compound शिरीषमाषक “siris seeds.”

- break of lumps (*granthi*).⁷²⁶ In this case, **white clitoria** or white **hogweed** should be licked with honey.
- 24cd–25ab The **Mole-rat** is said to cause lumps, fever, and an intense feeling of heat (*dāha*). In that case, one should drink ghee cooked with an decoction (*kvātha*) of **indigo** and **hogweed**.

The last five, from the Tawny rat on

- 25cd–26 The **Tawny rat** causes the wind to be angry, creating illnesses that originate in wind. The **Large Black (rat)** causes bile, the **White rat** phlegm, the **Large Brown rat** causes blood, and the **Pigeon rat** causes all four.⁷²⁷
- 27 In the bites of these ones there are lumps, rings and small ear-like growths (*karṇika*).⁷²⁸ There are accumulations of blisters (*piṭaka*) on the **body**, and severely painful swellings.
- 28–31 A half litre (*prastha*) each of curds, milk and ghee are **measured** out.⁷²⁹ Make a broth of **pongamo** oiltree, **golden shower tree**, the three **pungent drugs**, **hairy-fruited eggplant**, **beggarweed**, and **beggarweed**,⁷³⁰ and once again make that broth into one fourth part. One should add **turpeth**, **viburnum**, **heart-leaved moonseed**, **Himalayan mayapple**, **Indian snakeroot**, **Indian frankincense**,⁷³¹ **wood-apple**, **pomegranate**, and **cinnamon**. Mix all that together

⁷²⁶ कोठ was a skin ailment variously described by authorities as a redness that appeared and disappeared rapidly, that was itchy, that was caused by an excess of salty items, etc. (see *Mahākośa*: 1, 239, HML: IIB, 76, n. 47). It may have referred to conditions such as urticaria, allergy, ringworm or vitiligo. The English word “hives” has a history going back to ca. 1500, referring to various eruptions in the skin that may feel hot (OED: s.v. “**hives (n.)**”).

⁷²⁷ Note the switch to humoral theory with these last five rats in the list, and the assumption of blood as a fourth humour .

⁷²⁸ On **कर्णिका**, see footnote 714.

⁷²⁹ The measure of a प्रस्त्र is approximate and different authors have various estimates.

⁷³⁰ अंशुमती and स्थिरा are both normally identified as beggarweed, but when a pair are mentioned the second is probably **painted uraria**.

⁷³¹ For the vulgate’s reading समृतिका “with earth,” Dalhaṇa on 5.7.29 (Su 1938: 583) specified “black earth” and noted that some people read अहिमृतिका “snake earth” meaning earth taken from anthills, while Jejjāṭa read अगवृत्तिका, meaning शळकी, “**Indian frankincense**” (see also GVDB: 392). Jejjāṭa’s reading is essentially that of the Nepalese MSS, with a म/व alternant, if Trikamji Ācārya’s edition is correct on this.

and cook it over a gentle flame. This gets rid of the poison of the five rats from **Tawny rat** on.

Alternatively, prepare in the juices of **hedge caper** and **black nightshade**.

- 32 Also, you should pierce the affected veins (*sirā*) and apply purifications. As an alternative, one may apply this rule in all cases of rat poisoning.
- 33–34ab One should cauterize the bite, then bleed it and, having made small cuts (*pracchita*), smear it with a paste of **siris**, **turmeric**, **Himalayan mayapple**, **saffron**, and **heart-leaved moonseed**.⁷³² Emesis is with a decoction (*kvāṭha*) of indigo with **parakeet** and **sage-leaved alangium**.⁷³³
- 37–38 When doing a purge, **turpeth**, **red physic nut**, and **the three myrobalans** are recommended; when purging the head, either the juice of **siris** or its fruits. Juice of cow-dung with a lot of **the three pungent drugs** is good in collyrium.⁷³⁴ an electuary of the juice of **wood-apple** and cow-dung, with the two kinds of honey, is recommended.⁷³⁵
- 40 The person should drink ghee cooked in roots of **amaranth**, or either cooked with the roots of **bread flower** or the five products of the **wood-apple**.⁷³⁶
- 41 The poison that comes out of rats is most irritant during cloudy weather.⁷³⁷ And in that case too, the procedure that should be carried out is the one for removing slow-acting poison (*dūṣīviṣā*).
- 42 **The physician should cut (*pra✓chā*) the small ear-like growths (*karnika*) that are hard and slightly painful. And in every single case of poison he should perform the procedure as for a wound.**⁷³⁸

732 The vulgate substitutes कुष्ठ for वक्रा.

733 The vulgate has two and a half more verses at this point, expanding the recipe considerably and adding the appropriate verb, “he should vomit.”

734 The Nepalese MSS appear to read “juice that is cow-dung” (गोमयः स्वरसो) but the vulgate has the grammatically easier, “juice of cow-dung” (गोमयस्वरसो).

735 Verse 5.7.39 (Su 1938: 584) of the vulgate is not present in the Nepalese version.

736 Dalhaṇa on 5.7.40 (Su 1938: 584) glossed the last item as, “a decoction of the pulp of the fruit, roots, flowers, bark and leaves of the wood-apple.”

737 The Nepalese witnesses read निर्हतम् “removed, taken out,” in contrast to the vulgate’s अनिर्हतम् “not removed.” The vulgate refers to rat-poison remaining in a patient, while the Nepalese version is talking more generically about poison that comes from rats.

738 On प्रच्छयेत् “cut off, scarify” cf. the same verb at 4.9.10 (Su 1938: 443), 6.14.10

The bites of wild animals

- 43–44 When a creature such as a dog, a jackal, wolf, tiger or hyena has the poison, the corrupted phlegm which resides in the conduits of consciousness takes away consciousness.⁷³⁹ Then, its tail, jaw and shoulders droop down, it drools, it is deaf to unclear sounds and blind and it charges against one another.⁷⁴⁰
- 45–46ab And there is numbness in the limb of one who has been bitten by such a creature, and the blood runs black.⁷⁴¹
And it is in the main marked by the signs of someone who has been pierced by a poisoned arrow.⁷⁴²
- 46cd The person, repeatedly imitating the movement and cries of the creature that bit him, loses the power of movement and is destroyed.
- 47–48ab If the bitten person sees, in water or in a mirror, the one who was bitten by the creature with fangs, it is an indicator of impending death.
- 48cd–49ab If someone who has not been bitten nevertheless trembles at the sight, touch or sound, that should be known as hydrophobia (*jalatrāsa*), and that too is a sign of impending death.
- 50cd–52ab When one is bitten, one should make that bite flow and then it

(*Su 1938*: 621), and derivatives प्रच्छन्, प्रच्छन्, प्रच्छित्, etc., cited at *Mahākośa*: 1, 523.

The wording of the vulgate text of this verse is quite different, and it introduced the idea of treatment according to the humour.

739 The Nepalese version does not mention wind, unlike the vulgate, but the sentence structure is harder than the vulgate.

740 The grammatical number of “it charges against one another” is odd in Sanskrit too.

741 This translation of the text is tentative and does not account for सुः. The sentence is not clear in the witnesses or later derived versions such as *Aṣṭāṅgahṛdayasaṃhitā* 6.38.10 (*Ah 1939*: 921). Taking सुः as “numbness” is not comfortable, though the vulgate seems to have taken this sense, reading सुस्ता (that दलहाना glosses as बाधिर्यम्).

The vulgate version is a full śloka, rather than the Nepalese half-śloka, and translates as, “But there is numbness at the bite of the one bitten by such a mad, fanged, poisonous creature, and black blood overflows” (5.7.45 (*Su 1938*: 584)).

The main interpreters state that it is the limb or the location of the bite that becomes numb, not that the person loses consciousness. It is tempting to think that a more original text might have been referring to the victim losing consciousness. Srikantha Murthy (1991: 3, 375) took this view (against the commentator Aruṇadatta): “... the person gets into stupor”

742 अभिलक्षित “marked by” is not a common word and is perhaps a hapax legomenon. The vulgate has the simpler expression उपलक्षित.

should be cauterized (*paridāhita*) with ghee. One should anoint it with antidotes and one should also make the patient drink aged ghee. One should also quickly give them an evacuative mixed with the latex of purple calotropis. One should also give them white clitoria and hogweed, together with datura.⁷⁴³

- 5.7.60–60.1 He should be made to bathe on the bank of a river or at a cross-roads, accompanied with mantras, with pots full of seeds, jewels and medicinal herbs, filled with cold water.
- 5.7.61–62ab O Yakṣa, Ruler of Mad Dogs, Lord of the Pack of Dogs, make this dog affliction free from poison, quickly, Svāhā!
- 5.7.62cd One should provide an intense evacuation (*samśodhana*) for the person who has been bathed.
- 5.7.63 That poison flares up again in a person who has not been evacuated, even though the wound may have healed.
- 5.7.63.1 Whether asleep or awake, a healthy person who is frightened does not succeed. And a mortal who is afraid of water as well as one who gets inflamed when bitten.⁷⁴⁴

Thus the Kalpa 6.

743 At this point, the vulgate has seven and a half verses (5.7.52cd–59) that are not present in the Nepalese version. They describe a recipe that causes or aggravates the same symptoms as the bite of the animal. The interesting theory is presented that the patient will only survive if the poison is assisted in expressing its inflammatory symptoms fully (कृष्टेत्वयं विषं यस्य न स जीवति मानवः । तस्मात्प्रकोपयेदाशु स्वयं यावत्प्रकृष्टिः ॥ (5.7.58cd–59ab (Su 1938: 585)).

744 The sense of this verse, which does not appear in the vulgate, is uncertain.

Kalpasthāna 7: Beating Drums

Introduction

This chapter is numbered 7 in the Nepalese version, but 6 in the vulgate.

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.⁷⁴⁵

Translation

- 1 Now I shall explain the procedure (*kalpa*) on the topic of sounding the kettle drum (*dundubhi*).⁷⁴⁶
- 3 One should take the ash of the following items, mix it with cows' urine and an caustic (*kṣāra*) compound, take an extract and cook it thoroughly: axlewood, garjan oil tree, sandan, neem, weaver's beam tree, corky coral tree,⁷⁴⁷ cluster fig, emetic nut, arjun, white dammer tree, white siris (?), Indian cherry, sage-leaved alangium, Tellicherry bark, shami tree, wood-apple, maloo creeper, purple calotropis, Indian elm, oleander spurge, tree of heaven, liquorice, horseradish tree, teak,

⁷⁴⁵ [HIML](#): IA, 295. In addition to the translations mentioned by Meulenbeld ([HIML](#): IB, 314–315), a translation of this chapter was included in P. V. Sharma 1999–2001: 3, 61–66.

⁷⁴⁶ This title suggests that the chapter may once have begun with the words “the drums are to be sounded” or at least that this is the subject of the chapter (Pāṇini 4.3.87).

On the translation “kettle drum” see Hopkins 1889: 318; Rossi 2014.

⁷⁴⁷ The ingredients to this point are similar to the water-detoxifier described in *Suśrutasaṃhitā* 5.3.9 ([Su](#) 1938: 568), p. 173 above.

prickly-leaved elephant's foot, Himalayan birch,⁷⁴⁸ viburnum, marsh barbel, woody-fruited jujube, and white-bark acacia.

One should add to this the powder of the following items, together with an equal quantity of metals: long pepper, long pepper root, amaranth, cinnamon, smooth angelica, Indian madder, pongame oiltree, gajipipul, embelia, soot, Indian symphorema, soma,⁷⁴⁹ chir pine, saffron, halfa grass, mango, Indian mustard, three-leaved caper, Indian laurel, itchytree, castor-oil tree, Indian willow, purging nut, blackboard tree, Indian trumpet tree, cherry, croton tree,⁷⁵⁰ Indian aconite, deodar, black pepper, costus, and sweet flag.⁷⁵¹ Once it has been brought to the boil with the alkali, one should take it down and place it in a iron pot.⁷⁵²

- 4 One should smear this onto a drum as well as onto flags and carpets.⁷⁵³
One is released from all poisons as a result of seeing and hearing these.⁷⁵⁴
- 5–6 This is called “The Caustic Antidote (*ksārāgada*)”.⁷⁵⁵ It should be given

⁷⁴⁸ Note the unanimous Nepalese MS reading भूज, the Middle Indo-Aryan form of Sanskrit भूर्ज (CDIAL: #9570).

⁷⁴⁹ The literature on the identification of Soma is large and continuing (Wujastyk 2003b: 76–78, 125–131; Clark 2017). To the cited literature, the useful historical discussion by T. B. Singh and Chunekar (GVDB: 449–455) gave special attention to the āyurvedic literature. Its presence in this recipe may add special value or power to the resulting compound.

⁷⁵⁰ Ḑalhaṇa on 5.6.3 (Su 1938: 580) glossed नागदन्ती as a type of इन्द्रवारुणी (cocolynth), but he noted that Jejāṭa had thought it was दन्ती (red physic nut).

⁷⁵¹ Ḑalhaṇa on 5.6.3 (Su 1938: 580) noted that Gayadāsa omitted several of the above ingredients, keeping thirty.

⁷⁵² Ḑalhaṇa on 5.6.3 (Su 1938: 580) explained that the above substances, from pepper onwards, should be placed in liquid alkali and then cooked until they are neither too runny nor too viscous (a phrase he copied from 1.11.11 (Su 1938: 47)). The preparation of पाक is particularly common in the *Suśrutasamhitā* and the *Aṣṭāṅgahṛdayasamhitā*. Cf. the very similar ingredients and procedure in the chapter on alkali preparations, *Suśrutasamhitā* 1.11.11 (Su 1938: 46–47), p. 35 above.

⁷⁵³ The vulgate has तोरण “gateways” instead of आस्तरण “carpets.” On the meaning of the latter term, see Bailey 1970: 31, 33 *et passim* and the remarks of Rotman (2008: 1, 390–391, note 171). I am grateful to Michael Willis who has drawn my attention to similar practices described in Tibetan Buddhist literature, some of which may preserve material from before the fifth century CE (Gongkatsang and Willis 2018).

⁷⁵⁴ The vulgate adds “and touching” 5.6.4 (Su 1938: 580). Note the ditransitive (द्विकर्मक) -मुच्यते; cf. *Meghadūta*, *uttaramegha* 33 (Kale 1947: 99, 120).

⁷⁵⁵ Cf. 4.23.95–104 (Ca 1941: 575–576).

in cases of small urinary stones (*śarkarā*), urinary stones (*aśmarī*),⁷⁵⁶ hemorrhoids, wind-swelling (*vātagulma*), cough, abdominal gripes (*śūla*) and swollen belly (*udara*). It should be given for indigestion, humours of the abdomen (*grahaṇīdoṣa*),⁷⁵⁷ and severe aversion to food (*bhaktadveṣa*),⁷⁵⁸ in swelling, mouth ulcer (*sarvasara*),⁷⁵⁹ and persistent asthma (*śvāsa*).

- 7 This is to be employed in all cases where someone is suffering as a result of any poison. Thus, it is the antidote that is the Snakes' Controlling Hook (*sarpāñkuśa*) even for the snakes led by Takṣaka.^{760,761}
- 12–13 Grind **prickly chaff-flower** seeds and the beans of **siris**, the two **white clitorias** and **black nightshade** with cows' urine.⁷⁶² A ghee mixed with these is the most effective means of soothing poison. It is famous under the name "Immortal (Amṛta)." It can revive even the dead.
- 14–23 Collect together the following requisites:

⁷⁵⁶ अस्मरी and शर्करा are described in *Suśrutasaṃhitā* 2.3 (Su 1938: 276–280), the latter being smaller and more easily expelled (2.3.13cd–14 (Su 1938: 279); cf. *Mahākośa*: 1, 67–68, 808–809). The commentators Cakrapānidatta and Ḏalhaṇa discussed the lack of a firm distinction between these categories.

⁷⁵⁷ On the organ called ग्रहणी, see the useful summary by Ramachandra Rao and Sudarshan (1985–2005: 2, 20–21, 96 *et passim*).

⁷⁵⁸ A sign of impending death according to *Suśrutasaṃhitā* 1.32.4 (Su 1938: 142).

⁷⁵⁹ See *Mahākośa*: 1, 888 and *Suśrutasaṃhitā* 2.16.65–66 (Su 1938: 336) and 4.23.3 (Su 1938).

⁷⁶⁰ तक्षक is an ancient name for a Nāga, mentioned in the *Kauśikasūtra* (28.1 *et passim*, Bloomfield 1890: 78). Takṣaka is mentioned briefly in the *Rāmāyaṇa* (Pollock 1991: 292, n. 13) and more in later works. See further, Slouber 2016a: 22, 26, 37, *et passim*. The *Kriyākālottaratatantra*, edited by Slouber, contains a similar sentence (7.26cd, p. 232): "Even someone bitten by Takṣaka will be rapidly cured of poison."

⁷⁶¹ There follow four verses in the vulgate, 8–11, that are not present in the Nepalese version. These list ingredients that form a ghee called The Salutary (*kalyāṇaka*). This ghee recipe with the same name is also present in the *Uttaratatantra* at 6.39.229–232 (Su 1938: 689), where it is a treatment for mostly similar ailments: chronic fever, asthma, cough, swelling, madness and a toxic potion (*gara*) (defined at 5.8.24cd–25ab (Su 1938: 587) as something manufactured, कृत्रिम). However, in the Nepalese version at 6.39.232, the vulgate statement of this name "एतत्कल्याणकं नाम सर्पिमाङ्गल्यमुत्तमम्" is not present. Thus, in the Nepalese version, The Salutary (*kalyāṇaka*) is not named. The same named ghee also appears in the *Carakasaṃhitā* at 6.9.35–42ab (Ca 1941: 471), where it is presented as a treatment for madness (*unmāda*) as well as many other ailments including those mentioned above in the *Suśrutasaṃhitā* (excluding swelling); it is possible that this is a case where a text from the *Carakasaṃhitā* was added to the *Suśrutasaṃhitā* after the Nepalese version.

⁷⁶² On the BHS form पीषयेत्, see Edgerton 1953: 2, 346, Edgerton 1953: 1, §28.4, p. 220.

sandalwood, agarwood, costus, crape jasmine, wild spider flower, long-stamen *Wendlandia* (?), spikenard, chir pine, deodar, white sandalwood, plants like asthma plant and Gulf sandmat, verbena, indigo, Indian sarsaparilla, woody turmeric, wild Himalayan cherry, liquorice, **thorny (*sanakha*)** spikenard, Alexandrian laurel, cardamom, cherry, red ochre, rosha grass, scented pavonia, resin of white dammer tree, spikenard, Indian dill, peas, scramberry, cardamom, foxtail millet, sedge, sesame flowers, powdered ruffle lichen, malabathrum, black sarsaparilla, the three pungent drugs, camphor, white teak, kutki, purple fleabane, Indian aconite, gummy gardenia, colocynth, vetiver and lemon grass (?), three-leaved caper, coriander, sweet hoof, cinnamon, smooth angelica,⁷⁶³ scutch grass,⁷⁶⁴ chebulic myrobalan , the two types of clitoria, the two types of turmeric, Himalayan yew, lac, and the salts,⁷⁶⁵ white water-lily, blue water-lily, sacred lotus flowers, pale Java tea and the flowers of champak, Asoka tree, royal jasmine, long-stamen *Wendlandia* (?),⁷⁶⁶ weaver's beam tree, silk-cotton tree, Indian cherry, siris, toothed-leaf limonia, Arabian jasmine, Indian symphorema, axlewood, garjan oil tree, and sandan.

Collect these ingredients and then have a fine powder made out of them and place that in a horn together with cow's bile, honey and ghee.

- 24 This foremost antidote can rescue a man, with hunched shoulders and **rolling** eyes, from within the jaws of death.
- 25 This antidote can even destroy the irresistible, fire-like poison of Vāsuki, the lord of all the snakes, who is angry, and infinitely ardent.⁷⁶⁷

⁷⁶³ The plant is usually called चोरक, literally “thief.” The Nepalese text here uses the unusual expression तस्करसाह “called the same as ‘thief’.”

⁷⁶⁴ The preceding three plants are in a half-verse that appears in the Nepalese version of the *Suśrutasaṃhitā* but not in the vulgate. It is notable that चोरक (syn. तस्कर) is distributed across Afghanistan, Himalaya and western Tibet. ग्रन्थिला (more commonly ग्रन्थिल, n.) is mentioned in the version of this Mahāsugandha recipe in the *Aṣṭāṅgasaingraha*, Utt.47.69a (As 1980: 899) (but not in the *Aṣṭāṅgahṛdayasaṃhitā*), suggesting that the *Aṣṭāṅgasaingraha* at this point had access to sources similar to the Nepalese witnesses.

⁷⁶⁵ Ḑalhaṇa specified “the five salts” (Ḍalhaṇa on 5.6.19 (Su 1938: 581)).

⁷⁶⁶ The Nepalese witnesses unanimously read तिलक not the vulgate's तिल्वक. Both plants have fragrant flowers.

⁷⁶⁷ This Nepalese MSS unanimously read सर्वनागपति “the progress of all the snakes” for the vulgate's विषं नागपति “the poison of the king of snakes.” We emend to सर्वनागपति “the lord of all the snakes.”

- 26 Out of all the royal antidotes, this one, called The Great Perfume (*Mahāsugandha*), assembled out of eighty-five components, should always be in the king's hand.
- 27 A king anointed **with this** will become beloved of all the people. He becomes resplendent even when surrounded by his enemies.
- 28 For those afflicted by poison, the expert should apply a therapy that avoids heat. The exception is insect poison, because coldness makes that grow.⁷⁶⁸
- 31 Someone suffering from poison should avoid sleeping during the day, sexual intercourse, exercise, anger, the heat of the sun, wine (*surā*), **sesame** and **horse gram**.⁷⁶⁹
- 32 A physician can recognize that a person is free of poison if their humours are calm, if their tissues (*dhātu*) are in a normal state, if they have an appetite, if their urine and feces are regular (*sama*), and if **the movement of their senses and mind is calm**.⁷⁷⁰

768 Verses 29 and 30 of the vulgate, giving dietary advice, are not present in the Nepalese version.

769 Dalhana on 5.6.31 (Su 1938: 581) took the “and” in this sentence to mean the inclusion of a list of additional avoidances, from **long pepper** to **river dolphins** and **tortoises**.

770 This verse is much clearer in the Nepalese version. The vulgate seems to have acquired corrupted readings before the time of Dalhana.

Kalpasthāna 8: Poisonous insects

Introduction

This is the last chapter of the *Kalpasthāna*. Since the chapter-colophons of the Nepalese manuscripts of the whole *Suśrutasamhitā* commonly end with the statement, “here ends the *Suśrutasamhitā* together with the *Uttaratana*,” we can presume that an older version of the *Suśrutasamhitā*, sans *Uttaratana*, ended with the present chapter. Added to this, the beginning of the next section of the work, the *Uttaratana*, reads,

It being declared in the preceding 120 chapters, from here on, in
the latter section, I shall explain the meanings in detail, fully.⁷⁷¹
Now, I shall explain the treatise called “the latter” where dis-
eases in their diversity are fully revealed.

It is often the case with evolving works that new chapters are added at the start or, especially, at the end of a work. This has been true since the *Rgveda*. The *Kalpasthāna* has a different character from the rest of the *Suśrutasamhitā*, for example eschewing theoretical considerations in many situations. It may therefore itself have once been an addition to an even earlier medical work consisting of four main divisions.

Insect names

It is more than usually difficult to equate the Sanskrit names of insects with contemporary creatures. In fact, it is mostly impossible. This is partly, at least, because historical entomology is non-existent as a discipline. Furthermore, entomology as a science in South Asia is dramatically

⁷⁷¹ Note that this is not the reading of the vulgate, which says that the *Uttaratana* will explain everything that was *not* completely explained before.

undeveloped when compared, for example, with botany.⁷⁷² There are few general surveys of insects in India and virtually none that record historical names or literary references. In the twelfth century, Ḏalhaṇa made the following remark about the commentators who lived before his time:

These different types of insects are not described by commentators like Suvīra, Nandin, Varāha, Jejjīṭa and Gayadāsa, so they have to be identified by people from different localities.⁷⁷³

Thus, even pre-modern Sanskrit authors were not expert regarding the identities of the insects discussed in the *Suśrutasaṃhitā*.⁷⁷⁴

In general the names listed in passages 5–14 are the least recognizable. Most seem never to appear elsewhere in Sanskrit literature or even elsewhere in the *Suśrutasaṃhitā*. The names mentioned from passages 25 onwards are mostly recognizable and do appear elsewhere Sanskrit literature.⁷⁷⁵ This chapter therefore gives the appearance of having two distinct parts. First, there is a taxonomy arranged according to humoral characteristics, containing otherwise unknown insect names. Second follows a concatenated treatise with more recognizable ordinary-language nomenclature coupled with creature-by-creature nosology and therapy.

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.⁷⁷⁶

The early history of entomology in India was fragmented until the study of Maxwell-Lefroy (1909) who provided a comprehensive and well illustrated reference compendium. Dover (1922) gave an overview of the early years of the field, though he admitted that, “I have not the linguistic attainments to discuss the mention of various insects in ancient Sanskrit

⁷⁷² Desmond (1992) devoted a book of 368 pages to the early history of Indian botany; Dover (1922: 338–345) described the history of Indian entomology in seven pages.

⁷⁷³ Ḏalhaṇa on 5.8.4 (Su 1938: 586): एते कीटकभेदा नानादेशीयलोकादवगन्तव्याः, यतः सुवीरनन्दिवराहजेज्जटगयदासादिभिः टीकाकारैर्न व्याख्याताः. (Varāha is called Vārāha by Ḏalhaṇa on 2.13.3 (Su 1938: 318).) Cf. Meulenbeld (HIML: IA, 387–388) on Suvīra and *mutatis mutandis* on the other commentators

⁷⁷⁴ MW includes 191 insect names, almost none of which are identified.

⁷⁷⁵ E.g., T. R. Mitra 2005.

⁷⁷⁶ HIML: IA, 296–299.

works." Entomological studies focussed on south India include those of Baingrigge Fletcher (1914) and Ramakrishna Ayyar (1963). Meulenbeld (HIML: IB, 402) provided short bibliographies on Indian scorpions (note 214) and on spiders (note 222). Some insects were included by Ball (1888) in his study of the Indian flora and fauna known to classical Greek authors. Kaur and L. Singh (2018) provided a unique but very brief historical sketch of some arthropod references in Sanskrit literature.

Translation

1 And now I shall explain the procedure (*kalpa*) about insects.

Taxonomy of insects

- 3 Insects originate from snakes' semen, feces, urine, the rot of corpses, and eggs.⁷⁷⁷ Their characters are traditionally divided into three: wind, fire, and water.
- 4 Yet others hold the opinion that they are connected with the characters of all of the humours. And those insects are also very fierce and all of them are divided into four groups.⁷⁷⁸

The wind group

- | | | |
|-----|--|---|
| 5–6 | 1. Tick-navel,
2. Beaked,
3. Horned, and
4. Hundred-kulimbhakas,
5. Cricket,
6. ??,
7. Little-voice,
8. Vicingas, and
9. Lentil insects. | 10. Revolver, and
11. Sheep-insect,
12. Myna-face, and
13. Legume-insect,
14. Hundred-creeper,
15. Stripy,
16. Spotted,
17. Speckle-head. ⁷⁷⁹ |
|-----|--|---|

7cd–8ab These eighteen insects, being of airy character, irritate the wind. The diseases of people bitten by one of these are caused by wind.

The fire group

8cd–11ab

⁷⁷⁷ P. V. Sharma (1999–2001: 3, 78) omitted “snakes’” making it sound as if insects are just born of any semen, etc.

⁷⁷⁸ The insects named in the following lists are all unidentifiable at the present time. The English translations are based mostly on the etymologies of the Sanskrit names. Future ethno-linguistic studies of insect-names in South Asia may solve some cases.

⁷⁷⁹ The list is deficient in the Nepalese version. The vulgate text has another half-verse here listing two more names, शतबाहु “hundred-arm” and रक्तराजि “red-stripe.” It does not include the Nepalese version’s अल्पवाच “little voice.”

- | | |
|--|--|
| <ol style="list-style-type: none"> 1. Pitcher-like, 2. Hornet, 3. Celestial, and 4. Warding off, 5. Wing-scorpion, 6. Noseless, 7. Devout, 8. Droplet, 9. Bee, 10. Outsider. 11. Picciṭās, 12. Pot-turd, 13. Maggot, 14. Enemy-liquor, | <ol style="list-style-type: none"> 15. Lotus-insect, 16. Drummer, 17. Mosquito, 18. Centipede, 19. Five-venom, 20. Cook-fish insect, 21. Black-beak, 22. She-ass insect. |
| | <p>These are the insects, as well as the</p> |
| | <ol style="list-style-type: none"> 23. Worm-dish, 24. Slimy. |

11cd–12ab These are the twenty-four insects that have the character of fire. The diseases of people bitten by one of these are caused by bile.

The phlegm group

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. Wasp, 2. Five-white, 3. Five-black, 4. Kokila-insect, 5. Šairyaka-insect, 6. Pravalāka, 7. Bhaṭābha, | <ol style="list-style-type: none"> 8. Kiṭibha, 9. Aṭakī, 10. Needle-mouth, 11. Black monitor lizard, 12. Kuṣṭa-insect, 13. Red-dweller, |
|---|---|

These are the thirteen watery (*saumya*) insects that irritate the phlegm. The diseases of people bitten by one of these are caused by phlegm.

The three humours group

- | | |
|--|--|
| <ol style="list-style-type: none"> 1. Tuṅgīnāśa, 2. Valabhika, 3. Tolaka, 4. Nāhana, 5. Koṇṭāgīrī, 6. Krimikara, | <ol style="list-style-type: none"> 7. Maṇḍalapuṣpaka, 8. Tuṇḍavakra, 9. Sarṣapaka, 10. Spoṭaka, 11. Šambuka, 12. Fiery insect, |
|--|--|

- 17ab The fire insects are terrible. There are twelve, born of the three humours.

Symptoms

- 17cd For someone bitten by one of these, the information about the stages of toxic shock (*vega*) is the same as with snakes.⁷⁸⁰
- 20–21 The following are found in the area of a bite, or in a body overflowing (*ākula*) with poison: an eruption of blisters, swelling, lumps and circles, ringworm (*dardru*),⁷⁸¹ small ear-like growths (*karṇikā*), spreading rashes (*visarpa*), and dark, rough patches of skin (*kitibha*).⁷⁸²

Taxonomy according to symptoms and prognosis

- 25cd From here onwards he will explain each individual class of insects separately.⁷⁸³

Hornets

- 26 These four hornets (*kaṇabha*) that cause sharp pain are described in general terms according to the symptoms of the person bitten, and according to whether they are treatable or non-treatable.⁷⁸⁴

⁷⁸⁰ Two verses appear at this point in the vulgate that are not in the Nepalese version. They introduce a categorization of insect poisons into severe versus mild, a scheme that the Nepalese version does not reference.

⁷⁸¹ More usually दर्दु, a skin disease like कृष्ण, i.e., leprosy or vitiligo, caused by an excess of bile and phlegm (*Mahākośa*: 390), although the form दर्दु is mentioned in the *Uṇādisūtra* commentary by Śvetavanavāsin (fl. tenth to fifteenth century), “दर्दुः कृष्णभेदः” (I.88). Translated here as “ringworm” because that is prominent amongst the NIA usages of the lexeme and derivatives (CDIAL: 1, #6142).

⁷⁸² These symptoms are the same as those listed at 5.7.8 (*Su 1938*: 582) as being caused by rat poisoning, and similar to the list at 1.11.7 (*Su 1938*: 46). See footnote 714, p. 211. Again, the vulgate has three and a half added verses. They describe how to recognize severe poisoning and mild poisoning, developing the idea of graded degrees mentioned in note 779 above.

⁷⁸³ On वक्ष्यते “he will explain” see note to the edition.

⁷⁸⁴ The translation “hornet” is adopted in light of the Tamil *kaṭampai* and cognates described by DED₂: #1117.

- Triple-sting (*trikanṭaka*),⁷⁸⁵
 - Hopper (*kunī*),⁷⁸⁶
 - Lion (*hastikakṣya*), and
 - Undefeated (*aparājita*).
- 27 Someone stung (*daṣṭa*) by one of these experiences heaviness of the limbs and pain in the body, **a flow of saliva and a severe rupture of the legs.**⁷⁸⁷

Iguanas

28, verses 1, 2 There are traditionally five *iguanas*:

- Counter-sun (*pratisūrya*),
- Yellow-shine (*piṅgabhāsa*),
- Multicolour (*bahuvarṇa*),
- Bighead (*mahāśiras*),
- Peerless (*nirupama*).

The information about the toxic pulses that affect someone bitten by one of these is the same as for snakes. There are pains of various kinds and extremely sore lumps.⁷⁸⁸

785 Cf. Tamil *tēt-kottān* “a green insect whose touch produces the same sensation as a scorpion-sting” (DED₂:#2064).

786 The translation “hopper” gestures, with no real basis, to the Tamil word *kunī* and cognates, meaning “dance, jump, leap” (DED₂:#1863). For कुनी, the vulgate has the equally unknown term करिणी, which slightly resembles Dravidian *kūra*, *kūrān* “moth, cockroach” (DED₂:#1926).

787 The Nepalese and vulgate texts diverge noticeably at this point. This passage, 27, is in verse in the Nepalese version, but in prose in the vulgate. At this point, the Nepalese text continues with further passages in verse, while the vulgate has a series of prose passages (5.8.28–37) and verse passages that are similar but not identical to the Nepalese version (39–41). In several cases, the Nepalese version’s verses are in irregular forms of śloka (*vipulā*), which may have prompted a redactor to recast the text as prose.

788 The Nepalese reading of this passage was known to Dalhaṇa, who quoted it almost exactly as the reading “of some” (Su 1938: 587). It differs significantly from the vulgate. Dalhaṇa also quoted the description of the iguana (गोधरक) from तन्त्रान्तर “another book,” i.e., the *Carakasaṃhitā* (6.23.134 (Ca 1941: 577) with minor differences).

Geckos

29 verses 1, 2 These are the six house geckos:⁷⁸⁹

- White (*śvetā*),
- Black (*kṛṣṇā*),
- Black-striped (*kṛṣṇarājī*),
- Crimson and Crimson-ringed (*raktā*),
- All-white (*sarvaśvetā*),
- Mustard (*sarsapikā*).

Centipedes

30, verses 1, 2 There are traditionally eight centipedes:

- Harsh (*paruṣā*),
- the two kinds of Black-pattern (*kṛṣṇacitra*),
- Brown (*kapilā*),
- Yellow (*pītikā*),
- Crimson (*raktū*),
- White (*śvetavarnā*),
- Fire coloured (*agnivarnā*).

Someone stung (*daṣṭa*) by one of these experiences sharp pains and tearing swelling at the sting. Spots appear at the sting and there is dreadful fainting.⁷⁹⁰

Frogs

31, verses 1, 2 There are eight frogs that are well known to be defined as insects (*kīṭa*):

- White frog,
- Black-coloured,
- Arrow-coloured,
- Matt,
- Cavity,
- Greenish,
- Frown,
- Little point.

⁷⁸⁹ See n. 247, p. 92.

⁷⁹⁰ The Nepalese and vulgate texts continue to diverge in form and content.

Someone bitten by one of these gets itchy, greenish, faint and vomits.⁷⁹¹

Leeches

31 add There are declared to be six leeches, with their characteristics and treatments:⁷⁹²

- Snake-sore,
- Sore-maker, and the
- Round-bristleRound-bristle.⁷⁹³

All-supports

32 verse There are said to be three *Wasps*. They bring burning, fever and pain.⁷⁹⁴ As soon as one is bitten by one of them, there is swelling, and itching at the site of the bite.⁷⁹⁵

34 verses 1, 2 There is a discharge of foam, diarrhoea, and the appearance of dreadful hives (*a*).⁷⁹⁶

791 Dalhaṇa on 5.8.31 (*Su 1938*: 588) quoted a passage from “another book” (not the *Carakasaṃhitā*) that described the भृकुटी frog as follows: “When it rains, during the rainy season, a great snake may discharge semen. Then, when autumn comes, the water has froth (*maṇḍu*). In that frothy water, frogs (*mandūka*) are born, which is why they are called that. Experts say that a frog walks like a cow (*gogati*) so it is called a *koṭika*. It’s bite kills; there is no countermeasure against it.”

792 Puzzlingly, only three types are actually named. This verse occurs in the Nepalese MSS (K and H for this part of the text), but not in the vulgate.

793 The English translations are whimsical, based on the possibly-related word कोथ meaning variously, “afflicted with pain” or “putrefaction, corruption.”

794 Breaking the pattern of these descriptions, the names of this animal are not listed here in the Nepalese version.

795 The next passage in the vulgate sequence, 5.8.33 (*Su 1938*: 588), describes an animal called *Ahiṇḍukā*. This passage does not occur in the Nepalese manuscripts, and Dalhaṇa’s comment on this passage shows that he knew of a transmission of the text that omitted this material: “Some people do not read the symptoms of being bitten by *Ahiṇḍukās*, *Kanḍūmakas*, and *Sūkavṛntas*, because they are included as a type of *Wasp*(*Viśvambhara*). But others include each separate symptom of being bitten by *Ahiṇḍukas* and the others, because they need to be treated separately.” The Nepalese version of the *Suśrutasaṃhitā* fits Dalhaṇa’s description.

796 On the translation “hives” see note 725, and also *Suśrutasaṃhitā* 5.8.86 below.

Ants

These are said to be the six kinds of ant:

- Massage-ant,
- Thick-head,
- Brahman woman ant,
- Finger-ant,
- Colourless, and
- Brown.⁷⁹⁷

If one is bitten by one of them there is pain, burning and particularly itchy swelling.⁷⁹⁸

These ones are enamoured of eyes and bite the eyes in particular.

Mosquitoes

36 verses 1–3 Five kinds of mosquito are famous:

- District,
- Mountainous,
- Black,
- Oceanic,
- and the mosquito called Elephant.

If one is stung by one of these, there is swelling in the area of the sting together with anger. There is pain; blood with much red colour (*rāga*), accompanied by itching, flows out.⁷⁹⁹

⁷⁹⁷ Note the marginal insertions in both MSS K and H, the latter attributed to ग्रन्थान्तरे “in another book.” The scribe of H was aware of variant readings in other manuscripts.

⁷⁹⁸ Or “pain and burning as well as itching and swelling” if these are grammatically relaxed as. The end of this verse is different in witnesses K and H. The earliest recoverable text is disturbed here. There follows a verse, दाहचोषै... that is in H alone that corresponds to some extent to the vulgate’s 5.8.35 on bees.

⁷⁹⁹ This passage in both Nepalese witnesses not in the vulgate. The three preceding passages in the Nepalese version are somewhat corrupted and appear to treat of bees and mosquitos.

Therapy

- 38 In each of the individual groups, the following cannot be treated successfully:⁸⁰⁰
- Iguana,
 - Stench,
 - White gecko,
 - Fire-centipede,
 - Frown, and
 - Little point.
- 42 One should tend to those who have been stung by vicious insects (*kīṭa*) in the same way as for snakes. For the remaining three kinds, the therapy is three-fold.⁸⁰¹
- 43ab One should employ sweating and multiple therapies, except for a patient who has fainted.
- 44ab And one should use the procedure for destroying poisons and one should apply evacuants.⁸⁰²

Taxonomy of scorpions

- 56ef Scorpions are said to be of three types: having slow, medium or great toxin.
- 57cd Those born of the filth of snakes are sharp. By their poisons, they kill the person who has been stung by the poisoned tip.⁸⁰³
- 58 Medium ones are in the filth of cows, etc. The best are traditionally

⁸⁰⁰ The reference is to the groups introduced at p. 230.

⁸⁰¹ The meaning of this sentence is not obvious. Dalhana on 5.8.42 (Su 1938: 588) interpreted “three-fold” as referring to the therapies used for the three humours, and “of the three kinds” as referring to the divisions of the origin of the semen of the three classes of snake, Darvīkara, Maṇḍalin and Rājila. This refers to the idea presented at the start of this chapter that it is the semen of snakes that is one of the origins of insects (*kīṭa*) and that they are divided into three kinds according to their humoral characters.

⁸⁰² At this point, the vulgate has about thirteen verses that are not present in the Nepalese version. These verses describe medications against poisoning.

⁸⁰³ Reading हते as a rare ātmānepada third person plural.



Figure 6: Husain, Shaykh, Shaykh Ali and Shaykh Hatim, "Asavari Ragini: Cropped Image of Scorpions" (Husain et al. 1591). Courtesy of the Smithsonian Institution.

thought to be in the filth of dung.⁸⁰⁴ It is declared that there are twenty-seven in number.⁸⁰⁵

59, 60cd, 61ab All of the following are considered slow-poison types:

- Black scorpion,
- Brown scorpion,
- Variegated scorpion,
- Hairy scorpion,
- Scorpion the colour of cow's urine,
- Spotted scorpion,
- Dark blue scorpion,
- White scorpion,
- Indian red scorpion,
- Hairy-head scorpion, and
- Fierce-purple scorpion.

⁸⁰⁴ This sentence in the Nepalese version is hard to construe. The vulgate text enumerates the three levels of scorpion, saying there are twelve mild (born of cow dung), three moderate (born of wood or bricks) and fifteen virulent ones (born of snake filth, etc.).

⁸⁰⁵ In contrast to the vulgate's total of thirty.

- If bitten by one of these, there is pain and trembling. The limbs are paralyzed and dark blood flows out.
- 61ab When pierced in the limbs, there is pain and it goes upwards. There is **sweat at the site of the bite**, and sharp swelling of the face.
- 61cd Those of medium virulence have a belly that is red yellow and brown, and they have a smoky colour.
- 63ab When the sting is from one of medium venom, the tongue (*jihvā*) swells up, the sense of taste (*rasana*) is damaged and there is intense fainting.
- 63cd, 64cd, 65ab The following scorpions of various colours and forms are known to be terrible. They are deadly. White, variegated, dappled, blood-coloured, black, dark, white-and-blue-bellied, red, tawny, and with a single joint as before, and those with two joints, also as before.
- 66 If stung by one of these, the pulses (*vega*) associated with poison start to happen, with the appearance of spots, fever and burning, and trembling. Black blood flows copiously from the pores. After that, the person is rapidly caused to relinquish his breaths.

Therapies for scorpion-sting

Medium poison

- 67ab One has to provide medical care for those stung with fierce or middling poison in the same manner as for someone bitten by a snake.

Slow poison

- 70 But for those stung by a slow poison one should irrigate the bite with wheel-oil.⁸⁰⁶ Alternatively, the oil of **beggarweed** can be used, gently warmed.

⁸⁰⁶ Dalhaṇa on 5.8.70 (Su 1938: 591) explained “wheel oil” as sesame oil produced from pressing on a wheel, in contrast to that pressed with an instrument by hand. The term is discussed at *Suśrutasaṃhitā* 1.44.47–48 (Su 1938: 193), where Dalhaṇa elaborated on the superiority of wheel-oil over hand-machine oil: “The expression ‘wheel-oil’ means sesame oil that has been pressed on a wheel. This is meant to rule out pressing using manual instruments. Items like sesame that are pressed on a wheel are not roasted. Therefore, they are of the highest quality. The qualities of oiliness and heaviness are lost when sesame that has been roasted and dried is pressed by machine.” See Fig. 7. (Dalhaṇa gave a different interpretation of the production of wheel-oil at 4.2.72 and 4.3.12 (Su 1938: 413, 415).)



Figure 7: The Oil-Presser. MS British Library Add.Or.1707, no. 16. "Album of Kashmiri Trades." Datable to 1850–1860.

- 67cd–68ab The bite should be fomented, scarified and one should rub it with powders made from [turmeric](#), [rock salt](#), and the fruit and flowers of [the three pungent drugs](#), and [siris](#).
- 68cd–69ab In an ointment, the leaf-tips of [holy basil](#), mashed with [citron](#), [mangosteen](#) and cow's urine are said to be beneficial, as is warm cow dung.⁸⁰⁷
- 9cd, 71cd, 72cd, 71ab, 73ab One should use the following, together with plasters that counteract poisons: ghee with honey in a drink, or milk with a lot of sugar; alternatively, healthy jaggery-water steeped with [the four jāta drugs](#). Also, one should use sweating and poultices and use sesame oil, salt, and the tail-feathers of a peacock or a cock. This fumigation (*dhūpa*) rapidly destroys scorpion poison.
- 73cd–74 Alternatively, the flowers of safflower, [turmeric](#), and [Indian barberry](#),⁸⁰⁸

Some authorities interpret चक्रतैल as referring to the oil of [sickle senna](#) (*cakramarda*) (normally part of a therapy for ringworm (*dadru*)) and that might fit the present context better.

⁸⁰⁷ On the wider history of the association of [holy basil](#) with scorpions, see Simoons (1998: 40 et passim), who cites Watt (*WattDict*: 5, 442).

⁸⁰⁸ रजनी and निष्ठा (syn. निशा), as mentioned in this passage, separately both mean [turmeric](#). But when mentioned together, the second is understood to mean [Indian barberry](#).

should be mixed with ghee and made into a fumigant to be applied in the anal area. It can rapidly destroy poison that comes from an insect (*kīṭa*) or from a scorpion.

Spiders

- 75 The poison of spiders is the most terrible and the one that is hardest to understand. It is also the most difficult for a slow-witted doctor to treat.
- 76 If there is any doubt about whether it is poisonous or not, treat it with unobstructive medication that destroys poison.⁸⁰⁹
- 77 The proper use of anti-toxins (*agada*) is for a person injured (*dusṭa*) by poison. An anti-toxin applied to a person who has no poison itself turns into a toxin (*gada*).
- 78 For that reason, every effort must be made to achieve certain knowledge about the poison. Being ignorant of the true nature of the poison might lead the physician to harm the man.
- 79 A tree does not reveal its fully developed type by means merely of its newly formed buds. In exactly the same way, spiders' poison is extremely difficult to spot in the body when it has just started to spread.

Seven stages of spider poisoning

- 80 On the first day, there is slight itching and moving hives (*kotha*), and a faint colouring.⁸¹⁰
On the second day, there is swelling of the extremities, a hollowing of the mid-region and a very obvious colouring.
By the third day, once sees the bite here.
On the fourth day, the poison becomes irritated.
On the day after that, it causes the person to have disorders that arise from the aggravation of the poison.

berry (GVDB: 227).

809 Ḏalhaṇa on 5.8.76 (Su 1938: 591) interpreted “unobstructive medication” as referring to food and drink that do not obstruct the body tissues (*dhātu*), rather than with an actual antitoxin (*agada*) that would block the body tissues.

810 Ḏalhaṇa on 5.8.80 (Su 1938: 591) noted that Gayadāsa read प्रबल for प्रचल “moving,” understanding it as “on the first day there is itching of only slight strength” with increasing degrees of strength on later days.

- 82 On the sixth day, spreading, it powerfully spreads over all the locations of the lethal spots.⁸¹¹
On the seventh, it takes possession of the whole body. It kills that mortal person who has become extremely swollen.
- 83 Spiders have sharp, fierce, dreadful, poison. They can kill a man in seven nights. And different ones that have medium-strength poison can kill in a longer period than this.
- 84 Those that have the weakest-strength poison can kill in just a fortnight. So a physician should make every effort at this point, because of the force of the harm from the poison after the bite has happened.⁸¹²
- 85 Spiders emit poison in seven ways:
- saliva,
 - nails,
 - urine,
 - fangs,
 - menstrual fluid,
 - feces and
 - semen.⁸¹³

It has strong, medium or weak potency.

- 86 They say that if it is caused by saliva, there are hives (*kotha*) with itching and firmness and a small base, with mild pain.⁸¹⁴ When the sting comes from the tip of the nails, there is dryness (*cōṣā*), itching, granulations (*pulāyikā*), and the appearance of smoke.⁸¹⁵
- 87 But if the bite caused by urine, it is black in the middle and has a red surrounding, then know it to be split apart.

811 “Sensitive spots” (*marman*) are points where life is close to the surface of the body and damage may be lethal (Wujastyk 2003b: 201–202, 236–244). They are described in *Suśrutasanīhitā* 3.6 (Su 1938: 369–376).

812 Dalhaṇa here cited a verse from the ancient toxicology authority Ālambāyana, whom we mentioned on pages 157 and 210 (Su 1938: 591): लूतास्तीक्ष्णविषा हन्युः सप्ताष्टनवभिर्दिनैः । एकादशाहात्परतो विषं यासां तु मध्यमम् ॥ “Spiders that have the sharpest poison can kill after seven eight, or nine days. Those that have medium strength, after eleven or more”

813 Dalhaṇa on 5.8.85 (Su 1938: 592) confirmed the sense “semen” for इन्द्रिय in this passage.

814 Or “with a goitre and firmness,” in the reading of MS Kathmandu KL 699.

815 पुलायिका “granulations” is not found in dictionaries. I have guessed that it is connected with पुलाक “rice grain.” Cf. the cognates of **pūliya* “rotten” in CDIAL: 1, #8350. Sharma read पुलालिका with the vulgate and translated it as “horripilation” (P. V. Sharma 1999–2001: 3, 94) following Dalhaṇa’s gloss रोमाञ्चः Su 1938: 592.



Figure 8: Berries of the *emblic myrobalan* (*āmalaka*) and *toothbrush tree* (*pīlu*). Photos courtesy of Dinesh Valke (CC-BY-SA).

If it is caused by fangs, it is fierce, rough, discoloured, and you should know that the bite is firm and circular.

- 88ab You can recognize one arising from menstrual fluid, feces or semen by the blister (*sphota*) that is pale like a fully ripened *emblic myrobalan* or *toothbrush tree*.⁸¹⁶

The origin of spiders

- 88cd–89 This much has been declared to you. Now I shall narrate the **authoritative** origin of spiders,⁸¹⁷ and in a general way the incurable and curable patient who has been bitten as well as the therapy and the **distinctions to be made**.⁸¹⁸

- 90–91, 92ab, 92ef Once upon a time there was a good king called Viśvāmitra, “Friend to All.” He went to the ashram and somehow made Vaśiṣṭha, the best of sages, angry.⁸¹⁹ Drops of sweat from that angry sage’s forehead, as brilliant as the sun because of his countenance, reached the grass that

⁸¹⁶ See Figure 8.

⁸¹⁷ The vulgate’s reading पुराणम् “ancient” is no doubt easier than प्रमाणम् “authority,” but there is no support for it in the Nepalese manuscripts.

⁸¹⁸ The vulgate reads यथाविशेषम् “according to their specifics,” qualifying the therapies. The Nepalese version’s विशेषणम् च “distinguishing, qualifying,” seems to be a separate topic for explanation.

⁸¹⁹ On the legendary rivalry between these two figures, see Sathaye 2015: Introduction, et passim.

- had been cut and gathered by the sage for his cows.⁸²⁰ They started to damage the king's government and labours.⁸²¹
- 93 Since the sage's drops of sweat reached the cut (*lūna*) grass, spiders (*lūtā*) came into being. And they were sixteen in number.

Taxonomy of spiders

- 94 Spiders are traditionally said to be of two kinds: those that are hard to treat and those that cannot be treated. Amongst those, there are eight that are hard to treat and exactly the same number that should be avoided.⁸²²
- 95 They are traditionally said to be: Three-ring, White spider, Brown spider, Yellow spider, Sting-poison, Urine-poison, Red spider, and the eighth is the Cough-spider.
- 96 When bitten by one of these, there is headache and especially itching at the site of the bite, and in particular maladies related to phlegm and wind.
- 97 They are traditionally said to be: Goldie, Grain-coloured, Webby spider, Deer-foot, Black-face, Fire-face, Crow-egg, and the eighth is the Garland-virtue.
- 98 If one is bitten by one of these, there is a sore at the site of the bite and a flow of blood,⁸²³ fever, a temperature (*dāha*) and diarrhoea and the illnesses caused by the three humours.
- 99 There are also various kinds of boils and large rings, and large, soft, red and dark swellings that move about.

820 नियेतुः, 3rd, pl., pf., √यत् “reached, arrived,” is simplified in the vulgate to अपतन् “they fell.”

The vulgate adds half a verse here giving a subject to the next verb, वर्तन्ते: “From those were born these various, terrible creatures with great poison” 5.8.12cd (Su 1938: 592).

821 Dalhaṇa cited a different origin myth, which itself began “others say....”

822 “Avoided” in the sense that treatment should not be attempted.

Mānasa-taraṅgiṇī (2019) makes some spider identifications, but their basis is not stated.

823 Elsewhere, Dalhaṇa on 6.42.13 (Su 1938: 718) glossed क्षतज् “wound-born, blood,” as आर्तवरक् “seasonal blood.”

Specific symptoms and treatments

- 100 This is the generic characterization of the bites of all kinds of spider. I shall now describe their specific characterization, together with the therapy.

The Three-ring spider

- 101 The bite of a **Three-ring** makes the blood bleed thick and dark. There is deafness, clouded vision, and a burning sensation in the eyes.
- 102 In such a case, the root of **purple calotropis**, **turmeric**, **Indian snakeroot** and **painted uraria** are recommended in an errhine treatment and **for the massage of the feet** and in a collyrium.

The White spider

- 103 At the site of a bite of a **White spider**, a white, itchy spot appears that comes with heat, fainting and fever, and causes a spreading, weeping rash and pain.
- 104 In such a case, a **sandalwood**, **grey orchid**, **cardamom**, **peas**, **tall reed**, **Indian willow**, **costus**, **lemongrass**, **Himalayan mayapple**, and **spikenard** are a healthy antidote.⁸²⁴

The Brown spider

- 105 At the site of a bite of a **Brown spider**, there is a firm, coppery spot, the head feels heavy, and **the person's eyes feel hot**.⁸²⁵
- 106 The following remove the poison: **sacred lotus**, **wild Himalayan cherry**, **costus**, **cardamom**, **pongame oiltree**, **arjun tree**, **cinnamon**, **beggarweed**, **kumkum tree**, **prickly chaff-flower**, **durva grass**, and **water hyssop**.

⁸²⁴ Dalhaṇa on 5.8.105 (Su 1938: 592) glossed several of these drugs and noted that others had different opinions. In particular, he thought that वञ्जल was **white siris** (*jalavetasa*) rather than **Indian willow** (*vañjula*). But he also noted that Jejjāṭa thought it was क-सूका, an unidentified plant that Dalhaṇa thought should be interpreted as **white siris** (*kinīhī*).

⁸²⁵ The vulgate reads तिमिरं भ्रम एव च, “a defect of vision and giddiness” (P. V. Sharma 1999–2001: 3, 97).

The Yellow spider

- 107 At the site of a bite of a **Yellow spider**, a hard, yellow spot develops, because of the yellow, accompanied by vomiting and fever,⁸²⁶ sharp pain and the eyes may become red.
- 108 In such a case, the following are required: **arjun tree**, **vetiver**, **munj sweetcane**, **cogongrass**, **Indian willow**, **halfa grass**, **wild sugarcane**, **bamboo**, **white siris**, **siris**, **arjun tree**, and **cinnamon**.⁸²⁷

The Sting-poison spider

- 109 At the site of a bite associated with the **Sting-poison**, which is like a red circle, there are spots like **Indian mustard seeds**. It burns, the palate feels dry and there is a temperature.
- 110 In such a case, the antidote is **foxtail millet**, **coleus**, **costus**, **lemongrass**, and **Indian dill**, with the shoots of **sacred fig** and **banyan**.

The Urine-poison spider

- 111 The bite of a smelly **Urine-poison** spreads out, with black blood accompanied by coughing and wheezing, vomiting and fainting, fever and a burning feeling.
- 112 Famously, the poison can be destroyed by the following: **realgar**, **liquorice**, **costus**, **wild Himalayan cherry**, **sandalwood**, and **lemongrass**.

The Red spider

- 113 The bite of the **Red spider** has pale, hot, weeping (*kleda*) spots. It can be identified because it is dry (*coṣa*) and red, with red edges.
- 114 In such a case, the treatment should be done with **coleus**, **sandalwood**, **vetiver**, **wild Himalayan cherry**, **arjun**, **Indian cherry**, and the bark of **hog plum**.

826 Reading छर्दिज्जरः as a m. sg. dvandva. Cf. p. 74.

827 The repetition of ककुभ “arjun tree” suggests an error in the Nepalese transmission.

The Cough-spider

- 115 The bite of the **Cough-spider** makes cold, slimy blood flow. There is also wheezing and coughing. The treatment is as stated for the **Red spider**.⁸²⁸
- 120 The wise person should employ the bark of **Indian cherry** in the case of poisoning by any of them, and **horseradish tree** and **sacred fig** in all ailments.⁸²⁹

Spider poisons hard to treat

- 121 According to tradition, there are said to be eight spiders whose poison is incurable. Learn from me the symptoms of the potencies of these overpowering poisons.
- 122 The bite of the **Goldie** is dark, frothy, and smells like fish. The coughing and wheezing, fever, thirst and fainting in this case are terrible.⁸³⁰
- 123 When there is a bite by the **Grain-coloured**, blood runs out, dark and odorous. Heat, fainting, diarrhoea and a headache develop.
- 124 The bite of the **Webby spider** is terrible: it is striped and splits open. It causes paralysis, wheezing, increased gloominess (*tamas*) and dryness of the palate.⁸³¹
- 125 The bite of the **Deer-foot** has great heat and has the form of a black sesame seed. There is thirst, fainting, fever and vomiting, accompanied by wheezing and cough.

828 At this point, the vulgate has four verses that are not present in the Nepalese version. They describe the symptoms and treatment of the bites of two further spiders, the **Goldie** and the **Fire-face**. Dalhana on 5.8.119 (Su 1938: 593) reported that the commentator Gayadāsa thought the bites of the **Goldie** group (p. 242) were all incurable so he only described them but described no treatment.

829 Dalhana on 5.8.120 (Su 1938: 593) understood the compound अक्षीवपिष्पलम् as a tat-puruṣa, not a dvandva. I.e., “a **sacred fig** (*pippala*) that comes from an *akṣīva*,” and he glosses the latter word as *mahānimba* or *śobhāñjana*.

Dalhana also here quoted a passage from the lost work of Ālambāyana (see pp. 157, p. 210): लूताविषेषु सर्वेषु पाननस्याङ्गनादिना । प्रयोज्यः पिष्पलोऽक्षीवजातः शेलुत्वचोऽथवा “in all cases of spider-poison **sacred fig** that comes from **horseradish tree**, or else the bark of **Indian cherry**, should be used as drinks, errhines or ointments.”

830 Dalhana on 122 (Su 1938: 593) glossed ध्याम “dark” as “being the colour of burnt brick.”

831 Dalhana on 5.8.124 (Su 1938: 593) interpreted तमोवृद्धि as, “seeing darkness again and again.”

- 125 add 1 The bite of the **Black-face** has black edges, a depressed middle and very dry (*cosa*). There is pallor, fainting, vomiting and burning, accompanied by wheezing and cough.⁸³²
- 125 add 2 The bite of the **Fire-face** is recognized as being burnt, with spots and with pain. There is dryness, itching and horripilation, and suffering from heat and fever.
- 126 When someone is bitten by the **Crow-egg**, the bite is pale red and very painful. There is suffering from hiccuping, coughing, thirst, fainting, sleepiness, and pain in the heart.
- 127 The bite of the **Garland-virtue** is red, smells like smoke, and is extremely painful. It splits open multiple times and is accompanied by burning, fainting, and fever.

Curable and incurable

- 128 Even for those cases that are incurable, the physician should apply therapy, especially the elevation of the humours, with the exception of excision.⁸³³
- 129 As soon as someone is bitten by a treatable spider, the wise physician should excise the bite with a big-leaf scalpel (*vrddhipatra*).⁸³⁴
- 129 add 1 To avoid spreading, one should cauterize with a very hot jambu-lip (*jamboṣṭha*).⁸³⁵
- 131ab, 133ab After that, one should smear on an antidote made of a mixture of honey and **rock salt**, with a decoction (*kaṣāya*) of bark from trees with milky

⁸³² The following two verses are absent in the vulgate transmission, but deal correctly with the next two spiders listed above, p. 242, as having incurable bites.

⁸³³ The vulgate adds a compassionate phrase here, “after explaining [the incurability] to the patient.” The vulgate also rules out cauterization.

Dalhaṇa on 5.8.128 (Su 1938: 593) noted a variant reading असाध्यानाम् अपि चिकित्सितं that corresponds almost exactly to the Nepalese version.

⁸³⁴ On this scalpel, see Mukhopādhyāya 1913: 1, 232–235, illustrated at 2, 121–122, and Wujastyk 2003b: 83–84. Two forms of this scalpel were described by Dalhaṇa on 1.8.3 (Su 1938: 36–37) and are illustrated in that same edition: see Figure 9.

⁸³⁵ This half-verse does not appear in the vulgate, but it was known to Dalhaṇa as a variant reading (Dalhaṇa on 5.8.129 (Su 1938: 593)).
The “jambu-lip” is surgical instrument used for the cauterization of fistula according to 4.8.32 (Su 1938: 440). Dalhaṇa described it, loc. cit., as जम्बूफलसहशमुखाग्रा कृष्णपाषाणरचिता वर्ति: | “a wick made out of black stone that has a tip similar to the jambu fruit.” See Mukhopādhyāya 1913: 1, 159–160, illustrated at 2, 74 (no. 4).

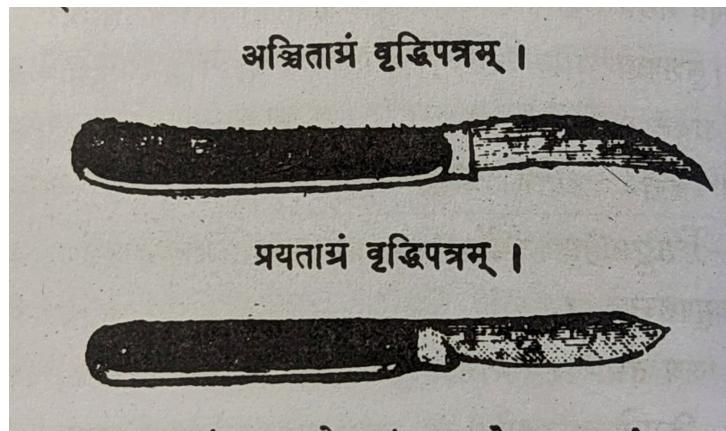


Figure 9: The big-leaf scalpels, as illustrated in Su 1938: 36.

- sap and with safflower, honey, and rock salt.⁸³⁶
- 137 Furthermore, after setting aside food that increases poison, it is good to eat the following together: yeast, Indian bdellium-tree, gypsum, and rock dove droppings.⁸³⁷
- 138 A painless, hard growth (*karṇikā*) caused by any kind of poison should be scarified and then treated with purifying substances mixed with honey.
- 138 add The observant physician should treat hot, ripe ones with food.⁸³⁸
- 139 The symptoms of the bites of 167 insects have been stated in a classified manner, followed by their therapies.

Concluding remarks

- 140 One hundred and twenty chapters have been stated in a classified manner. In the *Uttara* I shall explain the topics that have been referred to

⁸³⁶ The vulgate has one and a half verses, 131cd and 132, that intervene between the two parts of this passage. And following this passage, the vulgate adds several more verses, 133cd–136, mostly describing generic treatments for spider-bite.

⁸³⁷ The vulgate corresponding to this verse has quite different phrasing but similar sense.

⁸³⁸ This line, only found in the Nepalese witnesses, contrasts with the previous one. Scarification and diet are two therapeutic approaches to be applied according to whether the spider-bite is hard or soft and inflamed.

here but not explained.⁸³⁹

Contents of the *Suśrutasamhitā*

- 140 add 1 The *Ślokasthāna* describes, in concise sūtra form, the discipline, the origin of the discipline, and the strengths and weaknesses of the treatments for diseases.
- 140 add 2 The *Nidānasthāna* states the characteristics of external illnesses with the faults pertaining to humours and diet as well as the description of their stages.⁸⁴⁰
- 140 add 3 In the *Śārīra*, I have described the origin of the body amongst the body tissues (*dhātu*), senses and lethal spots, and the origin of all the vessels (*sirā*) etc.
- 140 add 4 In this discipline, the *Cikitsita* is traditionally said to be the successful treatment of diseases that are evident because of the symptoms and that have been taught according to their locations.
- 140 add 5 The *Kalpasthāna* is said to be about the beneficial treatment in cases of stationary and moving poisoning as well as the successful treatment in all these cases.

End of the Kalpasthāna

- 140 add 6 My dear, I have proclaimed this extensive work of a thousand verses, divided into in 120 chapters, that came forth from the mouth of The Creator.
- 141–142 The Vedas are eternal, unchanging and good for people, and they have outcomes both seen and unseen. The extent of their words has broad meaning and people respect them. Because of this, O Suśruta, there is nothing more virtuous than medicine.
- 143 After upholding this pure and universally approved doctrine of the sage with Indra's power, who was born of an immortal, someone who has the stated conduct and behaviour rejoices in this life and the next.⁸⁴¹

⁸³⁹ There now follow six verses that are present in the Nepalese version, but not in the vulgate.

⁸⁴⁰ अवस्था “stages” here probably refers to degrees of affliction, although this is not a distinct section of the *Nidānasthāna*.

⁸⁴¹ The vulgate version of the *Suśrutasamhitā*'s *Kalpasthāna* ends here.

- 143 add 1 He understands the logic of the remaining treatises too and the world is his family.
- 143 add 2 An expert in foreign bodies (*śalya*) defines anything that causes distress as a foreign body (*śalya*) since it pierces the limbs.⁸⁴²
- 143 add 3 Therefore, his progress, especially, cannot be opposed, just as the progress of a strong king cannot be stopped when he is in his own land.⁸⁴³
- 143 add 4 The *Uttaratantra* is stated for the purpose of treating fever and other ailments.⁸⁴⁴ It states the description, etiology and manifestationss (*vy-*añjana**) of complications.⁸⁴⁵
- 143 add 5 And there is a verse on this:

Someone who reads this work of one hundred and twenty chapters recorded in five sections, together with the latter part (*uttara*), is worthy of a king and revered by physicians. He is a doctor who has taken the steps to apply therapy.

- 143 add 6 Protection of food, stationary and moving poisons, the toxicology of snakebite patients, the treatment of snakebite patients, rats, the drum, and the treatment of insects as the eighth.⁸⁴⁶

In the treatise on foreign bodies belonging to the followers of Suśruta,
the *Kalpasthāna* is ended.

⁸⁴² This verse has nested relative pronouns and lacks a main verb. Perhaps the text lost a half-verse in transmission?

⁸⁴³ Or, "his progress cannot be opposed by any particular."

⁸⁴⁴ The chapter on fever is number 39 in the vulgate text, but number 60 in the Nepalese version.

⁸⁴⁵ The syntax of this sentence is slightly opaque.

⁸⁴⁶ This is a table of contents of the *Kalpasthāna*.

Part 6. Uttaratantra

Uttaratantra 17: Preventing Diseases of the Pupil

Literature

Meulenbeld offered an annotated overview of this chapter and a bibliography of earlier scholarship to 2002.⁸⁴⁷

The history of couching in India has been discussed since the nineteenth century,⁸⁴⁸

The therapies in this chapter make frequent use of collyrium (*añjana*). This substance and its uses and variants are described in *Carakasamhitā* 1.5.14–19 (Ca 1941: 38–39). In the *Suśrutasaṃhitā*, they are included in the “group starting with *añjana*” (*añjanādigaṇa*), that is listed at 1.38.41–42 (Su 1938: 167). They are described as valuable for counteracting blood-bile (*rakta-pitta*), poison and overheating (*dāha*).

Translation

- 1 Now I shall explain the counteraction (*pratiṣedha*) of diseases located in the pupil (*drṣṭi*).
- 2 There are three curable (*sādhya*), three incurable (*asādhya*), and six mitigable (*yāpya*) diseases located in peoples eyes. Among these, three

⁸⁴⁷ HIML: IA, 305–306.

⁸⁴⁸ Scott 1817; Breton 1826; Jack 1884; Hendley 1895; Elliot 1918; Pārśvanātha Śāstrī 1940; V. Deshpande 1999; 2000; Wujastyk 2003b; Fan 2005; Leffler et al. 2020; Hirschberg and Leffler 2024.

are curable (*sādhya*). Amongst these three, the remedy (*pratikāra*) has been stated for the one called “seeing smoke (*dhūmadarśin*)”.⁸⁴⁹

- 3–5ab When the eye is inflamed (*vidagdha*) by bile and when it is inflamed by phlegm, one should apply the method for removing bile and phlegm, using nasal medicines (*nasya*), irrigation (*seka*), application of collyrium (*añjana*), liniment (*ālepa*), and medicines cooked in a crucible (*puṭapāka*), together with an eyewash (*tarpaṇa*),⁸⁵⁰ but not cutting with a blade (*śastrakṣata*).⁸⁵¹

One should drink ghee (*sarpis*) prepared with the three fruits (*triphalā*) and in the first [case where the problem is bile], and prepared with turpeth (*traivṛta*) in the latter [case, of phlegm].

And ghee with **viburnum extract** is wholesome in both cases, or else aged ghee on its own.

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

- red ochre, rock salt, long pepper and the black soot (*maṣī*) from cow's teeth;
- cow's flesh (*gomāṁsa*), black pepper, **siris** and **realgar**;
- stalk (*vṛnta*) from a **wood-apple** with honey (*madhu*);⁸⁵²
- or the fruits of the velvet bean.

- 8 The physician should make a collyrium (*añjana*) with ground up **metal** (*kupyaka*),⁸⁵³ **Asoka tree**, **sal tree**, **mango**, **foxtail millet**, **lotus**, **blue water-lily**, together with **peas**, **emblic myrobalan**, **myrobalans**, **long pepper**. It should be combined with ghee and **honey**.

- 9–10 Also, when bile and phlegm have developed, the physician should apply **peas** with the expressed juice (*svarasa*) of the flowers from **mango**

⁸⁴⁹ 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.

⁸⁵⁰ These therapies are described in SS.6.18 (Su 1938: 633–640).

⁸⁵¹ Dalhaṇa interpreted this as blood-letting (*sirāvedha*), which is discussed in SS.1.14 (Su 1938).

⁸⁵² Wood apple (*कपित्थ*) in this verse is ablative singular or accusative plural, neither of which construe obviously.

⁸⁵³ A metal other than gold or silver, according to V. Jośī and N. H. Jośī (*Mahākośa*: 1, 217) (on कुप्त). The Nepalese witnesses have the rare कुप्तक rather than the vulgate's कुञ्जक, which makes no real sense. Perhaps lead, which is used in making contemporary collyrium.

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

maṣī
burned
charcoal.
Find refs.

and **jambul** trees.

Then this collyrium (*añjana*), matured (*vipakva*) with ghee and **honey**, should then be applied.

- 10–11ab Filaments (*kiñjalka*) of **lotus** and **blue water-lily**, with **red ochre**, and the juice of cow-dung (*gośakṛt*) are a collyrium (*añjana*) in the form of a pill (*gudikā*). This is good for both day and night blindness.
- 11cd–12ab Elixir-salve (*rasāñjana*), **honey**, ghee, **scramberry**, together with gold and ochre, with the juice of cow-dung (*gośakṛt*) are for an eye afflicted with bile.
- 12cd–13 Alternatively, wise physician should first grind together elixir-salve (*sīta*) and stibnite (*sauvīraka*), infused (*bhāvita*) with the blood of birds and animals (*rasa*).⁸⁵⁴ Then he mixes it with the bile of a tortoise or with extract of rohu carp (*rauhita*). It should always be used with powdered collyrium (*añjana*) to quell the bile.
- 14 Thus, a collyrium (*añjana*) of **white teak** flowers, **liquorice**, **Indian barberry**, **lodh tree** and elixir salve (*rasāñjana*) is always good as a collyrium in this case.
- 15 Alternatively, for those who cannot see during the day, this pill (*gudikā*), with sandalwood, is recommended: salt (*nadija*), conch shell and the three spices, collyrium (*añjana*), realgar (*manahśilā*), the two turmerics (*rajana*)⁸⁵⁵ and liver extract (*yakṛdrasa*).⁸⁵⁶
- 16 One should grind up kohl (*srotoja*),⁸⁵⁷ and ?? and long pepper and also hareṇu (*hareṇu*). Such wicks with goats urine are good in a collyrium (*añjana*) for night blindness (*kṣanadāndhya*).
- 17–18ab Alternatively, in such a case, grind together Indian sarsaparilla (*kālānusāriva*)⁸⁵⁸ long pepper, dried ginger (*nāgara*) and honey, the leaf of the scramberry (*tāliśapatra*), the two turmerics (*rajana*), a conch shell and liver extract (*yakṛdrasa*). Then shade-dried wicks take away

⁸⁵⁴ This was Dalhaṇa's preferred interpretation of *rasa* "juice" in this context. He also noted that some take elixir-salve (*sīta*) to be camphor.

⁸⁵⁵ Turmeric (*Curcuma longa Linn.*) and tree turmeric (*Berberis aristata DC*). The term *rajana* is unusual; the normal term is *rajani*. *Rajana* occurs in *Suśrutanighaṇṭu* 158 in the sense of *Ferula asafoetida*, Linn.

⁸⁵⁶ This verse appears as no. 27 in the vulgate.

⁸⁵⁷ Glossed by Dalhaṇa as a kind of collyrium (*añjana*). Cf. Nadkarni 1954: 2.M13 and P. V. Sharma 1982: 197–198

⁸⁵⁸ There are two forms of *sārīvā* 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.

- illness (*ruj*).
- 18cd–19ab Wicks made of red arsenic (*manahśilā*), chebulic myrobalan (*abhaya*), the three spices (*vyoṣa*). Indian sarsaparilla (*sāriva*), cuttlefish bone (*samudraphena*), combined with goat's milk are good.
- 19cd–21ab One should cook a honey collyrium (*kṣaudrāñjana*) either in the juices of cow's urine (*gomūtra*), and bile, spirits (*madirā*), liver (*yakṛt*), and emblic (*dhātrī*) or else in the juice of the liver (*yakṛt*) of something different, or else with the extract of the three fruits (*triphalā*). One of these should be mixed with cow urine, ghee and cuttle fish (*arṇavamala*)⁸⁵⁹ with long pepper, honey and box myrtle (*kaṭphala*). 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 emblices. Then one should store it properly in a catechu box. Prepared thus, the honey collyrium (*añjana*) is good.
- 23 Alternatively, a collyrium (*añjana*) that is *hareṇu* (*hareṇu*) mixed with long pepper (*māgadhi*), the bone and the marrow of a goat, cardamom (*elā*) and liver, together with liver extract, is good for eyes afflicted by phlegm.⁸⁶⁰
- 24 Over a fire, one should cook the liver (*yakṛt*) of a monitor lizard (*godhā*) prepared with entrails (*antra*) and stuffed with long pepper (*māgadhi*). As is well known, liver (*yakṛt*) which is used (*niṣevita*) with collyrium (*añjana*) certainly destroys night blindness.
- 25 After preparing both a spleen (*pliḥan*) and a liver on a spit, one should eat them both with ghee and oil.⁸⁶¹

859 At SS 6.12.31, Dalhaṇa glossed *arṇavamala* as cuttlefish bone (*samudraphena*). It may be worth considering whether the unusual term *arṇavamala* “ocean-filth” might refer to ambergris.

860 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 Dalhaṇa described it as aromatic and identical to *reṇukā* (SS.ci.2.75).

861 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.

- 25cd–26ab As is well known, there are six diseases that can be alleviated (*yāpya*); in those cases (*tatra*) one should release the blood by bloodletting. And for the sake of wellbeing one should also purge using aged ghee combined (*upahita*) with purgative aids (*aṅga*).
- 26cd–27 When an eye-disease is caused by wind (*pavanodbhava*) they say that castor oil (*pañcāṅgulataila*) mixed with milk is good.⁸⁶² In the case of diseases of blood (*śonita*) and bile (*pitta*), one should drink ghee with the three fruits; it is particularly cleansing.⁸⁶³ In the case of phlegm, a purgative by means of turpeth (*trivṛt*) is recommended. In the case of all three humours, sandal (*sugandhi*) in oil is prepared with it (turpeth).⁸⁶⁴
- 28 In cases of partial blindness (*timira*), 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 (*meṣavīśāna*). A man who is suffering from partial blindness should lick the finely-ground three fruits mixed with ghee off his hand (*sapāṇa*).⁸⁶⁵
- 29cd Alternatively, someone afflicted by phlegm should apply them (the three fruits) mixed with oil and steeped (*pragādha*) 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 (*trivṛt*) based on strong mallow (*atibalā*), and country mallow (*balā*) in an errhine (*nasya*).⁸⁶⁶

862 Dalhaṇa said that the unexpressed topic of this recipe is partial blindness (*timira*).

863 Blood-bile (*śonita-pitta*, *rakta-pitta*) 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

864 The expression “the fragrant one in oil (*tailasugandhi*)” 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.

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

866 “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.

- 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 (*puṭākhya*) with Sindh salt and the product of the meat of a carnivore (*kravyabhuj*) and a deer (*eṇa*), is combined with honey and ghee.⁸⁶⁷
 Fat (*vasā*) from a horse, a vulture, a snake, and a cock (*tāmracūda*), combined with **mahua** is always good in a collyrium (*añjana*).†⁸⁶⁸
- 33 Having prepared (*niṣevita*) a collyrium (*añjana*) made of kohl (*srotas*), gradually combine it with juices (*rasa*), milk and ghee.⁸⁶⁹
 For thirty days, this collyrium (*añjana*) is put in the mouth of a black snake that is covered with kuśa grass (*kuśa*).
- 34 Next, a collyrium (*añjana*) that is milk containing long pepper (*māgadhī*), lye (*kṣāraka*) and ?? that has been repeatedly prepared with the mouth of a black snake, is good in the case of bloodshot blindness (*rāgin timira*).⁸⁷⁰
- 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 (*tarpana*) is good that is a combination that is the flesh of wild animals taken hot (*puṭāhvaya*).⁸⁷¹
- 36 And realgar (*manahśilā*) mixed with elixir salve (*rasāñjana*) and honey

867 Ḑalhaṇa noted (Su 1938: 628a) that *puṭāhvaya* (see verse 35 below) is a synonym for *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 *Suśrutasamhitā*, which is earlier and different than that of *rasāśāstra* literature, see the discussion by Wujastyk (2019: 83):

The term ‘enclosed roasting’ (*puṭapāka*) does occur in the *Suśrutasamhitā* 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.

868 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.

869 On स्रोतस् “kohl” see footnote 856. Ḑalhaṇa on 6.17.36ab (Su 1938: 628) explicitly specified that the juices are meat soups of various animals that are “pleasing to the eye” (चक्षुष्यमृगपक्षिमांसरसः).

870 Ḑalhaṇa 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.

871 The expression taken hot (*puṭāhvaya*) is a guess.

is a liquid collyrium (*dravāñjana*) which is, in this case, combined with *mahua*.⁸⁷²

Alternatively, experts on this say that finely ground blue vitriol (*tuttha*) extracted from a gold mine is the “same collyrium (*samāñjana*)”.⁸⁷³

- 37 Conch mixed with equal parts of sheep’s horn and stibnite (*añjana*) removes the impurity of the glassy opacity (*kāca*) because of the application of collyrium (*añjana*).⁸⁷⁴

The extracts (*rasa*) produced from a flame of the forest (*palāśa*), Rohīta tree (*rohīta*),⁸⁷⁵ *mahua*, ground with the supernatant layer (*agra*) of the spirits (*madira*) is applied.

- 38 Alternatively, one should cook an errhine with cucus grass (*uśīra*), lodh tree (*lodhra*), the three fruits (*triphalā*), beauty berry (*priyangu*) to pacify eye diseases caused by phlegm.⁸⁷⁶

One should apply smoke of the bark of embelia (*vidaṅga*), velvet leaf (*pāthā*), white siris (*kinihī*), and desert date (*iṅgudī*); and cucus grass (*uśīra*) alone.

- 39 A ghee that is cooked (*bhāvita*) from a decoction of a non-flowering tree (*vanaspati*)⁸⁷⁷ as well as turmeric (*haridrā*) and spikenard (*nalada*) is good in a eyewash (*tarpana*).

Alternatively, one may have an enclosed roasting (*puṭapāka*) done with arid-land animals (*jārigala*)⁸⁷⁸ and a plentiful amount of long pepper (*māgadha*), Sindh salt and honey.

- 40 A treatment (*kriyā*) with realgar (*manahśilā*), the three spices, conch,

⁸⁷² The expression liquid collyrium (*dravāñjana*) is only known from Ḏalhaṇa’s comments on 6.17.11ab (Su 1938: 626). The recipe in the present collyrium is different from that discussed by Ḏalhaṇa.

⁸⁷³ 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 (*samāñjana*)” is a hapax legomenon glossed inexplicably by Ḏalhaṇa as “a collyrium with an equal amount of fermented barley” (*tulyasauvīrāñjana*) (Su 1938: 628).

⁸⁷⁴ The ablative “from collyrium” is hard to construe, but Ḏalhaṇa used this term and phrase in his commentary on 6.17.41ab (Su 1938: 629).

⁸⁷⁵ Probably *Soymida febrifuga* A. Juss.

⁸⁷⁶ Ḏalhaṇa invoked a general rule (*paribhāṣā*) to indicate that this mixture should be cooked with sesame oil.

⁸⁷⁷ These are fig trees. The *Sauśrutanighanītu* (252) specifies the Uḍumbara. Cf. the classification in CS.1.1.71–72, 1.8, *et passim*.

⁸⁷⁸ On this term, see SS.1.35.42 (Su 1938: 157) and the discussion by Zimmermann (1999: 25–31).

honey, along with Sindh salt, green vitriol (*kāśīsa*) and elixir salve (*rasāñjana*).⁸⁷⁹

They say that an elixir salve (*rasāñjana*) combined with myrobalans, treacle and dried ginger is good.⁸⁸⁰

- 41 Alternatively, a collyrium (*añjana*) that has been prepared many times in the eight types of urine⁸⁸¹ is put into water with the three fruits. Having stored it in the mouth of a nocturnal creature (*niśācara*)⁸⁸² one should place it in a conch (*salilotthita*) for two months.⁸⁸³
- 42 One should apply that collyrium (*añjana*) together with the flowers of *mahua* and horseradish tree (*śigru*) when [the disease] is caused by all [the humours].
But alternatively, all treatments apply when blood is the cause. The procedure that removes bile is good when there is blue dot cataract (*mlāyin*).⁸⁸⁴
- 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.⁸⁸⁵
The treatment that is good for removing watery eye (*syanda*) should be properly applied in all these humoral cases, according to the individual.⁸⁸⁶
- 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 collyrums, and that should be considered and then applied.⁸⁸⁷
- 45 Someone who uses matured ghee, the three fruits, wild asparagus, as

879 Ḏalhaṇa glossed treatment (*kriyā*) specifically as inspissation (*rasakriyā*) (*Su* 1938: 629).

880 We emend हिते to हितम् against the MSS.

881 See *Suśrutasamhitā* mūtravarga

882 Ḏalhaṇa glossed nocturnal creature (*niśācara*) as “vulture,” although elsewhere in the *Suśrutasamhitā* it is more commonly interpreted as a spirit or demon. In the present context, following verses 33 and 34, it is probably a snake.

883 We interpret “water-born (*salilotthita*)” as “conch” in line with *jalodbhava*, but the term is uncertain.

884 The vulgate follows Ḏalhaṇa 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.

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

886 The term watery eye (*syanda*) refers to the specific disease *abhisyanda*. See SS.6.6.5, 1.46.51, etc.

887 Ḏalhaṇa noted that *Kalpa* means the *Uttaratana* adhyāya 18 (*Su* 1938: 633 ff).

find ref.

Check out
these refs.

meaning of
kalpa

- well as **mung beans**, emblic and barley has nothing to fear from cases of severe blindness (*timira*).
- 46 Blindness is dispelled by milk prepared with wild asparagus or in embolics, or again cooked barley (*yavaudana*) followed by the water of three fruits with plenty of ghee.
- 47 When there is bloodshot blindness (*rāgini timire*), the wise physician should not cut a vein. A humour injured (*utpiḍita*) by the instrument rapidly destroys vision.
- 48 Non-bloodshot blindness (*araga timira*) in the first layer (*paṭala*) is treatable. And bloodshot blindness (*rāgini timire*) in the second layer, with difficulty. And in the third layer it can be mitigated (*yāpya*).⁸⁸⁸
- 49 I shall explain the therapy for success when there is a cataract (*liṅganāśa*) caused by phlegm. It may be white, like a full moon, an umbrella, a pearl (*muktā*) or a spiral (*āvarta*).
- 50 Or it may be uneven, thin in the middle, streaked or have excessive shine (*prabha*). A humour (*dosa*) in the pupil may be characterized as being painful or having blood.⁸⁸⁹
- 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 (*muktvā*) two white sections from the black part (*kṛṣṇa*) and from the outer corner of the eye (*apāṅga*). Then he should press (*pīḍ-*) properly into the eye,⁸⁹⁰ at the naturally-occurring (*daivakṛte*) opening (*chidra*) with a probe (*śalākā*) 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.⁸⁹¹

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

889 In the vulgate, and in parallel passages in the AS, the reading “it may be (*bhavet*)” is replaced with the negative “if, then not (*na ced*)” (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.

890 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.

891 Dalhana remarked on 6.17.61ab (Su 1938: 630) that when the piercing is not correctly

- 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 (*dr̥stimandala*) with the tip of the probe (*śalākā*).⁸⁹²
- 56 Without injuring, gently pushing the phlegm in the circuit of the pupil against the nose, he should remove it by means of sniffing (*ucchīngana*).⁸⁹³
- 57 Whether the humour is solid (*styāna*) or liquid (*cala*), one should apply sweating to the eye externally, with leaves (*bhaṅga*) that remove wind, after fixing the needle (*sūci*) properly.⁸⁹⁴
- 58 But if the humour cannot be destroyed or if it comes back, one should apply the piercing (*vyadha*) once again, with appropriate oils and so on.
- 59 Now the pupil (*dr̥ṣṭi*) shines like the sun (*hari*) in a cloudless sky; then, when objects become visible, one may slowly remove the probe (*śalākā*).⁸⁹⁵
- 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.⁸⁹⁶
- 61 At that time, he should not belch, cough, sneeze, spit or shiver. Afterwards there should be restrictions (*yantranā*) as in the case of someone who has drunk oil.⁸⁹⁷
- 62 Every three days one should wash it with decoctions (*kaṣāya*) that remove wind. After three days, one should sweat the eye externally be-

done, blood issues and there is no sound.

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

893 Ḑalhaṇa described sniffing (*ucchīngana*) at 6.19.8 (Su 1938: 641), clearly intending inward sniffing.

894 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 (*pallava*). 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.

895 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 (*agramukta*)" to "free from clouds (*abhramukta*)". The latter meaning is supported (in different words) by the vulgate and occurs elsewhere in Sanskrit literature.

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

897 Ḑalhaṇa glossed "restrictions (*yantranā*)" 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).

- cause of the danger of wind.
- 63 Having restrained himself in this way for ten days he should thereafter take a beneficial regimen (*karma*) that clears the pupil (*dṛṣṭi*) and also he should take light food in measure.

[Complications]

- 64 When there is a misshapen eyeball (*vilocana*), the eye may fill because of the release of blood from a vein.⁸⁹⁸
A hard probe leads to shooting pain (*śūla*), a thin to unsteadiness of the humours (*dosapariplava*),⁸⁹⁹
- 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 (*sthirā*) one brings about a loss of function (*kriyāsaṅga*).⁹⁰⁰
- 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 (*vaktra*).

- 67 A commendable probe should be made of silver, iron or gold (*śātakumbhī*).⁹⁰¹

898 The condition of “misshapen eye” is referred to briefly in 6.61.9 (Su 1938: 800), where Dalhaṇa glossed it as “bent brow and eye (*vakrabhrūnetra*).” The vulgate’s reading of “with blood (*śonitena*)” is easier to construe.

899 There is a medically significant difference here from the vulgate, which reads “a rough (*khara*) probe” not a “thin” probe.

900 This translation of loss of function (*kriyāsaṅga*) is given on the basis of Dalhaṇa’s gloss of *kriyāsaṅgakarī* at 3.8.19 (Su 1938: 382) as “causing the destruction of actions such as moving (*gamanādikriyāvināśakarī*).”

901 The vulgate reads “copper (*tāmra*)” in place of “silver.”

[Complications]

- Redness, swelling, lumps, driness (*coṣa*), bubbling (*budbuda*),⁹⁰² pigs' eye (*sūkarākṣitā*),⁹⁰³ irritation (*adhimantha*), 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.
Red chalk (*gairikali*), Indian sarsaparilla (*śārivā*), panic grass (*dūrvā*), 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 (*mātuluinga*) with sesame gently fried, mixed with white mustard (*siddhārthaka*).⁹⁰⁴ This is immediately beneficial when someone is looking for relief.
- 72 A paste with Holostemma (*payasyā*),⁹⁰⁵ Indian sarsaparilla (*śārivā*), cassia cinnamon (*patra*), Indian madder (*mañjiṣṭhā*), and liquorice (*madhukair*) stirred with goat's milk, pleasantly warmed, is said to be healthy.⁹⁰⁶
- 73 Alternatively, it can be made in this way with Himalayan cedar, Himalayan cherry (*padmaka*) 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 (*drāksā*), lac (*lākṣā*), white sugar (*sītā*), with wild asparagus, Hare Foot Uraria (*pr̥thakparṇī*),⁹⁰⁷ nutgrass (*mustā*), liquorice, Hi-

⁹⁰² Dalhaṇa glossed "bubbling (*budbuda*)" as "prolapse (*māṃsanirgama*) that looks like bubbles."

⁹⁰³ The expression "pigs' eye" appears to be a *hapax*. It was glossed as "downward vision (*adhodṛṣṭitva*)" by Dalhaṇa.

⁹⁰⁴ On the adverbial use of gently (*mṛdu*), see Gombrich 1979.

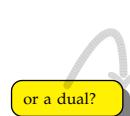
⁹⁰⁵ The identity of *payasyā* is debated (GVDB: 538), and was already in doubt at the time of Dalhaṇa but likely candidates may be those suggested by Dalhaṇa, who suggests either *arkapusī* or *kṣīrakākolī*, that may be *Holostemma adakodien* Schult. and *Leptadenia reticulata* (Retz.) Wight & Arn. (ADPS: 195–196). The *Sauśrutānighaṇṭu* glosses it as *kṣīrikā* or *arkapusīkā* (Suvedī and Tīvārī 2000: v. 307).

⁹⁰⁶ The expression "stirred with goat's milk (*ajūkṣīrārdita*)" is difficult. It may be connected with the rare root *ard* documented by Whitney (1885: 15). Cf. √*ard* *gatau* (Dhātupāṭha 1.56).

⁹⁰⁷ Suvedī and Tīvārī 2000: 18.

malayan cherry (*padmaka*), 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.⁹⁰⁸ This has an admixture of cottony jujube (*kākoli*) etc., should be prescribed in all treatments.⁹⁰⁹
- 77cd–78ab If pain does not end in this way, one should administer blood-letting to the vein of someone who has previously been oiled and sweated. Then the wise physician should apply cauterization in the advised manner.⁹¹⁰
- 78cd–80ab Now listen to two excellent collyrums for making the pupils clear. After grinding the flowers of perploca of the woods (*meṣaśṛṅga*), siris (*śiriṣa*), axelwood (*dhava*) royal jasmine (*jātī*), pearl and beryl (*vaidūrya*) with goat's milk, one should put it in a copper pot for seven days.
- 80cd–81 Having made it into wicks (*vartti*), the physician should apply it as a collyrium (*añjana*). Alternatively, one should make kohl (*srotoja*), coral (*vidruma*), cuttlefish bone (*phena*), and realgar (*manahśilā*) and peppers into wicks as before. One should apply these wicks, which are good in a collyrium, to steady the pupil.
- 82 I shall again discuss the foremost collyrums at length in the *Kriyākalpa* section. Those various methods may be applied here too.



or a dual?

⁹⁰⁸ Dalhaṇa mentioned that these drugs include Deodar (*bhadradāru*) and other wind-destroying drugs. The *vāṭasamāṇamana* group is listed in *Suśrutasanīhitā sūstrasthāna* 1.39.7.

⁹⁰⁹ Dalhaṇa noted that this would include errhines, ointments, etc.

⁹¹⁰ The vulgate reads *vāpi* for *cāpi*, so Dalhaṇa saw blood-letting and cauterity as alternatives, not a sequence of treatments. Dalhaṇa listed the places that cauterization may be applied, such as the brow, forehead, etc.

Uttaratantra 38: Diseases of the Female Reproductive System

Introduction

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.

Literature

The chapter is summarized, with notes on vocabulary and references to further research literature, in [HIML](#): IA, 313. (Tivārī 1990) dedicated a monograph to this topic, and Selby (2005a,b) has explored gyencological narratives in ayurveda.

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 5.⁹¹¹ 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*.

⁹¹¹ Or *Kumārabhṛtya* as this section is named in MS Kathmandu KL 699.

Table 5: 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
Tantrabhūṣaṇādhyaśaya	63–66	1–4

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 (*graha*) that are responsible for all children's diseases described in previous chapters of the *Kumāratantra*. In this way, the current chapter retains the general focus on the child bearing (*kaumārabhṛtya*), 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). Dalhana 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 (*graha*).” It is because (1) there is an explicit mention of the word “*yoni*” in the statement “born in the womb (*yoni*) 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.⁹¹²

- In the placement of the Nepalese version,
 - 6. *Yonivyāpatpratiṣedha* is preceded by

⁹¹² Dalhana on 6.38.1 ([Su 1938: 668](#)): ग्रहोत्पत्यध्यायायनन्तरं ‘तिर्यग्योनि मानुषं च’ इति वचनेन योने-नामसंकीर्तनात् कुमारजन्मविकारकारणत्वाद्वा योनेव्यापद्विकिस्तितार्थं योनिव्यापत्प्रतिषेधाध्यायारम्भो यु-ज्यत [...] ।

- 6.56 *Mūtrāghātapratisedha* (6.58 in [Su 1938](#)) and
- 6.57 *Mūtrakṛcchraptpratisedha* (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 that explain the reasons for treating the particular set of diseases. These lack any reference to the inborn disorders of children, mentioned by Ḏalhaṇa, 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.⁹¹³
- Parallel chapters in the *Aṣṭāṅgasamgraha* and the *Aṣṭāṅgahṛdayasaṁhitā* form a part of the *Śalyatantra* section of each text.

Parallels

The current chapter is parallel in its content to *Aṣṭāṅgasamgraha* 6.38 and 6.39 as well as *Aṣṭāṅgahṛdayasaṁhitā* 6.33 and 6.34 (*Guhyarogavijñāna* and *Guhyarogapratिशेदha* respectively).

A close literary parallel to the first part of the chapter is found in *Mādhavanidāna* ([MN₃](#)) 62, or at least its version printed in Y. T. Ācārya ([MN₃](#): 361). The readings of the [MN₃](#) 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 [MN₃](#). This part of the text is authored by Śrīkanṭhadatta, 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.⁹¹⁴

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

⁹¹³ See 1.3.37ab ([Su 1938](#): 15): नैगमेषचिकित्सा च ग्रहोत्पत्तिः सयोनिजा ॥.

⁹¹⁴ Meulenbeld [1974b](#): 22–26.

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: $\underline{U} \underline{U} \underline{\underline{U}} \underline{\underline{U}} \underline{U} \underline{\underline{U}}$. In content, they are only approximately parallel to three hemistichs in *anuṣṭubh* metre found in the vulgate.⁹¹⁵ The latter verses lack the apologetic explanation concerning the reasons for this chapter being taught.

The original opening verses

From verse *Suśrutasamhitā* 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).⁹¹⁶ By contrast, the vulgate contains two complete verses (four hemistichs) in the *anuṣṭubh* metre, again with only loosely-related content.⁹¹⁷ The three final hemistichs of this group are borrowed verbatim from the *Carakasamhitā*.⁹¹⁸ 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* (rogasamgraha)”.⁹¹⁹ This statement does not make any sense in the context of the *Suśrutasamhitā*, where no such Compendium exists.⁹²⁰ By contrast, in the *Carakasamhitā* this reference points back to chapter 1.19 (*Ca 1941*: 109–112), which calls itself “The Compendium of Diseases”.⁹²¹ This Compendium lists all the diseases dealt with in later sections of the text, and specifically mentions the twenty diseases of female reproductive system.⁹²² Even the vocabulary and wording of this

⁹¹⁵ *Suśrutasamhitā* 6.38.3–4ab (*Su 1938*: 668).

⁹¹⁶ The metre of these verses is not perfect.

⁹¹⁷ *Suśrutasamhitā* 6.38.4cd–6ab (*Su 1938*: 668).

⁹¹⁸ *Carakasamhitā* 6.30.7cd–8 (*Ca 1941*: 634).

⁹¹⁹ *Suśrutasamhitā* 6.38.5ab (*Su 1938*: 668): विंशतिर्व्यापदो योनेर्निर्दिष्टा रोगसंग्रहे ॥ ← *Carakasamhitā* 6.30.7cd (*Ca 1941*: 634).

⁹²⁰ The remark was not commented on by Dalhana.

⁹²¹ *Carakasamhitā* 1.19.9cd (*Ca 1941*: 112): रोगाध्याये प्रकाशिताः.

⁹²² *Carakasamhitā* 1.19.3 (*Ca 1941*: 110): विंशतिर्योनिव्यापदः।

passage is identical to the later verses. It is beyond doubt that this passage originated in the *Carakasam̄hitā* and was borrowed by the editors of the vulgate text of the *Suśrutasam̄hitā*.⁹²³

⁹²³ The above three hemistichs in *anuṣṭubh* are also repeated in the MN₃ 62.1–2ab. Given that the subsequent verses in the MN₃ stem from the *Suśrutasam̄hitā*, it is likely that MN₃ 62.1–2ab too was borrowed from from the *Suśrutasam̄hitā* and not from its original location in the *Carakasam̄hitā*.

Translation

- 1 And now I shall explain the countermeasures against disorders of the female reproductive system (*yonivyāpat*).⁹²⁴
- *3 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 (*yoni*), because he is entirely devoted to it (that is, to curing these diseases) for the sake of (people's) happiness.⁹²⁵
- *4 A corrupted female reproductive system (*yoni*) cannot consume semen (*bīja*), and therefore, the woman cannot take a fetus (that is, become pregnant). She gets severe prolapses (*arśas*), abdominal lump (*gulma*) and similarly many other diseases (*roga*).
- *5 Humours (*dosa*), wind (*vāta*), etc., corrupted due to faulty medical treatment (*mithyopacāra*),⁹²⁶ sexual activity, fate, and also defects (*dosa*) of menstrual blood (*ārtava*) and semen (*bīja*), produce various diseases in the female reproductive organ (*yoni*). These 20 diseases are taught here distinctly and one by one along with their treatment

⁹²⁴ On this broad understanding of the term *yoni* as “female reproductive system” see Das 2003: pp. 572–5.

⁹²⁵ 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.’

⁹²⁶ 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 *Carakasamhitā* 3.3.38 (Ca 1941: 245), it is given an explicit gloss by Cakrapāṇidatta: मिथ्योपचरितानि असम्यक् चिकित्सितान् “... given improper therapy”. In the *Suśrutasanhitā* (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 (*tarpana*) and roasting (*putapāka*), 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 (see p. 21) quoted by Gayadāsa at *Suśrutasanhitā* 2.5.17 (Su 1938: 287): श्विं तु द्विविधं प्रोत्कं दोषजं ब्रणजं तथा । तत्र मिथ्योपचाराद्विव्रणस्य ब्रणजं स्मृतम् ॥ “... arises from wrong treatment of the wound.” In contrast to this, the parallel verse in *Suśrutasanhitā* 6.38.5ab (Su 1938: 668) = *Carakasamhitā* 6.30.8 (Ca 1941: 634) = MN₃ 62.1 reads मिथ्याचार “wrong conduct.” All commentators (Cakrapāṇidatta on the *Carakasamhitā*, Śrīkanṭhadatta on the MN₃, and Dālhaṇa on the *Suśrutasanhitā*) explain that the wrong conduct stands here specifically for unwholesome diet. The parallel in *Aṣṭāṅgahṛdayasamhitā* 6.33.27 (Ah 1939: 895) = *Aṣṭāṅgasāngraḥ* 6.38.34a (As 1980: 829) plainly reads दुष्टभोजन “corrupted food” instead.

(*bhesaja*), causes (*hetu*) and signs (*cihna*).

*6.1 Because of wind (*vāta*), female reproductive organ (*yoni*) becomes:

1. *udāvartā* (*udāvartā*),
2. called Infertile (*vandhyā*), and
3. Sprung (*plutā*),
4. Flooded (*pariplutā*), and
5. Windy (*vātalā*).

*6.2 And because of choler (*pitta*), occur:

1. With bloodloss (*raktakṣayā*),
2. Vomiting (*vāminī*), and
3. Causing a Fall (*sraṇisani*),
4. Child-murderess (*putraghnī*), and also
5. Bilious / Choleric (*pittalā*).

*7.1 And because of phlegm (*kapha*) occur:

1. Extremely Excited (*atyānandā*),
2. Protuberant (*karṇīnī*), and
3. & 4. two Caranī (*caranī*), and
5. other Phlegmatic (*śleṣmalā*).

*7.2 And similarly there are other (kinds of morbid female reproductive system) involving all *dosas*:

1. Impotent (*śandhi*),
2. With testicles (*aṇḍīnī*),
3. two Huge (*mahatī*),
4. With a needle-like opening (*sūcīvaktrā*),
5. Sarvātmikā (*sarvātmikā*).

Uttaratantra 65: Rules of Interpretation

Literature

Meulenbeld offered an annotated overview of this chapter and a bibliography of earlier scholarship to 2002.⁹²⁷ Other explorations of this topic have included TY; Dasgupta 1952; Oberhammer 1968; TYV; Lele 1981; Scharfe 1993; Comba 1994; Mejor 2000; A. Singh 2003.

Scherrer-Schaub (1981) discussed the term *yukti* in Buddhist literature; see also Biardeau 1964: 444–446 Prets and Prandstetter 1991–2006: 343–345, while Frauwallner 1958 discussed the influence of the *tantrayuktis* in the Sāṅkhya tradition. Preisendanz (2013: 105–106, fn. 109) provided further references to the discussion of *yukti* in Buddhist literatures. Manevskaia (2008) gave examples of the use of *tantrayuktis* in Buddhist commentarial literature. Chevillard (2009) discusses the translation of the *tantrayuktis* in Tamil literary tradition, with a specific focus on *Tolkāppiyam* and its commentaries.

Early Sources

An ancient tradition of enumerating the *tantrayuktis* served as a foundational source not only for medical texts but also for works in various other disciplines, including Arthaśāstra, philosophy, and even grammar. The *Suśrutasaṃhitā* stands as the earliest Āyurvedic text that presents a compilation of a list of *tantrayuktis* followed by their definitions and usage. Mentions to Tantrayuktis are also found in the *Carakasaṃhitā* 8.12 (Ca 1941)

⁹²⁷ HML: IA, 331.

which introduce four additional *tantrayuktis*. However, the *tantrayuktis* remain undefined in the *Carakasamhitā*.

The *Arthaśāstra*

The enumeration and definitions of the *tantrayuktis* in the *Suśrutasamhitā* closely parallel their treatment in the *Arthaśāstra*. *Tantrayuktis* are discussed in the fifteenth and final chapter of the *Arthaśāstra*, called the *Tantrayukti*.⁹²⁸ For a side-by-side comparison of the *tantrayuktis* in the *Suśrutasamhitā* and the *Arthaśāstra*, please refer to Table 6.

The *Yuktidīpikā*

Yuktidīpikā (circa late sixth to early eighth century), an anonymous commentary on Īśvarakṛṣṇa's *Sāṅkhya-kārikā*, initiates its discourse with a detailed discussion of the characteristics of a scientific treatise, some of which align with the *tantrayuktis*.⁹²⁹ In the *Yuktidīpikā*, these terms are referred to as *tantraguṇa* or *tantrasampat*. They are: (1) *sūtropapatti* (2) *pramāṇopapatti* (3) *avayavopapatti* (4) *anyūnatā* (5) *saṃśayayokti* (6) *nirṇayayokti* (7) *uddeśa* (8) *nirdeśa* (9) *anukrama* (10) *saṃjñā* and (11) *upadeśa*.⁹³⁰ Apart from these, the *Yuktidīpikā* also exemplifies (12) *utsarga* (general rule), (13) *apavāda* (exception), and (14) *atideśa* (extended application). However, *utsarga* and *apavāda* are not considered *tantrayuktis* in other comprehensive lists. The *Yuktidīpikā* further states that while other *tantrayuktis* can be demonstrated in a similar manner, since they are peripheral topics, the text does not delve into their discussion.⁹³¹

928 *Arthaśāstra*: 280–283

929 See Oberhammer 1968: 605–614 for a detailed discussion of the use of the *tantrayuktis* in the *Yuktidīpikā*.

930 सत्रप्रमाणावयवोपपत्तिरन्यूनता संशयनिर्णयोक्ति: ।
उद्देशनिर्देशमनुक्रमश्च संज्ञोपदेशाविह तन्त्रसम्पत् ॥

Yuktidīpikā: 3

931 एवमारा अन्येऽपि द्रस्तव्याह् । तद्यथोत्सर्गोऽपवादोऽतिदेश इत्यादि ।...इत्येवमन्या अपि तन्त्रयुक्तयः शक्या
इह प्रदर्शयितुम् । अतिप्रसङ्गस्तु प्रकृतं तिरोदधातीति निवर्तते । सिद्धं तन्त्रयुक्तीनां सम्बन्धोपपत्तेस्तन्त्रम्
इदम् इति । *Yuktidīpikā*: 8

Tamil literature

Discussions on the *tantrayuktis* are also found in Tamil technical literature, the earliest of which is the *Tolkāppiyam*.⁹³² A list of 32 *tantrayuktis*, called *utti* or *tantiravutti* in Tamil, are given in the 27th (the final) chapter titled *Marapiyal* “Chapter on conventions” of the last book called *Porul* “Matters” of the *Tolkāppiyam*. There is no consensus regarding the dating of the *Tolkāppiyam*. However, if we endorse Zvelebil’s view, which posits that the final redaction of the *Tolkāppiyam* occurred around the fifth century AD, it follows that this section of the *Tolkāppiyam* cannot postdate the fifth century. If we follow the dating of Zvelebil, we can safely argue that by that time, Sanskrit *tantrayuktis* had already been translated into Tamil. Nevertheless, determining the correspondence between specific *tantrayuktis* and Tamil *uttis* poses a challenge. A major factor contributing to this challenge is the disagreement between two commentators of the *Tolkāppiyam*, namely Ilampūraṇar (11th or 12th century) and Pērāciriyan (possibly 13th century), regarding the interpretation of the list of *uttis*. It is still not clear which list of 32 *tantrayuktis* was before the author of the *Tolkāppiyam*.

After the *Tolkāppiyam*, several other Tamil texts refer to the *tantrayuktis*. Among them the *Yāpparuinkalam* (possibly 10th century), the *Vīracolīyam* (11th century), *Nannūl* (late 12th or early 13th century), and their commentaries hold significant importance in this context.

The *Viṣṇudharmottarapurāṇa*

The third book of the *Viṣṇudharmottarapurāṇa*, believed to have been composed between the fifth and seventh centuries, includes a chapter dedicated to the *tantrayuktis*.⁹³³ Unlike the *Arthaśāstra* and the *Suśrutasanhitā*, this chapter lacks illustrative examples of the *tantrayuktis*. The chapter lists 32 *tantrayuktis* followed by definitions. Notably, the list and definitions given here – we are using the critical edition by Priyabala Shah – in most cases bear a striking resemblance to those found in the *Suśrutasanhitā*. Given the striking alignment between the list and definitions of *tantrayuktis*, one could suggest that the *Viṣṇudharmottarapurāṇa*’s chapter on *tantrayuktis* likely draws directly or indirectly from the *Suśrutasanhitā* or

⁹³² For a detailed discussion of the treatment of the *tantrayuktis* in the *Tolkāppiyam* see Chevillard 2009.

⁹³³ Adhyāya 6, *Viṣṇudh* 3: 13–14.

from a common source. The designations and the order of the *tantrayuktis* in the *Viṣṇudharmottarapurāṇa* are almost identical. The only differences in the order are as follows:

1. *Viparyaya* is placed after *vidhāna* whereas in the *Suśrutasaṃhitā* it follows *arthāpatti*.
2. *Anumata* is placed after *vyākhyāna* whereas in the *Suśrutasaṃhitā* it follows *nirṇaya*.
3. *Anāgatāvekṣaṇa* (*anāgatāpekṣaṇa* in the Nepalese version) occurs after *atikrāntāvekṣaṇa* (*atikrāntāpekṣaṇa* in the Nepalese version) whereas the order is reverse in the *Suśrutasaṃhitā*.

For a side-by-side comparison of the *tantrayuktis* in the *Suśrutasaṃhitā* and the *Viṣṇudharmottarapurāṇa*, please refer to Table 6.

The *Saddanīti*

A list of the 32 *tantrayuktis* accompanied by definitions also appear in the final chapter (*Pariccheda 28*) of the final book (book 3: *Suttamālā*) of the renowned Pali grammar *Saddanīti* composed by Aggavāmsa in Arimaddanapura (modern Bagan, Burma) in the twelfth-century.⁹³⁴ Just as the *Viṣṇudharmottarapurāṇa*, this list also does not provide examples of the *tantrayuktis*. Although written in Pali, the order and the definition of the *tantrayuktis* (*tantiyutti* in Pali) closely resemble those of the *Suśrutasaṃhitā*. There are, however, a few differences:

1. The *tantrayukti pradeśa* is referred to as *paṭidesa* (Sanskrit *pratideśa*) and is positioned after *atidesa* (Sanskrit *atideśa*) whereas in the *Suśrutasaṃhitā* it follows *apadeśa*.
2. *Atikrāntāpekṣaṇa* is designated as *atītāpekkhana* (Sanskrit *atītāpekṣaṇa*).
3. *Svasaṃjñā* is designated as *anaññā sakasaṃjñā* (Sanskrit *ananyā svasaṃjñā*) and is defined with subtle variations.
4. *Ūhya* is designated as *upānīya*.

⁹³⁴ *Saddanīti* 3: 920–921.

For a side-by-side comparison of the *tantrayuktis* in the *Suśruta Saṃhitā* and the *Saddanīti*, please refer to Table 6.⁹³⁵

Table 6: *Tantrayuktis* in *Suśrutasaṃhitā* (S), *Viṣṇu-dharmottarapurāṇa* (V), *Arthaśāstra* (A), and *Saddanīti* (N)

Sequence	Terms	Definitions
(S) 1.	<i>adhikaraṇa</i>	तत्र यमर्थमधिकृत्योच्यते तदधिकरणम्।
(V) 1.	<i>adhikaraṇa</i>	तत्र यमर्थमधिकृत्योच्यते तदधिकरणम्।
(A) 1.	<i>adhikaraṇa</i>	यमर्थमधिकृत्योच्यते तदधिकरण।
(N) 1.	<i>adhikaraṇa</i>	तत्थं यं अधिकिञ्च वुञ्चति, तं अधिकरणं।
(S) 2.	<i>yoga</i>	येन वाक्यं युज्यते स योगः। यथा व्यत्यासेनोक्तानां सन्निकृष्टविप्रकृष्टानां पदार्थनाम् एकीकरणम्।
(V) 2.	<i>yoga</i>	येन वाक्यार्थे युज्यते स योगः।
(A) 3.	<i>yoga</i>	वाक्ययोजना योगः।
(N) 2.	<i>yoga</i>	पुञ्चापरवसेन वुत्तानं सन्निहितासन्निहितानं पदानं एकीकरणं योगो;।
(S) 3.	<i>padārtha</i>	योऽर्थोऽभिहितः सूत्रे पदे वा स पदार्थः। पदस्य पदयोः पदानां वा योऽर्थः स पदार्थः। अपरिमिताश्व पदार्थः।
(V) 3.	<i>padārtha</i>	योऽर्थो विधिकृतः सूत्रपदे स पदार्थः।
(A) 4.	<i>padārtha</i>	पदावधिकः पदार्थः।
(N) 3.	<i>padattha</i>	सूत्रपदेसु पुञ्चापरयोगतो यो अत्थो विहितो, सो पदत्थो।
(S) 4.	<i>hetvartha</i>	यदुक्तं साधनं भवति स हेत्वर्थः।
(V) 4.	<i>hetvartha</i>	यदन्यद्युक्तिमदर्थस्य साधनं स हेत्वर्थः।
(A) 5.	<i>hetvartha</i>	हेतुरर्थसाधको हेत्वर्थः।
(N) 4.	<i>hetuattha</i>	यं वुत्तत्यसाधकं, सो हेतुअत्थो। ⁹³⁶

935 For the reading of *Saddanīti*, we used the edition by H. Smith who also provided an apparatus with variants. However, the edition by Thera sometimes consists of variants which do not appear in the apparatus of Helmer Smith's edition. In those cases, we noted the variants in footnotes.

936 *yam vuttaatthasādhanam?* so hetuttho. Thera 1909: 807.

Sequence	Terms	Definitions
(S) 5.	<i>uddeśa / samuddeśa</i>	समासवचनं समुद्देशः ।
(V) 5.	<i>uddeśa</i>	समासवचनमुद्देशः ।
(A) 6.	<i>uddeśa</i>	समासवाक्यमुद्देशः ।
(N) 5.	<i>uddesa</i>	समासवचनं उद्देसो ।
(S) 6.	<i>nirdeśa</i>	विस्तरवचनं निर्देशः ।
(V) 6.	<i>nirdeśa</i>	विस्तरवचनं निर्देशः ।
(A) 7.	<i>nirdeśa</i>	व्यासवाक्यं निर्देशः ।
(N) 6.	<i>niddesa</i>	वित्थारवचनं निर्देशो ।
(S) 7.	<i>upadeśa</i>	एवमित्युपदेशः ।
(V) 7.	<i>upadeśa</i>	एवमेवेत्युपदेशः ।
(A) 8.	<i>upadeśa</i>	एवं वर्तितव्यमित्युपदेशः ।
(N) 7.	<i>upadesa</i>	एवन् ति उपदेसो ।
(S) 8.	<i>apadeśa</i>	अनेन कारणेनेत्युपदेशः ।
(V) 8.	<i>apadeśa</i>	अनेन कारणेनेत्युपदेशः ।
(A) 9.	<i>apadeśa</i>	एवमसावाहेत्युपदेशः ।
(N) 8.	<i>apadesa</i>	अनेन कारणेना ति अपदेसो ।
(S) 9.	<i>pradeśa</i>	प्रकृतस्यातिक्रान्तेन साधनं प्रदेशः ।
(V) 9.	<i>pradeśa</i>	प्रकृतस्यानागतेन साधनं प्रदेशः ।
(A) 11.	<i>predeśa</i>	वक्तव्येन साधनं प्रदेशः ।
(N) 10.	<i>paṭidesa</i>	पक्तस्स अनागतेन अथसाधनं पटिदेसो ।
(S) 10.	<i>atideśa</i>	प्रकृतस्यानागतेन साधनम् अतिदेशः ।
(V) 10.	<i>atideśa</i>	अतिक्रमणेन अतिदेशः ।
(A) 10.	<i>atideśa</i>	उक्तेन साधनमतिदेशः ।
(N) 9.	<i>atidesa</i>	पक्तस्स अतिक्रन्तेन साधनं अतिदेसो ।
(S) 11.	<i>apavarga</i>	अभिप्रमूज्यापर्कर्षणमपवर्गः ।
(V) 11.	<i>apavarga</i>	अभिप्रायानुकर्षणमपवर्गः ।
(A) 22.	<i>apavarga</i>	अभिप्लुतव्यपर्कर्षणमपवर्गः ।
(N) 11.	<i>apavagga</i>	अतिव्यापेत्वा अपनयनं अपवग्गो ।
(S) 12.	<i>vākyāśeṣa</i>	येन पदेनानुक्तेन वाक्यं समाप्यते स वाक्यशेषः ।
(V) 12.	<i>vākyāśeṣa</i>	येनार्थः परिसमाप्यते पदेनाहार्येण स वाक्यशेषः ।

Sequence	Terms	Definitions
(A) 17. (N) 12.	<i>vākyāśeṣa</i> <i>vākyadosa</i>	येन वाक्यं समाप्यते स वाक्यशेषः । येन पदेन अवृत्तेन वाक्यपरिसमापनं भवति, सो वाक्यदोसो ।
(S) (V)		
(A) 12. (N)	<i>upamāna</i>	दृष्टेनादृष्टस्य साधनमुपमानम् ।
(S) 13. (V) 13. (A) 13. (N) 13.	<i>arthāpatti</i> <i>arthāpatti</i> <i>arthāpatti</i> <i>atthāpatti</i>	यदकीर्तिमर्थादापद्यते सार्थापत्तिः । यदकीर्तिमर्थादापद्यते सार्थापत्तिः । यदनुक्तमर्थादापद्यते सार्थापत्तिः । यद् अकिञ्चितं अत्थतो आपज्जति, सा अत्था- पत्तिः ।
(S) 14. (V) 20. (A) 16. (N) 14.	<i>viparyaya</i> <i>viparyaya</i> <i>viparyaya</i> <i>vipariyaya</i>	यद्यस्य प्रातिलोम्यं तद्विपर्ययः । तस्य प्रातिलोम्यं विपर्ययः । प्रतिलोमेन साधनं विपर्ययः । यं यत्थ विहितं, तत्र यं तस्स पटिलोमं, सो वि- परिययो ।
(S) 15. (V) 14.	<i>prasaṅga</i> <i>prasaṅga</i>	प्रकरणान्तरेण समानः प्रसङ्गः । प्रकरणाभिहितोऽर्थः केनचिदुपोद्घातेन पुनरु- च्यमानः प्रसङ्गः ।
(A) 15. (N) 15.	<i>prasaṅga</i> <i>pasaṅga</i>	प्रकरणान्तरेण समानोऽर्थः प्रसङ्गः । पकरणान्तरेन समानो अत्थो पसङ्गो ।
(S) 16. (V) 15. (A) 26. (N) 16.	<i>ekānta</i> <i>ekānta</i> <i>ekānta</i> <i>ekānta</i>	यदवधारणेनोच्यते स एकान्तः । यथा तथा स एकान्तः । सर्वत्रायत्तमेकान्तः । सब्बथा यं तथा, सो एकान्तो ।
(S) 17. (V) 16. (A)	<i>anekānta</i> <i>anekānta</i> <i>anekānta</i>	क्वचित्तथा क्वचिदन्यथा सोऽनेकान्तः । क्वचित्तथा क्वचिदन्यथाऽसावनेकान्तः ।
(N) 17.		यो पन कथ्यचि अञ्जथा सो अनेकान्तो ।
(S) 18.	<i>pūrvapakṣa</i>	यस्तु निःसंशयमभिधीयते स पूर्वपक्षः । ⁹³⁷

⁹³⁷ This definition of *pūrvapakṣa* in the Nepalese version is problematic.

Sequence	Terms	Definitions
(V) 17.	<i>pūrvapakṣa</i>	प्रतिषेधवचनं पूर्वपक्षः ।
(A) 24.	<i>pūrvapakṣa</i>	प्रतिषेद्धव्यं वाक्यं पूर्वपक्षः ।
(N) 18.	<i>pubbapakkha</i>	[यो] तु निस्सन्देहम् अभिधीयते, सो पुब्बपक्खो ।
(S) 19.	<i>nirṇaya</i>	तस्योत्तरं निर्णयः ।
(V) 18.	<i>nirṇaya</i>	उत्तरवचनं निर्णयः ।
(A) 25.	<i>uttarapakṣa</i>	निर्णयवाक्यमुत्तरपक्षः ।
(N) 19.	<i>nirṇaya</i>	तस्स यं उत्तरं, सो निर्णयो ।
(S) 20.	<i>anumata</i>	परमतमप्रतिषिद्धमनुमतम् ।
(V) 25.	<i>anumata</i>	परमतमप्रतिषिद्धमनुमतम् ।
(A) 18.	<i>anumata</i>	परवाक्यमप्रतिषिद्धमनुमतम् ।
(N) 20.	<i>anumata</i>	परमतम् अप्पिटिसिद्धं अनुमतं ।
(S) 21.	<i>vidhāna</i>	प्रकरणानुपूर्वादभिहितं विधानम् ।
(V) 19.	<i>vidhāna</i>	प्रकरणानुपूर्वं विधानम् ।
(A) 2.	<i>vidhāna</i>	शास्त्रस्य प्रकरणानुपूर्वी विधानम् ।
(N) 21.	<i>vidhāna</i>	पकरणानुपुञ्चं विधानं ।
(S) 22.	<i>anāgatāpekṣaṇa</i>	एवं वक्ष्यतीत्यनागतापेक्षणम् ।
(V) 22.	<i>anāgatāpekṣaṇa</i>	परत्र वक्षामीत्यनागतावेक्षणम् ।
(A) 27.	<i>anāgatāvekṣaṇa</i>	पश्चादेवं विहितमित्यनागतावेक्षणम् ।
(N) 22.	<i>anāgatāpekkhana</i>	एवं वक्त्वामि ति अनागतापेक्षणं ।
(S) 23.	<i>atikrāntāpekṣaṇa</i>	इत्युक्तमित्यतिक्रान्तापेक्षणम् ।
(V) 21.	<i>atikrāntāpekṣaṇa</i>	इत्युक्तमित्यतिक्रान्तावेक्षणम् ।
(A) 28.	<i>atikrāntāvekṣaṇa</i>	पुरस्तादेवं विहितमित्यतिक्रान्तावेक्षणम् ।
(N) 23.	<i>atītāpekkhana</i>	इति वुत्तन् ति अतीतापेक्षणं ।
(S) 24.	<i>samśaya</i>	उभयहेतुनिर्दर्शनं संशयः ।
(V) 23.	<i>samśaya</i>	उभयतो हेतुदर्शनं संशयः ।
(A) 14.	<i>samśaya</i>	उभयतो हेतुमानर्थः संशयः ।
(N) 24.	<i>samsaya</i>	उभयहेतुदस्पनं संसयो ।
(S) 25.	<i>vyākhyāna</i>	तत्रातिशयोपवर्णनं व्याख्यानम् ।
(V) 24.	<i>vyākhyāna</i>	तत्रातिशयवर्णनातिव्याख्यानम् ।
(A) 19.	<i>vyākhyāna</i>	अतिशयवर्णना व्याख्यानम् ।
(N) 25.	<i>vyākhyāna</i>	संवर्णना व्याख्यानम् ।

Sequence	Terms	Definitions
(S) 26.	<i>svasañjñā</i>	अन्यशास्त्रासामान्या स्वसंज्ञा ।
(V) 26.	<i>svasañjñā</i>	पैररसम्मतः शब्दः स्वसंज्ञा ।
(A) 23.	<i>svasañjñā</i>	पैररसमितः शब्दः स्वसंज्ञा ।
(N) 26.	<i>anaññā sakasaññā</i>	भूतानं पवत्ता आरभ्यचिन्ता अनञ्जा, सस्स साधारणा सकसञ्जा ।
(S) 27.	<i>nirvacana</i>	लोकप्रथितमुदाहरणं निर्वचनम् ।
(V) 27.	<i>nirvacana</i>	लोके प्रतीतमुदाहरणं निर्वचनम् ।
(A) 20.	<i>nirvacana</i>	गुणतः शब्दनिष्पत्तिर्निर्वचनम् ।
(N) 27.	<i>nibbacana</i>	लोकप्यतीतम् उदाहरणं निब्बचनं ।
(S) 28.	<i>nidarśana</i>	दृष्टान्तव्यक्तिर्निर्दर्शनम् ।
(V) 28.	<i>nidarśana</i>	तद्युक्तिनिर्दर्शनं दृष्टान्तः ।
(A) 21.	<i>nidarśana</i>	दृष्टान्तो दृष्टान्तयुक्तो निर्दर्शनम् ।
(N) 28.	<i>nidassana</i>	दिट्ठन्तसंयोगो निर्दस्सनं ।
(S) 29.	<i>niyoga</i>	इदमेवेति नियोगः ।
(V) 29.	<i>niyoga</i>	एवेति नियोगः ।
(A) 29.	<i>niyoga</i>	एवं नान्यथेति नियोगः ।
(N) 29.	<i>niyoga</i>	इदम् एवा ति नियोगो ।
(S) 30.	<i>vikalpa</i>	।
(V) 30.	<i>vikalpa</i>	इदं वेदं वेति विकल्पः ।
(A) 30.	<i>vikalpa</i>	अनेन वानेन वेति विकल्पः ।
(N) 30.	<i>vikappa</i>	इदं वा ति विकर्पो ।
(S) 31.	<i>samuccaya</i>	।
(V) 31.	<i>samuccaya</i>	इदं चेदं चेति समुच्चयः ।
(A) 31.	<i>samuccaya</i>	अनेन चानेन चेति समुच्चयः ।
(N) 31.	<i>samuccaya</i>	संखेपवचनं समुच्चयो ।
(S) 32.	<i>ūhya</i>	यदनिर्दिष्टं बुद्धिगम्यं तदूह्यम् ।
(V) 32.	<i>ūhya</i>	अत्र यदनिर्दिष्टं युक्तिगम्यं तदूह्यम् ।
(A)	<i>ūhya</i>	अनुकूकरणमूह्यम् ।
(N) 32.	<i>upānīya</i>	यद् अनिदिष्टं बुद्धिया अवगमनीयं, तद् उपानीयन् ति ।

Āyurvedic literature

Primary texts

While references to *tantrayuktis* can be found across various disciplines, Āyurveda places a particular emphasis on their discussion, especially evident in key texts of Āyurveda, such as the *Caraka-* and the *Suśruta-* *samhitās*, as well as the *Aṣṭāṅgasāṅgraha*. The *Carakasamhitā* and *Aṣṭāṅgasāṅgraha* present an identical list of *tantrayuktis* contained in a stanza of four *anuṣṭubh* verses.⁹³⁸ However, unlike the *Suśrutasaṃhitā* they lack explicit definitions and examples. This list of the *tantrayuktis* appear in the final chapter of the last book in both *Carakasamhitā* (41b–45a, chapter 12, *Siddhisthāna*) and *Aṣṭāṅgasāṅgraha* (150–153, chapter 50, *Uttarasthāna*). The same has been quoted by Aruṇadatta in his commentary *Sarvāṅgasundarī* on the *Aṣṭāṅgahṛdaya* while elucidating the concept of *tantraguṇa* (qualities of the system)⁹³⁹ and by Śrīdāsa Pañjita in the prefatory section of his commentary *Hṛdayabodhikā* on the *Aṣṭāṅgahṛdayasaṃhitā*.⁹⁴⁰ Notably, this list consists of 36 *tantrayuktis* instead of 32 found in the *Suśrutasaṃhitā* and other texts. The additional four are: *prayojana* (objective), *pratyutsāra* (rebuttal), *uddhāra*, and *sambhava* (origin).

The presence of identical verses enumerating the *tantrayuktis* in the *Aṣṭāṅgahṛdayasaṃhitā*, *Carakasamhitā*, *Sarvāṅgasundarī* and *Hṛdayabodhikā* strongly suggests a shared origin. However, a critical issue arises due to the absence of a comprehensive critical edition of the chapter 12 of the *Siddhisthāna* of the *Carakasamhitā*, leaving uncertainty about the total number of *tantrayuktis* recognized by Dṛḍhabala in this section.⁹⁴¹ The

938 तत्राधिकरणं योगो हेत्वर्थोऽर्थः पदस्य च ।
 प्रदेशोद्देशनिर्देशवाक्यशेषाः प्रयोजनम् ॥
 उपदेशापदेशातिदेशार्थापत्तिनिर्णयाः ।
 प्रसङ्गैकात्तनैकान्ताः सापवर्गा विपर्ययः ॥
 पूर्वपक्षविधानानुमतव्याख्यानसंशयाः ।
 अतीतानागतपेक्षास्वसंज्ञोद्घासमुच्चयाः ॥
 निदर्शनं निर्वचनं नियोगोऽथ विकल्पनम् ।
 प्रत्युत्सारस्तथोद्भुरः सम्भवस्तन्त्रयुक्तयः ॥

Aṣṭāṅgasāṅgraha 6.50.150–153a (As 1980: 959). *Carakasamhitā* 8.12.41b–45a (Ca 1941: 736) reads almost the same. The only two variants are (1) अतीतानागतावेक्षा... and (2) निर्वचनं संनियोगो विकल्पनम्.

939 Aruṇadatta on the *Aṣṭāṅgahṛdayasaṃhitā* 6.40.78 (Ah 1939: 946).

940 AHS 1940: 1–2.

941 We know from internal textual evidence that the *Siddhisthāna* of the *Carakasamhitā* in

problem arises from different readings of the half-verse that occurs right before the list of 36 *tantrayuktis*. In MS Kathmandu NAK 1/1648 (dated 1183 AD, the oldest dated manuscript of the *Carakasamhitā* known to us), the reading of this verse is: षट्टिंशद्विर्विचित्राभिर्भूषितं तन्त्रयुक्तिभिः ॥ This number of 36 *tantrayuktis* perfectly agrees with the following list of the 36 *tantrayuktis*. A similar reading is found in Trikamji's 1933 *Carakasamhitā* edition which contains only the *mūla*-text.⁹⁴² However, although most of the other editions consist of the same reading, a number of editions show quite a lot of discrepancies with the number. For example, Trikamji's 1941 edition of the *Carakasamhitā* reads the same half-verse as षट्टिंशता विचित्राभिर्भूषितं तन्त्रयुक्तिभिः । 8.12.41a ([Ca 1941](#): 735). In the same edition, the reading of Cakrapāni's *Āyurvedadīpikā* supports the reading: षट्टिंशत्तन्त्रयुक्तिभिर्भूषितमपूर्यद्वबलं इति योजना. However, after this verse, the same edition consists of the versified list of the 36 *tantrayuktis* and commenting on these verses, the *Āyurvedadīpikā* confirms the total number of the *tantrayuktis* as 36: इत्येताः षट्टिंशत्तन्त्रयुक्तयो व्याहृताः ।⁹⁴³ Moreover, the edition of Rāmaprasāda Vaidyopādhyāya reads the half-verse as— पञ्चत्रिंशद्विचित्राभिर्भूषितं तन्त्रयुक्तिभिः.⁹⁴⁴ Rāmaprasāda Vaidyopādhyāya excludes *ūhya*.⁹⁴⁵ The same reading is found in Satīśacandra Śarmā's third edition of the *Carakasamhitā*.⁹⁴⁶ However, adding more troubles to it, Satīśacandra Śarmā, in his Bengali translation, says that there are 34 *tantrayuktis* (even though the main Sanskrit text of his edition counts 35). Then he in fact illustrates 36 *tantrayuktis* making a remark that states—

“in Gaṅgadhara’s reading, there are 36 *tantrayuktis* because he counts *saṃśaya* twice in his commentary. But 35 was reckoned

which the list of the *tantrayuktis* appear was originally authored by Dṛḍhabala, who lived in a town called Pañcanada sometime between 300 and 500 AD.

Cf. अखण्डार्थं द्वबले जातः पञ्चनदे पुरे ।

कृत्वा बहुभ्यस्तन्त्रेभ्यो विशेषोऽचिलोद्यम् ॥

सप्तदशौषधाध्यायसिद्धिकन्पैरपूरयत् ।

8.12.39–40a ([Ca 1941](#): 735)

942 षट्टिंशता विचित्राभिर्भूषितं तन्त्रयुक्तिभिः ॥ 8.12.70a ([Ca 1933](#): 972).

943 [Ca 1941](#): 737.

944 [Ca 1911](#): 1913.

945 Understanding the *tantrayukti samuccaya* as *asamuccaya*, he reads the verse where *ūhya* appears as— अतीतानागतापैक्षा स्वसज्जा हासपुच्छयाः. Surely, this reading is erroneous as the plural ending after *samuccaya* does not make sense.

946 [Ca 1923](#): 1020. His first edition, however, reads the half-verse the same as the reading in [Ca 1933](#). ([Ca 1904](#): 884)

in his *mūla*-text. Another manuscript reckons 34 *tantrayuktis* excluding *apadeśa*. This edition reads thirty-five instead of thirty-four or thirty-six.”⁹⁴⁷

In the edition of Narendranātha Senagupta and Balāicandra Senagupta that includes Cakrapāṇi’s *Āyurvedadīpikā* and Gaṅgādhara’s *Jalpakalpataru*, the Sanskrit *mūla* and the *Jalpakalpataru* enumerate 36 *tantrayuktis*. However, in the same edition, the *Āyurvedadīpikā* reads, पञ्चत्रिंशत्तन्त्रयुक्तिभिर्भूषितमपूर्यद्विल इति योजना.⁹⁴⁸ Again, after the illustrations of the 36 *tantrayuktis* it reads, इत्येताः षट्ट्रिंशत्तन्त्रयुक्तयो व्याहृताः.⁹⁴⁹ In his edition of the *Tantrayuktivicāra*, Muthuswami also mentions that 35 *tantrayuktis* are reckoned in the *Carakasamhitā*.⁹⁵⁰ Jivānanda Vidyāsagara’s edition gives no number at all— तथा च ता विचित्राभिर्भूषितं तन्त्रयुक्तिभिः.⁹⁵¹

Commentaries on the *Carakasamhitā* prior to Cakrapāṇi’s *Āyurvedadīpikā*, such as the *Carakanyāsa* of Bhaṭṭāra Hariścandra (c. mid-sixth century) or *Nirantarapadavyākhyā* of Jejjaṭa (c. 7th or 8th century AD) do not help much because the extant portions of these commentaries do not include the concerned section of the 12th chapter of the *Siddhisthāna*. However, Hariścandra was possibly not aware of the total number and the list of the *tantrayuktis* in the final chapter of the *Siddhisthāna* because he discussed the *tantrayuktis* right at the beginning of his commentary and showed no indication to the awareness about the discussion on the *tantrayuktis* at the end of the text. Moreover, he discusses 40 *tantrayuktis* instead of 36. It is not yet settled whether or not Hariścandra was aware of Dṛḍhabala’s redaction of the *Carakasamhitā*. However, Hariścandra’s treatment of the *tantrayuktis* supports the latter.⁹⁵² It is clear from Cakrapāṇi’s commentary on the *Carakasamhitā* that in the version of the text he commented upon contained the four verses that list the 36 *tantrayuktis*. It is, however, not improbable that the four verses that list the 36 *tantrayuktis* were later added to the *Carakasamhitā* sometime between the sixth (the date of Hariścandra) and the eleventh century (the date of

947 “গঙ্গাধর পাঠ— তন্ত্রযুক্তি ছত্রিশ প্রকার। তিনি টীকাতে সংশয়কে দুই বার উল্লেখ করিয়া ছত্রিশ প্রকার গণনা করিয়াছেন, কিন্তু তাহার মূলে পঁয়ত্রিশ প্রকার আছে; গ্রন্থান্তরে ৩৪ প্রকার আছে; তাহাতে ‘অপদেশ’ ধর্তব্য হয় নাই। এই অনুবাদের মূলে চতুষ্ট্রিংশৎ বা ষট্ট্রিংশৎ স্থলে পঞ্চষ্ট্রিংশৎ লিখিত হইল।” Ca 1923: 1022.

948 Ca 1928-33: III, 3814.

949 Ca 1928-33: III, 3822.

950 ‘पञ्चत्रिंशत्तन्त्रयुक्तिभिः।’ इति चरके। द्वात्रिंशदिति सुश्रुतः।(TYV: 2, fn. 2).

951 Ca 1877: 961.

952 HIML: IA, 189.

Cakrapāṇi) and the discrepancy appeared when the previous verse that gives the total number of the *tantrayuktis* was not properly emended by the scribes complying with the following list of 36 *tantrayuktis*. There is a need of a critical edition of the twelfth chapter of the *Siddhisthāna* of the *Carakasamhitā* to address these issues definitely.

Commentaries

The commentators who extensively delved into the discussion of the *tantrayuktis* are Hariścandra, the author of *Carakanyāsa*, and Aruṇadatta (12th century),⁹⁵³ who authored his commentary *Sarvāṅgasundarī* on the *Aṣṭāṅgahṛdaya* of Vāgbhaṭa. Hariścandra meticulously defined and analyzed 40 *tantrayuktis* at the beginning of his work. The four additional *tantrayuktis* are: *paripraśna* (question), *vyākaraṇa* (grammatical clarification), *vyutkrāntābhidhāna* (overpassing statement) and *hetu* (means of knowledge).⁹⁵⁴

Aruṇadatta, while discussing the concept of *tantraguṇa* at the end of the *Aṣṭāṅgahṛdaya*, provided an elaborate description of *tantrayuktis*, considering them as part of a system of ninety-five *tantraguṇas*. Śrīdāsa Pañḍita (14th century), a commentator on the *Aṣṭāṅgahṛdaya*, echoed Aruṇadatta's exploration of *tantrayuktis* in the beginning of his commentary, *Hṛdayabodhikā*.⁹⁵⁵ Thus, both Hariścandra and Śrīdāsa Pañḍita engage with this topic right at the beginning, underscoring the significance they attribute to the subject. Other noteworthy commentators who discussed the topic of *tantrayukti* are Cakrapāṇi (11th century) and Indu (sometime between 8th

953 [HIML](#): IA, 663–664.

954 This text has only been published once (only until the third chapter of *Sūtrasthāna*) by Masta Ram Shastri from Lahore in 1932/33. ([HIML](#): IB, 290) Unfortunately, it is currently inaccessible to us. Although some fragmented manuscripts of the *Carakanyāsa* exist, for this section (Chapter 1, *Sūtrasthāna*), we were able to consult only MS MS Jamnagar GAU 114. This is a recent apograph with several lacunae and corruptions. The list of the *tantrayuktis* provided in the *Carakanyāsa* is as follows (with some emendations made in the reading): तन्त्रस्य युक्तयोऽधिकरणाद्याश्वत्वारिंशत् ।... युक्तयस्तावदधिकरणं योगो हेत्वर्थं उद्देशो [निर्देश] उपदेशोऽपदेशोऽतिदेशः प्रदेशो निर्णयोऽर्थापत्तिवाक्यशैषः प्रयोजनं प्रसङ्गं एकान्तोऽनेकान्तो विपर्ययोऽपवर्गः पूर्वपक्षो विधानमनुमते व्याख्यानं परिप्रश्नो व्याकरणमतीतपेक्षणमनागतापेक्षणं संशयः स्वसंज्ञोह्यः समुच्चयौ निर्दर्शनं निर्वचनं नियोगो विकल्पः प्रत्युत्सार उद्भारः सम्भवो व्युक्तान्ताभिधानं हेतुरिति ।

955 [HIML](#): IA, 680.

and 12th century). Cakrapāṇi and Indu defined and illustrated the *tantrayuktis* mentioned in the *Carakasamhitā* and the *Aṣṭāṅgasaṅgraha*, respectively. They affirm the inclusion of the four additional *tantrayuktis* in Harīścandra's list. Cakrapāṇi, aligning them with existing concepts, incorporates *paripraśna*, *vyākaraṇa*, and *vyutkrāntābhidhāma* under the *tantrayuktis udeśa*, *vyākhyāna*, and *nirdeśa*, respectively. According to him, *hetu* serves as an overarching term encompassing all *pramāṇas* (means of knowledge) such as *pratyakṣa* (perception) and others. Indu, however, outlines three possible reasons for not incorporating these *tantrayuktis* into the list: (1) they lack direct mention in the main text, (2) they could be considered as falling within the scopes of already enumerated *tantrayuktis*, or (3) they are not recognized as *tantrayuktis*.

Detailed discussions on the *tantrayuktis* also appear in the *Jalpakalpataru*, a nineteenth-century commentary on the *Carakasamhitā* by Gaṅgādhara Kavirāja from Bengal. Gaṅgādhara included the commentary with his *editio princeps* of the *Carakasamhitā*. He defines the *tantrayuktis* most often as defined in the *Suśrutasamhitā* making explicit quotations from the *Suśrutasamhitā* itself. Hence, this commentary serves as a testimonium for most part of the *tantrayukti* section of the *Suśrutasamhitā*.

Monographs

two texts authored by Āyurvedic scholars exclusively delve into the topic of *tantrayukti*. The first is the *Tantrayuktivicāra* by a physician named Nīlamegha (also known as Vaidyanātha), while the second is called the *Tantrayukti*, which is a sort of recast of the former by an anonymous author. The anonymous author describes himself as being from the same lineage as Nīlamegha and asserts that Nīlamegha belongs to the same lineage of Bhīṣagārya (also known as Nārāyaṇa Bhīṣaj). Both Nīlamegha and the author of *Tantrayukti* are likely from Kerala or coastal Karnataka.⁹⁵⁶ According to Kolatteri Saṅkaramenon and Meulenbeld,

⁹⁵⁶ Kolatteri Saṅkaramenon, the first editor of the *Tantrayuktivicāra*, believes that Nīlamegha hails from Kerala. This conclusion is drawn from Nīlamegha's reference to his guru as Sundara, whom Saṅkaramenon identifies as the same individual credited with composing the *Lakṣaṇāmrta*, a treatise on toxicology. This assertion is plausible because the only known manuscript of *Tantrayuktivicāra* belongs to a member of one of the Aṣṭavaidya families of Kerala, aligning with the Vāgbhaṭa school, to which Nīlamegha also belongs. (HIML: IIA, 143) On the other hand, the anonymous au-

Nīlamegha flourished in the first half of ninth century.⁹⁵⁷ The *Tantrayukti* was very likely composed after the sixteenth century.⁹⁵⁸

Nīlamegha's *Tantrayuktivicāra* is a versified text accompanied by an autocommentary. The text comprises eighteen verses plus a hemistich, resulting in a total of 37 hemistichs. Each hemistich serves as a definition for a *tantrayukti*. Nīlamegha enumerates a total of 36 *tantrayuktis*, as mentioned in the *Aṣṭāṅgasaṅgraha* and *Carakasamhitā*. The additional hemistich defines *aviparyaya*, which, according to Nīlamegha, is sometimes considered instead of *viparyaya*. This substitution occurs when one understands that the negative prefix *a-* is deleted due to a *pūrvavarūpa sandhi*—*sāpavargah* + *aviparyayah* → *sāpavargo viparyayah* (See footnote 937.).

The text of the *Tantrayukti* includes some verses at the beginning and end, where the author discusses the lineage of Nīlamegha. The author explicitly states that his text is a revised version of Nīlamegha's *Tantrayuktivicāra* because the available manuscripts were mostly corrupt.⁹⁵⁹ It is evident that there are substantial reproductions of parts of the *Tantrayuktivicāra* and its autocommentary. The total number of *tantrayuktis* and their enumeration remains identical to that of the *Tantrayuktivicāra*. What distinguishes it from the *Tantrayuktivicāra* is the incorporation of a list of other *tantraguṇas* and 14 *tantradosas*. This list of *tantraguṇas* includes 15 types of

thor of the *Tantrayukti* associates Nīlamegha with the lineage of Bhiṣagārya, who hails from Uṇṭuru, a village located 3 kilometers from Gokarṇa which is in coastal Karnataka.(TY: 30).

957 Nīlamegha mentions Vāhaṭa (Vāgbhaṭa), Indu, and Jejjaṭa in his work. This places him definitively after the seventh century. The Buddhist influence in the *Tantrayukti* indicates a date not much later than 800 AD. (TYV: अवतारिका ५-६, HML: IIA, 143.)

958 From the explicit mention of Nīlamegha and Bhiṣagārya in the work *Tantrayukti*, we can say that the author flourished after them. Determining the date of Bhiṣagārya is problematic. However, since the Kairalī commentary on the *Aṣṭāṅgahṛdayasamhitā* frequently quotes from Bhiṣagārya's *Abhidhānamāñjari*, it indicates that Bhiṣagārya predates the composition of this commentary. Meulenbeld suggests the end of the seventeenth century as the terminus post quem for the Kairalī (HML: IA, 675). Moreover, he views *Abhidhānamāñjari* as a work composed after the sixteenth century, citing details within it that affirm its posteriority to the *Rājanighaṇṭu* and *Bhāvaprakāśa* (HML: IIA, 442).

959 वैद्यनाथोपसृष्टानां लक्ष्यलक्षणवासुषाम् ॥
तासां प्रायः प्रकाशानां दुर्लेखापङ्कदूषणात् ।
क्रियते साम्प्रतं कृच्छादुदृत्य परिमार्जनम् ॥

TY: 1

vyākhyā, 7 types of *kalpanā*, 20 types of *āśraya*, and 17 types of metaphoric and metonymic devices, such as *tācchīlā* and so on.

Tantrayukti-inventories

It is evident from the discussion on the early sources that all these listings of the *tantrayuktis* in the early sources can be grouped into two categories. For the ease of our following discussion, we name these two inventories as (1) earlier listing and (2) later listing.

Earlier Listing

The four inventories of *tantrayuktis* from the *Arthaśāstra*, *Suśrutasamhitā*, *Viṣṇudharmottarapurāṇa*, and *Saddanīti* belong to what we call the “earlier Listing.” The reason to call this listing as “earlier listing” is: two early Sanskrit texts, viz., the *Arthaśāstra* and the *Suśrutasamhitā* consists of this listing. The Tamil list of the *tantrayuktis* as found in the *Tolkāppiyam* also belongs to this group, even though not all of the *uttis* in this list might correspond accurately to the Sanskrit and Pali lists. A defining characteristic of this listing is that each inventory explicitly states the total number of *tantrayuktis* as thirty-two.⁹⁶⁰ Even though there are sometimes different *tantrayuktis* enumerated in different lists, the total count always remains consistent at 32. As demonstrated in Table 6, the Sanskrit and Pali lists are similarly ordered and are always accompanied by similar or identical definitions. This list appears across diverse disciplines.

Later Listing

The “later listing” is the one we find in the *Aṣṭāṅgasaṅgraha*, *Caraka-samhitā*, the commentaries on the *Carakasamhitā*, *Aṣṭāṅgasaṅgraha* and *Aṣṭāṅgahṛdayasamhitā* and the two monographs, the *Tantrayuktivicāra*

⁹⁶⁰ तद् द्वात्रिंशत् युक्तियुक्तम्। (5.1.3 Kangle 1965: 1, 280) “that (*Arthaśāstra*) is furnished with thirty-two logical methods of the system”, तत्र द्वात्रिंशत् तत्त्वयुक्तयो भवन्ति। (*Suśrutasamhitā* 6.64.2) “there are thirty-two logical methods of the system”, battimṣa tantiyuttiyo bhavanti/ (*Suttamālā*, 28 *Saddanīti* 3: 920) “there are thirty-two logical methods of the system”, எண்ணான்கு உத்தியின்... “It employs thirtytwo rules of criticism regarding writing.” (*Nannūl*: 9–10)

and *Tantrayukti*. This list has sprung from a single source—a versified list of thirty-six *tantrayuktis* comprising four verses that appear in the *Aṣṭāṅgasaṅgraha*, *Carakasaṃhitā* and Aruṇadatta's commentary on the *Aṣṭāṅgahṛdayasaṃhitā*. It remains unclear whether these verses initially appeared in the Drḍhabala's redaction of the *Carakasaṃhitā* or Vāgbhaṭa's *Aṣṭāṅgasaṅgraha*. Unlike the “earlier Listing,” this list lacks definitions of the *tantrayuktis*. Definitions and illustrations are given by the authors of the commentaries and monographs as discussed in the previous section. Although Hariścandra's list includes 40 *tantrayuktis* instead of 36, his enumeration aligns more closely with “later listing” than the earlier one. Despite the earlier listing's cross-disciplinary appearance, the later listing notably influences the field of Āyurveda, likely due to the popularity of Vāgbhaṭa's works. The *Suśrutasaṃhitā*, incorporating the “earlier listing” distinguishes itself among Āyurvedic texts that list the *tantrayuktis*.

Terminology

The terms have been translated into English in numerous books and articles. English renditions of the terms can be found in English translations of the *Suśrutasaṃhitā* such as in Singhal and J. Mitra 1980: 171–172, and P. V. Sharma 1999–2001: 3, 631–639; in translations of the *Carakasaṃhitā* such as in R. K. Sharma and B. Dash 2006: 436–444 and in Shree Gulabkunverba Ayurvedic Society 1949: 1050, in the translation of the *Arthaśāstra* such as in Shama Sastry 1951: 459, Kangle 1965: 593, Unni 2006: 1103 and Olivelle 2013, and by K. Srikanta Moorthy in TYV: Appendix xi–xxxiv. They are also found in various books and articles dedicated to discussing the *tantrayuktis* such as in Oberhammer 1968: 601–602, Solomon 1976–78: 1, 72, Lele 1981: 34–155, 2006: 36–150 and so on. German translations of the terms can be found in Meyer 1926: 663–664 (German translation of the *Arthaśāstra*) and in Preß and Prandstetter 1991–2006.

The definitions of *tantrayuktis* exhibit numerous variations across different texts. Here we will discuss each of the *tantrayuktis* that occur in the *Suśruta Saṃhitā* in comparison with their definitions in other texts. As indicated in Table 6, the definitions of *tantrayuktis* in the *Suśrutasaṃhitā* are frequently either identical or nearly identical to those found in the *Arthaśāstra*, *Viṣṇudharmottarapurāṇa* and *Saddanīti*. Therefore, unless the

definitions in these two texts notably deviate from those in the *Suśrutasamhitā*, we will not make explicit references to them in the subsequent elucidation of the terms.

1. *adhikaraṇa*

Adhikaraṇa appears as the first *tantrayukti* in all traditional enumerations. It is among those *tantrayuktis* for which there is little disagreement concerning its definition. This *tantrayukti* functions as a structural and interpretative device. With a tautological expression, the *Suśrutasamhitā* defines *adhikaraṇa* as something, with reference to which statements are made. While defining *adhikaraṇa*, the text employs the same verb, *adhi- kṛ-* (to refer), whence the noun *adhikaraṇa* has been derived. The text supplies examples of *rasa* (taste) and *doṣa* (humour), for which two chapters of the *Uttaratantra*, namely chapter 62 (*Kāyacikitsā* 27) and chapter 65 (*Kāyacikitsā* 30) are dedicated.⁹⁶¹ Clearly, *adhikaraṇa* is the topic or theme.

Cakrapāṇi and Gaṅgādhara define *adhikaraṇa* in almost the same way as does the *Suśrutasamhitā*.⁹⁶² Aruṇadatta's definition is similar but he specifies that *adhikaraṇa* can be of an entire discipline (*śāstra*), or a book (*sthāna*) of it, or a chapter (*adhyāya*), or a section (*prakaraṇa*), or even of a sentence (*vākya*).⁹⁶³ Śrīdāsa Paṇḍita follows Aruṇadatta.⁹⁶⁴ However, in the commentaries of Hariścandra and Indu, we explore two more aspects of the concept of *adhikaraṇa*. According to Hariścandra, *adhikaraṇa* is the reason or ground referring to which the authors direct their discourse. For example, diseases create misery and the authors of Āyurveda began their discussion addressing them.⁹⁶⁵ Thus disease is the *adhikaraṇa* or theme of their discussion. Indu identifies *adhikaraṇa* as a binding force that links

961 They are chapters 63 and 66 in A (*Su* 1938: B).

962 यमर्थमधिकृत्य प्रवर्तते कर्ता । यथा “विघ्नभूता यदा रोगा” इत्यादि । अत्र रोगादिकमधिकृत्यायुर्वेदो महर्षिभिः कृत इति ‘रोगाः’ इत्यधिकरणम् । *Ayurvedadīpikā* (*Ca* 1941: 736). तद् यमर्थमधिकृत्योच्यते; *Jalpakalpataru* (*Ca* 1928-33: III, 3815).

963 तत्र अधिकरणं नाम, यदधिकृत्य प्रवर्तते शास्त्रं स्थानमध्यायं प्रकरणं वाक्यं वा ।... (*Ah* 1939: 947).

964 *AHS* 1940: 2.

965 तत्राधिकरणं नाम यन्निमित्तमधिकृत्य प्रवर्तते कर्ता ।... उत वा विघ्नभूता यदा रोगाः प्रादुर्भूताः तदिदं निमित्तमधिकृत्य जगदनुकम्पया महर्षिभिरयमायुर्वेद आगमः । एवमधिकरणव्याख्या वर्णयितव्या । MS MS Jamnagar GAU 114, p.4-5.

ideas. According to him, *adhikarāṇa* as an introductory reference and it exposes a general statement to a specific context.⁹⁶⁶

Nīlamegha defines *adhikarāṇa* using the Paninian terminology. According to him, *adhikāraṇa* is the locus in which the *tātparya*, “reference” lies.⁹⁶⁷ *Adhikarāṇa* is one of the six *kāraka*-s (a sort of semantic roles recognized by Sanskrit grammarians). Pāṇini calls it a locus (*ādhāra*).⁹⁶⁸ Through metaphorical extensions, the idea of a locus can apply to abstract domains and not merely to physical locus. In traditional Sanskrit grammar, a metonymic or metaphorical domain is called *vaiśayika adhikarāṇa*. Patañjali considers *vaiśayika* as one of the three types of *adhikarāṇa*.⁹⁶⁹ Nīlamegha applies this idea to his definition of the *tantrayukti adhikarāṇa*. He quotes *Aṣṭāṅgahṛdayasamhitā Sūtrasthāna* 1.5b-6a and explains how the eight limbs of Āyurveda serve as the *adhikaraṇas* of *cikitsā* “treatment”. In Nīlamegha’s understanding, *adhikarāṇa* “theme” is the domain of a reference. The *Tantrayukti* repeats Nīlamegha’s idea but it also adds different types of *adhikarāṇa* as suggested by Aruṇadatta.

In the *Tolkāppiyam*, however, the equivalent expression for this *tantrayukti* remains unclear, as commentators, namely Ilampūraṇar and Pērāciriyan, list the item differently. In Sastri’s translation of the *Tolkāppiyam*, *adhikarāṇa* was identified with *atikāra murai*, the second element in Ilampūraṇar’s list. Sastri translates this expression as “deciding the extent where one serves as *adhikāra sūtra* or a word or words in a *sūtra* taken along with the *sūtra*-s that follow.”⁹⁷⁰ However, Dikshitar, in his brief article on the *tantrayuktis*, equates *adhikarāṇa* with *nūtaliyatu arītal*, the first element in Pērāciriyan’s list, and translates it as “that division of a book which centers around a chief topic and deals wholly with that topic.”⁹⁷¹ Clearly, Dikshitar’s interpretation stands close to our definition of *adhikarāṇa*. Sastri’s interpretation, on the other hand, corresponds to the concept of *adhikāra* “heading” and *anuvṛtti* “recurrence” in the *sūtra* literature, especially in Pāṇini’s *Aṣṭādhyāyī*.⁹⁷²

The translators usually translated this *tantrayukti* as “topic” or “subject

966 अधिकरणं प्रस्तावः सामान्येनोक्तमप्यर्थजातं यद्बलाद्विशेषेऽवस्थाप्यते तदधिकरणम् । (As 1980: 959).

967 तत्राधरोऽधिकरणं तात्पर्यं तत्र तिष्ठति । १ TYV: 2.

968 आधारोऽधिकरणम् । *Aṣṭādhyāyī* 1.4.45.

969 On *Aṣṭādhyāyī* 6.1.72 *Mahābhāṣya*: 3, 51.

970 P. S. S. Sastri 2002: 233.

971 Dikshitar 1930: 85

972 See Chevillard 2009: 111.

matter”.

2. *yoga*

This *tantrayukti* typically occupies the second position in most lists, except in the *Arthaśāstra* where it appears third following *vidhāna*. Functioning as a syntactic and semantic tool, *yoga*, as defined in the *Suśrutasamhitā*, represents the faculty responsible for the cohesion of a sentence. If we consider the main purpose of the *tantrayuktis* as narrated in the *Suśrutasamhitā*, namely, cohesion of a sentence (*vākyayojana*) and cohesion of meaning (*arthayojana*), it becomes evident that this *tantrayukti* is one of the fundamental *tantrayuktis* functioning as the device for *vākyayojana*. The *Suśrutasamhitā* further describes *yoga* as a syntactic connection between words, facilitating the linking of words even when they are in reverse order or placed apart. However, this paraphrased statement is absent in the vulgate; instead, it appears in the commentary of Ḏalhana with a minor variation.⁹⁷³ The definitions of *yoga* in the *Viṣṇudharmottarapurāṇa* and *Arthaśāstra* closely mirror that of the *Suśrutasamhitā*. However, the *Viṣṇudharmottarapurāṇa*'s definition introduces a slight variation by including the term *artha* “meaning”. According to this definition, *yoga* is that by which the meaning of a sentence coheres. The *Arthaśāstra* employs a nominalized verb in a compound noun instead of a relative clause—*vākyayojanā* “connecting a sentence”. The definition we find in the *Saddanīti* is close to the paraphrased part of the definition of the *Suśrutasamhitā*.⁹⁷⁴

For illustration, a verse from chapter 18 of the *Cikitsāsthāna* is quoted in the *Suśrutasamhitā*—

तैलं पिबेद्यामृतवल्लिनिम्बहंसाह्वयावृक्षकपिघलीभिः।
सिद्धुं बलाभ्याञ्च सदेवदारु हिताय नित्यं गलगण्डरोगे ॥⁹⁷⁵

In this verse, the noun sesame oil (*tailam*) appears at the beginning of the first hemistich, while its adjective cooked (*siddham*) is placed at the beginning of the final hemistich. Despite not being colocated, the *tantrayukti*

⁹⁷³ See 6.65.9 (Su 1938: 815).

⁹⁷⁴ See Table 6.

⁹⁷⁵ 4.18.47 (Su 1938: 474).

yoga effectively connects them, facilitating our comprehension of the intended meaning. Evidently, this exemplifies a device for linking words within a sentence.

In the commentaries of Hariścandra, Indu, Cakrapāṇi and Aruṇa, however, the *tantrayukti yoga* is used in a broader sense. In these interpretations, *yoga* serves not only as a device for cohesion within a sentence but also fosters coherence among sentences in a discourse. Hariścandra identifies three alternative interpretations of *yoga*.⁹⁷⁶ Aruṇadatta also interprets *yoga* in a similar fashion but instead of three alternatives he talks about the first two alternatives of Hariścandra. In the first alternative, *yoga* is coherence between the main statement (*sūtra*) and its gloss (*bhāṣya*). Aruṇadatta expands its scope to coherence between mention (*uddeśa*) and description (*nirdeśa*) as well.⁹⁷⁷ In the second alternative, *yoga* is reasoning (*yukti*) having five types: (1) *pratijñā* “proposition”, (2) *hetu* “reason”, (3) *udāharana* “exemplification” (4) *upanaya* “application”, and (5) *nigamana* “conclusion”, resembling the five-membered syllogism of inference (*anumāna*) in the Nyāya-Vaiśeṣika school.⁹⁷⁸ Śrīdāsa Paṇḍita’s comment is similar to that of Aruṇadatta.⁹⁷⁹ Hariścandra also notes a different understanding of this *tantrayukti* by some others. In this sense, *yoga* is connectedness. This alternative definition is close to that of the *Suśrutasamhitā*. In Indu’s interpretation, *yoga* is lexical cohesion, as he understands *yoga* as a relation between a word and its meaning or a sentence and its meaning.⁹⁸⁰ Cakrapāṇi, while defining *yoga* in a fashion similar to the *Suśrutasamhitā*, exemplifies it as a connection between five logical elements, namely *pratijñā*, *hetu*, *udāharana*, *upanaya* and *nigamana*, conflating the definition of *yoga* with Hariścandra’s second alternative i.e. *yoga* is reasoning (*yukti*).⁹⁸¹ Nīlamegha defines *yoga* as connecting words one by one coherently.⁹⁸² As he further explains in the autocommentary with examples from the *Aṣṭāṅgahṛdayasamhitā*, it is evident that he understands *yoga* as coherence between a part of a sentence

976 योगो नाम योजना ग्रन्थानां यथार्थसूत्रभाष्यसूत्रयोः... पञ्चलक्षणो वा योगः। प्रतिज्ञाहेतूदाहरणनिगमनानि...
यद् इह युज्यते स योग इत्येके। (MS Jamnagar GAU 114, p.5.)

977 योगो नाम योजना, उद्देशनिर्देशयोः सूत्रभाष्ययोर्वा। *Sarvāṅgasundarī* on 6.40.80 (Ah 1939: 947).

978 युक्तिवर्ती योगः, प्रतिज्ञा हेतुर्दृष्टान्त उपनयो निगमनमिति पञ्चविधः। 6.40.80 (Ah 1939: 947).

979 AHS 1940: 2.

980 योगो नाम योगः सम्बन्धः स च पदार्थयोर्वाक्यार्थयोर्वा। *Śaśilekhā* on 6.50.150aa (As 1980: 959).

981 योगो नाम योजना व्यस्तानां पदानामेकीकरणम्। उदाहरणं तावद्यथा प्रतिज्ञाहेतूदाहरणोपनयनिगमनानि।

8.12.41 (Ca 1941: 736).

982 योगः पदानामेकैकमर्थौचित्येन योजना। 2 TYV: 3.

and the discourse.⁹⁸³ Neither V. R. Ramachandra Dikshitar nor P. S. Subrahmanyam Sastri identified the *tantrayukti yoga* with any *utti* mentioned in the *Tolkāppiyam*.⁹⁸⁴

The word *yoga* derives from the Sanskrit root \sqrt{yuj} “to connect” with the primary suffix *GHaÑ*, which is often used for creating action nouns. In Sanskrit technical literature, the term *yoga* is used in a broad sense to mean any kind of linguistic connection or connectedness. In the *Aṣṭādhyāyī* of Pāṇini, it often refers to the connection with a word or a word-element.⁹⁸⁵ Hence, it refers to a morphosemantic or syntaco-semantic connection. Patanjali uses this term several times in his *Mahābhāṣya*. In the *Suśrutasaṃhitā* the word *yoga* is primarily used to mean the connection between words in a sentence. According to this definition and illustration, it is primarily intra-sentential cohesion. Unlike the later commentators on the works of Caraka and Vāgbhaṭa, it does not extend the scope of this term to inter-sentential cohesion and coherence. Keeping in mind such definition given in the *Suśrutasaṃhitā*, we translate the term as cohesion even though no other translators of the *tantrayuktis* used this translation. In some other contexts, however, *yoga* can be extended to coherence. Both coherence and cohesion are derived from the Latin verb *cohaere-* (< *con-* “with” *haereō* “cling”) “to cling together.” In other translations of the *tantrayuktis* (see p. 291), *yoga* is variously translated as employment, arrangement, conjoiner, connecting, concomitance, uniting, union, rational linking, joining and so on. We preferred the term cohesion because the other options are either too narrow or too vague. ‘Employment’ is rather *prayoga*, not *yoga*. ‘Rational linking’ disregards the grammatical aspect of *yoga*. ‘Conjoiner’, ‘connecting’, ‘union’, ‘uniting’ or ‘arrangement’ are vague and they do not reflect the technical import of the term *yoga*.

3. *padārtha*

In the earlier listing, *padārtha* follows *yoga*, while in the later listing, this *tantrayukti* is enumerated after *hetvartha*, possibly due to metrical requirements. The *Suśrutasaṃhitā* dedicates more words to describing this *tantrayukti* than any other early texts.

983 TYV: 3.

984 Chevillard 2009: 84.

985 Joshi and Roodbergen 1991: 64.

The description in the *Suśrutasaṃhitā* commences with the definition of *padārtha*, which is articulated as the meaning conveyed in an aphorism or a word. It then delves into the literal interpretation of the term *padārtha*. The straightforward meaning of the compound *padārtha*, obtained by dissecting its components—*pada* “word,” and *artha* “meaning”—is “the meaning of one or more words.” After presenting the literal interpretation of *padārtha*, the *Suśrutasaṃhitā* provides the rationale why mere word meanings cannot suffice as the *tantrayukti padārtha*—since a word or words may have multiple meanings. Therefore, as a *tantrayukti*, the term *padārtha* denotes the meaning of a word or words within a specific context.⁹⁸⁶ Ḏalhaṇa also supports this perspective, indicating that the term *padārtha* refers to a specific meaning of a word or words.⁹⁸⁷

In (Su 1938), a variant reading of the definition of *padārtha* is noted: सूत्रपदे in the place of सूत्रे पदे वा. It remains unclear which reading was available to Ḏalhaṇa. He proposed an etymological meaning of the word *pada*, defining it as that by which a meaning is understood, and includes *sūtra* under the semantic scope of *pada*. Essentially, he viewed *sūtra* as a type of *pada* because, by conveying a meaning, a *sūtra* falls under the category of *pada*, which by definition signifies a meaning-conveying unit. This interpretation does not separate *sūtra* and *pada* as mutually exclusive entities. Thus, if Ḏalhaṇa’s reading of the text is सूत्रे पदे वा, he perceived *pada* as a synonym or an alternative term for *sūtra*. On the other hand, if the reading was सूत्रपदे, he understood the meaning of the word सूत्रपदे as *pada* (a meaning-conveying unit) in the form of a *sūtra*. The editor of (Su 1938) offered a more straightforward explanation of the variant reading सूत्रपदे—a word (*pada*) in a *sūtra* is a *sūtrapada*.⁹⁸⁸ The *Viṣṇudharmottarapurāṇa* adopts a definition of *padārtha* close to this variant reading.⁹⁸⁹

The *tantrayukti padārtha* is illustrated with two examples in the *Suśrutasaṃhitā*. In the first example, three polysemous words—*sneha*, *sveda* and *abhyāñjana*—are provided. Ḏalhaṇa gave various meanings of these words—*sneha* can mean lubricity or grease or affection; *sveda* can mean sauna either with fire (*sāgnī*) or without fire (*niragnī*); *abhyāñjana* may mean the black

⁹⁸⁶ See fn. 1039.

⁹⁸⁷ अधुना बहुषु पदार्थेषु निर्धार्य विशिष्टपदार्थग्रहणाय पदार्थबहुत्वं प्रतिपादयति— अपरिमिता इत्यादि।

Ḍalhaṇa on 6.65.10 (Su 1938: 816).

⁹⁸⁸ अन्ये तु सूत्रपदे इति पठित्वा व्याख्यानयन्ति--- सूत्रस्य पदं सूत्रपदं तस्मिन् योऽर्थः स पदार्थः। fn.2 (Su 1938: 813).

⁹⁸⁹ See table 6.

eye make-up or oil rub (*abhyāṅga*).⁹⁹⁰ In the case of such polysemy, *padārtha* or relevant meaning will be the meaning which coheres with the prior and subsequent elements (*pūrvāparayogaśiddha*). The definition of this *tantrayukti* in *Saddanīti* corresponds to this explanation.⁹⁹¹ Thus, *padārtha* is that meaning which fits the context.

The second example is taken from the very beginning of the first chapter of the *Sūtrasthāna* that says वेदोत्पत्तिमध्यायं व्याख्यास्यामः, “I shall narrate the chapter on the origin of knowledge (*veda*).” The problem is, what does this word “*veda*” refer to? Is it the *Veda*, as in *Sāmaveda*? Or something derived from the roots $\sqrt{vi}(n)d$ or \sqrt{vid} ? Context (“prior and subsequent elements”) can help us to know that “*veda*” means only *āyurveda* and that the *Suśrutasamhitā* is talking about the origin of *āyurveda*, specifically. The same issue is also addressed by Ḏalhaṇa at 1.1.1 ([Su 1938: 1](#)).

Among the texts of the early listing, the *Arthaśāstra* presents a notably distinct definition of *padārtha*. Here, it is defined as that which has its limit within the word.⁹⁹² Though somewhat ambiguous, this definition implies that *padārtha* is the referent indicated by a word or in other words, *padārtha* is the scope of meaning that corresponds to a word. Hence, this definition of *padārtha* does not necessarily refer to a contextual meaning. It indirectly suggests that *padārtha* is basically the meaning of a word.

Similar to *Arthaśāstra*’s understanding, the commentators Hariścandra, Indu, Cakrapāṇi, Aruṇadatta and Śrīdāsapaṇḍita interpret *padārtha* as the referents indicated by a word. However, by this time, the term *padārtha* became an important point of discussion among certain philosophical schools, particularly Vaiśeṣika and Nyāya.⁹⁹³ In the Vaiśeṣika ontology, *padārtha* is the term used for denoting the fundamental ontological categories. Such a wider use of the term among philosophical schools also influenced the *Bṛhatṭrayī* commentators, most prominently Hariścandra, whose interpretation of *padārtha* aligns with the framework of Vaiśeṣika philosophy. Following the Vaiśeṣika doctrine, he lists six types of *padārthas*, namely, substance (*dravya*), attribute (*guṇa*), movement

⁹⁹⁰ तत्र स्नेहशब्दे निर्दिष्ट हि गुणप्रेमसर्पिषां त्रयाणामर्थनामुपपत्तिर्दृश्यते, स्वेदशब्देनापि साप्तिनिरप्तिकयोरूभ्य-
णोः प्राप्तिः, अञ्जनशब्देनापि नयनाञ्जनाभ्यङ्गयोः प्राप्तिः। Ḏalhaṇa on 6.65.10 ([Su 1938: 816](#)).

⁹⁹¹ See table 6.

⁹⁹² पदावधिकः पदार्थः। (15.1.10 Kangle 1965: 1, 280).

⁹⁹³ The concept *padārtha* is also discussed by grammarians such as Patañjali and others.

For the treatment of the term *padārtha* in different Indian philosophical schools, see Prets and Prandstetter 1991–2006: 2, 153–154.

(*karman*), universality (*sāmānya*), individuality (*viśeṣa*), and inherence (*samavāya*).⁹⁹⁴ In his understanding, a word (*pada*) is a universal category that may have several referents called *padārtha*. While other commentators such as Indu, Aruṇadatta, Śrīdāsa Paṇḍita follow Hariścandra while defining this *tantrayukti* and cite Vaiśeṣika *padārthas* such as *dravya* or *guṇa* as instances of *padārtha*, it is not clear whether they endorse the Vaiśeṣika interpretation.⁹⁹⁵ Cakrapāṇi adopts the literal definition of *padārtha* as mentioned in the *Suśrutasaṃhitā*. With examples, he emphasizes that word-meaning (*padārtha*) can stem from one word, two words or more.⁹⁹⁶ Gaṅgādhara, however, defined *padārtha* in the line of the *Suśrutasaṃhitā* considering *padārtha* as relevant word sense.⁹⁹⁷

Nīlamegha presents a distinct perspective, defining *padārtha* as polysemy within a given context.⁹⁹⁸ In his autocommentary, he also acknowledges another viewpoint that perceives *padārtha* as synonymy within a context.⁹⁹⁹ The author of the *Tantrayukti* merely quoted Nīlamegha's statements on this matter while incorporating the additional definition of *padārtha* found in commentaries such as those of Aruṇadatta, Indu, or Śrīdāsa Paṇḍita.¹⁰⁰⁰ Neither V. R. Ramachandra Dikshitar nor P. S. Subrahmanyam Sastri identified the *tantrayukti padārtha* with any *utti* mentioned in the *Tolkāppiyam*.¹⁰⁰¹

From the discussion above, it is clear that *Suśrutasaṃhitā*'s understanding of the *tantrayukti padārtha* is distinct from its definition offered

994 पदार्थो नाम य एकेन पदेनानेकार्थो गम्यते । यथा द्रव्यं गुणः कर्म सामान्यं विशेषः समवायः । MS Jamnagar GAU 114, p.6.

995 पदार्थो नाम येनार्थो गम्यते । यथा गुर्वादयो गुणशब्दादवगम्यते । Śāsilekhā on 6.50.150aa (As 1980: 959). पदार्थो नाम, पदेनार्थो गम्यते । यथा द्रव्यमिति पदं, तस्यार्थो भूजलादिः । गुण इति पदं तस्यार्थो गुर्वादिः । Sarvāṅgasundarī on 6.40.80 (Ah 1939: 947). The same reading appears in *Hṛdayabodhikā* (AHS 1940: 2).

996 पदस्य पदयोः पदानां वाऽर्थः पदार्थः । तत्र द्रव्यमिति पदेन खादयश्चेतनाषष्टा उच्यन्ते; पदयोरर्थो नाम यथा—‘आयुषो वेद’ इति पदयोरायुर्बोधकं तन्त्रमित्यर्थः, एवं पदानामप्यर्थं उदाहार्यः । Āyurvedadīpikā on 8.12.41 (Ca 1941: 736).

997 अर्थः पदस्य चेति पदार्थो नाम तन्त्रयुक्तिः सा योऽर्थोऽभिहितः सूत्रे पदे वा । पदार्थस्त्वनेकस्तत्र योऽर्थः पूर्वापरयोगसिद्धो भवति सोऽर्थो ग्राह्यः । Jalpakalpataru on (Ca 1928-33: 3, 3816).

998 पदार्थस्तु पदेक्येऽपि भिन्नमर्थं प्रकाशयेत् । 4 TYV: 4.

999 केचित्तु “पदार्थः पदभेदेऽपि न भेदः पुनरर्थतः ।” / TYV: 5.

1000 पदार्थस्तु य ऐक्येऽपि भिन्नमर्थं प्रकाशयेत्
...पदार्थोऽपि च भेदेऽपि न भेदः पुनरर्थतः ।
पदेन योऽर्थो ज्ञायते यथा गुर्वादयो गुणे ॥

TY: 8–10.

1001 Chevillard 2009: 84.

by the later commentators of the works of Dr̥ḍhabala and Vāgbhaṭa. The *Arthaśāstra*, which most often defines the *tantrayuktis* similarly to the *Suśrutasan̄hītā*, provides a definition of *padārtha* that is closer to the understanding of the commentators such as Hariścandra and so on. In the *Suśrutasan̄hītā*, *padārtha* is not merely the meaning of a word or words but the meaning arising within a particular context or co-text. It is the result of word sense disambiguation. Singhal and Mitra translates *padārtha* as “context.” However, *padārtha* denotes not the context but rather the meaning intended in a context or co-text. Most other translators render this term as “import of words,” which fits better in this case. The translation chosen here is “relevant meaning” because in the *Suśrutasan̄hītā*, *padārtha* refers to the meaning that is relevant within a context or co-text.

3. *hetvartha*

Hetvartha appears after *padārtha* in the earlier listing and before *padārtha* in the later listing. The word *hetvartha* is a compound of two words—reason (*hetu*) and purpose (*artha*). Although the term *hetvartha* is present in all lists of the *tantrayuktis*, it has not been lexicalized as a compound word. Thus, we need to understand the term through its components—*hetu* and *artha*. Depending on the meaning of the word *artha*, the word *hetvartha* can have different meanings. For example, Bhaṭṭoji Dīkṣita uses the term *hetvartha* to mean simply the sense of a cause.¹⁰⁰² As a *tantrayukti*, *hetvartha* is a logical device that serves as the purpose (*artha*) of a reason (*hetu*).

The *Suśrutasan̄hītā* provides an analytical definition of *hetvartha*, where it is described as a statement functioning as a premise (*sādhana*). The text supplies an example about moistening of wounds by milk etc. on the basis of the known fact that water moistens a lump of earth. Notably, the word *ukta* in the definition likely does not imply an explicit statement in the text. As appears in the example, it can be a known fact from the outside world that aids in predicting a similar case related to our body.¹⁰⁰³ The *Suśrutasan̄hītā* does not mention that water moistens a lump of earth; this is understood from general empirical knowledge. The *Suśrutasan̄hītā* prescribes moistening of a wound in certain cases but does not explicitly state how

¹⁰⁰² शेत्वर्थं तृतीया स्यात् | SiddhKau: 137.

¹⁰⁰³ Cf. अत्र बाह्ये न मृत्यिण्डृष्टान्तेन माषदुग्धयोगादिभिराभ्यन्तरो ब्रणप्रक्लेदः साध्यते । Dalhaṇa on 6.65.11 (Su 1938: 813).

to do so. The knowledge that milk and similar substances can be used to moisten a wound derives from the empirical knowledge of moistening a lump of earth with water. The causal relationship between water and moistening a lump of earth serves a purpose elsewhere as a premise for understanding the causal relationship between milk or other similar substances and moistening of a wound.¹⁰⁰⁴ The definition is clearer in 6.65.11 (*Su* 1938: 813) because it includes the word other (*anya*), emphasizing that an idea stated in one context serves a purpose in another.¹⁰⁰⁵ The author of the *Viṣṇudharmottarapurāṇa* as well as commentators such as Hariścandra, Cakrapāṇi, Indu, Aruṇadatta, and Śrīdāsa Paṇḍita define this *tantrayukti* similarly.¹⁰⁰⁶ However, in their interpretation, the term stated (*ukta*) means an explicit statement in the text.

A different definition appears in Nīlamegha's *Tantrayuktivicāra*, where he defines *hetvartha* as a situation where an entity is represented by its cause. For example, in the statement, रोगस् तु दोषवैषम्यम्, “disease, however, is the disproportion of the humours,” the cause “disproportion of the humours” represents its effect, “disease.” It can also be the reverse, where disease is the cause of disproportion of the humours. When a cause and its effect are considered equivalent and one represents the other, it is called *hetvartha*.¹⁰⁰⁷ This definition by Nīlamegha is not found elsewhere. This may explain why the author of the *Tantrayukti* does not refer to this

¹⁰⁰⁴The definition is similar in *Saddanīti*. In the *Arthaśāstra*, *hetvartha* is defined as a cause that serves a purpose. Although phrased differently, this definition refers to the same concept. See table 6.

¹⁰⁰⁵यदन्यदुक्तमन्यार्थसाधकं भवति स हेत्वर्थः। 6.65.11 (*Su* 1938: 813). The testimonium in Gaṅgādhara's *Jalpakalpataru* supports the reading of (*Su* 1938). In his own definition, Gaṅgādhara merely reproduces the definition of the *Suśrutasaṃhitā*. *Ca* 1928-33: 3, 3815.

¹⁰⁰⁶The definition of *hetvartha* is quite consistent across all the commentaries. Cakrapāṇi's definition: हेत्वर्थो नाम यदन्यत्राभिहितमन्यत्रोपपद्यते। *Āyurvedadīpikā* on 8.12.41 (*Ca* 1941: 736). Indu's definition: हेत्वर्थो नाम यदेकत्रोच्चमानमन्यत्रापि तथैवोपयुज्यते। *Śāsilekhā* on 6.50.150aa (*As* 1980: 959). Hariścandra's definition is also quite similar: हेत्वर्थो नाम यदन्यप्रस्तावाभिहितमर्थजातमन्यत्रापि तथैवापाद्यते। MS Jamnagar GAU 114 p. 5. Aruṇadatta's definition: हेत्वर्थो नाम यदन्यप्रस्तावोक्तमन्यत्रापि तथैवापाद्यते। *Sarvāṅgasundarī* on 6.40.80 (*Ah* 1939: 947). Śrīdāsa Paṇḍita's definition: हेत्वर्थो नामान्यप्रस्तावोक्तमन्यत्रापि तथैवापाद्यते। *Hṛdayabodhikā* (*AHS* 1940: 2).

¹⁰⁰⁷हेत्वर्थो हेतुनैव स्यात् तत्तदर्थप्रकाशनम् ॥३॥ यथा—‘रोगस्तु दोषवैषम्यम्’ (अ.ह.सू. १.२९) इत्यादौ रोगो नाम दोषवैषम्यहेतुः। न तु दोषवैषम्यम्। तत्तु वृद्धिः क्षयो वा। अतो हेतोर् एव रोगः। अत्र तुशब्देन रोगोऽपि दोषवैषम्यस्य हेतुरिति द्योतयति। *TYV*: 4.

definition at all, even though he frequently quotes Nīlamegha. Instead, the author of *Tantrayukti* uses Aruaṇadatta's definition without attribution. He concludes with another definition, describing *hetvartha* as a statement where a reason is expressed.¹⁰⁰⁸ Neither V. R. Ramachandra Dikshitar nor P. S. Subrahmanya Sastri identified *hetvartha* with any *utti* mentioned in the *Tolkāppiyam*.¹⁰⁰⁹

The term *hetvartha* has been translated in various ways, including "extension of argument," "implication," "goal of a reason," and merely "reason." We chose to translate *hetvartha* as "purpose of a reason" based on the components of the compound, which closely aligns with Olivelle's translation, "goal of a reason."¹⁰¹⁰ While other translations may capture the application of *hetvartha*, they do not convey the lexical meaning of the term.

5–6. *uddeśa* and *nirdeśa*

It is necessary to consider the *tantrayuktis* *uddeśa* and *nirdeśa* in relation to each other as they form a pair of relational antonyms. They consistently appear together in all listings—following *hetvartha* in the earlier listing and *pradeśa* in the later listing. The *Suśrutasaṃhitā* defines *samuddeśa* as a brief statement and *nirdeśa* as a detailed statement. An example of *uddeśa* is given as the simple mention of the word "spike (*śalya*)."¹⁰¹¹ In contrast, the example of *nirdeśa* is the phrase "in the body or exogenous," where spike is described in more detail as being of two kinds. These two *tantrayuktis* are stylistic structural devices used in scientific compositions for precision and clarity.

The texts of the earlier listing provide identical or near-identical definitions of *uddeśa* and *nirdeśa*.¹⁰¹¹ They are also similarly defined and exemplified in the *Yuktidīpikā*.¹⁰¹² Commentators on the works of Dṛḍhabala and Vāgbhaṭa also defined *uddeśa* and *nirdeśa* similarly.¹⁰¹³

¹⁰⁰⁸ हेतुना सह यत्रोक्तिः स हेत्वर्थः प्रकीर्तिः ॥ TY: 8.

¹⁰⁰⁹ Chevillard 2009: 84.

¹⁰¹⁰ Olivelle 2013: 436.

¹⁰¹¹ See table 6.

¹⁰¹² *Yuktidīpikā*: 7.

¹⁰¹³ उद्देशो नाम सङ्केपाभिधानम्...निर्देशो नाम विस्ता... MS Jamnagar GAU 114 p. 6. उद्देशो नाम स-
ङ्केपाभिधानम्...निर्देशो नाम संख्येयोक्तस्य (सङ्केपोक्तस्य ?) विवरणम्। Āyurvedadīpikā on 8.12.42
(Ca 1941: 736). उद्देशो नाम सङ्केपाभिधानम्...निर्देशो नाम तस्यैव विस्तारोक्तिः। Sarvāṅgasundarī

However, Indu's definitions of these two *tantrayuktis* are more informative. According to him, *uddeśa* refers to objects mentioned merely by single words, while *nirdeśa* involves restating those objects to show their specific features.¹⁰¹⁴

There is a difference between the examples of *uddeśa* and *nirdeśa* in the *Suśrutasamhitā* and other texts. In the *Suśrutasamhitā*, the example of *uddeśa* is a single word, not a complete sentence, while in other texts, including the *Arthaśāstra*, it is a complete sentence, usually a simple equative sentence. For instance, Arunadatta and Śridāsa Pandita quote 1.1.6b (Ah 1939: 6) as an example of *uddeśa*: वायुः पित्तं कफश्चेति त्रयो दोषाः समासतः |, "the three humours are wind, bile, and phlegm." As an example of *nirdeśa*, they quote 1.1.11 (Ah 1939: 9), which describes the characteristics of wind: तत्र रूक्षो लघुः शीतः खरः सूक्ष्मश्वलोऽनिलः |, "wind is rough, light, cold, harsh, subtle, and mobile." Even in these cases, where *uddeśa* is given with a complete sentence, *uddeśa* is exemplified by the individual items in those sentences. Thus, there are three *uddeśas* in that sentence, and the description of each functions as *nirdeśa*. What constitutes *uddeśa* and *nirdeśa* is contextually determined. In the example of the *Suśrutasamhitā*, spike (*śalya*) is the *uddeśa*, and its *nirdeśa* is the expression that provides its two varieties: (1) in the body and (2) extraneous. When each variety is further described, each variety of the spike functions as *uddeśa*. The author of the *Tantrayukti* indicates this mutual relatedness of *uddeśa* and *nirdeśa* in a verse.¹⁰¹⁵ He also provides a versified definition of these two *tantrayuktis*, in addition to repeating Nilamegha's statements.¹⁰¹⁶ Nilamegha also defined these *tantrayuktis* in a similar fashion.¹⁰¹⁷ Similar *uttis* also appear in the *Tolkappiyam*.

on 6.40.80 (Ah 1939: 947) and *Hṛdayabodhikā* (AHS 1940: 2). उद्देशो नाम तन्त्रयुक्तिः सा, यत् समासकथनम् |...निर्देशो नाम तन्त्रयुक्तिः सा, यद् विस्तरेणोच्यते | *Jalpakalpataru*, Ca 1928-33: 3, 3816.

¹⁰¹⁴उद्देशो नाम यत्रार्थानां शब्दमात्रेणैव कीर्तनमुद्देशः |...निर्देशो नाम यच्छब्दमात्रेण निर्दिष्टानां स्वरूपविशेषप्रदशनाय पुनः कीर्तनं निर्देशः | *Śāśilekhā* on 6.50.150ba (As 1980: 960).

¹⁰¹⁵उद्देशनिर्देशकयोरन्योन्यापेक्षिता भवेत् ।
यत्तदोरिव नित्यैव शास्त्रे सर्वत्र सर्वदा ॥

TY: 12.

¹⁰¹⁶प्राक् सङ्क्षेपेण कथनमुद्देश इति कीर्तितम् ।
निर्देशो नाम तस्यैव विस्तरोक्तिरुदाहृतः ॥

TY: 12.

¹⁰¹⁷उद्देशः समवायोक्तिरिति प्राहुर्मनीषिणः ।
निर्देशः स्याद् विवरणं पूर्वोक्तानामनुक्रमात् ॥

TYV: 6.

However, Sastri and Dikshitar differently identified these *tantrayuktis* with the *uttis* of *Tolkāppiyam*.¹⁰¹⁸

Uddeśa is a common technical term in Sanskrit literature.¹⁰¹⁹ Sometimes it appears paired with *lakṣaṇa*, where *uddeśa* means mentioning an item by name, and *lakṣaṇa* is its definition. In this sense, *lakṣaṇa* and *nirdeśa* are similar. However, *nirdeśa* means any elaboration of the mentioned item, whereas *lakṣaṇa* refers to precise features. In Pakṣilasvāmin's *Nyāyabhāṣya*, the term *uddeśa* appears with *lakṣaṇa* and investigation (*parikṣā*), and the triad of these three is called the course of the discipline.¹⁰²⁰

We mentioned before that Hariścandra added four more *tantrayuktis* to the later listing. Indu and Cakrapāṇi suggested that the scope of these *tantrayuktis* could be included in those already enumerated. According to Cakrapāṇi *paripraśna* could be included in *uddeśa* and *vyutkrāntābhidhāna* is a variety of *nirdeśa*.¹⁰²¹ The only manuscript of Hariścandra's *Carakanyāsa* available to us (MS MS Jamnagar GAU 114) is full of lacunae, making it challenging to determine its reading. It seems that asking a question about a topic is *paripraśna*, and stating something without mentioning the order of its items or objects is *vyutkrāntābhidhāna*. Including *paripraśna* and *vyutkrāntābhidhāna* under *uddeśa* and *nirdeśa* respectively may be an oversimplification.

The *tantrayukti* *uddeśa* has been variously translated as enunciation, concise statement, allusion, mention, etc. We chose the translation "mention." The expressions enunciation, allusion, and concise statement are vaguer than "mention." The *tantrayukti* *nirdeśa* is translated as elaboration, detailed statement, explanation, amplification, exposition, etc. All these translations are accurate. We translated *nirdeśa* as "exposition."

¹⁰¹⁸Chevillard 2009: 85.

¹⁰¹⁹For more references to the term *uddeśa* check Prets and Prandstetter 1991–2006: 2, 28–30.

¹⁰²⁰त्रिविधा चास्य शास्त्रस्य प्रवृत्तिः, उद्देशो लक्षणं परीक्षा चेति । तत्र नामधेयेन पदार्थमात्रस्याभिधानमुद्देशः । तत्रोद्दिष्टस्यातत्त्वव्यवच्छेदको धर्मो लक्षणम् । लक्षितस्य यथालक्षणमुपपद्यते न वेति प्रमाणैरवधारणं परीक्षा । Josī 1922: 14.

¹⁰²¹तत्र परिप्रश्न उद्देशोऽन्तर्भवति,...व्युल्कान्ताभिधानं निर्देशप्रभेदः *Ayurvedadīpikā* on 8.12.41b–45a (Ca 1941: 737).

Notes on Significant Variants

...द्वितीये पादे...

The Nepalese version reads द्वितीये पादे which would properly mean the second quarter of the first line; the vulgate reads तृतीये पादे “third quarter” which seems more correct.

यत्र तु स्लेहस्वेदाभ्यञ्जनेषु...पूर्वापरयोगसिद्धो भवति ।

There is a dangling relative clause, योऽर्थः, in the Nepalese version that is avoided in the vulgate recension by the addition of स ग्रहीतव्यः. There are two possible explanations for this discrepancy: firstly, the missing main clause may have been present in the archetype but inadvertently omitted in the Nepalese version due to a scribal error. Alternatively, the main clause could have been elliptical in the archetype. The scribes of the Nepalese manuscripts accurately transmitted the text. However, at some stage during the transmission process, the main clause was supplied as an attempt to rectify the ungrammatical sentence. The interpolation may also stem from Dalhana’s commentary in which the exact clause was used.¹⁰²² Considering the principle *lectio difficilior potior*, we may posit that the second scenario is more plausible. This is because the subject of the main clause can be inferred from the subject of the previous sentence, and within the context, the meaning of the sentence remains totally intelligible even without the explicit main clause.

सामवेदादयश्च वेदाः

Both , [Su 1938](#) and the excerpts from the *Suśrutasamhitā* cited in the *Jalpakalpataru* read ऋग्वेदादयस्तु वेदाः, ē “Rgveda and so on are the Vedas.” Traditionally, the *Rgveda*, being the earliest composed *Veda*, is often considered the prototype. However, the selection of *Sāmaveda* as the prototype in the Nepalese Version of the *Suśrutasamhitā* is intriguing. This choice brings to mind a verse from the *Bhagavadgīta* where Krṣṇa declares,

¹⁰²²तत्र योऽर्थ इत्यादि । पूर्वोक्तपरोक्तवाक्यसम्बन्धेनोपपन्नो योऽर्थो भवति स ग्रहीतव्य इत्यर्थः Dalhaṇa on 6.65.10 ([Su 1938](#): 816).

वेदानां सामवेदोऽस्मि¹⁰²³, "I am the *Sāmaveda* among the Vedas." With its incorporation of musical elements, the *Sāmaveda* holds a unique charm compared to the *Rgveda*. Thus, the decision to prioritize the *Sāmaveda* as the prototype may stem from its intrinsic appeal or enchantment rather than chronological precedence.¹⁰²⁴ However, this reading not just appear in the Nepalese version. Another early *Suśrutasamhitā* manuscript from 1595 also keeps the same reading.¹⁰²⁵

...विद विन्द इत्येतयोश्च धात्वोः...

Three issues need to be addressed here: (1) nomenclature of the verb roots in Sanskrit, (2) the homonymy of *vid*, and (3) variant readings in , *Su 1938* and *Jalpakalpataru*.

(1) The text suggests the etymology of the word *veda* by mentioning two verb roots, namely *vinda* and *vida*. It is worth noting that there are multiple ways of representing Sanskrit verb roots, even within traditional Sanskrit grammar like that of Pāṇini. Verb roots are presented in various forms, including mere lexical root forms,¹⁰²⁶ forms ending in *-a*,¹⁰²⁷ ending in *-i*,¹⁰²⁸ or with the ending *-ti* in the present stem,¹⁰²⁹ or sometimes with indicatory sounds (*anubandha*) as found in the *Dhātupāṭha*¹⁰³⁰ In the reading of the Nepalese version of the *Suśrutasamhitā*, the second option, representing the verbs with a final *-a*, is adopted.

(2) The second issue pertains to the homonymy of *vid* in Sanskrit *Dhātupāṭhas*, where at least four homonymous verbs are mentioned. They all belong to different classes and signify different meanings: √*vid* "to know" belongs to the second class (*adādi* or the root class), √*vid* "to find,

1023 10.22 *BhaGī*: 456.

1024 Cf. Madhusūdana Sarasvatī's comment on the same verse: चतुर्णा वेदानां मध्ये गानमाधुर्येणातिरमणीयः सामवेदोऽहमस्मि (10.22 *BhaGī*: 456), "amongst the four Vedas I am the *Sāmaveda*, which is extremely delightful due to its musical charm."

1025 MS Jodhpur RORI 20060 f.265r5.

1026 E.g. as √*gup*, √*tij*, and √*kit* are mentioned in गुप्तिज्ञकूलः सन् (Aṣṭādhyāyī: 3.1.5).

1027 E.g. as √*gam*, √*han*, √*vid*, and √*viś* are mentioned in विभाषा गमहनविदविशाम् (Aṣṭādhyāyī: 7.2.68).

1028 E.g. as √*mṛj* is mentioned in मृजेविभाषा (Aṣṭādhyāyī: 3.1.113).

1029 E.g. as √*as*, √*vac*, and √*khyā* are mentioned in अस्यतिवक्तिर्व्यातिभ्योऽद् (Aṣṭādhyāyī: 3.1.52).

1030 E.g. as √*iś* is mentioned in इषुगमियमां छः (Aṣṭādhyāyī: 6, 7.3.77). Cf. इषुम् इच्छायाम् (*Dhātupāṭha* 6.78).

to attain" to the sixth class (*tudādi* or the suffixally accented thematic class), \sqrt{vid} "to consider" to the 7th class (*rudhādi* or the athematic nasal infix class) and \sqrt{vid} "to exist" to the fourth class (*divādi* or the thematic *ya*-suffix class).¹⁰³¹ A 10th-class verb \sqrt{vid} is also mentioned in the *Dhātupāṭha* but this appears to be derived from the other *vid* verbs with a pleonastic causative suffix. The 4th-class *vid* is also originally a derivative of the other *vid* verbs formed with the passive suffix. The sixth-class verb *vid* belongs to a subclass called *mucādi*, characterized by a nasal infix. Thus, it is clear that *vinda*, the first of the two verbs mentioned in the *Suśrutasamhitā*, is the *vid* of the 6th class. The form *vinda* is, therefore, the present stem of the sixth-class verb *vid*.¹⁰³² The other one may be the 2nd- or the 7th-class *vid*. The nominalized form of all of these verbs, using the suffix *GHaÑ*, is *veda*. This is where the ambiguity appears.

(3) In , *Su 1938*, the verbs are represented as they appear in the Paninian *Dhātupāṭha*, with indicatory letters (*anubandha*) and meanings attached to the roots: विद् विचारणे, विद् लाभे.¹⁰³³ However, the citation from the *Jalpakalpataru* presents another variant— विद् विचारणे विद् विन्दति¹⁰³⁴. In both of these variants, the meanings of the verb roots appear. The verbs mentioned here are the 7th- and the 6th-class \sqrt{vid} respectively. The absence of meanings attached to the verb roots in the Nepalese version suggests the preservation of an older form of the text.¹⁰³⁵

...धात्वोरेकार्थः। पश्चात् पदं भवति...

The Nepalese version of this passage significantly diverges from other witnesses. For a comparison the readings of four witnesses are provided:

- पूर्वापरम् उपलक्ष्य विन्द विद् इत्येतयोश्च धात्वोरेकार्थः | पश्चात् पदम् भवति आयुर्वेदीत्पत्तिमयं विवक्षुरिति (Nepalese version)

¹⁰³¹Cf. सत्तायां विद्यते ज्ञाने वेत्ति विन्ते विचारणे। विन्दते विन्दति प्राप्तौ श्यन्तुकश्मोच्चिदं क्रमात्॥ (*SiddhKau*: 402).

¹⁰³²Mentioning verbs in their present stem forms is not uncommon. The same 6th class verb \sqrt{vid} is mentioned as *vinda* in this rule: अनुपसगाल्लिप्पविन्दधारिपारिवद्युदेजिचेतिसाति-साहित्यश्च (*Aṣṭādhyāyī*: 3.1.138).

¹⁰³³65.10 (*Su 1938*: 813).

¹⁰³⁴*Ca 1928-33*: 3, 3816.

¹⁰³⁵Scholars believe that meanings were not initially attached to verb roots in the original Paninian *Dhātupāṭha* and were later additions, possibly by Bhīmasena. See Cardona 1976: 161–163.

2. तत्र पूर्वापरयोगमुपलभ्य विंदतीत्येतयोश्च धात्वोरेकार्थयोः पश्चात् पदं भवति आयुर्वेदो-
त्पत्तिमयं विवक्षुरिति (*Śuśrutapāṭhaśuddhi* MS London BL IOLR 1842)
3. तत्र पूर्वापरयोगमुपलभ्य विद् विचारणे विद् विन्दतीत्येतयोश्च धात्वोरनेकार्थयोः प्रयोगः
पश्चात् प्रतिपत्तिर्भवति आयुर्वेदोत्पत्तिमयं विवक्षुरिति (*Jalpakalpataru*)
4. विद् विचारणे, विद् लाभे, इत्येतयोश्च धात्वोरनेकार्थयोः प्रयोगात्, तत्र पूर्वापरयोगमु-
पलभ्य प्रतिपत्तिर्भवति आयुर्वेदोत्पत्तिमयं विवक्षुरिति ([Su 1938](#))

Evidently, the readings gradually change across these manuscripts, with the Nepalese version representing the earliest and the last drawing from more recent manuscripts. Two key issues emerge: firstly, the contradictory readings of एकार्थः or एकार्थयोः versus अनेकार्थयोः, and secondly, the syntactic structure of the sentence.

(1) The Nepalese version and MS London BL IOLR 1842 uphold the former of the contradictory readings, while the *Jalpakalpataru* and ([Su 1938](#)) adhere to the latter. Ḏalhaṇa's commentary provides no definitive insight about his preferred reading. Nevertheless, the earlier reading appears more coherent. Although the two homonymous verbs bear distinct meanings, the context fails to privilege one over the other. In essence, we are not able to grasp the relevant meaning (*padārtha*) of the word *veda* by choosing one or the other meanings of the homonymous verb *vid*—be it *Sāmaveda* or *Āyurveda*, the meaning of the root *vid* does not change. The comprehension of *veda* as *Āyurveda* only occurs upon encountering the word “āyurveda” itself appearing after two sentences.¹⁰³⁶. Hence, the reading अनेकार्थयोः appears less tenable. But if we take the meaning of the word *artha* as “meaning,” the phrase विन्द विद् इत्येतयोश्च धात्वोरेकार्थः does not make sense either because these two homonymous verbs indeed have two different meanings. However, interpreting the word *artha* as “purpose” offers a more plausible explanation—both verbs, regardless of their individual meanings, serve the same purpose when nominalized with the suffix *GHaṄ*, yielding the same form *veda*.

(2) The other issue pertains to the sentence's syntax. In the Nepalese version, there are two separate sentences: “पूर्वापरमुपलक्ष्य विन्द विद् इत्येतयोश्च धात्वोरेकार्थः” and “पश्चात् पदम् भवति...”, whereas all other witnesses present a unified sentence. The fact of having two different sentences in the Nepalese

¹⁰³⁶Cf. ‘आयुर्वेदमिच्छाम इहोपदिश्यमानम्’ इत्यस्मिन्नायुर्वेदशब्दः श्रूयते, अतोऽत्र वेद आयुर्वेद इत्यभिप्रायः॥
(Ḍalhaṇa on 6.65.10 ([Su 1938](#): 816)).

version is determined by the use of the nominative case in the word एकार्थः, while the nominative of the second sentence is पदम्. In other readings, the genitive case is employed (एकार्थयोः) and thus the entire chunk in question constitutes a single sentence. Under this interpretation, the sentence conveys the meaning as: “when the prior and the subsequent elements are considered, after the fact that the roots *vind* and *vid* have the same meaning, the clue appears that he wants to talk about the origin of Āyurveda.” Here, the word पदम् likely denotes a sign or a clue, rather than its conventional meaning “word”, which would be incongruous in this context.

यदुक्तं साधनं भवति स हेत्वर्थः

The reading in 6.65.11 ([Su 1938:813](#)) is यदन्यदुक्तमन्यार्थसाधकं भवति स हेत्वर्थः. The same reading appears in MS London BL IOLR 1842 and the testimonium in the *Jalpakalpataru*. MS Jodhpur RORI 20060 reads यदुक्तमुभयार्थसाधनं भवति स हेत्वर्थः. Clearly, the reading in the Nepalese version represents an older stage of the textual transmission, while the vulgate version indicates an attempt to clarify the definition. A comparison with the readings found in the texts of earlier listing may also suggest that the reading in the Nepalese version is older.

...तथा माषदुग्धप्रभृतिभिर्वणः क्लिद्यते

The reading माषदुग्ध...presents some challenges. The Nepalese manuscripts, ([Su 1938](#)), Dalhaṇa's reading in ([Su 1938](#)), and MS London BL IOLR 1842—all have *māṣadugdha-*. However, this reading does not make much sense. Should we interpret it as a *dvandva* (beans and milk) or a *tatpuruṣa* (milk mixed with beans or bean milk)? The first option (*dvandva*) is untenable because a wound cannot be moistened with a solid substance like beans. The second option is also unlikely for two reasons:

1. In the *Suśrutasaṃhitā*, the word *-prabhṛti-* typically follows more than one item in a *dvandva* compound. Therefore, the reading माषदुग्धप्रभृतिभिः, where *māṣadugdha* signifies one item, is statistically improbable.
2. Does *māṣadugdha* mean bean milk? This expression is not found elsewhere. Does it mean milk mixed with beans? If so, it should be used for a specific remedial recipe and mentioned in the *Suśrutasaṃhitā*.

However, there is no such reference to *māṣadugdha* in the text. If *māṣadugdha* is not mentioned elsewhere, it is unlikely the author intended such a complex example.

We conjecture that the original term was not *māṣadugdha*- but *cājyadugdha*- or *ājyadugdha*- . MS Jodhpur RORI 20060 supports this reading. In this manuscript, The character before *jya* is unclear, but it is clear that there is a medial vowel *ā* before *jya*. The expression *ājyadugdha*- appears in other Sanskrit texts. If we read *ājya*- or *cājya*- instead of *māṣa*, it would mean “a wound gets moistened with ghee, milk, etc.,” which makes much more sense. If *ājya*- or *cājya*- was the original reading, the scribal error likely occurred quite early when the ligature *jya* looked similar to *sa*.

समासवचनं समुद्देशः |

The reading समुद्देशः appears in the Nepalese manuscripts and MS Jodhpur RORI 20060. Everywhere else, the reading is उद्देश, which matches the list of *tantrayuktis* provided at the beginning of the chapter. The version of the *Jalpakalpataru* includes another variant, समासकथनम्, which is not supported by any other witnesses.

Characteristics of the Manuscript Transmission

Translation

- 1 Now we shall explain the chapter called, “the enunciation of the logical methods of the system (*tantrayukti*).”
- 3 There are thirty-two logical methods of the system. They are as follows:

1. topic (<i>adhikarāṇa</i>)	18. objection (<i>pūrvapakṣa</i>)
2. cohesion (<i>yoga</i>)	19. determination (<i>nirṇaya</i>)
3. relevant meaning (<i>padārtha</i>)	20. consent (<i>anumata</i>)
4. purpose of a reason (<i>hetvartha</i>)	21. itemization (<i>vidhāna</i>)
5. mention (<i>samuddeśa</i>)	22. future reference (<i>anāgatāpekṣaṇa</i>)
6. exposition (<i>nirdeśa</i>)	23. past reference (<i>atikrāntāpekṣaṇa</i>)
7. prescription (<i>upadeśa</i>)	24. doubt (<i>samīṣaya</i>)
8. statement of reason (<i>apadeśa</i>)	25. explication (<i>vyākhyāna</i>)
9. indication (<i>pradeśa</i>)	26. field-specific term (<i>svasaṃjñā</i>)
10. prediction (<i>atideśa</i>)	27. interpretation (<i>nirvacana</i>)
11. exception (<i>apavarga</i>)	28. illustration (<i>nidarśana</i>)
12. ellipsis (<i>vākyāśeṣa</i>)	29. compulsion (<i>niyoga</i>)
13. implication (<i>arthāpatti</i>)	30. option (<i>vikalpa</i>)
14. contraposition (<i>viparyaya</i>)	31. aggregation (<i>samuccaya</i>)
15. recontextualization (<i>prasaṅga</i>)	32. deducible (<i>ūhya</i>)
16. invariable statement (<i>ekānta</i>)	
17. variable statement (<i>anekānta</i>)	

- 4 It is said about this, “what is the purpose of these methods?” The answer is, “cohesion of a sentence and cohesion of meaning”.¹⁰³⁷
- 5-6 There are two verses about this:

The logical methods of the system prohibit statements employed by people who do not speak the truth. They also bring about the validity of one's own statements. And they also clarify meanings that are stated back to front, that are implicit, unclear and any that are partially stated.

¹⁰³⁷Dalhaṇa on 6.65.4 (Su 1938: 815) explained “cohesion of a sentence” as “connecting up a sentence that is not connected,” and “cohesion of meaning” as “clarifying or making appropriate a meaning that is implied or inappropriate.”

- 8 Among them, “topic (*adhikarana*)” refers to the object, with reference to which statements are made, such as flavour (*rasa*) or humour (*dosa*).¹⁰³⁸
- 9 “Cohesion (*yoga*)” is that by which a sentence coheres, as when words that are in a reversed order, whether placed close or apart, have their meanings unified.

Sesame oil he should drink, with heart-leaved moonseed creeper, neem tree, maidenhair fern, Indrajao, and long pepper

that is cooked with heart-leaf sida and country mallow, and deodar, always for a benefit in the case of the disease goitre.

In this verse, one ought to say, first, “one should drink cooked....” However, the word “cooked” is used in the second line.¹⁰³⁹ Unifying the meanings of words in this way, even though they are far apart, is cohesion.

- 10 The meaning that is conveyed in an aphorism (*sūtra*) or a word is called relevant meaning (*padārtha*). The meaning that is attached to one or more words is the meaning of one or more words (*padārtha*). There are innumerable meanings of a word or words.¹⁰⁴⁰
Where two or three meanings of words such as *sneha*, *sveda* or *añjana* appear to be possible, the relevant meaning is the one that coheres with prior and subsequent elements. For example, when it is said that, “We

¹⁰³⁸The idea here is that “*rasa*” may be the topic of a chapter, and statements in that chapter are all understood to be about that topic

¹⁰³⁹See note on 305.

¹⁰⁴⁰Contrary to the translations by previous translators Singhal and J. Mitra and P. V. Sharma, we believe that there is a distinction in how the term *padārtha* is employed in the first sentence, which serves as the definition of this *tantrayukti*, and in the two subsequent sentences, which pertain to the non-technical understanding of the word *padārtha*. We have translated the initial use of the word *padārtha* as “relevant meaning” and the subsequent use as mere “meaning of one or more words.” Without presupposing the distinct usage of the word *padārtha* in this passage, the statement, अपरिमिताश पदार्थः, might seem out of context, as it would not make sense to assert that there are innumerable *padārthas* once the text has already specified that *padārtha* refers to the particular meaning conveyed in a *sūtra* or a word. Furthermore, the subsequent illustration featuring three polysemic words—*sneha*, *sveda*, and *añjana*—also supports our argument. Through these examples, the text advocates for the perspective that in cases where a word has multiple meanings, only the interpretation that aligns with the preceding and subsequent elements should be regarded as *padārtha*.

are going to explain the chapter on the *veda*-origin" the mind may be confused about which "veda" will be spoken about. *Sāmaveda* and so on are the Vedas. Taking note of the prior and subsequent elements, the two roots *vind* "find" and *vid* "know" have a single meaning.¹⁰⁴¹ Subsequently, the understanding takes place that there is a wish to talk about the origin of *āyurveda*. So that is the meaning of the word.

- 11 The purpose of a reason (*hetvartha*) is a statement that becomes a premise (*sādhana*). e For example, just as a lump of earth is moistened by water, so a wound is moistened by substances like milk with green gram.
- 12 A mention (*samuddeśa*) is a brief statement such as "spike (*śalya*)".¹⁰⁴²
- 13 A exposition (*nirdeśa*) is a detailed statement. For example, "in the body or exogenous".¹⁰⁴³
- 14 "Prescription" (*upadeśa*) refers to statements like "it should be this way." For example, one should not stay awake at night; one should not sleep during the day.
- 15 "Statement of reason" (*apadeśa*) refers to statements like "this happens because of this." For example, in the sentence "Sweet substances increase phlegm," the reason is stated.¹⁰⁴⁴
- 16 Substantiation of the subject matter through past evidence is "indication (*pradeśa*)."¹⁰⁴⁵ For example, he pulled out Devadatta's splinter (*śalya*), therefore he will pull out Yajñadatta's.
- 17 Substantiation of the subject matter through a future event is "prediction (*atideśa*)."¹⁰⁴⁵ For example, if his wind moves upwards, that will cause him to have colic."

¹⁰⁴¹The Nepalese text here is hard to follow, and the vulgate has a significantly different reading. But the problem situation seems to be as follows. The *Suśrutasanhitā* opens with a statement saying that it will describe the "origin of the *veda*" (*vedotpatti*). The problem is, what does this word "veda" refer to? Is it the Veda, as in *Sāmaveda*? Or something derived from the roots √vind or √vid? Context ("prior and subsequent elements") can help us to know that "veda" means only "*āyurveda*" and that the *Suśrutasanhitā* is talking about the origin of ayurveda, specifically. This same issue is also addressed by Ḑalhaṇa at 1.1.1 (*Su* 1938: 1).

¹⁰⁴²Generally, शल्य refers to any painful foreign body embedded in the flesh that requires surgical removal.

¹⁰⁴³This is a reference to 1.26.4 (*Su* 1938: 121) where शल्य is described in more detail as being of two kinds.

¹⁰⁴⁴A technical term also in *Nyāyaśāstra* (Jhalakīkar 1978: 54).

¹⁰⁴⁵A technical term also in *Nyāyaśāstra* (Jhalakīkar 1978: 6–7).

- 18 A deviation after generalization is exception (*apavarga*). For example, those afflicted by poison should not go through sudorific treatment other than the cases of poisoning by urinary worms.
- 19 Ellipsis (*vākyāśeṣa*) refers to an unstated word that completes a sentence. For example, despite not mentioning the word 'person', when mentioning someone as 'the one having a head, hands, feet, flanks, and abdomen,' it's apparent that the reference is to a person.
- 20 Implication refers to an unstated idea that becomes evident through context. For example, when one said, "We will eat rice" it becomes evident from the context that he did not wish to drink gruel.
- 21 When there is the reversal of it, it is contraposition (*viparyaya*). For example, when it is said, "Weak, dyspneic, and fearful people are difficult to treat," the converse holds true: "Those who are strong and so on are easily treatable."
- 22 Recontextualization (*prasaṅga*) refers to a concept common to another section. For example, a concept belonging to another section is brought up by mentioning it repeatedly throughout.
- 23 Invariable statement (*ekānta*) is one that is stated with certainty. For example, *turpeth* causes purgation; *emetin* induces vomiting.
- 24 Variable statement (*anekānta*) is one that is true in one way in some cases and in another way elsewhere. For example, some teachers identify the main element as substance, others as fluid, some as semen, and some as digestion.
- 25 A first point of view (*pūrvapakṣa*) is something stated with certainty. For example, how are the four types of diabetes caused by wind incurable?¹⁰⁴⁶
- 26 Its answer is determination. For example, afflicting the body and trickling downwards, it creates urine mixed with fat, fatty tissues, and marrow. Thus, those caused by wind are incurable.
- 28 Consent (*anumata*) refers to others' opinion that is not rejected. For example, when the assertor says that there are six flavours and that somehow gets accepted with affirmation, it is termed consent.
- 29 Itemization (*vidhāna*) refers to sequentially ordered statements within a chapter. For example, the eleven lethal points of thigh are mentioned

¹⁰⁴⁶The adverb निःसंशयम् is problematic: the example expresses a query or doubt, the opposite of certainty, which is answered in the next passage. It would seem to make more sense to read something like यस्तु संशयम् अभिधीयते स पूर्वपक्षः, but our manuscripts are unanimous in their reading.

See chapter
40 of Sūtra-
sthāna.

vasā / me-
das / maj-
jan

- sequentially in a chapter.
- 30 A statement like "Thus will be stated" is future reference (*anāgatāpekṣaṇa*) such as when he says in the *Sūtrasthāna*, "I will mention it in the *Cikitsāsthāna*."
 - 31 A statement like "Thus has been stated" is past reference (*atikrāntāpekṣaṇa*) such as when one says in the *Cikitsāsthāna*, "As mentioned in the *Sūtrasthāna*...."
 - 32 An indication pointing to causes on both sides is doubt (*samīśaya*). For example, a blow to the sole-heart (*talahrdaya*)¹⁰⁴⁷ is fatal, whereas cutting hands and feet is not fatal.
 - 33 An elaborate description is explication (*vyākhyāna*). For example, the twenty-fifth entity, person (*puruṣa*), is being explicated here. Thus, no other Āyurvedic texts discuss entities beginning with matters.
 - 34 A field-specific term (*svasamjñā*) is uncommon in other fields of studies. The term used in one's own systems is called field-specific term, such as in this system, pair (*mithuna*) denotes honey and ghee, and triad (*mithuna*) denotes ghee, sesame oil and fat.
 - 35 A customary portrayal is interpretation (*nirvacana*). For example, one goes along the shade fearing heat.
 - 36 Providing examples is illustration (*nidarśana*). For example, just as fire spreads rapidly in a dry forest when accompanied by wind, a wound intensifies affected by wind, bile, and phlegm.
 - 37 A statement like "This is the only way..." ... compulsion (*niyoga*). For example, one should consume only a healthy diet.
 - 39 A statement like "This and this..." is option (*vikalpa*). For example, in the section on meat, the major ones are blackbuck, deer, quail and partridge.¹⁰⁴⁸
 - 38 A summarized statement is aggregation (*samuccaya*).¹⁰⁴⁹ For example, let there be rice with meat broth, rice with milk, or burley with ghee.

Does
bhūtādi a
compound
or if means
ahankāra or
ego?

triad? -DW

A meaningful reading of these two rules would be

¹⁰⁴⁷तालहृदय is one of the muscle-group of lethal points mentioned in 3.6.7 (Su 1938: 370).

¹⁰⁴⁸The example here matches समुच्चय (next text), not विकल्प. There seems to have been a metathesis of terms. Y. T. Ācārya and N. R. Ācārya (Su 1945: 1005, footnote 6) notes that this text and the next have been swapped in the Calcutta edition that includes Hārāṇacandra's commentary Bhaṭṭācārya 1908–11: 2, in the same way as in the Nepalese version.

¹⁰⁴⁹As stated in the previous footnote, the example here is of विकल्प, not समुच्चय.

39 idam vedam veti vikalpah / yathā rasodanah kṣīrodanah
saghṛtā vā yavāgūr bhavatv iti //

38 samkṣepavacanam samuccayah / yathā māṃsavarge ena-
hariṇalāvatittirah pradhānā iti

- 40 What is not explicitly stated but can be understood through discernment is deducible (*ūhya*). For example, in the section on rules of foods and drinks, four types of foods and drinks are mentioned— masticable (*bhakṣya*), edible (*bhojya*), suckable (*lehya*), and drinkable (*peya*). Thus, while four types are needed to be stated, two types are actually mentioned. Here it is deducible that in the section on foods and drinks, by specifically mentioning two types, the four types are also mentioned. Furthermore, a masticable item is not excluded from the category of food because it shares the same characteristic of solidity. A suckable item is not excluded from being classified as a drink because it shares the same characteristic of liquidity. Four types of aliments are rare. They are usually just twofold. Therefore, lord Dhanvantari says “Two-fold is popular”.

Editions and Abbreviations

- Ah 1939 Kumṭe, Aṇṇā Moreśvara, Navare, Kṛṣṇāśāstrī, and Parādkar, Hariśāstrī (1939) (eds.), श्रीमद्वाग्भटविरचितम् अष्टाङ्गहृदयम्, श्रीमद-रुणदत्तविरचितया सर्वाङ्गसुन्दराख्यया व्याख्यया, हेमाद्रिप्रणीतया आयुर्वेदरसायनाहृया टीकया च समुल्लसितम् = *The Astāṅgahṛidaya* (6th edn., Mumbayyām: Nirṇayasāgara Press), ARK: <https://n2t.net/ark:/13960/t3tt6967d>.
- AHS 1940 Mūss, C. N. Nārāyaṇan (1940) (ed.), श्रीमद्वाहटाचार्यप्रणीतम् अष्टाङ्गहृदयम्. श्रीदासपण्डितविरचितया हृदयबोधिकाख्यया व्याख्यया समलङ्घितम् (Śrīcitrāyurvedagranthamālā, 4; Trivandrum: Rājakīyamudrāśālā), ARK: <https://n2t.net/ark:/13960/s23qzpqc61j>.
- 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.
- Arthaśāstra Kangle, R. P. (1960), *The Kauṭilīya Arthaśāstra* (University of Bombay Studies Sanskrit, Prakrit and Pali, 1; Bombay: University of Bombay), accessed 23/09/2021.
- As 1980 Āṭhavale, Anamta Dāmodara (1980) (ed.), अष्टाङ्गसङ्ख्यात् श्रीमद्वाग्भटविरचितः इन्दुव्याख्यासहितः [= Vāgbhaṭa's *Aṣṭāṅgasaiṅgraha* with Indu's Commentary] (Puṇe: M. A. Āṭhavale, Śrīmad Ātreya Prakāśanam), ARK: <https://n2t.net/ark:/13960/s25bwqsd0n7>.
- Aṣṭādhyāyī Sharma, Rama Nath (2002–03), *The Aṣṭādhyāyī of Pāṇini*, 6 vols. (Second revised and enlarged edition, New Delhi: Munshiram Manoharlal Publishers Pvt. Ltd.).

- BhaGī Panśīkar, Wāsudev Laxmaṇ Shāstri (1936) (ed.), श्रीमद्भगवद्गीता श्रीमच्छाङ्करभाष्येण - आनन्दगिरिकृतव्याख्यायुजा संबलिता तथा नीलकण्ठी - भाष्योत्कर्षदीपिका - श्रीधरीयसुबोधिनी - अभिनवगुप्ताचार्यव्याख्या - श्रीमधुसूदनसरस्वती - स्वामिकृतगृहार्थदीपिकारव्यव्यासहिता तद्वारव्यानेन श्रीधर्मदत्तशर्म (प्रसिद्धबद्धाशर्म) विरचित - गृहार्थतत्त्वालोकेन युता च [= *Bhagavadgīta with commentaries*] (2nd edn., Bombay: Nirṇaya-Sāgar Press), ARK: <https://n2t.net/ark:/13960/t7jq76w6m>.
- Bhela 1921 Mookerjee, Ashutosh, and Ananta Krishna Shastri, Vedantabisharad (1921) (eds.), *The Bhela Samhita. Sanskrit Text* (Calcutta: University of Calcutta), ARK: <https://n2t.net/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).
- Bhela 2000 Krishnamurthy, K. H. (2000), *Bhela-samhitā. Text with English Translation, Commentary and Critical Notes* (Haridas Ayurveda Series, 8; Varanasi: Chaukhambha Visvabharati).
- Ca 1877 Bhaṭṭācāryya, Jīvānanda Vidyāsāgara (1877) (ed.), चरकसंहिता सूत्र-निदान-विमान-शारीरेन्द्रिय-चिकित्सित-कल्प-सिद्धिस्थानात्मका। भगवता आत्रेयेण पुनर्वसुना उपदिष्टा अग्निवेशनामधेयेन तत् शिषेण विरचिता चरकाभिधेयेन ऋषिणा प्रतिसंस्कृता (Calcutta: Sarasvatī Yantra), ARK: <https://n2t.net/ark:/13960/t0sq9gf44>.
- Ca 1904 Śarmā, Satīśacandra (1904) (ed.), चरकसंशिति (1st edn., Kalikātā: Bhaiṣajya Steam Machine Press), ARK: <https://n2t.net/ark:/13960/t51g4nm8m>.
- Ca 1911 Vaidyopādhyāya, Rāmaprasāda (1911) (ed.), चरकसंहिता। श्रीमन्महर्षिप्रवरचरकप्रणीता। पण्डितरामप्रसादवैद्योपाध्यायविरचितप्रसादनी-भाषाटीकासहिता। (mumbai: Kṣemarāja-Śrīkṛṣṇadāsaśreṣṭhin), ARK: <https://n2t.net/ark:/13960/t2r59q189>.
- Ca 1923 Śarmā, Satīśacandra (1923) (ed.), चरकसंशिति (3rd edn., Kalikātā: Bhaiṣajya Steam Machine Press), ARK: <https://n2t.net/ark:/13960/t17m5hp8c>.
- Ca 1928-33 Senagupta, Narendranātha, and Senagupta, Balāicandra (1928–33) (eds.), चरक-संहिता। महामुनिना भगवताग्निक्वेशेन प्रणीता महर्षिचरकेण दृढबलेन च प्रतिसंस्कृता चरकचतुरानन-श्रीमञ्जुकपाणिदत्तप्रणीतया आयुर्वेदीपिकारव्यटीकया महामहोपाध्याय-श्रीगङ्गाधरकविरतकविराजविरचितया जल्पकल्पतरुसमारव्यया टीकया च समलङ्घता, 3 vols. (kalikātānagarī: Dhanvantari Electric Machine Yantra).

- Ca 1933 Ācārya, Yādavaśarma Trivikrama (1933) (ed.), *महर्षिणा अग्निवेशेन प्रणीता चरकद्वबलाभ्यां प्रतिसंस्कृता चरकसंहिता* (3rd edn., Mum-bayyāṁ: Nirnaya Sagara Press), ARK: <https://n2t.net/ark:/13960/t42s3kk45>.
- Ca 1941 Ācārya, Yādavaśarma Trivikrama (1941) (ed.), *महर्षिणा पुनर्वसुनोपदिष्टा, तच्छिष्ठेणाग्निवेशेन प्रणीता, चरकद्वबलाभ्यां प्रतिसंस्कृता चरकसंहिता, श्रीचक्रपाणिदत्तविरचितया आयुर्वेदीपिकाव्याख्या संवलिता* (3rd edn., Mum-bayyāṁ: Nirnaya Sagara Press), ARK: <https://n2t.net/ark:/13960/t48q2f20n>.
- CDIAL Turner, R. L. (1966–85), *A Comparative Dictionary of the Indo-Aryan Languages* (2nd edn., London, New York, Toronto: Oxford University Press), ISBN: 0197135501, URL: <http://n2t.net/ark:/13960/t2n69n06g>; v. 2: *Indexes* by D. R. Turner (OUP, London, 1969), v. 3: *Phonetic Analysis* by R. L. and D. R. Turner (OUP, London, 1971), v. 4: *Addenda and Corrigenda* ed. J. C. Wright (SOAS, London, 1985). Online database at <http://dsal.uchicago.edu/dictionaries/soas/>.
- DED₂ Burrow, Thomas, and Emeneau, Murray B. (1984), *A Dravidian Etymological Dictionary* (2nd edn., Oxford: Clarendon Press), ARK: <https://n2t.net/ark:/13960/s24rgc5rsz0>, URL: <http://dsal.uchicago.edu/dictionaries/burrow/>.
- EWA Mayrhofer, Manfred (1992–2001), *Etymologisches Wörterbuch des Altindoarischen* (Heidelberg: Carl Winter, Universitätsverlag), ISBN: 3-533-03826-2.
- Garuḍapurāṇa* Pāṇḍeya, Rāmateja (1963) (ed.), *श्रीकृष्णद्वैपायनव्यासप्रणीतं गरुडपुराणम्* (Vidyabhawan Prachyavidya Granthamala, 3; reprint, Caukhambā Vidyābhavana, Pāṇḍita-Pustakālaya: Kāśī), ARK: <https://n2t.net/ark:/13960/t6pz7tg7j>.
- HIML Meulenbeld, Gerrit Jan (1999–2002), *A History of Indian Medical Literature*, 5 vols. (Groningen: E. Forsten), ISBN: 9069801248.
- KEWA Mayrhofer, Manfred (1953–72), *Kurzgefaßtes etymologisches Wörterbuch des Altindoarischen; a Concise Etymological Sanskrit Dictionary* (Heidelberg: Carl Winter, Universitätsverlag).
- Mahābhāṣya Kielhorn, F. (1880–85) (ed.), *The Vyākaraṇa-Mahābhāṣya of Patanjali* (Bombay: Government Central Book Depot), ARK: <https://n2t.net/ark:/13960/s258g7r6bxf>.

- Mahākośa* Jośī, Venīmādhavaśāstri, and Jośī, Nārāyaṇa Harī (1968), आयुर्वेदीय महाकोशः अर्थात् आयुर्वेदीय शब्दकोशः संस्कृत-संस्कृत (Mum̄baī: Mahārāṣṭra Rājya Sāhityta āṇi Saṃskṛti Maṇḍala), ARK: <https://n2t.net/ark:/13960/t22c41g8t>.
- Mānasollāsa* Shrigondekar, Gajanan K. (1925–61) (ed.), मानसोल्लासः = *Mānasollāsa* [or *Abhilasitārthacintāmaṇi*] of King Someśvara (Gaekwad's Oriental Series; Baroda: Oriental Institute), ARK: <https://n2t.net/ark:/13960/t87h8tn95>; v. 2: ark:/13960/t3gz41v8m.
- MN₁ Ācārya, Yādavaśarma Trivikrama (1920) (ed.), महामतिश्रीमाधवकरप्रणीतं माधवनिदानम् श्रीविजयरक्षित-श्रीकण्ठदत्ताभ्यां विरचितया मधुकोशारब्यव्याख्याया, श्रीवाचस्पतिवैद्यविरचितया आतङ्कदर्पणव्याख्याया विशिष्टांशेन च समुलसितम् = *Mādhavanidāna* by Mādhavakara with the Two Commentaries, *Madhukosha* by Vijayarakshita & Śrīkanthadatta and Ātankadarpaṇa by Vāchaspati Vaidya (1st edn., Bombay: Nirnaya Sagara Press), ARK: <https://n2t.net/ark:/13960/t9z08jn5j>.
- MN₃ Ācārya, Yādavaśarma Trivikrama (1932) (ed.), महामतिश्रीमाधवकरप्रणीतं माधवनिदानम् श्रीविजयरक्षित-श्रीकण्ठदत्ताभ्यां विरचितया मधुकोशारब्यव्याख्याया, श्रीवाचस्पतिवैद्यविरचितया आतङ्कदर्पणव्याख्याया विशिष्टांशेन च समुलसितम् = *Mādhavanidāna* by Mādhavakara with the Two Commentaries, *Madhukosha* by Vijayarakshita & Śrīkanthadatta and Ātankadarpaṇa by Vāchaspati Vaidya (3rd edn., Bombay: Nirnaya Sagara Press), ARK: <https://n2t.net/ark:/13960/t66452x0h>; Reprinted Varanasi: Chowkhambha, 1986.
- 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.
- Nannūl Sripathi, Muthu Krishna (1995) (ed.), *Nannūl: A perceptive and comprehensive translation in English* (Madurai: MK Sripathi).
- 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/>.
- OED Simpson, J. A., and Weiner, E. S. C. (1989–), *The Oxford English Dictionary* (2nd edn., Oxford: Oxford University Press), ISBN: 0198611862, URL: <https://www.oed.com>; 20v.

- PW Böhtlingk, Otto, and Roth, Rudolph (1855–75), *Sanskrit-Wörterbuch* (St. Petersburg: Kaiserlichen Akademie der Wissenschaften), URL: <https://www.sanskrit-lexicon.uni-koeln.de/scans/PWGScan/2020/web/>, accessed 18/05/2023.
- PWK Böhtlingk, Otto (1879), *Sanskrit-wörterbuch in kürzerer fassung* (St. Petersburg: Kaiserlichen Akademie der Wissenschaften), URL: <https://www.sanskrit-lexicon.uni-koeln.de/scans/PWScan/2020/web/>, accessed 18/05/2023.
- Sabdasindhu* Gupta, Umeśachandra, and Sena, Nagendra Nātha (1983), वैद्यक-शब्दसिन्धुः = *Vaidyaka-Śabdasindhuḥ* (3rd edn., Varanasi & Delhi: Chaukhambha Orientalia); 3rd ed. first published in 1914.
- Saddanīti 3 Smith, Helmer (1930) (ed.), *Saddanīti la grammaire Palie d'Aggavaṇṭa: III Sūttamālā (Pariccheda XX–XXVIII)* (Skrifter utgivna av Kungl. Humanistiska Vetenskapssamfundet i Lund, XII:3; Lund: C. W. K. Gleerup), ARK: <https://n2t.net/ark:/13960/t1jh9w87b>.
- SiddhKau Gāḍagīla, Dinakaraśāstrī K., and Paṇaśīkara, Vāsudevaśarman (1904) (eds.), तत्त्वबोधिनीसमारब्धव्यासंवलिता सिद्धान्तकौमुदी नाम भट्टोजिदीक्षितप्रणीता पाणिनीयव्याकरणसूत्रवृत्तिः (3rd edn., Mum-bayī: Nirṇaya Sāgara), ARK: <https://n2t.net/ark:/13960/t0zq08k33>.
- Su 1889 Bhaṭṭācāryya, Jīvānanda Vidyāsāgara (1889) (ed.), सुश्रुतः. सूत्र-निदान-शारीर-चिकित्सा-कल्पोत्तर-तन्त्र-कल्पित आयुर्वेद. भगवता धन्वन्तरिणोपदिष्टः सुश्रुतनामधेयेन तच्छिष्येण विरचितः (3rd edn., Calcutta: Sarasvatī Press), ARK: <https://n2t.net/ark:/13960/t1nh6j09c>; HTML: IB, 311, edition b.
- Su 1931 Ācārya, Yādavaśarma Trivikrama (1931) (ed.), सुश्रुतसंहिता, वैद्यव-रश्रीडल्हणाचार्यविरचितया निबन्धसंग्रहारब्धव्याख्या समुल्लसिता, महर्षिणा सु-श्रुतेन विरचिता, सूत्र-निदान-शारीर-चिकित्सा-कल्पस्थानोत्तरतन्त्रात्मकः. आ-चार्योपाहेन त्रिविक्रमात्मजेन यादवशर्मणा संशोधिता = *The Sushrutasamhitā of Sushruta with the Nibandhasangraha Commentary of Shree Dalhanāchārya* (2nd edn., Mumbaiyām: Pāṇḍuraṅga Jāvajī at the Nirṇayasāgaramudrāyantrālaye), ARK: <https://n2t.net/ark:/13960/t9j41sg94>, accessed 09/06/2020; HTML: IB, 312 edition *v.

- Su 1938 Ācārya, Yādavaśarma Trivikrama, and Ācārya, Nārāyaṇa Rāma (1938) (eds.), श्रीडल्हणाचार्यविरचितया निबन्धसंग्रहारब्यव्याख्यया निदानस्थानस्य श्रीगयदासाचार्यविरचितया न्यायचन्द्रिकारब्यपञ्जिकाव्याख्यया च समुल्लसिता महर्षिणा सुश्रुतेन विरचिता सुश्रुतसंहिता (3rd edn., Bombay: Nirṇayasāgara Press), ARK: <https://n2t.net/ark:/13960/t09x0sk1h>; HML: IB, 313, edition cc ('the vulgate').
- Su 1939 Ācārya, Yādavaśarma Trivikrama, and Śarman, Nandakiśora (1939) (eds.), सुश्रुतसंहितायाः सूत्रस्थानम्. श्रीचक्रपाणिदत्तविरचितया भानुमतीव्याख्याया समेतम् = *Sushrut-saṅhitā* (*sūtra Sthān*) with *Bhānumatī Commentary by Chakrapāṇi Datta with Introduction by Gaṇanāth Sen* (Śrīsvāmi Lakṣmīrāma Nidhi Granthamālā = Shri Swāmī Lakshmī Rām Trust Series, 1; [Jaipur]: Śyāmasundara Śarman), ARK: <https://n2t.net/ark:/13960/s207htc1xpj>; Printed at the Nirṇayasāgara Press, Bombay.
- Su 1945 Ācārya, Yādavaśarma Trivikramācārya, and Ācārya, Nārāyaṇa Rāma (1945) (eds.), महर्षिणा सुश्रुतेन विरचिता सुश्रुतसंहिता (मूलमात्रा). पाठान्तर-परिशिष्टादिभिः संवलिता = the *Suśrutasaṅhitā* of *Suśruta* with Various Readings, Notes and Appendix etc. (Mumbāi: Nirṇayasāgarākhyamudraṇālaye), ARK: <https://n2t.net/ark:/13960/t8kd4jh7n>.
- TY Nārāyaṇa, Śaṅkaraśarman (1949), *Tantrayuktih*, ed. Vayaskara N. S. Mooss (Vaidyasārathigranthāvalih, 6; Koṭṭayanagaryāṁ: Vaidyasarathi Press), ARK: <https://n2t.net/ark:/13960/t6zx3wv30>.
- TYV Muthuswami, Nurani Easwara (1976) (ed.), *Tantrayuktivicāraḥ* [by *Nīlameghabhiṣaj*] (Kerala Praśāsanāyurveda Granthāvalih, 1; 2nd edn., Trivandrum: Publications Division, Govt. Ayurveda College), ARK: <https://n2t.net/ark:/13960/s2j1p7k0526>.
- Viṣṇudh 3 Shah, Priyabala (1958) (ed.), *Viṣṇudharmottara-Purāṇa. Third Khaṇḍa* (Gaekwad's Oriental Series, 130; Baroda: Oriental Institute), ARK: <https://n2t.net/ark:/13960/t52g33q88>.
- Viṣṇudh. Śarman, Madhusūdana, and Śarman, Mādhavaprasāda (1912) (eds.), विष्णुधर्मोत्तरपुराणम् = [*Viṣṇudharmottarapurāṇa*] (Mumbai: Khemarāja Śrīkrṣṇadāsa at the Śrīveṅkaṭeśvara Steam Press), ARK: <https://n2t.net/ark:/13960/t6qz6fr23>; Lithograph format. Edited on the basis of a manuscript belonging to the astrologer Śudhākaraśarman of the Varanasi Sanskrit Pāṭhaśālā.

- Yuktidīpikā Wezler, Albrecht, and Motegi, Shujun (1998) (eds.), *Yuktidīpikā: The Most Significant Commentary on the Sāṃkhyakārikā* (Alt- und Neu-Indische Studien herausgegeben vom Institut für Kultur und Geschichte Indiens und Tibets an der Universität Hamburg, 44; Stuttgart: Franz Steiner Verlag).

Index of Manuscripts

Numbers after the final colon refer to pages in this book.

Bikaner RORI 5157: 149

Cambridge CUL Add.1693: 145

Hyderabad Osmania 137-3(b): 59

Jamnagar GAU 114: 299, 301f

Jodhpur RORI 20060: 306, 309f

Kathmandu KL 699: 14, 17, 54, 60, 148, 172, 176, 267

Kathmandu NAK 1-1079: 14, 23, 37, 55, 60

Kathmandu NAK 1-1146: 38

Kathmandu NAK 1/1648: 285

Kathmandu NAK 5-333: 14, 23, 55, 60, 106, 109, 145, 150, 170, 172, 175ff

London BL IOLR 1842: 308f

MS Jamnagar GAU 114: 287, 292, 304

NAK 5-333: 162

Paris BNF Greek suppl. 247: 139

Thanjavur TMSSML 10773: 318

General Bibliography

- Ācārya, Yādavaśarma Trivikrama (1933) (ed.), *महर्षिणा अग्निवेशन प्रणीता चरकदृढबलाभ्यां प्रतिसंस्कृता चरकसंहिता* (3rd edn., Mumbaiyāṁ: Nirnaya Sagara Press), ARK: <https://n2t.net/ark:/13960/t42s3kk45>.
- (1941) (ed.), *महर्षिणा पुनर्वसुनोपदिष्टा, तच्छिष्येणाग्निवेशन प्रणीता, चरकदृढबलाभ्यां प्रतिसंस्कृता चरकसंहिता, श्रीचक्रपाणिदत्तविरचितया आयुर्वेददीपिकाव्याख्याया संबलिता* (3rd edn., Mumbaiyāṁ: Nirnaya Sagara Press), ARK: <https://n2t.net/ark:/13960/t48q2f20n>.
- Ācārya, Yādavaśarma Trivikramācārya, and Ācārya, Nārāyaṇa Rāma (1945) (eds.), *महर्षिणा सुश्रुतेन विरचिता सुश्रुतसंहिता* (मूलमात्रा). *पाठान्तर-परिशिष्टादिभिः संबलिता* = *the Suśrutasanhitā of Suśruta with Various Readings, Notes and Appendix etc.* (Mumbāi: Nirṇayasāgarākhyamudraṇālaye), ARK: <https://n2t.net/ark:/13960/t8kd4jh7n>.
- Achaya, K. T. (1994), *Indian Food: A Historical Companion* (Delhi: Oxford University Press), ISBN: 0195628454.
- (1998), *A Historical Dictionary of Indian Food* (Delhi: Oxford University Press), ISBN: 0195642546.
- Agostini, Giulio (2004), “Buddhist Sources on Feticide as Distinct from Homicide,” *Journal of the International Association of Buddhist Studies*, 27/1: 63–96.
- Ali, Salim, and Ripley, S. Dillon (1983), *Handbook of the Birds of India and Pakistan, Together with Those of Bangladesh, Nepal, Bhutan, and Sri Lanka. Compact Edition*, 10 vols. (Delhi: Oxford University Press).
- Alvi, M. A., and Rahman, A. (1968), *Jahangir the Naturalist* (Monograph Series, 3; New Delhi: National Institute of Sciences of India), ARK: <https://n2t.net/ark:/13960/t59d2897k>.

- Angermeier, Vitus (2021), "Agni and Soma Revisited: A Primordial Āyurvedic Concept?," in Toke Lindegaard Knudsen, Jacob Schmidt-Madsen, and Sara Speyer (eds.), *Body and Cosmos* (Leiden: Brill), chap. 3, 15–32. doi: https://doi.org/10.1163/9789004438224_004.
- Azeez Pasha, M. (1971), "English Translation of Madan-ul-Shifa, Tibbe Sikandar Shahi (Sikandar Shah's Mine of Medicine)," *Bulletin of the Department of History of Medicine (Osmania University, Hyderabad)*, 2/4: 227–2324; continued in BDHM 3(1) 29–38; BIHM 1(3/4) 127–134; & BIHM 2(1), 17–22.
- Bagchi, P. C. (1941), "New Materials for the Study of the Kumāratantra of Rāvana," *Indian Culture*, 7/4: 269–86, URL: <https://archive.org/details/in.ernet.dli.2015.281551/page/n280/mode/1up>.
- Bailey, Harold W. (1970), "Vāsta," *Acta Orientalia*, 30: 20, ISSN: 0001-6438. doi: <https://doi.org/10.5617/ao.5229>.
- Baingrige Fletcher, T. (1914), *Some South Indian Insects and Other Animals of Importance Considered Especially from an Economic Point of View* (Madras: Government Press), ARK: <https://n2t.net/ark:/13960/t2f76s67n>.
- Ball, Valentine (1888), "On the Identification of the Animals and Plants of India Which Were Known to Early Greek Authors," *Proceedings of the Royal Irish Academy*, 2 (1879–1888)/6: 302–46, URL: <https://www.jstor.org/stable/20651530>.
- Barceloux, Donald G. (2008), *Medical Toxicology of Natural Substances. Foods, Fungi, Medicinal Herbs, Plants, and Venomous Animals* (Hoboken, NJ, etc.: John Wiley & Sons), ISBN: 047172761X.
- Bedekar, V. M. (1967), "The Legend of the Churning of the Ocean in the Epics and the Purāṇas: A Comparative Study," *Purāṇa*, 9/1: 7–61, ARK: <https://n2t.net/ark:/13960/t57d2r97r>.
- Bellini, Marco (2025), "The Byzantine Alchemist Christianos and His Procedures on Indian Lac," *Ambix*, 72/2 (Mar.): 127–42, ISSN: 1745-8234. doi: <https://doi.org/10.1080/00026980.2025.2481338>.
- Bendall, Cecil (1883), *Catalogue of the Buddhist Sanskrit Manuscripts in The, University Library, Cambridge: With Introductory Notices and Illustrations of the Palaeography and Chronology of Nepal and Bengal* (Cambridge: University Press), ARK: <https://n2t.net/ark:/13960/t03x8vz7b>.

- Bhaṭṭācārya, Candrakānta (1908–11) (ed.), सुश्रुतसंहिता प्रथमवण्डम् सूत्रस्थानात्मकम् हाराणचन्द्रचक्रवर्तिकविरचितसुश्रुतार्थसन्दीपनभाष्य-समेतम्... चन्द्रकान्त भट्टाचार्य-प्रमुखैः संशोधितम् = [The *Suśrutasaṃhitā* with the Commentary *Suśrutārtha-sandīpanabhaṣya* by Hārāṇacandra Cakravarti] (Kalikātā: Satya Press); edition "t" in [HTML](#): IB, 312.
- Biardeau, Madeleine (1964), *Théorie de la connaissance et la philosophie de la parole dans la brahmanisme classique* (Paris & La Haye: Mouton & Co.), ARK: <https://n2t.net/ark:/13960/t42r7g950>.
- Birch, Jason, Wujastyk, Dominik, Klebanov, Andrey, Parameswaran, Madhu K., et al. (2021), "Further Insight into the Role of Dhanvantari, the Physician to the Gods, in the *Suśrutasaṃhitā*," *Academia Letters*. doi: <https://doi.org/10.20935/AL2992>.
- Birch, Jason, Wujastyk, Dominik, Klebanov, Andrey, Rimal, Madhusudan, et al. (2021), "Ḍalhaṇa and the Early 'Nepalese' Version of the *Suśrutasaṃhitā*." doi: <https://doi.org/10.20935/al3733>.
- Bloomfield, Maurice (1890), "The Kauśika Sūtra of Atharva Veda With Extracts from the Commentaries of Dārila and Keśava," *Journal of the American Oriental Society*, 14, ISSN: 0003-0279. doi: <https://doi.org/10.2307/592399>; reprint of the 1889 edition, JAOS.
- Böhtlingk, Otto (1879), *Sanskrit-wörterbuch in kürzerer fassung* (St. Petersburg: Kaiserlichen Akademie der Wissenschaften), URL: <https://www.sanskrit-lexicon.uni-koeln.de/scans/PWScan/2020/web/>, accessed 18/05/2023.
- Böhtlingk, Otto, and Roth, Rudolph (1855–75), *Sanskrit-Wörterbuch* (St. Petersburg: Kaiserlichen Akademie der Wissenschaften), URL: <https://www.sanskrit-lexicon.uni-koeln.de/scans/PWGScan/2020/web/>, accessed 18/05/2023.
- Bosworth, C. Edmund (1994), "Abū Ḥafṣ 'umar Al-kirmānī and the Rise of the Barmakid," *Bulletin of the School of Oriental and African Studies*, 57/2: 268–82, URL: <http://www.jstor.org/stable/620573>.
- Breton, P. (1826), "On the Native Mode of Couching," *Transactions of the Medical and Physical Society of Calcutta*, 2: 341–82, ARK: <https://n2t.net/ark:/13960/t3dz8nn5t>, URL: <https://archive.org/details/s8id13658440/page/338/mode/2up>, accessed 02/06/2021.
- Bronkhorst, Johannes (2016), *How the Brahmins Won: From Alexander to the Guptas* (Leiden: Brill). doi: <https://doi.org/10.1163/9789004315518>.

- Brooks, Lisa Allette (2018), "Epistemology and Embodiment: Diagnosis and the Senses in Classical Ayurvedic Medicine," *Asian Review of World Histories*, 6: 98–135. doi: <https://doi.org/10.1163/22879811-12340027>.
- (2020a), "A Surgeon's Hand: Reflections on Surgical Tactility in Early Ayurveda," *Asian Medicine*, 15/1: 30–62. doi: <https://doi.org/10.1163/15734218-12341460>.
- (2020b), "Whose Life is Water, Whose Food is Blood: Fluid Bodies in Āyurvedic Leech Therapy," in Natalie Köhle and Shigehisa Kuriyama (eds.), *Fluid Matter(s): Flow and Transformation in the History of the Body* (Asian Studies Monograph Series, 14; Canberra: ANU Press). doi: <https://doi.org/10.22459/fm.2020>.
- (2021a), "The Vascularity of Ayurvedic Leech Therapy: Sensory Translations and Emergent Agencies in Interspecies Medicine," *Medical Anthropology Quarterly*, 35/1: 82–101. doi: <https://doi.org/10.1111/maq.12595>.
- (2021b), "Translating Touch in Āyurveda: Medicine, Sense, and Subjectivity in Early south Asia and Contemporary Kerala," PhD thesis (University of California, Berkeley).
- (in press), "Leech Logic: Classification, Sensation, and Care," in Hsiao-wen Cheng, Yan Liu, and Margaret Ng (eds.), *Global Lives of Medicines: Materials, Markets, and Healing Practices Across Asia* (Seattle: University of Washington Press).
- Brunton, T. Lauder, and Fayerer, J. (1909), "On the Nature and Physiological Action of the Poison of *Naja tripudians* and other Indian Venomous Snakes, parts I and II," in *On the Poison of Venomous Snakes and the Methods of Preventing Death from their Bite* (London: Macmillan and Co.), 1–22, 23–110, ARK: <https://n2t.net/ark:/13960/t0bv7ts2c>.
- Burnell, Arthur Coke (1880), *A Classified Index to the Sanskrit MSS. in the Palace at Tanjore* (London: Trübner), ARK: <https://n2t.net/ark:/13960/t4xh86j61>; Bhelasamhitā described on pp. 67 ff.
- Burrow, Thomas (1948), "Dravidian Studies VII," *Bulletin of the School of Oriental and African Studies* (London), 12/2: 365–96, URL: <https://www.jstor.org/stable/608752>.
- (1971), "Spontaneous Cerebrals in Sanskrit," *Bulletin of the School of Oriental and African Studies*, 34/3: 538–59. doi: <https://doi.org/10.1017/s0041977x00128538>, URL: <https://www.jstor.org/stable/613901>.

- Byrski, Maria Christopher (1981), "Is there a Sanskrit Word for Pumice," *Indologica Taurinensis*, 8–9, URL: http://www.asiainstitutetorino.it/Indologica/volumes/vol08-09/vol_08-09_art09_byrski.pdf.
- Caillat, Colette (2019), "On the Medical Doctrines in the Tandulaveyāliya: 2. Teachings of Anatomy," trans. Brianne Donaldson, *International Journal of Jaina Studies*, 15/1: 1–12, ISSN: 1748-1074, URL: <https://www.soas.ac.uk/sites/default/files/2022-06/On%20the%20Medical%20Doctrines%20in%20the%20Tandulavey%C4%81liya%202%20Teachings%20of%20Anatomy%20file139945.pdf>, accessed 07/07/2019.
- Cardona, George (1976), *Pāṇini: A Survey of Research* (Trends in Linguistics State-of-the Art Reports, 6; The Hague: Mouton & Co. B.V., Publishers), ARK: <https://n2t.net/ark:/13960/s2mtq72w6s2>.
- Chakraborty, Deepro (2022), "NAK 5/333 is not a direct copy of KL 699: further evidence." doi: <https://doi.org/10.5281/ZENODO.6537884>.
- Chatterji, Suniti Kumar (1974), *Kiraata-Jana-Kṛti* (2nd edn., Calcutta: The Asiatic Society), ARK: <https://n2t.net/ark:/13960/t47q4b12c>; 1998 reprint.
- Chevers, Norman (1870), *A Manual of Medical Jurisprudence for India, Including the Outline of a History of Crime against the Person in India* (3rd edn., Calcutta), With plates, ARK: <https://n2t.net/ark:/13960/t7sn5b13b>.
- (1886), *A Commentary on the Diseases of India* (London: J. & A. Churchill), ARK: <https://n2t.net/ark:/13960/t72v3bn2q>.
- Chevillard, Jean-Luc (2009), "The Metagrammatical Vocabulary inside the Lists of 32 Tantrayukti-s and its Adaptation to Tamil: Towards a Sanskrit-Tamil Dictionary," in Eva Wilden (ed.), *Between Preservation and Recreation: Tamil Traditions of Commentary. Proceedings of a Workshop in honour of T.V. Gopal Iyer* (École Française d'Extrême-Orient Collection Indologie, 109; Pondichéry: Institut français de Pondichéry / École Française d'extrême-Orient), 71–132, URL: <https://www.academia.edu/4769252>, accessed 15/11/2023.
- Clark, Matthew (2017), *The Tawny One. Soma, Haoma and Ayahuasca* (London: Muswell Hill Press), ISBN: 978-1908995223.
- Cohen, Jack (1990), "The Function of Human Semen Coagulation and Liquefaction In Vivo," in *Advances in Assisted Reproductive Technologies*, ed. Shlomo Mashiach et al. (NY & London: Plenum Press), 443–52, ISBN: 9781461306450. doi: https://doi.org/10.1007/978-1-4613-0645-0_49.

- Comba, Antonella (1994), "L'enseignement médical en Inde. Un méthode d'exposition (tantra-yukti): l'adhikaraṇa ou spécification du sujet," in Nalini Balbir (ed.), *Genres littéraires en Inde* (Paris: Presses de La Sorbonne Nouvelle), 151–64, ARK: <https://n2t.net/ark:/13960/s2mb8kpr6px>.
- Cone, Margaret (2001), *A Dictionary of Pāli* (Oxford: The Pali Text Society), ISBN: 0 86013 394 x.
- Cowell, E. B., et al. (1895–1907), *The Jātaka or Stories of the Buddha's Former Births, Translated from the Pāli by Various Hands*, ed. E. B. Cowell (Cambridge: Cambridge University Press); v. 1 ARK: <https://n2t.net/ark:/13960/t5j969876>; v. 2 ARK: <https://n2t.net/ark:/13960/toms3vr71>; v. 3 ARK: <https://n2t.net/ark:/13960/t7mp55t98>; v. 4 ARK: <https://n2t.net/ark:/13960/t2p61wr9z>; v. 5; v. 6 (1907) ARK: <https://n2t.net/ark:/13960/tojt8933k>.
- Cox, Whitney (2011), "Saffron in the Rasam," in Y. Bronner, L. McCrea, and W. Cox (eds.), *South Asian Texts in History: Critical Engagements with Sheldon Pollock* (Asia Past & Present: New Research from AAS, 7; Ann Arbor: Association for Asian Studies), chap. 8, 177–201, ISBN: 9780924304637, ARK: <https://n2t.net/ark:/13960/t5r89k36f>; reprinted Delhi, 2016.
- Das, Rahul Peter (1983), "Miscellanea de Operibus Āyurvedics," *Journal of the European Āyurvedic Society*, 1: 47–68, ARK: <https://n2t.net/ark:/13960/t53g37n9t>.
- (2003), *The Origin of the Life of a Human Being. Conception and the Female According to Ancient Indian Medical and Sexological Literature* (Indian Medical Tradition; Delhi: Motilal Banarsidas), ISBN: 81-208-1998-5.
- Dasgupta, S. N. (1952), "Speculations in the Medical Schools," in *A History of Indian Philosophy*, 2 (Reprint of 1932 edition, Cambridge: Cambridge University Press), chap. 13, 273–436, ARK: <https://n2t.net/ark:/13960/t1hh6c83r>.
- Dave, K. N. (1985), *Birds in Sanskrit Literature* (Delhi: Motilal Banarsi das), ISBN: 0-89581-676-8, ARK: <https://n2t.net/ark:/13960/t2c94cv80>.
- Deshpande, Adwait M., Sastry, K. Venkata, and Bhise, Satish B. (2022), "A Contemporary Exploration of Traditional Indian Snake Envenomation Therapies," *Tropical Medicine and Infectious Disease*, 7/6: 108, ISSN: 2414-6366. doi: <https://doi.org/10.3390/tropicalmed7060108>.
- Deshpande, Vijaya (1999), "Indian Influences on Early Chinese Ophthalmology: Glaucoma As a Case Study," *Bulletin of the School of Oriental and African Studies*, 62: 306–22. doi: <https://doi.org/10.1017/S0041977X00016724>.
- (2000), "Ophthalmic Surgery: A Chapter in the History of Sino-indian Medical Contacts," *Bulletin of the School of Oriental and African Studies*, 63/3: 370–88, ISSN: 0041-977X. doi: <https://doi.org/10.1017/s0041977x00008454>.

- Desmond, Ray (1992), *The European Discovery of the Indian Flora* (Oxford, Delhi: Oxford University Press), ISBN: 9780198546849. doi: <https://doi.org/10.1093/oso/9780198546849.001.0001>.
- Deuti, Kaushik (2020), *Skinks of India*, ed. Sujoy Raha and Probath Bag (Kolkata: Zoological Survey of India), ISBN: 9788181715517.
- Diedrich, Veronica, Zweerink, Kara, and Elder, Brandon (2024), "Plant Dermatitis," *Emergency Medicine Clinics of North America*, 42/3: 613–38, ISSN: 0733-8627. doi: <https://doi.org/10.1016/j.emc.2024.03.001>.
- Dikshitar, V. R. Ramachandra (1930), "Tantrayukti," *Journal of Oriental Research*, 4: 82–9, ARK: <https://n2t.net/ark:/13960/t3b04m19g>.
- Doniger, Wendy (2015), "Introduction: Sympathy for the Devi: Snakes and Snake Goddesses in Hinduism," in Kaiser Haq, *The Triumph of the Snake Goddess* (Cambridge, MA: Harvard University Press), 1–28. doi: <https://doi.org/10.4159/9780674089136-intro>.
- Dover, Cedric (1922), "Entomology in India," *The Calcutta Review*, 3/2: 336–49, ARK: <https://n2t.net/ark:/13960/t16n5nm66>.
- Eco, Umberto (2004), *Mouse or Rat? Translation As Negotiation* (London: Orion), ISBN: 9780297830016.
- Edgerton, Franklin (1953), *Buddhist Hybrid Sanskrit Grammar and Dictionary* (William Dwight Whitney Linguistic Series; New Haven: Yale University Press); vol. 1: Grammar, vol. 2: Dictionary.
- Edgeworth, M. Pakenham (1851), "Descriptions of Some Unpublished Species of Plants from North-Western India," *Transactions of the Linnean Society of London*, 20: 23–92, ARK: <https://n2t.net/ark:/13960/t9x060p3b>.
- Eggermont, Pierre Herman Leonard (1975), *Alexander's Campaigns in Sind and Baluchistan and the Siege of the Brahmin Town of Harmatelia* (Louvain: Leuven University Press), ISBN: 9061860377, ARK: <https://n2t.net/ark:/13960/s2bf83pchxw>.
- Ellenhorn, Matthew J. (1997), *Ellenhorn's Medical Toxicology. Diagnosis and Treatment of Human Poisoning* (2. ed., Baltimore, MD: Williams & Wilkins), ISBN: 0683300318, ARK: <https://n2t.net/ark:/13960/s21qsb3jf1v>; Previous ed.: London: Elsevier, 1988.
- Elliot, Robert Henry (1918), *The Indian Operation of Couching for Cataract: Incorporating the Hunterian Lectures Delivered before the Royal College of Surgeons of England on February 19 and 21, 1917* (London: H. K. Lewis).

- Elshakry, Marwa S. (2008), "Knowledge in Motion: The Cultural Politics of Modern Science Translations in Arabic," *Isis*, 99/4: 701–30. doi: <https://doi.org/10.1086/595767>, URL: <https://www.jstor.org/stable/10.1086/595767>, accessed 24/02/2019.
- Elwin, Verrier (1955), *The Religion of an Indian Tribe* (London, Glasgow, New York, etc.: Oxford University Press), ARK: <https://n2t.net/ark:/13960/t0tr5kj79>.
- Emeneau, M. B. (1969), "Sanskrit Syntactic Particles – "kila, khalu, nūnam"," *Indo-Iranian Journal*, 11/4: 241–68.
- Emmerick, Ronald E. (1984), "Some Remarks on the History of Leprosy in India," *Indologica Taurinensis*, 12: 93–105. doi: <https://doi.org/10.5281/zenodo.10798623>.
- Ewart, Joseph (1878), *The Poisonous Snakes of India: For the Use of the Officials and Others Residing in the Indian Empire* (London: J & A Churchill), ISBN: 81-7002-011-5, ARK: <https://n2t.net/ark:/13960/t9z07w72g>; Reprinted Delhi: Himalayan Books, 1985.
- Falk, Harry (1991), "Silver, Lead and Zinc in Early Indian Literature," *South Asian Studies*, 7/1: 111–7. doi: <https://doi.org/10.1080/02666030.1991.9628430>.
- Fan, Ka Wai (2005), "Couching for Cataract and Sino-Indian Medical Exchange From the Sixth to the Twelfth Century AD," *Clinical and Experimental Ophthalmology*, 33/2: 188–90. doi: <https://doi.org/10.1111/j.1442-9071.2005.00978.x>; unaware of V. Deshpande 1999; 2000.
- Fausbøll, Viggo (1877–96), *The Jātaka. Together with Its Commentary. Being Tales of the Anterior Births of Gotama Buddha*, 7 vols. (London: Trübner); V.7 is indexes by Dines Andersen.
- Fayrer, Joseph (1874), *The Thanatophidia of India, Being a Description of the Venomous Snakes of the Indian Peninsula with an Account of the Influence of their Poison on Life and a Series of Experiments* (2nd edn., London: Churchill), ARK: <https://n2t.net/ark:/13960/t9h49dg5c>; First edition 1872.
- Filliozat, Jean (1937), *Étude de démonologie indienne: le Kumāratantra de Rāvaṇa et les textes parallèles Indiens Tibétains, Chinois, Cambodgien et Arabe* (Cahiers de la Société asiatique. Première série, 4; Paris: Imprimerie Nationale), ARK: <https://n2t.net/ark:/13960/s2n9zpkg11f>.
- Frauwallner, Erich (1958), "Die Erkenntnislehre des klassischen Sāṃkhya-Systems," *Wiener Zeitschrift für die Kunde Süd- und Ostasiens und Archiv für indische Philosophie*, 2: 84–139, ARK: <https://n2t.net/ark:/13960/s2sdmmmt8nf8>.

- Froese, R., and Pauly, D. (2022) (eds.), "Fishbase: The Global Encyclopedia about Fish," URL: <https://www.fishbase.org.au/v4>.
- Ganapatiśāstrī, T. (1920–25), *Āryamañjuśrīmūlakalpah* (Trivandrum Sanskrit Series, 70; Anantaśayane: Rājakīyamudraṇayantrālaye), ARK: <https://n2t.net/ark:/13960/t4pk5sj0j>.
- Ghāṇekara, Bhāskara Govinda (1936–41), महर्षिण सुश्रुतेन विरचिता सुश्रुतसंहिता आयुर्वेदरहस्यदीपिकारब्यया हिन्दीव्याख्यया समुलसिता = *Sushruta Saṃhitā with Hindi Commentary Named "Ayurveda Rahasyadīpikā"*, 2 vols. (1st edn., Lahore: Meharacandra Lakṣmaṇadāsa); no more published. Edition "ee" in HIMAL: IB, 313, 2: शारीरस्थानात्मकः द्वितीयो भागः = *Shāristhān* (1941), 2: सूत्रनिदानस्थानात्मकः प्रथमो भागः = Volume 1, *Sutra and Nidāsthān* (1936).
- Ghosh, Ritwik, et al. (2023), "Snakebite Envenomation-Induced Posterior Reversible Encephalopathy Syndrome Presenting with Bálint Syndrome," *Neurología (English Edition)*, 38/6 (July): 440–2, ISSN: 2173-5808. doi: <https://doi.org/10.1016/j.nrleng.2022.06.001>.
- Gildemeister, Johannes (1847), *Bibliothecae Sanskritae sive recensus librorum sanskitorum hucusque typis vel lapide exscriptorum critici specimen* (Bonn and London: H. B. Koenig), ARK: <https://n2t.net/ark:/13960/t4rj5dm7j>.
- Gode, P. K., and Karve, C. G. (1957–59) (eds.), *Revised and Enlarged Edition of Prin. V. S. Apte's the Practical Sanskrit-English Dictionary* (Poona: Prasad Prakashan), ARK: <https://n2t.net/ark:/13960/t3gx47212>, accessed 20/10/2017.
- Gombrich, Richard (1979), "'He Cooks Softly': Adverbs in Sanskrit Grammar," *Bulletin of the School of Oriental and African Studies*, 42/2: 244–56. doi: <https://doi.org/10.1017/s0041977x0014580x>.
- Gonda, Jan (1977), *The Ritual Sutras* (A History of Indian Literature, 1.2; Wiesbaden: Harrassowitz).
- Gongkatsang, Tséring, and Willis, Michael (2018), "How to Use a Text and What to Expect: Translation of the Instructions Appended to the Āryatathāgatoṣṇīśasītātapatre Aparajitamahāpratyamgīraparamasiddhanāma Dhāraṇī," URL: <http://doi.org/10.5281/zenodo.1470798>.
- Gostomiris, A.-G. (1897), "Études sur les écrits inédits des anciens médecins grecs et ceux dont le texte original est perdu, mais qui existent en latain or en arabe, première série," *Revue des Études Grecques*, 2/8: 343–83, ARK: <https://n2t.net/ark:/13960/t9j469d5d>, URL: <https://www.jstor.org/stable/44265629>.

- Goswami, Pradip Kumar (2011), "Comparative Studies of Bhanumati and Ni-bandha Samgraha with Special Reference to Arista Vijnana (prognostic Science)," *AYU (An International Quarterly Journal of Research in Ayurveda)*, 32/2: 147. doi: <https://doi.org/10.4103/0974-8520.92540>.
- Govindjī, Śāstrī Kālidās, Jīvanrām, Vaidyarāj Prabhurām, and Prabhurām, Papat (1901) (eds.), *सुश्रृत आयुर्वेद. गुजराती भाषान्तर = [Suśrutasamhitā with a Gujarati Translation]* (Mumbaī: Nirṇaya Sāgara Press), ARK: <https://n2t.net/ark:/13960/t08w8r74f>; edition *r in [HTML](#).
- Gow, A. S. F., and Scholfield, A. F. (1953), *Nicander. The Poems and Poetical Fragments, Edited with a Translation and Notes* (Cambridge: Cambridge University Press), ARK: <https://n2t.net/ark:/13960/t5n95440h>.
- Gupta, Parmanand (1989), *Geography from Ancient Indian Coins & Seals* (New Delhi: Concept Publishing Company), ISBN: 9788170222484.
- Gupta, Sri Madhusudana (1835–36) (ed.), *Āyur-veda-prakāśa [Also Called Suśrutasamhitā] by Suśruta. The Suśruta, or System of Medicine, Taught by Dhanwantari, and Composed by His Disciple Suśruta*, 2 vols. (Calcutta: Education Press and Baptist Mission Press), ARK: <https://n2t.net/ark:/13960/t6841qw6x>.
- Gupta, Śyāmacaraṇa (1887), *आयुर्वेदार्थचन्द्रिका [= Āyurvedārtha candrikā]* (Calcutta), ARK: <https://n2t.net/ark:/13960/t5w71k903>.
- Hamza, Muhammad, et al. (2021), "Clinical Management of Snakebite Envenoming: Future Perspectives," *Toxicon: X* 11/100079: 1–12, ISSN: 2590-1710. doi: <https://doi.org/10.1016/j.toxcx.2021.100079>.
- Harimoto, Kengo (2011), "In Search of the Oldest Nepalese Manuscript," *Rivista degli Studi Orientali*, 84/1–4: 85–106, ISSN: 0392-4866, URL: <https://www.academia.edu/4128593/>, accessed 08/09/2019.
- (2013), "More Observations on the Old Nepalese Manuscripts of the Suśrutasamhitā: oral presentation of the 20th congress of the Association for the Study of the History of Indian Thought, the University of Tokyo, December 2013."
- Hayashi, Takao (2017), "The Units of Time in Ancient and Medieval India," *History of Science in South Asia*, 5/1: 1–116. doi: <https://doi.org/10.18732/h2ht0h>.
- Hellwig, Oliver (2009), *Wörterbuch Der Mittelalterlichen Indischen Alchemie* (Groningen: Barkhuis & University of Groningen, University Library), ISBN: 9789077922620. doi: <https://doi.org/10.2307/j.ctt22728hs>, URL: <https://www.academia.edu/1268947/>, accessed 19/06/2020.

- Hemarājaśarman (1938) (ed.), *काश्यपसंहिता* (वृद्धजीवकीयं तन्त्रं वा) महर्षिणा मारीचकश्य-
पेनोपदिष्टा ... हेमराजशर्मणा लिखितेन विस्तृतेन उपोद्घातेन सहिता ... सत्यपाल भिषगा कृतया
विद्योतिनी हिन्दीव्याख्यया ... समुल्लिङ्गिता (1st edn., Mumba: Nirnayasāgara Press),
ARK: <https://n2t.net/ark:/13960/t3mw5gb9p>.
- Hendley, T. Holbein (1895), *A Medico-topographical Account of Jeypore, Based on the Experience of Twenty Years' Service As a Residency Surgeon and Thirteen As Superintendent of Dispensaries at Jeypore, Rajputana* (Calcutta: Calcutta Central Press Company).
- Hessler, Franciscus (1844–55), *Suśrutas Ayurvédas: id est Medicinae Systema a Venerabili D'hantare Demonstratum a Susruta Discipulo Compositum; Nunc Primum Ex Sanskrita in Latinum Sermonem Vertit, Introductionem, Annotationes Et Rerum Indice Franciscus Hessler* (Erlangen: Ferdinandum Enke), ARK: <https://n2t.net/ark:/13960/t17m45r97>.
- Hidas, Gergely (2019), *A Buddhist Ritual Manual on Agriculture: Vajratuṇḍasamayakalparāja – Critical Edition* (Berlin & Boston: De Gruyter), ISBN: 9783110621051.
DOI: <https://doi.org/10.1515/9783110621051>.
- Hilloowala, Franmak (2019), "Ibn Abī Uṣaybi‘ah: His Life and Career," in Emily Savage-Smith (ed.), *A Literary History of Medicine – The ‘Uyūn al-anbā’ fi ṭabaqāt al-aṭibbā’ of Ibn Abī Uṣaybi‘ah*, 1 (Leiden: Brill), chap. 2, 13–26. DOI: https://doi.org/10.1163/9789004545564_003.
- Hirschberg, Julius, and Leffler, Christopher T. (2024) (eds.), *A New History of Catgut Surgery: From Antiquity through 1750* (The History of Ophthalmology – The Monographs, 17; Amsterdam: Wayenborgh Publications), ISBN: 9789062994724.
- Hoernle, A. F. Rudolf (1893–1912) (ed.), *The Bower Manuscript: Facsimile Leaves, Nagari Transcript, Romanised Transliteration and English Translation with Notes* (New Imperial Series, 22; Calcutta: Government of India and under the patronage of the Bengali Government, Archaeological Survey of India), ARK: <https://n2t.net/ark:/13960/t1wd8kx1x>.
- (1897), *सुश्रुतसंहिता = The Suśruta-Saṃhitā or the Hindū System of Medicine According to Suśruta Translated from the Original Sanskrit* (Bibliotheca Indica, 911; Calcutta: Asiatic Society), ARK: <https://n2t.net/ark:/13960/t8pd1kw9r>, accessed 03/01/2018; No more published; Hoernle does not state which edition he is translating, but it includes the "Dhanvantari phrase".
- (1907), *Studies in the Medicine of Ancient India: Osteology or the Bones of the Human Body* (Oxford: Clarendon Press), ARK: <https://n2t.net/ark:/13960/t1pg9cq8b>.

- Hopkins, Edward W. (1889), "The Social and Military Position of the Ruling Caste in Ancient India, as Represented by the Sanskrit Epic," *Journal of the American Oriental Society*, 13: 57–376.
- Husain, Shaykh, Ali, Shaykh, and Hatim, Shaykh (1591), "Scorpions (Detail of Asavari Ragini Painting)," National Museum of Asian Art, Smithsonian Institution, ARK: <https://n2t.net/ark:/65665/ye31efef5ad-31e8-45a1-bfc8-856e338b5486>, accessed 18/01/2025.
- Ihm, Sibylle (1995), *Der Traktat περὶ τῶν ἰοβόλων θηρίων καὶ δηλητηρίων φαρμάκων des sog. Aelius Promotus* (Serta Graeca; Wiesbaden: L. Reichert), ISBN: 9783882268225.
- Irwin, John C. (1982), "The Sacred Anthill and the Cult of the Primordial Mound," *History of Religions*, 21/4: 339–60, ISSN: 00182710, 15456935, URL: <http://www.jstor.org/stable/1062329>, accessed 24/01/2024.
- Jack, David Morton (1884), "A Thesis on Cataract in India: Its Pathology and Treatment," Wellcome Library, London, MS 3007, URL: <https://catalogue.wellcomelibrary.org/record=b1842019~S8>, accessed 02/06/2021.
- Jamison, Stephanie W., and Brereton, Joel P. (2014), *The Rigveda. The Earliest Religious Poetry of India* (South Asia Research; New York: Oxford University Press), ISBN: 9780199370184; With commentary at <http://rigvedacommentary.als.ucla.edu/>.
- Jhalakīkar, Bhīmācārya (1978), न्यायकोशः (सकलशास्त्रोपकारकन्यायादिशास्त्रीयपदार्थ-प्रकाशकः) = *Nyāyakośa or Dictionary of Technical Terms of Indian Philosophy* (Poona: Bhandarkar Oriental Research Institute), ARK: <https://n2t.net/ark:/13960/t4cp7242f>.
- Jolly, Julius (1951), *Indian Medicine, Translated from the German...by C. G. Kashikar* (Poona: C. G. Kashikar), URL: <https://archive.org/details/in.gov.ignca.8567>, accessed 08/11/2017; 2nd edition Delhi: Munshiram Manoharlal, 1977, 1994 etc.
- Joshi, S. D., and Roodbergen, J. A. F. (1991), *The Aṣṭādhyāyī of Pāṇini with Translation and Explanatory Notes* (New Delhi: Sahitya Akademi).
- Kahl, Oliver (2015), *The Sanskrit, Syriac, and Persian Sources in the Comprehensive Book of Rhazes* (Leiden: Brill), ISBN: 9789004290259.
- Kale, M. R. (1947), *The Meghadūta of Kālidāsa With the Commentary (Samjīvani) of Mallinātha, Edited with a Literal English Translation...* (4th edn., Bombay: B. D. Mulgaokar, of Gopal Narayan & Co), ARK: <https://n2t.net/ark:/13960/t3fz6x53f>.

- Kangle, R. P. (1965), *The Kauṭīlīya Arthaśāstra*, 3 vols. (2nd edn., Delhi: Motilal BanarsiDass), ISBN: 978-81-208-0042-7, ARK: <https://n2t.net/ark:/13960/t3gz6qh1s>; reprint of 2010, 1: *Part I, Sanskrit Text With a Glossary* (1969), 2: *Part II, Translation with Critical and Explanatory Notes* (1972), 3: *Part III A Study* (1965).
- Karttunen, Klaus (2015), *Yonas and Yavanas in Indian Literature* (Studia Orientalia, 116; Helsinki: Finnish Oriental Society), 454, ISBN: 978-951-9380-88-9, URL: <https://journal.fi/store/issue/view/4184>; Published electronically in 2016 as a back issue of *Studia Orientalia*.
- Kaur, Sagan Deep, and Singh, Lakhvir (2018), *Indian Arthropods in Early Sanskrit Literature: A Taxonomical Analysis*. doi: <https://doi.org/10.16943/ijhs/2018/v53i1/49364>.
- Khan, Zihan Rahman, et al. (2018), "Medicinal Values of Aquatic Plant Genus Nymphoides Grown in Asia: A Review," *Asian Pacific Journal of Tropical Biomedicine*, 8/2: 113–9, ISSN: 2221-1691. doi: <https://doi.org/10.4103/2221-1691.225615>.
- Kieffer-Pülz, Petra (1996), "The Meaning of Māla(ka)/māla(ka) in Pāli," in N. Balbir, G.-J. Pinault, and J. Fezas (eds.), *Langue, style et structure dans le monde indien, Centenaire de Louis Renou. Actes du Colloque international* (Paris, 25–27 janvier 1996 (Paris), 285–325, URL: <https://www.academia.edu/5597472>, accessed 17/05/2023.
- Klebanov, Andrey (2021a), "On the Textual History of the Suśrutasamhitā (1): A Study of Three Nepalese Manuscripts," *eJIM: Electronic Journal of Indian Medicine*, 12/1: 1–64. doi: <https://doi.org/10.21827/ejim.12.1.37385>.
- (2021b), "On the Textual History of the Suśrutasamhitā, (2): An Anonymous Commentary and its Identified Citations," in Toke Lindegaard Knudsen, Jacob Schmidt-Madsen, and Sara Speyer (eds.), *Body and Cosmos: Studies in Early Indian Medical and Astral Sciences in Honor of Kenneth G. Zysk* (Leiden, Boston: Brill), 110–39. doi: https://doi.org/10.1163/9789004438224_008.
- Kokoszko, Maciej, and Rzeźnicka, Zofia (2018), "Malabathron (μαλάβαθρον) in Ancient and Early Byzantine Medicine and Cuisine," *Medicina Nei Secoli Arte E Scienza / Journal of History of Medicine*, 30/2: 579–616, ISSN: 0394-9001, URL: https://rosa.uniroma1.it/rosa01/medicina_nei_secoli/article/view/1551.
- Kolhatkar, Madhavi (2005), "Jaiminīyabrāhmaṇa, Pseudocyesis and Homosexuality," *Annals of the Bhandarkar Oriental Research Institute*, 86: 81–92.

- Kritzer, Robert (2009), "Life in the Womb: Conception and Gestation in Buddhist Scripture and Classical Indian Medical Literature," in Vanessa R. Sasson and Jane Marie Law (eds.), *Imagining the Fetus: The Unborn in Myth, Religion, and Culture* (New York: Oxford University Press), 73–90.
- (2013), "Garbhāvakrāntau ('In the Garbhāvakrānti'): Quotations from the Garbhāvakrāntisūtra in Abhidharma Literature and the Yogācārabhūmi," in Ulrich Timme Kragh (ed.), *The Foundation for Yoga Practitioners. the Buddhist Yogācārabhūmi Treatise and Its Adaptation in India, East Asia, and Tibet* (Harvard Oriental Series, 75; Cambridge, Mass.: Harvard University Press), 738–71, ISBN: 9780674725430.
- Kulikov, Leonid (2006), "The Sanskrit -yet- Optative: A Formation Not Yet Recorded in Sanskrit Grammars," *Wiener Zeitschrift für die Kunde Südasiens*, 50: 27–68. doi: <https://doi.org/10.1553/wzksls27>, URL: <https://www.jstor.org/stable/24007742>.
- Kunjalal Bhishagratna, Kaviraj (1907–16), *An English Translation of the Sushruta Samhita Based on Original Sanskrit Text*, 3 vols. (1st edn., Calcutta: The Author), URL: <https://tinyurl.com/bhishagratna>, accessed 18/02/2021.
- Kunjunni Raja, K. (1963), *Indian Theories of Meaning* (Madras: The Adyar Library and Research Centre), URL: <https://archive.org/details/in.ernet.dli.2015.495203>, accessed 09/01/2018; 2 ed., 1969.
- Kutumbiah, P. (1962), *Ancient Indian Medicine* (Bombay, etc.: Orient Longmans), ARK: <https://n2t.net/ark:/13960/t6r01v93g>; Often reprinted.
- Lamming, George E., and Marshall, Francis H. (1990) (eds.), *Marshall's Physiology of Reproduction: Reproduction in the Male* (4th edn., London: Chapman & Hall), ISBN: 0443019673.
- Law, Bimala Churn (1984), *Historical Geography of Ancient India* (New Delhi: Orient Books Reprint), ARK: <https://n2t.net/ark:/13960/t3d01t737>; Reprint of 1954 Paris edition.
- Leffler, Christopher T., et al. (2020), "The History of Cataract Surgery: From Couching to Phacoemulsification," *Annals of Translational Medicine*, 8/22: 1551–97, ISSN: 2305-5847. doi: <https://doi.org/10.21037/atm-2019-rcc-04>, URL: <http://atm.amegroups.com/article/view/54993>, accessed 02/11/2020.
- Lele, W. K. (1981), *The Doctrine of the Tantrayukti-s: Methodology of Theoretico-scientific Treatises in Sanskrit* (Chaukhamba Surabharati Studies, 3; Varanasi: Chaukhamba Surabharati Prakashan), ARK: <https://n2t.net/ark:/13960/s28vqzhkdjq>.

- (2006), *Methodology of Ancient Indian Sciences* (The Chaukhamba Surbharati Studies, 3; Varanasi: Chaukhamba Surbharati Prakashan), ARK: <https://n2t.net/ark:/13960/s2dc7zd8hf1>.
- Leslie, I. Julia (1989), *The Perfect Wife* (New Delhi: Oxford University Press).
- Levey, Martin (1966), *Medieval Arabic Toxicology: The Book on Poisons of Ibn Wahshiyya and Its Relation to Early Indian and Greek Texts* (New Series, 56.7; Philadelphia: American Philosophical Society).
- Lienhard, Siegfried (1978), "On the Meaning and Use of the Word Indragopa," *Indologica taurinensis*, 6: 177–88, URL: <https://tinyurl.com/Lienhard1978>, accessed 06/02/2021; The indragopa is a 'red velvet mite'.
- Liu, Yan (2021), "Poisons in the Premodern World," *Encyclopedia of the History of Science*. doi: <https://doi.org/10.34758/yazp-kz74>.
- Lüders, Heinrich (1940), *Philologica Indica. Ausgewählte kleine Schriften von Heinrich Lüders. Festgabe zum siebzigsten Geburtstage am 25. Juni 1939 dargebracht von Kollegen, Freunden und Schülern* (Göttingen: Vandenhoeck & Ruprecht), ARK: <https://n2t.net/ark:/13960/t2d880f53>.
- Maas, Philipp André (2008), "The Concepts of the Human Body and Disease in Classical Yoga and Āyurveda," *Wiener Zeitschrift für die Kunde Südasiens = Vienna Journal of South Asian Studies*, 51: 125–62. doi: <https://doi.org/10.1553/wzkslis123>.
- Mahādeva Śāstrī, K. (1958) (ed.), ജ്യോത്സ്നിക: വിഷവൈദ്യം *Jyotsnika (Viṣa Vaidya)* [The *Jyotsnikā of Kārāṭṭu Nārāyaṇan Nampūṭir*] (Srī Vañci Setu Lakṣmī series, 9; 3rd edn., Trivandrum: The Government of His Highness The Maha-raja of Travancore); First published in 1927.
- Mairs, Rachel (2013), "Greek Settler Communities in Central and South Asia, 323 BCE to 10 CE," in Ato Quayson (ed.), *A Companion To Diaspora And Transnationalism* (Oxford: John Wiley and Sons Ltd), 443–54, ISBN: 9781405188265.
- (2014), *The Hellenistic Far East: Archaeology, Language, and Identity in Greek Central Asia: Archaeology, Language, and Identity in Greek Central Asia* (Berkeley: University of California Press), 250, ISBN: 9780520292468. doi: <https://doi.org/10.1525/9780520959545>.
- Majno, Guido (1975), *The Healing Hand. Man and Wound in the Ancient World* (Cambridge, MA: Harvard University Press), ARK: <https://n2t.net/ark:/13960/t4hm7xf2c>.
- Mānasa-taraṅgiṇī (2009), "vAsiShTha lUtikAshAstra," mAnasa-taraMgiNI Blog (20 Jan.), URL: <https://tinyurl.com/lutikashastra>, accessed 28/05/2025.

- Mānasa-taraṅgiṇī (2019), “Kaiṭabha, Poison and Death: Meanderings through Tradition,” mAnasa-taraMgiNI Blog (1 Sept.), URL: <https://tinyurl.com/kaitabha>, accessed 31/01/2023.
- Manevskiaia, Ilona (2008), “Preliminary Observations on Compositional Methods in Haribhadra’s Ālokā,” in Richard Gombrich and Cristina Scherrer-Schaub (eds.), *Buddhist Studies* (Papers of the 12th World Sanskrit Conference, 8; Delhi: Motilal Banarsidass), 97–117.
- Maxwell-Lefroy, Harold (1909), *Indian Insect Life. A Manual of the Insects of the Plains (Tropical India)* (Calcutta, Simla, etc.: Thacker, Spink & Co.), ARK: <https://n2t.net/ark:/13960/t40s7sf4r>.
- McHugh, James (2012), “The Disputed Civets and the Complexion of the God: Secretions and History in India,” *Journal of the American Oriental Society*, 132/2: 245, ISSN: 0003-0279. DOI: <https://doi.org/10.7817/jameroriesoci.132.2.0245>.
- (2013), “Blattes de Byzance in India: Mollusk Opercula and the History of Perfumery,” *Journal of the Royal Asiatic Society of Great Britain & Ireland*, 23/1: 53–67, ISSN: 2051-2066. DOI: <https://doi.org/10.1017/s1356186312000727>.
- (2021), *An Unholy Brew: Alcohol in Indian History and Religions* (New York: Oxford University Press), 416 pp., ISBN: 9780199375936.
- Mehta, S. R., and Sashindran, V. K. (2002), “Clinical Features And Management Of Snake Bite,” *Medical Journal Armed Forces India*, 58/3: 247–9, ISSN: 0377-1237. DOI: [https://doi.org/10.1016/s0377-1237\(02\)80140-x](https://doi.org/10.1016/s0377-1237(02)80140-x).
- Mejor, Marek (2000), “Some Observations on the Date of the *Yukti-dīpikā* (apropos of a New Edition),” in Piotr Blcerowicz and Marek Mejor (eds.), *On the Understanding of Other Cultures*, 7 (Studia Indologiczne; Warszawa: Instytut Orientalistyczny, Uniwersytet Warszawski), 255–89.
- Menon, Vivek (2014), *Indian Mammals: A Field Guide* (Gurgaon: Hachette India), ISBN: 978-93-5009-760-1.
- Meulenbeld, Gerrit Jan (1974b), *The Mādhabanidāna and Its Chief Commentary: Chapters 1–10. Introduction, Translation, and Notes* (Leiden: Brill), ISBN: 978-90-04-03892-9, ARK: <https://n2t.net/ark:/13960/t25b8q97g>.
- (1987), “Reflections on the Basic Concepts of Indian Pharmacology,” in Gerrit Jan Meulenbeld and Dominik Wujastyk (eds.), *Studies on Indian Medical History* (Groningen: Egbert Forsten), chap. 1, 1–17, ARK: <https://n2t.net/ark:/13960/t8tc08626>.

- (1989), "The Search for Clues to the Chronology of Sanskrit Medical Texts As Illustrated by the History of Bhaṅgā (cannabis Sativa Linn.)," *Studien zur Indologie und Iranistik*, 15: 59–70.
- (1990), "Conformities and Divergences of Basic Ayurvedic Concepts in Veterinary Texts," *Journal of the European Ayurvedic Society*, 1: 1–6, URL: <https://archive.org/details/journalofeuropea01unse/page/n5/mode/2up>, accessed 16/02/2022.
- (1991), "The Constraints of Theory in the Evolution of Nosological Classifications: A Study on the Position of Blood in Indian Medicine (Āyurveda)," in *Medical Literature from India, Sri Lanka, and Tibet*, 91–106, ISBN: 90-04-09522-5, URL: <https://goo.gl/D79azA>.
- (1992), "The Characteristics of a Doṣa," *Journal of the European Āyurvedic Society*, 2/1: 1–5, ARK: <https://n2t.net/ark:/13960/t8hf69z8j>.
- (1997), "Aspects of Indian Psychiatry," in Yosio Kawakita, Shizu Sakai, and Yasuo Otsuka (eds.), *History of Psychiatric Diagnoses: Proceedings of the 16th International Symposium on the Comparative History of Medicine – East and West September 1–8, 1991, Susono-shi, Shizuoka, Japan* (Tokyo ; Brentwood, Missouri: Ishiyaku EuroAmerica), 183–237, ISBN: 1563860430, ARK: <https://n2t.net/ark:/13960/s27rkrfvdd4>.
- (2008a), "A Quest for Poison Trees in Indian Literature, Along with Notes on Some Plants and Animals of the Kauṭiliya Arthaśāstra," *Wiener Zeitschrift für die Kunde Südasiens / Vienna Journal of South Asian Studies*, 51 (2007–2008): 5–75, URL: <https://www.jstor.org/stable/24007714>.
- (2008b), *The Mādhavanidāna with "Madhukośa," the Commentary by Vi-jayarakṣita and Śrīkanṭhadatta (Ch. 1–10). Introduction, Translation, and Notes* (Delhi: Motilal BanarsiDass).
- (2009), *The Trees Called Śigru (Moringa sp.), along with a Study of the Drugs Used in Errhines* (eJim Supplements; Groningen: Barkhuis), ISBN: 978-90-77922-52-1. doi: <https://doi.org/10.2307/j.ctt22728b6>.
- (2011), "The Relationships between Doṣas and Dūṣyas: A Study on the Meaning(s) of the Root Murch-/mūrch," *eJournal of Indian Medicine*, 4/2: 35–135, URL: <http://ugp.rug.nl/eJIM/article/view/24740>, accessed 13/10/2017.
- Meyer, Johann Jakob (1926), *Das altindische Buch vom Welt- und Staatsleben. Das Arthaśāstra des Kauṭilya* (Leipzig: Otto Harrassowitz), ARK: <https://n2t.net/ark:/13960/s21gb96bcxv>.

- Minton, Sherman A., and Minton, Madge Rutherford (1969), *Venomous Reptiles* (New York: Charles Scribners' Sons), ARK: <https://n2t.net/ark:/13960/t9k423s9k>.
- Mitra, T. R. (2005), "Taxonomic Assessment of Insects Recorded in Kalidasa's Works," *Records of the Zoological Survey of India*, 105/1–2: 97–103.
- Mukhopādhyāya, Girindranāth (1913), *The Surgical Instruments of the Hindus, with a Comparative Study of the Surgical Instruments of the Greek, Roman, Arab, and the Modern European (sic) Surgeons* (Calcutta: Calcutta University), ARK: <https://n2t.net/ark:/13960/t1zd2pq29>, accessed 29/01/2018; Vol.2: ark:/13960/t9r25qd8m. Reprinted as a single volume, New Delhi, 1987.
- Nadkarni, K. M. (1954), *Dr. K. M. Nadkarni's Indian Materia Medica, with Ayurvedic, Unani-tibbi, Siddha, Allopathic, Homeopathic, Naturopathic & Home Remedies, Appendices & Indexes ... in Two Volumes*, ed. A. K. Nadkarni, 2 vols. (Third ed., revised by A. K. Nadkarni, Bombay: Popular Prakashan), ARK: <https://n2t.net/ark:/13960/t6rz4h160>.
- O'Flaherty, Wendy Doniger (1980), "Karma and Rebirth in the Vedas and Purāṇas," in id. (ed.), *Karma and Rebirth in Classical Indian Traditions* (Berkeley: University of California Press), chap. 1, 3–37. doi: <https://doi.org/10.1525/9780520377967>, URL: <https://www.jstor.org/stable/jj.15707015>.
- Oberhammer, Gerhard (1968), "Notes on the Tantrayuktis," *The Adyar Library Bulletin*, 31–32 (1967–1968): 600–16. doi: <https://doi.org/10.5281/zenodo.10440052>.
- Oberlies, Thomas (2003), *A Grammar of Epic Sanskrit* (Indian Philology and South Asian Studies, 5; Berlin: De Gruyter), ISBN: 9783110144482. doi: <https://doi.org/10.1515/9783110899344>.
- Olivelle, Patrick (1995), "Food in India," *Journal of Indian Philosophy*, 23/3: 367–80. doi: <https://doi.org/10.1007/bf01463136>.
- (2001), *Food for Thought. Dietary Rules and Social Organization in Ancient India* (Gonda Lectures, 9; Amsterdam: Royal Netherlands Academy of Arts and Sciences), URL: <https://storage.knaw.nl/2022-06/20021013.pdf>, accessed 28/06/2023.
- (2005), *Manu's Code of Law: A Critical Edition and Translation of the Manavādharmasāstra*, With the editorial assistance of Suman Olivelle (South Asia research; New York: Oxford University Press), ISBN: 0195171462.

- (2013), *King, Governance, and Law in Ancient India: Kauṭilya's Arthaśāstra. a New Annotated Translation* (New York: Oxford University Press), ISBN: 9780199891825. doi: <https://doi.org/10.1093/acprof:osobl/9780199891825.003.0001>.
- Osbaldiston, Tess Anne, and Wood, R. P. A. (2000), *Dioscorides. De Materia Medica. Being an Herbal with Many Other Medicinal Materials Written in Greek in the First Century of the Common Era. A New Indexed Version in Modern English [Introductory Notes by R. P. Wood]* (Johannesburg: IBIDIS Press), ISBN: 9780620234351. doi: <https://doi.org/10.5281/zenodo.15330582>, URL: <https://web.archive.org/web/20160301000627/http://panaceavera.com/demateriaindex.html>, accessed 01/03/2016.
- Özbulat, Mehmet, et al. (2021), "Factors Affecting Prognosis in Patients with Snakebite," *Eurasian Journal of Emergency Medicine*, 20/1 (Mar.): 6–11, ISSN: 2149-6048. doi: <https://doi.org/10.4274/eajem.galenos.2020.69885>.
- Pāṇḍeya, Rāmateja (1963) (ed.), श्रीकृष्णद्वैपायनव्यासप्रणीतं गरुडपुराणम् (Vidyabhawan Prachyavidya Granthamala, 3; reprint, Caukhambā Vidyābhavana, Paṇḍita-Pustakālaya: Kāśī), ARK: <https://n2t.net/ark:/13960/t6pz7tg7j>.
- Paramesvaran, Madhu K. (2023), "Personal email communication," 26 Dec.
- Pārśvanātha Śāstrī, Vardhamāna (1940) (ed.), उग्रादित्याचार्यकृत कल्याणकारक (राष्ट्रभाषानुवादसहित) = *The Kalyāṇa-kārakam of Ugrādityacharya, Edited with Introduction, Translation, Notes, Indexes and Dictionary* (Sakhārāma Nemacamāda Gramthamālā, 129; Solāpura: Seṭha Govimḍajī Rāvajī Dośī), ARK: <https://n2t.net/ark:/13960/t2q617g4d>.
- Pecchia, Cristina (2022), "Ayurveda, Philology and Print: On the First Printed Edition of The Carakasamhitā and Its Context," *South Asian History and Culture*, 13/1: 112–34. doi: <https://doi.org/10.1080/19472498.2022.2036402>.
- Pillay, V. V. (2013), *Modern Medical Toxicology* (New Delhi: Jaypee Brothers Pvt. Ltd), ISBN: 9789350259658.
- Pillay, Vijay V., and Sasidharan, Anu (2019), "Oleander and Datura Poisoning: An Update," *Indian Journal of Critical Care Medicine*, 23/Supplement 4: 5250–5. doi: <https://doi.org/10.5005/jp-journals-10071-23302>.
- Pollock, Sheldon (1991), *The Rāmāyaṇa of Vālmīki: an Epic of Ancient India: Volume III: Aranyakāṇḍa*, ed. Robert P. Goldman (Princeton: Princeton University Press), ISBN: 0-691-06660-4.

- Poudel, Ram C., et al. (2013), "Yews (*Taxus*) along the Hindu Kush-Himalayan Region: Exploring the Ethnopharmacological Relevance among Communities of Mongol and Caucasian Origins," *Journal of Ethnopharmacology*, 147/1: 190–203, ISSN: 0378-8741. doi: <https://doi.org/10.1016/j.jep.2013.02.031>.
- Preisendanz, Karin (2007), "The Initiation of the Medical Student in Early Classical Āyurveda: Caraka's Treatment in Context," in Birgit Kellner et al. (eds.), *Pramāṇakīrtīḥ. Papers Dedicated to Ernst Steinkellner on the Occasion of His 70th Birthday. Part 2*, 2, 2 vols. (Wiener Studien zur Tibetologie und Buddhismuskunde, 70.2; Wien: Arbeitskreis für Tibetische Und Buddhistische Studien Universität Wien), 629–68, ISBN: 9783902501097, URL: https://www.istb.univie.ac.at/caraka/file_download/36.
- (2013), "Logic, Debate and Epistemology in Ancient Indian Medical Science: An Investigation Into the History and Historiography of Indian Philosophy. Part I," in Dominik Wujastyk, Anthony Cerulli, and Karin Preisendanz (eds.), *Medical Texts and Manuscripts in Indian Cultural History* (Delhi: Manohar Publishers and Distributors), 63–139, ISBN: 978-9350980194.
- Prets, Ernst, and Prandstetter, Joachim (1991–2006), *Terminologie der frühen philosophischen Scholastik in Indien: Ein Begriffswörterbuch zur altindischen Dialektik, Erkenntnislehre und Methodologie*, ed. Gerhard Oberhammer, 3 vols. (Österreichische Akademie der Wissenschaften, Philosophisch-Historische Klasse, Denkschriften, 223, 248, 343; Wien: Verlag der Österreichischen Akademie der Wissenschaften); Beiträge zur Kultur- und Geistesgeschichte Asiens; Nr. 9, 17, 49.
- Rādhākāntā Deva, Rājā (1876), *शब्दकल्पद्रुमः = Shabda Kalpadrumah, Or, the Tree Bearing All the Words That May Be Wished For* (Calcutta: Baradākānta Mitra & Co. at the New Bengal Press), ARK: <https://n2t.net/ark:/13960/t9x10x61b>.
- Rai, Rishu (2019), "Kirata Tribes of Colonial Darjeeling: Historical Understanding through Discourse Analysis," *International Journal of Research and Analytical Reviews*, 6/1: 390–9, URL: <https://www.ijrar.org/papers/IJRAR19J5465.pdf>.
- Rai, Saurav Kumar (2019), "Invoking 'Hindu' Ayurveda: Communalisation of the Late Colonial Ayurvedic Discourse," *The Indian Economic & Social History Review*, 56/4: 411–26. doi: <https://doi.org/10.1177/0019464619873820>; Online first.
- Ramachandra Rao, S. K., and Sudarshan, S. R. (1985–2005), *Encyclopaedia of Indian Medicine*, 6 vols. (Bombay: Popular Prakashan), eprint: ark:/13960/s2dn77q7v39, 1: *Historical Perspective* (1985), 2: *Basic Concepts* (1985), 3: *Clinical Examination and Diagnostic Methods* (1987), 4: *Materia Medica, Herbal*

- Drugs (2005), 5: *Materia Medica, Mineral and Metallic Drugs* (2005), 6: *Diseases and their Cures* (2005).
- Ramakrishna Ayyar, T. V. (1963), *Handbook of Economic Entomology for South India* (Madras: Government of Madras), ARK: <https://n2t.net/ark:/13960/t59d5461t>.
- Ray, Kavirāja Gaṅgādhara (1868–70) (ed.), चरकसंहिता ... श्रीमद्-गङ्गाधर-कविराज-कविरत्न-विरचितया जल्प-कल्प-तरु-समारब्यया व्यारब्यया सहितम् तेनैव संशोधितम् = [The Carakasamhitā edited by Kavirāja Gaṅgādhara with his Commentary Jalpakalpataru] (Calcutta: Samvada Jnanaratnakara Press).
- Raychaudhuri, Hemachandra (1953), *Political History of Ancient India* (Calcutta: University of Calcutta), ARK: <https://n2t.net/ark:/13960/s25hz0hz29p>.
- Renou, Louis (1940), "Sur certaines anomalies de l'optatif Sanskrit," *Bulletin de la Société de Linguistique de Paris*, 41: 5–17, ARK: <https://n2t.net/ark:/12148/bpt6k121049>.
- Rossi, Paola M. (2014), "The Sounds of the Warriors: The Vedic Drums between War and Poetry," *Indologica Taurinensis*, 40, URL: http://www.asiainstitutetorino.it/Indologica/volumes/vol40/14_ROSSI.pdf.
- Rotman, Andy (2008), *Divine Stories* दिव्यावदान *Divyāvadāna* (Classics of Indian Buddhism; Somerville, MA: Wisdom Publications), ISBN: 978-1-61429-470-2, ARK: <https://n2t.net/ark:/13960/t7nq1444m>.
- Roy, B. K. (1970), *The Savar: A Scheduled Tribe in West Bengal* (New Delhi: Office of the Registrar General), URL: https://censusindia.gov.in/nada/index.php/catalog/32384/download/35565/42925_1961_SAV.pdf.
- Ruben, Walter (1954), "Medizin (Caraka) und Logik (Nyāya) (um 100 u. Z.)," in id., *Geschichte der indischen Philosophie* [collected articles] (Berlin: Deutscher Verlag), chap. 21, 212–22, ARK: <https://n2t.net/ark:/13960/t9v18cc78>.
- Saccone, Margherita Serena (2015), "The Conception of Atoms as Substantially Existing in Śubhagupta," *Journal of the International Association of Buddhist Studies*, 38: 107–37, ISSN: 2507-0347, 2507-0347. doi: <https://doi.org/10.2143/JIABS.38.0.3134539>.
- Saraswat, K. S. (1991), "Archaeobotanical Remains in Ancient Cultural and Socio-Economical Dynamics of the Indian Subcontinent," *Palaeobotanist*, 40: 514–45. doi: <https://doi.org/10.54991/jop.1991.1797>.

- Śarmā, Muralīdhara (1895–99) (ed.), श्रीधन्वन्तरिभागवतसमुपदिष्टा, तच्छिष्येण सुश्रुतेन विरचिता सुश्रुतसंहिता, आरोग्यसुधाकरसम्पादकेन फर्रुखनगरनिवासिना पंडित मुरलीधरशर्मणा राजवैद्येन सान्वयसटिप्पणिकासपरिशिष्टया भाषाटीकया संभूषिता (Mumbayyam: Khemarāja Śrīkrṣṇadāsa at Śrīveṅkaṭeśvara Press), ARK: <https://n2t.net/ark:/13960/t6n066p8x>; Volume 1 (sūtrasthāna): <ark:/13960/t6n066p8x>; vol. 2 (nidāna and śārīra): <ark:/13960/t3328jf4n>; vol. 3 (cikitsāsthāna and kalpa-sthāna): <ark:/13960/t5q87zp52>; vol. 4 (uttaratatantra): <ark:/13960/t24b84s9c>.
- Sarukkai, Sundar (2016), “Translation As Method: Implications for History of Science,” in Bernard Lightman, Gordon McOuat, and Larry Stewart (eds.), *The Circulation of Knowledge Between Britain, India and China* (Leiden: BRILL), 309–29. doi: https://doi.org/10.1163/9789004251410_014.
- Sastri, P. P. S. (1933), *A Descriptive Catalogue of the Sanskrit Manuscripts in the Tanjore Maharaja Serfoji's Sarasvati Mahal Library Tanjore: Natya, Sangita, Kamasashtra, Vaidya & Jyotisa*, nos. 10650 – 11737 (Srirangam: Sri Vani Vilas Press), ARK: <https://n2t.net/ark:/13960/t3nw8bc12>.
- Sastri, P. S. Subrahmanya (2002), *Tolkāppiyam. The Earliest Extant Tamil Grammar, with a Short Commentary in English: Volume II. Poruṭatikāram* (2nd edn., Chennai: The Kuppuswami Sastri Research Institute), ISBN: 81-85170-27-4, ARK: <https://n2t.net/ark:/13960/t7jq8k19s>; reprint of 1936 edition.
- Śāstri, Paraśurāma (1931) (ed.), दामोदरसूनुशार्ङ्गधराचार्यविरचिता शार्ङ्गधरसंहिता [= *The Śārīrgadharasamhitā* by Śārīrgadhar with the Commentaries of Ādhamalla and Kāśīrāma] (2nd edn., Muñbai: Nirṇayasāgara Press), ARK: <https://n2t.net/ark:/13960/t7wn11g9r>; 1st ed. 1920.
- Sathaye, Adheesh A. (2015), *Crossing the Lines of Caste. Viśvāmitra and the Construction of Brahmin Power in Hindu Mythology* (New York, NY: Oxford University Press), ISBN: 9780199341115.
- Savage-Smith, Emilie, Swain, Simon, and van Gelder, Geert Jan (2019) (eds.), *A Literary History of Medicine - The ‘Uyūn al-anbā’ fī ṭabaqāt al-aṭibbā’ of Ibn Abī Usaybi‘ah*, 3 vols. (Handbook of Oriental Studies. Section 1 The Near and Middle East, 134; Leiden: Brill), ISBN: 978-90-04-41031-2, URL: <https://brill.com/view/db/lhom>.
- Scharfe, Hartmut (1993), *Investigations in Kauṭalya's Manual of Political Science* (2nd edn., Wiesbaden: Harrassowitz), ISBN: 3447033304; 2nd. rev. ed. of Untersuchungen zur Staatsrechtslehre des Kauṭalya. Extracts at <https://tinyurl.com/scha-1993>.
- Scherrer-Schaub, Cristina (1981), “Le Terme Yukti: Première étude in Hommage à Constantin Regamey,” *Etudes Asiatiques. Revue de la Société Suisse d'Etude Asiatique Bern*, 35/2: 185–99. doi: <https://doi.org/10.5169/seals-146624>.

- Schubring, Walther (1969), *Tandulaveyāliya: ein Pannaya des Jaina-Siddhānta. Textausgabe, Analyse und Erklärung* (Abhandlungen der Geistes- und Sozialwissenschaftlichen Klasse, 6; Wiesbaden: Franz Steiner Verlag). doi: <https://doi.org/10.2307/598613>.
- Schwartzberg, Joseph E., Bajpai, Shiva G., et al. (1978) (eds.), *A Historical Atlas of South Asia* (Chicago: University of Chicago Press), URL: <http://dsal.uchicago.edu/reference/schwartzberg/>.
- Scott, H. (1817), "Some Remarks on the Arts of India, with Miscellaneous Observations on Various Subjects," *Journal of Science and the Arts*, 2: 67–72, ill. after 133, ARK: <https://n2t.net/ark:/13960/t9870jt4g>; Breton 1826: 358–363 cites Scott's description of cataract couching.
- Sekhar Namburi, U. R. (2023), *A Text Book of Agada Tantra (Illustrated)* (repr. Varanasi: Chaukhamba Sanskrit Sansthan).
- Selby, Martha Ann (2005a), "Narratives of Conception, Gestation, and Labour in Sanskrit Ayurvedic Texts," *Asian Medicine*, 1/2: 254–75, ISSN: 1573-420X. doi: <https://doi.org/10.1163/157342105777996638>.
- (2005b), "Sanskrit Gynecologies in Postmodernity: The Commoditization of Indian Medicine in Alternative Medical and New-age Discourses on Women's Health," in *Asian Medicine and Globalization*, chap. 8, 120–31, URL: <https://www.dropbox.com/s/uuwdx2urvke5uv/2005%20Sanskrit%20Gynecologies%20in%20Postmodernity%20-%20in%20Alter.pdf?dl=0>, accessed 22/03/2018.
- Semalty, Mona, et al. (2010), "Semecarpus anacardium Linn.: A review," *Pharmacognosy Reviews*, 4/7: 88, ISSN: 0973-7847. DOI: <https://doi.org/10.4103/0973-7847.65328>.
- Semeka-Pankratov, Elena (1979), "A Semiotic Approach to the Polysemy of the Symbol *nāga* in Indian Mythology," in Irene Portis Winner and Jean Umiker-Sebeok (eds.), *Semiotics of Culture* (Approaches to Semiotics, 53; The Hague, Paris, NY: Mouton), 237–90. doi: <https://doi.org/10.1515/9783110823134-009>; The contents of this volume were published simultaneously in *Semiotica* (1/3) 1979.
- Sen, Sailendra Nath (1988), *Ancient Indian History and Civilization* (Delhi: New Age International), ARK: <https://n2t.net/ark:/13960/t8gf8pz34>.

- Sengupta, Nagendra Nath (1901), *The Ayurvedic System of Medicine, or an Exposition, in English, of Hindu Medicin As Occurring in Charaka, Susruta, Bágbhata, and Other Authoritative Works, Ancient and Modern, in Sanskrit* (1st edn., Calcutta: Keval Ram Chatterjee), ARK: <https://n2t.net/ark:/13960/t4tj3wj4v>; Often reprinted. Vol.2: <https://archive.org/details/inernet.dli.2015.47497>.
- Shama Sastry, R. (1951), *Kauṭilya's Arthaśāstra* (4th edn., Mysore: Sri Raghuveer Printing Press), ARK: <https://n2t.net/ark:/13960/t04z1mp6c>.
- Sharma, Priya Vrat (1982), *Dalhana and his Comments on Drugs* (Delhi: Munshiram Manoharlal).
- (1999–2001), *Suśruta-Saṃhitā, with English Translation of Text and Dalhana's Commentary Alongwith (sic) Critical Notes*, 3 vols. (Haridas Ayurveda Series, 9; Varanasi: Chaukhamba Visvabharati), ARK: <https://n2t.net/ark:/13960/s2gpx8453k1>.
- Sharma, Priyavrat (1994), *Caraka-saṃhitā. Critical Notes (Incorporating the commentaries of Jejjāṭa, Cakrapāṇi, Gaṅgādhara and Yogīndranātha)* (Jaikrishnadas Ayurveda Series, 36; 1st edn., Varanasi, Delhi: Chaukhamba Orientalia).
- Sharma, Ram Karan, and Dash, Bhagwan (2006), *Agniveśa's Caraka Saṃhitā. Text with English translation & Critical Exposition Based on Cakrapāṇi Datta's Āyurvedadīpikā* (Chowkhamba Sanskrit Studies, 94; repr. Varanasi: Chowkhamba Sanskrit Series Office).
- Shastri, R. Shama (1920) (ed.), बोधायनगृह्यसूत्रम् *The Bodhāyana Grihyasutra* (Mysore: University of Mysore), ARK: <https://n2t.net/ark:/13960/t2t492622>.
- Shefer-Mossensohn, Miri, and Hershkovitz, K. Abou (2013), "Early Muslim Medicine and the Indian Context: A Reinterpretation," *Medieval Encounters*, 19/3: 274–99. doi: <https://doi.org/10.1163/15700674-12342139>, URL: <https://academia.edu/4049722>.
- Shree Gulab Kunverba Ayurvedic Society (1949), *The Caraka Saṃhitā. Expounded by the Worshipful Ātreya Punarvasu Compiled by the Great Sage Agniveśa and Redacted by Caraka & Dridhabala. Edited and Published in Six Volumes with Translations in Hindi, Gujarati and English* (First Impression, Jamnagar: Shree Gulab Kunverba Ayurvedic Society), ARK: <https://n2t.net/ark:/13960/t5m95n971>.
- Siddiqi, Muhammad Zubayr (1959), *Studies in Arabic and Persian Medical Literature*, ARK: <https://n2t.net/ark:/13960/s25bxqt84xm>.
- Simoons, Frederick J. (1998), *Plants of Life, Plants of Death* (Madison, Wisconsin: University of Wisconsin Press), ISBN: 9780299159009.

- Simpson, J. A., and Weiner, E. S. C. (1989–), *The Oxford English Dictionary* (2nd edn., Oxford: Oxford University Press), ISBN: 0198611862, URL: <https://www.oed.com>; 20v.
- Singh, A. (2003), “*Tantra Yukti: Method of Theorization in Ayurveda*,” *Ancient Science Of Life*, 22/3: 64–74.
- Singh, G. P. (1990), *The Kirātas in Ancient India. A Historical Study of their Life, Culture and Civilization* (Delhi: Gian Publishing House), ISBN: 9788121203296.
- Singh, Girish P. (2008), *Researches into the History and Civilization of the Kirātas* (New Delhi: Gyan Publishing House), 572 pp., ISBN: 8121202817; Includes bibliographical references (p. [503]-526) and index.
- Singhal, G. D., et al. (1972–82), *Diagnostic [and Other] Considerations in Ancient Indian Surgery* (Varanasi: Singhal Publications); A translation of the *Suśrutasamhitā* in 10v.
- Singhal, G. D., and Dwivedi, R. N. (1976), *Toxicological Considerations in Ancient Indian Surgery : Based on Kalpa-Sthāna of Suśruta Saṃhitā* (Ancient Indian Surgery, 7; Allahabad: Singhal Publications).
- Singhal, G. D., and Mitra, Jyotir (1980), *Paediatric & Gynaecological Considerations and Aphorisms in Ancient Indian Surgery: Based on Suśruta Saṃhitā, Uttara-tantra Chapters 27–38 & 63–66* (Varanasi: Singhal Publications).
- Sircar, Dinesh Chandra (1966), *Indian Epigraphical Glossary* (Delhi: Motilal Banarsi-dass), ARK: <https://n2t.net/ark:/13960/t85h7f98n>.
- (1971), *Studies in the Geography of Ancient and Medieval India* (2nd edn., Delhi: Motilal Banarsi-dass), ARK: <https://n2t.net/ark:/13960/t72w2zd8w>.
- Śiromani, Bharata-candra (1873) (ed.), *চতুর্বৰ্ণচিন্তামণি-দানবণ্ডম्* (Calcutta: Asiatic Society of Bengal), ARK: <https://n2t.net/ark:/13960/t1rf9jd94>.
- Slaje, Walter (1995), “R̥tū-, R̥tv(i)ya-, artavá-. Weibliche ‘Fertilität’ im Denken vedischer Inder,” *Journal of the European Ayurvedic Society*, 4: 109–48, ARK: <https://n2t.net/ark:/13960/t0mt26p1b>.
- Slouber, Michael (2016a), *Early Tantric Medicine: Snakebite, Mantras, and Healing in the Garuda Tantras* (New York: OUP), 392 pp., ISBN: 9780190461812.
- (2016b), “Snakebite Goddesses in the Śākta Traditions: Roots and Incorporations of Tvaritā, Kurukullā and Bherundā: History, practice and doctrine,” in Bjarne Wernicke Olesen (ed.), *Goddess Traditions in Tantric Hinduism* (Routledge studies in tantric traditions; London: Routledge,), chap. 4, ISBN: 9781317585213.

- Smets, Sandra (2006), "Grossesses atypiques selon l' Ayurveda," *Bulletin des Etudes indiennes*, 24–25: 225–37, ISSN: 0761-3156.
- (2010), "Les fausses couches dans la littérature ayurvédique," *Asiatische Studien / Etudes asiatique*, 64/2: 387–414.
- Smith, Brian K. (1994), *Classifying the Universe: The Ancient Indian Varṇa System and the Origins of Caste* (New York, Oxford: Oxford University Press), ISBN: 0-19-508498-5.
- Smith, William (1870), *Dictionary of Greek and Roman Antiquities*, 1, 3 vols. (Boston: Little, Brown, and Company), ARK: <https://n2t.net/ark:/13960/t9s17xn41>.
- Solomon, Esther A. (1976–78), *Indian Dialectics. Methods of Philosophical Discussion*, 2 vols. (Sheth Bholabhai Jeshingbhai Institute of Learning and Research Research Series, 70/74; Ahmedabad: B. J. Institute of Learning and Research. Gujarat Vidya Sabha), ARK: <https://n2t.net/ark:/13960/t5jb4x70d>.
- Spencer, Walter George (1935–38), *Celsus: De Medicina. with an English Translation by W. G. Spencer*, 3 vols. (Loeb Classical Library, 292, 304, 336; Cambridge, MA; London: Harvard University Press; William Heinemann), URL: <https://tinyurl.com/loebcelsus>, accessed 02/06/2021.
- Speziale, Fabrizio (2019), "Rasāyana and Rasaśāstra in the Persian Medical Culture of South Asia," *History of Science in South Asia*, 7: 1–41. DOI: <https://doi.org/10.18732/hssa.v7i0.40>.
- Spiers, Carmen S. (2022), "The Semantics of Sharpness and the Prohibition of the Pungent: Garlic, Sanskrit śigru(ka)-, and Old Persian *θigra(ka)-," *Indo-Iranian Journal*, 65/2: 93–121, ISSN: 1572-8536. DOI: <https://doi.org/10.1163/15728536-06501002>, URL: <https://hal.science/hal-03703996v1/file/SPIERS%20The%20Semantics%20of%20Sharpness.pdf>.
- Srikantha Murthy, K. R. (1991), *Vāgbhaṭa's Aṣṭāṅga Hṛdayam* (Text, English Translation, Notes, Appendices and Indices) (1st edn., Varanasi: Krishnadas Academy).
- (2000–02), *Illustrated Suśruta Saṃhitā: Text, English Translation, Notes, Appendices and Index* (Jaikrishnadas Ayurveda Series, 102; 1st edn., Varanasi: Chaukhamba Orientalia).
- Steingass, F. (1930), *A Comprehensive Persian-English Dictionary Including the Arabic Words and Phrases to Be Met with in Persian Literature* (London: Kegan Paul, Trench, Trubner), ARK: <https://n2t.net/ark:/13960/s25bwz0337d>; Reprint, Delhi: Oriental Reprint, 1973.

- Storey, C. A. (1971), *Persian Literature, a Bio-bibliographical Survey*. Vol. II.2: Medicine (London: Royal Asiatic Society of Great Britain and Ireland), ARK: <https://n2t.net/ark:/13960/t9v18bf68>.
- Strauss, Bettina (1934), "Das Giftbuch des Šānāq: eine Literaturgeschichtliche Untersuchung," *Quellen und Studien zur Geschichte der Naturwissenschaften und der Medizin*, 4/2: [89]–[152] followed by Arabic text, ARK: <https://n2t.net/ark:/13960/s2hb5j66s95>.
- Subba, Tanka Bahadur (1999), *Politics of Culture: A Study of Three Kirata Communities in the Eastern Himalayas* (1st edn., Chennai [u.a.]: Orient Longman), ISBN: 8125016937.
- Suneson, Carl (1991), "Remarks on Some Interrelated Terms in the Ancient Indian Embryology," *Wiener Zeitschrift für die Kunde Südasiens = Vienna Journal of South Asian Studies*, 35: 109–21, URL: <https://www.jstor.org/stable/24006727>.
- Suvedī, K. S., and Tīvārī, N. (2000) (eds.), सौश्रुतनिघण्टुः ग्रन्थादौ विस्तृतेन ग्रन्थवैशिष्ट्य-प्रकाशकेनोपोद्धारतेन अवसाने च द्रव्याणामनेकभाषानामावली-पर्यायसङ्घाभ्यां समलङ्घतः सुश्रुतसंहितायां प्रयुक्तानामौषधद्रव्याणां पर्याय-गुणकर्मवर्णात्मको इपूर्वग्रन्थः (Belajhundī, Dāñ: Mahendrasamkrtaivavidaṁyālayah).
- Sweet, Michael J., and Zwilling, Leonard (1993), "The First Medicalization: The Taxonomy and Etiology of Queerness in Classical Indian Medicine," *Journal of the History of Sexuality*, 3/4: 590–607, URL: <http://www.jstor.org/stable/3704394>.
- Talwar, P. K., and Kacker, R. K. (1984), *Commercial Sea Fishes of India* (Calcutta: Zoological Survey of India), ARK: <https://n2t.net/ark:/13960/t5s841v5m>.
- Thackston, Wheeler M. (1999), *The Jahangirnama: Memoirs of Jahangir, Emperor of India* (New York, etc.: Oxford University Press), ISBN: 0195127188.
- Tīvārī, Premvatī (1990), Āyurvedīya prasūti-tantra evam strī-roga; pratham bhāgः Prasūti-tantra, dvitīya bhāgः Strī-roga (Jayakṛṣṇadāsa Āyurvedīya Granthamālā, 41; Varanas: Caukhamba Orientalia).
- Touwaide, Alain, Aslanoff, Grégoire, and Föerstel, Christian (1997) (eds.), *Theriaka y Alexipharmacum de Nicandro. Facsimil y transcripción con estudio* (Barcelona: Moleiro), ISBN: 9788488526298; digital images of the MS are online at ARK.
- Unni, N. P. (2006), *The Arthaśāstra of Kauṭalya with the Commentary "Śrīmūlā" of Mahāmahopādhyāya T. Gaṇapati Śāstrī: Part III—8, 9, 10, 11, 12, 13, 14 & 15 Adhikaraṇas* (Delhi: New Bharatiya Corporation), ARK: <https://n2t.net/ark:/13960/t41s58879>.

- Vaidyopādhyāya, Rāmaprasāda (1911) (ed.), चरकसंहिता । श्रीमन्महर्षिप्रवरचरकप्रणीता । पट्टिंतरामप्रसादैद्योपाध्यायविरचितप्रसादनी-भाषाटीकासहिता । (mumbayī: Kṣemarāja-Śrīkrṣṇadāsaśreṣṭha), ARK: <https://n2t.net/ark:/13960/t2r59q189>.
- Valiathan, M. S. (2007), *The Legacy of Suśruta* (Hyderabad, Chennai, etc.: Orient Longman).
- Van Bladel, Kevin Thomas (2011), "The Bactrian Background of the Barmakids," in Anna Akasoy, Charles Burnett, and Ronit Yoeli-Talim (eds.), *Islam and Tibet: Interactions along the Musk Routes* (Farnham: Ashgate), chap. 3, 43–88, URL: <https://academia.edu/5857685>.
- Van der Geer, Alexandra (2008) (ed.), *Animals in Stone: Indian Mammals Sculptured Through Time* (Handbuch der Orientalistik 2: India; Leiden & Boston: Brill), ISBN: 9789004168190.
- Varshney, R. K. (2000), "First Authentic Record of the Lac Insect from Gujarat," *Bionotes*, 2/2: 27, URL: <https://tinyurl.com/varshney2000>, accessed 24/09/2024.
- Vīrasvāmi (1900–09) (ed.), [Suśutasamhitā] (Madras); unidentified edition mentioned by Hoernle (1907:68); date uncertain.
- Vogel, Claus (2005), review of Rahul Peter Das (2003), *The Origin of the Life of a Human Being. Conception and the Female According to Ancient Indian Medical and Sexological Literature* (Indian Medical Tradition; Delhi: Motilal Banarsidas), ISBN: 81-208-1998-5, in *Indo-Iranian Journal*, 48/1/2: 127–32, URL: <https://www.jstor.org/stable/24664092>.
- Vogel, Jean (1962), *The Goose in Indian Literature and Art* (Arts & Letters, XXVII; Leiden), 1952, ARK: <https://n2t.net/ark:/13960/t9j425x5z>.
- Von Hinüber, Oskar (1978), "On the Tradition of Pali Texts in India, Ceylon and Burma," in Heinz Bechert (ed.), *Buddhism in Ceylon and Studies on Religious Syncretism in Buddhist Countries* (Gottingen: Vandenhoeck & Ruprecht), 48–60, ISBN: 9783525823873.
- Wall, Frank (1913), *The Poisonous Terrestrial Snakes of Our British Indian Dominions (Including Ceylon) and How to Recognize Them; With Symptoms of Snake Poisoning and Treatment* (3rd edn., Bombay: Bombay Natural History Society), ARK: <https://n2t.net/ark:/13960/t1zc8g94b>.
- (1921), *Ophidia Taprobanica or the Snakes of Ceylon* (Colombo: Cottle, Government Printer), ARK: <https://n2t.net/ark:/13960/t39z9q93n>.
- Weinstein, Scott, et al. (2009), "Envenomations: An Overview of Clinical Toxicology for the Primary Care Physician," *American family physician*, 80 (8): 793–802, ISSN: 1532-0650 (ppublish).

- Whitney, William Dwight (1885), *The Roots, Verb-forms, and Primary Derivatives of the Sanskrit Language. A Supplement to his Sanskrit Grammar* (Leipzig: Breitkopf and Härtel), ARK: <https://n2t.net/ark:/13960/t3qv3p906>.
- WHO (2019), *Snakebite Envenoming: A Strategy for Prevention and Control* (Geneva: WHO), ISBN: 978-92-4-151564-1.
- Wikipedia contributors (2025), "Hottentotta tamulus," *Wikipedia, The Free Encyclopedia* (21 June), URL: https://en.wikipedia.org/w/index.php?title=Hottentotta_tamulus&oldid=1293018226, accessed 21/06/2025.
- Winternitz, Maurice (1981–85), *A History of Indian Literature*, trans. V. Srinivasa Sarma and Subhadra Jha (2nd edn., Delhi: Motilal Banarsidas), ISBN: 81-208-0264-0, ARK: <https://n2t.net/ark:/13960/s2p4419t5qd>.
- Woodcock, Martin W. (1980), *Collins Handguide to the Birds of the Indian Sub-continent, Including India, Pakistan, Bangladesh, Sri Lanka and Nepal* (Collins), ISBN: 0-00-219712-X; Reprinted 1990.
- Wujastyk, Dagmar (2012), *Well-Mannered Medicine: Medical Ethics and Etiquette in Classical Ayurveda* (New York: Oxford University Press). doi: <https://doi.org/10.1093/acprof:oso/9780199856268.001.0001>.
- (2013a), "Perfect Medicine. Mercury in Sanskrit Medical Literature," *Asian Medicine: Tradition & Modernity*, 8/1 (Sept.): 15–40, ISSN: 1573-4218. doi: <https://doi.org/10.1163/15734218-12341278>.
- (2019), "Iron Tonics: Tracing the Development from Classical to Iatrocchemical Formulations in Ayurveda," *HIMALAYA: The Journal of the Association for Nepal and Himalayan Studies*, 39/1, ISSN: 2471-3716. doi: <https://doi.org/10.5281/zenodo.7746874>.
- Wujastyk, Dominik (1999), "Miscarriages of Justice: Demonic Vengeance in Classical Indian Medicine," in John Hinnells and Roy Porter (eds.), *Religion, Health, and Suffering* (London: Kegan Paul International), 256–75, ISBN: 9780710306111, URL: <https://www.academia.edu/492293/>, accessed 21/09/2019; Reprinted as an eBook, Routledge 2011, 2016.
- (2000), "The Combinatorics of Tastes and Humours in Classical Indian Medicine and Mathematics," *Journal of Indian Philosophy*, 28: 479–95. doi: <https://doi.org/10.1023/a:1017514013759>.
- (2002), "Cannabis in Traditional Indian Herbal Medicine," in Ana Salema (ed.), *Āyurveda at the Crossroads of Care and Cure. Proceedings of the Indo-European Seminar on Ayurveda held at Arrábida, Portugal, in November 2001* (Lisbon: Centro de História de Além-Mar, Universidade Nova de Lisboa), 45–73, ISBN: 972-98672-5-9, URL: <https://www.academia.edu/188844/>, accessed 27/05/2019.

- Wujastyk, Dominik (2003a), "Black Plum Island," in *2nd International Conference on Indian Studies. Proceedings* (Kraków: Jagiellonian University, Institute of Oriental Philology and Księgarnia Akademicka), 637–49.
- (2003b), *The Roots of Ayurveda: Selections from Sanskrit Medical Writings* (Penguin Classics; 3rd edn., London, New York, etc.: Penguin Group), ISBN: 0-140-44824-1.
- (2004), "Agni and Soma: A Universal Classification," *Studia Asiatica: International Journal for Asian Studies*, IV–V, ed. Eugen Ciurtin: 347–70, ISSN: 1582-9111, URL: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2585368/>, accessed 30/01/2021.
- (2008), "A Body of Knowledge: The Wellcome Ayurvedic Anatomical Man and His Sanskrit Context," *Asian Medicine: Tradition & Modernity*, 4/1: 201–48. doi: <https://doi.org/10.1163/157342109X423793>.
- (2013b), "New Manuscript Evidence for the Textual and Cultural History of Early Classical Indian Medicine," in *Medical Texts and Manuscripts in Indian Cultural History*, ed. Dominik Wujastyk, Anthony Cerulli, and Karin Preisendanz (New Delhi: Manohar), 141–57, URL: <https://www.academia.edu/4125988/>.
- (2016a), "From Balkh to Baghdad. Indian Science and the Birth of the Islamic Golden Age in the Eighth Century," *Indian Journal of the History of Science*, 51/4: 679–90. doi: <https://doi.org/10.5281/zenodo.14796895>, URL: <http://doi.org/10.16943/ijhs/2016/v51/i4/41244>.
- (2016b), "Models of Disease in Ayurvedic Medicine," in Mark Jackson (ed.), *The Routledge History of Disease* (Abingdon: Routledge), chap. 3, 38–53, ISBN: 9780415720014. doi: <https://doi.org/10.4324/9781315543420-4>.
- (2021), "A New Translation of Carakaśaṁhitā, Vimānasthāna, Chapter 1, Based on the Vienna Critical Edition," in Toke Lindegaard Knudsen, Jacob Schmidt-Madsen, and Sara Speyer (eds.), *Body and Cosmos. Studies in Early Indian Medical and Astral Sciences in Honor of Kenneth G. Zysk* (Leiden, Boston: Brill), chap. 6, 77–109. doi: https://doi.org/10.1163/9789004438224_007.
- Wujastyk, Dominik, et al. (2021–), "The Suśruta Project: The Textual and Cultural History of Medicine in South Asia Based on Newly-Discovered Manuscript Evidence," ed. Dominik Wujastyk, Jason Birch, Andrey Klebanov, et al., URL: <https://sushrutaproject.org>, accessed 21/01/2023.
- Wujastyk, Dominik (2022), "The Science of Medicine," in Gavin D. Flood (ed.), *The Wiley Blackwell Companion to Hinduism* (2nd edn., Hoboken, NJ: Wiley and Sons, Ltd.), chap. 23, 399–413, ISBN: 9781119144861. doi: <https://doi.org/10.1002/9781119144892.ch23>.

- (2024), “Candraṭa’s editing of the Suśrutasamṛhitā,” version 2, The Suśruta Project (12 Sept.), URL: <https://sushrutaproject.org/2024/09/12/candrata/>, accessed 29/09/2023; first published 2023-07-04.
- (2025), “Intertextuality and the Methods of Diagnosis,” version 1, The Suśruta Project (20 Mar.), URL: <https://sushrutaproject.org/2025/02/25/>, accessed 20/03/2025; first published 2025-02-25.
- Wujastyk, Dominik, et al. (2023), *On the Plastic Surgery of the Ears and Nose. The Nepalese Version of the Suśrutasamṛhitā* (Heidelberg: Heidelberg Asian Studies Publishing), ISBN: 978-3-948791-63-6. doi: <https://doi.org/10.11588/hasp.1203>.
- Yagi, Toru (1994), “A Note on bhojya- and bhakṣya-,” in Yasuke Ikari (ed.), *A Study of the Nilamata. Aspects of Hinduism in Ancient Kashmir* (Kyoto: Kyoto Institute for Research in Humanities, Kyoto University).
- Yule, Henry, and Burnell, Arthur Coke (1903), *Hobson-Jobson: A Glossary of Colloquial Anglo-Indian Words and Phrases, and of Kindred Terms, Etymological, Historical, Geographical and Discursive* (London: John Murray), ISBN: 81-215-0109-1, ARK: <https://n2t.net/ark:/13960/t1zc7wm8w>; Often reprinted.
- Zimmermann, Francis (1999), *The Jungle and the Aroma of Meats* (2nd edn., Delhi: Motilal BanarsiDass), ISBN: 8120816188.
- Zwilling, Leonard, and Sweet, Michael (2010), ““Like a City Ablaze”: The Third Sex and the Creation of Sexuality in Jain Religious Literature,” in Stephen Hunt (ed.), *Religions of the East* (New Delhi: Routledge, May), 425–50. doi: <https://doi.org/10.4324/9781315244679-17>.
- Zwilling, Leonard, and Sweet, Michael J. (2000), “The Evolution of Third-Sex Constructs in Ancient India a Study in Ambiguity,” in Julia Leslie and Mary McGee (eds.), *Invented Identities: The Inter play of Gender, Religion and Politics in India* (New Delhi: Oxford University Press), 99–132, ISBN: 9780195652932.
- Zysk, Kenneth G. (1993), “The Science of Respiration and the Doctrine of the Bodily Winds in Ancient India,” *Journal of the American Oriental Society*, 113: 198–213. doi: <https://doi.org/10.2307/603025>.
- (2007), “Revisited,” *Journal of the Royal Anthropological Institute* (N.S.), S105–S115.

Materia Medica

Abbreviations

- ADPS Sivarajan, V. V., and Balachandran, Indira (1994), *Ayurvedic Drugs and Their Plant Sources* (New Delhi, Bombay, Calcutta: Oxford & IBH Publishing).
- AVS Warrier, P. K., Nambiar, V. P. K., and Ramankutty, C. (1994–96) (eds.), *Indian Medicinal Plants: A Compendium of 500 Species. Vaidyaratnam P. S. Varier's Arya Vaidya Sala, Kottakal* (Madras: Orient Longman).
- BIA Prater, S. H. (1993), *The Book of Indian Animals* (3rd edn., Bombay, Delhi, etc.: Oxford University Press), ARK: <https://n2t.net/ark:/13960/t6356w32f>; 4th impression of 3rd corrected 1980 edition.
- Chevillard Chevallier, Andrew (2000), *The Encyclopedia of Herbal Medicine*, ed. Penny Warren et al. (1st edn., New York: Dorling Kindersley), ISBN: 9780751303148, ARK: <https://n2t.net/ark:/13960/s2bh76qc88s>.
- Chopra Chopra, R. N., Nayar, S. L., and Chopra, I. C. (1956), *Glossary of Indian Medicinal Plants* (3rd reprint, 1992, New Delhi: Council of Scientific and Industrial Research); vol. 2: R. N. Chopra, I. C. Chopra, and Varma (*Chopra_{sup}*).
- Chopra IDG Chopra, R. N., Chopra, I. C., Handa, K. L., et al. (1958), *Chopra's Indigenous Drugs of India* (2nd edn., Calcutta: Dhur & Sons), ARK: <https://n2t.net/ark:/13960/t9673t140>.
- Chopra_{sup} Chopra, R. N., Chopra, I. C., and Varma, B. S. (1969), *Supplement to Glossary of Indian Medicinal Plants* (Reprint 1986, New Delhi: National Institute of Science Communication), ISBN: 8185038872.

- CIPP Pillay, V. V. (2010), "Common Indian Poisonous Plants," in D. A. Warrell, T. M. Cox, and J. D. Firth (eds.), *Oxford Textbook of Medicine* (5th edn., Oxford University Press), 1371–5. doi: <https://doi.org/10.1093/med/9780199204854.003.090302>.
- Dutt Dutt, Uday Chand (1922), *The Materia Medica of the Hindus...with a Glossary of Indian Plants by George King. Revised Edition...by Binod Lall Sen and Ashutosh Sen and Pulin Krishna Sen* (Krishnadas Sanskrit Studies; 3rd edn., Calcutta: Madan Gopal Dass for the Adi-Ayurveda Machine Press), ARK: <https://n2t.net/ark:/13960/t59c7tg9z>; Reprinted Varanasi: Chowkhamba Saraswatibhavan, 1980.
- Dymock Dymock, William, Warden, C. J. H., and Hooper, David (1890), *Pharmacographia Indica: A History of the Principal Drugs of Vegetable Origin Met with in British India* (London, Bombay, Calcutta: Kegan Paul), URL: <https://tinyurl.com/dymock1890>, accessed 16/03/2023.
- GJM1 Meulenbeld, Gerrit Jan (1974a), "Sanskrit Names of Plants and their Botanical Equivalents," in id., *The Mādhavanidāna and Its Chief Commentary: Chapters 1–10. Introduction, Translation, and Notes* (Leiden: Brill), chap. Appendix Four, 520–611, ARK: <https://n2t.net/ark:/13960/t25b8q97g>.
- GJM2 Meulenbeld, Gerrit Jan (1988), "G. J. Meulenbeld's Additions to his "Sanskrit Names of Plants and their Botanical Equivalents"," in Rahul Peter Das, *Das Wissen von der Lebensspanne der Bäume: Surapālas Vṛkṣāyurveda* (Stuttgart: Franz Steiner Verlag), chap. Appendix 1, 425–65, ISBN: 9783515046633; Supplement to **GJM1**.
- GVDB Singh, Thakur Balwant, and Chunekar, K. C. (1972), *Glossary of Vegetable Drugs in Brhattrayī* (Varanasi: Chowkhamba Sanskrit Series Office), ARK: <https://n2t.net/ark:/13960/s2cvp72x58j>.
- HK Hilgenberg, Luise, and Kirfel, Willibald (1941), *Vāgbhaṭa's Aṣṭāṅgahṛdayasamhitā, ein altindisches Lehrbuch der Heilkunde, aus dem Sanskrit ins Deutsche übertragen mit Einleitung, Anmerkungen und Indices* (Leiden: Brill), ARK: <https://n2t.net/ark:/13960/t52h05616>.

- IGP Griffiths, Mark (1994), *The New Royal Horticultural Society Index of Garden Plants* (London: Macmillan), ARK: <https://n2t.net/ark:/13960/t2q61gn9z>.
- IHR Khare, C. P. (2004), *Indian Herbal Remedies: Rational Western Therapy, Ayurvedic and Other Traditional Usage, Botany* (Berlin and Heidelberg: Springer), ISBN: 978-3-642-62229-8. doi: <https://doi.org/10.1007/978-3-642-18659-2>, ARK: <https://n2t.net/ark:/13960/t2p67054f>.
- Issar Issar, T. P. (1994), *Blossoms of Bangalore* (Bangalore: T. P. Issar).
- IW Israel, Samuel, et al. (1988), *Indian Wildlife: Sri Lanka Nepal* (Insight Guides; Singapore etc.: APA Publications), ISBN: 9780245545238, ARK: <https://n2t.net/ark:/13960/s2p9d5pqd1w>.
- K&B Kirtikar, K. R., Basu, B. D., and an I.C.S (1987), *Indian Medicinal Plants*, ed. E. Blatter, J. F. Caius, and K. S. Mhaskar, 8 vols. (2nd edn., Dehradun: International Book Distributors); First published in Allahabad, 1918.
- MBG Missouri Botanical Garden (2024), "Missouri Botanical Garden: Plant Finder," Missouri Botanical Garden, URL: <https://bit.ly/MissouriPlantfinder>.
- NEH Bown, Deni (2001), *New Encyclopedia of Herbs and Their Uses* (2nd edn., London, New York etc: Dorling Kindersly).
- NK Nadkarni, K. M. (1982), *Dr. K. M. Nadkarni's Indian Materia Medica, with Ayurvedic, Unani-tibbi, Siddha, Allopathic, Homeopathic, Naturopathic & Home Remedies, Appendices & Indexes ... in Two Volumes*, ed. A. K. Nadkarni, 2 vols. (3 ed., revised and enlarged by A. K. Nadkarni, Bombay: Popular Prakashan), ISBN: 8171541429, URL: <https://tinyurl.com/Nadkarni1982>; First published in 1954.
- Peter Peter, K. V. (2012) (ed.), *Handbook of Herbs and Spices* (Food Science, Technology and Nutrition, 228; 2nd edn., Oxford, Cambridge, Philadelphia, New Delhi: Woodhead Publishing), ISBN: 9780857090393.
- Potter Wren, R. C. (1956), *Potter's New Cyclopaedia of Botanical Drugs and Preparations*, ed. R. W. Wren (7th edn., Rustington, Sussex: Health Science Press), ARK: <https://n2t.net/ark:/13960/t14n65c9g>.

Potter _{rev}	Wren, R. C., Williamson, Elizabeth M., and Evans, Fred J. (1994), <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations</i> (Saffron Walden: C. W. Daniel Company Ltd.); Reprint of revised 1988 edition.
POWO	Kew Gardens (2024), "Plants of the World," Royal Botanic Gardens, URL: https://pwo.science.kew.org .
Reptiles	Daniel, J. C. (1983), <i>The Book of Indian Reptiles</i> (Bombay: Oxford University Press).
Trees	Bole, P. V., and Vaghani, Yogini (1986), <i>Field Guide to the Common Trees of India</i> (Bombay, Delhi, Oxford, etc.: World Wildlife Fund – India and Oxford University Press), ISBN: 0-19-561595-6; 4th reprint.
Watt _{Comm}	Watt, George (1908), <i>The Commercial Products of India, Being an Abridgement of "the Dictionary of the Economic Products of India"</i> (London: John Murray), ARK: https://n2t.net/ark:/13960/t8cg7dm79 .
Watt _{Dict}	Watt, George (1889–96), <i>A Dictionary of the Economic Products of India</i> (Calcutta: Dept. Revenue and Agriculture, Government of India), URL: https://tinyurl.com/watt1889 , accessed 28/04/2021.

Flora

aconite leaf (?) (<i>viśapatrikā</i>) Unknown. Cf. perhaps, Indian aconite (<i>viśā</i>) (but that is feminine). Cf. GVDB: 373, "unidentified": 159	amaranth (<i>taṇḍulīyaka</i>) Amaranthus spinosus L. See GVDB: 174, Dutt: 321, NK: 1, #144, Potter _{rev} : 15. Cf. AVS: 1, 121. Amaranth (etym. amṛta!) is a large family, many originally endemic to S. America. A. hypochondriacus L. is sometimes identified with <i>taṇḍulīyaka</i> , but A. spinosus L. is better known and attested in S. Asia in the first millennium BCE (Saraswat 1991) : 151, 212, 215, 220, 362
agarwood (<i>aguru</i>) Aquilaria malaccensis Lam., GVDB: 3 : 116, 117, 222	Arabian jasmin (<i>trnaśūnya</i>) see Arabian jasmine (<i>mallikā</i>), GVDB: 190 MW: 453 says Jasminium sambac. GVDB: 190 also suggest screwpine (<i>ketaka</i>) : 363
'alas, alas' (?) (<i>hālāhala</i>) unknown. See Cf. <i>Sodhalanighantu</i> p.43 (sub <i>bola</i>) = <i>stomaka</i> = Indian aconite (<i>vatsanābha</i>) : 160, 162	
Alexandrian laurel (<i>punnāga</i>) Calophyllum inophyllum, L. See AVS: 1, 338, NK: 1, #425: 203, 222	
amaranth (<i>taṇḍulīya</i>) see amaranth (<i>taṇḍulīyaka</i>) : 204	

- Arabian jasmine (*mallikā*) *Jasminum sambac* (L.) Aiton, **GVDB**: 300 : **362**
- Arabian jasmine (*ṭṛṇaśūlya*) probably an alternative pronunciation for **Arabian jasmin** (*ṭṛṇaśūnya*), **GVDB**: 190 : **222**
- arjun (*arjuna*) *Terminalia arjuna* (Roxb.) Wight & Arn., see **HK**: 738, **GVDB**: 61 : **50, 88, 219, 244, 363**
- arjun tree (*kakubha*) *Terminalia arjuna* (Roxb.) Wight & Arn., **GVDB**: 61. But these authors also point out that this plant is sometimes cited together with arjun (*arjuna*), so it may be **bluebell barleria** (*ārtagala*) (see **GVDB**: 39 for extensive discussion) : **243, 244**
- Asoka tree (*aśoka*) *Saraca indica* Linn., **GVDB**: 26 : **117, 119, 204, 222, 254, 374**
- atis root (*śṛṅgīviṣa*) *Aconitum heterophyllum*, Wall. ex Royle. See **AVS**: 1, 42, **NK**: 1, #39: **160, 162**
- axlewood (*dhava*) *Anogeissus latifolia* (Roxb. ex DC.) Wall. ex Guill & Perr. See **AVS**: 1, 163 f, **Chopra**: 20 : **50, 87, 173, 219, 222**
- bamboo (*vamśa*) *Bambusa arundinacea* (Retz.) Willd. : **244**
- bamboo leaves (*veṇupatrikā*) *Bambusa bambos*, Druce, **NK**: 1, #307. But **GVDB**: 380 argues for *Setaria glauca* Beauv. : **151**
- banyan (*nyagrodha*) *Ficus benghalensis*, L., **GVDB**: 356, **HK**: 748 : **363**
- banyan (*vaṭa*) see **banyan** (*nyagrodha*) : **88, 91, 244**
- barley (*yava*) *Hordeum vulgare*, L. See **HK**: 752 : **127**
- barley ash (*yavakṣāra*) The preparation method is described at **GVDB**: 327 : **130, 363**
- barley ash (*yavanāla*) see **barley ash** (*yavakṣāra*), **GVDB**: 327 : **213**
- bayberry (*katphala*) *M. esculenta* Buch.-Ham. ex D.Don, which is native to the Himalaya, from Kashmir to Assam, as well as S. China and SE Asia. *Nageia nagi* (Thunb.) Kuntze (syn of *Myrica nagi* Thunb.), as suggested by T. B. Singh and Chunekar (**GVDB**: 66), is native to East Asia, not India : **204**
- bearded premna (*vasuka*) *Premna barbata* Wall. (← *vasuhattā*), according to Cakrapāṇidatta. See the discussion by T. B. Singh and Chunekar (**GVDB**: 362–363), where other candidate species such as *Osmanthus*, *Calotropis*, and *Trianthema* are discussed. T. B. Singh and Chunekar (**GVDB**: 363) note that when *vasuka* is mentioned with *vasira*, two varieties of salt are often meant (see *vasukavasirā*). See also **NK**: #1299 who identifies it with *Indigofera enneaphylla*, Linn. (Birdsville Indigo), apparently without controversy : **87**
- beautyberry (*śyāmā*) *Callicarpa macrophylla*, Vahl. See **AVS**: 1, 334, **NK**: 1, #420 : **122, 149, 151, 205**
- beggarweed (*amśumatī*) see **beggarweed** (*śālaparnī*), **GVDB**: 1, mentioning that the pair of these refers to **beggarweed** and ?? : **167, 214**
- beggarweed (*sthirā*) see **beggarweed** (*śālaparnī*), **GVDB**: 458 : **214, 243**
- beggarweed (*vidārigandhā*) see **beggarweed** (*śālaparnī*) : **59, 127, 237, 375**
- beggarweed (*śālaparnī*) *Desmodium gangeticum* (L.) DC. See **Dymock**: 1, 428, **GJM1**: 602, **NK**: 1, #1192; **ADPS**: 382, 414 and **AVS**: 2, 319, 4.366 are confusing : **363**
- beleric myrobalan (*bibhītaka*) *Terminalia bellirica* Roxb. One of the components of the three myrobalans (*triphalā*) **GVDB**: 274, 196 : **383**
- Bengal quince (*bilva*) *Aegle marmelos* (L.) Corr. See **AVS**: 1, 62, **Chevillard**: 161, **NK**: 1, #62, i(**MW**: 732a) : **87, 117, 119, 124, 205, 364, 369, 382**

- big poison (?) (*mahāviṣa*) unknown. : 160, 162
- big thorn apple (?) (*mahākarambha*) Perhaps *Datura metel*, L.? See **thorn apple** (*karambha*) : 159
- bitter gourd (*paṭolī*) see **pointed gourd** (*paṭola*), cite [233]gvdb : 204
- bitumen (*adrija*) → *śilājīt*. A tar-like, black, resinous rock exudate. See **Mahākośa**: 1, 21 : 185
- black Bengal quince (*kṛṣṇaśrīphalikā*) GVDB: 412, on *śrīphala*, synonym of **Bengal quince** (*bilva*) fruit : 370
- black creeper (*kālānusārī*) *Ichnocarpus frutescens* R. Br. or *Cryptolepis buchanani* Roemer & Schultes. Probably a synonym for *kṛṣṇasāriṇīvā* (GVDB: 94–95). I. *frutescens* has dark, rust-colored stems, so has been preferred here. However, *Cryptolepis grandiflora*, Wight, also has black stems. Synonym of *kālānusāriṇī*, *kālānusāriṇīvā*. *kālānusārya* may be a synonym of *tagara*, itself hard to identify : 203, 364
- black creeper (*pālindī*) *Ichnocarpus frutescens*, (L.) R.Br. or *Cryptolepis buchanani*, Roemer & Schultes. See **AVS**: 3, 141, 145, 203, **NK**: 1, #1283, 1210, **ADPS**: 434. Dalhanā on SS 5.1.82 identified *pālindī* with *trivṛt* (*turpeth*) and T. B. Singh and Chunekar (GVDB: 246) supported this as a usual identification : 151, 154, 167, 204
- black nightshade (*kākamācī*) *Solanum nigrum*, Linn., GVDB: 86–87. May also be the less poisonous *S. dulcamara*, "bittersweet nightshade," K&B: 1, 889–892 : 215, 221, 367
- black pepper (*marica*) *Piper nigrum*, L. See **ADPS**: 294, **NK**: 1, #1929. Known to ancient Greek authors (Ball 1888: 341) : 128, 220, 254, 369, 383
- black sarsaparilla (*kālānusāriṇīvā*) see **Indian sarsaparilla** (*sāriṇīvā*); see also **black creeper** (*kālānusārī*). Problems about identifying this plant are discussed at GVDB: 94–95 and GVDB: 429–431 : 222
- blackboard tree (*saptachada*) *Alstonia scholaris* R. Br. GVDB: 420 : 150, 364
- blackboard tree (*saptaparna*) see **blackboard tree** (*saptachada*) : 220
- blackbuck (*hariṇa*) *Antilope cervicapra*, L. See **BIA**: 270 **IW**: 95, 165, *et passim* : 154
- blue water-lily (*utpalā*) *Nymphaea stellata*, Willd. See **GJM1**: 528, **IGP** 790; **Dutt**: 110, **NK**: 1, #1726 : 41, 108, 149, 167, 222, 254, 255, 368
- bluebell barleria (*kuravaka*) see **bluebell barleria** (*kuruvaka*) : 205
- bluebell barleria (*kuruvaka*) Or *kurubaka*. T. B. Singh and Chunekar (GVDB: 108) notes that this is sometimes listed as a type of rice, as at *Suśrutasamhitā* 1.46.8 (Su 1938: 215). Further discussion at GVDB: 447–448, sub **bluebell barleria** (*saireyaka*), where *kurubaka* is said to be identifiable with *baka* and *būka*. T. B. Singh and Chunekar (GVDB) finally propose a red-flowering Rhododendron, admitting that this is a novel suggestion : 159, 364
- bluebell barleria (*sahā*) see **bluebell barleria** (*sahācara*), GVDB: 428 : 126, 213
- bluebell barleria (*sahācara*) see **bluebell barleria** (*saireyaka*), GVDB: 427 : 364
- bluebell barleria (*saireyaka*) A Barleria, perhaps *B. cristata* L. that is particularly well-known in South India. Four kinds are distinguished in ayurveda, based on the colour of their flowers. See substantive discussion at GVDB: 444–449 : 364
- bluebell barleria (*ārtagala*) A variety of **bluebell barleria** (*saireyaka*), q.v.; GVDB: 39 argue for *Xanthium strumarium* L., "clotbur" and for *Acanthus ilicifolius* Linn., which is not native to S. Asia. See also GVDB: 446 : 363

- bread flower (*āsphota*) GVDB: 41 argue for *Vallaris solanacea* (Roth ex Roem. & Schult.) Kuntze. This has the right distribution in S. Asia POWO: s.v.: 215
- bull's head (*gokṣura*) *Tribulus terrestris* L. GVDB: 144–145, 193. A component of lesser five roots : 365
- bull's head (*trikāṇṭaka*) → bull's head (*gokṣura*) GVDB: 193. A component of lesser five roots : 375
- bulrush (*kaśeru*) "Two species, *Scirpus kysoor* Roxb., and *S. grossus* Linn. f., are used" GVDB: 85. Also *kaśeruka* and *kaseru* : 122, 123, 126
- calabash gourd (*kūṣmāṇḍa*) → *puṣpaphala*. *Beninkasa hispida*, (Thunb.) Cogn. See AVS: 2, 1127; cf. AVS: 1, 261: 369
- camphor (*karpūra*) → *sītaśīva*. *Cinnamomum camphora*, (L.) Sieb. See IGP 253: 365
- camphor (*sītaśīva*) rarely mentioned. Taken as rock salt (*saindhava*) or shami tree (*śamī*), etc., by some authors, GVDB: 402. Dalhaṇa on 5.6.18 (Su 1938: 581) glossed it as camphor (*karpūra*), but noticed other interpretations : 222
- cardamom (*elā*) *Elettaria cardamomum*, Maton. See AVS: 2, 360, NK: 1, #924, Potter_{rev}: 66: 116, 117, 167, 175, 203, 204, 212, 222, 243, 365, 383
- cardamom (*kṣudrīlā*) see cardamom (*elā*), GVDB: 128. This expression, "small cardamom" is only used at Suśrutasamhitā Kalpasthāna 6.17: 222
- caray cheddie (*viśvadevā*) → *gāṅgerukī* *Canthium parviflorum*, Lam. See AVS: 1, 366 f. Or *Sida rhombifolia* Linn. (GVDB: 372, 444 ff. et passim) : 91
- castor oil tree (*gandharvahasta*) see castor-oil (*eraṇḍa*). GVDB: 135, K&B: 3, 2277: 55, 119
- castor-oil (*eraṇḍa*) *Ricinus communis*, L. See NK: 1, #2145, Chopra: 214: 60, 365
- castor-oil tree (*vardhamāna*) see castor-oil (*eraṇḍa*), GVDB: 361: 220
- catechu (*khadira*) *Senegalia catechu* (L.f.) P. J. Hurter & Mabb = *Acacia catechu* Willd. GVDB: 129–130: 88
- certain minerals (*tārāvitāra*) Unknown. It is not even certain that these are minerals. The variant reading in the vulgate, *tārah sutārah* was glossed by Dalhaṇa on 5.3.14 (Su 1938: 568) as follows *tāro rūpyam*, *sutārah pāradah*, "tāra means silver; sutāra means mercury." : 174
- chaff (*kāṇḍana*) The word *kāṇḍana* is not found in dictionaries; *kāṇḍana* is threshing, separating the chaff from the grain in a mortar. Cf. Hemādri's *Caturvargacintāmaṇi* (PWK: 2, 8) (Siromani 1873: 1, 138: 21, citing the *Vāyupurāṇa*) : 43, 380
- champak (*campaka*) *Magnolia champaca* (L.) Baill. ex Pierre, GVDB: 154: 222
- chebulic myrobalan (*harītakī*) *Terminalia chebula* Retz. GVDB: 466: 125, 150, 222, 383
- cherry (*elavālu*) *Prunus cerasus*, L. See GVDB: 58 for a thoughtful discussion NK: 1, #2037. : 167, 222, 365
- cherry (*elavāluka*) see cherry (*elavālu*) : 220
- chinaberry tree (*māhānimba*) *Melia azedarach* L., GVDB: 302: 371
- chir pine (*sarala*) *Pinus roxburghii*, Sarg. GVDB: 423: 87, 126, 220, 222
- cinnamon (*tvac*) *Cinnamomum cassia*, Blume. See NK: 1, #579: 214, 222, 243, 244, 365, 383
- cinnamon (*tvak*) see cinnamon (*tvac*) : 204
- cinnamon (*varāṅga*) see cinnamon (*tvac*), GVDB: 360: 220
- citron (*mātulūṅga*) *Citrus medica*, Linn. GVDB: 276, 306. Also spelled *mātulīṅga*, *mātulaṅga*, *mātulāṅga* : 87, 124, 129, 130, 204, 238
- cluster fig (*udumbara*) *Ficus racemosa*, L. See ADPS: 487: 219
- cobra's saffron (*nāgapuṣpa*) → *nāgakeśara*. Mesua ferrea, L. See NK: 1, #1595,

- GVDB: 220 : 167**
- cogongrass (*balvaja*) possibly *Imperata cylindrica* (L.) P. Beauv. **GVDB: 271**
describe the debate about this identity : **244**
- coleus (*hrīvera*) *Coleus vettiveroides* K.C.Jacob, **GVDB: 474**, where it is stated that this is a synonym for **scented pavonia** (*bālaka*), also a disputed plant. See **POWO: https://powo.science.kew.org/taxon/446211-1**. Some say this is *Pavonia odorata*, Willd., "scented pavonia" : **244, 381**
- colocynth (*indravāruṇī*) *Citrullus colocynthis* (L.) Schrad., **GVDB: 46**. The two varieties of this plant are discussed by (**ADPS: 180–183**); the first is agreed to be colocynth, the second is debated but is likely to be a **Curcubitaceae: 220, 222, 366**
- colocynth (*mṛgādanī*) see **colocynth (*indravāruṇī*)** **GVDB: 46, 318 : 204**
- common smilax (*śvadāniṣṭra*) *Smilax aspera* L., **GVDB: 414 : 87**
- convolvulus (*lakṣmaṇā*) Sivarajan and Balachandran (**ADPS: 273–275**) suggest *Ipomoea marginata* (Desr.) Verdc. or *I. obscura* (Linn.) **AVS: 3, 237–238** suggests *Ipomoea sepiaria* Roxb. (looks like a little boy (*putraka*), and generates a boy (*putrajanānī*), according to the *Bhāvaprakāśa*). Sivarajan and Balachandran (**ADPS: 273–275**) firmly reject *Mandragora officinalis* which is European; but possible consideration could be given to *Mandragora caulescens* C.B.Clarke, a variant that is known in South Asia. Cf. **GVDB: 346–347**. **NK: #1546, #2323** suggests *Mandragora officinalis*, Linn., known as *putrada* : **91**
- coriander (*dhānyaka*) *Coriandrum sativum* L., **GVDB: 213 : 366**
- coriander (*kustumburya*) see **coriander (*dhānyaka*)**, **GVDB: 113 : 222**
- corky coral tree (*pāribhadra*) *Erythrina suberosa* Roxb. See **GVDB: 245 : 173, 366**
- corky coral tree (*pāribhadra*) see **corky coral tree (*pāribhadra*)** : **119, 219**
- costus (*kuṣṭha*) *Dolomiaea costus* (Falc.) Kasana & A. K. Pandey. See **GVDB: 112, NK: 1, #2239**. Known to ancient Greek authors (Ball **1888: 345**) : **116, 117, 124, 151, 167, 175, 203, 204, 212, 220, 222, 243, 244**
- cottony jujube (*kākolī*) *Ziziphus mauritanica*, Lam. See **IGP: 1233, NK: 1, #2663; IGP 1233**. Cf. **NK: 1, #1170 : 115, 123, 124, 200**
- country mallow (*atibalā*) *Abutilon indicum*, (L.) Sweet, but may be other kinds of mallow, e.g., *Sida rhombifolia*, L.. See **NK: 1, #11, IGP: 1080, NK: 1, #2300, ADPS: 71, 77 : 59, 123, 126, 312**
- country mallow (*sahadevā*) → *balā* (**GVDB: 428**). Contains ephedrine : **91, 126**
- country sarsaparilla (*anantā*) *Hemidesmus indicus*, (L.) R. Br. See **ADPS: 434, AVS: 3, 141–145, NK: 1, #1210**. But see **GVDB: 13** for complications that may suggest that it is to be equated with *sārivā*, which may sometimes be *Cryptolepis* or *Ichnocarpus fruitescens* R. Rr. (**GVDB: 429–431**) : **59, 159, 167, 174**
- crape jasmine (*tagara*) *Tabernaemontana divaricata* (L.) R.Br. ex Roem. & Schultes. See **GJM1: 557, AVS: 5, 232**. Synonym of *nata*. But some say *Valeriana jatamansi*, Jones. See **GVDB: 173–174** for discussion (and charming comments on brain-liquid testing). Some say *tagara* is Indian rose-bay or Indian valerian or a *Nymphaeoides* (see **water snowflake (?)** (*kumudavatī*)), but there remain many

- historical questions about the ancient and regional identities of this plant See, e.g., AVS: 5, 334, 345. See also IGP: 1147, K&B: 1, 796, #758: 116, 117, 124, 151, 167, 203, 222, 370, 385
- crimson trumpet-flower tree (*pāṭalā*) *Stereospermum chelonides*, (L. f.) A. DC. See GJM1: 573, AVS: 5, 192 ff, ADPS: 362 f, AVS: 3, 1848 f, IGP 1120, Dymock: 3, 20 ff: 369, 385
- croton tree (*nāgadantī*) *Croton persimilis* Müll.Arg., GVDB: 222: 220, 367, 380
- croton tree (*nāgavinnā*) *Croton persimilis* Müll.Arg. GVDB: 222 I have taken this as croton tree (*nāgadantī*) because of context in *Suśrutasaṃhitā* Kalpasthāna 5: 205
- crow (?) (*kākāz*) an unidentified poisonous plant apparently called "crow." T. B. Singh and Chunekar (GVDB: 86) note that several drugs named after the crow are unidentifiable. Black nightshade, (*kākamācī*) is toxic, but this is a stretch: 159
- datura (*dhattūra*) *Datura metel*, L. See AVS: 2, 305 (cf. *Abhidhānamāñjarī*), NK: 1, #796 ff. Potter_{rev}: 292 f, ADPS: 132: 56, 367
- datura (*dhuttūrakā*) see datura (*dhattūra*): 217
- deodar (*bhadradāru*) *Cedrus deodara*, (Roxb.ex D.Don) G. Don. See AVS 41, NK: 1, #516: 50, 123, 127, 167, 220
- deodar (*devadāru*) *Cedrus deodara* (Roxb.) Loud. GVDB: 206–207: 87, 124, 222, 312, 367
- deodar (*suradāru*) see deodar (*devadāru*): 203
- devil's dung (*hiṅgu*) *Ferula foetida* Regel., GVDB: 471–472: 88, 89, 203
- dried ginger (*nāgara*) → dried ginger (*śunṭhī*) GVDB: 221–222: 89, 203
- dried ginger (*śunṭhī*) *Zingiber officinale*, Roscoe. See ADPS: 50, NK: 1, #2658, AVS: 5, 435, IGP: 1232: 122, 367, 383
- dried meat (*vallūra*) MW: 929, Mahākośa: 1, 730. The term is used, rarely, in both the CS (1.5.10) and SS (1.13, 16, 6.42.75–76). It is a Dravidian loanword and occurs in the *Arthaśāstra* etc. (KEWA: 3, 167): 42
- drum-giver (?) (*lambadarā*) Unknown; cf. GVDB: 348: 159
- durva grass (*dūrvā*) *Cynodon dactylon* (L.) Pers., GVDB: 205, where some questions are raised about white and green varietals: 243, 371, 381
- elixir salve (*rasāñjana*) cf. Indian barberry (*añjana*): 50, 60, 372
- embelia (*viḍāṅga*) *Embelia ribes*, Burm. f. See ADPS: 507, AVS: 2, 368, NK: 1, #929, Potter_{rev}: 113: 50, 87, 117, 167, 203, 204, 220
- emblic myrobalan (*āmalaka*) *Phyllanthus emblica*, L. See AVS: 4, 256: 87, 125, 126, 241, 254, 383
- emetic nut (*karaghāṭa*) Probably a synonym for *karahāṭa* (emetic nut), q.v., GVDB: 74: 367
- emetic nut (*karaghāṭaka*) see emetic nut (*karaghāṭa*): 160, 219
- emetic nut (*karahāṭa*) *Randia dumetorum*, Lamk. See GVDB: 291–292 and NK: 1, #2091. T. B. Singh and Chunekar (GVDB: 74, 77–78) noted that it may be a synonym for *karaghāṭa*, emetic nut, and pointed rather to *Gardenia turgida* Roxb. on the basis of local knowledge in U. P.: 367
- emetic nut (?) (*karatā*) Not in GVDB. Cf. perhaps *karahāṭa* (emetic nut): 158
- emetic nut (*madana*) *Randia dumetorum*, Lamk. See NK: 1, #2091: 150, 314
- false daisy (*bhṛṅga*) *Eclipta prostrata* (L.) L. See GVDB: 288: 87
- false daisy (*subhaṅgurā*) (su)bhaṅgura = bhṛṅga? *Eclipta prostrata* (L.) L. See GVDB: 288: 158
- fermented rice-water (*dhānyāmla*) → *kāñjī*, *kāñjikā*, *sauvīra*. GVDB: 458, NK: 2,

- appendix VI, #18: 57, 58
- fern (*ajaruhā*) Nephrodium species
GVDB: 7, uncertain. Perhaps *Christella dentata* (Forssk.) Brownsey & Jermy, which is reported to have folk applications against skin diseases in India : 153
- fire-flame bush (*dhātakī*) Woodfordia fruticosa (L.) Kurz. See **AVS:** 5, 412, **NK:** 1, #2626. Known to ancient Greek authors (Ball 1888: 344) : 88, 150
- five roots (*pañcamūla*) Described at *Suśrutasamhitā* 1.38.66–69 (**Su** 1938: 169). There are two *pañcamūlas*, the *laghupañcamūla* (the lesser five roots) and *brhatpañcamūla* (greater five roots), with differing properties. Combined they are called *daśamūla* (ten roots). See also *Mahākośa*: 1, 468: 87
- flame-of-the-forest (*kimśuka*) see flame-of-the-forest (*palāśa*), **GVDB:** 97–98 : 212
- flame-of-the-forest (*palāśa*) *Butea monosperma* (Lam.) Taub. **GVDB:** 241. *pālāśa* in some sources : 88, 119, 368
- flax (*atasī*) *Linum usitatissimum*, L. See **NK#1495:** 123
- foxtail millet (*priyaṅgu*) also *śyāmā*. *Setaria italica* (L.) P. Beauvois **GVDB:** 263–264, **GJM1:** 576. The most widely-grown species of millet in Asia. Some say *Callicarpa macrophylla*, Vahl. See **AVS:** 1, 334, **NK:** 1, #420. The fruits of *S. italica* and *C. macrophylla* are similar. See also **GVDB:** 413, where the authors suggest that *priyaṅgu* is meant by *gondī* or *gondanī* and may have originally been called *gundrabīja* : 50, 167, 175, 203, 204, 244, 254, 368
- foxtail millet (*priyaṅgu*) see foxtail millet (*priyaṅgu*) : 222
- fragrant lotus (*sauvandhika*) A type of white water-lily (*kumuda*) or blue water-lily (*utpalā*), **GVDB:** 457 : 41
- fruit of the marking-nut (*āruṣkara*) see marking-nut tree (*aruṣkara*). “āruṣkara = aruṣkara phala” **ADPS:** 23; see also **MW:** 151 : 204
- gajipipul (*gajapippalī*) **GVDB:** 469, 132, syn. *hastipippalī*. A controversial plant, but the conjecture of T. B. Singh and Chunekar that *Scindapsus officinalis* (Roxb.) Schott is the more ancient identity is accepted here : 368, 390
- gajipipul (*hastipippalī*) see gajipipul (*gajapippalī*), **GVDB:** 469, 132 : 220
- galangal (*galaṅgala*) *Alpinia galanga* (L.) Sw. Identified with grey orchid in Kerala (**ADPS:** 398). The name is borrowed from Chinese, perhaps via Persian or Arabic (**Peter:** 2, 304), and the name does not occur in early āyurvedic literature (**GVDB:** : 369)
- galls (?) (*karkaṭa*) almost impossible to identify with certainty, **GVDB:** 78–80. Perhaps *Rhus succedanea*, L. See **NK:** 1, #2136 : 160
- garjan oil tree (*aśvakarṇa*) *Dipterocarpus turbinatus* Gaertn. f. See **GVDB:** 28, **Chopra:** 100 : 173, 219, 222
- giant potato (*kṣīravidārī*) possibly → *kṣīraśukla*. *Ipomoea mauritiana*, Jacq. See **ADPS:** 510, **AVS:** 3, 222, **AVS:** 3, 1717 ff: 123, 373, 377, 378, 380
- ginger (*mahaūṣadha*) *Zingiber officinale*, Roscoe. See **ADPS:** 50, **NK:** 1, #2658, **IGP:** 1232 : 154
- gold (*hema*) gold : 167
- gold and sarsaparilla (*surendragopa*) Unknown. Ḑalhaṇa on 5.3.15 (**Su** 1938: 568) glossed *surendra* as “gold” and *gopā* as “Indian sarsaparilla.” He also noted other opinions that *surendra* was “Tellicherry bark” : 174
- golden shower tree (*rājadruma*) see golden shower tree (*āragvadha*) : 173
- golden shower tree (*rājavṛkṣa*) see golden shower tree (*āragvadha*) : 87

golden shower tree (*āragvadha*) Cassia fistula L. **GVDB**: 37–38, **ADPS**: 48, **AVS**: 2, 11 ff, **AVS**: 2, 854, **IGP**: 215. Known to ancient Greek authors (Ball 1888: 343). The plant has many synonyms : 125, 202, 212, 214, 368

gourd (*alābu*) *Lagenaria siceraria* Standl. **GVDB**: 25. Some say *Lagenaria vulgaris*, Seringe (**NK**: 1, #1419) but this is not appropriate for blood-letting : 37, 38, 150, 200

gourd (*vallīja*) see gourd (*vallīja*) : 160

gourd (*vallīja*) This is a guess. According to some lexical sources, syn. for **black pepper** (*marica*) (**MW**: 929). See **NK**: 1, #1929. T. B. Singh and Chunekar (**GVDB**: 362) note that *vallīphala* may be **calabash gourd** (*kūṣmāṇḍa*), which I follow. The related **spiny bitter gourd** has poisonous seeds, but not flowers. Commenting on *Bṛhatśāṁhitā* 8.13ab and 16.24ab, Bhaṭṭotpala glossed it as *mudgādi*, "mung beans etc." : 369

grapes (*drākṣā*) *Vitis vinifera* L. **GVDB**: 208–209 : 204

greater five roots (*bṛhatpañcamūla*) Described at *Suśrutasāṁhitā* 1.38.68–69 (*Su* 1938: 169). Consists of **Bengal quince**, **migraine tree**, **Indian trumpet tree**, **crimson trumpet-flower tree**, and **white teak** : 368, 374, 383

green gram (*māṣa*) *Vigna radiata* (L.) R. Wilcz. See **ADPS**: 296, **IGP** 1204 : 50, 123, 313

grey orchid (*rāsnā*) *Vanda tessellata* (Roxb.) Hook. ex G.Don, usually. But *Pluchea lanceolata*, Oliver & Hiern, is a more common identification in Punjab and Gujarat (**GVDB**: 337–338); *Alpinia galanga* (L.) Sw. is more common in Kerala (**ADPS**: 398; Peter: 2, 303–318), though this is usually identified with **galangal**. As all authorities note, the identification of this plant is debated. Sivarajan and Balachandran

(**ADPS**: 398–401) note that sources describe it as having leaves like cardamom and sweet-smelling roots and that "there is great confusion with regard to the identity of the drug." : 87, 122, 124, 203, 243, 368

gummy gardenia (*pr̥thvikā*) ← *hīngupatrikā*, *Gardenia gummiifera* L.f., **GVDB**: 257, q.v. for discussion : 204, 222

hairy bergenia (*pāṣāṇabheda*) *Bergenia ligulata* (Wall.) Engl. **GVDB**: 246–247 : 87

hairy-fruited eggplant (*br̥hatī*) *Solanum lasiocarpum* Dunal. (syn. *S. ferox*, L. & *S. indicum* L.), **GVDB**: 277–278, who discuss the two kinds of *br̥hatī*, which may be large and small eggplants (*Solanum melongena* L.). See also **ADPS**: 100, **NK**: 1, #2329, **AVS**: 5, 151, **IHR**: 429–430 : 119, 125, 166, 167, 213, 214, 375

halfa grass (*darbha*) *Desmostachya bipinnata* Stapf. **GVDB**: 201. Synonym of *kuśa* : 90, 123

halfa grass (*kuśa*) *Desmostachya bipinnata*, (L.) Stapf. **GVDB**: 111, **AVS**: 2, 326 : 123, 197, 220, 244

hare foot uraria (*kroṣṭakamekhalā*) see **hare foot uraria** (*pr̥śniparnī*) *Mahākośa*: 1, 246. *kroṣṭaka* can mean "jackal" *śṛgāla*, as in *śṛgālavinna*, "a kind of *pr̥śnaparnī*" *Mahākośa*: 1, 839 : 204

hare foot uraria (*pr̥thakparṇī*) → **hare foot uraria** (*pr̥śniparnī*) and **rajmahal hemp** (*mūrvā*) **GVDB**: 257. A component of **lesser five roots** : 125, 375

hare foot uraria (*pr̥śniparnī*) → *sahā?* Uraria lagopoides, DC. and *U. picta* Desv. See **GVDB**: 257–258, **GJM1**: 577, **Dymock**: 1, 426, **AVS**: 1, 750 ff, **NK**: 1, #2542; **ADPS**: 382, **AVS**: 2, 319 and **AVS**: 4, 366 are confusing. Also called *pr̥thakparṇī*. A component of **lesser five roots** : 122, 123, 369

heart-leaf sida (*balā*) *Sida cordifolia*, Linn.

- See ADPS: 71, NK: 1, #2297: 59, 123, 126, 128, 167, 312
- heart-leaved moonseed (*amṛtā*) *Tinospora cordifolia*(Thunb.) Miers., synonym of *guḍūcī*. See ADPS: 38, NK: 1, #2472, 624, Dastur #229, GVDB: 17–18. Also *amṛta*, m.: 151, 166, 214, 215
- heart-leaved moonseed (*guḍūcī*) *Tinospora cordifolia*, (Thunb.) Miers. ADPS: 38, NK: 1, #2472 & #624, Dastur #229, GVDB: 141–142. Also identified as *Cocculus cordifolius* DC. by Nadkarni (NK) and others (see also the [Tropicos botanical database](#)). Also commonly called *amṛtā*: 87, 124
- heart-leaved moonseed (*somavallī*) *Tinospora cordifolia* (Thunb.) Miers. GVDB: 456. Likely, but uncertain: 151
- heart-leaved moonseed creeper (*amṛtavalli*) See *amṛtā*: 312
- hedge caper (*himṣrā*) *Capparis sepiaria* L., GVDB: 471, IHR: 124, K&B: 1, 109: 370
- hedge caper (*kākādanī*) synonym of [hedge caper](#) (*himṣrā*), GVDB: 88, 471, IHR: 124, K&B: 1, 109. This name is not used in the *Carakasaṃhitā*. At 5.7.31 (Su 1938: 583), Ḏalhaṇa glossed *kādādanī* as [black Bengal quince](#) (*kṛṣṇaśrīphalikā*). GVDB: vi, 471 note that they have identified *kākādanī* as *Cardiospermum halicacabum* L. “balloonvine”: 215
- henna (*madayantikā*) *Lawsonia inermis*, L. See AVS: 3, 303, NK: 1, #1448, Potter_{rev}: 151: 152
- hibiscus (?) (*ambaṣṭhā*) possibly *Hibiscus rosa-sinensis* L.? T. B. Singh and Chunekar (GVDB: 18–19) discuss the confusions surrounding the identity of this plant, and especially between this plant and [velvet-leaf](#) (*pāṭhā*); they must be different items. T. B. Singh and Chunekar propose that *ambaṣṭhā* is either the fruit of *Hibiscus* or the galls of a *Quercus* or *Tamarix* species.
- According to Meulenbeld 1974b: 599, *vanakārpāsi* is more likely a name for a hibiscus: 205
- Himalayan birch (*bhūja*) see [Himalayan birch](#) (*bhūrja*): 220
- Himalayan birch (*bhūrja*) *Betula utilis* D. Don, GVDB: 287: 370
- Himalayan mayapple (*vakra*) *Podophyllum hexandrum*, Royle (NK: #1971), K&B: 1, 68. But perhaps a synonym of [crape jasmine](#) (*tagara, nata* q.v. (GVDB: 354)): 175, 203, 204, 214, 215, 243
- Himalayan yew (*sthauneyā*) see [Himalayan yew](#) (*sthauneyaka*): 222
- Himalayan yew (*sthauneyaka*) T. B. Singh and Chunekar (GVDB: 458–459) suggested *Taxus baccata* L., but that tree is endemic to the Mediterraenean and not South Asia. Poudel et al. 2013 show that *T. contorta* Griff., *T. mairei* (Lemée & Lév.) and *T. wallichiana* Zucc. are distributed in the Hindu Kush - Himalaya region. The Nepalese name *Thuneraka* is etymologically cognate with the Sanskrit name. *T. contorta* is of medicinal importance, so its common name is used here: 203, 370
- hog plum (*āmrātaka*) *Spondias pinnata* (L.f.) Kurz, GVDB: 37, ADPS: 36–37. A member of the *ambaṣṭhādi* group: 108, 244
- hogweed (*punarnavā*) *Boerhaavia diffusa*, L. See ADPS: 387, AVS: 1, 281, NK: 1, #363: 125, 152, 166, 205, 370, 371
- hogweed (*punarnavā*) see [hogweed](#) (*punarnavā*): 214
- hogweed (*punarnavā*) see [hogweed](#) (*punarnavā*): 217
- hogweed (*varṣābhū*) see [hogweed](#) (*varṣābhū*): 214
- hogweed (*varṣābhū*) see [hogweed](#) (*punarnavā*). According to GVDB: 361, it is *Trianthema portulacastrum* L., but this is mainly known from Africa and

- the new world. The name is often considered a synonym for **hogweed** (*punarnavā*) : 370
- Holostemma creeper (*jīvantī*) → *sūryavallī*? Holostemma ada-kodien, Schultes. See ADPS: 195, AVS: 3, 167, 169, NK: 1, #1242 : 126, 378
- holy basil (*surasa*) Ocimum tenuiflorum, Linn. GVDB: 438–439. Not always distinguished from *O. basilicum* L., Watt_{Dict}: 5, 443 : 205, 238
- honey (*kṣaudra*) Eight varieties of honey are described in the *Suśrutasamhitā* (NK: 2, Appendix 192). *Kṣaudra* is the product of a small bee of tawny colour, called *kṣudra* : 131, 154, 254, 255
- horned pondweed (*śaivāla*) also *śaivāla*, *śevara*. Zannichellia palustris L. The uncertainties of this identification are discussed by T. B. Singh and Chunekar (GVDB: 409). Sometimes identified with **durva grass** (*dūrvā*) (GVDB: 409). Identified as Ceratophyllum demersum Linn. (“hornwort”) by AVS: 2, 56–57x : 124, 371, 379
- hornwort (*jalaśūka*) → *jalanīlikā*. Ceratophyllum demersum, L. See AVS: 2, 56, IGP: 232. T. B. Singh and Chunekar (GVDB: 166) suggest **horned pondweed**. Dalhaṇa noted on 1.16.19 (Su 1938: 79) that some people interpret it as a poisonous, hairy, air-breathing, underwater creature : 59
- horse gram (*kaulattha*) See **horse gram** (*kulattha*) : 198
- horse gram (*kulattha*) Macrotyloma uniflorum (Lam.) Verdcourt, syn. Dolichos biflorus, L., D. uniflorus, Lam., GVDB: 109, POWO: sub Macrotyloma uniflorum : 127, 128, 202, 223, 371
- horseradish tree (*akṣīva*) see **horseradish tree** (*śigru*). GVDB: 2–3, 27 discusses the contradictions in identifying this plant. I am adopting the most common

traditional identification with *śigru* (Meulenbeld 2009: 77, note 12), although **chinaberry tree** (*mahānimba*) is also likely. The suggestion by T. B. Singh and Chunekar about the name being an erroneous reading for *akṣīra*[*aśmantaka*] cannot stand since the name occurs in a ninth-century *Suśrutasamhitā* manuscript. This occurrence in the *Suśrutasamhitā* was not known to the definitive study by Meulenbeld (2009: 77–78) : 245

horseradish tree (*madhukaśigru*) See **horseradish tree** (*śigru*), GVDB: 398–399 : 219

horseradish tree (*muruṅgī*) see **horseradish tree** (*śigru*), (GVDB: 311) : 204

horseradish tree (*śigru*) Moringa oleifera Lam. See IGP: 759, GJM1: 603, Dymock: 1, 396, GVDB: 398–399, K&B: 1, 396–399, #336. The definitive study is that by Meulenbeld (2009), who suggested that the name may have denoted pungent, pro-pitta plants, while Spiers (2022) took this further, suggesting that “*śigru*” may historically have referred more generally to plants with a sharp taste, perhaps including garlic : 124, 125, 371

hyacinth beans (*nispāva*) Lablab purpureus (L.) Sweet (1826) GVDB: 228 : 113

Indian aconite (*ativiśā*) Aconitum ferox, Wall. ex Ser., or perhaps A. heterophyllum Wall. ex Royle, GVDB: 12, NK: 1, #39. Also called “*atis roots*” or just *viśā*. A. ferox is also called aconite, monkshood, wolfsbane, etc. A. ferox is extremely poisonous. See also Indian aconite (*vatsanābha*). It grows especially in mountainous Sikkim : 114, 152, 154, 175, 220, 222, 372

Indian aconite (*vatsanābha*) Aconitum ferox, Wall. ex Ser. Cf. AVS: 1, 47 (A. Napellus, L., which is European and now taxonomically separated from A.

- ferox), **NK**: 1, #42, **Potter_{rev}**: 4 f. A. chasmanthum Stapf ex Holmes according to **GVDB**: 357, but that is distributed in Pakistan, Afghanistan and Tibet, Mongolia and Siberia. "vatsanābha" occurs in only once in the *Carakasamhitā* and thrice in the *Suśrutasamhitā* (Ca4.23.11571, Su5.2. 5, 6, 12564) : **160, 161, 362, 371**
- Indian aconite (*vīśā*) see Indian aconite (*ativīśā*), **GVDB**: 12, 373 : **362, 379**
- Indian barberry (*añjana*) see Indian barberry (*dāruharidrā*) Cf. elixir salve (*rasāñjana*) : **60, 153, 367**
- Indian barberry (*dāruharidrā*) Berberis holstii Engl., **Dymock**: 1, 65, **NK**: 1, #335, #685, **GJM1**: 562, **IGP**: 141, **GVDB**: 203 : **166, 167, 238, 372, 383**
- Indian barberry (*dārvī*) see Indian barberry (*dāruharidrā*) : **255**
- Indian barberry (*kāliyaka*) see Indian barberry (*dāruharidrā*) : **151**
- Indian bat tree (*śuigā*) → *parkatīvrksa* according to *Śabdasindhu*: 1058; idem also suggests *vaṭavṛksa*, i.e., *Ficus benghalensis* Linn. and *āmrātaka*, *Spondias pinnata* (L.f.) Kurz. (native to S.E Asia but naturalized in S. Asia). Contrasted with *vaṭa* at *Suśrutasamhitā* 3.2.32. Cf. **MW**: 1081. : **91**
- Indian bdellium-tree (*guggula*) See Indian bdellium-tree (*guggulu*) : **203, 247**
- Indian bdellium-tree (*guggulu*) Commiphora wightii (Arn.) Bhandari (**GVDB**: 140). This is a flowering shrub or small tree that produces a fragrant resin commonly called *guggulu*. The name sometimes refers to the plant and sometimes to the resin. Known to ancient Greek authors (Ball 1888: 340) : **131, 372**
- Indian beech (*naktamāla*) Pongamia pinnata, (L.) Pierre. See **AVS**: 4, 339, **NK**: 1, #2003 : **50, 119**
- Indian cherry (*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.). See Indian cherry (*śleśmātakī*) : **125, 166, 244, 245**
- Indian cherry (*śelu*) see Indian cherry (*śleśmātakī*), **GVDB**: 408 : **222**
- Indian cherry (*śleśmātaka*) see Indian cherry (*śleśmātakī*) : **245**
- Indian cherry (*śleśmātakā*) see Indian cherry (*śleśmātakī*) : **219**
- Indian cherry (*śleśmātakī*) Cordia dichotoma G. Forst., **AVS**: 2, 180–183. See **POWO**: C. dichotoma; *Cordia myxa* L., according to T. B. Singh and Chunekar (**GVDB**: 413–414), although they also suggest C. dichotoma (synonym of *C. wallichii* G. Don.) and C. rothii (synonym of *Cordia sinensis* Lam.) : **204, 372**
- Indian dill (*śatapuṣpā*) Anethum graveolens L. May also be *Foeniculum vulgare* Mill. See **GVDB**: 388 for discussion : **126, 222, 244**
- Indian elm (*cirabilva*) Holoptelea integrifolia (Roxb.) Planch. **GVDB**: 158, who also say that *pūtika* is a synonym; but that must be different than *pūtikā* : **372**
- Indian elm (*ciribilva*) see Indian elm (*cirabilva*) : **219**
- Indian frankincense (*agamṛttikā*) see Indian frankincense (*śallakī*), according to Dalhaṇa's comment on *Suśrutasamhitā* 5.7.29. A variant form of Indian frankincense (*agavṛttikā*) : **214**
- Indian frankincense (*agavṛttikā*) see Indian frankincense (*nagavṛttikā*), **GVDB**: 3, 392 : **372, 373**
- Indian frankincense (*gajavṛttikā*) *Boswellia serrata* Roxb.; equated with Indian frankincense (*śallakī*) by some, **GVDB**: 392. See also Indian frankincense (*nagavṛttikā*) : **204**
- Indian frankincense (*nagavṛttikā*) see

- Indian frankincense (*agavṛttikā*) : 372
- Indian frankincense (*śallakī*) *Boswellia serrata* Roxb., **GVDB**: 392 : 214, 372
- Indian fumitory (*parpāta*) the ancient plant is probably impossible to identify, and many alternatives are used today, including especially *Fumaria* species (**GVDB**: 239–240). I have chosen *Fumaria indica* (Hausskn.) Pugsley, which can be poisonous : 373
- Indian fumitory (*reṇu*) see Indian fumitory (*parpāta*), **GVDB**: 339. To be distinguished from pollen (?) (*reṇukā*) : 159
- Indian ipecac (*payasyā*) Uncertain. Possibly *Tylophora indica* (Burm.f.) Merr. Perhaps a synonym of *panacea twiner*, *giant potato*, *purple roscoea*, and plants like asthma plant and *Gulf sandmat* (**GVDB**: 237–238). Also “curds” when not a plant : 59, 124, 378
- Indian jujube (*sauvīraka*) *Zizphus jujuba* Mill., **GVDB**: 458, **MBG**: sub *jujuba* : 123, 198
- Indian kudzu (*vidārī*) → *payasyā*. *Pueraria tuberosa* (Willd.) DC. See **ADPS**: 510, **AVS**: 1, 792 f, **AVS**: 4, 391; not **Dymock**: 1, 424 f. See **GJM**2: 444, 451, **AVS**: 1, 187, but **AVS**: 3, 1719 = *Ipomoea mauritiana*, Jacq.: 59, 87
- Indian laurel (*plakṣa*) *Ficus microcarpa*, L. f. See **ADPS**: 377 : 220
- Indian madder (*mañjiṣṭhā*) *Rubia cordifolia*, L. See **IGP**, **Chopra**: 215, **GVDB**: 289 : 55, 167, 203, 204, 213, 220
- Indian mottled eel (*varmimatsya*) Almost certainly the mottled eel. **MW**: 962c noted that the *varmi* fish “is commonly called *vāmi*.” The “vam fish,” or “বান মাছ (*bān māch*)” in Bengal, is a marine and freshwater eel, *Anguilla bengalensis*. It is the most common eel in Indian inland waters and a prized food fish (Froese and Pauly 2022). However, some NIA languages identify the “vam” fish with the Indian Pike Conger, *Congresox talabonides* (Bleeker) (Talwar and Kacker 1984: 235, 236) : 39
- Indian mustard (*sarṣapa*) *Brassica juncea*, Czern. & Coss. See **AVS**: 1, 301, **NK**: 1, #378, **GVDB**: 426–427 : 42, 160, 220, 244, 376
- Indian pennywort (*maṇḍūkaparnī*) *Centella asiatica* (L.) Urban. See **GVDB**: 290, **ADPS**: 289–291 : 205
- Indian sarsaparilla (*sugandhikā*) see Indian sarsaparilla (*śvetasārvā*) **GVDB**: 430, 436 : 204, 222
- Indian sarsaparilla (*sārivā*) → *anantā*. The *śveta* variety is *Hemidesmus indicus*, (L.) R. Br. **ADPS**: 434, **AVS**: 3, 141–145, **NK**: 1, #1210, **GVDB**: 430; and the black form, black creeper, *pālindī*. *Ichnocarpus frutescens*, (L.) R.Br. or *Cryptolepis buchanani*, Roemer & Schultes **AVS**: 3, 141, 145, 203, **NK**: 1, #1283, 1210, **ADPS**: 429–430 : 167, 364, 368, 373
- Indian sarsaparilla (*śvetasārvā*) *Hemidesmus indicus*, (L.) R. Br. See Indian sarsaparilla (*sārivā*). **ADPS**: 434, **AVS**: 3, 141–145, **NK**: 1, #1210, **GVDB**: 430 : 373
- Indian snakeroot (*nākulī*) see Indian snakeroot (*sarpagandhā*). See **GVDB**: 219 for discussion of the difficulties in this identification : 243
- Indian snakeroot (*sarpagandhā*) *Rauvolfia serpentina*, (L.) Benth. ex Kurz. See **NK**: 1, #2099, **ADPS**: 439, **GVDB**: 425; cf. SS 5.5.76–78 : 205, 373
- Indian snakeroot (*sarvagandhā*) common spelling in Nepalese MSS for Indian snakeroot (*sarpagandhā*), q.v. : 214
- Indian symphorema (*ananta*) Not in **GVDB** but **MW**: 25 says “*sinduvāra*” on no authority (see Indian symphorema : 220)
- Indian symphorema (*sinduvāra*) T. B. Singh and Chunekar (**GVDB**: 435)

- settles on *Sympcorema polyandrum* Wight as the identity of this plant. Other authors choose *Vitex negundo* Linn. See further NK: 1, #2603 (cf. use of leaves), IGP: 1210a, MW: 1088b. Discussion by GVDB: 433–435: 203, 205, 213, 222, 373
- Indian trumpet tree (*śyonāka*) *Oroxylum indicum* (L.) Benth. ex Kurz. GVDB: 172–173. A component of greater five roots: 374
- Indian trumpet tree (*tīṇṭuka*) → Indian trumpet tree (*śyonāka*). *Oroxylum indicum* (L.) Benth. ex Kurz. GVDB: 172–173. A component of greater five roots: 369
- Indian trumpet tree (*tīṇṭuka*) see Indian trumpet tree (*śyonāka*), GVDB: 172–173: 220
- Indian willow (*vañjala*) see Indian willow (*vañjula*): 244
- Indian willow (*vañjula*) see Indian willow (*vetasa*); see GVDB: 356 for discussion. Doubts about this identification go back as far as Jejjāta (Dalhaṇa on 5.8.105 (Su 1938: 592)). T. B. Singh and Chunekar (GVDB: 356) noted that this is a tree in the *nyagrodha* group and has sometimes been equated with Asoka tree (*aśoka*) and sometimes with sandan (*tiniśa*): 124, 220, 243, 374, 386
- Indian willow (*vetasa*) *Salix tetrasperma* Roxb, GVDB: 380–381, q.v. for the argument that this is not the same as rattan (*vetra*). The identification of *vetasa* with *Salix caprea* L. is unlikely since the distribution of that *S. caprea* does not include S. Asia: 374
- indigo (*nīlinī*) *Indigofera tinctoria*, L. See NK: 1, #1309. GVDB: 229–230 propose that this may differ from indigo (*nīlī*), and be rather the *Ipomoea hederacea* Jacq., “ivy-leaved morning glory.” But that plant is native to the Americas, as are most *Ipomoea* species. I. tinctoria was known to ancient Greek authors (Ball 1888: 343): 215, 374
- indigo (*nīlā*) see indigo (*nīlinī*). Although T. B. Singh and Chunekar (GVDB: 229) refer to an unidentified creeper mentioned in *Carakasamhitā* Ci.1-4.7, the use in the Nepalese *Suśrutasamhitā* 5.6.24 is likely to refer to indigo (*nīlī*): 214
- indigo (*nīlī*) see indigo (*nīlinī*): 222, 374
- Indrajao (*indravaya*) see *vṛkṣaka* (Indrajao) Holarrhena pubescens Wall. ex G.Don 1837 GVDB: 376, 45 and 84: 114
- Indrajao (*vṛkṣaka*) → *indravaya*, *indrabīja*, *kaliṅga*, and *kuṭaja*. Holarrhena pubescens Wall. ex G.Don 1837 GVDB: 376, 45 and 84: 89, 312, 374
- ironwood tree (*nāgakeśara*) *Mesua ferrea* L. GVDB: 220: 383
- itchytree (*nicula*) *Barringtonia acutangula* (L.) Gaertn., GVDB: 224: 220
- jambul (*jambū*) *Syzygium cumini*, (L.) Skeels. See ADPS: 188, NK: 1, #967, Potter_{rev}: 168, Wujastyk 2003a: 150, 255
- jequirity (*guñjā*) *Abrus precatorius*, L. See AVS: 1, 10, NK: 1, #6, Potter_{rev}: 168. See further jequirity (*kālakūṭā*): 158, 159
- jequirity (*kālakūṭā*) see jequirity (*kālakūṭā*): 161, 374
- jequirity (*kālakūṭā*) possibly Abrus precatorius, L. Cf. RRS 21.14. See AVS: 1, 10, NK: 1, #6, Potter_{rev}: 168. The Nepalese witnesses agree on the feminine form, *kālakūṭā*, while the more normal gender is masculine. The etymology of the name *kāla-kūṭa*, “black-top,” fits with the striking appearance of jequirity seeds. GVDB: 93 does not attempt to identify the plant. The *Rasaratnasamuccaya* of pseudo-Vāgbhaṭa (21.14) says that the *kālakūṭa* poison is similar to “crow’s beak” (*kākacañcu*), which is a more certain name for jequirity. Another hypothesis for the name, which could

be translated “time/death-peak” might connect it with Sandakphu mountain, whose name is Lepcha for “the height of the poisonous plant” because of the abundance of Aconitum ferox on the mountain: 160, 374

koda millet (*kodrava*) Paspalum scrobiculatum L., GVDB: 119 : 131

kumkum tree (*kampillaka*) Mallotus philippensis (Lam.) Muell.Arg., GVDB: 74. AVS: 3, 375–379 describes the different plant used in Kerala, with the variant name *kampippāla* and and ADPS: 203–205 cites this as a good example of how Sanskrit plant identities can be misinterpreted in Kerala: 375

kumkum tree (*kampilya*) see kumkum tree (*kampillaka*): 117, 243

kutki (*kaṭukā*) Picrorhiza kurroa Royle ex Benth. (GVDB: 64–65) : 114, 131, 375, 377

kutki (*kaṭurohaṇī*) → kutki (*kaṭukā*), GVDB: 66, 64–65: 203

kutki (*kaṭurohiṇī*) see kutki (*kaṭukā*), GVDB: 66, 64–65: 222

leadwort (*agniśikhā*) Plumbago zeylanica (or rosea?), L. See NK: 1, #1966, 1967 : 375

leadwort (*citraka*) Plumbago zeylanica (or indica?), L. See RĀ. 6.124, ADPS: 119, NK: 1, #1966, 1967 : 50, 88, 114, 119, 130, 203

leadwort (*pālaka*) → citraka. Plumbago zeylanica (indica? rosea?), L. See Rā. 6.124, ADPS: 1, 119, NK: 1, #1966, 1967 : 160, 161

leadwort (*vidyutśikhā*) see leadwort (*agniśikhā*): 158

lemongrass (*lāmajja*) Cymbopogon iwarancusa (Jones ex Roxb.) Schult. See NK: 1, #176, POWO: <https://powo.science.kew.org/taxon/396948-1>. GVDB: 350 points out that the identity of this grass remains

uncertain, though it one of the two *uśīras*. The Linnean name C. iwarancusa derives from William Jones' use of the Sanskrit name *jvarāñkuśa* for this plant: 148, 375, 384

lemongrass (*lāmajja*) see lemongrass (*lāmajja*): 243, 244

lemongrass (*uśīrabheda*) see lemongrass (*lāmajja*): 384

lesser five roots (*laghupañcamūla*) Described at *Suśrutasaṃhitā* 1.38.66–67 (Su 1938: 169). Consists of bull's head, hairy-fruited eggplant, yellow-berried nightshade, hare foot uraria, and beggarweed : 365, 368, 369, 383, 387

liquorice (?) (*klītaka*) Glycyrrhiza glabra, L.? GVDB: 123–124 discuss the many difficulties in identifying this plant: 158

liquorice (*madhuka*) also *yaṣṭī(ka/kā)*, *yastīmadhuka*, Glycyrrhiza glabra, L. AVS: 3, 84, NK: 1, #1136, GVDB: 329 f. : 59, 87, 122–127, 129, 154, 165, 167, 203, 219, 222, 244, 255, 375

liquorice (*yaṣṭī*) see liquorice (*madhuka*): 204

liquorice (*yaṣṭīmadhuka*) see liquorice (*madhuka*): 60

lodh tree (*lodhra*) Symplocos racemosa, Roxb. See GJM1: 597, ADPS: 279 f, NK: 1, #2420. T. B. Singh and Chunekar (GVDB: 351–352) notes that there are two varieties, S. racemosa, qualified as śāvara, and S. crataegoides Buch.-Ham. for *paṭṭikā lodhra* : 50, 167, 203, 255

long pepper (*kṛṣṇā*) see long pepper (*pippalī*): 254

long pepper (*māgadha*) see long pepper (*pippalī*): 153

long pepper (*pippali*) see long pepper (*pippalī*): 203

long pepper (*pippalī*) Piper longum, L. See ADPS: 374, NK: 1, #1928, GVDB: 249–250, but cf. AVS: 3, 245: 87, 119, 125, 126, 130, 131, 154, 167, 220, 223, 254, 312, 375, 376, 383

long pepper root (*pippalīmūla*) see long pepper (*pippalī*) : 220

long-stamen Wendlandia (?)
(*prapaunḍarīka*) See the substantial discussion by T. B. Singh and Chunekar (GVDB: 261). They note that it is used mainly in eye troubles and frequently with liquorice, than which it is has been said to be thicker, and sweet in taste. A candidate they suggest is Wendlandia *heynei* (Schult.) Santapau & Merchant (formerly W. exserta), native to India; I have accepted that provisionally : 160, 203, 222, 376

long-stamen Wendlandia (?) (*tilaka*) see long-stamen Wendlandia (?)
(*prapaunḍarīka*), GVDB: 183–184.

Sometimes thought to be a synonym of viburnum (*tilvaka*), q.v., but this is probably erroneous : 222, 385

lotus (*nalina*) see sacred lotus (*kamala*), GVDB: 218 : 254, 255

lotus stalk (*mṛṇāla*) “Leaf stalk of sacred lotus” GVDB: 318 : 124

luffa (*jālinī*) see luffa (*koṣātakī*), GVDB: 168 : 160, 212, 213

luffa (*kośāvatī*) see luffa (*koṣātakī*) : 166

luffa (*koṣātakī*) *Luffa cylindrica*, (L.) M. J. Roem. or L. *acutangula*, (L.) Roxb. ADPS: 252–253, NK: 1, #1514 etc. “Kośātakī appears to be used in a general way for all the fruit drugs of the family Cucurbitaceae which have a net-like structure of fibres in the pulp. It thus includes nearly all Luffa species...” GVDB: 121 : 376

mahua (*madhūka*) *Madhuca longifolia*, (J. Koenig) J. F. Macbride. See AVS: 3, 362 f. Known to ancient Greek authors (Ball 1888: 339–340) : 87, 258–260

maidenhair fern (*haṇṭsāhvayā*) *Adiantum lunaluatum* Burm f. GVDB: 463 : 312

malabathrum (*patra*) *Cinnamomum tamala*, (Buch.-Ham.) Nees. See AVS: 2, 84, NK: 1, #589. Other common

names include Indian bay leaf etc., but the plant has an ancient history in the classical world as “malabathrum.” See Ball 1888: 341, who also suggests that the chief source of the plant in India is Assam. See also Wikipedia. Kokoszko and Rzeźnicka (2018: 581) discuss the abbreviations “leaf” (*φύλλα, folium*) in the Mediterranean world that parallels the Sanskrit usage. Kokoszko and Rzeźnicka 2018: 584 note that Dioscorides (fl. 1st cent. CE) stated that malabathrum came from India, although Dioscorides’ description of malabathrum is of a plant like a *Nymphaoides indica* (L.) Kuntze, not a tree (Osbaldston and Wood 2000: 17) : 116, 117, 124, 151, 167, 212, 222, 383

Malay beechwood (*śrīparṇī*) → *kāśmarī*. *Gmelina arborea* Linn., GVDB: 412, 96–97 : 87

maloo creeper (*aśmantaka*) T. B. Singh and Chunekar (GVDB: 27) note that this is the name of two different drugs, *Piliostigma malabaricum* (Roxb.) Benth. or *Phanera vahlii*. (Wight & Arn., 1834) Benth. (non-lactiferous), and *Ficus cordifolia* Roxb. (lactiferous). I have selected P. vahlii in this context because of its abundance in S. Asia and its Himalayan and Nepalese distribution : 205, 219

mango (*āmra*) *Mangifera indica* Linn. GVDB: 37 : 108, 150, 205, 220, 254

mangosteen (*amlā*) *Garcinia pedunculata* Roxb. ex Buch.-Ham. See GVDB: 20–21 : 202, 238

marking nut tree (?) (*sārṣapa*) this would normally mean “connected with mustard,” (Indian mustard (*sarṣapa*)) and excessive consumption of mustard oil can be harmful. However, the *Sauśrutānighaṇṭu* (156) gives *raksoghna* as a synonym for *sarṣapā*. This can be *Semecarpus anacardium*, L.f., which has

- some poisonous parts ("the black fruit is toxic and produces a severe allergic reaction if it is consumed or its resin comes in contact with the skin"
 Semalty et al. 2010) : 161
- marking-nut tree (*aruṣkara*) see
marking-nut tree (*bhallātaka*) : 159, 368
- marking-nut tree (*bhallātaka*) *Semecarpus anacarium*, L. See **NK**: 1, #2269,
AVS: 5, 98, **ADPS**: 85–86, **GVDB**: 23,
 283 : 119, 153, 377
- marsh barbel (*ikṣuraka*) *Hygrophila auriculata* (Schumach.) Heine (syn.
Asteracantha longifolia (L.) Nees.),
GVDB: 42–43 : 220
- medhshingi (*vijayā*-2) *Dolichandrone falcata* (Wall. ex DC.) Seem. The
Sauśrutanighaṇṭu gives a number of
 synonyms for *vijayā* (Suvedī and Tīvārī 2000: 5.77, 10.143). But one of them,
viṣāṇū (also *meṣāśringī*), is sometimes
 equated with *Dolichandrone falcata*
 (DC.) Seemann (**GVDB**: 373 f;
ADPS: 518, a plant used as an
 abortifacient and fish poison
 (**NK**: #862) : 159
- migraine tree (*agnimantha*) *Premna corymbosa*, Rottl. See **AVS** 1927,
ADPS: 21, **NK**: 1, #2025, **AVS**: 4, 348;
GJM1: 523; = *P. integrifolia/serratifolia*,
 L : 166, 369
- milk-white (*kṣīraśuklā*) An unidentified
 plant. **GVDB**: 126: see **purple roscoea**
 and **giant potato** : 59, 380
- monkey (?) (*markaṭa*) 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 : 162
- muddy (?) (*kardama*) unknown. : 160, 162
- mulberry (*kramuka*) probably the **mulberry**
 (*tūda*); see discussion by T. B. Singh
 and Chunekar (**GVDB**: 122) : 204
- mulberry (*tūda*) *Morus indica* L.,
- GVDB**: 189 : 377
- mung beans (*mudga*) *Phaseolus radiatus* L.
GVDB: 310–311 : 123, 126, 261
- mung beans (*māṣaka*) *Phaseolus mungo*
 Linn. **GVDB**: 308 : 151
- munj grass (*nārācaka*) *Saccharum bengalense*, Retz.? See **NK**: 1, #2184 :
 160
- munj sweetcane (*muñja*) *Tripidium bengalense* (Retz.) H.Scholz.,
GVDB: 309, 391. Synonym of **munj**
 sweetcane (*śara*) : 244
- munj sweetcane (*śara*) *Tripidium bengalense* (Retz.) H.Scholz.,
GVDB: 309, 391 : 377
- musk mallow (*latākastūrikā*) *Abelmoschus moschatus* Medik., **GVDB**: 348 : 377
- musk mallow (*ullaka*) **kutki** (*kaṭukā*) or
musk mallow (*latākastūrikā*), according
 to **GVDB**: 54; I have chosen the latter
 identity since *A. moschatus* can cause
 phototoxic dermatitis (Diedrich et al.
 2024: 621) : 377
- musk mallow (*ullika*) see **musk mallow**
 (*ullaka*) : 159
- myrobalan (*abhayā*) *Terminalia chebula*,
 Retz. See **ADPS**: 172, **NK**: 1, #2451,
Potter_{rev.}: 214 : 114, 166, 175
- myrobalans (*pathyā*) *Terminalia chebula*
 Retz. See **NK**: 1, #2451 : 254
- natron (*suvarcikā*) Sodium carbonate.
NK: 2, #45. Dalhaṇa identifies *suvarcikā*
 with *svarjikṣāra* 4.8.50 (**Su** 1938: 441) :
 130, 167, 203
- neem (*picumarda*) see **neem tree** (*nimba*),
GVDB: 247–248 : 219
- neem tree (*nimba*) *Azadirachta indica* A.
 Juss., **GVDB**: 226 : 56, 312, 377
- nutgrass (*kuruvinde*) Unknown. Dalhaṇa
 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, *şaṣṭika*

- dhānya* : 174
- nutgrass (*mustaka*) *Cyperus rotundus*, L. See ADPS: 316, AVS: 2, 296, NK: 1, #782: 160, 162
- nutgrass (*mustā*) *Cyperus rotundus*, L. See ADPS: 316, AVS: 2, 296, NK: 1, #782: 377
- odal oil plant (*iṅgudi*) see odal oil plant: 212
- odal oil plant (*iṅgudi*) Kirtikar et al. (K&B: 5, 79) also firmly identify *iṅgudi* as *Sarcostigma kleinii* Wight & Arn., a liana well known in the Western Ghats and widely used in āyurveda, including for skin diseases. *Balanites aegyptiaca* (L.) Delile, GVDB: 43 is an African plant and unlikely to be the original āyurvedic *iṅgudi*. : 378
- oleander spurge (*mahāvṛkṣa*) see oleander spurge (*snuhī*), GVDB: 302-303: 219
- oleander spurge (*nandā*) see oleander spurge (*snuhī*), GVDB: 215: 382
- oleander spurge (*snuhā*) see oleander spurge (*snuhī*): 119, 160, 213
- oleander spurge (*snuhī*) *Euphorbia neriifolia*, L., or *E. antiquorum*, L. See ADPS: 448, AVS: 2, 388, AVS: 3, 1, NK: 1, #988, IGP: 457b. T. B. Singh and Chunekar (GVDB: 459) discuss the two varieties distinguished by Caraka on the basis of their spines. *Euphorbia* all share the feature of having a poisonous, latex-like sap : 378, 382
- orchid tree (*kovidāra*) *Bauhinia purpurea* Linn. or *B. variegata* Linn. (probably the former), GVDB: 120, AVS: 1, 256-260. The fruit of *kovidāra* is contrasted with the mango in Patañjali's *Mahābhāṣya* (on P1.2.45, varttika 8) : 198
- paddy rice (*śāli*) *Oriza sativa*, Linn. GVDB: 395-396 mentioning 33 Sanskrit sub-variety names; AVS: 4, 193: 43, 380
- painted uraria (*prṣṇaparṇikā*) see painted uraria (*prṣṇaparṇī*) : 243
- painted uraria (*prṣṇaparṇī*) *Uraria picta* (Jacq.) Desv. ex DC. and *U. lagopoides* DC are both to be used for this plant according to GVDB: 257-258. See also IHR: 188-190: 214, 378
- pale Java tea (*arjaka*) *Orthosiphon pallidus* Royle ex Benth., GVDB: 24, based on Dalhaṇa's descriptions, and by P. V. Sharma 1982: 127, #60. But *Ocimum basilicum* L., according to AVS: 4, 160 : 222
- panacea twiner (*arkapuṣṭī*) → *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 : 166, 373
- peas (*hareṇu*) *Pisum sativum*, L. T. B. Singh and Chunekar (GVDB: 419-420, 467-468) note that two plants are usually meant under this name, but there is no agreement on the identity of the second. Synonym of peas (*satīna*). GVDB: 468 make an argument for *Sympcorema polyandrum* Wight : 124, 166, 167, 175, 204, 243, 254, 378, 379
- peas (*hareṇukā*) see peas (*hareṇu*) : 222
- peas (*satīna*) see peas (*hareṇu*), GVDB: 419-420 : 378
- peepul tree (*aśvattha*) *Ficus religiosa*, L. See ADPS: 63. Known to ancient Greek authors (Ball 1888: 338-339) : 177
- periploca of the woods (*meṣāśrīga*) *Gymnema sylvestre* (Retz.) R. Br. See AVS: 3, 107, NK: 1, #1173: 153
- phalsa (*parūṣaka*) *Grewia asiatica* Linn., GVDB: 238 : 88
- plants like asthma plant and Gulf sandmat

- (*dugdhikā*) synonym of plants like **asthma plant and Gulf sandmat** (*kṣīriṇī*), **GVDB**: 204–205, 127 : 379
- 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) : 373, 379
- plants like asthma plant and Gulf sandmat (*yavaphalā*) synonym of plants like **asthma plant and Gulf sandmat** (*dugdhikā*), and **plants like asthma plant and Gulf sandmat** (*kṣīriṇī*), q.v., **GVDB**: 327, 127 : 222
- 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. : 383
- pointed gourd (*patōla*) *Trichosanthes dioica*, Roxb., **GVDB**: 232–233 : 124, 166, 364
- poison-altar (?) (*viśavedikā*) Unknown. Possibly, at a guess, **strychnine tree** (*viśamuṣṭika*)? **GVDB**: 373 Or **Indian aconite** (*viśā*) : 159
- pollen (?) (*reṇukā*) An unidentifiable plant. Perhaps a misreading for **peas** (*harenu*), although this is a long shot. T. B. Singh and Chunekar (**GVDB**: 339) suggest, on no authority, the synonyms *vṛkṣaruhā*, *māṇsarohinī*, or *durvā*, none of which help : 159, 373
- pomegranate (*dāḍima*) *Punica granatum* Linn. **GVDB**: 201–202 : 87, 88, 129, 130, 205, 214
- 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. : 167
- pondweed (*śeṇāla*) *Zannichellia palustris* L. See **horned pondweed** : 41, 42
- pongame oiltree (*karañja*) see **pongame oiltree** (*karañjikā*) : 131, 214, 243
- pongame oiltree (*karañjikā*) T. B. Singh and Chunekar (**GVDB**: 74–76) discuss complications, but probably *Pongamia pinnata* (L.) Pierre in *Suśrutasamhitā* 5.6.3 : 220, 379
- powdered ruffle lichen (*śaileya*) *Parmotrema perlatum* (Huds.) M.Choisy (1952), although there are some inconsistencies in groups and synonyms. See **GVDB**: 408–409, **AVS**: 4, 222–225. The plant has a notably complex taxonomic history : 222, 379
- powdered ruffle lichen (*śaileyaka*) see **powdered ruffle lichen** (*śaileya*) : 203
- prickly chaff-flower (*apāmārga*) *Achyranthes aspera*, L. See **GVDB**: 14, **GJM1**: 524 f, **AVS**: 1, 39, **ADPS**: 44 f, **AVS**: 3, 2066 f, **Dymock**: 3, 135 : 55, 59, 123, 221, 243, 379
- prickly chaff-flower (*vasira*) also *vaśīra*. Perhaps *Achyranthes aspera*, L. **GVDB**: 362 describes several possible identities, including *sūryāvara*, **prickly chaff-flower** and *markaṭatṛṇa*. See also *vasukavasira* (**GVDB**: 363) : 87
- prickly-leaved elephant's foot (*gojihvā*) syn. *gojī*. *Elephantopus scaber*, L. See **AVS**: 2, 357. T. B. Singh and Chunekar (**GVDB**: 145–146) argue that *gojihvā* *śāka* is *Launaea asplenifolia* (Willd) Hook. f. (creeping Launaea), a plant with Himalayan to SE Asian distribution : 379
- prickly-leaved elephant's foot (*gojī*) T. B. Singh and Chunekar (**GVDB**: 145–146) observe that this plant name is unique to the *Suśrutasamhitā*. Since the usage is similar to that of **prickly-leaved elephant's foot** (*gojihvā*), q.v., it is almost certain to be the same plant. : 220
- products of the wood-apple (*kāpitta*) a

- reading in the Nepalese MSS for **products of the wood-apple** (*kāpittha*), q.v.: 215
- products of the wood-apple (*kāpittha*) relating to or derived from the **wood-apple** (*kāpittha*): 380
- purgung nut (*dravantī*) *Jatropha curcas*, L. See AVS: 3, 261, NK: 1, #1374. A.k.a. *mūṣikaparṇī*: 380
- purgung nut (*mūṣikā*) *Jatropha curcas*, L. See AVS: 3, 261, NK: 1, #1374: 153
- purgung nut (*putraśrenī*) Commonly identified as **croton tree** (*nāgadantī*), GVDB: 253 “a variety of red physic nut (*dantī*).” But it appears in a list with *nāgadantī* at *Suśrutasamhitā* 5.6.3, and Dalhaṇa identified it there as **purgung nut** (*dravantī*): 220
- purgung nut tree (*mūṣikakarṇī*) *Jatropha curcas*, L. AVS: 3, 261, NK: 1, #1374, GVDB: 317. GVDB: 317; ADPS: 23–25 discuss this issue well: 151, 152
- purple calotropis (*arka*) *Calotropis gigantea*, (L.) R. Br. See ADPS: 52, AVS: 1, 341, NK: 1, #427, Potter_{rev}: 57, Chopra IDG: 305–308: 50, 59, 119, 198, 217, 219, 243
- purple fleabane (*somarājī*) see **scurfy pea** (*bākucī*), but GVDB: 455–456 note that two areas of therapy (antitoxin, antileucoderma) may point to two plants being used under this name or a different plant with two active ingredients. A particular candidate is *Baccharoides anthelmintica* (L.) Moench.: 222
- purple roscoea (*kṣīrakākoli*) 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**: 123, 373, 377
- radish (*mūlaka*) *Raphanus sativus*, L. See NK: 1, #2098: 128, 160, 162
- rajmahal hemp (*moraṭa*) → *mūrvī*,
- Marsdenia tenacissima (Roxb.) Wight et Arn. Good discussion at GVDB: 314–316, 324: 166
- rajmahal hemp (*mūrvā*) *Gongronemopsis tenacissima* (Roxb.) S.Reuss, Liede & Meve (= Marsdenia tenacissima (Roxb.) Moon), GVDB: 314–316. One of the twenty-two drugs in the group *madanādi*. T. B. Singh and Chunekar and ADPS: 310–313 discuss the long controversy about the identity of this plant. *Sansevieria roxburghiana* Schult. & Schult.f. (“Indian bowstring hemp”) was preferred by Meulenbeld (GJM1: 590) and the sources he cited, including NK: 1, #2216, K&B: 4, 2457; ADPS: 310 mention this identity as being local to Bengal, but note that the plant is not a creeper: 126, 369
- rattan (*vetra*) *Calamus rotang*, L. See AVS: 1, 330, NK: 1, #413. T. B. Singh and Chunekar (GVDB: 381) prefer *C. tenuis*, Roxb., which is also native to S. and S.E. Asia: 374
- realgar (*manahīlā*) *Arsenii disulphidum* NK: 2, #11: 244, 254
- red gourd (*bimbī*) *Coccinia indica*, W. & A. See PVS 1994.4.715; NK: 1, #534: 150
- red ochre (*gairika*) Hellwig 2009: 140–141. NK: 2, #40; the same source, at #6, gives kaolinum or china clay: 167, 203, 205, 222, 254, 255
- red physic nut (*dantī*) *Baliospermum solanifolium* (Burm.) Suresh, GVDB: 200: 117, 160, 215, 220, 380
- resin of white dammer tree (*sarjarasa*) GVDB: 424–425. See **white dammer tree** (*sarja*): 126, 222
- rice grains (*tanḍula*) *Oriza sativa*, Linn. Same as **paddy rice** (*śāli*) GVDB: 174; or just “grains”: 43
- rice-grain chaff (*śālitandulakāṇḍana*) See **chaff**: 43
- rossha grass (*dhyāmaka*) *Cymbopogon martinii* (Roxb.) Wats. See AVS: 2, 285,

- NK: 1, #177 : 167, 203, 222
 royal jasmine (*mālatī*) *Jasminium grandiflorum*, L. See NK: 1, #1364,
 ADPS: 285–288 : 151, 381
 royal jasmine (*sumanā*) see royal jasmine (*mālatī*), GVDB: 437 : 222
 sacred fig (*pippala*) *Ficus religiosa* L.,
 GVDB: 248 etc. : 244, 245
 sacred lotus (*kamala*) *Nelumbo nucifera*,
 Gaertn., GVDB: 73–74, Dutt: 110, NK: 1,
 #1698 : 376, 381
 sacred lotus (*padma*) see sacred lotus (*kamala*), GVDB: 235–236 : 41, 108, 124,
 151, 222, 243, 386
 safflower (*kusumbha*) *Carthamus tinctorius* L. GVDB: 113 : 238, 247
 saffron (*bāhlīka*) syn. of saffron (*kuṇkuma*), q.v., GVDB: 273–274 : 220
 saffron (*kuṇkuma*) *Crocus sativus* Linn., GVDB: 100. On the history of confusions between saffron and turmeric, see Cox 2011 : 215, 381
 sage-leaved alangium (*aīkolla*) *Alangium salvifolium* (Linn. f.) Wang., GVDB: 5–6. See also AVS: 1, 77; cf. NK: 1, #88 : 150, 205, 212, 215, 381
 sage-leaved alangium (*aīkoṭha*) see sage-leaved alangium (*aīkolla*) : 219
 sal group of trees (*śālasārādi*) *śālasārādi* is a group (*gaṇa*) of twenty-three trees listed at 1.38.8–9 (Su 1938: 165), *Mahākośa*: 1, 898 : 88
 sal tree (*śālā*) *Shorea robusta*, Gaertn.f. See AVS: 5, 124 : 254
 sandalwood (*candana*) *Santalum album*, L. See ADPS: 111, NK: 1, #2217. See GVDB: 152–153 for discussion of types, including white and red (*Pterocarpus santalinus* (L.f.)) : 89, 124, 126, 167, 198, 204, 222, 243, 244, 386
 sandan (*tiniśa*) *Ougeinia oojeinensis* (Roxb.) Hochr. GVDB: 181, q.v. for discussion about whether *tiniśa* and *syandana* are to be separated. If other trees are in the frame for either name, T. B. Singh and Chunekar (GVDB) suggest *Lagerstroemeia parviflora* Roxb. (*sidhraka/siddhaka*) and L. *flos-reginae* Retz. (*jārula* by some). See GVDB: 432 : 219, 222, 374
 sappanwood (*pattāṅga*) Also *pattaṅga*. *Caesalpinia sappan*, L. AVS: 1, 323, K&B: 2, 847 f, GVDB: 234 : 50, 60
 scarlet mallow (*bandhūjīva*) *Pentapetes phoenicea*, L. NK: #1836, GVDB: 268 : 152
 scented pavonia (*bālaka*) *Pavonia odorata*, Willd. See ADPS: 498, NK: 1, #1822. But GVDB: 273 argue for *Coleus vettiveroides* K.C.Jacob; see *coleus (hrīvera)* : 167, 366
 scented pavonia (*toya*) → *bālaka*? *Pavonia odorata*, Willd. ADPS: 498, NK: 1, #1822 : 222
 strawberry (*tālīsapatra*) see strawberry (*tālīśa*) : 222
 strawberry (*tālīśa*) T. B. Singh and Chunekar (GVDB: 179, 458–459) discusses the several identifications and regional differences in identifying this plant. *Taxus baccata* Linn. is a common candidate, as is *Flacourtie jangomas* (Lour.) Raeusch. (scramberry) : 124, 255, 381
 screwpine (*ketaka*) *Pandanus tectorius* Parkinson ex Du Roi, GVDB: 116 : 362
 scurfy pea (*bākuci*) Identified as *Cullen corylifolia* (L.) Medik. ADPS: 69–70, GVDB: 272 : 380
 scutch grass (*granthilā*) see durva grass (*dūrvā*), *Mahākośa*: 1, 303, citing the *Rājanighaṇṭu*. It should be an aromatic in this context. Monier-Williams et al.: 371 said “two kinds of *Dūrvā* grass and of a kind of *Cyperus*” on lexical authority, perhaps also the *Rājanighaṇṭu* where it is listed amongst sweet-smelling plants. Other sources identify it as *Cissus quadrangularis*, L., i.e., Veldt grape (Ś. Gupta 1887: 272), or

- Bengal quince (*bilva*) : 222
- sedge (*kuṭannāṭa*) → *plava*, *tagara*, or *śyonāka*, according to commentators (GVDB: 102–103). T. B. Singh and Chunekar leans towards the *plava*, but that plant too is difficult to identify. Various sources identify *kuṭannāṭa* as *Cyperus rotundus* L., C, *scariosus* R. Br., *Oroxylum indicum* (L.) Benth. ex Kurz (= *Bignonia Indica* L.) or even *Cinnamomum verum* J.Presl. The *Cyperus* genus comprises about 700 species of sedges, and I have chosen “sedge” as a generic indication of the likely identity of this plant: 203, 382
- sedge (*kuṭannāṭa*) see sedge (*kuṭannāṭa*) : 222
- sesame (*tila*) *Sesamum indicum* L. GVDB: 183. Known to ancient Greek authors (Ball 1888: 344) : 222, 223
- sesame oil (*taila*) *Sesamum indicum* L. GVDB: 183 : 59, 198
- shami tree (*śamī*) *Prosopis cineraria* (L.) Druce GVDB: 390 : 219, 365
- sickle senna (*cakramarda*) *Senna tora* (L.) Roxb. GVDB: 150 : 238
- silk-cotton tree (*śālmalī*) *Bombax malabarica*. See Issar: 152 : 222
- siris (*śirīṣa*) *Albizia lebbeck*, Benth. See AVS: 1, 81, NK: 1, #91, GVDB: 399–400. Cf. white siris : 166, 198, 212, 213, 215, 221, 222, 238, 244, 254, 386
- siris seeds (*śirīsamāṣaka*) *Albizia lebbeck*, Benth. See AVS: 1, 81, NK: 1, #91 : 150, 213
- small-flowered crape myrtle (*sidhraka*) *Lagerstroemia parviflora* Roxb., GVDB: 432 : 173
- smooth angelica (*coraka*) *Angelica glauca* Edgw. GVDB: 161. Distribution: Afghanistan, Himalaya, western Tibet (POWO). Edgeworth even recorded the indigenous name “chura” (Edgeworth 1851: 53) : 205, 220, 382
- smooth angelica (*taskara*) see smooth angelica (*coraka*), GVDB: 176 : 222
- snakeroot (*sugandhā*) → *sarpagandhā* *Rauvolfia serpentina* Benth. ex. Kurz. See *sarpagandhā*. But may be *Aristolochia indica* Linn. Has been identified with *nākulī*, or *gandhanākulī*. See (GVDB: 219, 436) : 158
- spikenard (*jaṭā*) see spikenard (*jaṭāmāṇī*) : 213, 222
- spikenard (*jaṭāmāṇī*) *Nardostachys jatamansi* (D.Don) DC, GVDB: 163. See also NK: 1, #1691. Known to ancient Greek authors (Ball 1888: 343–344) : 382
- spikenard (*māṇī*) see spikenard (*jaṭāmāṇī*) : 167, 204, 222
- spikenard (*nalada*) see spikenard (*jaṭāmāṇī*) : 148, 204, 222, 243
- spiny bitter gourd (*karkāruka*) *Momordica cochinchinensis* (Lour.) Spreng., (Thunb.) Cogn. See AVS: 2, 1135, IGP 754 (or Beninkasa hispida? AVS: 2, 1127; cf. AVS: 1, 261). M *cochininchensis* has poisonous seeds (NEH: 279) : 369
- spurge (?) (*nandanā*) an unknown poisonous plant, a.k.a. (equally obscurely) *udīmānaka*, GVDB: 215 (where it is m.). Perhaps a synonym of oleander spurge (*snuhī*), like oleander spurge (*nandā*) : 159
- spurge (*saptalā*) T. B. Singh and Chunekar (GVDB: 421–422) discuss the four candidates for this plant, three of which are Euphorbias : 128, 205
- strychnine tree (*viṣamuṣṭika*) *Strychnos nux vomica* Linn., GVDB: 373 : 379
- sugar (*sitā*) Dalhaṇa makes this equation at 1.37.25 (Su 1938: 162) : 167, 204
- sugar (*śarkara*) *Saccharum officinarum*, Linn. NK: #2182 : 154
- sugar cane (*ikṣu*) *Saccharum officinarum*, Linn. NK: #2182 : 154
- sunflower (*sūryavallī*) → *ādityavallī*, *sūryamukhī*, *Helianthus annūs* Linn.

- GVDB:** 35, 443 : 166
 sweet flag (*vacā*) *Acorus calamus* Linn. See
GVDB: 352–355 : 123, 130, 220
 sweet plants (*madhuravarga*) The sweet plants are enumerated at *Suśrutasamhitā* 1.42.11. See also
GVDB: 127 : 59
 sweet-scented oleander (*aśvamāraka*) *Nerium oleander*, L. See **ADPS:** 223, **NK:** 1, #1709, **GVDB:** 77, which discusses the white and red forms : 158
 tall reed (*nala*) *Phragmites karka* (Retz.) Trin. ex Steud, **GVDB:** [217] : 123, 124, 243
 teak (*śāka*) *Tectona grandis*, L.f. See **AVS:** 5, 245, (**MW:** 1061) : 219
 Tellicherry bark (*kutaja*) *Holarrhena pubescens* Wall. ex G.Don, with *Wrightia tinctoria* and *W. arborea* considered **GVDB:** 101–102, **ADPS:** 267–270 : 119, 219, 368
 ten roots (*daśamūla*) Described at *Suśrutasamhitā* 1.38.70–71 (**Su** 1938: 169) as a combination of the lesser five roots and the greater five roots : 368
 the four *jāta* drugs (*caturjāta*) a group of four drugs, *cinnamon* (*tvac*), *malabathrum* (*patra*), *cardamom* (*elā*), and *ironwood tree* (*nāgakeśara*) **GVDB:** 152 : 383
 the four *jāta* drugs (*caturjātaka*) see the four *jāta* drugs (*caturjāta*) : 238
 the three myrobalans (*triphalā*) chebulic myrobalan beleric myrobalan and emblic myrobalan (*haritakī bibhitaka* and *āmalaka*) One of the most-often mentioned drugs in the *Bṛhatrayī* **GVDB:** 194–196 : 117, 203, 204, 213, 215, 363
 the three pungent drugs (*kaṭutrika*) see the three pungent drugs (*trikaṭu*) : 215, 222
 the three pungent drugs (*trikaṭu*) dried ginger, long pepper, and black pepper (*śunṭhī*, *pippalī*, and *marica*) **GVDB:** 193 : 203, 383
 the three pungent drugs (*vyoṣa*) see the three pungent drugs (*trikaṭu*), **GVDB:** 382–383 : 214, 238
 the two types of clitoria (*śvete*) see white clitoria (*śvetā*) : 222
 the two types of turmeric (*haridre*) see turmeric (*haridrā*) and Indian barberry (*dāruharidrā*), **GVDB:** 465–466 : 222
 thorn apple (*karambha*) *Datura metel*, L. See **GVDB:** 76 for useful discussion. Also, **AVS:** 2, 305 (cf. *Abhidhānamañjari*), **NK:** 1, #796 ff. **Potter_{rev}:** 292 f, **ADPS:** 132. Possibly the same plant as plumed cockscomb (*indīvara*) (**GVDB:** 76, 44–45) : 159, 160, 364, 379
 three heating spices (*tryūṣaṇa*) *śunṭhī* (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 : 89, 166
 three-leaved caper (*varuṇa*) *Crataeva magna* (Lour.) DC. See **AVS:** 2, 202; cf. **NK:** 1, #696 : 153, 205, 220, 383
 three-leaved caper (*varuṇaka*) see three-leaved caper (*varuṇa*) : 222
 toothbrush tree (*pīlu*) *Salvadora oleoides* Dcne. **GVDB:** 251. T. B. Singh and Chunekar also mention *S. persica* L., but that is native to Africa, Syria and the Arabian peninsula (**POWO:** taxon/urn:lsid:ipni.org:names:779348-1). Also commonly called Vann : 122, 241
 toothed-leaf limonia (*surasi*) *Naringi crenulata* (Roxb.) Nicolson (formerly *Limonia crenulata* Roxb.), **GVDB:** 439 : 204, 222
 top layer of fermented liquor (*surāmaṇḍa*) **K&B:** 2, 502, **NK:** 2, appendix VI, #49, McHugh 2021: 39 : 57, 58
 tree cotton (*kārpāsa*) *Gossypium arboreum*

- L. ADPS: 231, *pace* the identifications of T. B. Singh and Chunekar (GVDB: 92, 247), since *G. barbadense* L. is native to South America and *G. herbaceum* L. is native to Africa : 56, 384
- tree cotton (*picu*) See tree cotton (*kārpāsa*) : 58, 60
- tree of heaven (*arala*) probably *Alianthus excelsa* Roxb., GVDB: 21–22 : 219
- turmeric (*gaurī*) *Curcuma longa*, L. See ADPS: 169, AVS: 2, 259, NK: 1, #750 : 124
- turmeric (*haridrā*) *Curcuma longa* Linn. GVDB: 465. On the history of confusions between saffron and turmeric, see Cox 2011 : 125, 166, 175, 203, 383
- turmeric (*rajani*) *Curcuma longa*, L. ADPS: 169, AVS: 2, 259, NK: 1, #750 : 42, 167, 204, 215, 238, 243
- turpeth (*trivṛt*) → *trvṛtā*. *Operculina turpethum* (Linn.) Silva Manso = *Ipomoea turpethum* R. Br. GVDB: 197. : 117, 154, 203, 314, 364
- turpeth (*trivṛt*) The common spelling in Nepalese MSS of *trivṛt* : 214, 215
- two kinds of salt (*vasukavasira*) See the discussion by T. B. Singh and Chunekar (GVDB: 362–363), who note that when *vasuka* is mentioned together with *vasira*, two varieties of salt are often meant (see *vasukavasirā*) : 87
- unknown fruit poison (*veṇuka*) see unknown fruit poison (*veṇukā*) : 159
- unknown fruit poison (*venukā*) *Bambusa bambos*, Druce?. See NK: 1, #307, GVDB: 380. The Nepalese transmission has the m. *veṇuka*, not the f. *veṇukā* T. B. Singh and Chunekar (GVDB: 380) note that this is an unknown fruit-poison : 384
- velvet bean (*svayamguptā*) *Mucuna pruriens* (L.) DC., GVDB: 461, who say that the plant is known in the *Carakasāñhitā* but not the *Suśrutasāñhitā*. Watt (WattDict: 5, 286) noted that the English names Cowhage or Cowitch are derived from the Hindi name of *M. pruriens*, *Kiwach*, Skt. *kapikacchu*, supported by Yule and Burnell (1903: 268) : 254, 384
- velvet bean (*ārsabhi*) see velvet bean (*rṣabhi*) and velvet bean (*svayamguptā*). Mahākośa: 1, 94, citing the *Rājanighaṇṭu* 3.50, 201 : 213
- velvet bean (*rṣabhi*) see velvet bean (*svayamguptā*), MW: 226, GVDB: 56 : 384
- velvet-leaf (*pāthā*) *Cissampelos pariera*, L. See ADPS: 366, NK: 1, #592, GJM1: 573, AVS: 1, 95; cf. AVS: 2, 277 : 50, 89, 114, 130, 166, 203, 204, 370
- velvet-mite (*indragopa*) *Kerria lacca* (Kerr.). Lienhard 1978 : 149
- verbena (*bhārgī*) see verbena (*bhāringī*) : 204, 222
- verbena (*bhāringī*) → *phañjī*. Clerodendrum serratum (L.) Moon or C. serratum; see AVS: 2, 121, ADPS: 87 : 384
- verbena (*phañjī*) Clerodendrum serratum, L. See AVS: 2, 121, ADPS: 87 : 152
- vetiver (*uśīra*) *Chrysopogon zizanioides* (L.) Roberty, also called “khus.” NK: 1, #180, GVDB: 54 identify it as vetiver. Commentators normally identify two types of *uśīra*, the other being the same as lemongrass (*lāmajja*) : 88, 151, 198, 244, 384
- vetiver and lemon grass (?) (*uśīre*) “the two *uśīras*,” perhaps vetiver (*uśīra*) and lemongrass (*uśīrabheda*) : 222
- viburnum (*tilva*) see viburnum (*tilvaka*) : 214
- viburnum (*tilvaka*) *Viburnum nervosum* D.Don. In their thoughtful article, T. B. Singh and Chunekar (GVDB: 185–186) separate *tilvaka* from *lodhra*, a conflation they attribute to Drḍhabala. They identify *V. nervosum*

because of its use under a similar local name in Garhawal and Gangotri and the match with its purging properties mentioned in ayurvedic literature.

AVS: 5, 219 makes the same separation, noting that in Kerala the plant *Jatropha curcas* L. is used. But that is a native of the new world. Cf. many *Viburnum* varieties listed by Griffiths (*IGP*: 1200 ff.). **POWO** confirms that *V. nervosum* has an appropriate Himalayan distribution. *Tilvaka* is also sometimes wrongly considered to be a synonym of **long-stamen Wendlandia (?)** (*tilaka*), **GVDB**: 185–186 : 117, 220, 376, 384, 385

viburnum extract (*tailvaka*) see **viburnum** (*tilvaka*), **GVDB**: 185, also a ghee compound of **viburnum** (*tilvaka*) : 254

'Virāṭa's plant' (*vairāṭaka*) unknown. See ?: 160, 162

water hyssop (*brāhmī*) *Bacopa monnieri* (L.) Pennel, **GVDB**: 281, who describe the substitutes that are mistakenly used in some places : 243

water snowflake (?) (*kumudavati*) see **water snowflake** (?) (*kumudavatī*) : 160

water snowflake (?) (*kumudavatī*) This is an unidentifiable plant whose name means, etymologically, "with lilies." **MW**: 292 gives *Nymphoides indica* (L.) Kuntze (formerly *Villarsia indica*) on no authority; I have used the common name of *N. indica* as a possibility, but this is not known to be poisonous; on the contrary, it is used medicinally (Khan et al. 2018). *N. indica* is illustrated on p. 6 of the Voynich manuscript. Khan et al. (2018) assert that this is the same plant as *tagara*, although this is not a widely-held view (see **crape jasmine** (*tagara*)) : 159, 366, 385

watered buttermilk (*udaśvit*) **MW**: 183 : 150

weaver's beam tree (*mokṣaka*) see **weaver's**

beam tree (*muṣkaka*) : 385

weaver's beam tree (*muṣkaka*) Schrebera *swietenioides*, Roxb. See **AVS**: 5, 88, **Lord**, **NK**: 1, #2246, **GVDB**: 242–243 : 119, 173, 385

weaver's beam tree (*pāṭalī*) usually a synonym for **crimson trumpet-flower tree** (*pāṭalā*), but T. B. Singh and Chunekar (**GVDB**: 242–243) argue that it is **weaver's beam tree** (*mokṣaka*) because some authors distinguish two colours (unlike *pāṭalā*) : 119, 219, 222

weaver's beam tree (*viśalyā*) Schrebera *swietenioides* Roxb. ← *kuberākṣī*. T. B. Singh and Chunekar (**GVDB**: 371) notes that this name is a synonym for many other plants, including *lāṅgālī*, *indravāruṇī*, *guḍūcī* etc. Dalhaṇa identified it with *pāṭalā*, *kāṣṭhapāṭalā*, and *agniśikhā* tree, all of which may be called *śvetamokṣaka* or *kuberākṣī* : 203

weevil wort (*tālamūlikā*) **GVDB**: 178–179 : 385

weevil wort (*tālapatrī*) → *tālamūlikā*, **weevil wort**, q.v. **GVDB**: 178 : 205

white calotropis (*alarka*) *Calotropis procera*, (Ait.) R. Br. See **NK**: 1, #428, **Chopra**: 46b, **Chopra IDG**: 305–308 : 59

white clitoria (*śvetā*) *Clitoria ternatea*, L. See **AVS**: 2, 129, **NK**: 1, #621. **GVDB**: 416–417 notes that there are two types, *ksudrā* (white, according to Dalhaṇa) and *mahā* (blue, according to Dalhaṇa). Sometimes given as a synonym for **winged-stem canscora**, but sometimes as a contrasting plant : 151, 204, 214, 217, 221, 383

white cutch tree (*somavalka*) *Acacia polyacantha*, Willd. See **AVS**: 1, 30, **IGP** 7, **GJM1**: 602, **AVS**: 2, 935; *pace NK*: 1, #1038 : 152, 173

white dammer tree (*sarja*) *Vateria indica*, L. See **NK**: 1, #2571, **AVS**: 5, 349 f, **AVS**: 1, 292 f, **Chopra**: 253a. T. B. Singh and Chunekar (**GVDB**: 424) discussed

- whether this term might be broadened to any resinous tree and decided against: 50, 87, 380, 386
- white dammer tree (*sarjja*) see white dammer tree (*sarja*): 219
- white lotus (*pūṇḍarīka*) see sacred lotus (*padma*), GVDB: 252: 162
- white sandalwood (*bhadraśriya*) Santanlum album Linn. See white sandalwood (*bhadraśrī*): 124, 222
- white sandalwood (*bhadraśrī*) Santanlum album Linn. see sandalwood (*candana*) GVDB: 152, 282 and *Carakasamhitā* ci.4.102 (Ca 1941: 434) where it is contrasted with *lohitacandana*: 89, 386
- white siris (*jalavetasa*) Dalhaṇa (5.8.105 (Su 1938: 592)) thought that this was Indian willow (*vañjula*), but he noted that Jejjaṭa thought it was *kambukā*, an unidentified plant he interpreted as white siris (*kiñihī*). AVS: 3, 172–174 identify *jalavetasa* as *Homonoia riparia* Lour., willow-leaved water croton, and include a survey of the confusions about this plant in various texts; they make their judgment about *H. riparia* on the basis of its medical effects. See siris (*śirīṣa*): 243
- white siris (?) (*kapītana*) T. B. Singh and Chunekar (GVDB: 72–73) note that this stands for at least two plants, milky and non-milky. For the latter type, they propose *Albizia procera* (Roxb.) Benth., *Thespesia* (hibiscus-like, but not endemic to S. Asia) or *Spondias* (cashew). Six different identifications are made by Monier-Williams et al. (MW: 251), without authority: 219
- white siris (*kaṭabhi*) *Albizia procera* (Roxb.) Benth. or *A. lebbeck* (Linn.) Benth. GVDB: 63–64, AVS: 1, 81–84. See siris (*śirīṣa*): 198, 382
- white siris (*kiñihī*) *Albizia procera* (Roxb.) Benth., GVDB: 98, which also discusses past confusions; NK: 1, #93. See siris (*śirīṣa*): 166, 204, 243, 244, 386
- white teak (*kārśmari*) see white teak (*kāśmari*): 255
- white teak (*kāśmarya*) see white teak (*kāśmari*): 222
- white teak (*kāśmaryā*) see white teak (*kāśmari*): 87
- white teak (*kāśmari*) also *kāśmarya*, *kārśmari*, *madhuparṇī*. *Gmelina arborea*, Roxb. See GJM1: 543, Trees: 51, ADPS: 240, GVDB: 96–97: 124, 126, 369, 386
- white teak (*madhuparṇī*) see white teak (*kāśmari*): 87
- white water-lily (*kumuda*) *Nymphaea alba*, Linn., GVDB: 105: 41, 108, 222, 368
- white-bark acacia (*arimeda*) Vachellia & leucophloea (Roxb.) Maslin, Seigler & Ebinger. See AVS: 1, 23, T. B. Singh and Chunekar (GVDB: 22, 33): 50, 220
- wild asparagus (*bahuputrā*) Asparagus racemosus, Willd. See further wild asparagus (*śatāvarī*) Possibly a syn. for *nandana*. The bark of wild asparagus is toxic: 152
- wild asparagus (*śatāvarī*) Asparagus racemosus, Willd. See ADPS: 441, AVS: 1, 218, NK: 1, #264, IGP: 103, AVS: 4, 249 ff, Dymock: 3, 482 ff: 122–124, 126, 260, 386
- wild celery (*agnika*) → may be *bhallātaka*, *lāṅgalī*, *ajamodā*, *moraṭa*, or *agnimantha*, GVDB: 4. Uncertain A plant often cited in *Suśrutasamhitā*, but rarely in *Carakasamhitā* (GVDB: 4). Dalhaṇa glossed it at 5.2.45 (Su 1938: 566) as *ajamodā* but noted that others consider it to be *moraṭa*. There is considerable complexity surrounding the identification of *moraṭa/mūrvā* itself and related synonyms (GVDB: 314–316): 166, 386
- wild celery (*ajamodā*) *Apium graveolens*, L. Sometimes identified with *agnika* (wild celery), q.v.: 166, 203

wild Himalayan cherry (*padmaka*) *Prunus cerasoides* D.Don, **GVDB**: 236, **AVS**: 4, 353–355. **MW**: 585 is wide of the mark : 124–126, 203, 204, 222, 243, 244

wild spider flower (*ajagandhā*) possibly *Cleome gynandra* L. (syn. *Gynandropis gynandra* L.); possibly also *Basil* (*Ocimum basilicum* Linn. or *Crested Late Summer Mint* (*Elsholtzia ciliata* Willd.) (**GVDB**: 6). But *E. ciliata* is not native to South Asia : 130

wild spider flower (*tailaparnīka*) see **wild spider flower** : 222

wild spider flower (*tilaparnī*) *Cleome gynandra* L., **GVDB**: 184–185, but see the discussion of the other drug plants sometimes intended by this name : 387

wild sugar cane (*kāñdeksu*) *Saccharum spontaneum* L., **GVDB**: 90 : 87

wild sugarcane (*kāśa*) *Saccharum spontaneum* L. **GVDB**: 96 : 123, 244

winged-stem canscora (*girihvā*) see **winged-stem canscora** (*girikarṇikā*) : 204

winged-stem canscora (*girikarṇikā*) sometimes → *śvetā*, in which case possibly *Clitoria ternatea*, L., see **AVS**: 2, 129, **NK**: 1, #621. Since *śvetā* and *girihvā* are cited as separate constituents of one formula (e.g., *Suśrutasaṃhitā* 5.5.75 (**Su** 1938: 579) they cannot be the same plant. **GVDB**: 138–139 argued for *Symploisma polyandrum* Wight, which they also assigned to *sinduvāra*. When discussing *śaṅkhapuspī*, another

possible synonym, Sivarajan and Balachandran (**ADPS**: 425–427) also suggest *Canscora alata* (Roth) Wall. (syn of *Canscora decussata* Schultes & Schultes f.) and *Convolvulus pluricaulis* Chois. The former has a more appropriate distribution and is chosen here : 387

winged-stem canscora (*giryāhvā*) see **winged-stem canscora** (*girikarṇikā*) : 385

Withania (aśvagandhā) *Withania somnifera* (L.) Dunal. See **AVS**: 5, 409 f, **Dymock**: 2, 566 f, 150, **GVDB**: 29, **Chevillard**: 152 : 59, 118, 125, 204

wood-apple (*kapittha*) *Limonia acidissima*, L. See **AVS**: 3, 327, **NK**: 1, #1021 : 125, 151, 153, 205, 214, 215, 219, 254, 380

woody turmeric (*kāleyaka*) *Coscinium fenestratum* (Goetgh.) Colebr., **GVDB**: 95. See V. K. Gupta et al. 2015: 173–175 : 222

woody-fruited jujube (*gopaghontā*) *Ziziphus xylopyra* (Retz.) Willd. **GVDB**: 147 → *ghontā* : 220

yeast (*kinva*) **MW**: 282, **EWA**: 1, 350 : 247

yellow-berried nightshade (*kaṇṭakārī*) *Solanum virginianum* L. (syn. *Solanum surattense* Burm. f. and *Solanum xanthocarpum*, Schrad. & Wendl.) **GVDB**: 68–69. See also **IHR**: 430. A component of **lesser five roots** : 375, 387

yellow-berried nightshade (*ksudrā*) see **yellow-berried nightshade** (*kaṇṭakārī*), **ADPS**: 100, **NK**: 1, #2329, **AVS**: 5, 164 : 166, 167

Fauna

ant (*pipūlika*) **MW**: 627 : 234

arala rat (*arala-animal*) a hapax legomenon in Sanskrit, probably a Dravidian loan word or cognate from forms like Pengo, Manda, Kuwi etc., *orli*, *urlī*, etc.,

DED₂: #994 : 210, 213

arrow-coloured (*śaravarna*) unknown frog, name from etymology : 232

atakī (*aṭakī*) unknown : 229

bad-marked rat (*kuliṅga*) etymologically,

- "having bad-marks" MW: 286, but unidentifiable : 210, 213
- beaked (*tundikerī*) neologism insect-name based on the etymology of *tunda*. Probably *tundikera* and *tundicela* are variants of the same lexeme. *tunda* is "Nicht überzeugend erklärt" according to Mayrhofer (EWA: 1, 653), who refers to a possible non-Indo-European origin (ibid. v. 3, 249 on *tundikā*, *tundikerī* refers to plants only). But Burrow 1971: 544 derived the term plausibly from √*tud* "peck" : 228
- bee (*bhramara*) bee or bumble-bee, MW: 769, etc. : 173, 229
- bee (*makṣikā*) MW: 771. May sometimes refer to a fly : 172, 234
- bee (*sīlīmukha*) MW: 1073 : 391
- bhaṭābha (*bhaṭābha*) unknown : 229
- black (*kṛṣṇa-maśaka*) unknown; name based on etymology : 234
- black drongo (*dhiūmyāṭa*) Dicrurus adsimilis, Bechstein, Dave 1985: 63, 65, 199 : 148
- black monitor lizard (*kṛṣṇagodhā*) unknown, name from etymology : 229
- black rat (*kṛṣṇa*) perhaps the widespread Black Rat or Common House Rat, *Rattus Rattus* L., BIA: 210 : 210, 212
- black scorpion (*kṛṣṇa-vṛścika*) unknown; name from etymology. Possibly a *Heterometrus*, since they are large, black and have low toxicity : 236
- black-beak (*kṛṣṇatunda*) unknown insect, name based on etymology; MW: 307. But possibly "black-belly" based on the lexeme *tunda*, CDIAL: 1, #5858 : 229
- black-coloured (*kṛṣṇavarṇa*) unknown frog, name from etymology : 232
- black-face (*kṛṣṇamukhā*) an unidentified spider : 242, 246
- brahman woman ant (*brāhmaṇī*) unknown; meaning from etymology : 234
- brown (*kapilā*) unknown; meaning from etymology : 234
- brown rat (*kapila-animal*) name from etymology; unidentified; see tawny rat (*aruna*) : 210, 213, 393
- brown scorpion (*śyāva-vṛścika*) unknown; name from etymology : 236
- brown spider (*kapilā-spider*) an unidentified spider : 242, 243
- bull (*vṛṣabha*) MW: 1012, etc. *Bos taurus*, Linn. : 148
- cavity (*kuhara*) unknown frog, name from etymology : 232
- celestial (*svarga-insect*) unknown insect, name based on etymology : 229
- centipede (*śatapāda*) see centipede (*śatapādaka*) : 232
- centipede (*śatapādaka*) the name's meaning is, "hundred-foot" MW: 1049, CDIAL: 1, #12281 : 229, 388
- chital deer (*prṣata*) Axis axis, Erxleben. BIA: 295–296. In *Suśrutasamhitā* 5.5.71 (Su 1938: 579) it seems to be specifically the musk that is meant. so the reference may be to the Musk Deer (*Moschus moschiferus* L.). But all species produce musk, so *prṣata* may also be simply Chital or Spotted Deer. See also IW: 93 : 148, 154, 204
- chukar partridge (*cakora*) *Alectoris chukar*, J. E. Gray, Woodcock 1980: 45, distributed from NW India to Nepal and Assam : 148
- civet (*mārjāra*) BIA: ch. 4 *et passim*, McHugh 2012 : 204
- colourless (*vivarṇā*) unknown; meaning from etymology : 234
- common crane (*kroñca*) *Grus grus*, Linn., Woodcock 1980: 47, Dave 1985: ch. 62 : 148
- common myna (*sārikā*) see common myna (*śārikā*) : 148
- common myna (*śārikā*) *Acridotheres tristis tristis*, L., etc. See Ali and Ripley 1983: #1006, Dave (1985: 28 ff.), Woodcock (1980: 119) : 172, 388
- cone snail (*śambūka*) a bivalve or snail

- (MW: 1055), but presumably a poisonous one such as the cone-snail : 172
- cook-fish insect (*pākamatsya*) unknown insect, name based on etymology. A kind of fiery insect according to Dalhana on 5.3.5 (Su 1938: 567) : 172, 229
- cough-spider (*kasanā-spider*) an unidentified spider : 242, 245
- cricket (*ucciṭīṅga*) The suggestion “cricket” is from Assamese *usaṅgā* and Bengali *cuiṅgā, ucuṅgā*, CDIAL: 1, #1645, although they are not venomous. Unlikely: a crab, MW: 173. The cricket may appear to have a sting, although it does not Maxwell-Lefroy 1909: 102 : 172, 228
- crow-egg (*kākāṇḍā*) an unidentified spider : 242, 246
- dark blue scorpion (*mecaka*) unknown; name from etymology : 236
- deer-foot (*eṇipadī*) an unidentified spider : 242, 245
- devout (*brahmaṇīkā*) unknown insect, name based on etymology : 229
- dish-creeper (*śarāvakurdi*) unknown insect, name based on etymology. See *śarāvakurda* “creeping among dishes” (MW: 1057), (apparently also the name of a snake) : 172
- district (*maṇḍala*) unknown; name based on etymology : 234
- droplet (*bindula*) unknown insect, name based on etymology. Dalhana on 5.8.9 (Su 1938: 586) noted that some people read *viliṭa* instead of *bindula* : 229
- drummer (*dundubhaka*) unknown insect, name based on etymology. But may be connected with a variant of *tunda/tund* “belly” CDIAL: 1, #5858. **tunda-bhaka* might then mean “belly-croaker/puffer” : 229
- elephant (*hastin*) unknown; name based on etymology : 234
- enemy-liquor (*arimedaka*) unknown insect, name based on etymology. Perhaps a variant of *ali-* “bee”, CDIAL: 1, #716 or *āla* “poison” CDIAL: 1, #1352 : 172, 229
- idgety rat (*capala*) from the etymology of the word. Unidentifiable mouse or rat. It is probably too much of a stretch to connect it with Dravidian forms like *Kui superi* “shrew-mouse”, DED₂: #2675 : 210, 213
- fierce-purple scorpion (*ugradhūmra*) unknown; name from etymology : 236
- fiery insect (*agnikīṭa*) see ?? (*agni-insect*) : 229, 389
- finger-ant (*aṅgulikā*) unknown; meaning from etymology : 234
- fire centipede (*agni-centipede*) unknown insect, name based on etymology. Cf. Marāṭhī *āghī* “a kind of stinging fly” CDIAL: 1, #57 : 389
- fire-centipede (*agniprabhā*) uncertain; same as the fire centipede (*agni-centipede*) and cf. fiery insect (*agnikīṭa*) : 235
- fire-face (*agnimukhā*) an unidentified spider : 242, 245, 246
- fish-bone (*kaiṭaka*) MW: 245; cf. Manu 8.95 (Olivelle 2005: 172, 677) : 173
- five-black (*pañcakṛṣṇa*) unknown, etymologically “five-black” : 229
- five-venom (*pañcālaka*) unknown insect, name based on etymology : 229
- five-white (*pañcaśukla*) unknown, etymologically “five-white” : 229
- fondling rat (*lālana*) based on etymology. An unknown rat or mouse : 210, 212
- frog (*dardura*) frog. CDIAL: 6198 also gives “lizard, chameleon” for Khotanese *dodór*, though this may be <*dardru*-> : 232
- frown (*bhṛkuṭī*) unknown frog, name from etymology : 232, 235
- gajipipul rat (*vasira-animal*) unknown type of rat or mouse. “*Vasira*,” equated with *gajapippalī* is usually the name of the liana *Scindapsus officinalis* (Roxb.)

- Schott (GVDB: 132, 362) (see **gajipul** (*gajapippalī*)). Lianas are known for providing a habitat for many arboreal animals, including rodents. The vulgate *Suśrutasañhitā* reads *haṇṣira* as the name of this rat: 210, 212
- garland-virtue (*mālāguṇī*) an unidentified spider: 242, 246
- goldie (*sauvarṇikā*) an unidentified spider: 242, 245
- grain-coloured (*lājavarṇā*) an unidentified spider: 242, 245
- greenish (*harita-frog*) unknown frog, name from etymology: 232
- grey peacock-pheasant (*jīvajīwaka*) *Polyplectron bicalcaratum*, Linn., Dave 1985: 270, 273, 274, 281: 148
- hairy scorpion (*romaśa*) unknown; name from etymology: 236
- hairy-head scorpion (*romaśīrsa*) unknown; name from etymology: 236
- horned (*śṛṅgi*) unknown, based on etymology: 228
- hornet (*kaṇabha*) Possibly connected with *kaṇa* "grain of corn or rice" (MW: 245), but more likely a loan word from Dravidian *kaṭampai* etc., "a kind of hornet, wasp" DED₂: #1117: 172, 229
- house gecko (*gr̥hagolikā*) see **house gecko** (*gr̥hagodikā*): 232
- house gecko (*gr̥hagodikā*) MW: 362, CDIAL: 1, #4324. Hemacandra's *Abhidhānacintāmaṇi* (4.364) mentions that *gr̥hagodhikā* and *gr̥hagolikā* are synonyms (Rādhākāntā Deva 1876: 691a, *sub māṇikyā*): 172, 390
- house shrew (*chuchundara*) *Suncus murinus* (Linnaeus, 1766), Wikipedia, BIA: 168–169 and plate 38. Probably a Dravidian loan word related to Tamil *cunṭan*, "grey musk shrew," see DED₂: #2661 and CDIAL: 1, #5053: 210, 213
- hundred-creeper (*śatakurda*) unknown insect, name based on etymology. Cf. *śarāvakurda* "creeping among dishes" (MW: 1057), apparently also the name of a snake.: 228
- hundred-kulimbhaka (*śatakulimbhaka*) unknown insect class. Perhaps centipedes: 228
- hundred-woody (*śatadārukā*) see **woody** (*dāruka*). MW: 1049: 172, 394
- iguana (*godheraka*) The गौधेरक is described in the *Carakasañhitā* as a four-legged snake born of a **Indian monitor lizard** that is similar to a black snake and has several species (6.23.134 (Ca 1941: 577)). CDIAL: 1, #4286 identifies this as an iguana: 231, 235, 391
- Indian monitor lizard (*godhā*) *Varanus bengalensis* (Daudin, 1802), Reptiles: 58–60, ill.: 59, 105, 154, 390
- Indian peafowl (*mayaūra*) *Pavo cristatus*, Linn., Woodcock 1980: 39: 148
- Indian red scorpion (*rakta-vṛścika*) name from etymology. Likely to be the *Hottentotta tamulus* (Fabricius, 1798); see Wikipedia contributors 2025: 236
- invincible rat (*ajita*) etymological meaning; unidentifiable: 210, 213
- kitibha (*kiṭibha*) unknown: 229
- koel (*kokila*) *Eudynamys scolopaceus*, Linn., Wikipedia, Woodcock 1980: 66: 148
- kokila-insect (*kokila-insect*) unknown: 229
- konṭāgīrī (*konṭāgīrī*) unknown: 229
- krimikara (*krimikara*) unknown: 229
- kuṣṭa-insect (*kuṣṭa-insect*) unknown: 229
- lac (*lāksā*) *Kerria lacca* (Kerr.). See GJM1: 445, NK: 2, #32, Varshney 2000. Watt (Watt_{Comm}: 1053–1066) is characteristically informative, and is definite about the antiquity of lac in India. See also Bellini 2025: 135–138: 175, 204, 222
- large Brown rat (*mahākapila*) from the etymology of the name, "large brown," perhaps a bandicoot: 214

large gecko (*galagoḍikā*) A poisonous insect, amphibian or reptile described in *Suśrutasamhitā* 5.8.29 (Su 1938: 588) as a biting creature that may be white, black, with red stripes or rings or spotted. It is described just after the *iguanas* (*godheraka*) and before centipedes. The name is unstable, e.g., गलगोळिका, गलदोडी, गलगोली. Cf. the remarks on geckos in note 562, p. 172. The similarity of names suggests that a गलगोडिका may be a non-domestic creature that looks similar to a domestic gecko. Cf. other IA parallels at CDIAL: 1, #4324, 4431, which point to a Dravidian origin for the lexeme (DED₂:#1125) and suggests "iguana." The tokay gecko (*Gekko gecko* (Linnaeus, 1758)) is a large gecko endemic to South Asia having a blue-gray skin with red or orange spots and speckles that may change according to its environment like a chameleon. Tokay geckos, especially males, are aggressive and territorial and can inflict a strong bite. However, many agamids and skinks are also endemic to South Asia, and have markings that could match the description of the *Suśrutasamhitā*. See further IW: 40, 135–136; Deuti 2020: 92

legume-insect (*vaidala*) unknown insect, name based on etymology : 228

lentil insect (*masūrika-insect*) usually the name of a lentil or the "lentil disease," namely smallpox. But here, an insect : 228

little point (*koṭika*) unknown frog, name from etymology : 232, 235

little rat (*cikkira*) likely related to the Tuļu "cikkeli, a small variety of mouse," and other Dravidian words related to Tamil *cikka* "small," DED₂:#2495. See also CDIAL: 1, #4779 on *cikka* "mouse or muskrat," from lexical sources, and

#4781 *cikkā* "small" from Drav., Burrow 1948: #141: 210, 212, 213

little-voice (*alpavāca*) unidentified insect; possibly a wrong reading : 228

lotus-insect (*padmakīṭa*) unknown insect, name based on etymology : 229

maggot (*kīra-insect*) unknown insect. See Lahndā, Panjabī, Bengali, Oriya *kīrā*, etc., CDIAL: 1, #3193 and similar forms in Bihārī, Maithili Bhojpuri, etc. Obviously a variant of *kīṭa* : 229

maṇḍalapuṣpaka (*maṇḍalapuṣpaka*) unknown : 229

massage-ant (*saṃvāhikā*) unknown; translation based on etymology : 234

matt (*aprabha*) unknown frog, name from etymology : 232

mole-rat (*kokila-animal*) Bandicota bengalensis (Gray & Hardwicke). Etymologically, "brown as a Kokila". CDIAL: 1, #4324 relates *kokila* to *golaka* but it may more likely be a Dravidian loanword from *koko*, *kogi*, *koki*, meaning "small, little, young" DED₂: 2030. This is possibly supported by Kannada *kok* and Telugu *golatta*, *koku* for the mole-rat, reported by Prater (BIA: 205) : 210, 214

mongoose (*nakula*) Urva edwardsii or the often sympatric U. europunctatus (small Indian mongoose, usually an eater of smaller creatures than snakes) (BIA: ch. 5), On mongooses and snakes, see IW: 112; BIA: 98–99 : 154, 204

mosquito (*maśaka*) a mosquito, gnat, gadfly or any stinging fly, MW: 793, CDIAL: 1, #9917 : 229, 234

mountainous (*pārvata*) unknown; name based on etymology : 234

myna-face (*śārikāmukha*) unknown insect, name based on etymology, cf. *śāra* etc., MW: 1066; perhaps also cf. bee (*śilīmukha*) : 228

nāhana (*nāhana*) unknown : 229

needle-mouth (*sucīmukha*) unknown,

- etymologically “needle-mouth” : 229
 noseless (*vināśikā*) unknown insect, name based on etymology : 229
 oceanic (*sāmudra*) unknown; name based on etymology : 234
 outsider (*bāhyaka*) unknown insect, name based on etymology : 229
 parakeet (*śuka*) *Psittacula krameri*, Scopoli (or *P. eupatria* or *cyancephala*), See Woodcock 1980: 64 : 148, 215
 picciṭā (*picciṭā*) unknown insect; etymologically perhaps similar to *piccaṭa* “squashed flat” (MW: 624) : 229
 pigeon rat (*kapota-animal*) a rat “like a pigeon;” presumably of grey colour : 210, 214
 pitcher-like (*kauṇḍinya-insect*) unknown insect, name based on etymology : 229
 pot-nose wasp (?) (*kumbhīnāsa*) unknown insect, name based on etymology. Cf. the forms related to *kumbhakārī* “potters’ wife” at CDIAL: 1, #3312, including Assamese *kumārni* “mason-wasp,” Hindī “wasp-like insect which makes a clay nest” : 393
 pot-turd (*kumbhīvarcas*) unknown insect, name based on etymology (on *-varcas*, see Mahākośa: 1, 725 : 229
 pravalāka (*pravalāka*) unknown : 229
 racket-tailed drongo (*bhrīgarāja*) *Dicrurus paradiseus*, Linn., Woodcock 1980: 123 : 148
 rat (*unduru*) Also *undura* or *indūra* in some sources, including the vulgate. A common name for a rat or mouse in many S. Asian languages from Prakrit to contemporary, CDIAL: 1, #2095, Menon 2014, where it is called “house mouse” : 210, 214
 red spider (*raktā-spider*) an unidentified spider : 242, 244, 245
 red-dweller (*kaśāyavāśika*) unknown, name from etymology : 229
 red-toothed shrew (*kaśāyadanta*) see red-toothed shrew (*kaśāyadaśana*) : 213
 red-toothed shrew (*kaśāyadaśana*) from the etymology of the word. Shrews in the genus *Sorex* (as well as others in the subfamily Soricinae) have red-pigmented teeth. Species in South Asia include Hodgson’s brown-toothed shrew (*Episoriculus caudatus*), the Himalayan water shrew (*Chimarrogale himalayica*), the Assam mole shrew (*Anourosoricini assamensis*) and the Giant mole shrew (*A. schmidti*) : 210, 392
 revolver (*āvarttaka*) unidentified insect : 228
 river dolphin (*śiśumāra*) *Platanista gangetica* (Lebeck), BIA: 313–314, plate on p. 289, MW: 1076 : 223
 rock dove (*pārāvata*) *Columba livia* Gmelin, JF, Dave 1985: 255–256 : 247
 round-bristle (*vṛttaśūka*) unknown; name based on etymology : 233
 śairyaka-insect (*śairyaka-insect*) unknown : 229
 śambuka (*śambuka*) unknown : 229
 sarṣapaka (*sarṣapaka*) unknown : 229
 scorpion (*vṛścīka*) MW: 1011, etc. : 172, 235
 scorpion the colour of cow’s urine (*gomūtrābha*) unknown; name from etymology : 236
 scorpion-fish (*varakimatsya*) *varaki* in the Nepalese MSS may possibly be an alternant of *wasp* (*varaṭī*). Dalhana on 5.3.5 (Su 1938: 568) remarked that some interpreted *varakimatsya* as two items, “wasp and fish,” others as a single one, “wasp-fish”; I have here taken the latter option because the terms always seem to appear together. See also HIML: 1B, 396, note 62 : 172, 173
 she-ass insect (*gardabhī-insect*) unknown insect, name based on etymology : 229
 sheep-insect (*urabhra-insect*) unidentified insect : 228
 slimy (*śleśmaka-insect*) unknown insect, name based on etymology : 229

- snake-sore (*ahikuththa*) unknown; name based on etymology : 233
- sonny rat (*putraka*) unidentified mouse or rat. Perhaps related to Dravidian forms like Pengo *puṭki*, DED₂:#4257 (itself perhaps just a form related to Tamil *poṭi* "little") : 210, 212
- sore-maker (*kutthuka*) unknown; name based on etymology : 233
- speckle-head (*citraśīrṣa*) see speckle-head (*citraśīrṣaka*) : 169, 172
- speckle-head (*citraśīrṣaka*) unknown insect, name based on etymology : 228, 393
- spotaka (*spoṭaka*) unknown : 229
- spotted (*paruṣa*) unknown insect, name based on etymology, which could be anything from dirty-coloured, stiff, or rough to shaggy : 228
- spotted scorpion (*paruṣa-vṛścika*) unknown; name from etymology : 236
- stench (*sthālakā*) unknown; translation based on *sthālika*, MW: 1262 : 235
- sting-poison (*alaviṣa*) an unidentified spider : 242, 244
- stripy (*abhirājī*) unknown insect, name based on etymology : 228
- swan (*hamsa*) *Cygnus olor*, Gmelin, Dave 1985: ch. 84. As Dave says, "a generic term for a large part of the Anatidae family" including Swans, Geese, Ducks and Teals. The term needs to be translated variously according to the geographical context of the usage. In the Himalayan region, "swan" is appropriate, but in more southerly peninsular India, "goose" is more likely. The dogmatism of J. Vogel 1962 is based on mainly southern observations and temple carvings. The discussion by Dave 1985 is nuanced and accurate : 148
- sweet hoof (*nakha*) *Unguis odoratus* or *Onycha*, McHugh 2013, from which I adopt the name "sweet hoof." See especially McHugh's very interesting discussion about translating this term, pp. 56 ff. See also MW: 524 (on no authority) : 222
- tawny rat (*aruṇa*) from the etymology of the word, perhaps *Rattus norvegicus* (Berkenhout, 1769), which is large, brown and common (it originated in central Asia and (likely) China, not Norway), and perhaps distinguishing it from the "large" brown rat : 210, 214, 215, 388
- thick-head (*sthūlaśīrṣā*) unknown; meaning from etymology : 234
- three-ring (*trimāṇḍalā*) an unidentified spider : 242, 243
- tick-navel (*uṇḍunābha*) unknown insect; name based on etymology. Etymologically, an insect with an *uṇḍu* for a navel. Conjecturally, perhaps *uṇḍu* is a loan from Tamil *antu* "small grey-winged insect found in stored paddy" (DED₂:#150). Possibly remotely related to Dravidian lexemes for "tick," *ulūṅgu*, *uḍum*, *urūm*, *uṇṇi*, etc. DED₂:#591, #604. The vulgate of the *Suśrutasamhitā* reads pot-nose wasp (?) (*kumbhīnāsa*) "pot-nose" in place of this lexeme, q.v. : 228
- tolaka (*tolaka*) unknown : 229
- tortoise (*kūrma*) Perhaps *Geochelone elegans* (Schoepff), Reptiles: 30 and plate, MW: 1076 : 223
- tunḍavakra (*tunḍavakra*) unknown : 229
- tunḡīnāsa (*tunḡīnāsa*) unknown : 229
- urine-poison (*mūtraviṣa*) an unidentified spider : 242, 244
- valabhika (*valabhika*) unknown insect : 173, 229
- variegated scorpion (*karbura*) unknown; name from etymology. Possibly *Isometrus maculatus* (De Geer, 1778), which is brown and spotty : 236
- viciṅga (*viciṅga*) unidentified insect (not in MW) : 228

- warding off (*vāraṇī*) unknown insect, name based on etymology. Cf. ṥrīyā *bāraṇī* “charm against wild animals or noxious insects” [CDIAL](#): 1, #11553: 229
- wasp (*vaiśvambhara*) A variant of [wasp](#) (*viśvambhara*), q.v.: 229
- wasp (*varatī*) [MW](#): 923, [CDIAL](#): #11313, 11330, etc.: 392
- wasp (*viśvambhara*) said to be a synonym of *gandholī*, q.v. ([HIML](#): 1B, 395, note 59): 172, 233, 394
- webby spider (*jālinī-spider*) an unidentified spider: 242, 245
- white frog (*śveta-dardura*) uncertain; name based on etymology: 232
- white gecko (*śveta-gr̥hagolikā*) unknown; name based on etymology: 235
- white rat (*śveta-animal*) from the etymology, perhaps the *Mus musculus*, L., although strictly, they are agouti
- not white. The whitetailed wood rat (*Madromys blanfordi*, Thomas) is brown but has a distinctive white end to its tail: 210, 214
- white scorpion (*śveta-vṛścika*) unknown; name from etymology: 236
- white spider (*śvetā-spider*) an unidentified spider: 242, 243
- wing-scorpion (*patravṛścika*) unknown insect, name based on etymology: 172, 229
- woody (*dāruka*) an unknown insect; translation based on etymology. See hundred-woody (*śatadārukā*), [MW](#): 1049: 390
- worm-dish (*krimisarāvī*) unknown insect, name based on etymology. *śarāva* “dish, plate, etc.” ([MW](#): 1057): 229
- yellow spider (*pītikā-spider*) an unidentified spider: 242, 244

Minerals

- ashes (*bhasma*) ashes, corrosive when wet: 160
- cuttle-fish bone (?) (*phenāśma*) Hapax legomenon. Etymologically “foam-stone”. Perhaps cuttlefish bone, or pumice (see Byrski 1981)? Dutt ([Dutt](#): 38–42) conjectured that ‘foam-stone’ may be impure white arsenic obtained by roasting orpiment.: 160
- gypsum (*godanta*) [NK](#): 2, 46, #20: 247
- orpiment (*haritāla*) Arsenii trisulphidum. See [NK](#) v. 2, p. 20 ff: 160
- rock salt (*saindhava*) See [NK](#): 2, M#48, [Watt_{Comm}](#): 963–971: 42, 87, 130, 203, 238, 246, 247, 254, 365
- vermilion (*rakta*) speculative, based on *Mahākośa*: 1, 667, under *raktadhātu*, citing the *Dhanvantariyanighaṇṭu*: 160

Glossary

'angry beetles' - *toṭaka*: 172
 'flat insects' - *picciṭā*: 172
 'mustard snakes' - *sarṣapaka*: 172
 'orange-dwellers' - *kaṣāyavāsika*: 172
 'pot insects' - *kauṇḍinya*: 172
 \checkmark *pīḍ* - pain: 193
 \checkmark *rakṣ* - protect: 90
 \checkmark *sodh* - purge: 199
 \checkmark *ūh* - propelled: 192

a man with no semen - *sañḍa*: 104
 - *sañḍha*: 95

a - hives: 233

abdomen - *pakvāśa*: 114

abdominal gripes - *śūla*: 221

abdominal lump - *gulma*: 272

abdominal swelling - *gulma*: 72

abhayā - chebulic myrobalan: 256

abhighāṭa - trauma: 78

abhiprāya - intentionality: 104

abhivyakta - manifest: 103

abhramukta - free from clouds: 262

abhyarīga - massage oil: 147, 153 - oil
 massage: 151 - oil rub: 114, 298

abhyāñjana - oil rubs: 203

abhyantarāyāma - internal tension: 77

abīja - seedless: 86

ācamana - lavages: 89

ācāra - regimen: 25

ācārika - medical advice: 58

accents - *svara*: 198

accumulation - *samudāya*: 55 - *sañcaya*: 26

acetana - without feeling: 78

acidic - *amlā*: 88

ādarśamanḍala - the mirror ring: 187

adhikarāṇa - topic: 311f

adhimantha - irritation: 264

adhiṣṭhāna - base, foundation: 171
 - carriers: 171 - located: 25

ādhmāna - distension: 161 - tympanites:
 82

ādhmāta - swollen: 190

adhodṛṣṭitva - downward vision: 264

adhva - roads: 75

adhyāya - sections: 28

afflicted - *upasṛṣṭa*: 86

affliction - *upasarga*: 153

afterbirth - *aparā*: 133

agada - anti-toxin: 239 - antidote: 165,
 198f, 203, 217 - antitoxic: 198
 - antitoxin: 239

āgantu - external factors: 27

āgāradhūma - soot from the chimney: 50,
 115

aggregation - *samuuccaya*: 311, 315

āgneya - of the nature of agni: 100

agni - digestive fire: 71 - heat: 70

agnika - the flame: 187

agnikarma - cauterization: 114

agnisaṅga - diminished digestive fire: 72

agnivarṇā - fire coloured: 232

agra - supernatant layer: 259

agramukta - free from the point: 262

āhāra - diet: 25

āhārya - take away: 56

ahipatāka - thei snake flag: 188

ahorātra - day and night: 26

aids - *āṅga*: 257

air - *samīraṇa*: 192

ajagara - constrictor: 190 - the goat
 Swallow: 188

ajākṣīrārdita - stirred with goat's milk:
 264

ajeya - invincible: 154 - invincible: 167

akhiladehavyāptirūpam - takes the form of
 pervading the whole body: 163

akriya - inactive: 81

ākṣepaka - convulsion: 78f, 82 - the
 convulsor: 77

āksip - convulse: 77

ākṣipaṇa - convulsing: 77

ākula - overflowing: 230

al layers - *kalā*: 192

alagardā - sting-gush: 39

alagarda - the hungry sting: 187

alaṅkṛtvā - made accessible: 23

ālepa - liniment: 254

- ālepana* - liniments: 39, 153 - ointments: 114
all-white - *sarvaśvetā*: 232
alleviated - *yāpya*: 257
alleviation - *pratikāra*: 26
along these lines - *evam*: 27
āmāśaya - stomach: 164f
amla - acidic: 88
amṛta - immortal: 154
anāgatāpekṣaṇa - future reference: 311, 315
ānāha - constipation: 161, 164, 167
anāyusya - not conducive to long life: 101
āndaja - born from eggs: 26
āṇḍīnī - with testicles: 273
anekānta - variable statement: 311, 314
āṅga - aids: 257 - component: 24 - parts: 27
āṅgamarda - bruising of the limbs: 164
anger - *krodha*: 25
anguish - *santāpa*: 76
āṅgulirājī - the finger stripe: 187
animals - *paśu*: 26
añjana - application of collyrium: 254, 259 - collyrium: 199f, 203f, 253–256, 258ff, 265 - eye make-up: 147, 153 - eye ointment: 153 - eye salve: 165 - stibnite: 259
annamada - intoxication from food: 164
antarāyāma - emprosthotonos: 79
anti-toxin - *agada*: 239
antidote - *agada*: 165, 198f, 203, 217
antitoxic - *agada*: 198
antitoxin - *agada*: 239
antra - entrails: 256 - gut: 165
ants - *pipīlīka*: 26
ānu - minute: 100
anubandha - indicator sounds: 306
anulepana - massage ointment: 147, 151 - ointment: 151
ānulomya - rightness: 70
anumata - consent: 311, 314
anus - *guda*: 171
anuvāsana - oily enema: 87
anya - other: 301
- apadeśa* - statement of reason: 311, 313
apāna - *apāna*: 71
apāna - *apāna*: 71
apāṅga - outer corner of the eye: 261
aparā - afterbirth: 133
aparājita - undefeated: 231
apatānaka - seizure: 77f
āpatantraka - spasmodic contradiction: 80
apavarga - exception: 311, 314
apertures of the head - *kha*: 152
aphorism - *sūtra*: 312
apparent - *pravyakta*: 103
application of collyrium - *añjana*: 254, 259
application of oil to the head - *śirobasti*: 116
apuṣpa - the grass flower: 186
araga timira - non-bloodshot blindness: 261
ardhakapāṭasandhika - half door-hinge: 56
ardita - paralysis of the jaw-bones: 80, 82 - spasm of the jaw-bones: 80
arid-land animals - *jāngala*: 259
ariṣṭā - bandage: 196f, 201f
ariṣṭa - omens: 63
arṇavamala - cuttle fish: 256
arocaka - loss of appetite: 164
arśas - prolapses: 272
ārtava - menses: 102 - menstrual blood: 100, 272 - seasonal blood: 86
ārtava - menstrual blood: 88f
arthā - purpose: 300
arthāpatti - implication: 311, 314
aruci - disinterest in food: 201
asādhya - incurable: 86, 253 - untreatable: 261
āsaṅgima - fastening: 56
asātmya - uncongenial: 75
āsekya - having diminished seed: 93
asi - stings: 172
āśmarī - urinary stones: 221
āśoka - grief: 25
āśraya - substrata: 157
āśrayin - substrate: 25

aśrupāta - weeping tears: 90
āsthāpana - enema: 87
asthi - bones: 27
aṣṭhilā - pebble: 149
asthma - *śvāsa*: 221
asūyā - jealousy: 25
atibalā - strong mallow: 257
atideśa - prediction: 311, 313
atikrāntāpekṣaṇa - past reference: 311, 315
ātmaka - nature: 24
ātopa - flatulence: 150
attribute - *guṇa*: 298
atyānandā - extremely excited: 273
avabāhuka - avabāhuka: 82
avabāhuka - *avabāhuka*: 82
avadāraṇa - fissuring: 153
avakāśa - place: 42
avalekhana - combs: 147
avapīḍa - sternutatory: 200
āvara - spiral: 261
avaśardhita - fart: 171
aversion to food - *bhaktadvesa*: 221
axelwood - *dhava*: 265
ayana - half-year: 26
āyatta - depends on: 25
āyu- - life: 38
āyur - life, longevity: 21
āyurveda - the science of life: 22

babhru - the brown: 187
babhrūkuṭīmukha - the brown hut mouth:
 186
baddham - bound, connected: 60
bahuvarṇa - multicolour: 231
bāhyāyāma - external tension: 77
balā - country mallow: 257
bala - strength: 25
balāsa - phlegm: 115
bali - morsel: 148 - ritual offering: 105
 - sacrificial offerings: 197
bandage - *ariṣṭā*: 196f, 201f - *bandha*: 196
bandha - bandage: 196
base, foundation - *adhiṣṭhāna*: 171
bāspa - vapour: 148f, 152
basti - enema: 116
basti - instillation: 87

be exhausted - *sāda*: 165
bearers - *vodhāra*: 147
beauty berry - *priyaṅgu*: 259
belly - *kukṣi*: 93
bellyache - *jaṭhara*: 167
bent brow and eye - *vakrabhrūnetra*: 263
numbed - *jāḍya*: 192
beryl - *vaidūrya*: 265
between the shoulder-blades - *trika*: 116
bewilderment - *moha*: 74
bhāgadheya - tribute: 105
bhadradāru - deodar: 265
bhakṣya - masticable: 316
bhaktadvesa - aversion to food: 221
bhanīga - leaves: 262
bhavet - it may be: 261
bhāvita - cooked: 259 - infused: 255
bherī - drum: 204
bheṣaja - treatment: 273
bhojya - edible: 316
bhrama - dizziness: 74
bhramaraka - drongo: 148
bhūmī - black earth: 205
bhūta - element: 100
bhūtātman - elemental self: 101
big-leaf scalpel - *vyddhipatra*: 246
bighead - *mahāśiras*: 231
bija - seed: 93 - semen: 272
bile-fever - *pittajvara*: 202
bile - *pitta*: 257
bilious / choleric - *pittalā*: 273
bindurāji - the drop stripe: 187
black earth - *bhūmī*: 205
black part - *kṛṣṇa*: 261
black soot - *maṣī*: 254
black-pattern - *kṛṣṇacitra*: 232
black-striped - *kṛṣṇarājī*: 232
black - *kṛṣṇā*: 39, 232
blanket sweating - *prastara*: 114
blindness - *timira*: 261
blink of the eye - *nimeṣa*: 26
blister - *sphoṭa*: 241
blisters - *piṭaka*: 211, 214
blockage of the vision - *dṛṣṭyavarodha*:

- blood-bile - *rakta-pitta*: 253
 blood-bile - *śonita-pitta*, *rakta-pitta*: 257
 blood-letting - *sirāvedha*: 254
 blood - *rakta*: 86 - *rudhira*: 26 - *śonita*: 257
 - *śonita*: 85f
 bloodshot blindness - *rāgin timira*: 258
 - *rāgīni timire*: 261
 blossom - *prasūna*: 204
 blue dot cataract - *mlāyin*: 260
 blue vitriol - *tuttha*: 259
 bodily constituents - *dhātu*: 163
 bodily element - *dhātu*: 73
 bodily tissues - *dhātu*: 70 - *dhātu*: 192
 body language - *īngita*: 147
 body tissue - *dhātu*: 164, 239
 body tissues - *dhātu*: 248
 bones - *asthi*: 27
 born from eggs - *aṇḍaja*: 26
 born in in a caul - *jarāyuja*: 26
 born of sweat - *svedaja*: 26
 bound, connected - *baddham*: 60
 bow paralysis - *dhanuhstambha*: 77
 box myrtle - *kaṭphala*: 256
brahma - holiness: 197
brahmacāriṇī - chaste woman: 90
brahmaṛṣi - holy sages: 197
 breath - *prāṇa*: 71
 brilliance - *tejas*: 92
 bristle - *śūka*: 171
bṛṇihāna - nourishment: 25
 brown - *kapilā*: 232
 bruising of the limbs - *aṅgamarda*: 164
 bubbling - *budbuda*: 264
budbuda - bubbling: 264
 bulbs - *kanda*: 26
 bulges - *piṭaka*: 103
 burning sensation in feet - *pādadāha*: 81
 burning sensation - *dāha*: 75
 bursts out - *sphuṭita*: 76

cakradhārā - rim of a wheel: 57
cakraka - the ringed: 188
cala - liquid: 262
 can be mitigated - *yāpya*: 76, 261
caraṇī - caraṇī: 273
caraṇī - caraṇī: 273
 cardamom - *elā*: 256
carman - pelt: 26
carmānta - leather: 196
 carnivore - *kravyabhuj*: 258
 carriers - *adhiṣṭhāna*: 171
 cassia cinnamon - *patra*: 264
 castor oil - *pañcāṅgulataila*: 257
 cataract - *liniganāśa*: 261
caturvarga - fourfold grouping: 27
catuṣṭaya - four factors: 27
 caused by wind - *pavanodbhava*: 257
 causes - *hetu*: 273
 causing a fall - *sramsanī*: 273
 causing the destruction of actions such
 as moving - *gamanādikriyāvināśakarī*:
 263
 caustic - *kṣāra*: 87, 89, 219
 cauterization - *agnikarma*: 114
 cauterized - *paridāhita*: 217
cetanādhātu - element of consciousness:
 103
 character - *prakṛti*: 228
 chaste woman - *brahmacāriṇī*: 90
 chebulic myrobalan - *abhaya*: 256
chedya - excision: 27
 cheek-ear - *gaṇḍakarṇa*: 56
 chest - *hṛd*: 165
chidra - opening: 261
 child bearing - *kaumārabhṛtya*: 268
 child-murderess - *putraghṇī*: 273
chinna - segmented: 39
 cholera - *pitta*: 273
chyle - *rasa*: 106, 164
chyle - *rasa*: 46
chyle - *rasa*: 72
cihna - signs: 273
 circuit of the pupil - *drṣṭimandala*: 262
citraka - the mark: 187
 citron - *mātuluṅga*: 264
 clean - *pra/ sādh*: 153
 cloth - *plota*: 196
 clumps - *granthi*: 85, 89
 clusters - *samplava*: 26
 cock - *tāmracūḍa*: 258
 cohesion - *yoga*: 311

cohesion - *yoga*: 312
 collection - *varga*: 27
 colligation - *sannipāta*: 100
 collyrium - *añjana*: 199f, 203f, 253–256,
 258ff, 265
 combined - *upahita*: 257
 combs - *avalekhana*: 147
 comfort - *sukha* : 27
 compendium of diseases - *rogasamgraha*:
 270
 complexion - *varṇa*: 25, 63, 92, 108
 component - *aṅga*: 24
 compounds - *yoga*: 254
 compressed - *saṅkṣipta*: 56
 compressed - *saṅkṣipta*: 57
 compulsion - *niyoga*: 311, 315
 conch - *salilotthita*: 260
 congenital blindness - *jātyandha*: 92
 congested humours - *sannipāta*: 27
 consent - *anumata*: 311, 314
 constipation - *ānāha*: 161, 164, 167
 constitution - *prakṛti*: 201
 constrictor - *ajagara*: 190
 contamination dropsy - *duṣyodara*: 164
 contraposition - *viparyaya*: 311, 314
 convulse - *ākṣip*: 77
 convulsing - *ākṣipana*: 77
 convulsion - *ākṣepaka*: 78f, 82
 cooked barley - *yavaudana*: 261
 cooked - *bhāvita*: 259 - *siddham*: 294
 copper - *tāmra*: 263
 coral - *vidruma*: 265
 core - *majjan*: 107
 coṣa - driness: 264 - dry: 244, 246
 -dryness: 240
 cottony jujube - *kākolī*: 265
 counter-sun - *pratisūrya*: 231
 counteraction - *pratiṣedha*: 253
 country mallow - *balā*: 257
 cow snout - *gonasa*: 188
 cow-dung - *gośakṛt*: 255
 cow-praising - *govandanā*: 39
 cow's flesh - *gomāmsa*: 254
 cow's urine - *gomūtra*: 256
 creeper-ear - *vallikarṇa*: 56

creepy-crawlies - *sarīṣṛpa*: 23, 26
 crimson and crimson-ringed - *raktā*: 232
 crimson - *raktā*: 232
 crow's foot - *kākapada*: 166
 crow's lip - *kākauṣṭha*: 56
cumucumāyana - itching: 73
cuñcumālaka - little ring of spots: 184
 curable - *sādhyā*: 86, 253f
 curds - *dadhi*: 150, 154
 cure - *siddhi*: 166
 cured - *sādhyā*: 167
 cuscus grass - *uśīra*: 259
 cut - *pra√chā*: 215
 cutting with a blade - *śastrakṣata*: 254
 cuttle fish - *arṇavamala*: 256
 cuttlefish bone - *phena*: 265
 - *samudraphena*: 256
 dadhi - curds: 150, 154
 dadhimukha - the curd mouth: 186
 dadru - ringworm: 230, 238
 dāha - burning sensation: 75 - feeling of
 heat: 214 - overheating: 253
 - temperature: 242
 dainya - misery: 25
 dais - *pīṭha*: 56
 daivakṛte - naturally-occurring: 261
 daṇḍāpatānaka - stick seizure: 77
 dantamāṃsa - gum: 150
 dantaveṣṭa - tooth socket: 150
 darbhapuspa - the grass flower: 188
 dardru - ringworm: 230
 darita - torn: 184
 dark brown - *śyāma*: 92
 dark colour - *dhyāma*: 162
 dark, rough patches of skin - *kitibha*: 211,
 230
 dark - *kṛṣṇa*: 92
 dart-mouth - *śaṅkumukhī* : 40
 daṣṭa - stung: 231f
 datta - given: 148
 dauḥṛda - pregnant craving: 105
 - pregnant longing: 104 - sharing her
 heart with the fetus: 104
 dauḥṛdā - sharing her heart with the
 fetus: 104

- day and night - *ahorātra*: 26
 deadly substance - *kālakalpa*: 192
 decoction - *kaṣāya*: 87, 246 - *kvātha*: 89, 165, 212, 214f - *nīḥkvātha*: 89
 decoctions - *kaṣāya*: 147, 262
 decomposition - *kuṇapa*: 85f
 deducible - *ūhya*: 311, 316
 deer - *ena*: 258
 defect - *dosa*: 88
 defects - *dosa*: 272
 deity - *devatā*: 197
 delirium - *moha*: 161
 demons - *graha*: 268
 demons - *graha*: 268
 deodar - *bhadradāru*: 265
 depends on - *āyatta*: 25
 depression - *viṣāda*: 25
 desert date - *īngudi*: 259
 desire - *icchā*: 25
 determination - *nirṇaya*: 311
devadinnā - the gift of god: 187
devatā - deity: 197
dhāmanī - duct: 106 - ducts: 77
dhāmani - pipe: 78
dhāmani - pipes: 102
dhanuhstambha - bow paralysis: 77
dharma - merits: 109 - virtue: 93
dhātī - emblic: 256
dhātu - bodily constituents: 163 - bodily element: 73 - bodily tissues: 70 - body tissue: 164, 239 - body tissues: 248 - element: 158, 161 - mineral: 160 - tissues: 223
dhātu - bodily tissues: 192
dhava - axelwood: 265
dhūma - inhaled smoke: 147
dhūmadarśin - seeing smoke: 254
dhūpa - fumigation: 238
dhyāma - dark colour: 162 - grimy: 147
 diet - *āhāra*: 25
 differentiated - *pravyakta*: 105
digdha - poisoned: 202f
 digestive fire - *agni*: 71
 dilator - *pravardhanaka*: 55
 diminished digestive fire - *agnisaṅga*: 72
dīpyaka - the stimulator: 188
 discharge - *praseka*: 162 - *srāva*: 151, 153
 discolouration - *vaivarnya*: 72
 disease - *vyadhi*: 27
 diseases - *roga*: 272
 disinterest in food - *aruci*: 201
 disjunction - *viślesa*: 164
 disorders of the female reproductive system - *yonivyāpat*: 272
 disorientation - *moha*: 72
 distension - *ādhmāna*: 161
 dizziness - *bhrama*: 74
 door-hinge - *kapāṭasandhika*: 56
dosa - defects: 272 - humour: 163, 261, 312 - humours: 26 - humours: 272 - humours: 70
dosa - defect: 88 - pathology: 87
dosapariplava - unsteadiness of the humours: 263
 double - *yamalā*: 150
 doubt - *samśaya*: 311, 315
 downward vision - *adhodṛṣṭitva*: 264
drākṣā - grapes: 264
dravāñjana - liquid collyrium: 259
dravya - liquid: 203 - substance: 63, 298
 dried flesh - *vallūraka*: 56
 dried ginger - *nāgara*: 255
 driness - *coṣa*: 264
 drinkable - *peya*: 316
 drongo - *bhramaraka*: 148
 drowsiness - *supti*: 115
dr̥ṣṭi - eye: 92 - pupil: 253, 262f
dr̥ṣṭimāṇḍala - circuit of the pupil: 262
dr̥ṣṭivibhrama - faulty vision: 153
dr̥ṣṭyavarodha - blockage of the vision: 191
 drum - *bherī*: 204
 dry rub - *utsādana*: 151
 dry rubs - *utsādana*: 147
 dry - *coṣa*: 244, 246 - *rūkṣa*: 163
 dryness - *coṣa*: 240
 duct - *dhāmani*: 106 - *sirā*: 198
 ducts - *dhāmani*: 77 - *sirā*: 27, 114 - *srotas*: 95, 189
duḥkha - suffering: 25

dumb - *mūka*: 81
dundubhi - kettle drum: 219
dung beetles - *varcalikīta*: 172
dūrvā - panic grass: 264
dūṣī-viṣa - slow-acting poison: 164
dūṣīviṣa - slow poisoning: 199
 - slow-acting poison: 167, 215
dūṣīviṣāri - enemy of slow-acting poison:
 167 - slow-acting poison antidote:
 150
dust - *rajas*: 70
duṣṭa - injured: 239
dusyodara - contamination dropsy: 164
dveṣa - hatred: 25
dvyāhika - the two-day: 188
dvyaṅgulirājī - the two finger stripe: 187
dwindling away - *kṣaya*: 164
dysfunctional eyes - *vikṛtakṣa*: 92, 104

ear-ache - *karṇaśūla*: 82
early stage - *taruṇa*: 107
earth products - *pārthīva*: 26
earth - *pāṁśu*: 196
earthen products - *pārthīva*: 27
edible - *bhojya*: 316
ekāṅgaroga - illness of one limb: 78
 - monoplegia: 79
ekānta - invariable statement: 311
 - invariable statement: 314
ekarasa - one essence: 205
elā - cardamom: 256
element of consciousness - *cetanādhātu*:
 103
element - *bhūta*: 100 - *dhātu*: 158, 161
elemental self - *bhūtātmā*: 101
elephant/snake - *nāga*: 173
elixir salve - *rasāñjana*: 255, 258, 260
elixir-salve - *rasāñjana*: 255
elixir-salve - *sīta*: 255
ellipis - *vākyāśeṣa*: 311
ellipsis - *vākyāśeṣa*: 314
embelia - *vidaṅga*: 259
emblic - *dhātrī*: 256
emprosthotonos - *antarāyāma*: 79
eṇa - deer: 258

enclosed roasting - *puṭākhya*: 258
 - *puṭapāka*: 259
ends - *vaktra*: 263
enema - *āsthāpana*: 87 - *basti*: 116
enemy of slow-acting poison - *dūṣīviṣāri*:
 167
energy - *ojas*: 63
enīpada - the deer foot: 187
entrails - *antra*: 256
envy - *īrṣyā*: 25
errhine - *nasya*: 257
errhines - *nasya*: 153
essence - *rasa*: 106 - *sāra*: 26 - *sattva*: 108
evacuation - *saṁśodhana*: 217
evam - along these lines: 27
even more apparent - *pravyaktatara*: 103
exception - *apavarga*: 311, 314
excision - *chedya*: 27
expansive - *vikāsin*: 163
expert - *vicakṣaṇa*: 91
explication - *vyākhyāna*: 311, 315
exposition - *nirdeśa*: 311, 313
expressed juice - *svarasa*: 254
extensive meaning of the collection of
 statements - *vāksamūhārthavistāra*: 189
external factors - *āgantu*: 27
external tension - *bāhyāyāma*: 77
extract of rohu carp - *rauhita*: 255
extract - *niryāsa*: 153
extracted juice - *surasa*: 89
extracted juice - *svarasa*: 152
extracts - *rasa*: 259
extremely excited - *atyānandā*: 273
eye make-up - *añjana*: 147, 153
eye ointment - *añjana*: 153
eye salve - *añjana*: 165
eye - *dr̥ṣṭi*: 92
eyewash - *tarpaṇa*: 153, 254, 258f
fainting - *mūrcchā*: 202 - *mūrchiā*: 74
fart - *avaśardhita*: 171
fastening - *āsaṅgima*: 56
fat - *vasū*: 258
faulty medical treatment - *mithyopacāra*:
 272
faulty vision - *dr̥ṣtivibhrama*: 153

feeling of heat all over - *paridāha*: 191
 feeling of heat - *dāha*: 214
 female reproductive organ - *yoni*: 272f
 female reproductive system - *yoni*: 272
 fetal conduit - *garbhanādī*: 105
 fever - *jvara*: 69
 field-specific term - *svasamjñā*: 311, 315
 filaments - *kiñjalka*: 255
 fire coloured - *agnivarṇā*: 232
 first point of view - *pūrvapakṣa*: 314
 fissuring - *avadāraṇa*: 153
 flag - *patāka*: 204
 flame of the forest - *palāśa*: 259
 flatulence - *āṭopa*: 150
 flavour - *rasa*: 312
 flavours - *rasa*: 25, 63
 flesh - *māṇsa*: 27
 flooded - *pariplutā*: 273
 flowering trees - *vṛkṣa*: 25
 flowers - *puṣpa*: 26
 follicles - *kha*: 151
 force - *vega*: 116
 foreign bodies - *śalya*: 249
 foreign body - *śalya*: 249
 formal procedure - *kalpa*: 171, 196
 formulation - *yoga*: 113
 fortnight - *pakṣa*: 26
 foul-smelling pus - *pūtipūya*: 86
 four factors - *catuṣṭaya*: 27
 fourfold grouping - *caturvarga*: 27
 free from clouds - *abhramukta*: 262
 free from the point - *agramukta*: 262
 frogs - *maṇḍuka*: 26
 fruit trees - *vanaspati*: 25
 fruits - *phala*: 26
 fumigation - *dhūpa*: 238
 future reference - *anāgatāpekṣaṇa*: 311,
 315

gada - toxin: 239
gadgad - stammers: 81
gādha - pinched: 58
gairikāḥ - red chalk: 264
gamana - intercourse: 88

gamanādikriyāvināśakarī - causing the destruction of actions such as moving: 263
gaṇḍakarṇa - cheek-ear: 56
gara - toxic potion: 221
garbha - offspring: 95f
garbhanādī - fetal conduit: 105
garbhāśaya - uterus: 101
 garlands - *sraj*: 147
garuḍa - *tārksya*: 204
 gasping - *vij̄imbhikā*: 213
 gauze - *plota*: 58
gavedhuka - the gavedhuka: 186
 general rule - *paribhāṣā*: 259
 gently - *mṛdu*: 264
 ghee - *sarpis*: 154 - *sarpis*: 254
girisarpa - the mountain snake: 187
 given - *datta*: 148
 giving of fumes - *paridhūpāyana*: 190
 giving off fumes - *paridhūpana*: 190
 glassy opacity - *kāca*: 259
 gloominess - *tamas*: 245
godhā - monitor lizard: 256
gold - *śātakumbhī*: 263
gomāṇsa - cow's flesh: 254
gomūtra - cow's urine: 256
gonasa - cow snout: 188
gośakṛt - cow-dung: 255 - juice of cow-dung: 255
gout - *vātarakta*: 82
govandanā - cow-praising: 39
graha - demons: 268 - demons: 268
grahaṇī - seat of fire in the gut: 191
grahaṇī - seat of fire in the gut: 191
grahaṇīdoṣa - humours of the abdomen: 221
granthi - clumps: 85, 89 - knots: 162
 -lumps: 151, 161, 211, 214
granthi - knot: 103
granulations - *pulāyikā*: 240
grapes - *drākṣā*: 264
grdhrasī - sciatica: 80, 82
 great antidote - *mahāgada*: 39
 great fragrance - *mahāsugandha*: 153
 greed - *lobha*: 25

- green vitriol - *kāśīsa*: 260
grhadhūma - soot: 177, 220
grief - *āśoka*: 25
grimy - *dhyāma*: 147
gripes - *śūla*: 72
grooming - *vilekhana*: 90
growth - *karnikā*: 247
gruel - *yavāgū*: 166, 199
guda - anus: 171
guḍikā - pill: 255
gulma - abdominal lump: 272
 - abdominal swelling: 72
gum - *dantamāṇsa*: 150
guna - attribute: 298 - qualities: 162
gut - *antra*: 165
- haemorrhaging - *śonitāgamana*: 190
half door-hinge - *ardhakapāṭasandhika*: 56
half litre - *prastha*: 214
half-year - *ayana*: 26
hare foot uraria - *prthakparṇī*: 264
hareṇu - *hareṇu*: 255f
hareṇu - *hareṇu*: 255f
hari - sun: 262
haridrā - turmeric: 259
harṣa - horripilation: 164
 - overexcitement: 25
harsh - *paruṣā*: 232
hastābharaṇaka - the hand decoration: 187
hastikakṣya - lion: 231
hatred - *dveṣa*: 25
having diminished seed - *āsekya*: 93
having made small cuts - *pracchita*: 215
heart-seizure - *hṛdgṛaha*: 72, 213
heat - *agni*: 70 - *tejas*: 92, 100
herbs - *oṣadhi*: 25
hetu - causes: 273 - reason: 300
hetvartha - purpose of a reason: 311, 313
himalayan cherry - *padmaka*: 264f
hīnakarṇa - reduced-ear: 56
hives - *a*: 233 - *koṭha*: 213, 239f
hoarseness - *pāruṣya*: 161
holiness - *brahma*: 197
holostemma - *payasyā*: 264
holy sages - *brahmarsi*: 197
honey collyrium - *kṣaudrāñjana*: 256
- honey - *madhu*: 254 - *madhus*: 148
hopper - *kunī*: 231
hornets - *kaṇabha*: 230
horripilation - *harṣa*: 164
horseradish tree - *śigru*: 260
hot all over - *samanṭatastāpah*: 190
hot over the whole body
 - *sarvāṅgasantāpah*: 190
hṛd - chest: 165
hṛdgṛaha - heart-seizure: 72, 213
huge - *mahatī*: 273
human being - *puruṣa*: 24f, 27
humoral colligation - *sannipāta*: 86
humour - *doṣa*: 163, 261, 312
humours of the abdomen - *grahaṇīdoṣa*:
 221
humours - *doṣa*: 26
humours - *doṣa*: 272
humours - *doṣa*: 70
hydrophobia - *jalatrāsa*: 216
- icchā* - desire: 25
if, then not - *na ced*: 261
ilikinī - the ilikinī: 188
illness of one limb - *ekāṅgaroga*: 78
illness - *ruj*: 256
illustration - *nidarśana*: 311, 315
immortal - *amṛta*: 154
implication - *arthāpatti*: 311, 314
impotent - *śaṇḍhī*: 273
in those cases - *tatra*: 257
in yama's direction - *yāmya*: 177
inactive - *akriya*: 81
incised - *pracchāna*: 202 - *pracchita*: 202
incising - *pracchāna*: 198
incurable - *asādhya*: 86, 253
indian madder - *mañjiṣṭhā*: 264
indian sarsaparilla - *kālānusārīva*: 255
 - *sārīva*: 256 - *śārīvā*: 264
indication - *pradeśa*: 311, 313
indicatory sounds - *anubandha*: 306
indigo - *nīlī*: 150
individuality - *viśeṣa*: 299
indragopa - red velvet mites: 26
indrāyudhā - rainbow: 39
infertile - *vandhyā*: 273

- inflamed - *samṛambha*: 59 - *vidagdha*: 254
 infused - *bhāvita*: 255
 infusion - *upasneha*: 106
ingita - body language: 147
iṅgudī - desert date: 259
 inhaled smoke - *dhūma*: 147
 inherence - *samavāya*: 299
 inherent factors - *svabhāva*: 27
 inherent - *svābhāvika*: 25
 injured - *duṣṭa*: 239 - *utpiḍita*: 261
 insect - *kīṭa*: 228, 239
 insects - *kīṭa*: 232, 235
 inspissation - *rasakriyā*: 260
 instillation - *basti*: 87
 intended - *vyākhyāta*: 27
 intentionality - *abhiprāya*: 104
 intercourse - *gamana*: 88
 internal tension - *abhyantarāyāma*: 77
 interpretation - *nirvacana*: 311, 315
 intestines - *pakvādhāna*: 165 - *pakvāśaya*: 150, 164
 intoxication from food - *annamada*: 164
 invariable statement - *ekānta*: 311
 invariable statement - *ekānta*: 314
 investigation - *parikṣā*: 304
 invincible - *ajeya*: 154
 invincible - *ajeya*: 167
 irregularities - *vaiśamya*: 25
 irrigated - *pratipūraṇa*: 152
 irrigation - *seka*: 254 - *tarpana*: 272
 irritation - *adhimantha*: 264 - *prakopa*: 26
īrṣyā - envy: 25
 it may be - *bhavet*: 261
 itching - *cumucumāyana*: 73
 itemization - *vidhāna*: 311, 314
 items created by time - *kālakṛta*: 26 - *kālakṛta*: 27
jāḍya - benumbed: 192
jāḍyatā - rigidity: 201
jala - water: 38
jalatrāsa - hydrophobia: 216
jalaukas - water-dwellers: 38
jamboṣṭha - jambu-lip: 246
jambu-lip - *jamboṣṭha*: 246
jāṅgala - arid-land animals: 259
jaṅgama - mobile: 158 - moving: 25
jaṅgama - moving: 27
japa - mantra repetition: 197
jarāyuja - born in in a caul: 26
jathara - bellyache: 167
jātī - royal jasmine: 265
jatru - neck: 71
jātyandha - congenital blindness: 92
 jealousy - *asiyā*: 25
jihvā - tongue: 237
jīva - life: 93
 joints - *sandhi*: 27
 juice extract - *svaraṣa*: 26
 juice of cow-dung - *gośakrt*: 255
 juice - *rasa*: 115
 juices - *rasa*: 258
jvara - fever: 69
jyotiṛatha - the chariot of light: 188
kāca - glassy opacity: 259
kākapada - crow's foot: 166
kākauṣṭha - crow's lip: 56
kākoli - cottony jujube: 265
kalā - layer: 181 - minutes: 26
kalā - al layers: 192 - layers of skin: 192
kālakalpa - deadly substance: 192
kālakṛta - items created by time: 26
kālakṛta - items created by time: 27
kālāniusārīva - indian sarsaparilla: 255
kalāyakhañja - lathyrism: 81f
kalka - mash: 167 - paste: 87, 89
kalpa - formal procedure: 171, 196 - procedure: 146, 182, 210, 219, 228
kalyāṇaka - the salutary: 221
kāma - lust: 25
kaṇabha - hornets: 230
kanda - bulbs: 26
kaṇṭaka - spots: 152
kapālacūrṇa - powdered earthenware crockery: 57
kapāṭasandhika - door-hinge: 56
kapha - mucus: 152 - phlegm: 161, 163, 165, 191, 273
kapilā - brown: 232 - tawny: 40
kapittha - wood apple: 254
karburā - mottled: 39

kardama - the mud: 187
karma - regimen: 263
karman - movement: 299 - therapies: 27
karṇāśūla - ear-ache: 82
kaṛnavyadha - piercing the ear: 53
karṇikā - growth: 247
karṇika - small ear-like growths: 211, 214f
karṇikā - small ear-like growths: 230
karṇinī - protuberant: 273
karṣū - trench sweating: 114
kaśaya - decoction: 87, 246 - decoctions:
 147, 262 - the ochre: 187
kaśāyavāsika - 'orange-dwellers': 172
kāśipati - lord of kāśī: 146
kāśīsa - green vitriol: 260
kāṣṭhā - trice: 26
kaṭphala - box myrtle: 256
kaumārabhṛtya - child bearing: 268
kaumārī - young girl: 95
kauṇḍinya - 'pot insects': 172
kavala - mouthwash: 151
 kettle drum - *dundubhi*: 219
kevala - simply: 200
kha - apertures of the head: 152
 - follicles: 151
khaluṣa - the khaluṣa: 187
khaṇḍaphaṇa - the break hood: 186
khañja - limpness: 81
khara - rough: 263
kikkisāda - the worm eater: 188
kinihī - white siris: 259
kiñjalka - filaments: 255
kīta - insect: 228, 239 - insects: 232, 235
 kitchen - *mahānasa*: 147
kitibha - dark, rough patches of skin: 211,
 230
kitipa - lice: 172
kleda - weeping: 244
knot - granthi: 103
knots - *granthi*: 162
 knowledge - *veda*: 21, 298
kohl - *srotas*: 258 - *srotoja*: 255, 265
koṣṭha - trunk of the body: 191
koṭha - hives: 213, 239f - skin disease: 164
kravyabhuj - carnivore: 258

kṛcchra - with difficulty: 261
kriyā - procedures: 24, 27 - treatment:
 259f
kriyākāla - the time for therapies: 27
kriyāsaṅga - loss of function: 263
kṛmi - worms: 26
krodha - anger: 25
kroṣṭukaśīrṣa - synovitis of knee join: 81f
kṛṣṇa - black part: 261
kṛṣṇā - black: 39, 232
kṛṣṇa - dark: 92
kṛṣṇacitra - black-pattern: 232
kṛṣṇarājī - black-striped: 232
kṛṣṇasarpa - the black snake: 186
kṛṣṇodara - the black belly: 186
kṣaṇadāndhya - night blindness: 255
ksāra - caustic: 87, 89, 219
kṣārāgada - the caustic antidote: 220
kṣāraka - lye: 258
kṣaudrāñjana - honey collyrium: 256
kṣaya - dwindling away: 164 - wasting:
 79
kṣīṇa - low volume: 85 - wasted: 58
kṣīra - milky sap: 158, 160f - sap: 26
ksīrikāpuspa - the milk flower: 188
kukṣi - belly: 93
kukuṭa - the kukuṭa: 186
kunakha - ugly nails: 90
kunapa - decomposition: 85f - smell of
 decomposition: 86
kunī - hopper: 231
kūni - shrivelled hand: 96
kunta - small insects: 26
kupyaka - metal: 254
kuṣṭha grass - *kuṣṭa*: 258
kuṣṭha - *kuṣṭa* grass: 258
kuṣṭha - pallid skin disease: 90, 164
kuṭī - sauna: 114
kvāṭha - decoction: 89, 165, 212, 214f

 lac - *lākṣā*: 264
lākṣā - lac: 264
lālā - saliva: 171
lame - *paiṇgu*: 81
lathyrism - *kalāyakhañja*: 81f

- latter part - *uttara*: 249
 lavages - *ācamana*: 89
 layer - *kalā*: 181 - *patala*: 261
 layers of skin - *kalā*: 192
 leather - *carmānta*: 196
 leaves - *bhaṅga*: 262 - *patra*: 26
lehya - suckable: 316
lekhana - scarification: 25
 lice - *kiṭipa*: 172
 life, longevity - *āyur*: 21
 life - *āyu*-: 38 - *jīva*: 93
 limpid - *viśada*: 163
 limpness - *khañja*: 81
liṅga - symptom: 152 - symptoms: 164
liṅganāśa - cataract: 261
 liniment - *ālepa*: 254
 liniments - *ālepana*: 39, 153
 lion - *hastikakṣya*: 231
 liquid collyrium - *dravāñjana*: 259
 liquid - *cala*: 262 - *dravya*: 203
 liquorice - *madhukair*: 264
 little ring of spots - *cuñcumālaka*: 184
 liver extract - *yakṛdrasa*: 255
 liver - *yakṛt*: 256
lobha - greed: 25
 located on the limb - *sākhāśrayā*: 198
 located - *adhiṣṭhāna*: 25
 lodh tree - *lodhra*: 259
lodhra - lodh tree: 259
 logical methods of the system
 - *tantrayukti*: 311
lohitākṣa - the red eye: 186, 188
 long pepper - *māgadha*: 259 - *māgadhi*: 256 - *māgadhī*: 256, 258
 loose stool - *viḍbheda*: 161, 174
 lord of kāśī - *kāśipati*: 146
 loss of appetite - *arocaka*: 164
 loss of function - *kriyāsaṅga*: 263
 lotus-mouth - *puṇḍarikamukhī*: 40
 lotus-splittable - *utpalabhedyaka*: 56
 lotus-spots - *padminīkaṇṭaka*: 152
 low volume - *kṣīṇa*: 85
 lumps - *granthi*: 151, 161, 211, 214
 lust - *kāma*: 25
lūṭā - spiders: 23
 lye - *kṣāraka*: 258
madanaka - the intoxicator: 187
 made accessible - *alaṅkṛtvā*: 23
madhu - honey: 254 - mead: 197
madhukair - liquorice: 264
madhus - honey: 148
madirā - spirits: 256
madira - spirits: 259
 madness - *unmāda*: 221
māgadha - long pepper: 259
māgadhi - long pepper: 256
māgadhī - long pepper: 256, 258
mahāgada - great antidote: 39 - the great
 antidote: 213
mahāgada - *The Great Antidote*: 203
mahākapota - the big pigeon: 186
mahākṛṣṇa - the big black: 186
mahānasa - kitchen: 147
mahāpadma - the great lotus: 186
mahāpanasaka - the big jackfruit: 187
mahāsarpa - the great snake: 186
mahāśiras - bighead: 231
mahāśīrṣa - the big head: 187
mahāsugandha - great fragrance: 153
mahatī - huge: 273
majjan - core: 107
mākuli - *mākuli*: 188
mākuli - *mākuli*: 188
 malice - *mātsarya*: 25
māṃsa - flesh: 27
māṃsanirgama - prolapse: 264
māṃsarasa - meat broth: 115
manahśilā - realgar: 255, 258f, 265 - red
 arsenic: 256
mānasa - mental: 25
maṇḍala - round blotches: 164
maṇḍuka - frogs: 26
 manifest - *abhivyakta*: 103
 manifestations - *vyañjana*: 249
mañjiṣṭhā - indian madder: 264
 mantra repetition - *japa*: 197
 manual agitation - *pāṇimantha*: 114
manyāstambha - stiffness of the neck: 192
manyāsthambha - rigidity of neck: 80
mardana - rubbing: 114

marks with a knife - *śastrapada*: 42
māruta - wind: 86
māsa - month: 26
mash - *kalka*: 167
maṣī - black soot: 254
massage oil - *abhyāṅga*: 147, 153
massage ointment - *anulepana*: 147, 151
masticable - *bhakṣya*: 316
mātrā - measures: 116
mātsarya - malice: 25
mātulūṅga - citron: 264
matured - *vipakva*: 255
mead - *madhu*: 197
meaning of one or more words
 - *padārtha*: 312
measures - *mātrā*: 116
meat broth - *māṇsarasa*: 115
medical advice - *ācārika*: 58
medicines cooked in a crucible
 - *puṭapāka*: 254
men - *nara*: 172
menses - *ārtava*: 102
menstrual blood - *ārtava*: 100, 272
 - *ārtava*: 88f
mental - *mānasa*: 25
mention - *samuddeśa*: 311, 313
merits - *dharma*: 109
meṣaśrīga - periploca of the woods: 265
meṣaviṣāṇa - periploca of the woods: 257
metal - *kupyaka*: 254
metamorphopsia - *viparītadarśana*: 190
milk - *payas*: 154
milky sap - *kṣīra*: 158, 160f
mimmira - mumbles: 81
mineral - *dhātu*: 160
minor body parts - *pratyāṅga*: 103
minute - *aṇu*: 100
minutes - *kalā*: 26
misery - *dainya*: 25
miśrakacikitsa - various treatments: 60
misshapen eyeball - *vilocana*: 263
mithuna - pair: 315 - triad: 315
mithyopacāra - faulty medical treatment:
 272
mitigatable - *yāpya*: 253

mlāyin - blue dot cataract: 260
mobile - *jaṅgama*: 158
moha - bewilderment: 74 - delirium: 161
 - disorientation: 72
monitor lizard - *godhā*: 256
monkey - *vānara*: 172
monoplegia - *ekāīgaroga*: 79
month - *māsa*: 26
morsel - *bali*: 148
mottled - *karburā*: 39
mouse - *mūṣikā*: 40
mouth ulcer - *sarvasara*: 221
mouthwash - *kavala*: 151
movement - *karman*: 299
moving - *jaṅgama*: 25 - *jaṅgama*: 27
mṛdu - gently: 264
mucous - *śleṣman*: 191
mucus - *kapha*: 152
muhūrta - three-quarters of an hour: 26
mūka - dumb: 81
mukhasaṁdamīśā - nipping with the
 mouth: 171
muktā - pearl: 261
muktvā - separate: 261
mūla - root: 25 - roots: 26
multi-joins - *vyāyojima*: 56
multicolour - *bahuvarṇa*: 231
mumbles - *mimmira*: 81
mūrcchā - fainting: 202 - stupor: 149
mūrcha - fainting: 74
mūṣikā - mouse: 40
mūṣikā - rats: 210
mūṣika - rodents: 23
mustā - nutgrass: 264
mustard - *sarṣapikā*: 232
na ced - if, then not: 261
nāḍī - tube: 114 - umbilicus: 108
nadīja - salt: 255
nāga - elephant/snake: 173
nāgara - dried ginger: 255
nalada - spikenard: 259
napuṇṣaka - neither male nor female: 101
 - third gender: 109
nara - men: 172
nasal medicine - *nasya*: 165

nasal medicines - *nasya*: 254
nasya - errhine: 257 - errhines: 153 - nasal medicine: 165 - nasal medicines: 254 - snuff: 147, 152
 naturally-occurring - *daivakṛte*: 261
 nature - *ātmaka*: 24
 nausea - *praseka*: 102
 neck - *jatru*: 71
 needle - *sūci*: 262
 neither male nor female - *napumṣaka*: 101
nemīsandhānaka - rim-join: 56 - rim-join: 57
 newborn - *prasava*: 92
nidarśana - illustration: 311, 315
 night blindness - *kṣaṇadāndhya*: 255
nīlkvātha - decoction: 89 - stewed juice: 166
nīlī - indigo: 150
nimeśa - blink of the eye: 26
nimitta - purposes: 104
 nipping with the mouth - *mukhasaṃdanīśā*: 171
nirdeśa - exposition: 311, 313
nirṇaya - determination: 311
nirupama - peerless: 231
nirvacana - interpretation: 311, 315
nirvedhima - ready-split: 56
nirviṣa - without venom: 184
niryāsa - extract: 153 - resin: 26, 158, 160f
niśācara - nocturnal creature: 260
niśevita - prepared: 258 - used: 256
nivāta - no wind: 26
niyoga - compulsion: 311, 315
 no wind - *nivāta*: 26
 nocturnal creature - *niśācara*: 260
 non-bloodshot blindness - *araga timira*: 261
 non-flowering tree - *vanaspatti*: 259
 not conducive to long life - *anāyuṣya*: 101
 nourishment - *bṛ̥nhaya*: 25
 numb - *stabdhā*: 115
 numbness - *supti*: 73 - *svāpa*: 73, 153
 nutgrass - *mustā*: 264
 objection - *pūrvapakṣa*: 311
 oblations - *upahāra*: 197

obligation - *r̥ṇa*: 91
 oceanic - *sāmudrikā*: 39
 of the nature of agni - *āgneya*: 100
 of the nature of soma - *saumya*: 100
 off his hand - *sapāṇa*: 257
 offspring - *garbha*: 95f
 oil massage - *abhyāṅga*: 151
 oil rub - *abhyāṅga*: 114, 298
 oil rubs - *abhyāñjana*: 203
 oil stripe - *snigdharāji*: 188
 oil - *sneha*: 26
 oily enema - *anuvāṣana*: 87
 oily stripe - *snigdharāji*: 188
 ointment - *anulepana*: 151 - *pralepa*: 149, 152
 ointments - *ālepana*: 114
ojas - energy: 63 - vital energy: 25, 105
 oleation - *sneha*: 114
 omens - *ariṣṭa*: 63
 one essence - *ekarasa*: 205
 opening - *chidra*: 261
 ophidian - *sarpita*: 184
 option - *vikalpa*: 311, 315
 or not distorted - *vāvīkṛtā*: 150
oṣadhī - remedies: 25
oṣadhi - herbs: 25 - remedies: 27
 other - *anya*: 301
 outer corner of the eye - *apāṅga*: 261
 overexcitement - *harṣa*: 25
 overflowing - *ākula*: 230
 overheating - *dāha*: 253
 pacification - *saṃśamana*: 25 - *upaśama*: 26
pada - word: 297, 299
pāḍadāhu - burning sensation in feet: 81
padārtha - meaning of one or more words: 312 - relevant meaning: 308, 311f - word-meaning: 299
padma - the lotus: 186
padmaka - himalayan cherry: 264f
padminīkāṇṭaka - lotus-spots: 152
 pain and injury - *vedanābhīghāṭa*: 22
 pain - *√piḍ*: 193 - *śūla*: 165
 pair - *mithuna*: 315
pāka - sepsis: 153

pakṣa - fortnight: 26
pakṣāghāta - paralysis of one side: 82
 - paralysis: 78ff
pakvādhāna - intestines: 165
pakvāśa - abdomen: 114
pakvāśaya - intestines: 150, 164
palāśa - flame of the forest: 259
pālindaka - the morning glory: 187
pallava - shoots: 262
 pallid skin disease - *kuṣṭha*: 90, 164
pāṇḍu - earth: 196
panasaka - the jackfruit: 187
pañcāngulataila - castor oil: 257
paṅgu - lame: 81
panic grass - *dūrvā*: 264
pañimantha - manual agitation: 114
 paralysis of arms and back - *viśvañci*: 81f
 paralysis of one side - *pakṣāghāta*: 82
 paralysis of the jaw-bones - *ardita*: 80, 82
 paralysis - *paksāghāta*: 78ff
pārāvata - the pigeon: 187
paribhāṣā - general rule: 259
paridāha - feeling of heat all over: 191
paridāhita - cauterized: 217
paridhūpana - giving off fumes: 190
paridhūpāyana - giving of fumes: 190
parikṣā - investigation: 304
pariplutā - flooded: 273
parisarpa - the snake around: 186
pariṣeka - shower: 151
parśvabhedā - ribs crack: 165
pārthīva - earth products: 26
pārthīva - earthen products: 27
 partial blindness - *timira*: 257
 particulars - *vikalpa*: 27
 parts - *aṅga*: 27
paruṣā - harsh: 232
pāruṣya - hoarseness: 161
paryuṣita - stale: 88
 past reference - *atikrāntāpeksaṇa*: 311, 315
 paste - *kalka*: 87, 89
paśu - animals: 26
pataha - tabors: 204
patāka - flag: 204
paṭala - layer: 261

pāṭhā - velvet leaf: 259
 pathology - *doṣa*: 87
patra - cassia cinnamon: 264 - leaves: 26
paṭṭa - strip of cloth: 115
pavanodbhava - caused by wind: 257
payas - milk: 154
payasyā - holostemma: 264
pearl - *muktā*: 261
pebble - *aṣṭhilā*: 149
peerless - *nirupama*: 231
pelt - *carmā*: 26
 periploca of the woods - *meṣaviṣāṇa*: 257
 perploca of the woods - *meṣaśṛṅga*: 265
 person - *puruṣa*: 315
 pervasive - *vyaवāyin*: 163
peya - drinkable: 316
phala - fruits: 26
phena - cuttlefish bone: 265
phlegm - *balāsa*: 115 - *kapha*: 161, 163, 165,
 191, 273
phlegmatic - *śleṣmalā*: 273
physical - *śārīravād*: 27
picciṭā - 'flat insects': 172
pīḍ- - press: 261
 piercing the ear - *kārnavyadha*: 53
 piercing - *vyadha*: 262
 pigs' eye - *sūkarākṣitā*: 264
pilindaka - the pilindaka: 187
pill - *guḍikā*: 255
 pinched - *gāḍha*: 58
piṅgabhāṣa - yellow-shine: 231
piṅgalā - ruddy: 40
pipe - *dhamani*: 78
 pipes - *dhamanī*: 102
pipūlika - ants: 26
piṭaka - blisters: 211, 214 - bulges: 103
pith - *sāra*: 158, 160f
pīṭha - dais: 56
pīṭikā - yellow: 232
pitta - bile: 257 - choleric: 273
pittajvara - bile-fever: 202
pittalā - bilious / choleric: 273
pittaviṣa - poison in the bile: 197
 place - *avakāśa*: 42
plīhan - spleen: 256

- plota* - cloth: 196 - gauze: 58
plutā - sprung: 273
 poison in the bile - *pittaviṣa*: 197
 poison-stink - *viṣapūti*: 202
 poisoned - *digdha*: 202f
 poṭa throat - *potagala*: 188
potagala - poṭa throat: 188
 potency - *vīrya*: 203, 213
 poultice - *upanāha*: 114
 powdered earthenware crockery
 - *kapālacakrūja*: 57
pra√/ *sādh* - clean: 153
pra√/ *chā* - cut: 215
pra√/ *kuth* - rot: 150
prabha - shine: 261
pracchāna - incised: 202 - incising: 198
pracchita - having made small cuts: 215
 - incised: 202
 practical purposes - *prayojanavat*: 26
pradeśa - indication: 311, 313
pragāḍha - steeped: 257
prakopa - irritation: 26
prakṛti - character: 228 - constitution: 201
 - temperament: 25
pralāpa - ranting: 161
pralepa - ointment: 149, 152
prameha - urinary diseases: 72
prāṇa - breath: 71 - prāṇa: 71 - vital wind:
 71
prāṇa - *prāṇa*: 71
prasaiṅga - recontextualization: 311
 - recontextualization: 314
prasava - newborn: 92
praseka - discharge: 162 - nausea: 102
prastara - blanket sweating: 114
prastha - half litre: 214
prasūna - blossom: 204
pratikāra - alleviation: 26 - remedy: 254
pratipūraṇa - irrigated: 152
pratisāraṇa - rub: 150 - rubbing: 150
pratiṣedha - counteraction: 253
pratisūrya - counter-sun: 231
pratitūnī - *pratitūnī*: 82
pratitūnī - *pratitūnī*: 82
pratyādhamāna - *pratyādhamāna*: 82
- pratyāṅga* - minor body parts: 103
pratyāṣṭhīla - *pratyāṣṭhīla*: 82
pratyāṣṭhīla - *pratyāṣṭhīla*: 82
pravardhanaka - dilator: 55
pravyakta - apparent: 103
pravyakta - differentiated: 105
pravyaktatara - even more apparent: 103
prayojanavat - practical purposes: 26
 prediction - *atideśa*: 311, 313
 pregnant craving - *dauhyda*: 105
 pregnant longing - *dauhṛda*: 104
 premise - *sādhana*: 300, 313
 prepared with turpeth - *traivṛta*: 254
 prepared - *niṣevita*: 258
 prescription - *upadeśa*: 311, 313
 press - *pīḍ*-: 261
 priest - *upādhyāya*: 91
priyaṅgu - beauty berry: 259
 probe - *śalākā*: 261f
 procedure - *kalpa*: 146, 182, 210, 219, 228
 procedures - *kriyā*: 24, 27
 prolapse - *māṇisanirgama*: 264
 prolapses - *arśas*: 272
 propelled - √*ūḥ*: 192
 protect - √*rakṣ*: 90
 protuberant - *kariṇī*: 273
pr̥ṣata - the speckled: 187
pr̥thakparṇī - hare foot uraria: 264
pulāyikā - granulations: 240
 pulse interval - *vegāntara*: 192
 pulse - *vega*: 181, 237
 pulses - *vega*: 157
puṇḍarīka - the lotus: 187
puṇḍarīkamukha - the lotus mouth: 186
puṇḍarīkamukhī - lotus-mouth: 40
 pupil - *dṛṣṭi*: 253, 262f
 purge - √*sodh*: 199
 purification - *saṃśodhana*: 25
 purpose of a reason - *hetvartha*: 311, 313
 purpose - *artha*: 300
 purposes - *nimitta*: 104
puruṣa - human being: 24f, 27 - person:
 315

pūrvapakṣa - first point of view: 314
 - objection: 311

puṣpa - flowers: 26

puṣpābhikīrṇnābha - the flower sprinkle beauty: 187

puṣpapāṇḍu - the pale as a flower: 187

puspasakalī - the flower all: 188

puṭāhvaya - taken hot: 258

puṭākhyā - enclosed roasting: 258

puṭapāka - enclosed roasting: 259
 - medicines cooked in a crucible: 254
 - roasting: 272

pūtipūya - foul-smelling pus: 86
 - stinking pus: 85

putraghnī - child-murderess: 273

putrid - *śīrṇa*: 202

qualities - *guṇa*: 162

rāga - red colour: 234

rāgin timira - bloodshot blindness: 258

rāgiṇī timire - bloodshot blindness: 261

rainbow - *indrāyudhā*: 39

rainy seasons - *varṣā*: 26

rajana - turmeric: 255

rajas - dust: 70

rājicitra - the stripe speckle: 187

rājimat - striped snake: 166

rakta - blood: 86

raktā - crimson and crimson-ringed: 232
 - crimson: 232

raktakṣayā - with bloodloss: 273

raktamaṇḍala - the red ring: 187

raktapitta - blood-bile: 253

ranting - *pralāpa*: 161

rarefied - *sūkṣma*: 163

rasa - chyle: 106, 164 - chyle: 46 - chyle: 72 - essence: 106 - extracts: 259
 - flavour: 312 - flavours: 25, 63 - juice: 115 - juices: 258 - taste: 106 - the blood of birds and animals: 255

rasakriyā - inspissation: 260

rasana - sense of taste: 237

rasāñjana - elixir salve: 255, 258, 260
 - elixir-salve: 255

rats - *mūṣikā*: 210

rauhita - extract of rohu carp: 255

ready-split - *nirvedhima*: 56

realgar - *manahśilā*: 255, 258f, 265

reason - *hetu*: 300

recontextualization - *prasaṅga*: 311

recontextualization - *prasaṅga*: 314

red arsenic - *manahśilā*: 256

red chalk - *gairikalī*: 264

red colour - *rāga*: 234

red velvet mites - *indragopa*: 26

reduced-ear - *hīnakarṇa*: 56

regimen - *ācāra*: 25 - *karma*: 263

regular - *sama*: 223

relevant meaning - *padārtha*: 308, 311f

religious power - *tapas*: 197

remedies - *oṣadhi*: 25 - *oṣadhi*: 27

remedy - *pratīkāra*: 254

required knowledge - *vijñānīya*: 158, 182

resin - *niryāsa*: 26, 158, 160f

restrictions - *yantraṇā*: 262

resuscitator - *sañjīvana*: 204

retas - semen: 85

retas - semen: 93

rheum - *upadeha*: 153

ribs crack - *parśvabhedā*: 165

rightness - *ānulomya*: 70

rigid - *sthirā*: 263

rigidity of neck - *manyāsthambha*: 80

rigidity - *jādyatā*: 201

rim of a wheel - *cakradhārā*: 57

rim-join - *nemīsandhānaka*: 56

rim-join - *nemīsandhānaka*: 57

ringworm - *dadru*: 230, 238 - *dardru*: 230

ritual offering - *bali*: 105

rjusarpa - the straight snake: 187

r̥ṇa - obligation: 91

roads - *adhva*: 75

roasting - *puṭapāka*: 272

rodents - *mūṣika*: 23

roga - diseases: 272

rogasamgraha - compendium of diseases: 270

rohīta tree - *rohīta*: 259

rohīta - *rohīta* tree: 259

root - *mūla*: 25

- roots - *mūla*: 26
 rot - *prav/kuth*: 150
 rough - *khara*: 263
 round blotches - *maṇḍala*: 164
 royal jasmine - *jātī*: 265
ṛtu - season: 26, 90, 101
 rub - *pratisāraṇa*: 150
 rubbing - *mardana*: 114 - *pratisāraṇa*: 150
 - *unmardana*: 114
 ruddy - *piṅgalā* : 40
rudhira - blood: 26
ruj - illness: 256
rūkṣa - dry: 163
rūkṣa - sere: 88
 sacrificial offerings - *bali*: 197
 sacrum - *trika*: 72
sāda - be exhausted: 165
sadana - tiredness: 102
śadaṅga - the six part: 187
śaddharāṇa - six-units: 113
śādhana - premise: 300, 313
śādhya - curable: 86, 253f - cured: 167
saindhava - salt: 165
śākhāśrayā - located on the limb: 198
śalākā - probe: 261f
salilotthita - conch: 260 - water-born: 260
 saliva - *lālā*: 171 - *śleṣman*: 149
 salt - *nadija*: 255 - *saindhava*: 165
śalya - foreign bodies: 249 - foreign body:
 249 - spike: 302f, 313 - splinter: 313
sama - regular: 223
samāna - *samāna*: 71
samāna - *samāna*: 71
samāñjana - same collyrium: 259
samantatastāpaḥ - hot all over: 190
sāmānya - universality: 299
śamavāya - inheritance: 299
 same collyrium - *samāñjana*: 259
samīraṇa - air: 192
śaṅkhapāla - the conch keeper: 186
śaṅkiṣipta - compressed: 56 - compressed:
 57
samplava - clusters: 26
śaṅrambha - inflamed: 59
śaṅsamana - pacification: 25
saṃśaya - doubt: 311, 315
saṃśodhana - evacuation: 217
 - purification: 25
saṃuccaya - aggregation: 311, 315
saṃudāya - accumulation: 55
saṃuddeśa - mention: 311, 313
saṃudraphena - cuttlefish bone: 256
sāmudrikā - oceanic: 39
saṃvatsara - year: 26
sanakha - thorny: 222
sañcaya - accumulation: 26
śaṇḍa - a man with no semen: 104
 sandal - *sugandhi*: 257
śaṇḍha - a man with no semen: 95
śaṇḍhī - impotent: 273
sandhi - joints: 27
sañjīvana - resuscitator: 204
śaṅkumukhī - dart-mouth: 40
sannipāta - colligation: 100 - congested
 humours: 27 - humoral colligation:
 86
santāpa - anguish: 76
sap - *kṣira*: 26
sapāṇa - off his hand: 257
sāra - essence: 26 - pith: 158, 160f
śārīrvad - physical: 27
śarīrṣpa - creepy-crawlies: 23, 26
sāriṣa - indian sarsaparilla: 256
śārivā - indian sarsaparilla: 264
śarkarā - small urinary stones: 221
sarpāṇikuṣa - snakes' controlling hook:
 221
sarpis - ghee: 154
sarpis - ghee: 254
sarpita - ophidian: 184 - serpented: 184
sarṣapaka - 'mustard snakes': 172
śarṣapikā - mustard: 232
śarvakṛṣṇa - the all black: 186
śarvāṅgasantāpaḥ - hot over the whole
 body: 190
sarvasara - mouth ulcer: 221
śarvaśvetā - all-white: 232
śarvātmikā - *sarvātmikā*: 273
śarvātmikā - *sarvātmikā*: 273
śastrakṣata - cutting with a blade: 254

- śastrapada* - marks with a knife: 42
śātakumbhī - gold: 263
sātmya - suitability: 108, 201
sattva - essence: 108
saumya - of the nature of soma: 100
 - watery: 229
sauna - *kutī*: 114
sauvīraka - stibnite: 255
sāvarikā - *sāvarikā*: 40
sāvarikā - *sāvarikā*: 40
scarification - *lekhama*: 25
sciatica - *gṛdhraśī*: 80, 82
scramberry - *tālīśapatra*: 255
season - *r̥tu*: 26, 90, 101
seasonal blood - *ārtava*: 86
seat of fire in the gut - *grahāṇī*: 191
 - *grahāṇī*: 191
secondary ailments - *upadrava*: 201
sections - *adhyāya*: 28
seed - *bīja*: 93
seedless - *abīja*: 86
seeing smoke - *dhūmadarśin*: 254
segmented - *chinna*: 39
seizure - *apatānaka*: 77f
seka - *irrigation*: 254
semen - *bīja*: 272
semen - *retas*: 85
semen - *retas*: 93 - *śukra*: 93
sense of taste - *rasana*: 237
separate - *muktvā*: 261
sepsis - *pāka*: 153
sere - *rūkṣa*: 88
serpented - *sarpita*: 184
sesame oil - *taila*: 202 - *tailam*: 294
sharing her heart with the fetus
 - *dauhṛ̥da*: 104 - *dauhṛ̥dā*: 104
sharp - *tīkṣṇa*: 199
shine - *prabha*: 261
shooting pain - *śūla*: 263
shoots - *pallava*: 262 - *udbhid*: 26
shower - *parīṣeka*: 151
shrivelled hand - *kūni*: 96
shrubs - *vīrudh*: 25
siddham - cooked: 294
siddhārthaka - white mustard: 264
siddhi - cure: 166
side-effects - *upadrava*: 153, 167
signs - *cīhna*: 273
śigru - horseradish tree: 260
simply - *kevala*: 200
sinews - *snāyu*: 27
sirā - duct: 198 - ducts: 27, 114 - veins: 215
 - vessel: 248
sirāvedha - blood-letting: 254
siris - *śīriṣa*: 265
śīriṣa - siris: 265
śīrṇa - putrid: 202
śirobasti - application of oil to the head:
 116
śiśuka - the kid: 187
śīta - elixir-salve: 255
sitā - white sugar: 264
six-units - *śaḍdharaṇa*: 113
skin disease - *koṭha*: 164
skin - *tvac*: 181 - *tvak*: 26f
sleep - *svāpa*: 161
śleṣmalā - phlegmatic: 273
śleṣman - mucous: 191 - saliva: 149
slice of flesh - *vadhra*: 6of
slow poisoning - *dūṣīviṣa*: 199
slow-acting poison antidote - *dūṣīviṣāri*:
 150
slow-acting poison - *dūṣī-viṣa*: 164
 - *dūṣīviṣa*: 167, 215
small ear-like growths - *karṇika*: 211,
 214f - *karṇikā*: 230
small insects - *kunta*: 26
small urinary stones - *śarkarā*: 221
smell of decomposition - *kuṇapa*: 86
snakes' controlling hook - *sarpāṅkuśa*:
 221
snāyu - sinews: 27
sneha - oil: 26 - oleation: 114
sniffing - *ucchiṅgana*: 262
snigdharājī - oil stripe: 188 - oily stripe:
 188
snuff - *nasya*: 147, 152
sole-heart - *talāhṛdaya*: 315
solid - *styāna*: 262
soma creeper - *somalatā*: 149

- somalatā* - soma creeper: 149
śonita-pitta, rakta-pitta - blood-bile: 257
śonita - blood: 257
śoṇita - blood: 85f
śonitāgamana - haemorrhaging: 190
śonitena - with blood: 263
soot from the chimney - *āgāradhūma*: 50, 115
soot - *grhadhūma*: 177, 220
sour - *śukta*: 88
spasm of the jaw-bones - *ardita*: 80
spasmodic contradiction - *āpatantraka*: 80
special property - *viśeṣa*: 100
sperm - *śukra*: 85
sphoṭa - blister: 241 - spots: 152f
sphuṭita - bursts out: 76
spiders - *lūtā*: 23
spike - *śalya*: 302f, 313
spikenard - *nalada*: 259
spiral - *āvarta*: 261
spirits - *madirā*: 256 - *madira*: 259
spleen - *plīhan*: 256
splinter - *śalya*: 313
spots - *kaṇṭaka*: 152 - *sphoṭa*: 152f
spreading rash - *visarpa*: 243
spreading rashes - *visarpa*: 211, 230
sprung - *plutā*: 273
sraj - garlands: 147
sraṃsanī - causing a fall: 273
srāva - discharge: 151, 153
śreyas - welfare: 22
srotas - ducts: 95, 189 - kohl: 258 - tubes: 191
srotoja - kohl: 255, 265
stabdhā - numb: 115
stale - *paryuṣita*: 88
stalk - *vṛnta*: 254
stammers - *gadgad*: 81
stated - *ukta*: 301
statement of reason - *apadeśa*: 311, 313
stationary - *sthāvara*: 25, 158 - *sthāvara*: 27
steeped - *pragādha*: 257
sternutatory - *avapīda*: 200
stewed juice - *nīḥkvātha*: 166
sthāvara - stationary: 25, 158
sthāvara - stationary: 27
sthirā - rigid: 263
stibnite - *añjana*: 259 - *sauvīraka*: 255
stick seizure - *daṇḍāpatānaka*: 77
stick-ear - *yaṣṭikarṇa*: 56
stiffening - *uddaṇḍaka*: 75
stiffness of the neck - *manyāstambha*: 192
sting-gush - *alagardā*: 39
stings - *asi*: 172 - *śūla*: 172
stinking pus - *pūtipūya*: 85
stirred with goat's milk - *ajākṣīrārdita*: 264
stomach - *āmāśaya*: 164f
strength - *bala*: 25 - *vīrya*: 106
strip of cloth - *paṭṭa*: 115
striped snake - *rājimat*: 166
strong mallow - *atibalā*: 257
stung - *daṣṭa*: 231f
stupor - *mūrcchā*: 149
styāna - solid: 262
substance - *dravya*: 63, 298
substrata - *āśraya*: 157
substrate - *āśrayin*: 25
sūcī - needle: 262
sūcīvaktrā - with a needle-like opening: 273
suckable - *lehya*: 316
suffering - *duḥkha*: 25
sugandhi - sandal: 257
suitability - *sātmya*: 108, 201
śūka - bristle: 171
śukapatra - the white leaf: 188
sūkarākṣitā - pigs' eye: 264
sukha - comfort: 27
śukla - white: 93
śukra - sperm: 85
śukra - semen: 93
sūkṣma - rarefied: 163
śukta - sour: 88
śūla - abdominal gripes: 221 - gripes: 72
 - pain: 165 - shooting pain: 263
 - stings: 172
sun - *hari*: 262
supernatant layer - *agra*: 259

suppressing - *vegāghāta*: 88
supti - drowsiness: 115 - numbness: 73
surā - wine: 223
surasa - extracted juice: 89
sūtra - aphorism: 312
svabhāva - inherent factors: 27
svābhāvika - inherent: 25
svāpa - numbness: 73, 153 - sleep: 161
svara - accents: 198
svarasa - expressed juice: 254 - extracted juice: 152 - juice extract: 26
śvāsa - asthma: 221 - wheezing: 71, 161
svasamījñā - field-specific term: 311, 315
svedaja - born of sweat: 26
śvetā - white: 232
śvetadara - the white rip: 187
svetahanu - the white jaw: 187
śvetakapota - the white pigeon: 186
śvetamaṇḍala - the white ring: 187
śvetavarṇā - white: 232
 swollen belly - *udara*: 221
 swollen - *ādhmāta*: 190
śyāma - dark brown: 92
syanda - watery eye: 260
 symptom - *liṅga*: 152
 symptoms - *liṅga*: 164
 synovitis of knee join - *kroṣṭukaśīrṣa*: 81f
 tabors - *paṭaha*: 204
taila - sesame oil: 202
tailam - sesame oil: 294
tailasugandhi - the fragrant one in oil: 257
 take away - *āhārya*: 56
 taken hot - *puṭāhvaya*: 258
 takes the form of pervading the whole body - *akhiladehavyāptirūpam*: 163
takṣaka - the snake prince takṣaka: 204
talahṛdaya - sole-heart: 315
tāliśapatra - scramberry: 255
tamas - gloominess: 245
tāmra - copper: 263
tāmracūḍa - cock: 258
tantrayukti - logical methods of the system: 311
tantuka - the stretch: 187
tapas - religious power: 197

tārkṣya - garuḍa: 204
tarpaṇa - eyewash: 153, 254, 258f
 - irrigation: 272
taruṇa - early stage: 107
 taste - *rasa*: 106
tatra - in those cases: 257 - the tatra: 187
 tawny - *kapilā*: 40
tejas - brilliance: 92 - heat: 92, 100
 temperament - *prakṛti*: 25
 temperature - *dāha*: 242
 the all black - *sarvakṛṣṇa*: 186
 the bamboo leaf - *veṇupatruka*: 187
 the big black - *mahākrṣṇa*: 186
 the big cow snout - *vrddhagonasa*: 187
 the big head - *mahiśīrṣa*: 187
 the big jackfruit - *mahāpanasaka*: 187
 the big pigeon - *mahākapota*: 186
 the black belly - *kṛṣṇodara*: 186
 the black snake - *kṛṣṇasarpa*: 186
 the blood of birds and animals - *rasa*: 255
 the break hood - *khanḍaphana*: 186
 the brown hut mouth - *babhrūkuṭīmukha*: 186
 the brown - *babhrū*: 187
 the caustic antidote - *kṣārāgada*: 220
 the chariot of light - *jyotiṛatha*: 188
 the conch keeper - *śaṅkhapāla*: 186
 the convulsor - *ākṣepaka*: 77
 the curd mouth - *dadhimukha*: 186
 the deer foot - *eṇīpada*: 187
 the drop stripe - *bindurāji*: 187
 the finger stripe - *aṅgulirāji*: 187
 the flame - *agnika*: 187
 the flower all - *puṣpasakalī*: 188
 the flower sprinkle beauty - *puṣpābhikīṇnābha*: 187
 the fragrant one in oil - *tailasugandhi*: 257
 the gavedhuka - *gavedhuka*: 186
 the gift of god - *devadinna*: 187
 the goat swallower - *ajagara*: 188
 the grass drier - *ṭṛṇaśoṣaka*: 187
 the grass flower - *apuṣpa*: 186
 - *darbhapuspa*: 188
The Great Antidote - *mahāgada*: 203
 the great antidote - *mahāgada*: 213

- the great lotus - *mahāpadma*: 186
 the great snake - *mahāsarpa*: 186
 the hand decoration - *hastābharaṇaka*: 187
 the hungry sting - *alagarda*: 187
 the ilikinī - *ilikinī*: 188
 the intoxicator - *madanaka*: 187
 the jackfruit - *panasaka*: 187
 the khaluṣa - *khaluṣa*: 187
 the kid - *śiśuka*: 187
 the kūkuṭa - *kūkuṭa*: 186
 the little tree - *vṛkṣaka*: 188
 the lotus mouth - *puṇḍarīkamukha*: 186
 the lotus - *padma*: 186 - *puṇḍarīka*: 187
 the mark - *citraka*: 187
 the milk flower - *kṣīrikāpuṣpa*: 188
 the mirror ring - *ādarśamaṇḍala*: 187
 the morning glory - *pālindaka*: 187
 the mountain snake - *girisarpa*: 187
 the mud - *kardama*: 187
 the ochre - *kasāya*: 187
 the pale as a flower - *puṣpapāṇḍu*: 187
 the pigeon - *pārāvata*: 187
 the pilindaka - *pilindaka*: 187
 the rain cloud - *valāhako*: 186, 188
 the red eye - *lohitākṣa*: 186, 188
 the red ring - *raktamandala*: 187
 the ringed - *cakraka*: 188
 the salutary - *kalyāṇaka*: 221
 the science of life - *āyurveda*: 22
 the six part - *śaḍaṅga*: 187
 the snake around - *parisarpa*: 186
 the snake prince takṣaka - *takṣaka*: 204
 the speckled - *pr̥sata*: 187
 the stimulator - *dīpyaka*: 188
 the straight snake - *r̥jusarpa*: 187
 the stretch - *tantuka*: 187
 the stripe speckle - *rājicitra*: 187
 the tatra - *tatra*: 187
 the three fruits - *triphalā*: 259
 the three spices - *vyoṣa*: 256
 the time for therapies - *kriyākāla*: 27
 the two finger stripe - *dvyāṅgulirāji*: 187
 the two-day - *dvyāhika*: 188
 the variegated - *vicitra*: 187
 the white jaw - *svetahanu*: 187
 the white leaf - *śukapatra*: 188
 the white pigeon - *śvetakapota*: 186
 the white ring - *śvetamaṇḍala*: 187
 the white rip - *śvetadara*: 187
 the worm eater - *kikkisāda*: 188
 the year-snake - *varṣāhīka*: 188
 thei snake flag - *ahipatāka*: 188
 therapies - *karman*: 27
 third gender - *napumṣaka*: 109
 thorny - *sanakha*: 222
 three fruits - *triphalā*: 254, 256
 three-quarters of an hour - *muhūrta*: 26
tīkṣṇa - sharp: 199
timira - blindness: 261 - partial
 blindness: 257
 tiredness - *sadana*: 102
 tissues - *dhātu*: 223
 tongue - *jihvā*: 237
 tooth socket - *dantaveṣṭa*: 150
 topic - *adhikaraṇa*: 311f
 torn - *darita*: 184
toṭaka - 'angry beetles': 172
 toxic potion - *gara*: 221
 toxic pulse - *vega*: 210
 toxic reaction - *vega*: 182, 199, 203 - *vega*:
 192f - *viṣavega*: 190
 toxic shock - *vega*: 156, 230
 toxin - *gada*: 239
traivṛta - prepared with turpeth: 254
 trauma - *abhighāta*: 78
 treatable - *yāpya*: 167
 treatment - *bheṣaja*: 273 - *kriyā*: 259f
 - *kriyā*: 27, 87
 trench sweating - *karṣū*: 114
 triad - *mithuna*: 315
 tribute - *bhāgadheya*: 105
 trice - *kāṣṭhā*: 26
 trika - between the shoulder-blades: 116
 - sacrum: 72
trikāṇṭaka - triple-sting: 231
triphalā - the three fruits: 259 - three
 fruits: 254, 256
 triple-sting - *trikāṇṭaka*: 231
trivṛt - turpeth: 257
trṇaśoṣaka - the grass drier: 187

trunk of the body - *koṣṭha*: 191
 tube - *nādī*: 114
 tubes - *srotas*: 191
tūnī - *tūnī*: 82
tūnī - *tūnī*: 82
 turmeric - *haridrā*: 259
 turmerics - *rajana*: 255
 turpeth - *trivṛt*: 257
tuttha - blue vitriol: 259
tvac - skin: 181
tvak - skin: 26f
 twins - *yama*: 93
 tympanites - *ādhimāna*: 82
ucchiṅgana - sniffing: 262
udāna - *udāna*: 71
udāna - *udāna*: 71
udara - swollen belly: 221
udāvartā - *udāvartā*: 273
udāvartā - *udāvartā*: 273
udbhid - shoots: 26
uddaṇḍaka - stiffening: 75
udveṣṭana - writhing: 161
 ugly nails - *kunakha*: 90
ūhya - deducible: 311, 316
ukta - stated: 301
 umbilicus - *nādī*: 108
 uncongenial - *asātmya*: 75
 undefeated - *aparājita*: 231
 universality - *sāmānya*: 299
unmāda - madness: 221
unmardana - rubbing: 114
 unsteadiness of the humours
 - *doṣapariplava*: 263
 untreatable - *asādhyā*: 261
upadeha - rheum: 153
upadeśa - prescription: 311, 313
upādhyāya - priest: 91
upadrava - secondary ailments: 201
 - side-effects: 153, 167
upahāra - oblations: 197
upahita - combined: 257
upanāha - poultice: 114
upaśama - pacification: 26
upasarga - affliction: 153
upasneha - infusion: 106

upasṛṣṭa - afflicted: 86
 urethral instillation - *uttarabasti*: 87, 89
 - *uttarabasti*: 87 - *uttaravasti*: 88
 urinary diseases - *prameha*: 72
 urinary stones - *aśmarī*: 221
ūrṇa - wool: 115
 used - *niṣevita*: 256
uśīra - cuscus grass: 259
 uterus - *garbhāśaya*: 101
utpalabhedyaka - lotus-splittable: 56
utpiḍita - injured: 261
utsādana - dry rub: 151 - dry rubs: 147
uttara - latter part: 249
uttarabasti - urethral instillation: 87, 89
uttarabasti - urethral instillation: 87
uttaravasti - urethral instillation: 88
vadhra - slice of flesh: 60f
vaiḍūrya - beryl: 265
vaiśamya - irregularities: 25
vaivarnya - discolouration: 72
vakrabhrūnetra - bent brow and eye: 263
vāksamūhārthavistāra - extensive meaning
 of the collection of statements: 189
vaktra - ends: 263
vākyāśeṣa - ellipsis: 311 - ellipsis: 314
valāhako - the rain cloud: 186, 188
vallīkarṇa - creeper-ear: 56
vallūraka - dried flesh: 56
vāminī - vomiting: 273
vānara - monkey: 172
vanaspati - fruit trees: 25 - non-flowering
 tree: 259
vandhyā - infertile: 273
vapour - *bāṣpa*: 148f, 152
varcaḥkīṭa - dung beetles: 172
varga - collection: 27
 variable statement - *anekānta*: 311, 314
 various treatments - *miśrakacikitsa*: 60
varṇa - complexion: 25, 63, 92, 108
varṣā - rainy seasons: 26
varṣāhīka - the year-snake: 188
vartti - wick: 55 - wicks: 265
vasā - fat: 258
vāta - wind: 69, 272f
vātagulma - wind-swelling: 221

- vātakanṭaka* - vātakanṭaka: 82
vātakanṭaka - *vātakanṭaka*: 82
vātalā - windy: 273
vātarakta - gout: 82 - wind-blood: 75
 - wind-blood: 76
vātāṣṭhilā - vātāṣṭhilā: 82
vātāṣṭhilā - *vātāṣṭhilā*: 82
vāvikṛtā - or not distorted: 150
veda - knowledge: 21, 298
vedanābhīghāta - pain and injury: 22
vega - force: 116 - pulse: 181, 237 - pulses:
 157 - toxic pulse: 210 - toxic reaction:
 182, 199, 203 - toxic shock: 156, 230
vega - toxic reaction: 192f
vegāghāta - suppressing: 88
vegāntara - pulse interval: 192
veins - *sirā*: 215
velvet leaf - *pāthā*: 259
veṇupatraka - the bamboo leaf: 187
vessel - *sirā*: 248
vicakṣaya - expert: 91
vicitra - the variegated: 187
vidagdha - inflamed: 254
vidaṅga - embelia: 259
viḍbheda - loose stool: 161, 174
vidhāna - itemization: 311, 314
vidruma - coral: 265
vijñānīya - required knowledge: 158, 182
vijñmbhikā - gasping: 213
vikalpa - option: 311, 315 - particulars: 27
vikāsin - expansive: 163
vikṛtakṣa - dysfunctional eyes: 92, 104
vilekhana - grooming: 90
vilocana - misshapen eyeball: 263
vipakva - matured: 255
viparītadarśana - metamorphopsia: 190
viparyaya - contraposition: 311, 314
virtue - *dharma*: 93
vīrudh - shrubs: 25
vīrya - potency: 203, 213 - strength: 106
viśada - depression: 25
viśada - limpid: 163
viśapūti - poison-stink: 202
visarpa - spreading rash: 243 - spreading
 rashes: 211, 230
viśavega - toxic reaction: 190
višeṣa - individuality: 299 - special
 property: 100
viśleṣa - disjunction: 164
viśvañci - paralysis of arms and back: 81f
vital energy - *ojas*: 25, 105
vital wind - *prāna*: 71
vodhāra - bearers: 147
vomiting - *vāminī*: 273
vṛddhagonasa - the big cow snout: 187
vṛddhipatra - big-leaf scalpel: 246
vṛkṣa - flowering trees: 25
vṛkṣaka - the little tree: 188
vṛnta - stalk: 254
vyadha - piercing: 262
vyadhi - disease: 27
vyākhyāna - explication: 311, 315
vyākhyāta - intended: 27
vyāla - wild animals: 26
vyāna breath - *vyāna*: 191
vyāna - *vyāna* breath: 191 - *vyāna*: 71
vyāna - *vyāna*: 71
vyāñjana - manifestations: 249
vyavāyin - pervasive: 163
vyāyojima - multi-joins: 56
vyoṣa - the three spices: 256
wasted - *kṣīṇa*: 58
wasting - *kṣaya*: 79
water-born - *salilotthita*: 260
water-dwellers - *jalaukas*: 38
water - *jala*: 38
watery eye - *syanda*: 260
watery - *saumya*: 229
weeping tears - *aśrupāta*: 90
weeping - *kleda*: 244
welfare - *śreyas*: 22
wheezing - *śvāsa*: 71, 161
white mustard - *siddhārthaka*: 264
white siris - *kiniḥi*: 259
white sugar - *sitā*: 264
white - *śukla*: 93
white - *śvetā*: 232 - *śvetavarṇā*: 232
wick - *vartti*: 55
wicks - *vartti*: 265
wild animals - *vyāla*: 26

wind-blood - *vātarakta*: 75f
wind-blood - *vātarakta*: 76
wind-swelling - *vātagulma*: 221
wind - *māruta*: 86 - *vāta*: 69, 272f
windy - *vātalā*: 273
wine - *surā*: 223
with a needle-like opening - *sūcīvaktrā*:
 273
with blood - *śonitena*: 263
with bloodloss - *raktakṣayā*: 273
with difficulty - *krcchra*: 261
with testicles - *aṇḍīnī*: 273
without feeling - *acetana*: 78
without venom - *nirviṣa*: 184
womb - *yoni*: 268
wood apple - *kapittha*: 254
wool - *ūrṇa*: 115
word-meaning - *padārtha*: 299
word - *pada*: 297, 299
worms - *kṛmi*: 26
writhing - *udveṣṭana*: 161

yakṛdrasa - liver extract: 255
yakṛt - liver: 256

yama - twins: 93
yamalā - double: 150
yāmya - in yama's direction: 177
yantraṇā - restrictions: 262
yāpya - alleviated: 257 - can be mitigated:
 76, 261 - mitigatable: 253 - treatable:
 167
yaṣṭikarṇa - stick-ear: 56
yavāgū - gruel: 166, 199
yavaudana - cooked barley: 261
year - *saṃvatsara*: 26
yellow-shine - *piṅgabhāsa*: 231
yellow - *pīlikā*: 232
yoga - cohesion: 311 - cohesion: 312
 - compounds: 254 - formulation: 113
yoni - female reproductive organ: 272f
 - female reproductive system: 272
 - womb: 268
yonivyāpat - disorders of the female
 reproductive system: 272
young girl - *kaumārī*: 95
yuga - *yuga*: 26
yuga - *yuga*: 26

Todo list

█ Cite Paul Courtright, Ganesha book.	23
█ Can't be "sedation"	51
█ complete this thought	69
█ add footnote here	70
█ add refs to Divodāsa as king.	70
█ find out about uttarabasti	87
█ to what?	88
█ 29, 30 missing?	91
█ Problematic passage in the edition.	91
█ unsolved problem	96
█ Perhaps <i>kalka</i> here could also mean the <i>Terminalia Bellerica</i> (विभीतक).	116
█ Perhaps <i>kalka</i> here could also mean the <i>Terminalia Bellerica</i> (विभीतक).	116
█ Euphorbia Antiquorum (Antique spurge)	119
█ The webpage https://hindi.shabd.in/vairagya-shatakam-bhag-acharya-arjun-tiwari/post/117629 says that this verse belongs to the <i>Nītratna</i> . I could not find this text.	123
█ The provisional edition should be modified accordingly.	125
█ There, Dalhaṇa commented that deliberation on <i>avapiḍa</i> had been done earlier when it was mentioned. Find that description to know more details.	127
█ Search for the section where the treatment of <i>ākṣepaka</i> is described.	128
█ Make the first letter of sentence capital.	128
█ ?	134
█ ?	134
█ ?	134
█ (?)	134
█ Is Dh. the teacher of Su. elsewhere?	146
█ Cf. Arthaśāstra 1.21.8.	147

■ I'm still unhappy about this verse.	150
■ Mention this in the introduction as an example of the scribe knowing the vulgate.	150
■ fn about sadyas+	150
■ Bear's bile instead of deer's bile.	151
■ punarṇavā in the N & K MSS	152
■ śrita for śṛta	152
■ explain more	152
■ Medical difference from Sharma.	153
■ example where the vulgate clarifies that these should be used separately; appears to be a gloss inserted into the vulgate text.	153
■ The two uses of prāpta are hard to translate. prāptāḥ → kṣipram is an example of the vulgate banalizing the Sanskrit text to make sense of a difficult passage.	153
■ ✓ vyadh not ✓ vedh (also elsewhere and for the ears), causative optative.	153
■ Look up the ca. reference.	162
■ write footnote: don't repeat ativisā; vulgate similar to H.	175
■ Include info on Hidas 2019	181
■ Or "There are 20 phaṇins and 6 maṇḍalins. The same number are known. There are 13 Rājīmats." Or even, "there are 20 Phaṇins and six of them are Maṇḍalins." Are phaṇins really the same as darvīkaras?	183
■ grammar	184
■ ri- ṛ-?	187
■ varṇa means "colour" elsewhere?	188
■ write note on pariṣekān pradehāṁś	200
■ where is cutting with a knife related to removing bile or phlegm.	254
■ maṣī burned charcoal. Find refs.	254
■ find ref.	260
■ Check out these refs.	260
■ meaning of kalpa	260
■ or a dual?	265
■ See chapter 40 of Sūtrasthāna.	314
■ vasā / medas / majjan	314
■ Does bhūtādi a compound or it means ahaṅkāra or ego?	315
■ triad? -DW	315

