

# A Translation of the Nepalese Text of the Suśrutasamhitā

Dominik Wujastyk    Jason Birch    Andrey Klebanov  
Lisa A. Brooks    Paras Mehta    Madhusudan Rimal  
Deepro Chakraborty    Harshal Bhatt    Jane Allred  
et alii

Draft of 11th March 2025  
© The Authors



# Contents

<b>Introduction</b>	<b>11</b>
The date of the Suśrutasamhitā . . . . .	11
The Nepalese Version . . . . .	14
The vulgate . . . . .	15
The Translation . . . . .	16
 <b>Part 1. Sūtrasthāna</b>	 <b>19</b>
 <b>Sūtrasthāna 1: The Origin of Medical Knowledge</b>	 <b>21</b>
Literature . . . . .	21
Translation . . . . .	21
 <b>Sūtrasthāna 2: The Initiation of a Student</b>	 <b>29</b>
Literature . . . . .	29
Translation . . . . .	29
 <b>Sūtrasthāna 3: The Table of Contents</b>	 <b>31</b>
Literature . . . . .	31
Translation . . . . .	31
 <b>Sūtrasthāna 10: Diagnosis</b>	 <b>33</b>
 <b>Sūtrasthāna 11: Preparing and using caustics</b>	 <b>35</b>
 <b>Sūtrasthāna 13: On Leeches</b>	 <b>37</b>
Literature . . . . .	37
Translation . . . . .	37

<b>Sūtrasthāna 14: On the Properties of Blood</b>	<b>45</b>
Previous scholarship . . . . .	45
Translation . . . . .	45
<b>Sūtrasthāna 16: Repairing Pierced Ears</b>	<b>53</b>
Previous literature . . . . .	53
Translation . . . . .	53
<b>Sūtrasthāna 28: Unfavourable Prognosis in Patients with Sores</b>	<b>63</b>
Literature . . . . .	63
Translation . . . . .	63
<b>Sūtrasthāna 46: The Rules about Food and Drink</b>	<b>65</b>
Introduction . . . . .	65
 <b>Part 2. Nidānasthāna</b>	 <b>67</b>
<b>Nidānasthāna 1: The Diagnosis of Diseases Caused by Wind</b>	<b>69</b>
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
 <b>Part 3. Śārīrasthāna</b>	 <b>81</b>
<b>Śārīrasthāna 2: On Semen and Menstrual Fluid</b>	<b>83</b>
Literature . . . . .	83
Translation . . . . .	83
Diagnosis by humours . . . . .	84
Therapies for menstrual blood . . . . .	87
During menstruation . . . . .	88
Types of persons . . . . .	91
Birth irregularities . . . . .	93

<b>Śārīrasthāna 3: On Conception and the Development of the Embryo</b>	<b>97</b>
Literature . . . . .	97
Translation . . . . .	98
 <b>Part 4. Cikitsāsthāna</b>	 <b>101</b>
<b>Cikitsāsthāna 4: On the Treatment of Wind Diseases</b>	<b>103</b>
Literature . . . . .	103
Translation . . . . .	103
 <b>Cikitsāsthāna 5: On the Treatment of Serious Wind Diseases</b>	 <b>111</b>
Literature . . . . .	111
Translation . . . . .	111
 <b>Cikitsāsthāna 15: On Difficult Delivery</b>	 <b>123</b>
Literature . . . . .	123
Translation . . . . .	123
 <b>Part 5. Kalpasthāna</b>	 <b>127</b>
<b>Kalpasthāna: Introduction</b>	<b>129</b>
The Sequence of Chapters . . . . .	129
The Spread of Indian Toxicological Lore to Medieval Islamic Au- thors . . . . .	130
The <i>Kalpasthāna</i> 's diffusion . . . . .	130
 <b>Kalpasthāna 1: Protecting the King from Poison</b>	 <b>133</b>
Introduction . . . . .	133
The meaning of "kalpa" . . . . .	133
Chapter 1 of the Kalpasthāna . . . . .	133
Literature . . . . .	134
Manuscript notes . . . . .	135
Translation . . . . .	136
[Threats to the king] . . . . .	136

<b>Kalpasthāna 2: Poisonous Plants</b>	<b>145</b>
Introduction . . . . .	145
Shock . . . . .	146
Literature . . . . .	147
Translation . . . . .	148
The effects of poisons . . . . .	151
Slow-acting poison . . . . .	153
<b>Kalpasthāna 3: Poisonous Insects and Animals</b>	<b>159</b>
Literature . . . . .	159
Translation . . . . .	159
Pollution of the environment . . . . .	161
The origin of poison . . . . .	163
The working of poison . . . . .	164
Patients beyond help . . . . .	165
<b>Kalpasthāna 4: Snakes and Envenomation</b>	<b>167</b>
Introduction . . . . .	167
Literature . . . . .	168
The Seven Stages of Toxic Shock . . . . .	169
Translation . . . . .	170
[The Taxonomy of Snakes] . . . . .	170
[Behaviours] . . . . .	172
[Enumeration of Snakes] . . . . .	174
[Breeding and Gender] . . . . .	176
[Symptoms of snakebite] . . . . .	177
[Summary Verses] . . . . .	180
<b>Kalpasthāna 5: Therapy for those Bitten by Snakes</b>	<b>183</b>
Introduction . . . . .	183
Literature . . . . .	183
Translation . . . . .	184
The application of mantras . . . . .	185
Blood letting . . . . .	186
Internal medications . . . . .	186
Therapies at each pulse of toxic reaction . . . . .	187
Subsequent therapies . . . . .	189

<b>Kalpasthāna 6: Rats and Rabies</b>	<b>195</b>
Introduction . . . . .	195
Mouse or Rat? . . . . .	195
Literature . . . . .	197
Translation . . . . .	198
The types of rat . . . . .	198
Detailed symptoms . . . . .	199
The bites of wild animals . . . . .	203
 <b>Kalpasthāna 7: Beating Drums</b>	 <b>207</b>
Introduction . . . . .	207
Literature . . . . .	207
Translation . . . . .	207
 <b>Kalpasthāna 8: Poisonous insects</b>	 <b>213</b>
Introduction . . . . .	213
Insect names . . . . .	213
Literature . . . . .	214
Translation . . . . .	216
Taxonomy of insects . . . . .	216
Symptoms . . . . .	218
Taxonomy according to symptoms and prognosis . . . . .	218
Therapies . . . . .	218
Taxonomy of scorpions . . . . .	218
Therapies for scorpion-sting . . . . .	219
Symptoms of spider poisoning . . . . .	219
Origin story for spiders . . . . .	219
Taxonomy of spiders . . . . .	219
Specific symptoms and treatment for spider poisoning . . . . .	219
Untreatable spider poisons . . . . .	220
Curable and incurable . . . . .	220
Therapies for spider poisoning . . . . .	220
General therapies for poisoning . . . . .	220
End of the Suśrutasaṃhitā . . . . .	220

<b>Part 6. Uttarantra</b>	<b>221</b>
<b>Uttarantra 17: Preventing Diseases of the Pupil</b>	<b>223</b>
Literature . . . . .	223
Translation . . . . .	223
[Complications] . . . . .	233
[Characteristics of the probe] . . . . .	233
[Complications] . . . . .	234
<b>Uttarantra 38: Diseases of the Female Reproductive System</b>	<b>237</b>
Introduction . . . . .	237
Literature . . . . .	237
Placement of the Chapter . . . . .	237
Parallels . . . . .	239
Philological notes . . . . .	240
Metrical alterations . . . . .	240
The original opening verses . . . . .	240
Translation . . . . .	242
<b>Uttarantra 65: Rules of Interpretation</b>	<b>245</b>
Literature . . . . .	245
Early Sources . . . . .	245
The <i>Arthaśāstra</i> . . . . .	246
The <i>Yuktidīpikā</i> . . . . .	246
Tamil literature . . . . .	247
The <i>Viṣṇudharmottarapurāṇa</i> . . . . .	247
The <i>Saddanīti</i> . . . . .	248
Āyurvedic literature . . . . .	254
Tantrayukti-inventories . . . . .	260
Earlier Listing . . . . .	260
Later Listing . . . . .	260
Terminology . . . . .	261
1. <i>adhikaraṇa</i> . . . . .	262
2. <i>yoga</i> . . . . .	264
3. <i>padārtha</i> . . . . .	266
3. <i>hetvartha</i> . . . . .	270
5–6. <i>uddeśa</i> and <i>nirdeśa</i> . . . . .	272
Notes on Significant Variants . . . . .	275



...द्वितीये पादे...	275
यत्र तु सेहस्वेदाभ्यञ्जनेषु...पूर्वापरयोगसिद्धो भवति ।	275
सामवेदादयश्च वेदाः	275
...विद विन्द इत्येतयोश्च धात्वोः...	276
...धात्वोरेकार्थः । पश्चात् पदं भवति...	277
यदुक्तं साधनं भवति स हेत्वर्थः	279
...तथा माषदुग्धप्रभृतिभिर्व्रणः क्लिद्यते	279
समासवचनं समुद्देशः	280
Characteristics of the Manuscript Transmission	280
Translation	281
<b>Editions and Abbreviations</b>	<b>287</b>
<b>Index of Manuscripts</b>	<b>295</b>
<b>General Bibliography</b>	<b>297</b>
<b>Materia Medica</b>	<b>331</b>
Abbreviations	331
Flora	334
Fauna	358
Minerals	362
<b>Glossary</b>	<b>365</b>



# Introduction

What follows is a draft translation of selected chapters of the *Compendium of Suśruta* (*Suśrutasaṃhitā*). This differs from former translations, being based on the text that survives in the oldest known manuscripts of the work.<sup>1</sup> 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.<sup>2</sup>

## The date of the *Suśrutasaṃhitā*

In a previous publication, I discussed evidence showing that the *Suśrutasaṃhitā* 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.<sup>3</sup> The more detailed reflections by Meulenbeld support this dating.<sup>4</sup> 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.<sup>5</sup> 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 *Suśrutasaṃhitā* is not tied in the same way to the older, Nepalese version of the text.<sup>6</sup> In the late ninth century, the *Suśrutasaṃhitā* was read as a work delivered by Divodāsa, King of Kāśī, not the god Dhanvantari. The

---

<sup>1</sup> 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.

<sup>2</sup> For more discussion of this issue, see Wujastyk et al. [2023](#): Introduction and ch. 2.

<sup>3</sup> Wujastyk [2003b](#): 63–64.

<sup>4</sup> [HIML](#): 1A, 333–352.

<sup>5</sup> Wujastyk et al. [2023](#): 16–26.

<sup>6</sup> 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 Jejjāṭa.<sup>7</sup>

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. Former arguments based on 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*.

In the standard, printed edition or vulgate text of the *Suśrutasamhitā*, chapter ten of the *Sūtrasthāna* is dedicated to the topic of becoming a professional physician. The title of the chapter is interesting: “how to start being a secular practitioner,” (विशिकानुप्रवेशनीयमध्यायम्). The word I translate as “secular practitioner” is, etymologically, “without a top-knot,” i.e., a person who is not wearing a religious tuft of hair on the back of the head following tonsure. The text’s choice of words points to a felt distinction of the doctor as not being a religious functionary.<sup>8</sup> 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

<sup>7</sup> Wujastyk 2024.

<sup>8</sup> Some commentators interpreted the word विशिखा to mean “path, road.” This sense is not known outside the present passage. I would suggest it is an attempt to reverse engineer the chapter’s title to mean something like the Pali *sotāpanna*.

knowledge about diseases, i.e., by the five senses, hearing etc., and by interrogation.<sup>9</sup>

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 *Suśrutasaṃhitā* knew the Caraka text and were responding to it. This is one of the pieces of evidence that is used to argue that the *Suśrutasaṃhitā* is chronologically later than the *Carakasamhitā*. In the Nepalese version of the *Suśrutasaṃhitā*, 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.<sup>10</sup>

The passage referring to the *Carakasamhitā* is absent.

Luckily, for this part of the *Suśrutasaṃhitā*, the learned commentary of Cakrapāṇidatta (fl. 1075) 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.<sup>11</sup> Thus, we can say that it was added to the text of the *Suśrutasaṃhitā* 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 *Suśrutasaṃhitā* means that the argument about chronological priority cannot be sustained.

9 दूतनिमित्तशकुनमङ्गलानुलोम्येनातुरगृहमभिगम्य, उपविश्य, आतुरमभिपश्येत्स्पृशेत्पृच्छेच्च; त्रिभिरेतैर्विज्ञानोपायै रोगाः प्रायशो वेदितव्या इत्येके; तत्तु न सम्यक्, षड्विधो हि रोगाणां विज्ञानोपायः, तद्यथा — पञ्चभिः श्रोत्रादिभिः प्रश्नेन चेति ॥ ४ ॥

10 ततो दूतनिमित्तशकुनमङ्गलानुलोम्येनातुरगृहमागम्योपविश्यातुरमभिपश्येत्स्पृशेच्च त्रिभिरेतैर्विज्ञानोपायैः दीर्घमायुषोल्पायुषो वेदितव्यः ।

11 अयं पाठश्च चक्रासंगतः.

Evidently, Candrāṭa or some other editor added material from the *Carakasamhitā* to the *Suśrutasaṃhitā* after the ninth century. A piece of evidence that remains independent of the above issues is the remark by the learned commentator Cakrapāṇidatta (fl. 1075, Bengal) that Dr̥ḍhabala (fl. ca. 300–500 CE) knew and made use of the *Suśrutasaṃhitā*.<sup>12</sup> This provides a latest date for the *Suśrutasaṃhitā* 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 *Suśrutasaṃhitā*.

## 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.<sup>13</sup> It covers most of the *Suśrutasaṃhitā*, 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.<sup>14</sup> 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 *Suśrutasaṃhitā*. It is dated CE 1513.<sup>15</sup> The text of manuscript H follows K very closely but is probably not a direct apograph.<sup>16</sup> I conjecture that it was either copied from an intermediary that followed K very closely or from an ancestor of K.<sup>17</sup>

<sup>12</sup> Cakrapāṇi ad *Carakasamhitā* 8.12.39 (Ca 1941: 735) (see also HIML: 1A, 132, 350–351).

<sup>13</sup> Klebanov 2021a: 15.

<sup>14</sup> Klebanov 2021a: 17–18.

<sup>15</sup> 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.

<sup>16</sup> Chakraborty 2022.

<sup>17</sup> “...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).

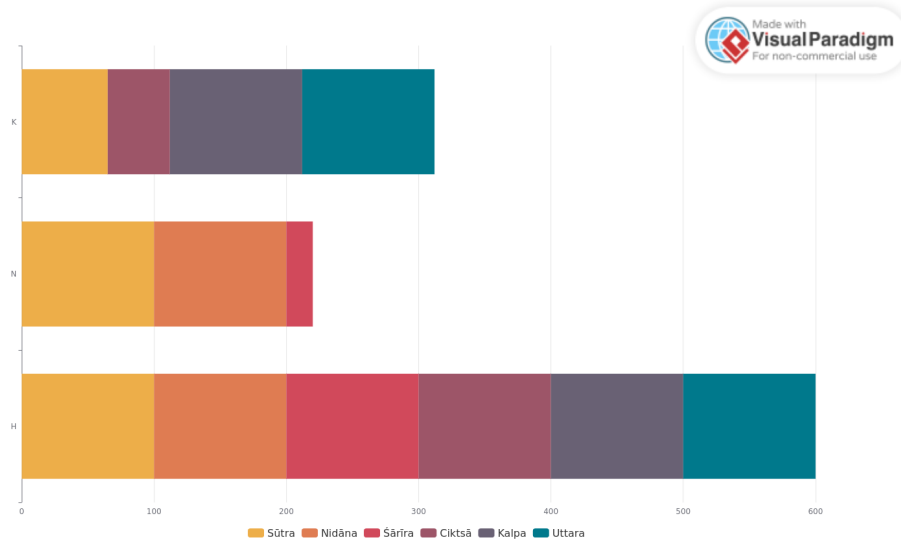


Figure 1: Coverage of the text by MSS K, N and H.

## 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 most careful and authoritative edition is that of Y. T. Ācārya and N. R. Ācārya (Su 1938).<sup>18</sup> It is telling that this edition includes the commentary of Ḍalhaṇa (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.<sup>19</sup> It is possible that Gayadāsa and Ḍalhaṇa, 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 *Suśrutasamhitā*. But with the more limited materials available to him at the turn of the twentieth century he drew

<sup>18</sup> This and the following issues have been discussed by Wujastyk et al. (2023: 2 and ch. 3).

<sup>19</sup> E.g., see the discussion in footnote 176 below.

the line a little differently. He referred to the text of the *Śārīrasthāna* 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 prints,<sup>20</sup> 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.<sup>21</sup>

However, Hoernle was unfortunately not aware of the Nepalese manuscripts of the *Suśrutasaṃhitā*, 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 *Carakasaṃhitā* as printed by the influential Bengali scholar, Kavirāja Gaṅgādhara Ray (1798–1885).<sup>22</sup>

## The Translation

The translation follows the methods of rigorous philological care and modern principles of translation theory.<sup>23</sup> 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 *Suśrutasaṃhitā* 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

20 Hoernle listed four, S. M. Gupta 1835–36; Su 1889; Vīrasvāmi 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 Gaṅgādhara 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.



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

Similarly, the manuscript evidence for the *Suśrutasaṃhitā* 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 have 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, Candrāṭa, Gayadāsa and Cakrapāṇidatta and the editor Candrāṭa. 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.<sup>24</sup>

## Translation

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

---

<sup>24</sup> [HIML](#): IA, 203–204.

<sup>25</sup> Ḍalhaṇa understood the word “knowledge (*veda*)” as specifically “medical knowledge.” He said that the word “longevity” (*āyur*) had been elided. After this opening statement, later manuscripts and commentaries include the attribution, “as the venerable Dhanvantari stated.” The absence of this statement in the early Nepalese manuscripts is highly significant because it removes the outer narrative frame of the *Suśrutasaṃhitā* (Wujastyk 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.

<sup>26</sup> 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 (*vedanābhighāta*), feeling helpless in spite of having friends, because of diseases arising from the body, the mind and external sources.
- 4 “To quell the illnesses of those who seek happiness and for our own purpose of prolonging life, we desire the science of life (*āyurveda*) that is being taught. Welfare, both in this world and in the next, depends upon it. Therefore, we have come to the Lord in pupillage.”
- 5 The Lord said to them:  
“Welcome to you! My children, all of you are beyond reproach and worthy to be taught.
- 6 “As is well known, Ayurveda is the name of what is said to be the subsidiary part of the Atharvaveda.<sup>27</sup> 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.<sup>28</sup>
- 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,<sup>29</sup> 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 Brahṁā, 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,<sup>30</sup> Gandharvas, Yakṣas, demons, deceased ancestors, Piśācas, Vināyakas,<sup>31</sup> 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.<sup>32</sup>
- 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”.<sup>33</sup>
- 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.
- 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;

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 Ḍalhaṇa.

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).

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, [surgery] alone is the best because of the quick action of its procedures (*kriyā*), its application of blunt instruments, knives, caustics and fire, and it is common to all disciplines.
- 19 “Therefore, [surgery] 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 on 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.*<sup>34</sup>

- 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.<sup>35</sup> Alternatively, it can be considered as being fivefold. The multitude of beings in it are fourfold: they are termed “sweat-born, stone-born, caul-born and egg-born”.<sup>36</sup> Where

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.

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



- 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 (*vaiṣaṃyā*) in wind, bile, phlegm and blood.<sup>37</sup>
- “The mental (*mānasa*) ones, caused by desire (*icchā*) and hatred (*dveṣa*), 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 (*adhiṣṭhāna*) in the mind and body.
- 27 “Scarification (*lekhaṇa*), nourishment (*bṛṃhaṇa*), 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 (*āyatta*) the six flavours (*rasa*). Flavours, furthermore, have substances as their substrate (*āśrayin*). And substances are remedies (*oṣadhī*).<sup>38</sup> There are two types: stationary (*sthāvara*) and moving (*jaṅgama*).
- 29 “Of these, there are four types of stationary ones: fruit trees (*vanaspati*), flowering trees (*vrkṣa*), herbs (*oṣadhi*) and shrubs (*vīrudh*).<sup>39</sup> Amongst these, the “fruit trees” have fruit but no flowers.<sup>40</sup> The “flowering trees”

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

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.

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

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 (*jarāyujā*), those born from eggs (*aṇḍaja*), those born of sweat (*svēdaja*), and shoots (*udbhid*). Amongst these, those born in a caul include animals (*paśu*), humans, and wild animals (*vyāla*). Birds, creepy-crawlies (*sarīrpa*) and snakes are “born of eggs.” Worms (*kṛmi*), small insects (*kunta*) and ants (*pipīlika*) and others are born of sweat.<sup>41</sup> Shoots include red velvet mites (*indragopa*) and frogs (*maṇḍūka*).<sup>42</sup>
- 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*)<sup>43</sup> 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.<sup>44</sup>
- 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 (*varṣā*) are concerned. The divisions of time are the blink of the eye (*nimeṣa*), a trice (*kāṣṭhā*), minutes (*kalā*), three-quarters of an hour (*muhūrta*), a day and night (*ahorātra*), a fortnight (*pakṣa*), a month (*māsa*), a season (*rtu*), a half-year (*ayana*), a year (*saṃvatsara*), and yuga (*yuga*).<sup>45</sup>
- 34 “These naturally cause accumulation (*sañcaya*), irritation (*prakopa*), pacification (*upaśama*) and alleviation (*pratīkāra*) of the humours (*doṣa*). And they have practical purposes (*prayojanavat*).
- 35 “There are verses about this:

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

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

42 On *indragopa*, see Lienhard 1978.

43 On juice extract (*svarasa*) see CS 1.1.73, 1.4.7; Ḍalhaṇa 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).

46 On the topic of the “group of four,” the commentator Ḍalhaṇa considered them to

- 36 There are two kinds of invasive diseases. Some certainly<sup>47</sup> 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 (māṃsa), ducts (sirā), sinews (snāyu), bones (asthi) and joints (sandhi) are meant.
- From the mention of “diseases,” all diseases caused by wind, bile, phlegm, congested humours (sannipāta), external factors (āgantū) and inherent factors (svabhāva) are intended (vyākhyāta).
- From the mention of “remedies,” there is the teaching of substances, tastes, potencies, post-digestive tastes.
- From the mention of “procedures (kriyā),” therapies (karman) such as oiling and excision (chedya) are taught.
- From the mention of the word “time,” every single teaching about the times for procedures is meant.

- 39 “There is a verse about this:

---

be “food, behaviour, earthen products and items created by time.” He referred to the author of the lost commentary entitled *Pañjikā*, and to Jejjāta (HIML: IA, 372–3, 192). In his view, these early commentators do not agree that the fourfold grouping (catuṣṭaya) 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*.

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

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

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*-, *Śārīra*-, *Cikitsā*- and *Kalpa-sthānas*. These have 46, 16, 10, 40 and 8 chapters respectively. The *Uttaratantra* has 66 chapters.

49 On *viṃśa* in the sense of “greater by 20” see P.5.2.46 *śadantaviṃśateś 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 *Uttaratantra* (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 <sup>51</sup>

---

<sup>51</sup> Bronkhorst [2016](#): 167.





# Sūtrasthāna 10: Diagnosis

11 [52](#) content

---

52 See p. [208](#) below.



# Sūtrasthāna 11: Preparing and using caustics

7 <sup>53</sup>  
11 <sup>54</sup> content

---

<sup>53</sup> See p. 199 below.

<sup>54</sup> See p. 208 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.<sup>55</sup>

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. Khawāṣṣ Khān.<sup>56</sup>

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.<sup>57</sup>

## 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.<sup>58</sup>

---

<sup>55</sup> [HIML](#): IA, 209; IB, 324, n. 131.

<sup>56</sup> Siddiqi 1959: 96–109; Azeez Pasha 1971; Storey 1971: 231–232; [HIML](#): IB, 324, n. 128; Speziale 2019: 8–9.

<sup>57</sup> Brooks 2020a,b; 2021a,b.

<sup>58</sup> This sentence is hard to construe grammatically, although its meaning seems clear. In place of विशेषस्तु, Cakrapāṇidatta and Ḍalhaṇa both read विशेषतस्, which helps interpretation ([Su 1939](#): 95, [Su 1938](#): 55). It is 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.*<sup>59</sup>

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.*<sup>60</sup>

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.*<sup>61</sup>

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.<sup>62</sup>

9 Leeches are called “*jala-āyu-ka*” because their life (*āyu-*) is in water (*jala*).<sup>63</sup> “Home” (*okas*) means “dwelling;” their home is water, so they are called “water-dwellers (*jalaaukas*).”

---

Devanāgarī manuscript.

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

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 Ḍalhaṇa 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 *Suśrutasaṃhitā* (HIML: IA, 689–690 *et passim*). The editor Ācārya was aware of this reading in the Nepalese manuscripts; see his note 4 on 1.13.5 (Su 1938: 55, note 4).

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 *R̥gveda*.

- 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*)<sup>64</sup>
  - Rainbow (*indrāyudhā*)
  - Oceanic (*sāmudrikā*)
  - Cow-praising (*govandanā*)<sup>65</sup>

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.<sup>66</sup> 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.<sup>67</sup>

<sup>64</sup> Treating गर्दा as गल्दा and translating as in RV 8.1.20, with Jamison and Brereton (2014: 1023, verse 20 and cf. commentary). But if गर्द is to be taken from √गर्द् then we might have “crying from the sting.”

<sup>65</sup> The manuscripts all read गोवन्दना against the vulgate's गोचन्दना.

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

<sup>67</sup> 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 (*puṇḍarikamukhī*)
- 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.<sup>68</sup>
- 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.<sup>69</sup> Those in

68 The compound *सिग्धमुद्गवर्णा* is supported by all the manuscript witnesses and is translated here. Nevertheless, the reading of the vulgate, that separates *सिग्धा*, 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 toponym. 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.<sup>70</sup> 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.*<sup>71</sup>

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

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 Nizām’s dominions,” “possibly to be identified with Bodhan.”

Ḍalhaṇa on 1.13.13 (Su 1938: 57) anachronistically identified “Yavana” as the land of the Turks (तुरुष्क) and “Pautana” as the Mathurā region. He also noted, as did Cakrapāṇidatta (Su 1939: 97), that this passage was not included by some authorities on the grounds that the habitats of poisonous and non-poisonous creatures are defined by other criteria.

- 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,<sup>73</sup> 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.<sup>74</sup> 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 (śas-trapada).<sup>75</sup> 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 Ḍalhaṇa on 1.13.18 (Su 1938: 57) who glossed परिक्लिष्ट "injured" as अमनोज्ञदर्शन "disagreeable looking."

74 Ḍalhaṇa 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 Suśrutasaṃhitā 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 567.

- 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.<sup>76</sup> 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.<sup>77</sup>
- 23 *One that protects its deflated head with its body, suddenly curls up and makes the water warm is traditionally said to have Indrapada.*<sup>78</sup>
- Thus, one should keep such a one as before.<sup>79</sup>
- 24 *After observing the proper or improper flow of the blood, one should rub the opening made by the leech with honey.*<sup>80</sup> 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 *Garuḍapurāṇa* 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 l-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.<sup>81</sup>

## Translation

- 1 Now we shall declare the chapter about blood.
- 2
- 3 Food is of four types.<sup>82</sup> It is endowed with six tastes and is made of the five elements.<sup>83</sup> It has either two or eight potencies, and is endowed with many qualities. <sup>84</sup> Chyle (*rasa*) is the most intangible essence of this food that is properly transformed. It is of the nature of fire.

---

81 [HIML](#): IA, 209–201 and Meulenbeld [1991](#). Meulenbeld’s footnotes on this chapter in [HIML](#): IB, 325 ff. refer often to “Hoernle’s note.” This appears to be a reference to Hoernle’s copious notes to his translation of this chapter (Hoernle [1897](#): 87–98). Meulenbeld ([1990](#)) also discussed Sanskrit veterinary texts in the light of their standard theory of four humours, including blood.

82 Ḍalhaṇa on 1.14.3 ([Su 1938](#): 59) said that the four types of food are those that can be drunk, licked, eaten and chewed (पेयलेह्यभोज्यभक्ष्य). The main text of the *Carakasamhitā* is explicit about these categories at 4.3.4(1) ([Ca 1941](#): 308): पानाशनभक्ष्यलेह्य । “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) is a treatise on food in āyurveda.

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

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

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,<sup>85</sup> it satisfies the entire body, enlivens it, prolongs it,<sup>86</sup> and makes it grow. The motion of the entity that flows throughout the body should be understood by inference. That motion causes deterioration and growth.

With regards to the chyle that flows through all the limbs, humours, body tissues, and impurities of the body, the question arises, “Is it moist or is it fiery?” It is understood to be moist because of its fluidity while flowing<sup>87</sup> and due to attributes such as mobility, lubrication, enlivening, satisfaction, and supporting.<sup>88</sup>

- 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.<sup>89</sup> That is due to the embryo being fiery and moist.<sup>90</sup>
- 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.

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

90 Ḍalhaṇa 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 (आग्नेय/सौम्य), see Wujastyk 2004; Angermeier 2021.

*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 preserve<sup>91</sup> chyle by administering food and drink, being nicely disciplined with food<sup>92</sup>.*

- 13 The verbal root *rasa* means movement.<sup>93</sup> Because it keeps moving day after day, it is called *rasa* (chyle).<sup>94</sup>
- 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 group<sup>95</sup> is 18,090.*

*This is the particular transformation period regarding chyle that lasts for a person with mild fire<sup>96</sup>. For a person with developed fire, one should know it to last for the exact same time<sup>97</sup>*

91 All three manuscripts have रक्षेत 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 Bhishagratna 1907–16: 109

94 In the list of verbal roots of Pāṇini, the verbal root रस(*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 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.

- 16 Resembling the expanse of sound, flame, and water, that entity moves along in a minute manner throughout the entire body<sup>98</sup>.
- 17 The aphrodisiac medicines, however, being used like a purgative due to their excessively strong characteristics, evacuate the semen.
- 18 Just as it cannot be said that the fragrance in a flower bud is present in it or not, but accepting that there is the manifestation of existing entities<sup>99</sup>, it,<sup>100</sup> however, is not experienced only due to its intangibility. That same entity is experienced at another time in the blossomed flower. In the same way regarding children also, the manifestation of semen happens because of the advancement of age<sup>101</sup>. For women, the manifestation is different as rows of hair, menses, etc.
- 19 That very essence of food does not nourish very old people due to their decaying bodies.
- 20 These entities are called body tissues (*dhātu-s*) because they bear the body<sup>102</sup>.
- 21 Their decay and growth are due to blood. Therefore, I will speak about blood. In that regard: The blood that is foamy, tawny, black, rough, thin, quick-moving, and non-coagulating is vitiated by air. The blood that is dark green, yellow, green, brown, sour-smelling, and unpleasant to ants and flies is vitiated by bile. The blood that is orange, unctuous, cool, dense, slimy, flowing, and resembling the colour of flesh-muscles is vitiated by phlegm. The blood having all these characteristics is vitiated by the combination of all three of them. The blood that is extremely black is vitiated by blood<sup>103</sup> just as bile. The blood that has the combined characteristics of vitiations of two humours is vitiated by

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.

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.

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."



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 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, *fox-tail 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 babool*, *granthi*, *axlewood*, and *dhanvāna* (Camelthorn), or a linen cloth<sup>104</sup>, 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 *kākolī*, etc. sweetened by sugar and honey to drink. Or, one should consume the blood of black buck, deer, ram, buffalo, rabbit, or pig, accompanied by milk, green gram soup and meat soup<sup>105</sup>. 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 weak<sup>106</sup> 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.*

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

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

106 This refers to the digestive fire.

- 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 pure<sup>107</sup> 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.*

Can't be  
"sedation"

<sup>107</sup> Ḍalḥaṇa 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.<sup>108</sup> 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.<sup>109</sup>

---

<sup>108</sup> [HIML](#): IA, 211–212317.

<sup>109</sup> The topic of piercing the ear (*kaṇavyadha*) is not discussed in the *Carakasamhitā* ([HIML](#): IB, 326, n. 175), but it is mentioned in some texts that followed the *Suśrutasamhitā*, such as the *Kaśāpyasamhitā* ([HIML](#): IIA, 30). Also, the instrument for piercing the ear is described in the *Aṣṭāṅgaśāstrīdayasamhitā* 1.26.26 ([Ah 1939](#): 321). In the versions of the text known to Ḍalhaṇa ([Su 1938](#): 76) and Cakrapāṇidatta ([Su 1939](#): 125), the heading of this chapter is “the method of piercing and joining the ear” (कर्णव्यधबन्धविधि), instead of the Nepalese version’s “the method of piercing the ear” (कर्णव्यधविधि). The topic of joining the ear (कर्णबन्ध) is discussed in passages 17–20 of the Nepalese version. However, it appears that only subsequent redactors reflected its importance by including it in chapter headings.

The Nepalese version also omits the opening remark on Dhanvantari that appears in subsequent versions of the text. For a discussion of the frame story in the Nepalese version, see Birch, Wujastyk, Klebanov, Parameswaran, et al. 2021.

When commenting on this statement, Ḍalhaṇa ([Su 1938](#): 76) and Cakrapāṇidatta ([Su 1939](#): 125) observed that only the ears of healthy people should be pierced, and they quoted the lost authority Bhoja to affirm this: “When piercing the ears of chil-

- 2 One may pierce a child's ears for the purpose of preserving and decorating. During the bright fortnight, when the child is in the sixth or seventh month, on renowned days, half days, hours and constellations, the physician, with a calming presence, sits the boy, who has received a benediction and the recitation of a blessing,<sup>110</sup> on the lap of a wet-nurse.<sup>111</sup> Then, he should pull the ear with his left hand and pierce straight through with his right hand at a naturally-occurring cleft.<sup>112</sup> 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.<sup>113</sup>
- 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.<sup>114</sup>

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 Ḍalhaṇa (Su 1938: 76) have the additional compound कुमारधराङ्के ("on the lap of one who holds the child") after धात्र्यङ्के. The gender of कुमारधर is made clear by Ḍalhaṇa's gloss "a man who holds the child." Also, both versions add बालक्रीडनकैः प्रलोभ्य ("having enticed with children's toys") to indicate that the child should be tempted with toys to stay on the assistant's lap. According to Ḍalhaṇa on 1.16.3 (Su 1938: 76), the toys include replica elephants, horses, bulls and parrots. Ḍalhaṇa further mentions that others read 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 Ḍalhaṇa (Su 1938: 76) add that this naturally-occurring cleft is illuminated by a ray of sunshine (आदित्यकरावभासिते).

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

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

- 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.<sup>115</sup>
- 5 Having removed the wick (*vartti*) because of the accumulation of humours or an unsatisfactory piercing at that location,<sup>116</sup> 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.<sup>117</sup>
- 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.<sup>118</sup>
- 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.<sup>119</sup>

---

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 Ḍalhaṇa's versions, to outline the specific problems caused by piercing three ducts called कालिका, मर्मिका and लोहितिका (1.16.4 (Su 1939: 126) and 1.16.5 (Su 1938: 77) respectively). In fact, the order of the problems mentioned in the Nepalese version has been retained in the other versions and divided between each duct. Cakrapāṇidatta's commentary on 1.16.4 (Su 1939: 126) cites several verses attributed to Bhoja on the problems caused by piercing these three ducts in the ear flap: 'लोहितिका, मर्मिका and the black ones are the ducts situated in the earflaps. Listen in due order to the problems that arise when they are pierced. Paralysis of the nape of the neck and convulsions, or sharp pain arise from piercing लोहितिका. Pain and lumps are thought to arise from piercing मर्मिका. Piercing कालिका gives rise to swelling, fever and burning.'
- 116 In addition to these reasons, Ḍalhaṇa at 1.16.6 (Su 1938: 77) added "because of piercing with a painful, crooked and unsatisfactory needle" (क्लिष्टजिह्वाप्रशस्तसूचीव्यधात्) and "because of a wick that is too thick" (गाढतरवर्तित्वात्). Ḍalhaṇa was aware of the reading in the Nepalese version because in his commentary on 1.16.6 (Su 1938: 77) he noted that some read "because of the 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 Ḍalhaṇa 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 humours<sup>120</sup> 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.<sup>121</sup> They are as follows: Rim-join (*nemīsandhānaka*), Lotus-splittable (*utpalabhedyaka*), 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 (*saṃkṣipta*), Reduced-ear (*hīnakarṇa*), Creeper-ear (*vallīkarṇa*), Stick-ear (*yaṣṭīkarṇa*), and Crow's lip (*kākauṣṭha*).<sup>122</sup>

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. <sup>123</sup>
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*. Ḍalhaṇa added that it can also be made of lead and should have the shape of the *datura* flower. The manuscripts have variant readings for लघुप्रवर्धनकमामुञ्चेत् at this point that include a scribal emendation, none of which construe plausibly. It is possible that the unusual verb form आ+√मुच् puzzled the scribes and caused the implausible scribal readings and emendations.

<sup>120</sup> Ḍalhaṇa on 1.16.9 (Su 1938: 77) notes that the word दोष here can refer to either a humour, such as wind, as we have understood it, or a disease generated from a humour.

<sup>121</sup> The Nepalese version uses the word सन्धान to refer to joining a split in an ear flap, which is consistent with the terminology in the verse cited above (8). However, 1.16.10 of Ḍalhaṇa's version (Su 1938: 77) uses the term बन्ध here and at the very beginning of the chapter (i.e., 1.16.1) to introduce the topic of repairing the ear.

<sup>122</sup> 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).

<sup>123</sup> 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.<sup>124</sup> The five from compressed (*saṃkṣipta*) on are incurable.<sup>125</sup> 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.<sup>126</sup>

- 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.<sup>127</sup> And in this regard, he should particularly gather<sup>128</sup> top layer of fermented liquor, milk, water, fermented rice-water, and powdered earthenware crockery (*kapālacūrṇa*).<sup>129</sup>

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

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

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

127 *Suśrutasaṃhitā* 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 विशेषतश्चाग्नोपहरणीयात् has been emended to विशेषतश्चाग्नोपहरेत् to make sense of the list of ingredients, which is in the accusative case. Also, the repetition of अग्नोपहरणीयात् 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. Ḍalhaṇa (Su 1938: 79) defines it as the powder of fragments of fresh earthen pots and Cakrapāṇidatta (Su 1939: 129) as the powder of earth-

Next, having made the woman or man tie up the ends of their hair, eat lightly and be firmly held by qualified attendants, the physician considers the joins and then applies them by means of cutting, splitting, scarification, or piercing.<sup>130</sup> 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.<sup>131</sup>

- 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.<sup>132</sup> 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.<sup>133</sup>*
- 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 Ḍalhaṇa’s version (Su 1938: 78), which has च कृत्वा following सुपरिगृहीतं. It is likely that a verb, such as कृत्वा, dropped out of the Nepalese transmission.

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

132 1.16.17 of Ḍalhaṇa’s version (Su 1938: 79) reads “impure” for the Nepalese “too pure,” which would appear to make better medical sense. Emending the text to नाशुद्ध- for नातिशुद्ध- in the Nepalese version would yield the same meaning as Ḍalhaṇa’s version.

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

- (*saṃrambha*), 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,<sup>134</sup> fat, marrow, milk, and sesame oil, and white mustard oil.<sup>135</sup> 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**.<sup>136</sup> 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.*<sup>137</sup>
- 16 *Ears which do not enlarge even when sweated and oiled, should be scarified at the edge of the hole, but not outside it.*<sup>138</sup>
- 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.*<sup>139</sup>

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

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

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

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

138 Ḍalhaṇa'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 Ḍalhaṇa (*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.<sup>140</sup>
- 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),<sup>141</sup> with the same measurements, off the cheek, the end of the nose is then scarified.<sup>142</sup> 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.<sup>143</sup> Having caused it to be raised,<sup>144</sup> the powder of sappanwood,<sup>145</sup> liquorice and Indian barberry should be sprinkled on it.<sup>146</sup>
- 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. Ḍalhaṇa 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 Ḍalhaṇa's version (Su 1938: 80).

141 The version of 1.16.28b known to Ḍalhaṇa (Su 1938: 81) reads "bound, connected (*bad-dham*)" 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, Ḍalhaṇa (Su 1938: 81) clarified the meaning of the vulgate here by stating that one should supply the word "flesh" when reading "connected," thus indicating that he understood the flesh to be connected to the face.

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

144 The Sanskrit term उन्नामयित्वा 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 Ḍalhaṇa has पत्तङ्ग (1.16.29 (Su 1938: 81)) and this term is propagated in modern dictionaries.

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

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

---

<sup>147</sup> The expression स्वयथोपदेश is ungrammatical but supported in all available witnesses.

<sup>148</sup> The vulgate transmission has lost the word वध्र and replaced it with अर्ध "half," which makes little sense in this surgical context.

<sup>149</sup> Ḍalhaṇa accepted a verse following this, 1.16.32 (Su 1938: 81), which pointed out that the procedure for joining the nose is similar to that of joining the lips without fusing the ducts. He noted that earlier teachers did not think this statement on the nose and lips was made by sages, but he included it because it was accepted by Jejjāṭa, Gayadāsa and others, although they did not comment on it because it was easy to understand. Cakrapāṇidatta also did not comment on this additional verse (Su 1939: 133).



# Sūtrasthāna 28: Unfavourable Prognosis in Patients with Sores

## Literature

Meulenbeld offered an annotated overview of this chapter and a bibliography of earlier scholarship to 2002.<sup>150</sup>

Goswami studied the commentaries of Ḍalhaṇa and Cakrapāṇidatta on this and the following adhyāyas up to 32, focussing on the topic of omens (*ariṣṭa*). He concluded that both authors were influenced by the Indriyasthāna of the *Carakasamhitā* in their commentaries on this topic.<sup>151</sup>

## 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.<sup>152</sup>

---

<sup>150</sup> HIML: IA, 219.

<sup>151</sup> Goswami 2011.

<sup>152</sup> 1.1.28 (*Su* 1938: 7), tr. P. V. Sharma 1999–2001: 1, 21.





# Sūtrasthāna 46: The Rules about Food and Drink

## Introduction

•  
83 <sup>153</sup>

---

<sup>153</sup> 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.<sup>154</sup>

## 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 Uttaratantṛa, 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.

complete  
this  
thought

## Translation

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

---

<sup>154</sup> [HIML](#): IA, 234. (Ruben [1954](#)) studied the wind doctrines in the *Carakasamhitā*.

- 3 After holding the feet of Dhanvantari, the foremost of the upholders of righteousness who emerged out of nectar, Suśruta makes this enquiry.<sup>155</sup>
- 4 O King! O best of orators! Explain the location and types of diseases of the wind, whether in its natural state or disordered.<sup>156</sup>
- 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*).<sup>157</sup> It has inconceivable power. It is the leader of the humours<sup>158</sup> and the ruler of the multitude of diseases.  
It moves fast, it moves constantly, it is located in the stomach and in the rectum.<sup>159</sup>
- 9cd Now, learn from me the characteristics of wind as it moves inside the body.<sup>160</sup>
- 10 Wind connects the senses and the sense objects. Unvitiated, it maintains a state of equality between the humours (*doṣa*), the bodily tissues (*dhātu*) and heat (*agni*) and the rightness (*ānulomya*) of actions.<sup>161</sup>

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 Ḍalhaṇa 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 Ḍalhaṇa interpreted it. On the semantic field of रजस्, see Das 2003: 14 note 26 and ff.

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

161 According to Ḍalhaṇa on 1.6.3 (Su 1938: 23), सम्पत्तिः=सम्पन्नता. According to Ḍalhaṇa, Gayadāsa read इन्द्रियार्थोपसंप्राप्तिं but Ḍalhaṇa 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

add foot-  
note here

add refs to  
Divodāsa as  
king.

- 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.<sup>162</sup>
1. prāṇa,
  2. udāna,
  3. samāna,
  4. vyāna,
  5. apāna.<sup>163</sup>

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

- 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.<sup>165</sup> 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*.<sup>166</sup> Special acts like speech and singing are all initiated by it. It particularly causes diseases above the neck (*jatru*).<sup>167</sup>
- 16–17ab The *samāna* wind flows in the receptacles of raw and of digested matter.<sup>168</sup> 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 Ḍalhaṇa on 2.1.12 (Su 1938: 259), स्थान=साम्य, यापयन्ति=धारयन्ति. All the manuscripts read प्राणोदानः समानश्च व्यानोपानस्तथैव च । against the vulgate’s प्राणोदानौ समानश्च व्यानश्चापान एव च ।.

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

166 The sentence plays on the sound उत्- ऊर्ध्व- in the qualifiers (उदान, ऊर्ध्वम्, उत्तम). According to Ḍalhaṇa 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 Ḍalhaṇa 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.<sup>169</sup>  
 It mainly causes abdominal swelling (*gulma*), diminished digestive fire (*agnisaṅga*) and diarrhoea.<sup>170</sup>
- 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**.<sup>171</sup> 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.<sup>172</sup>
- 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 (*hṛdgraha*), and pain in the flanks.<sup>173</sup> It also causes rumbling of the bowels, gripes (*śūla*), swollen belly, painful urine and feces, constipation, and pain in the sacrum (*trika*).<sup>174</sup> 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 *Nyācācandrikā*). This suggests that it is the samāna that cooks food, while the vulgate reading involves the equal participation of digestive fire.

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

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

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

173 On “disorientation,” Ḍalhaṇa 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 Ḍalhaṇa 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.<sup>175</sup> Located in the flesh, painful lumps.<sup>176</sup> 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.<sup>177</sup> 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.<sup>178</sup>

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.

<sup>175</sup> 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 *Bhedaśaṃhitā* seems to have taught that रस “chyle” was the sources of menstrual blood, in contrast to the *Kāśyapaśaṃhitā* that assigned this role to त्वक् “skin.” In their comments on this passage, Gayadāsa and Ḍalhaṇa 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 त्वक्स्थ “located in the skin” should, by extension, be read as रसस्थ “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; Jhalakīkar 1978: 698–699).

<sup>176</sup> 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 Ḍalhaṇa 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).

<sup>177</sup> According to Ḍalhaṇa सिराकुञ्चनं is also known as कुटिला सिरा (Su 1938: 262), which may refer to varicose veins.

<sup>178</sup> Ḍalhaṇa 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.<sup>179</sup> And located in the limbs, it can cause a multitude of diseases.<sup>180</sup>

#### 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**.<sup>181</sup>

#### 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.<sup>182</sup>

#### Samāna

- 36cd–37ab When is 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.

<sup>179</sup> Ḍalhaṇa on 2.1.31cd (Su 1938: 262) explained “wind that is compounded” as wind being mixed with bile and phlegm.

<sup>180</sup> The Nepalese version omits passages 2.1.32cd–33ab which are about the diseases that arise when contaminated wind mixes with cough, phlegm and blood (Su 1938: 263).

<sup>181</sup> 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.

<sup>182</sup> 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, अस्वेदहर्षौ “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.<sup>183</sup> When covered with phlegm there is a feeling of heaviness in the lower body and coldness.

### Vyāna

- 38cd–39ab When vyāna is covered by bile there is a burning sensation (*dāha*), tossing of the limbs and fatigue. When covered by phlegm there is a stiffening and being like a vertical stick (*uddaṇḍaka*) and swelling pain.  
<sup>184</sup> Instead of this verse, Nepalese version has a different hemistich here which is स्तम्भनोद्धण्डकश्चापि शोथशूलं कफावृते ||.
- 40–41 Persons who are of delicate nature, follow faulty diet and lifestyle, ? also afflicted with intoxicating drinks, sexual enjoyment, exercise causes vitiation of wind and blood.??
- 42 Riding elephant, horse and camel, lifting great weights, consuming vegetables which are pungent, hot, sour, alkali and being frequently distressed situation causes contamination of wind.
- 43–44 Blood flowing in the body blocks the passage of contaminated wind which moves quickly in the body. Excessively irritated wind–being contaminated by wind and dominance of wind, it is called वातरक्त Gout<sup>185</sup>.
- 45–46 Vātarakta causes – pricking pain, dryness, loos of sensation in the feet. Contaminated Bile mixed with blood causes sharp burning sensation, excessive heat and soft swelling with red color in the feet. Contaminated Phlegm mixed with the blood causes itching in the feet. It makes feet white, cold, dry, thick and hard. All defects <sup>186</sup> in the blood contaminated by humours (wind, bile, phlegm) manifest their symptoms in the feet.
- 48 This disease spreads all over the body like rat poison by staying in feet or sometimes hands.

<sup>183</sup> The This probably describes hematuria. Again we have an Epic m. sing. dvandva.

<sup>184</sup> Nepalese version omits next verse which is गुरुणि सर्वगात्राणि स्तम्भनं चास्थिपर्वणाम् | लिङ्गं कफावृते व्याने चेष्टास्तम्भस्तथैव च || The verse describes other diseases that cause by contaminated vyāna mix with cough and phlegm. *Su* 1938: 264.

<sup>185</sup> In the medical term वातरक्त is known as Gout. Cakrapāṇi called it आढ्यरोगः Caraka-saṃhitā sū.14.18 and ci.28.66

<sup>186</sup> Gayadāsa suggests सर्वे दुष्टाः शोणितं चापि nominative plural instead of locative singular.

- 49 Gout spreads in the knee and the skin bursts and starts bleeding makes it incurable. It is mitigatable if it is of a year's old.
- 50–51 When vitiated wind enters in the all arteries it causes quickly convulsions again and again and because of frequent contractions (*ākṣepa*) it is called convulsions (*ākṣepaka*).
- 52–56 Because in this situation a person often sees darkness and fall, it calls spasmodic contraction (*apatānaka*)<sup>187</sup>. If wind mixed with phlegm stays excessively in the arteries, it stiffens body like a staff and it is called दण्डापतानकः epilepsy with convulsions. 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 vein 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<sup>188</sup>.
- 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 (*pakṣāṅghāta*).<sup>189</sup> 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.<sup>190</sup>

187 Gayadāsa accepted the Nepalese reading ताम्यते which vulgate does not read. Gayadāsa gives definition of अपतानक as येनापताम्यते means a situation in that a person sees the dark.

188 According to Ḍaḥṇa convulsion (*ākṣepaka*) is also known as अपतानक (Su 1938:266). He further mentions that even if fortunately, it is cured, it cripples the limb.

189 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 (*apakṣāṅghāta*) is known as hemiplegia.

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

- 63 A paralysis (*pakṣāghāta*) caused by wind <sup>191</sup> 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 अपतानक. Ḍalhaṇa 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 Ḍalhaṇa commented that the आक्षेपक and अपतानक is same (Su 1938:266) and again he suggested that the अपतानक and अपतन्त्रक both are similar condition. Therefore, आक्षेपक, अपतानक and अपतन्त्रक should be the same. Gaya-dāsa further commented that the Caraka has not read आक्षेपक as अपतानक 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 Ḍalhaṇa, 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.<sup>192</sup> 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 (*gṛdhrasī*).
- 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*).

<sup>193</sup>

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

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

192 Ḍalhaṇa suggests नेत्रादीनाम् इत्यादि शब्दात् भूगण्डादि उपसङ्ग्रहः

193 Both the MSS N and H read विश्वञ्चि instead of the vulgate reading विश्वाची. There is no

- 76 Vitiated wind and blood in the joint of knee causes synovitis of knee joint (*kroṣṭukaśīrṣa*). 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 (*paṅgu*).
- 78 A person who trembles at the beginning of walking or walks limping and whose foot joint has become loose is called lathyrism (*kalāyakhāñja*).
- 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 (*pādadaḥa*).
- 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.<sup>194</sup>
- 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*).<sup>195</sup>
- 85 Vitiated wind penetrating into the cheekbones, temporal bones, head and neck causes piercing pain in the ears. It is called ear-ache (*karṇaśūla*).<sup>196</sup>
- 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.

such word found in other Āyurveda texts.

194 Ḍaḥaṇa and Gayadāsa both have defined two diseases i.e., अंसशोष and अवबाहुक respectively.

195 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.

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

- 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.

<sup>197</sup>

- 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 प्रत्यष्टीला.

Names of diseases discussed in the chapter 2.1

Gout (*vātarakta*) convulsion (*ākṣepaka*) paralysis of one side (*pakṣāghāta*) paralysis of the jaw-bones (*ardita*) sciatica (*grdhraśī*) paralysis of arms and back (*viśvañci*) synovitis of knee join (*kroṣṭukaśīrṣa*) lathyrism (*kalāyakhañja*) vātakaṇṭaka (*vātakaṇṭaka*) avabāhuka (*avabāhuka*) tūnī (*tūnī*) pratitūnī (*pratitūnī*) tympanites (*ādhmāna*) pratyādhmāna (*pratyādhmāna*) vātāṣṭhīlā (*vātāṣṭhīlā*) pratyāṣṭhīlā (*pratyāṣṭhīlā*)

<sup>197</sup> 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.<sup>198</sup> 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*)<sup>199</sup> is incompetent to produce offspring if it is [characterized by] wind, bile, phlegm, blood (*śoṇita*),<sup>200</sup> decomposition (*kunāpa*), clumps (*granthi*),<sup>201</sup> stinking pus (*pūtipūya*), low volume (*kṣīṇa*), urine, or feces.

---

<sup>198</sup> [HIML](#): IA, 244–246.

<sup>199</sup> 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.

<sup>200</sup> 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).

<sup>201</sup> 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 (*kuṇapa*).<sup>202</sup>
  - 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 feces.<sup>203</sup>

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.<sup>204</sup>

- 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.<sup>205</sup>

This can also be known by means of the humour, colour and pain.

In these cases, that which displays decomposition (*kuṇapa*), 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.

202 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.

203 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*).

204 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.

205 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).*<sup>206</sup>

find out  
about ut-  
tarabasti

### 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.<sup>207</sup> 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**.<sup>208</sup>
- 6.2 When the sperm is of the nature of bile, there is an enema of milk cooked with curds, **Malay beechwood** and **liquorice**. 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.<sup>209</sup> 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**.

<sup>206</sup> Ḍalhaṇa on 3.2.6 (**Su 1938**: 345) noted that “unction and sweating” indicates the “five treatments”: वमन, विरेचन, अनिरूह, 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.

<sup>207</sup> These three recipes are not present in the vulgate text of the *Suśrutasaṃhitā*.

<sup>208</sup> -विपक्व “well cooked with...” might be interpreted as “with ripe...”.

<sup>209</sup> 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*.<sup>210</sup>

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.<sup>211</sup>

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.<sup>212</sup>

to what?

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*).<sup>213</sup>

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.

210 The Nepalese text and translation of this sentence are uncertain. The vulgate text reads, 3.2.8 (Su 1938: 345): ग्रन्थिभूते शटीसिद्धं पालाशे वा ऽपि भस्मनि “If clumps appear, it is cooked with *śaṭī* or in ash from a *palāśa*.” The vulgate edition notes in a footnote that some vulgate manuscripts add an extra line, स्नेहादिश्च क्रमः षट्प्रेतासु विजानता. The Nepalese manuscripts read this line two verses further down.

211 Dalhaṇa on 3.2.9 (Su 1938: 345) noted that “what was stated before” refers to the स्व-योनिवर्धन section, i.e., *Suśrutasamhitā* 1.15.10 (Su 1938: 69), and that “what will be described” refers to *Suśrutasamhitā* 4.26 (Su 1938: 496), the chapter on weakness and strength (क्षीणबलीय).

212 It is difficult to know which six cases the author intended. Dalhaṇa on 3.2.10 (Su 1938)

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

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*).<sup>214</sup>
- 13 One should use a paste (*kalka*) as well as cloths and a salutary lavages (*ācamana*).<sup>215</sup>
- 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**.<sup>216</sup>
- 14ab When clumps (*granthi*) appear, he should drink **velvet-leaf**, **three heating spices**, and **Indrajao**.<sup>217</sup>
- 14a He should drink a a decoction (*niḥkvātha*) 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.<sup>218</sup>

<sup>214</sup> The “procedure ending with a urethral instillation” probably refers to verse 6 above (see page 85).

<sup>215</sup> The word आचमन, normally “sipping water from the palm” is here translated “lavage” following the context and Ḍalhaṇa 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.”

<sup>216</sup> 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.

<sup>217</sup> On ग्रन्थि, see note 201.

<sup>218</sup> 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 (*brahmacārīṇī*) foregoes bathing, anointments, ornaments and grooming (*vilekhana*).<sup>219</sup> 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.<sup>220</sup>
- For what reason? By sleeping during the day, the fetus becomes **deaf**.<sup>221</sup> 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*).<sup>222</sup> 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 ( $\sqrt{\text{rakṣ}}$ ) 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.<sup>223</sup>
- 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.<sup>224</sup>
- 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.*

219 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*). Ḍalhaṇa on 3.2.25 (Su 1938: 347) noted that the woman’s abstention should last three days from the first appearance of her menses.

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

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

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

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

224 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 (vicakṣaṇa) 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.<sup>225</sup>
- 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.<sup>226</sup>
- 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.*<sup>227</sup>
- 34 Children born in this manner are beautiful, of noble character and enjoy long lives.<sup>228</sup> They provide release from obligation (*ṛṇa*) and they

29, 30 missing?

Problematic passage in the edition.

225 In the Nepalese version, this text presents a general rule for lovemaking on even days. In the vulgate, the word पुत्रकाम 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.

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

227 The Nepalese version reads क्षेत्रबीजोदकतृणाम् “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 Ḍalhaṇa interpreted the verse.

228 We translate महासत्त्वाः as “noble character;” Ḍalhaṇa, commenting on the vulgate

themselves have children, benefitting their parents.<sup>229</sup>

- 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.<sup>230</sup> When earth is the predominant element, it is dark (*kṛṣṇa*). When earth and ether are the chief elements, it is dark brown (*śyāma*).<sup>231</sup> 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.<sup>232</sup> 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.<sup>233</sup>

35.1–4 And on this, there are the following:<sup>234</sup>

*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 सत्त्ववन्तः, refers to the गुणस्, interpreting the expression as "not strongly influenced by रजस् and तमस्."

- 229 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 Ḍalhaṇa's phrasing is odd in that he says पितृणामृणत्रयमोक्षणशीला: "behaving so as to provide release from the three debts to the ancestors."

230 The food of the mother, that is.

231 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.

232 Cf. also n., p. 218. Cf. HIML: IA, 70 and notes on these poisonous animals as described in the *Carakasamhitā*, 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 *ṭikṭikī*, *jyeṣṭhi*, *jyaishṭhi*, *girgiṭ*.

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

234 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.*<sup>235</sup>

*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.<sup>236</sup>

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.<sup>237</sup>

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*.<sup>238</sup> Without doubt, after eating something white (*śukla*), his flag is raised.<sup>239</sup>

<sup>235</sup> Perhaps this describes the appearance of arcus senilis.

<sup>236</sup> 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.

<sup>237</sup> Note the adverbial -पुरा at the end of a Bahuvrīhi.

The commentator Gayadāsa (cited here by Ḍalhaṇa) 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).

<sup>238</sup> Etymologically, “to be poured into.” On this and the following typologies, see the brief treatment by Meulenbeld (1997: 216–217).

<sup>239</sup> Ḍalhaṇa 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.<sup>240</sup>
- 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 *Kumbhika*.<sup>241</sup>
- 40d–41abc Hear about the next one, the *Īrṣyaka*. Someone who has sexual activity after seeing the copulation of other people is termed an *Īrṣyaka*.<sup>242</sup>

“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, *Suśrutasaṃhitā* 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. Ḍalhaṇa 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.

240 Etymologically, “Sweet Smelling.”

241 The vulgate adds an avagraha before ब्रह्मचर्याद्, meaning “because of *not* being celibate.” Ḍalhaṇa 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 क्लैब्यवशसंजाताप्रवृत्तित्वात् “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. Ḍalhaṇa 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). Ḍalhaṇa 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 or 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 *Suśrutasaṃhitā* is factual and descriptive in these passages, as befits a medical work, while the commentators introduce a moralistic and critical tone.

242 Etymologically “one who envies.”

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

- 41d–42 Hear about the fifth, the *Ṣaṇḍhaka*. 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 *Ṣaṇḍha*.<sup>243</sup>
- 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 *Kumbhika* and the *Īrṣyaka* are known to have semen. The man with no semen is termed a *Ṣaṇḍha*.<sup>244</sup>
- 45 In both of these cases, they have a semen-carrying vessel that dilates as a result of unnatural excitement.<sup>245</sup> Then the flag may be raised.<sup>246</sup>

### 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.<sup>247</sup>

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

- 243 The vulgate's भार्या "woman, wife" for the Nepalese version's कौमारी "girl" is probably bowdlerization.
- 244 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 षण्ड, 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.
- 245 Dalhaṇa on 3.5.45 (Su 1938: 349) cited the expression नरनारीषण्डौ from the *Carakasamhitā* (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? *Carakasamhitā* 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 सिराओ सुक्खधारिणीओ, Schubring 1969: 145 ff; Cailat 2019: 5; I am grateful to Jan Gerris for this reference).

- 246 On this euphemism, see footnote 239 above.

- 247 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.

- 47 Whenever a woman and a woman have sex together, they release semen on each other. Then a being without bones comes into being.<sup>248</sup>
- 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.<sup>249</sup>
- 51 Offspring that is *vimānitaḥ* by irritation of wind and by pregnant longing may become hunchbacked, have a shrivelled hand (*kūṇi*), be lame, mute or have a stutter.<sup>250</sup>
- 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.<sup>251</sup>
- 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.

unsolved  
problem

248 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 *Ṣaḍvīmśabrāhmaṇa* 2.1.1 (Kolhatkar 2005) and later in Purāṇic literature (O’Flaherty 1980).

The Nepalese version of the *Suśrutasamhitā* does not have the following two verses that occur in the vulgate. Ḍalhaṇa 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.

249 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.

250 The Nepalese version has कूनि while the vulgate reads कुणि. Ḍalhaṇa on 3.2.51 (Su 1938: 349) felt the need to explain the unusual term, saying कुणि: विकलपाणि: “having a crippled hand,” but Y. T. Ācārya and N. Śarman (Su 1939: footnote 5) noted a variant विकृतपाणि:, suggesting some instability in the interpretation of this term. Cakrapāṇidatta on 8.2.21 (Su 1939: 690) gave the meaning कुब्जितकर: “having a hunched hand” (where there is also a variant reading नष्टकर:), cf. *Mahākośa*: 1, 216. The Tamil lexemes *kūṇ* means “bend, curve, hump on the back, humpback” and *kūṇi* means “... become hunchbacked” (DED<sub>2</sub>:#1927). It seems likely that this is a Dravidian word that has been absorbed into Ayurvedic terminology at an early period.

251 Ḍalhaṇa 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.<sup>252</sup>
- 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.<sup>253</sup>

Here ends the second chapter that is the anatomy.

---

<sup>252</sup> The text reads शरीराणाम् “of the bodies” that we have translated “of the body parts,” following Ḍalhaṇa’s interpretation. He also said that “palms” included the soles of the feet.

<sup>253</sup> 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.<sup>254</sup> Important subsequent studies of the chapter include those of Das and of Kritzer.<sup>255</sup>

---

<sup>254</sup> [HIML](#): IA, 247–247.

<sup>255</sup> Das [2003](#): ch. 8, *et passim*; Kritzer [2009](#); [2013](#).

## Translation

- 1 We shall now explain the anatomy that is the descent of the embryo.
- 3 Semen is of the nature of Soma (*saumya*) and menstrual blood is of the nature of Agni (*āgneya*).<sup>256</sup> 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.<sup>257</sup>
- 4 In this case, when there is a union of **a husband and wife**, the heat from the body stimulates the wind.  
In that case, because of the combination (*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?”**<sup>258</sup>  
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.<sup>259</sup>

256 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.”

257 Ḍalhaṇa on 3.3.3 (Su 1938: 350) glossed अणुना विशेषेण “by way of a minute special property” as सूक्ष्मप्रकारेण “in an attenuated manner.”

Ḍalhaṇa 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.

258 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 the vulgate’s यः कोऽसाव् 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 कोऽसावित्यु). No other translators translate this phrase, nor does Ḍalhaṇa gloss it.

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

- 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 (*napuṃsaka*).
- 6ab In that context, there is a twelve-night period that is the season (*ṛtu*).<sup>260</sup>
- 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.<sup>261</sup> To the extent that the fetus is deposited at that time, because of being expelled it is lost.<sup>262</sup> †
- 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.<sup>263</sup>
- 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.

260 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.

261 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.

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

263 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.

- 3.3.10 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.<sup>264</sup> It is slightly dark and smells.<sup>265</sup>
- 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.<sup>266</sup>
- 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, getting too thin, sleeping by day, waking at night, grief, riding in a vehicle, fear, excessive coughing in seclusion, or therapies like oleation or bloodletting at the wrong time.

264 “Pipes” (धमनी) are defined in the *Suśrutasaṃhitā* 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.

265 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.

266 “Flower” referring to the twelve-day period that has been discussed earlier. Ḍalhaṇa 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 624) 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).

## **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.<sup>267</sup>

## 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 (*ṣaḍ-dharaṇa*), together with tepid water, for seven nights.<sup>268</sup>

---

<sup>267</sup> [HIML](#): IA, 265–266.

<sup>268</sup> 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. Ḍalhaṇa 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 *dharaṇa*. 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).)

*Aṣṭāṅgaḥṛdayasaṃhitā* 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 Śrīkaṇṭha. There seems to be some confusion about this expression.

Ḍalhaṇa 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.<sup>269</sup>
- 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.<sup>270</sup>
- 10ab When the wind has reached the semen, one should perform the treatment for the defects of the semen.<sup>271</sup>
- 10cd–11 When the wind has reached the whole body, an intelligent person should conquer it by means of immersion, sauna (*kuṭī*), trench sweating (*karṣū*), blanket sweating (*prastara*), oil massage, enema, and blood-letting.<sup>272</sup> Or, if is located in a single limb and is stuck there, a

269 On the translation of methods of medical touch, such as अभ्यङ्ग 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.

270 The expression “which is split” could be construed with “wind.” The word order is not obvious. Ḍalhaṇa on 4.4.9 (Su 1938: 420) interpreted पाणिमन्थ 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.

271 Ḍalhaṇa 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 *Śārīrasthāna* Ch. 2, शुक्रशोणितविशुद्धि.

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

Regarding blood-letting, Ḍalhaṇa 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.<sup>273</sup>
- 12 Or, if it is mingled with phlegm (*balāsa*), bile, and blood, the physician should treat it with non-hostile remedies.<sup>274</sup> However, when the wind is inactive, he should perform blood-letting many times.<sup>275</sup>
- 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.<sup>276</sup>
- 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.<sup>277</sup>
- 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 paṭṭa (*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*<sup>278</sup>

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

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

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

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

276 The vulgate reading दिह्यात् for the Nepalese लिह्यात् changes the meaning to “one should smear.”

Ḍalhaṇa on 4.4.13 (*Su* 1938: 421) glossed पञ्चमूली 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 Ḍalhaṇa as specifically being a meat broth (*māṃsarasa*). 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 फलाम्लो रसः in the text here may mean a vinegar made from sour fruit. Cf. धान्याम्ल.

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

278 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*<sup>279</sup>, 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.<sup>280</sup> 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*).<sup>281</sup> 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.<sup>282</sup>

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, meats<sup>283</sup>, soups, oils<sup>284</sup>, 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, meats<sup>285</sup>, soups, oils<sup>286</sup>, any unctuous substance, unctuous

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

279 some aquatic animal

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

281 Ḍaḥaṇa on 4.2.20 (*Su* 1938: 422) interpreted मात्रा as a measure of time, citing an un-attributed 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.

282 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.”

283 The plural indicates milk and meat from various animals.

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

285 The plural indicates milk and meat from various animals.

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

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 pastes<sup>287</sup> of turpeth,<sup>288</sup> red physic nut, ??, ??, the three myrobalans, and embelia, a Bengal quince fruit equivalent measure of viburnum-root and ??, two *pātra* quantities of both triphalā-decoction<sup>289</sup> and yogurt, and one *pātra* measure of ghee.<sup>290</sup> 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.<sup>291</sup>

This procedure of making viburnum-ghee should also be referred for making Asoka tree-ghee and ??-ghee.<sup>292</sup>

- 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.<sup>293</sup> This is the *anutaila*

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

288 In H, perhaps it should have been त्रिवृद् instead of तृवृत्.

289 त्रिफलारस is here taken to mean a decoction of triphalā.

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

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

292 अशोक and रम्यक are the Ashoka and Chinaberry respectively.

293 In H, the word दन्तप्रतीवायं in the compound word वातघ्नौषधदन्तप्रतीवायं 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)<sup>294</sup> that is mentioned in wind disorders. It is called *anutaīla* because it is produced from tiny oily objects.<sup>295</sup>

- 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 oily<sup>296</sup> in a big vessel and totally cover it with water.<sup>297</sup> 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 possible<sup>298</sup> with one thousand parts of each of the following---a decoction of wind-alleviating herbs, meat soup, milk, and *kāñjika*<sup>299</sup>---and thus prepare the *sahasra-pāka* (that which is cooked with thousands). The admixture added to the oil contains the *hemavata* herbs<sup>300</sup>, 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.<sup>301</sup> 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.

294 The न् should be read ण्.

295 The word अनु in the compound word अनुतैलद्रव्येभ्यः should be read अण्.

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

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

298 The phrase "यावता कालेन शक्नुयात् 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.

299 Ḍalhaṇa 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 Williams's Sanskrit Dictionary.

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

301 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*.<sup>302</sup> These leaves should be completely pounded along with salt in a mortar. This mixture should be put in a pot filled with oil<sup>303</sup>. It (pot) should be smeared<sup>304</sup> with cow-dung. Thereafter, the pot should be heated.<sup>305</sup> This (resultant) is the *patra-lavaṇa* (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.<sup>306</sup> In that pot, one should add ghee, oil, fat, and marrow. Then, one should smear it<sup>307</sup> and heat it as earlier. This (resultant) is the *sneha-lavaṇa* (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.<sup>308</sup> 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)

302 In H, the ending नाम् should be णाम् due to sandhi.

303 सेहघट can also mean a pot filled with ghee

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

305 The word दाहयेत् usually refers to burning, but sometimes it can refer to heating.

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

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

308 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 *plīhāgnisaṃga*, 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.<sup>309</sup>

## 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) (*vāta-rakta*) is of two types: spreading out over a surface (उत्तान) and deep (अवगाढ).<sup>310</sup> However, this is not correct.<sup>311</sup> 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.<sup>312</sup>, 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.

---

<sup>309</sup> [HIML](#): IA, 266.

<sup>310</sup> Ḍalhaṇa commented ([Su 1938](#): 424) that उत्तान refers to being situated in the skin and flesh, and अवगाढ refers to being situated internally.

<sup>311</sup> In H, the word तन् should be तत्.

<sup>312</sup> 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.<sup>313</sup> Later, it spreads throughout the body. Its early forms are pricking pain, burning, itching, ulcer, trembling<sup>314</sup>, roughness of the skin, pulsation in the blood vessels, tendons, and tubular vessels<sup>315</sup>, 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.<sup>316</sup> 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<sup>317</sup>, 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<sup>318</sup>, ??, wild asparagus, ??, and ??. This milk should then be used to cook oil with the admixture of pastes of ??, ??,

313 In H, the word तन् should be तत्.

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

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

316 In H, the reading अम्लान does not make sense given the context. Therefore, we have accepted the vulgate reading म्लान for the translation.

317 Ḍalhaṇa glossed (Su 1938: 425) *śṛgālavinnā* as *prśniparṇī*.

318 According to Ḍalhaṇa, *śṛgālavinnā* is *prśniparṇī*.



??, ??, 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-flower<sup>319</sup>, ??, liquorice, giant potato, heart-leaf sida, country mallow, and ??<sup>320</sup>, with the admixture of cottony jujube, etc. Or, one should use the heart-leaf sida-oil that is cooked as *śatapāka*.<sup>321</sup> 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.<sup>322</sup> 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*<sup>323</sup> 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 roscoe, ??, ??, heart-leaf sida, country mallow, hare foot uraria<sup>324</sup>, ??, ??, sugar, bulrush<sup>325</sup>, ??, and sweet flag. Or, the essence of unctuous fruits<sup>326</sup> can be used as a poultice. Or, a *veśavāra*<sup>327</sup> prepared from the flesh of a fat *cilicima* fish<sup>328</sup> can be used instead. Or, [one

319 Ḍalhaṇa glossed (Su 1938: 425) *mayūraka* as *apāmārga*.

320 Ḍalhaṇa commented (Su 1938: 425) that *halfa grass*, ??, ??, *halfa grass*, ??, and ?? are called *ṭṛṇa* (grass).

321 *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*.

322 Ḍalhaṇa 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 *tuṣa* is perhaps *Terminalia Bellerica* (विभीतक).

323 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.

324 *śṛgālavinṇā*

325 For *kaśerukā*

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

327 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.

328 H has the compound word नलपीनमत्स्य. नलमीन is a particular fish known as *cilicima* (चिलिचिमः). See *Amarakośa*. Also, if the name is नलमत्स्य then the word पीन (fat) within the name is not according to proper Sanskrit. But, it can be allowed because the word मत्स्य (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, नलपीनमत्स्य can mean "a

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

can use] the poultice containing Bengal quince-rind<sup>329</sup>, crape jasmine, deodar, ??, grey orchid, peas, costus, ??, liquor, yogurt, and whey. Or, [one can use] the ointment prepared by mixing citron, amla<sup>330</sup>, 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].<sup>331</sup>

[The patient] should be sprinkled with a decoction of ??, lotus stalk, white sandalwood, and wild Himalayan cherry mixed with goat-milk<sup>332</sup>, 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 *jīvanīya*<sup>333</sup> 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 ??, pussywillow, scrambleberry<sup>334</sup>, ??, ??, turmeric, horned pondweed, sacred lotus, etc. The poultice should be mixed with ghee.

fat fish that is a नल (*cilicima*)”.

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

329 The word पेसिका in H should be read पेशिका.

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

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

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

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

334 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 acidic<sup>335</sup>. 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, ??<sup>336</sup>, **liquorice**, ??<sup>337</sup>, 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 ??<sup>338</sup>, **Indian cherry**, and **wood-apple**, or the paste of honey, **horseradish tree**, and **hogweed**,<sup>339</sup> or the paste of dry ginger, long pepper, black pepper,<sup>340</sup> **hare foot uraria**, and **hairy-fruited eggplant**.<sup>341</sup> 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.<sup>342</sup>
- 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].<sup>343</sup> In this way, one should

The provisional edition should be modified accordingly.

335 Reading the word सुक्त in H as शुक्त

336 Monier Williams states Rumex Vesicarius for śuktā

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

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

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

340 व्योषतिक्ता refers to the group of these three pungent spices. Also see Sūtrasthāna 14.35.

341 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.

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

343 In H, the letter अ् 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,<sup>344</sup> 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,<sup>345</sup> 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 eating<sup>346</sup>. 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.<sup>347</sup>

*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,<sup>348</sup> spacious and comfortable rooms<sup>349</sup> with no wind, soft pillows, comfortable beds,

344 Perhaps विषमज्वर could mean irregular fever.

345 H has कशेरुका.

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

347 The word भवति in H should have been भवन्ति.

348 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.

349 In H, read the स सरणानि as श.

and soft massages are recommended in the condition of wind-blood.

- 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,<sup>350</sup> 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,<sup>351</sup> and who is not restrained externally. There at the beginning itself,<sup>352</sup> after rubbing the patient with oil and making him perspire, one should treat him with a strong *avapīḍa*<sup>353</sup> 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*<sup>354</sup> 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.<sup>355</sup> Or else he should

There, Dalhana commented that de-liberation on *avapīḍa* had been done earlier when it was mentioned. Find that description to know more details.

350 In H, the reading अपताकिनम् should have been अपतानकिनम्.

351 V. S. Apte has खट्वयति. The *Āyurvedīya Śabdakośa* has the entry खट्वापातिन् 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.

352 In H, प्रागैव should have been प्रागेव.

353 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 *avapīḍa*.

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

355 H has the reading रथाकारचुल्ल्याम् that means "fireplace shaped like a chariot", but the

be made to sweat by [a mixture of] ??, *veśavāra*,<sup>356</sup> and milk.

Oil cooked with the juice of *radish*, ??, ??, *spurge*, and ?? should be used in sprinkling, etc. for patients with spasmodic contractions.<sup>357</sup> 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 *avapīḍa*-s. One should also consider the fats of cock, crab, black fish, and porpoise.<sup>358</sup> 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,<sup>359</sup> 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*.<sup>360</sup> *Anutaila* should be used for massage.<sup>361</sup> *Sālvala* should be used for poultice.<sup>362</sup> *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.

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

Make the first letter of sentence capital.

vulgate reading रथकारचुल्लयाम् makes more sense here. Thus, we have accepted it.

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

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

358 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 वसाः instead of रसान् which appears to be the more probable reading. Thus, we have accepted it.

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

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

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

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



20

21

- 22 One should treat the patient with *ardita*<sup>363</sup> 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 remaining<sup>364</sup> should be brought down [the stove] and filtered. It should then be mixed with a *prastha*<sup>365</sup> 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 *gr̥dhrasī*, *viścañcī*, *kroṣṭukaśīrṣa*, *paṅgukalāya*, lameness, *vātakaṇṭaka*, 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 *karṇamūla*,<sup>366</sup> lukewarm juice of ??<sup>367</sup> mixed with *liquorice*, oil, and salt should be put into the ears.<sup>368</sup> 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.<sup>369</sup> 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.

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

364 It means that the water has evaporated.

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

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

367 शृङ्गवेर appears to be a name of ginger. Refer to the Sanskrit dictionary of Monier Williams.

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

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

- 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 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.<sup>370</sup> One should also treat the patient with enemas.
- 26 In the case of *ādhmāna*,<sup>371</sup> however, one should do *avatarpaṇa*,<sup>372</sup> heating the hands, *phalavartikriyā*,<sup>373</sup> stimulation of digestion, and [administer] digestives. One should also employ the purging of bowels and enemas. In the case of *pratyādhmāna*,<sup>374</sup> one should employ vomiting, fasting, and stimulation of digestion.
- 27 In the case of *aṣṭhīlā* and *pratyāṣṭhīlā*,<sup>375</sup> 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*, *pārsvodara*, *bastisūla*, *an-āhamūtra*, painful piles, *plīhodara*, 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*

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

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

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

373 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.

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

375 Refer to *Nidānasthāna* 1.90 and 1.91.



*understood as either pure or vitiated by humours<sup>376</sup> and should be 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.<sup>377</sup>*
- 33 *That is called ūrūstambha. Others call it āḍhyaṁvāta. In that case, one should drink the ṣaṇḍharāṇa 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.<sup>378</sup>*  
*One should eat old ??s, ??, ??, etc. along with uncooked<sup>379</sup> 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.*

376 In H, the reading लक्षणोन्याम्श्च does not make sense. Hence I cannot translate it. Perhaps the correct reading could be लक्षणाभ्याञ्च. This would connect with the two conditions of the wind as stated in the verse.

377 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.

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

379 The vulgate has the reading अघृतैः 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.<sup>380</sup> Das made observations about the afterbirth (*aparā*) that is mentioned in 4.15.17 ([Su 1938](#): 432).<sup>381</sup> Selby has explored gynecological narratives in ayurveda.<sup>382</sup>

## 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.

---

<sup>380</sup> [HIML](#): IA, 271–272.

<sup>381</sup> Das [2003](#): 517.

<sup>382</sup> 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 *śālmālī*- 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 (मण्डलाग्र) 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.<sup>383</sup> 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.<sup>384</sup>

## 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 Jejjāṭa.<sup>385</sup>

---

<sup>383</sup> Liu (2021) provides a valuable overview of poison treatises in the ancient world, inexplicably omitting mention of the *Kalpasthāna*.

<sup>384</sup> 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.

<sup>385</sup> See note 648 below.

Table 2: Chapters of the *Kalpasthāna*.

Chapter title	Nepalese	vulgate
Annapānarakṣākalpa	1	1
Sthāvaraviṣavijñāna	2	2
Jaṅgamaviṣavijñāna	3	3
Sarppadaṣṭavijñāna	4	4
Sarppadaṣṭacikitsita	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 *Suśrutasamhitā*, was translated into Persian and Arabic at the Abbasid court of Baghdad by an Indian physician who is often known by the name Mankah.<sup>386</sup> The principle source of information about this translation is the *ʿUyūn al-anbāʾ fī ṭabaqāt al-aṭibbā* of Ibn Abī Uṣaybiʿah (ca. 1201–1270).<sup>387</sup> Ibn Abī Uṣaybiʿah mentioned that al-Rāzī used the *Suśrutasamhitā*, among other Indian works, and that it had been translated into Arabic at the orders of the Barmakid Yaḥyā ibn Khālīd.<sup>388</sup> The *Suśrutasamhitā* passages used by al-Rāzī

<sup>386</sup> On the name and its variants, see [HIML](#): 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).

<sup>387</sup> On Ibn ʿAbī Uṣaybiʿah, see Hilloowala 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).

<sup>388</sup> Savage-Smith et al. 2019: 3.2, 987. Ibn Abī Uṣaybiʿah said the work consisted of ten

have been identified and printed in parallel with the Arabic translation by Kahl.<sup>389</sup>

Ibn Abī Uṣaybiʿah 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 Yaḥyā ibn Khālīd ibn Barmak. The work was subsequently translated [into Arabic] for the caliph al-Maʾmūn by his client, al-ʿAbbās ibn Saʿīd al-Jawharī. The latter was also assigned the task of reading it aloud to al-Maʾmūn.<sup>390</sup>

There are several interesting features of this account, some of which have been discussed elsewhere.<sup>391</sup> As the pioneering work of Strauss showed, the *Poison Book* of “Shanaq” contained material directly translated from the first chapter of the *Kalpasthāna*.<sup>392</sup> The reception of these materials from the *Suśrutasaṃhitā* under the name “Shanaq” remains a historical puzzle.<sup>393</sup>

chapters, which does not match the six books of the known *Suśrutasaṃhitā*. 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.

389 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 *Suśrutasaṃhitā* to the period third-sixth century CE are not incorrect.

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

391 E.g., in the notes to the translation of Savage-Smith et al., in *HIML*: 1A, 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.

392 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*.

393 Most scholars agree that this is a Perso-Arabic reception of the Sanskrit name Cāṇakya, but that name was associated not with the *Suśrutasaṃhitā*, 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 *Suśrutasaṃhitā*.<sup>394</sup>

The *Suśrutasaṃhitā* 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.<sup>395</sup>

The author Suśruta was also cited as a famous authority in Tibetan lexicographical literature of the early ninth century.<sup>396</sup>

Shortly after this time, inscriptional evidence by King Yaśovarman I (r. 889–910) shows that the *Suśrutasaṃhitā* was known in Cambodia.<sup>397</sup>

<sup>394</sup> Listed with references in [HIML](#): 1A, 352.

<sup>395</sup> Levey 1966: 6.

<sup>396</sup> [HIML](#): 1A, 352.

<sup>397</sup> *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.<sup>398</sup> The twelfth-century author Aruṇadatta,<sup>399</sup> glossed कल्प simply as प्रयोग: “procedure” and as योजनम्.<sup>400</sup>

## 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.

---

<sup>398</sup> 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.

<sup>399</sup> “A learned man with a great command of a number of sciences,” (HIML: 1A, 661).

<sup>400</sup> *Sarvāṅgasundarī* on *Aṣṭāṅgaḥṛdayasamhitā* 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.<sup>401</sup>

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.<sup>402</sup>

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.<sup>403</sup> 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.<sup>404</sup> 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).<sup>405</sup>

<sup>401</sup> *Arthaśāstra* 1.21.8 (Kangle 1965: 1, 30), translation by Olivelle (2013: 97).

<sup>402</sup> Cf. *Arthaśāstra* 1.21.6, *ibid.*, Olivelle (2013: 96).

<sup>403</sup> Cf. *Arthaśāstra* 1.21.6 again.

<sup>404</sup> HIML: IA, 289–290.

<sup>405</sup> 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,<sup>406</sup> dated to 1165 CE.<sup>407</sup>

---

<sup>406</sup> Scan at [cudl.lib.cam.ac.uk/view/MS-ADD-01693/1](http://cudl.lib.cam.ac.uk/view/MS-ADD-01693/1).

<sup>407</sup> 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.<sup>408</sup>
- 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.<sup>409</sup>

### [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.<sup>410</sup>
- 6 Therefore, a king should always be protected from poison by a physician.

408 MS H adds in the margin अथ खलु वत्स सुश्रुतः “Now begins Vatsa Suśruta.” This phrase has been copied here by the scribe from the beginning of the *Suśrutasaṃhitā* chapter in the *sūtrasthāna* on the rules about food and drink (1.46.3 (Su 1938: 214)). The scribe presumably felt, not unreasonably, that this section had common subject matter with the present chapter. Further, SS 1.46.3 is one of the few places in the Nepalese transmission of the *Suśrutasaṃhitā* that names Dhanvantari and integrates him into the narrative of the *Suśrutasaṃhitā* as the teacher of Suśruta.

The mention of Dhanvantari here is 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 *Suśrutasaṃhitā* may have had the phrase only at this point and not elsewhere in the work. See the further discussion by Birch, Wujastyk, Klebanov, Parameswaran, et al. (2021). “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.

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

410 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.<sup>411</sup>
- 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,<sup>412</sup> have clean utensils and be staffed by men and women who have been vetted.<sup>413</sup>
- 17–18ab The chefs, bearers (*voḍhāra*), and makers of boiled rice soups and cakes and whoever else might be there, must all be under the strict control of the doctor.<sup>414</sup>
- 18cd–19ab An expert knows people's body language (*iṅgita*) 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.<sup>415</sup> 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 (*kaṣāya*) and massage ointment (*anulepana*); in garlands (*sraja*), 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.

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

412 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).

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

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

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

- 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.<sup>416</sup> It will excite a *Indian peafowl* and the terrified *parakeet* and the *hill myna* screech. The *swan* trembles very much, and the *racket-tailed drongo* churrs.<sup>417</sup> The *bull* sheds tears and the monkey releases excrement.<sup>418</sup>
- 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.<sup>419</sup>
- 35, 36cd In such a case, an *errhine* and a *collyrium* that are *costus*, *??*, *spikenard* and *honey* (*madhus*);<sup>420</sup> a paste of sandalwood on the heart may also

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

417 Ḍalhaṇa 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.”

418 MS Kathmandu KL 699 reads “*bull* (*vṛṣabha*)” for “*chital deer* (*prṣata*).” The latter may perhaps be mistaken for the former in the Nēwa script, although the reading of MS Kathmandu KL 699 is hard to read at this point.

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

420 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.

- provide relief.<sup>421</sup>
- 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**.<sup>422</sup>
- 38–39 If he eats that food, through inattention or by mistake, then his tongue will feel like a pebble (*aṣṭhīlā*) and it will lose its sense of taste. It stings and burns, and his saliva (*śleṣman*) dribbles out.<sup>423</sup> In such a case, he should apply the treatment recommended above for vapour (*bāṣpa*), and what will be stated below under “toothbrush twigs”.<sup>424</sup>
- 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.<sup>425</sup>

421 Singhal et al. (1972–82: 350) discussed the difficulties in identifying लामञ्ज, a plant cited more often in the *Suśrutasaṃhitā* than in the *Carakasaṃhitā*; Ḍalhaṇa 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.”

422 “Beautyberry” (*Callicarpa macrophylla* Vahl.) is one identification of श्यामा, but vaidyas and commentators have different ideas about the plant’s identity (see glossary). On translating इन्द्रगोप as “velvet-mite,” see Lienhard 1978. Ḍalhaṇa’s remarks show that he had a reading इन्द्रगोपा before him, and he tries to explain इन्द्रा and गोपा as separate plants. But he also says that some people read इन्द्रगोप. Ḍalhaṇa curiously parsed the name सोमा (f.) out of the compound; this feminine noun is almost unknown to Ayurvedic literature. Some dictionaries and commentators consider it a synonym for गुडूची, others for ब्राह्मी or चन्द्रतरु. Ḍalhaṇa also mentioned that some people think the word refers to the soma creeper (सोमलता), which might explain his choice to take the word as feminine. But the compounded word is far more likely to be सोम (m.), the well-known mystery plant (see Wujastyk 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).

423 The word अष्टील 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 Ḍalhaṇa reproduced his observation. The vulgate reading चास्यात् “and from his mouth” is more obvious (*lectio facillior*), but is not attested in the Nepalese manuscripts.

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

425 I translate मूर्च्छा in the light of the metaphors discussed by Meulenbeld (2011), that

- 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*).<sup>426</sup>
- 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.<sup>427</sup>
- 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 (*prā√kuth*) and unripe ones ripen.<sup>428</sup>
- 48 When a toothbrush twig has poison on it, the bristles are corroded and the flesh of the tongue, gums and lips swells up.<sup>429</sup>
- 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.<sup>430</sup>
- 50 Alternatively, the rubbing (*pratisāraṇa*) can be done with either the roots of **sage-leaved alangium**, the bark of **blackboard tree** or **siris**

I'm still unhappy about this verse.

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

fn about sadyas+

include thickening and losing consciousness.

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

427 Both Nepalese witnesses read विकृत (distorted) twice, which is tautologous. In the first occurrence both read विकृता without proper termination. One might read the sandhi in the second occurrence as or not distorted (*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*.

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

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

430 This recipe is different from the vulgate.

- seeds.<sup>431</sup>
- 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.<sup>432</sup> 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*.<sup>433</sup>
- 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*).<sup>434</sup>
- 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*,<sup>435</sup> ghee, *beautyberry*,<sup>436</sup> *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.<sup>437</sup>

Bear's bile  
instead of  
deer's bile.

431 The spelling of the name अङ्गोल्ल varies अङ्गोट, अङ्गोठ, अङ्गोल (GVDB: 5); Ḍalhaṇa noted that the form अङ्गोल्ल 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 Ḍalhaṇa in interpreting the compound to refer to the distinctive bean-like siris seeds, rather than to *mung beans* (5.1.50 (Su 1938: 562)).

432 The feminine स्फोट for “boils” is unattested.

433 This compound could be interpreted as “wood apple juice and *malabathrum*.” Note that this recipe differs from that of the vulgate, which requires urine.

434 See verse 52 above.

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

436 See note 422.

437 The plant identifications in this passage follow Ḍalhaṇa’s glosses, although he noted

- 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 (*kaṇṭaka*) that are like lotus-spots (*padminīkaṇṭaka*).<sup>438</sup> In this case, the drink is honey and ghee, and the ointment (*pralepa*) is sandalwood with ghee, curds, honey, **verbena**, **scarlet mallow** and **hogweed**.<sup>439</sup>
- 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.<sup>440</sup>

punarṇavā  
in the N &  
K MSS

śrita for  
śrta

explain  
more

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 539, p. 165.

<sup>438</sup> 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.

<sup>439</sup> 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 Gaṇapatiśāstrī 1920–25: 20, where it is the name of a constellation).

<sup>440</sup> 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 (*dr̥ṣṭivibhrama*), and possibly even blindness.<sup>441</sup>
- 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 fis-suring (*avadāraṇa*).<sup>442</sup>
- 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.<sup>443</sup>
- 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.<sup>444</sup>

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* → *kṣiprāḥ* 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.

out the difficulties.

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

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

443 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

444 In early Ayurvedic literature, the plant अजरुह is mentioned only here and its identity is unknown. It may be a fern of the Nephrodium family, according to T. B. Singh and

- 79cd–80 He should always guard his heart when amongst **people who are not his friends**.<sup>445</sup> Before eating, he should drink the kinds of ghee called “Invincible” and “Immortal”.<sup>446</sup> He should drink ghee (*sarpiṣ*), **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**,<sup>447</sup> **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.<sup>448</sup>
- 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). Ḍalhaṇa, on 5.1.78 (Su 1938: 563), cited a description of the two plants from the little-known authority Uśanas (HIML:IA, 660 et passim) who described अजरुहा as a white root with spots on it that looks like collyrium when it is split; when drunk with sandalwood it causes poison to be digested.

445 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)). Ḍalhaṇa 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).

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

447 Ḍalhaṇa on 5.1.82 (Su 1938: 563) equated this with **turpeth**.

448 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 commentated on a similar list of poisons in the *Carakasamhitā*, and referred to the *Suśrutasamhitā* on the topic.<sup>449</sup> He also noted that,

In assigning the names to these plants, the main authorities are the Kirātas and Śabarās, who know about these things because they can explain these matters on the basis of a succession of teachers.<sup>450</sup>

About a century later, the learned commentator on the *Suśrutasamhitā*, Ḍalhaṇa, remarked,

In spite of having made the greatest effort, it has been impossible to identify these plants. In the Himalayan regions, Kirātas and Śabarās are able to identify them.<sup>451</sup>

From the view of Sanskrit authors, Kirātas and Śabarās were tribal peoples.<sup>452</sup>

---

<sup>449</sup> Cakrapāṇidatta on 6.23.11 ([Su 1939](#): 571).

<sup>450</sup> Cakrapāṇidatta on *Carakasamhitā* 6.23.11 ([Su 1938](#): 571).

<sup>451</sup> After *Suśrutasamhitā*, *kalpasthāna* 2.5 ([Su 1938](#): 564).

<sup>452</sup> 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.<sup>453</sup> 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.<sup>454</sup> 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.<sup>455</sup>

## 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).

<sup>453</sup> HIML: IIA, 620.

<sup>454</sup> See Wujastyk 2003b: 80–81.

<sup>455</sup> 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.<sup>456</sup>

According to the author of the *Aṣṭāṅgasanġraha*, 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.<sup>457</sup>

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.<sup>458</sup>

## Literature

Meulenbeld offered an annotated overview of this chapter and a bibliography of earlier scholarship to 2002.<sup>459</sup>

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

457 *Aṣṭāṅgasanġraha* 6.40.35a (As 1980: 844): सप्तेति वेगा मूर्च्छाद्या विदेहपतिना स्मृताः ॥३४॥ रक्तमांसवसास्त्रायु तथाऽस्थ्याद्यास्त्रयः 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 *Suśrutasaṃhitā*. On Ālambāyana, see p. 198, note 670.

458 *Aṣṭāṅgasanġraha* 6.40.60a (As 1980): याः सिराः सर्वगात्रेषु हृदये सम्प्रतिष्ठिताः । ताभिरस्य विषं सर्वं हृदयं सम्प्रधावति ॥ घृतेन तु प्रतिच्छिन्नं विषं नाति प्रपीडयेत् । निर्वाणजननं सर्पिः प्राणिनां प्राणवर्द्धनम् ॥ हृदयावरणास्तद्वद्वक्ष्या भोज्याश्च सागदाः ॥

459 HIML: IA, 290–291.

## Translation

- 1 And now I shall explain **required knowledge** (*vijñānīya*) about stationary poisons.<sup>460</sup>
- 3 It is said that there are two kinds of poisons, stationary (*sthāvara*) and mobile (*jaṅgama*). The former dwells in ten sites, the latter in sixteen places.
- 4 Traditionally, the ten are: root, leaf, fruit, flower, bark, milky sap (*kṣīra*), pith (*sāra*), resin (*niryāsa*), the elements (*dhātu*), and the tuber.
- 5 In that context,
  - the eight root-poisons are:<sup>461</sup>
    1. liquorice (?),<sup>462</sup>
    2. sweet-scented oleander,<sup>463</sup>
    3. jequirity,<sup>464</sup>
    4. false daisy,<sup>465</sup>
    5. emetic nut (?),<sup>466</sup> and ending with
    6. leadwort,<sup>467</sup>

460 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.

461 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).

462 Liquorice eaten in excess can be poisonous, but it is unlikely to be the plant intended here. T. B. Singh and Chuneekar (GVDB: 124) noted that the poisonous root mentioned in this passage, “remains to be identified.”

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

464 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.

465 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*).

466 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.

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

7. country sarsaparilla (?),<sup>468</sup> and
8. medhshingi,<sup>469</sup>

- 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,<sup>470</sup>
  - thorn apple, and
  - big thorn apple (?).

<sup>468</sup> 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.

<sup>469</sup> 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 *Sauśrutaniḥṣaṇṭu* 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 *meṣaśṛṅgī*), 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.

<sup>470</sup> रेणु and रेणुक 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 (?),<sup>471</sup>
  - red physic nut,
  - oleander spurge, and
  - luffa
- the mineral (*dhātu*) poisons include:<sup>472</sup>
  - orpiment,
  - cuttle-fish bone (?),
  - ashes, and
  - vermilion.<sup>473</sup>
- 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 (?)

471 While the identity of this plant is uncertain, the Nepalese version of the *Suśrutasamhitā* does not present the hopeless problem of the vulgate’s reading कुमुदग्री.

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

473 If this identification as vermilion (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*).<sup>474</sup>  
 The milky sap (*kṣīra*)-poisons make one froth at the mouth, cause loose stool, and make the tongue feel heavy.<sup>475</sup> 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.<sup>476</sup>  
 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.<sup>477</sup>

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

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

476 See Ḍalhaṇa’s comments on the impossibility of identifying the following plants, p. 145 above.

477 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**.<sup>478</sup>

15b With **big poison** (?), one’s limbs grow weak, there is a burning feeling and swelling of the belly.<sup>479</sup>

16a With **white lotus**, one’s eyes go red, and one’s belly becomes distended.<sup>480</sup>

16b With **radish**, one’s body is drained of colour and the limbs are paralysed.<sup>481</sup>

17a With ‘**alas, alas**’ (?), a man turns a dark colour (*dhyāma*), and gasps.<sup>482</sup>

17b With **atis root** one gets violent knots (*granthi*) and stabbing pains in the heart.<sup>483</sup>

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 (*guṇa*).

19b–20a The ten are:

478 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.

479 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.

480 The word *puṇḍarīka* very commonly means white lotus. The entire plant is edible and cannot be the poison intended here. T. B. Singh and Chuneekar (GVDB: 252) noted that this poison is unidentified and that it is also listed as a poison in *Carakasamhitā*. 23.12.

481 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 Chuneekar (GVDB: 317) noted that this poison is unidentified.

482 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. (*Soḍhalanighaṇṭu* p. 43).

Ḍalhaṇa 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.

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



- 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.<sup>484</sup>
- 22 Because it is fast-acting it kills quickly, and because of its pervasiveness it affects one's whole physical constitution (*prakṛti*).<sup>485</sup> 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,<sup>486</sup> becomes a slow-acting poison (*dūṣīviṣa*).<sup>487</sup> 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.

<sup>484</sup> We read the active *vikaroti* with Ḍalhaṇa against the transmitted passive *vikriyeta*, since it must be the parts of the body that are distorted, not the poison.

<sup>485</sup> Ḍalhaṇa on 5.2.22 (*Su* 1938: 565) explained this as “takes the form of pervading the whole body (*akhiladehavyāptirūpam*).”

<sup>486</sup> Ḍalhaṇa specified that this refers to the ten qualities that are mentioned above (5.2.26 (*Su* 1938: 565)).

<sup>487</sup> Ḍalhaṇa cited this verse at 1.46.83 (*Su* 1938: 222) while explaining *dūṣīviṣa* (see p. 155).

- 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.<sup>488</sup>
- 28 If it lodges in his stomach (*āmāsaya*), he becomes sick because of wind and phlegm; if it lodges in his intestines (*pakvāsaya*), he becomes sick because of wind and choler. A man's hair and limbs fall away and he looks like a bird whose wings have been chopped off.
- 29a–c If it lodges in one of the body tissues such as chyle (*rasa*), it causes the diseases arising from the body tissues, that have been said to be wrong.<sup>489</sup> and it rapidly becomes inflamed on days that are nasty because of cold and wind.
- 29d–31 Listen to its initial symptoms (*liṅga*): it causes heaviness due to sleep, yawning, disjunction (*viśleṣa*) and horripilation (*harṣa*) and a bruising of the limbs (*aṅgamarda*).<sup>490</sup> Next, it causes intoxication from food (*an-namada*) and indigestion, loss of appetite (*arocaka*), the condition of having a skin disease (*koṭha*) with round blotches (*maṇḍala*),<sup>491</sup> **dwindling away (*kṣaya*) of flesh**, swelling of the feet, hands, and face, **the fever called *pralepaka***, vomiting and diarrhoea.<sup>492</sup> 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.

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

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

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

491 The last ailment could perhaps be ringworm.

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

### 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 (*parśvabheda*), 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.<sup>493</sup>

### Remedies for the stages of slow poisoning

- 40 In the first shock of the poison, the physician should make the man, who has vomited and been sprinkled with cold water, drink an antidote (*agada*) mixed with with honey and ghee.
- 41a In the second, he should make the man who has vomited and been purged drink as before;
- 41b on the third, drink an antidote and a beneficial nasal medicine (*nasya*) as well as an eye salve (*añjana*).
- 42a In the fourth, the physician should make him drink an antidote that is salt with a little oil.<sup>494</sup>
- 42b In the fifth, he should be prescribed the antidote together with a decoction (*kvātha*) of honey and liquorice.

493 Here at 5.2.24 (*Su* 1938: 566) Ḍalhaṇa glossed *sannirodha* as “complete cessation, i.e., of breath” (*sannirodhaḥ samyānnirodhaḥ, ucchvāsasya iti śeṣaḥ*). The manuscripts all read *skanda* where *skandha* must be intended; this confusion is known from Buddhist Hybrid Sanskrit (Edgerton 1953: 2, 608).

494 At 6.52.30 (*Su* 1938: 769) Ḍalhaṇa 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.<sup>495</sup>
- 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 (*niḥ-kvātha*) destroys the two poisons: luffa,<sup>496</sup> wild celery,<sup>497</sup> velvet-leaf, sunflower,<sup>498</sup> heart-leaved moonseed, myrobalan siris, and Indian cherry, white siris, the two kinds of turmeric,<sup>499</sup> and the two kinds of hairy-fruited eggplant,<sup>500</sup> hogweed, peas, the three heating spices, the

495 The vulgate text here is quite different, recommending that the patient have medicated powder blown up his nose. It may be possible to detect the evolution of the Nepalese अवसीदेत् to the vulgate's अवपीडश्. The vulgate version is hard to construe, and we see Ḍalhaṇa struggling to interpret it in his commentary on 5.2.43ab (Su 1938: 566). This sternutatory is, however, recommended in the Nepalese version at 5.5.30ab (Su 1938: 576), for the seventh shock of poisoning by a striped snake (*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).

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

497 A plant often cited in *Suśrutasamhitā*, but rarely in *Carakasamhitā* (GVDB: 4). Ḍalhaṇa glossed it here, 5.2.45 (Su 1938: 566), as *ajamodā*, wild celery, but noted that others consider it to be *morāṭa*, rajmahal hemp. There is considerable complexity surrounding the identification of *morāṭa*/*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.

498 At 5.2.45 (Su 1938: 566) Ḍalhaṇa said that this plant has leaves like the *paṭola*, pointed gourd, T. B. Singh and Chuneekar (GVDB: 280, 443) argued plausibly that this is a synonym for *arkapuṣpī*, panacea twiner, as Ḍalhaṇa also stated in 1.45.120 (Su 1938: 206), and the leaves of *Holostemma* and *Trichosanthes* are indeed strikingly similar. The appearance of the plant, a creeper with sun-like flowers, fits the name. But there remains much controversy about the identities of these candidates (e.g., ADPS: 195–198).

499 I.e., turmeric and Indian barberry.

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

two kinds of Indian sarsaparilla<sup>501</sup> 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 turmeric, <sup>502</sup> the two Indian nightshades, <sup>503</sup> the two kinds of Indian sarsaparilla, <sup>504</sup> beggarweed, and heart-leaf sida.

### Curing the ‘slow-acting’ poison

- 50–52 Someone suffering from “slow-acting poison (*dūṣṭviṣa*)” 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 (*dūṣṭviṣāri*),” 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.

<sup>501</sup> I.e., country sarsaparilla and black creeper.

<sup>502</sup> I.e., turmeric and Indian barberry.

<sup>503</sup> I.e., hairy-fruited eggplant and yellow-berried nightshade.

<sup>504</sup> 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.<sup>505</sup>

## Translation

- 1 And now we shall explain the formal procedure (*kalpa*) that is the required knowledge about mobile poisons.<sup>506</sup>
- 3 The full explanation about the sixteen carriers (*adhiṣṭhāna*) of the mobile poisons, that have been mentioned by me in brief, will be stated.<sup>507</sup>
- 4 In that context, they are:<sup>508</sup>
  1. gaze
  2. breath,
  3. teeth,
  4. nails,
  5. mouth,
  6. urine,
  7. feces,
  8. **menstrual blood**,
  9. semen,
  10. **tail**,

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

<sup>505</sup> [HIML](#): IA, 291–292.

<sup>506</sup> In contrast to stationary, plant poisons. No reference is made to Dhanvantari (see Birch, Wujastyk, Klebanov, Parameswaran, et al. [2021](#)).

<sup>507</sup> "Carrier" for base, foundation (*adhiṣṭhāna*) aims to capture the idea that the author will describe the creatures in which poisons inhere.

<sup>508</sup> The content of this section is presented as a table, for clarity for the contemporary reader and mindful of the theoretical issues surrounding notational variation, including the "symbolic rewriting" and the modification of "expressive capacities" discussed by Sarukkai ([2016](#): 321 ff). For further discussion, see Wujastyk [2021](#): 81–83.

- |   |                                   |
|---|-----------------------------------|
| 11. contact with saliva,                        | 15. bones,                        |
| 12. nipping with the mouth                      | 16. bile,                         |
| ( <i>mukhasaṃdamśā</i> ),                       | 17. bristles ( <i>śūka</i> ), and |
| 13. fart ( <i>avaśardhita</i> ), <sup>509</sup> | 18. corpses. <sup>511</sup>       |
| 14. anus, <sup>510</sup>                        |                                   |

5 In that context,

<i>location of the poison</i>	<i>creatures</i> <sup>512</sup>
in their breath and gaze	divine snakes
in their fangs	the ones on earth <sup>513</sup>
in their nails, mouths and fangs a	cats, dogs, monkeys, men ( <i>nara</i> ), <sup>514</sup> crocodiles, frogs, cook-fish insect, <sup>515</sup> monitor lizards, cone snails, 'poisonous snakes' ( <i>pracalāka</i> ), <sup>516</sup> house geckos, <sup>517</sup> four-footed insects and others
in their urine and faeces	lice ( <i>kiṭiṇa</i> ), 'flat insects' ( <i>picciṭā</i> ), 'orange-dwellers' ( <i>kaṣāyavāsika</i> ), 'pepper snakes' ( <i>sarṣapaka</i> ), 'angry beetles' ( <i>toṭaka</i> ), dung beetles ( <i>varcaḥkīṭa</i> ), and 'pot insects' ( <i>kaunḍinya</i> )

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

510 Ḍalhaṇa on 5.3.4 (Su 1938: 567) noted this reading.

511 This list has grown in transmission by two items.

512 Many of these names are mere dubious placeholders.

513 Ḍalhaṇa 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).

514 Probably dittography from the previous word, monkey (*vānara*). But it is supported in both Nepalese witnesses, so it must go back to an earlier exemplar.

515 MS KL 699 separates the words पाक and मत्स्य with a daṇḍa, indicating that the scribe thought they were separate terms (see 217).

516 *Arthaśāstra* 14.1.14, 23 (Olivelle 2013: 448), where it might also be a chameleon; but the latter are not venomous.

517 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 232, p. ??).



<i>location of the poison</i>	<i>creatures</i>
in their semen	mice
in their stings ( <i>śūla</i> )	scorpions, 'earth scorpions' ( <i>viśvambhara</i> ), wasps ( <i>varaki</i> ), <sup>518</sup> fish, crabs ( <i>uccīṭiṅga</i> ), and 'wing-scorpions' ( <i>patravṛścika</i> )
in their saliva, nails, urine, feces, blood, semen and fangs	spiders
in the bites of their mouths	flies, wasps ( <i>kaṇabha</i> ) and leeches
in the bites of their mouths, in their fangs, faces, †, farts, anuses and feces	'speckle-heads' ( <i>citraśīrṣa</i> ), 'lids' ( <i>śārava</i> ), 'bellied' ( <i>kukṣita</i> ), 'wood-enemies' ( <i>dārukāri</i> ), 'liquors' ( <i>medaka</i> ), and 'darts' ( <i>śārikā</i> ).
continue	continue
continue	continue

Table 3: Passage 5, expressed in tabular format.

519

got to here  
- 2023-01  
continue  
with table  
for #5

## 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.<sup>520</sup> 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.

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

519 Kaur and L. Singh 2018 is unhelpful, in spite of a section on the *Suśrutasaṃhitā* (pp. 61–63).

520 अस normally means "tears," but rarely means "blood."

- 8 Men, horses and elephants who swim in it experience vomiting, delusion, fever, swelling and sharp pains.<sup>521</sup> 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*.<sup>522</sup> 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.<sup>523</sup>
- 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.<sup>524</sup> *And if there exists another path, he should go by that.*<sup>525</sup>
- 13 When grasses and foods are polluted, people collapse, fall unconscious. And others vomit. They get loose stool or they die.<sup>526</sup> 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*<sup>527</sup> together

521 On the polysemy of elephant/snake (*nāga*), see Semeka-Pankratov 1979.

522 Cf. with the recipe at *Suśrutasaṃhitā* 5.6.3 (*Su* 1938: 580) for a paste to put on drums etc., p. 207 below.

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

524 Our “alcoholic drinks” translates सुरा. For a discussion of this term at our period see McHugh 2021: 37–39 *et passim*.

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

526 In “they get loose stool,” the verb आर्च्छन्ति (√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).”

527 “Certain minerals” translates तारावितार, the unanimous reading of the Nepalese witnesses. But the meaning of this expression is not clear and may even refer to plants, like the other ingredients. The vulgate reads तारः सुतारः, which is also not very clear. However, Ḍalhaṇa on 5.3.14 (*Su* 1938: 568) identified these as “silver” and “mercury.” This is highly unlikely to be a correct understanding of the passage. Historically, mer-

with gold and sarsaparilla, and a portion of of nutgrass equal to that, together with the bile called “brown cow”.<sup>528</sup> 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.<sup>529</sup>
- 17 The smoke and air can be purified by putting into the air: lac, turmeric, Indian aconite, and myrobalan, with Himalayan mayapple, costus, cardamom,<sup>530</sup> as well as peas, and foxtail millet.

write footnote: don't repeat  
ativīṣā; 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.<sup>531</sup>
- 19 Pitiless Fury took a body and burst out of the mouth of furious Brahmā's store of fiery energy.<sup>532</sup>
- 20 He burned that great, thundering, apocalyptic demon. Then, after bringing about the annihilation of that demon, his amazing fiery energy increased.

cury is not naturally present in the South Asian peninsula (Watt<sub>Diet</sub>: 5, 233) and the word पारद that Ḍalhaṇa used is probably a loan-word from Persian (sub *paranda*, *par-randa* 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*).

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

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

530

531 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 *Satapathabrāhmaṇa*, see Mānasa-taraṅgiṇī 2019.

532 “Fury” is here anthropomorphised.

- 21 And so, there was a sinking down (*viṣāda*) of the Daityas. Observing that, it was named “poison (*viṣa*)” because of it’s ability to produce a “sinking down.”
- 22 After that, the Lord created beings and subsequently made that fury enter into creatures still and moving.

### 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.<sup>533</sup>
- 25 Generally speaking, in a poison, all the qualities are really sharp. For this reason, every poison is known to irritate all of the humours.
- 26 Irritated and afflicted by the poison, they leave their natural functions. Poison does not get digested, so it blocks the breaths.<sup>534</sup>
- 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.<sup>535</sup>
- 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,<sup>536</sup> in the case of corpses that have been pierced by a poisoned arrow and bitten by a snake, someone who eats

533 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.

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

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

536 “Having come upon” translates प्रस्थाप्य, which is hard to interpret unless it is a rare form connected with the sense “to see.”

the poisoned flesh of a recent corpse out of carelessness will suffer with illness according to the poison, or even die. And therefore, the flesh of those should not be eaten when they have just died.

It is admissable after three quarters of an hour, but without the poisoned arrow and the snakebite.

35.1 [At this point an Upajāti verse is added in the margin of K but is not fully legible; the version of the text in H is also incomplete and not fully comprehensible.]<sup>537</sup>

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.<sup>538</sup>

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

35cd & 36cd One designates a person who has diarrhoea of feces looking like soot (*grhadhūma*) with wind,<sup>539</sup> 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.<sup>540</sup>

## 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

<sup>537</sup> *Mādhavanidāna*, 69.20–21 (MN<sub>1</sub>: 480) has verses that are directly parallel to this section: दर्वीकराणां विषम् आशुघाति सर्वाणि चोष्णे द्विगुणीभवन्ति ॥ अजीर्णपित्तातपपीडितेषु बालेषु वृद्धेषु बुभुक्षितेषु ॥२०॥ क्षीणक्षते मोहिनि कुष्ठयुक्ते रूक्षे ऽबले गर्भवतीषु चापि ॥ शस्त्रक्षते यस्य न रक्तम् एति राज्यो लताभिश्च 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.

<sup>538</sup> At this point, witness H inserts a marginal Indravajrā verse about diseases that afflict immoral women.

<sup>539</sup> गृहधूम is not a plant in this context, *pace* MW: 362. See the discussion in note 437, p. 142 above.

<sup>540</sup> Dalhaṇa 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.

dawn or dusk, at a crossroads, under Yama's asterism,<sup>541</sup> 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. †...

39.2 <sup>542</sup>

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,<sup>543</sup> or where there is no horripilation because of cold water, whose mouth is **crooked**, whose hair is falling out of his head. A man who is fatigued and those who stammer,<sup>544</sup> 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.<sup>545</sup>

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

542 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.

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

544 nāsāvasāda & plural sakaṇṭhabhaṅgāḥ

545 The grammatical verb-form परिवर्जयित् "he should avoid," opt., 3rd, sg., is unusual. Renou (1940: 10 ff) documented such forms from the *Aitareyabrāhmaṇa* onwards. Oberlies (2003: ¶6.3.3 "Peculiar optative endings", pp. 176–177) showed that the form is well-documented in *manuscripts* of the *Mahābhārata*, but has been edited out of the printed critical edition in almost all cases. Cf. also Kulikov 2006.

The concern about a patient who "has fangs that have not fallen out" is hard to understand. The word दंष्ट्रा does not mean human teeth (दन्त). We therefore prefer to 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: दंष्ट्रा or दंष्ट्र + 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 2 and 3.<sup>546</sup>

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.<sup>547</sup> 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.<sup>548</sup> 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*.<sup>549</sup>

---

<sup>546</sup> On the idea of notational variants in scientific translation, see Elshakry 2008; Sarukkai 2016; Wujastyk 2021: 81–83.

<sup>547</sup> 6.23.124 ff. (Ca 1941: 577).

<sup>548</sup> *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).

<sup>549</sup> 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.<sup>550</sup> 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.<sup>551</sup>

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.<sup>552</sup> 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.<sup>553</sup> 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 569 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)).

550 HIML: IA, 292–294. 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. The classic work of Jolly (1951: ¶93) offered a short but accurate overview of Indian toxicology.

551 Chevers 1870: 368–386.

552 Fayrer 1874, first published in 1872.

553 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 *Suśrutasaṃhitā*'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 *Suśrutasaṃhitā* does.<sup>554</sup> But unlike the *Suśrutasaṃhitā*, 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.<sup>555</sup> After a close comparative reading of lists of poisonous snakes, Harimoto concluded that, “the Nepalese version is internally consistent while the [vulgate] editions are not.” Harimoto showed how the vulgate editions had been adjusted textually to smooth over inconsistencies, and gave insights into these editorial processes.<sup>556</sup>

Include info  
on Hidas  
2019

## The Seven Stages of Toxic Shock

A prominent feature the *Suśrutasaṃhitā*'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 *Suśrutasaṃhitā*'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.<sup>557</sup>

Contemporary clinical studies of snake envenomation and treatment do not show any awareness of such a seven-stage symptomatology as found in

<sup>554</sup> Slouber 2016a: 144–145.

<sup>555</sup> Harimoto 2011: 101–104.

<sup>556</sup> The two editions that Harimoto noted, Su 1938 and Su 1889, present identical texts.

<sup>557</sup> The system of the कला is described at 4.4.4–20 (Su 1938: 355–357). Cf. *Mahākośa*: 1, 183–184, *Śabdasaṃdhu*: 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 (त्वक्) (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 *Śārṅgadharasaṃhitā* (1.1.60 (Śāstrī 1931: 15)).

traditional Indian medicine.<sup>558</sup> Exceptionally, the studies by Barceloux and Özbek et al., do identify and tabulate three stages of envenomation.<sup>559</sup> 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.<sup>560</sup>

## Translation

- 1 Now we shall explain the procedure (*kalpa*) that is required knowledge (*vijñānīya*) concerning the venom in those who have been bitten by snakes.<sup>561</sup>
- 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”.<sup>562</sup>

### [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.

558 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.

559 Barceloux 2008: 1017, Table 176.3, and Özbek et al. 2021: 7, and Table 1, broadly following Barceloux.

560 I am grateful to Prof. Jan Gerris (U. Ghent) and Prof. Jan Tytgat (KU Leuven) for assistance in finding relevant toxicological literature.

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

562 The expression “toxic reactions” translates वेग, 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).

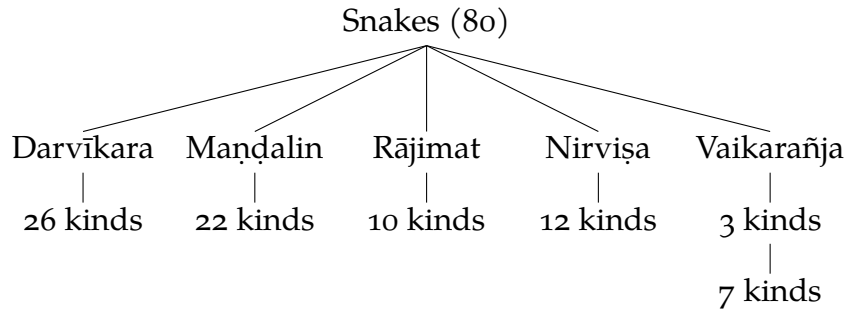


Figure 2: The taxonomy of snakes in the vulgate, 5.4.9–13ab (Su 1938: 571).

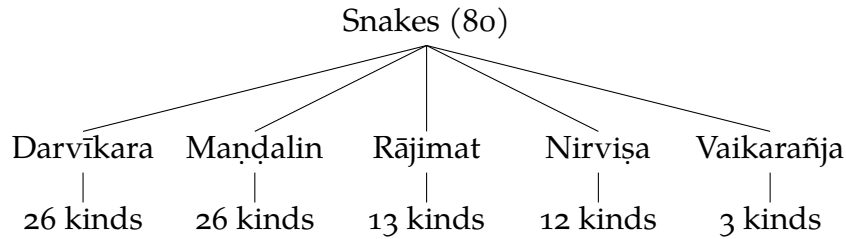


Figure 3: The taxonomy of snakes in the Nepalese version of the *Suśrutasamhitā*.

“The ones that I shall enumerate in due order are those mundane ones with poison in their fangs who bite humans.<sup>563</sup>

9cd–10 “There are eighty kinds of snakes and they are divided in five ways: Darvīkaras, Maṇḍalins, Rājīmatas, and Nirviṣas. And Vaikarañjas that are traditionally of three kinds.<sup>564</sup>

11 “Of those, there are twenty and six hooded snakes, and the same number of Maṇḍalins are known. There are thirteen Rājīmatas.<sup>565</sup>

12 “There are said to be twelve Nirviṣas and, according to tradition, three Vaikarañjas.

<sup>563</sup> 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.

<sup>564</sup> Harimoto (2011) translated these names as “hooded,” “spotted,” “striped,” “harmless,” and “hybrid.” Figure 2 shows the taxonomy described in the vulgate text; Figure 3 shows the different and more logical division of the Nepalese version of the *Suśrutasamhitā*.

<sup>565</sup> The phrasing of this śloka is awkward.

Or “There are 20 phanins and 6 maṇḍalins. The same number are known. There are 13 Rājīmatas.” Or even, “there are 20 Phanins and six of them are Maṇḍalins.” Are phanins really the same as darvīkaras?

## [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”.<sup>566</sup>
- 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,<sup>567</sup> accompanied by a little ring of spots (*cuñcumālaka*),<sup>568</sup> 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.<sup>569</sup> That is “hurt by a snake’s body.”

grammar

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

567 The word उद्धृत “aroused” was glossed by Ḍalhaṇa at 5.4.15 (Su 1938: 571) as उन्मोद्य, a word not found as such in standard dictionaries (MW; KEWA; *Mahākośa*; 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 மோதி (*mōti*), whose meanings include “arrogance, grandeur, display” (DED<sub>2</sub>: #5133) or to faintly-documented forms like *moṭyate* “is twisted” (CDIAL: #10186). Ḍalhaṇa’s उन्मोद्य 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.

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

569 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,<sup>570</sup> gods, holy sages, **spirits**, and saints, or in places full of herbs that destroy poison.<sup>571</sup>

### [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 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.

<sup>570</sup> Ḍalhaṇa 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 Garuḍa 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*.

<sup>571</sup> 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.<sup>572</sup>
- 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.<sup>573</sup>
- 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.<sup>574</sup>

### [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                      |
| 3. The Black Belly ( <i>kṛṣṇodara</i> );               | ( <i>khaṇḍaphaṇa</i> );                 |
| 4. The All Black ( <i>sarvakṛṣṇa</i> ); <sup>575</sup> | 13. The Kūkuṭa ( <i>kūkuṭa</i> );       |
| 5. The White Pigeon                                    | 14. The Lotus ( <i>padma</i> );         |
| ( <i>śvetakapota</i> ); <sup>576</sup>                 | 15. The Great Lotus                     |
| 6. The Rain Cloud ( <i>valāhako</i> );                 | ( <i>mahāpadma</i> );                   |
| 7. The Great Snake                                     | 16. The Grass Flower ( <i>apuṣpa</i> ); |
| ( <i>mahāsarpa</i> );                                  | 17. The Curd Mouth                      |
| 8. The Conch Keeper                                    | ( <i>dadhimukha</i> );                  |
| ( <i>śaṃkhapāla</i> );                                 | 18. The Lotus Mouth                     |
| 9. The Red Eye ( <i>lohitākṣa</i> );                   | ( <i>puṇḍarīkamukha</i> );              |
| 10. The Gavedhuka ( <i>gavedhuka</i> );                | 19. The Brown Hut Mouth                 |
| 11. The Snake Around                                   | ( <i>babhrūkuṭīmukha</i> );             |

<sup>572</sup> 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)).

<sup>573</sup> 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.

<sup>574</sup> The sense of the last phrase here is quite different from the vulgate, which says only that “details” will be explained below.

<sup>575</sup> Not in the vulgate.

<sup>576</sup> The vulgate adds The Big Pigeon (*mahākapota*).

- |  |   |
|--|---|
| 20. The Variegated ( <i>vicitra</i> ); | ( <i>rjusarpa</i> );                      |
| 21. The Flower Sprinkle Beauty         | 24. The White Rip ( <i>śvetadara</i> );   |
| ( <i>puṣpābhikīrṇnābha</i> );          | 25. The Big Head ( <i>mahāśīrṣa</i> );    |
| 22. The Mountain Snake                 | and                                       |
| ( <i>girisarpa</i> );                  | 26. The Hungry Sting ( <i>alagarda</i> ); |
| 23. The Straight Snake                 |   |

### 34.2 Here are the Maṇḍalins

- |  |  |
|--|--|
| 1. The Mirror Ring                       | 13. The Morning Glory                                |
| ( <i>ādarśamaṇḍala</i> );                | ( <i>pālindaka</i> );                                |
| 2. The White Ring                        | 14. The Stretch ( <i>tantuka</i> );                  |
| ( <i>śvetamaṇḍala</i> );                 | 15. The Pale as a Flower                             |
| 3. The Red Ring ( <i>raktamaṇḍala</i> ); | ( <i>puṣpapāṇḍu</i> );                               |
| 4. The Speckled ( <i>prṣata</i> );       | 16. The Six Part ( <i>ṣaḍaṅga</i> );                 |
| 5. The Gift of God ( <i>devadinna</i> ); | 17. The Flame ( <i>agnika</i> );                     |
| 6. The Pilindaka ( <i>pilindaka</i> );   | 18. The Brown ( <i>babhru</i> );                     |
| 7. The Big Cow Snout                     | 19. The Ochre ( <i>kaśāya</i> );                     |
| ( <i>vr̥ddhagonasa</i> );                | 20. The Khaluṣa ( <i>khaluṣa</i> );                  |
| 8. The Jackfruit ( <i>panasaka</i> );    | 21. The Pigeon ( <i>pārāvata</i> );                  |
| 9. The Big Jackfruit                     | 22. The Hand Decoration                              |
| ( <i>mahāpanasaka</i> );                 | ( <i>hastābharanaka</i> );                           |
| 10. The Bamboo Leaf                      | 23. The Tatra ( <i>tatra</i> ); <sup>577</sup>       |
| ( <i>veṇupatraka</i> );                  | 24. The Mark ( <i>citraka</i> );                     |
| 11. The Kid ( <i>śīśuka</i> );           | 25. The Deer Foot ( <i>eṇīpada</i> ). <sup>578</sup> |
| 12. The Intoxicator ( <i>madanaka</i> ); |  |

### 34.3 Here are the Rājīmats.<sup>579</sup>

- |   |  |
|---|--|
| 1. The Lotus ( <i>puṇḍarīka</i> );          | 5. The Drop Stripe ( <i>bindurāji</i> );   |
| 2. The Stripe Speckle ( <i>rājicitra</i> ); | 6. The Mud ( <i>kardama</i> );             |
| 3. The Finger Stripe ( <i>aṅgulirāji</i> ); | 7. The Grass Drier ( <i>tr̥ṇaśoṣaka</i> ); |
| 4. The Two Finger Stripe                    | 8. The White Jaw ( <i>svetahanu</i> );     |
| ( <i>dvyāṅgulirāji</i> );                   | 9. The Grass Flower                        |

<sup>577</sup> This seems implausible, but otherwise the list of Maṇḍalins would be short.

<sup>578</sup> 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.

<sup>579</sup> 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*.

<sup>580</sup> Also in the Darvīkara list.

<sup>581</sup> Also in the Darvīkara list.



- (*darbhapuṣpa*);<sup>580</sup>
10. The Red Eye (*lohitākṣa*);<sup>581</sup>
11. The Ringed (*cakraka*);
12. The Worm Eater (*kikkisāda*);

34.4 Here are the Nirviṣas.

- |   |  |
|---|--|
| 1. The Rain Cloud ( <i>valāhako</i> ); <sup>582</sup> | 8. The Two-day ( <i>dvyaḥika</i> );        |
| 2. Thei Snake Flag ( <i>ahipatāka</i> );              | 9. The Milk Flower                         |
| 3. The White Leaf ( <i>śukapatra</i> );               | ( <i>kṣīrikāpuṣpa</i> );                   |
| 4. The Goat Swallower                                 | 10. The Flower All ( <i>puṣpasakalī</i> ); |
| ( <i>ajagara</i> );                                   | 11. The Chariot of Light                   |
| 5. The Stimulator ( <i>dīpyaka</i> );                 | ( <i>jyotīratha</i> );                     |
| 6. The Ilikinī ( <i>ilikinī</i> );                    | 12. The Little Tree ( <i>vṛkṣaka</i> );    |
| 7. The Year-Snake ( <i>varṣāhika</i> );               |  |

### [Breeding and Gender]

34.5 The Vaikaraṇjas originate out of contrary unions amongst the three colours.<sup>583</sup> 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.<sup>584</sup> Females

<sup>582</sup> Also in the Darvīkara list.

<sup>583</sup> The word *varṇa* in this chapter normally means “colour” not “class.” (“Class is expressed by “jāti.”) While *kṣṇasarpa* is clearly a colour-type, it is less obvious that *gonasī* is a special colour, and *rājimat* is a group of snakes.

<sup>584</sup> 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.<sup>585</sup>
- 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.<sup>586</sup> And ignored for even a period of time, it can drag the patient away. There is not even an opportunity to follow the literature.<sup>587</sup>  
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”.<sup>588</sup>

### [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.<sup>589</sup>

<sup>585</sup> The reading मन्दचेष्टाक्रोधा is an awkward compound; possibly the original reading was मन्दचेष्टाः + अक्रोधा and sandhi was applied twice.

<sup>586</sup> 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.

<sup>587</sup> 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.

<sup>588</sup> In the next passage, the symptoms of snake poisoning are indeed explained under three headings.

<sup>589</sup> 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,<sup>590</sup> 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.<sup>591</sup>

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.<sup>592</sup> 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.<sup>593</sup>

590 The term “giving off fumes (परिधूपयन)” is not in MW: 596 as such, although परिधूपन, परिधूमन and परिधूमायन are cited and referred to the *Suśrutasaṃhitā*. “Giving off fumes (परिधूपन)” is listed at *Suśrutasaṃhitā* 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). Ḍalhaṇa 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 “अङ्गानां धूमोद्धमनमिव” citing the *Suśrutasaṃhitā*.

591 Ghosh et al. (2023) describes visual disturbances due to snake envenomation.

592 The grammar of अविषलिङ्गम् is not quite right; it should be a masculine or plural bahuvrīhi.

593 Cf. the same concept in the context of plants, at 155

[**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.<sup>594</sup> 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.<sup>595</sup>

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.<sup>596</sup>

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 (*śleṣman*), 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.

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.

<sup>594</sup> Strictly, we would expect a dual verb here, instead of the plural of the witnesses.

<sup>595</sup> Dalhana on 5.4.39 (Su 1938: 574) glossed the last expression as “blockage of the vision (दृष्ट्यवरोध).”

<sup>596</sup> 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.

[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).<sup>597</sup>*

41 *The interval taken by the deadly substance (kālakaḥ), propelled (√ūh) by air (samīraṇa), to cut the layers of skin is known as the "pulse interval (vegāntara)".<sup>598</sup>*

42 *In the first pulse, an animal has a swollen body, is distressed and broods.<sup>599</sup>*

*In the second, it dribbles somewhat,<sup>600</sup> the hair stands up on its body, and it has pain (√pīḍ) in the heart.*

<sup>597</sup> See note 557 above.

<sup>598</sup> Ḍalhaṇa on 5.4.41 (Su 1938: 574) glossed कालकल्प as मृत्युसदृशं विषं "the poison resembles death."

<sup>599</sup> The verb √प्रध्वै "meditate, be thoughtful, brood" is unexpected here and in the second class, an epic form. Ḍalhaṇa 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 Nepales witnesses testifies to their antiquity.

<sup>600</sup> The Nepalese witnesses use लालि-, not लाला-, for "saliva."

- 43      *The third stage brings headache and it breaks the ears and necks.<sup>601</sup>  
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.<sup>602</sup>  
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.<sup>603</sup>*

601 The scribe of MS H emended the text to read कण्ठग्रीव with the vulgate. Intransitive use of pass. भञ्ज्.

602 On अन्तःस्वेद as “elephant,” cf. *Arthaśāstra* 9.1.46 (Kangle 1965: v.1, 219; Olivelle 2013: 351): हस्तिनो ह्यन्तःस्वेदाः कुष्ठिनो भवन्ति ॥ ४६ ॥

603 See on this subject: Brunton and Fayrer 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.<sup>604</sup>

---

<sup>604</sup> [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.<sup>605</sup>
- 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.<sup>606</sup>
- 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 (*car-mānta*) or bark.<sup>607</sup>
- 5 Where a bandage (*bandha*) is not suitable, one should **raise the bite up** and then cauterize it.<sup>608</sup> Suction, cutting and cauterizing are recommended in all cases.
- 6 Suction will be good after filling the mouth with **earth** (*pāṃśu*).<sup>609</sup> Alternatively, the snake should be bitten **by the person who knows** that they have just been bitten.<sup>610</sup>

605 On कल्प, see note 561.

606 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).

607 It is hard to translate the word अरिष्टा otherwise than “bandage,” as referred to by बन्धियात् 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 *Aṣṭāṅgahṛdayasaṃhitā* (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.

608 The vulgate reads उत्कृत्य “having excised” rather than translate उद्धृत्य “having raised up.”

609 The vulgate recommends cloth, not earth (5.5.6 (*Su* 1938: 574)).

610 The syntax is odd here, and the vulgate has removed the difficulties. Ḍalhaṇa 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 (हस्ताभ्यामुपसंगृह्य पुच्छे वक्रे च सर्पः सम्यग् दष्टव्यः). Our colleague Dr Madhu K. Paramesvaran reports that this procedure is known in Malayalam *viṣavaidya* 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 (*pittaviṣa*), that bite will be lethal as a result of cauterization.<sup>611</sup>

## 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.<sup>612</sup>
- 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.<sup>613</sup>
- 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.<sup>614</sup>

the first-response cares for snakebite in most of the Malayalam texts of Viṣhavaidyā. 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 Viṣhavaidyā text edited by Mahādeva Śāstrī (1958).

611 Verses 5.4.29, and 37 above note that the venom of Maṇḍalins particularly irritates the bile.

612 Ḍalhaṇa 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.

613 Ḍalhaṇa on 5.5.10 (Su 1938: 575) noted that mantras like “kurukullā” and “bheruṇḍā” 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 *Hara-mekhalā*, and Meulenbeld 2008a: 30–34 includes discussion of Bheruṇḍa as a bird, with related terms.

614 Ḍalhaṇa 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.<sup>615</sup> 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.<sup>616</sup>

### 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.<sup>617</sup>
- 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.

<sup>615</sup> 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.

<sup>616</sup> 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*.

<sup>617</sup> 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.<sup>618</sup>
- 21 At the third one should use errhines and collyrium (*añjana*) that destroy poison.<sup>619</sup> 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 (*tikṣṇa*), and a well-regarded gruel too.
- 23 **But at the seventh, one should purge (*śodh*) his head with a sharp sternutatory.**<sup>620</sup>

## In the case of Maṇḍalins

- 24 Amongst Maṇḍalins, the earliest toxic reaction (*vega*) should be treated in the same way as with Darvīkaras.<sup>621</sup>
- 25 **At the second, one should make him drink ghee and honey and then make him vomit.**<sup>622</sup>
- 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.

618 This section reproduces some of the therapies from *Suśrutasaṃhitā* 5.2.40–43 (Su 1938: 566) on the stages of slow poisoning (*dūṣṭviṣa*) by plant poisons; see translation on p. 155 above.

619 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 *Carakasaṃhitā*, occurring eleven times, e.g., at 1.20.13 (Ca 1941: 114), 2.1.36 (Ca 1941: 203), *et passim*.

The *Carakasaṃhitā* 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.

620 The vulgate adds a half-verse here recommending the application of a collyrium (*añjana*) to a cut made on the patient’s head.

621 The vulgate again adds a half-verse here, recommending the “crow’s foot” incision on the patient’s head. On this procedure, described in *Carakasaṃhitā* 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 *Suśrutasaṃhitā* 5.2.43 (Su 1938: 566) either. See footnote 495, p. 156 above. As stated there, it appears that this procedure was known in the tradition of the *Carakasaṃhitā*, but not in the earliest text of the *Suśrutasaṃhitā*.

622 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.<sup>623</sup> And at the seventh, a wholesome antidote that destroys poison in a sternutatory (*avapīḍa*).<sup>624</sup>

### In the case of Rājimats

- 28 **Now, Amongst Rājimats, one should let blood at the first toxic shock.**<sup>625</sup>  
 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 (*avapīḍa*). 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 buffaloes and camels, four times for elephants and simply (*kevala*) for all birds.<sup>626627</sup>

write note  
on par-  
isekān pra-  
dehāms

623 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.

624 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, Ḍalhaṇa 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 Dr̥ḍhabala (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.

625 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.

626 Ḍalhaṇa 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. 181 for the toxic reactions in birds and other animals.

## 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.<sup>628</sup>
- 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.<sup>629</sup>
- 48cd–49 Or it may lead to dejection, pallor, fever, cough and headaches, dessication, swelling, catarrh, poor vision, disinterest in food (*aruci*) or rigidity (*jāḍyātā*).<sup>630</sup> And in such cases one should apply the cure as appropriate.<sup>631</sup>
- 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

627 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. Ḍaḥaṇa on 5.5.33 (Su 1938: 576) cited the opinions of Gayadāsa and Jejjāta 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.

628 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” (यथादोषं), 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 495 and 621, pp. 156, 187 above) and the beating of drums that have been smeared with antidotes, as discussed in *Suśrutasaṃhitā* 5.6 (Su 1938: 580–582) (see p. 207 below).

629 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.

630 Ḍaḥaṇa on 5.5.49ab (Su 1938: 577) reported a reading from Jejjāta of स्तैमित्य “immobility” instead of प्रतिश्याय “catarrh.”

631 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.<sup>632</sup>
- 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**.<sup>633</sup>
- 54 One can conquer phlegm with the group that starts with **golden shower tree**, together with honey.<sup>634</sup>

### Formal verses

- 56 If the the bandage (*ariṣṭā*) 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** (*viṣapūti*).”<sup>635</sup>
- 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.<sup>636</sup>
- 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

632 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.

633 The vulgate reads “fish” in place of “wine.”

634 The आरम्बघण is listed at *Suśrutasaṃhitā* 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)).

635 *Suśrutasaṃhitā* 5.5.16 (*Su* 1938: 575) (p. 186 above) suggests smearing an incised area with antidotes.

636 The Nepalese witnesses describe someone who has been struck or hurt (क्षत, आहत), while the vulgate describes someone who is pierced (विद्ध). Ḍalhaṇa 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**,<sup>637</sup> and all kinds of salt.<sup>638</sup> 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**, **fox-tail millet**, **lodh tree**, **Indian bdellium-tree**, **red ochre**, **rock salt**, **long pepper**, and **dried ginger**. This antidote (*agada*) is identified as “Garuḍa

<sup>637</sup> There is no मञ्जिष्ठा group, but there is a plant वक्र.

<sup>638</sup> There is a लवणवर्ग, (1.46.313–321 (Su 1938: 236–237)).



- (*tārṣya*).” 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.<sup>639</sup> 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.<sup>640</sup> 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 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, fox-tail 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,<sup>641</sup> bayberry, citron, white clitoria, winged-stem canscora, white siris, and sugar, taken with amaranth.<sup>642</sup>
- 76cd–78ab The best antidote for the poison of Maṇḍalins is grapes, Withania, Indian frankincense, ground white clitoria, combined in equal amounts

639 Dalhaṇa on 5.5.70 (Su 1938: 579) glossed प्रसून more specifically as तुलसीपुष्प “the Tulasi flower.”

640 All three animals produce musk. Dalhaṇa on 5.5.71 (Su 1938: 579) remarked that some people thought शिखी was a cock, not a peacock. He also here glossed पृषत as चित्तल.

641 Dalhaṇa on 5.5.75 (Su 1938: 579) noted the common name बहुवार for श्लेष्मातकी.

642 राजिल appears to be a synonym for राजिमत्, a “striped” snake. Dalhaṇa 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.<sup>643</sup>

- 84ab–86 The following group is known as the One Essence (*ekarasa*):<sup>644</sup> 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 (*bhūmī*),<sup>645</sup> and bluebell barleria. Whether used separately or in pairs, it removes poison.<sup>646</sup>

643 After this passage, the vulgate has five and a half verses that do not appear in the Nepalese version.

644 The vulgate reads एकसर, “one run.” Ḍalhaṇa on 5.5.86 (Su 1938: 580) also read एकसर and glossed it as the proper name of a गण.

645 A hapax in this meaning *Mahākośa*: 1, 582. So glossed by Ḍalhaṇa on 5.5.86 (Su 1938: 580): भूमिः कृष्णमृत्तिका ॥;

646 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 *Suśrutasaṃhitā* 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.<sup>647</sup> Jejjāṭa too read the chapters this way round, as reported by Ḍalhaṇa.<sup>648</sup>

## Mouse or Rat?

In 2004, Umberto Eco published a characteristically subtle and enlightening book about translation entitled *Mouse or Rat?*.<sup>649</sup> 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.<sup>650</sup> 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.<sup>651</sup>

---

<sup>647</sup> See p. 129 above.

<sup>648</sup> Ḍalhaṇa on 5.6.32 ([Su 1938](#): 582): जेज्जटस्तु मूषिककल्पानन्तरं दुन्दुभिस्वनीयं कल्पं पठति.

<sup>649</sup> Eco 2004.

<sup>650</sup> CDIAL: #10258.

<sup>651</sup> 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*).<sup>652</sup> 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),<sup>653</sup> the bandicoot rat (*B. indica*, Bechstein), the shorttailed bandicoot (*Nesokia indica*, Gray & Hardwicke), the whitetailed wood rat (*Madromys blanfordi*, Thomas), the bay bamboo rat (*Cannomys badius*, Hodgson), and other similar rodents.<sup>654</sup> However, plausibly matching these creatures to the Sanskrit names listed in this chapter is hard to impossible.<sup>655</sup> Almost no works engage directly with the representation or identity of rodents in pre-modern India.<sup>656</sup>

## Rabies

Passages 43 ff. (p. 203) describe rabies fairly unambiguously, including the symptoms of hydrophobia.<sup>657</sup> As Meulenbeld noted, the idea that the bite-victim displays the behaviours of the creature that bit them is not unique to South Asia.<sup>658</sup>

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.<sup>659</sup>

652 BIA: 194.

653 "Recent studies...show that the mole-rat forms 98% of the total rodent population of Calcutta," BIA: 206.

654 BIA: ill. plates 45, 46 *et passim*. See also Menon 2014: *passim*.

655 Mouse-words that we do not see in this chapter include the *kirika*, *giri*, *girikā* group (EWA: 1, 353, 488, 566).

656 One of the few is van der Geer 2008: ch. 3.

657 For a short historical bibliography on rabies, see HIML: IB, 400, note 163.

658 HIML: IB, 400, note 164.

659 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.<sup>660</sup>

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.<sup>661</sup> The experiments with cannabis anesthesia conducted by William O'Shaughnessy in Calcutta earlier in the nineteenth century were largely aimed at palliative care for rabies patients, an incurable, lethal disease.<sup>662</sup>

A rich description of Indian rodents is available by Prater, including several useful illustrations.<sup>663</sup> 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.<sup>664</sup>

660 [HIML](#): IA, 295–296. 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, 67–77. Sekhar Namburi (2023) omitted mention of this type of poisoning, although he discussed rabies, a subsection of this chapter.

661 Chevers 1870: 359–368; 1886: 426–440.

662 Wujastyk 2002: 50–55.

663 [BIA](#): ch. 13, esp. 205–215.

664 *Arthaśāstra* 4.3.20–26, tr. Olivelle 2013: 230.

## Translation

- 1 Now I shall explain the procedure (*kalpa*) relating to rats (*mūṣikā*).<sup>665</sup>
- 3 Learn concisely about aforementioned eighteen kinds of rats that have poison in their semen, according to their names, characteristics and the herbal treatments.<sup>666</sup>

### The types of rat

- 4–6 The eighteen rats are traditionally called,<sup>667</sup>
  1. Fondling rat,
  2. Sonny rat,
  3. Black rat,
  4. Gajpipul rat,
  5. Little rat,
  6. House shrew
  7. Arala rat,<sup>668</sup>
  8. Red-toothed shrew,
  9. Bad-marked rat,
  10. Invincible rat,
  11. Fidgety rat,
  12. Brown rat,
  13. the one called Mole-rat and
  14. Tawny rat,
  15. the large black rat,
  16. White rat, together with the
  17. the large Brown rat,
  18. and the Pigeon rat-like rat.<sup>669</sup>
- 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.<sup>670</sup>

665 The word मूषिका does not distinguish between rats and mice. See Introduction above.

666 Rats with poisonous semen were mentioned in 5.3.5 (Su 1938: 567) (see p. 161 above).

667 Ḍalhaṇa 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.

668 The word अरल is a hapax legomenon and has not previously been identified as a lexeme because it did not appear in earlier editions of the *Suśrutasaṃhitā*. It is a loan-word from Dravidian (see glossary).

669 The Nepalese list has वसिर (Gajpipul rat) for the vulgate's हंसिर. The terms आखु, मूषिका and उन्दुरु are here used as generic names of rat/mouse rodents.

670 On this, Ḍalhaṇa on 5.7.7 (Su 1938: 582) quoted an authority called Ālambāyana who elaborated on this subject (see HIML: IA, 658 for references to this author of a lost treatise on toxicology). Ḍalhaṇa also cited Ālambāyana elsewhere on the topics of insects and spiders (HIML: IB, 722, note 5). See also the *Aṣṭāṅgasaṃgraha*'s assertion that Ālambāyana was responsible for the doctrine of toxic pulse (*vega*)s, p. 147 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

8–10ab It happens that there are lumps (*gran̥thi*), swellings, small ear-like growths (*kar̥ṇika*) and rings, accumulations of severe **blisters** (*piṭaka*), spreading rashes (*visarpa*) and dark, rough patches of skin (*kiṭibha*).<sup>671</sup> There are severe conditions such as pain in the joints, pain, fever, fainting, weakness, loss of appetite, exhaustion, nausea and horripilation.<sup>672</sup>

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**,<sup>673</sup> and the body is heaped with lumps like the young of a rat.<sup>674</sup> One should lick **siris**, **odal oil plant** and **malabathrum** with

---

the Jātakas includes mention of an Ālambāyana who claimed to be a doctor and specialist in snakebite poisons: *nāhaṃ diḍādhīpo homi, na diṭṭho garuḷo mayā, āsīvisena vitto ti veḷḷo maṃ brāhmaṇaṃ 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 “Ālambāyana,” 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).

671 “Little ears” was strikingly described by Ḍalhaṇa 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 Ḍalhaṇa on 5.8.136 (Su 1938: 594)). Perhaps similar to hypergranulation. The Nepalese version has पिटक “blisters” for the vulgate’s पीडक “boils” (itself perhaps a typo for पिडक). किटिभ “dark rash” was described by Ḍalhaṇa 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).

672 पर्वभेद “pain in the joints” was glossed by Ḍalhaṇa on 5.7.9 (Su 1938: 582) as “spots on the joints” (सन्धेः 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.

673 The expression -वल्गु “beauty” in the Nepalese MSS, for the vulgate’s simpler -वर्ण “complexion,” is unusual.

674 The grammar here is very loose. शिशुर् cannot stand outside the compound, which

- honey.<sup>675</sup>
- 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.<sup>676</sup>
- 14 The **Gajpipul rat** causes a person have a revulsion for food, to yawn, and makes their body-hair **leprous**.<sup>677</sup> 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**.
- 16cd–ab The **House shrew** causes constipation, paralysis of the neck, and gasping (*vijṛmbhikā*).<sup>678</sup> In this case, one should administer a caustic made of **barley ash** and **velvet bean** as well as the two **hairy-fruited eggplants**.<sup>679</sup>

should read मूषिकशिसुसंस्थितैः. The vulgate text has the simpler and grammatical आ-खुशावकसन्निभैः “resembling the offspring of a rat.”

675 Ḍalhaṇa 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 Jejjāta on the exact formulation of the lickable medication.

676 Ḍalhaṇa 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**.”

677 The qualifier कुष्ठता (रोम्णां) is odd; the vulgate’s हर्षण “horripilation” reads more easily. कुष्ठ has a lesser-known meaning “prominent part, mouth or opening” which might perhaps be considered here, though it is hard to see how.

678 विजृम्भिका is one of the eighty wind diseases listed in the *Kāśyapaśaṃhitā* and glossed by Hemarājaśarman as “yawning” (Hindī जेभाई, 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 Ḍalhaṇa 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.

679 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, anostomia, etc., presumably arising from the bite of the **House shrew**. Ḍalhaṇa 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.



- 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.<sup>680</sup>
- 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.<sup>681</sup>
- 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 (*hṛd-graha*) 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 (*koṭha*), fever, and an outbreak of lumps (*granthi*).<sup>682</sup> 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**

680 "The great antidote" recipe is described at *Suśrutasaṃhitā* 5.6.63 (p. 191 above).

681 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."

682 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, *HIML*: IIB, 76, n. 47). It may have referred to conditions such as urticaria, allergy, ringworm or vitiligo. "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.)").

- causes all four.<sup>683</sup>
- 27 In the bites of these ones there are lumps, rings and small ear-like growths (*karṇika*).<sup>684</sup> 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.<sup>685</sup> Make a broth of pongame oiltree, golden shower tree, the three pungent drugs, hairy-fruited eggplant, beggarweed, and beggarweed,<sup>686</sup> and once again make that broth into one fourth part. One should add turpeth, viburnum, heart-leaved moonseed, Himalayan mayapple, Indian snakeroot, Indian frankincense,<sup>687</sup> wood-apple, pomegranate, and cinnamon. Mix all that together 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.<sup>688</sup> Emesis is with a decoction (*kvātha*) of indigo with parakeet and sage-leaved alangium.<sup>689</sup>
- 37–38 When doing a purge, turpeth, red physic nut, and the three myrobalans are recommended; when purging the head, either

683 Note the switch to humoral theory with these last five rats in the list, and the assumption of blood as a fourth humour .

684 On कर्णिका, see footnote 671.

685 The measure of a प्रस्थ is approximate and different authors have various estimates.

686 अंशुमती and स्थिरा are both normally identified as beggarweed, but when a pair are mentioned the second is probably painted uraria.

687 For the vulgate's reading समृत्तिका "with earth," Dalhaṇa on 5.7.29 (Su 1938: 583) specified "black earth" and noted that some people read अहिमृत्तिका "snake earth" meaning earth taken from anthills, while Jejjāṭa read अगवृत्तिका, meaning शल्लकी, "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.

688 The vulgate substitutes कुष्ठ for वक्रा.

689 The vulgate has two and a half more verses at this point, expanding the recipe considerably and adding the appropriate verb, "he should vomit."

the juice of *siris* or its fruits. Juice of cow-dung with a lot of the three pungent drugs is good in collyrium.<sup>690</sup> an electuary of the juice of wood-apple and cow-dung, with the two kinds of honey, is recommended.<sup>691</sup>

- 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.<sup>692</sup>
- 41 The poison that comes out of rats is most irritant during cloudy weather.<sup>693</sup> And in that case too, the procedure that should be carried out is the one for removing slow-acting poison (*dūṣṭviṣa*).
- 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.<sup>694</sup>

### 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.<sup>695</sup> Then, its tail, jaw and shoulders droop down, it drools, it is deaf to unclear sounds and blind and it charges against one another.<sup>696</sup>
- 45–46ab And there is numbness in the limb of one who has been bitten by such a creature, and the blood runs black.<sup>697</sup>

690 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).

691 Verse 5.7.39 (Su 1938: 584) of the vulgate is not present in the Nepalese version.

692 Ḍaḥaṇa 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.”

693 The Nepalese witnesses read निर्हृतम् “removed, taken out,” in contrast to the vulgate’s अनिर्हृतम् “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.

694 On प्रच्छयेत् “cut off, scarify” cf. the same verb at 4.9.10 (Su 1938: 443), 6.14.10 (Su 1938: 621), and derivatives प्रच्छन, प्रच्छान, प्रच्छित, 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.

695 The Nepalese version does not mention wind, unlike the vulgate, but the sentence structure is harder than the vulgate.

696 The grammatical number of “it charges against one another” is odd in Sanskrit too.

697 This translation of the text is tentative and does not account for स्युः. The sentence is not clear in the witnesses or later derived versions such as *Aṣṭāṅgahṛdayasaṃhitā* 6.38.10

- And it is in the main marked by the signs of someone who has been pierced by a poisoned arrow.<sup>698</sup>
- 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 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*.<sup>699</sup>
- 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!

(Ah 1939: 921). Taking सुप्तः as “numbness” is not comfortable, though the vulgate seems to have taken this sense, reading सुप्तता (that Ḍalhaṇa 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 ....”

698 अभिलिङ्गित “marked by” is not a common word and is perhaps a hapax legomenon. The vulgate has the simpler expression उपलक्षित.

699 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 (कुप्येत्स्वयं विषं यस्य न स जीवति मानवः । तस्मात्प्रकोपयेदाशु स्वयं यावत्प्रकुप्यति ॥ (5.7.58cd–59ab (Su 1938: 585)).

- 5.7.62cd One should provide an intense evacuation (*saṃśodhana*) 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.<sup>700</sup>

Thus the Kalpa 6.

---

<sup>700</sup> 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.<sup>701</sup>

## Translation

- 1 Now I shall explain the procedure (*kalpa*) on the topic of sounding the kettle drum (*duṇḍubhi*).<sup>702</sup>
- 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,<sup>703</sup> 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,

---

<sup>701</sup> [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.

<sup>702</sup> 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.

<sup>703</sup> The ingredients to this point are similar to the water-detoxifier described in *Suśruta-saṃhitā* 5.3.9 ([Su](#) 1938: 568), p. 162 above.

prickly-leaved elephant's foot, Himalayan birch,<sup>704</sup> viburnum, marsh barbel, woody-fruited jujube, and white babool.

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, gajpipul, embelia, soot, Indian symphorema, soma,<sup>705</sup> chir pine, saffron, halfa grass, mango, Indian mustard, three-leaved caper, Indian laurel, itchytree, castor-oil tree, pussywillow, purging nut, blackboard tree, Indian trumpet tree, cherry, croton tree,<sup>706</sup> Indian aconite, deodar, black pepper, costus, and sweet flag.<sup>707</sup> Once it has been brought to the boil with the alkali, one should take it down and place it in a iron pot.<sup>708</sup>

- 4 One should smear this onto a drum as well as onto flags and carpets.<sup>709</sup> One is released from all poisons as a result of seeing and hearing these.<sup>710</sup>

- 5–6 This is called “The Caustic Antidote (*kṣārāgada*)”.<sup>711</sup> It should be given

704 Note the unanimous Nepalese MS reading भूज, the Middle Indo-Aryan form of Sanskrit भूर्ज (CDIAL: #9570).

705 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.

706 Ḍalhaṇa on 5.6.3 (Su 1938: 580) glossed नागदन्ती as a type of इन्द्रवारुणी (colocynth), but he noted that Jejjāta had thought it was दन्ती (red physic nut).

707 Ḍalhaṇa on 5.6.3 (Su 1938: 580) noted that Gayadāsa omitted several of the above ingredients, keeping thirty.

708 Ḍalhaṇa 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 *Suśrutasaṃhitā* and the *Aṣṭāṅgahṛdayasaṃhitā*. Cf. the very similar ingredients and procedure in the chapter on alkali preparations, *Suśrutasaṃhitā* 1.11.11 (Su 1938: 46–47), p. 35 above.

709 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).

710 The vulgate adds “and touching” 5.6.4 (Su 1938: 580). Note the ditransitive (द्विकर्मक) -मुच्यते; cf. *Meghadūta*, uttaramegha 33 (Kale 1947: 99, 120).

711 Cf. 4.23.95–104 (Ca 1941: 575–576).



- in cases of small urinary stones (*śarkarā*), urinary stones (*aśmarī*),<sup>712</sup> hemorrhoids, wind-swelling (*vātagulma*), cough, abdominal gripes (*śūla*) and swollen belly (*udara*). It should be given for indigestion, humours of the abdomen (*grahaṇīdoṣa*),<sup>713</sup> and severe aversion to food (*bhaktadveṣa*),<sup>714</sup> in swelling, mouth ulcer (*sarvasara*),<sup>715</sup> 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 (*sarpāṅkuśa*) even for the snakes led by Takṣaka.<sup>716,717</sup>
- 12–13 Grind prickly chaff-flower seeds and the beans of siris, the two white clitorias and black nightshade with cows' urine.<sup>718</sup> 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:

712 अश्मरी and शर्करा are described in *Suśrutasamhitā* 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 Cakrapāṇidatta and Ḍalhaṇa discussed the lack of a firm distinction between these categories.

713 On the organ called ग्रहणी, see the useful summary by Ramachandra Rao and Sudarshan (1985–2005: 2, 20–21, 96 *et passim*).

714 A sign of impending death according to *Suśrutasamhitā* 1.32.4 (*Su* 1938: 142).

715 See *Mahākośa*: 1, 888 and *Suśrutasamhitā* 2.16.65–66 (*Su* 1938: 336) and 4.23.3 (*Su* 1938).

716 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 *Kriyākālottaratantra*, edited by Slouber, contains a similar sentence (7.26cd, p. 232): "Even someone bitten by Takṣaka will be rapidly cured of poison."

717 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 Salutory (*kalyāṇaka*). This ghee recipe with the same name is also present in the *Uttaratantra* 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 सर्पिर्माङ्गल्यमुत्तमम्" is not present. Thus, in the Nepalese version, The Salutory (*kalyāṇaka*) is not named. The same named ghee also appears in the *Carakasamhitā* 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 *Suśrutasamhitā* (excluding swelling); it is possible that this is a case where a text from the *Carakasamhitā* was added to the *Suśrutasamhitā* after the Nepalese version.

718 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, scrambleberry, 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,<sup>719</sup> scutch grass,<sup>720</sup> chebulic myrobalan, the two types of clitoria, the two types of turmeric, Himalayan yew, lac, and the salts,<sup>721</sup> white water-lily, blue water-lily, sacred lotus flowers, pale Java tea and the flowers of champak, Asoka tree, royal jasmine, long-stamen Wendlandia (?),<sup>722</sup> 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.<sup>723</sup>

719 The plant is usually called चोरक, literally "thief." The Nepalese text here uses the unusual expression तस्करसाह्व "called the same as 'thief'."

720 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. ग्रन्थिल (more commonly ग्रन्थिल, n.) is mentioned in the version of this Mahāsugandha recipe in the *Aṣṭāṅgas-aṅgraha*, Utt.47.69a (*As* 1980: 899) (but not in the *Aṣṭāṅgahrdayasaṃhitā*), suggesting that the *Aṣṭāṅgas-aṅgraha* at this point had access to sources similar to the Nepalese witnesses.

721 Dalhaṇa specified "the five salts" (Dalhaṇa on 5.6.19 (*Su* 1938: 581)).

722 The Nepalese witnesses unanimously read तिलक not the vulgate's तिल्वक. Both plants have fragrant flowers.

723 This Nepalese MSS unanimously read सर्वनागगति "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 refulgent 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.<sup>724</sup>
- 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**.<sup>725</sup>
- 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**.<sup>726</sup>

<sup>724</sup> Verses 29 and 30 of the vulgate, giving dietary advice, are not present in the Nepalese version.

<sup>725</sup> Ḍalhaṇa 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**.

<sup>726</sup> This verse is much clearer in the Nepalese version. The vulgate seems to have acquired corrupted readings before the time of Ḍalhaṇa.



# 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 *Uttaratantra*,” we can presume that an older version of the *Suśrutasamhitā*, sans *Uttaratantra*, ended with the present chapter. Added to this, the beginning of the next section of the work, the *Uttaratantra*, reads,

It being declared in the preceding 120 chapters, from here on, in the latter section, I shall explain the meanings in detail, fully.<sup>727</sup> Now, I shall explain the treatise called “the latter” where diseases 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 *Ṛgveda*. 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

---

<sup>727</sup> Note that this is not the reading of the vulgate, which says that the *Uttaratantra* will explain everything that was *not* completely explained before.

undeveloped when compared, for example, with botany.<sup>728</sup> There are few general surveys of insects in India and virtually none that record historical names or literary references. In the twelfth century, Ḍalhaṇa 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, Jejjāṭa and Gayadāsa, so they have to be identified from the people of different localities.<sup>729</sup>

Thus, even pre-modern Sanskrit authors were not expert regarding the identities of the insects discussed in the *Suśrutasamhitā*.<sup>730</sup>

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 *Suśrutasamhitā*. The names mentioned from passages 25 onwards are mostly recognizable and do appear elsewhere Sanskrit literature.<sup>731</sup> 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.<sup>732</sup>

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

<sup>728</sup> 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.

<sup>729</sup> Ḍalhaṇa on 5.8.4 (Su 1938: 586): एते कीटकभेदा नानादेशीयलोकादवगन्तव्याः, यतः सुवीरनन्दि-वराहजेज्जटगयदासादिभिः टीकाकारैर्न व्याख्याताः. (Varāha is called Vārāha by Ḍalhaṇa on 2.13.3 (Su 1938: 318).) Cf. Meulenbeld (HIML: IA, 387–388) on Suvīra and *mutatis mutandis* on the other commentators

<sup>730</sup> MW includes 191 insect names, almost none of which are identified.

<sup>731</sup> E.g., T. R. Mitra 2005.

<sup>732</sup> 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.<sup>733</sup> 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.<sup>734</sup>

### Wind

- |     |   |   |
|-----|---|---|
| 5-6 | 1. Tick-navel,<br>2. Beaked,<br>3. Horned, and<br>4. Hundred-kulimbhakas,<br>5. Cricket,<br>6. Fiery,<br>7. Little-voice,<br>8. Vicitingas, and<br>9. Lentil insects. | 10. Revolver, and<br>11. Sheep-insect,<br>12. Myna-face, and<br>13. Legume-insect,<br>14. Hundred-creeper,<br>15. Stripy,<br>16. Spotted,<br>17. Speckle-head. <sup>735</sup> |
|-----|---|---|

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.

### Fire

8cd-11ab

<sup>733</sup> P. V. Sharma (1999-2001: 3, 78) omitted "snakes'" making it sound as if insects are just born of any semen, etc.

<sup>734</sup> 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.

<sup>735</sup> 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."



- |                        |                                |
|------------------------|--------------------------------|
| 1. Pitcher-like,       | 15. Lotus-insect,              |
| 2. Shining-like-grain, | 16. Drummer,                   |
| 3. Celestial, and      | 17. Mosquito,                  |
| 4. Warding off,        | 18. Centipede,                 |
| 5. Leaf-scorpion,      | 19. Five-venom,                |
| 6. Noseless,           | 20. Cook-fish insect,          |
| 7. Devout,             | 21. Black-beak,                |
| 8. Droplet,            | 22. She-ass insect.            |
| 9. Bee,                | These are the insects, as well |
| 10. Outsider.          | as the                         |
| 11. Picciṭās,          | 23. Worm-dish,                 |
| 12. Pot-turd,          | and the other one that is      |
| 13. Maggot,            | known as the                   |
| 14. Enemy-liquor,      | 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.

### Phlegm

- |         |                     |                    |
|---------|---------------------|--------------------|
| 12–15ab | 1. Vaiśvambhara,    | 8. Kiṭibha,        |
|         | 2. Pañcaśukla,      | 9. Aṭakī,          |
|         | 3. Pañcakṛṣṇa,      | 10. Sucīmukha,     |
|         | 4. Kokila-insect,   | 11. Kṛṣṇagodhā,    |
|         | 5. Śairyaka-insect, | 12. Kuṣṭha-insect, |
|         | 6. Pravalāka,       | 13. Kaṣāyavāsika,  |
|         | 7. Bhaṭābha,        |                    |

These are the thirteen watery (*saumya*) insects that irritate the phlegm. The diseases of people bitten by one of these are caused by phlegm.

### All three humours

- |           |               |                    |
|-----------|---------------|--------------------|
| 15cd-17ab | 1. Tuṅgīnāsa, | 7. Maṇḍalapuṣpaka, |
|           | 2. Valabhika, | 8. Tuṇḍavakra,     |
|           | 3. Tolaka,    | 9. Sarṣapaka,      |
|           | 4. Nāhana,    | 10. Spoṭaka,       |
|           | 5. Koṇṭāgīrī, | 11. Śambuka,       |
|           | 6. Krimikara, | 12. Fiery insect,  |

These are the twelve terrible ones that are born of all three humours.

## Symptoms

- 17cd, 20–24 The knowledge about the stages of toxic shock (*vega*) of those bitten by one of these is the same as with snakes.<sup>736</sup>  
 The following are found in the area of a bite, or in a body permeated (*ākula*) with poison: an eruption of blisters, swelling, lumps and circles, ringworm (*dardru*),<sup>737</sup> small ear-like growths (*karṇikā*), spreading rashes (*visarpa*), and dark, rough patches of skin (*kiṭibha*).<sup>738</sup>

## Taxonomy according to symptoms and prognosis

- 25–27 xx  
 28 iguana  
 29 <sup>739</sup>  
 30–41 xx

## Therapies

- 42–56abcd xx

## Taxonomy of scorpions

- 56ef–66 xx

<sup>736</sup> 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.

<sup>737</sup> More usually ददु, a skin disease like कुष्ठ, 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 कुष्ठभेदः” (I.88). Translated here as “ringworm” because that is prominent amongst the NIA usages of the lexeme and derivatives (CDIAL: 1, #6142).

<sup>738</sup> 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 671, p. 199.

<sup>739</sup> See n. 232, p. 90.



Figure 4: Husain, Shaykh, Shaykh Ali and Shaykh Hatim, “Asavari Ragini: Cropped Image of Scorpions” (Husain et al. 1591). Courtesy of the Smithsonian Institution.

### **Therapies for scorpion-sting**

67–74 xx

### **Symptoms of spider poisoning**

75–89 xx

### **Origin story for spiders**

90–93 xx

### **Taxonomy of spiders**

94–100ab xx

### **Specific symptoms and treatment for spider poisoning**

100cd–120 XX

**Untreatable spider poisons**

121–127 xx

**Curable and incurable**

128–129 xx

**Therapies for spider poisoning**

130–134 xx

**General therapies for poisoning**

135–139 xx

**End of the Suśrutasamhitā**

140–143 xx

## **Part 6. Uttarat Tantra**



# Uttaratantra 17: Preventing Diseases of the Pupil

## Literature

Meulenbeld offered an annotated overview of this chapter and a bibliography of earlier scholarship to 2002.<sup>740</sup>

The history of couching in India has been discussed since the nineteenth century,<sup>741</sup>

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 *Suśrutasamhitā*, they are included in the “group starting with *añjana*” (*añjanādigana*), that is listed at 1.38.41–42 (Su 1938: 167). They are described as valuable for counteracting blood-bile (*raktapitta*), poison and overheating (*dāha*).

## Translation

- 1 Now I shall explain the counteraction (*pratiṣedha*) of diseases located in the pupil (*dr̥ṣṭi*).
- 2 There are three curable (*sādhya*), three incurable (*asādhya*), and six mitigatable (*yāpya*) diseases located in peoples eyes. Among these, three

---

<sup>740</sup> HIML: IA, 305–306.

<sup>741</sup> 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 (*pratīkāra*) has been stated for the one called “seeing smoke (*dhūmadarśin*)”.<sup>742</sup>

- 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*),<sup>743</sup> but not cutting with a blade (*śastrakṣata*).<sup>744</sup>

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

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 (*gomāṃsa*), **black pepper, siris** and **realgar**;
- stalk (*vṛnta*) from a **wood-apple** with honey (*madhu*);<sup>745</sup>
- or the the fruits of the **velvet bean**.

maṣī  
burned  
charcoal.  
Find refs.

- 8 The physician should make a collyrium (*añjana*) with ground up **metal** (*kupyaka*),<sup>746</sup> **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**

742 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.

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

744 Dalhaṇa interpreted this as blood-letting (*sirāvedha*), which is discussed in SS.1.14 (Su 1938).

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

746 A metal other than gold or silver, according to V. Jośī and N. H. Jośī (*Mahākośa*: 1, 217) (on कूप्य). The Nepalese witnesses have the rare कूप्यक rather than the vulgate’s कुब्जक, which makes no real sense. Perhaps lead, which is used in making contemporary collyrium.



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 (*guḍikā*). This is good for both day and night blindness.
- 11cd–12ab Elixir-salve (*rasañjana*), **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 (*śīta*) and stibnite (*sauvīraka*), infused (*bhāvita*) with the blood of birds and animals (*rasa*).<sup>747</sup> 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 (*rasañjana*) is always good as a collyrium in this case.
- 15 Alternatively, for those who cannot see during the day, this pill (*guḍikā*), with sandalwood, is recommended: salt (*nadīja*), conch shell and the three spices, collyrium (*añjana*), realgar (*manaḥśilā*), the two turmeric (*rajana*)<sup>748</sup> and liver extract (*yakṛdrasa*).<sup>749</sup>
- 16 One should grind up kohl (*srotoja*),<sup>750</sup> and ?? and long pepper and also hareṇu (*hareṇu*). Such wicks with goats urine are good in a collyrium (*añjana*) for night blindness (*kṣaṇadāndhya*).
- 17–18ab Alternatively, in such a case, grind together Indian sarsaparilla (*kālānusāriṇa*)<sup>751</sup> long pepper, dried ginger (*nāgara*) and honey, the leaf of the scrambling (*tālīśapatra*), the two turmeric (*rajana*), a conch shell and liver extract (*yakṛdrasa*). Then shade-dried wicks take away

<sup>747</sup> This was Ḍalhaṇa's preferred interpretation of *rasa* "juice" in this context. He also noted that some take elixir-salve (*śīta*) to be camphor.

<sup>748</sup> Turmeric (*Curcuma longa* Linn.) and tree turmeric (*Berberis aristata* DC). The term *rajana* is unusual; the normal term is *rajanī*. *Rajana* occurs in *Suśrutanighaṇṭu* 158 in the sense of *Ferula asafoetida*, Linn.

<sup>749</sup> This verse appears as no. 27 in the vulgate.

<sup>750</sup> Glossed by Ḍalhaṇa as a kind of collyrium (*añjana*). Cf. Nadkarni 1954: 2.M13 and P. V. Sharma 1982: 197–198

<sup>751</sup> There are two forms of *sārivā* mentioned widely in Āyurvedic literature, the white and the black. Ideas on the identity of the black form are particularly fluid. See Sivarajan and Balachandran (ADPS: 434–438) for a clear discussion.

- illness (*ruj*).
- 18cd–19ab Wicks made of red arsenic (*manaḥśilā*), chebulic myrobalan (*abhayā*), 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 (*aṇavamala*)<sup>752</sup> 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 emblics. 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.<sup>753</sup>
- 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 (*plīhan*) and a liver on a spit, one should eat them both with ghee and oil.<sup>754</sup>

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

753 On the identities of *elā* and *hareṇu*, Watt ([WattComm](#): 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 Chuneekar ([GVDB](#): 467 f) provided an interesting discussion of *hareṇu*, noting that the term refers to two substances, first the *satīna* pulse (*Pisum sativum*, Linn.), and second an unknown fruit such as perhaps a *Vitex*. They noted, "None of the text commentators have attempted to disclose the nature of its source plant," although Ḍalhaṇa described it as aromatic and identical to *reṇukā* (SS.ci.2.75).

754 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.<sup>755</sup> In the case of diseases of blood (*śonita*) and bile (*pitta*), one should drink ghee with the three fruits; it is particularly cleansing.<sup>756</sup> 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).<sup>757</sup>
- 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 (*meṣaviśāṇa*). A man who is suffering from partial blindness should lick the finely-ground three fruits mixed with ghee off his hand (*sapāṇa*).<sup>758</sup>
- 29cd Alternatively, someone afflicted by phlegm should apply them (the three fruits) mixed with oil and steeped (*pragāḍha*) 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*).<sup>759</sup>

<sup>755</sup> Ḍalhaṇa said that the unexpressed topic of this recipe is partial blindness (*timira*).

<sup>756</sup> 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

<sup>757</sup> 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.

<sup>758</sup> “Off his hand” translates the adverbial *sapāṇam*, an unusual word. Ḍalhaṇa reproduced a reading close to the Nepalese recension but says that Jejjāta rejects it and so he also does (Su 1938: 627).

<sup>759</sup> “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 (*puṭākhyā*) with Sindh salt and the product of the meat of a carnivore (*kravyabhuj*) and a deer (*eṇa*), is combined with honey and ghee.<sup>760</sup>

Fat (*vasā*) from a horse, a vulture, a snake, and a cock (*tāmracūḍa*), combined with *mahua* is always good in a collyrium (*añjana*).†<sup>761</sup>

- 33 Having prepared (*niṣevita*) a collyrium (*añjana*) made of kohl (*srotas*), gradually combine it with juices (*rasa*), milk and ghee.<sup>762</sup>

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*).<sup>763</sup>

- 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 (*tarpaṇa*) is good that is a combination that is the flesh of wild animals taken hot (*puṭāhvaya*).<sup>764</sup>

- 36 And realgar (*maṇḥṣilā*) mixed with elixir salve (*rasañjana*) and honey

<sup>760</sup> Ḍalhaṇa noted (Su 1938: 628a) that *puṭāhvaya* (see verse 35 below) is a synonym for *puṭapāka*, and that the process is described in the *Kriyākālpa* 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 *rasaśāstra* 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.

<sup>761</sup> 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.

<sup>762</sup> On स्रोतस् “kohl” see footnote 750. Ḍalhaṇa 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).

<sup>763</sup> Ḍalhaṇa described this blindness as a type of *kāca* disease caused by wind (Su 1938: 628). The expression “bloodshot blindness” is an attempt to capture the idea of a blind eye that is dyed or coloured (not colour-blindness). This verse is quite different from the vulgate and also syntactically challenging.

<sup>764</sup> The expression taken hot (*puṭāhvaya*) is a guess.

is a liquid collyrium (*dravāñjana*) which is, in this case, combined with *mahua*.<sup>765</sup>

Alternatively, experts on this say that finely ground blue vitriol (*tuttha*) extracted from a gold mine is the “same collyrium (*samāñjana*)”.<sup>766</sup>

- 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*).<sup>767</sup>

The extracts (*rasa*) produced from aflame of the forest (*palāśa*), Rohīta tree (*rohīta*),<sup>768</sup> *mahua*, ground with the supernatant layer (*agra*) of the spirits (*madira*) is applied.

- 38 Alternatively, one should cook an errhine with cuscus grass (*uśīra*), lodh tree (*lodhra*), the three fruits (*triphalā*), beauty berry (*priyaṅgu*) to pacify eye diseases caused by phlegm.<sup>769</sup>

One should apply smoke of the bark of embelia (*vidaṅga*), velvet leaf (*pāthā*), white siris (*kinihī*), and desert date (*iṅgudī*); and cuscus grass (*uśīra*) alone.

- 39 A ghee that is cooked (*bhāvita*) from a decoction of a non-flowering tree (*vanaspati*)<sup>770</sup> as well as turmeric (*haridrā*) and spikenard (*nalada*) is good in a eyewash (*tarpaṇa*).

Alternatively, one may have an enclosed roasting (*puṭapāka*) done with arid-land animals (*jāṅgala*)<sup>771</sup> and a plentiful amount of long pepper (*māgadha*), Sindh salt and honey.

- 40 A treatment (*kriyā*) with realgar (*manaḥśilā*), the three spices, conch,

<sup>765</sup> The expression liquid collyrium (*dravāñjana*) is only known from Ḍalhaṇa’s comments on 6.17.11ab (Su 1938: 626). The recipe in the present collyrium is different from that discussed by Ḍalhaṇa.

<sup>766</sup> 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 Ḍalhaṇa as “a collyrium with an equal amount of fermented barley” (*tulyasauvīrāñjana*) (Su 1938: 628).

<sup>767</sup> The ablative “from collyrium” is hard to construe, but Ḍalhaṇa used this term and phrase in his commentary on 6.17.41ab (Su 1938: 629).

<sup>768</sup> Probably *Soyimida febrifuga* A. Juss.

<sup>769</sup> Ḍalhaṇa invoked a general rule (*paribhāṣā*) to indicate that this mixture should be cooked with sesame oil.

<sup>770</sup> These are fig trees. The *Sauśrutaniḡhaṇṭu* (252) specifies the Uḍumbara. Cf. the classification in CS.1.1.71–72, 1.8, *et passim*.

<sup>771</sup> 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 (*kāsīsa*) and elixir salve (*rasāñjana*).<sup>772</sup>

They say that an elixir salve (*rasāñjana*) combined with myrobalans, treacle and dried ginger is good.<sup>773</sup>

- 41 Alternatively, a collyrium (*añjana*) that has been prepared many times in the eight types of urine<sup>774</sup> is put into water with the three fruits. Having stored it in the mouth of a nocturnal creature (*niśācara*)<sup>775</sup> one should place it in a conch (*salilotthita*) for two months.<sup>776</sup>

- 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*).<sup>777</sup>

- 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.<sup>778</sup>

The treatment that is good for removing watery eye (*syanda*) should be properly applied in all these humoral cases, according to the individual.<sup>779</sup>

- 44 The physician should not employ substances in errhines etc., when the humours intensify, and also when disease spreads. And further, in the *Kalpa*, there is a good deal more said about collyriums, and that should be considered and then applied.<sup>780</sup>

- 45 Someone who uses matured ghee, the three fruits, *wild asparagus*, as

772 Ḍalhaṇa glossed treatment (*kriyā*) specifically as inspissation (*rasakriyā*) (Su 1938: 629).

773 We emend हिते to हितम्, against the MSS.

774 See *Suśrutasamhitā* mūtravarga

775 Ḍalhaṇa 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.

776 We interpret “water-born (*salilotthita*)” as “conch” in line with *jalodbhava*, but the term is uncertain.

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

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

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

780 Ḍalhaṇa noted that *Kalpa* means the Uttaratantra 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 emblics, or again cooked barley (*yavaudana*) followed by the water of three fruits with plenty of ghee.
- 47 When there is bloodshot blindness (*rāgiṇi timire*), the wise physician should not cut a vein. A humour injured (*utpīḍita*) by the instrument rapidly destroys vision.
- 48 Non-bloodshot blindness (*araga timira*) in the first layer (*paṭala*) is treatable. And bloodshot blindness (*rāgiṇi timire*) in the second layer, with difficulty. And in the third layer it can be mitigated (*yāpya*).<sup>781</sup>
- 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 (*doṣa*) in the pupil may be characterized as being painful or having blood.<sup>782</sup>
- 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,<sup>783</sup> 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.<sup>784</sup>

<sup>781</sup> 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.

<sup>782</sup> 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.

<sup>783</sup> 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.

<sup>784</sup> Ḍalhaṇa 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 (*dr̥ṣṭimaṇḍala*) with the tip of the probe (*śalākā*).<sup>785</sup>
- 56 Without injuring, gently pushing the phlegm in the circuit of the pupil against the nose, he should remove it by means of sniffing (*ucchiṅgana*).<sup>786</sup>
- 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 (*sūcī*) properly.<sup>787</sup>
- 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*).<sup>788</sup>
- 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.<sup>789</sup>
- 61 At that time, he should not belch, cough, sneeze, spit or shiver. Afterwards there should be restrictions (*yantraṇā*) as in the case of someone who has drunk oil.<sup>790</sup>
- 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.

785 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.

786 Ḍalhaṇa described sniffing (*ucchiṅgana*) at 6.19.8 (Su 1938: 641), clearly intending inward sniffing.

787 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.

788 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.

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

790 Ḍalhaṇa glossed "restrictions (*yantraṇā*)" 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 (*dr̥ṣṭi*) 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.<sup>791</sup>  
A hard probe leads to shooting pain (*śūla*), a thin to unsteadiness of the humours (*doṣapariplava*),<sup>792</sup>
- 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 (*sthira*) one brings about a loss of function (*kriyāsaṅga*).<sup>793</sup>
- 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*).<sup>794</sup>

<sup>791</sup> The condition of “misshapen eye” is referred to briefly in 6.61.9 (Su 1938: 800), where Ḍalhaṇa glossed it as “bent brow and eye (*vakrabhrūnetra*).” The vulgate’s reading of “with blood (*śonitena*)” is easier to construe.

<sup>792</sup> There is a medically significant difference here from the vulgate, which reads “a rough (*khara*) probe” not a “thin” probe.

<sup>793</sup> This translation of loss of function (*kriyāsaṅga*) is given on the basis of Ḍalhaṇa’s gloss of *kriyāsaṅgakarī* at 3.8.19 (Su 1938: 382) as “causing the destruction of actions such as moving (*gamanādikriyāvīnāśakarī*).”

<sup>794</sup> The vulgate reads “copper (*tāmra*)” in place of “silver.”

## [Complications]

- Redness, swelling, lumps, driness (*coṣa*), bubbling (*budbuda*),<sup>795</sup> pigs' eye (*sūkarākṣitā*),<sup>796</sup> 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 (*gairikaḥ*), 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 (*mātuluṅga*) with sesame gently fried, mixed with white mustard (*siddhārthaka*).<sup>797</sup> This is immediately beneficial when someone is looking for relief.
- 72 A paste with Holostemma (*payasyā*),<sup>798</sup> Indian sarsaparilla (*śārivā*), cassia cinnamon (*patra*), Indian madder (*mañjiṣṭhā*), and liquorice (*madhukair*) stirred with goat's milk, pleasantly warmed, is said to be healthy.<sup>799</sup>
- 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 (*drākṣā*), lac (*lākṣā*), white sugar (*sitā*), with wild asparagus, Hare Foot Uraria (*prthakparṇī*),<sup>800</sup> nutgrass (*mustā*), liquorice, Hi-

795 Ḍalhaṇa glossed "bubbling (*budbuda*)" as "prolapse (*māṃsanīrgama*) that looks like bubbles."

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

797 On the adverbial use of gently (*mṛdu*), see Gombrich 1979.

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

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

800 Suvedī and Tivārī 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.<sup>801</sup> This has an admixture of cottony jujube (*kākolī*) etc., should be prescribed in all treatments.<sup>802</sup>
- 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.<sup>803</sup>
- 78cd–80ab Now listen to two excellent collyriums for making the pupils clear. After grinding the flowers of perploca of the woods (*meṣaśṛṅga*), siris (*śirīṣa*), axelwood (*dhava*) royal jasmine (*jātī*), pearl and beryl (*vaiḍūrya*) 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 (*manaḥśilā*) 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 collyriums at length in the *Kriyākālpa* section. Those various methods may be applied here too.

or a dual?

801 Ḍalhaṇa mentioned that these drugs include Deodar (*bhadradāru*) and other wind-destroying drugs. The *vātasamśamana* group is listed in *Suśrutasamhitā sūtrasthāna* 1.39.7.

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

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



# Uttaratantra 38: Diseases of the Female Reproductive System

## 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 (*nīdāna*), 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 gynecological 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 4.<sup>804</sup> 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*.

---

<sup>804</sup> Or *Kumārabhṛtya* as this section is named in MS Kathmandu KL 699.

Table 4: Subdivisions of the Uttaratantra, in the vulgate.

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

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). Ḍalhana 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*)."<sup>805</sup> It is because (1) there is an explicit mention of the word "*yonī*" in the statement "born in the womb (*yonī*) 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.<sup>805</sup>

- In the placement of the Nepalese version,
  - 6.*Yonivyāpatpratiṣedha* is preceded by

<sup>805</sup> Ḍalhana on 6.38.1 (Su 1938: 668): ग्रहोत्पत्त्यध्यायानन्तरं 'तिर्यग्योनिं मानुषं च' इति वचनेन योने-  
र्नामसंकीर्तनात् कुमारजन्मविकारकारणत्वाच्च योनेर्व्यापञ्चिकित्सितार्थं योनिव्यापत्प्रतिषेधाध्यायारम्भो यु-  
ज्यत [...].

- 6.56 *Mūtrāghātapraṭiṣedha* (6.58 in [Su 1938](#)) and
- 6.57 *Mūtrakṛcchrapraṭiṣedha* (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 Ḍalhaṇa, and instead highlight the importance of curing female diseases for the satisfaction of male partner.

- SS.1.3 in both [Su 1938](#) and the Nepalese version lists the chapter at the place where it is found in the vulgate.<sup>806</sup>
- Parallel chapters in the *Aṣṭāṅgasamgraha* and the *Aṣṭāṅgahṛdayasamhitā* 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 *Aṣṭāṅgahṛdayasamhitā* 6.33 and 6.34 (*Guhyarogavijñāna* and *Guhyarogapraṭiṣedha* respectively).

A close literary parallel to the first part of the chapter is found in *Mādhavanidāna* ([MN<sub>3</sub>](#)) 62, or at least its version printed in Y. T. Ācārya ([MN<sub>3</sub>](#): 361). The readings of the [MN<sub>3</sub>](#) as it stands now usually side with the vulgate version rather than with the Nepalese. In addition to the basic text, there are several valuable pointers made in the *Madhukośa*, an early commentary on the [MN<sub>3</sub>](#). This part of the text is authored by Śrīkaṇṭhadatta, who was most like a direct student of Vijarakṣita. The latter wrote the first part of the *Madhukośa*, up to chapter 32, and, what is more, can be dated to the late eleventh or early twelfth centuries.<sup>807</sup>

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

<sup>806</sup> See 1.3.37ab ([Su 1938](#): 15): नैगमेषचिकित्सा च ग्रहोत्पत्तिः सयोनिजा ॥.

<sup>807</sup> 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:  $\underline{\text{U}} \text{ } \underline{\text{U}} \text{ } \underline{\text{U}} \text{ } \underline{\text{U}} \text{ } \underline{\text{U}} \text{ } \underline{\text{U}} \text{ } \underline{\text{U}}$ . In content, they are only approximately parallel to three hemistichs in *anuṣṭubh* metre found in the vulgate.<sup>808</sup> 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).<sup>809</sup> By contrast, the vulgate contains two complete verses (four hemistichs) in the *anuṣṭubh* metre, again with only loosely-related content.<sup>810</sup> The three final hemistichs of this group are borrowed verbatim from the *Carakasamhitā*.<sup>811</sup> 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)”.<sup>812</sup> This statement does not make any sense in the context of the *Suśrutasamhitā*, where no such Compendium exists.<sup>813</sup> By contrast, in the *Carakasamhitā* this reference points back to chapter 1.19 (*Ca* 1941: 109–112), which calls itself “The Compendium of Diseases”.<sup>814</sup> This Compendium lists all the diseases dealt with in later sections of the text, and specifically mentions the twenty diseases of female reproductive system.<sup>815</sup> Even the vocabulary and wording of this

808 *Suśrutasamhitā* 6.38.3–4ab (*Su* 1938: 668).

809 The metre of these verses is not perfect.

810 *Suśrutasamhitā* 6.38.4cd–6ab (*Su* 1938: 668).

811 *Carakasamhitā* 6.30.7cd–8 (*Ca* 1941: 634).

812 *Suśrutasamhitā* 6.38.5ab (*Su* 1938: 668): विंशतिर्व्यापदो योनेर्निर्दिष्टा रोगसंग्रहे ॥ ← *Carakasamhitā* 6.30.7cd (*Ca* 1941: 634).

813 The remark was not commented on by Ḍalhana.

814 *Carakasamhitā* 1.19.9cd (*Ca* 1941: 112): रोगाध्याये प्रकाशिताः.

815 *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 *Carakasamhitā* and was borrowed by the editors of the vulgate text of the *Suśrutasamhitā*.<sup>816</sup>

---

<sup>816</sup> The above three hemistichs in *anuṣṭubh* are also repeated in the *MN*<sub>3</sub> 62.1–2ab. Given that the subsequent verses in the *MN*<sub>3</sub> stem from the *Suśrutasamhitā*, it is likely that *MN*<sub>3</sub> 62.1–2ab too was borrowed from from the *Suśrutasamhitā* and not from its original location in the *Carakasamhitā*).

## Translation

- 1 And now I shall explain the countermeasures against disorders of the female reproductive system (*yonivyāpat*).<sup>817</sup>
- \*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.<sup>818</sup>
- \*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 (*doṣa*), wind (*vāta*), etc., corrupted due to faulty medical treatment (*mithyopacāra*),<sup>819</sup> sexual activity, fate, and also defects (*doṣa*) 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 (*bheṣaja*),

817 On this broad understanding of the term *yoni* as “female reproductive system” see Das 2003: pp. 572–5.

818 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.’

819 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: मिथ्योपचरितानिति असम्यक् चिकित्सितान् “... given improper therapy”. In the *Suśrutasaṃhitā* (Su 1938), it is used once in a passage (6.18.30 (Su 1938: 635)) where it refers specifically to the wrong application of irrigation (*tarpaṇa*) and roasting (*puṭapāka*), both of which are mentioned in the previous verse. Another use of the compound in a similar meaning is found in a citation from Bhoja’s work quoted by Gayadāsa at *Suśrutasaṃhitā* 2.5.17 (Su 1938: 287): श्वित्रं तु द्विविधं प्रोक्तं दोषजं व्रणजं तथा । तत्र मिथ्योपचाराद्धि व्रणस्य व्रणजं स्मृतम् ॥ “... arises from wrong treatment of the wound.” In contrast to this, the parallel verse in *Suśrutasaṃhitā* 6.38.5ab (Su 1938: 668) = *Carakasamhitā* 6.30.8 (Ca 1941: 634) = MN<sub>3</sub> 62.1 reads मिथ्याचार “wrong conduct.” All commentators (Cakrapāṇidatta on the *Carakasamhitā*, Śrīkaṇṭhadatta on the MN<sub>3</sub>, and Ḍalhaṇa on the *Suśrutasaṃhitā*) explain that the wrong conduct stands here specifically for unwholesome diet. The parallel in *Aṣṭāṅgahṛdayasaṃhitā* 6.33.27 (Ah 1939: 895) = *Aṣṭāṅgasaṃgraha* 6.38.34a (As 1980: 829) plainly reads दुष्टभोजन “corrupted food” instead.

causes (*hetu*) and signs (*cihna*).

\*6.1 Because of wind (*vāta*), female reproductive organ (*yonī*) 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 (*sraṃsanī*),
4. Child-murderess (*putraghnī*), and also
5. Bilious / Choleric (*pittalā*).

\*7.1 And because of phlegm (*kapha*) occur:

1. Extremely Excited (*atyānandā*),
2. Protuberant (*karṇinī*), and
3. & 4. two Caraṇī (*caraṇī*), and
5. other Phlegmatic (*śleṣmalā*).

\*7.2 And similarly there are other (kinds of morbid female reproductive system) involving all *doṣas*:

1. Impotent (*śaṇḍhī*),
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.<sup>820</sup> Other explorations of this topic have included TY; Dasgupta 1952; Oberhammer 1968; TYV; Lele 1981; Scharfe 1993; Comba 1994; Mejer 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 *Suśrutasamhitā* 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 *Carakasamhitā* 8.12 (Ca 1941)

---

<sup>820</sup> [HIML](#): 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*.<sup>821</sup> For a side-by-side comparison of the *tantrayuktis* in the *Suśrutasamhitā* and the *Arthaśāstra*, please refer to Table 5.

## The *Yuktidīpikā*

*Yuktidīpikā* (circa late sixth to early eighth century), an anonymous commentary on Īśvarakṛṣṇa's *Sāṅkhyakārikā*, initiates its discourse with a detailed discussion of the characteristics of a scientific treatise, some of which align with the *tantrayuktis*.<sup>822</sup> In the *Yuktidīpikā*, these terms are referred to as *tantraguṇa* or *tantrasampat*. They are: (1) *sūtropapatti* (2) *pramāṇopapatti* (3) *avayavopapatti* (4) *anyūnatā* (5) *saṁśayokti* (6) *nirṇayokti* (7) *uddeśa* (8) *nirdeśa* (9) *anukrama* (10) *saṁjñā* and (11) *upadeśa*.<sup>823</sup> 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.<sup>824</sup>

821 *Arthaśāstra*: 280–283

822 See Oberhammer 1968: 605–614 for a detailed discussion of the use of the *tantrayuktis* in the *Yuktidīpikā*.

823 सूत्रप्रमाणावयवोपपत्तिरन्यूनता संशयनिर्णयोक्तिः ।  
उद्देशनिर्देशमनुक्रमश्च संज्ञोपदेशाविह तन्त्रसम्पत् ॥

*Yuktidīpikā*: 3

824 एवमारा अन्येऽपि द्रष्टव्याह । तद्यथोत्सर्गोऽपवादोऽतिदेश इत्यादि ।...इत्येवमन्या अपि तन्त्रयुक्तयः शक्या इह प्रदर्शयितुम् । अतिप्रसङ्गस्तु प्रकृतं तिरोदधातीति निवर्त्यते । 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*.<sup>825</sup> A list of 32 *tantrayuktis*, called *utti* or *tantiravutti* in Tamil, are given in the 27<sup>th</sup> (the final) chapter titled *Marapiyal* “Chapter on conventions” of the last book called *Poruḷ* “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 Ḹampūraṇar (11th or 12th century) and Pēraciriyar (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 *Yāpparuṅkalam* (possibly 10th century), the *Vīracolīyam* (11th century), *Nannūḷ* (late 12th or early 13th century), and their commentaries hold significant importance in this context.

## The Viṣṇudharmottarapurāṇa

The third book of the *Viṣṇudharmattarapurāṇa*, believed to have been composed between the fifth and seventh centuries, includes a chapter dedicated to the *tantrayuktis*.<sup>826</sup> Unlike the *Arthaśāstra* and the *Suśrutasaṃhitā*, 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 *Suśrutasaṃhitā*. 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 *Suśrutasaṃhitā* or

825 For a detailed discussion of the treatment of the *tantrayuktis* in the *Tolkāppiyam* see Chevillard 2009.

826 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 *Suśrutasamhitā* it follows *arthāpatti*.
2. *Anumata* is placed after *vyākhyāna* whereas in the *Suśrutasamhitā* it follows *nirṇaya*.
3. *Anāgatāvekṣaṇa* (*anāgatāpekṣaṇa* in the Nepalese version) occurs after *atīkrāntāvekṣaṇa* (*atīkrāntāpekṣaṇa* in the Nepalese version) whereas the order is reverse in the *Suśrutasamhitā*.

For a side-by-side comparison of the *tantrayuktis* in the *Suśrutasamhitā* and the *Viṣṇudharmottarapurāṇa*, please refer to Table 5.

## 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 Aggavaṃsa in Arimaddanapura (modern Bagan, Burma) in the twelfth-century.<sup>827</sup> 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 *Suśrutasamhitā*. 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 *Suśrutasamhitā* it follows *apadeśa*.
2. *Atīkrāntāpekṣaṇa* is designated as *atītāpekṣhana* (Sanskrit *atītāpekṣaṇa*).
3. *Svasaṃjñā* is designated as *anaññā sakasaṃjñā* (Sanskrit *ananyā svasaṃjñā*) and is defined with subtle variations.
4. *Ūhya* is designated as *upānīya*.

<sup>827</sup> *Saddanīti* 3: 920–921.



For a side-by-side comparison of the *tantrayuktis* in the *Suśruta Saṃhitā* and the *Saddanīti*, please refer to Table 5.<sup>828</sup>

Table 5: *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 तदधिकरणम् ।
(N) 1.	<i>adhikaraṇa</i>	तत्थ यं अधिकिञ्च वुञ्चति, तं अधिकरणम् ।
(S) 2.	<i>yoga</i>	येन वाक्यं युज्यते स योगः । यथा व्यत्यासेनोक्तानां सन्निकृष्टविप्रकृष्टानां पदार्थानाम् एकीकरणम् ।
(V) 2.	<i>yoga</i>	येन वाक्यार्थो युज्यते स योगः ।
(A) 3.	<i>yoga</i>	वाक्ययोजना योगः ।
(N) 2.	<i>yoga</i>	पुब्बापरवसेन वुत्तानं सन्निहितासन्निहितानं पदानं एकीकरणं योगो; ।
(S) 3.	<i>padārtha</i>	योऽर्थोऽभिहितः सूत्रे पदे वा स पदार्थः । पदस्य पदयोः पदानां वा योऽर्थः स पदार्थः । अपरिमिताश्च पदार्थाः ।
(V) 3.	<i>padārtha</i>	योऽर्थो विधिकृतः सूत्रपदे स पदार्थः ।
(A) 4.	<i>padārtha</i>	पदावधिकः पदार्थः ।
(N) 3.	<i>padattha</i>	सुत्तपदेसु पुब्बापरयोगतो यो अत्यो विहितो, सो पदत्यो ।
(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 हेतुअत्यो । <sup>829</sup>

<sup>828</sup> 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.

<sup>829</sup> yaṃ vuttaatthasādhanaṃ ? 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 उद्देशो ।
(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 निद्देशो ।
(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 उपदेशो ।
(S) 8.	<i>apadeśa</i>	अनेन कारणेनेत्यपदेशः ।
(V) 8.	<i>apadeśa</i>	अनेन कारणेनेत्यपदेशः ।
(A) 9.	<i>apadeśa</i>	एवमसावाहेत्यपदेशः ।
(N) 8.	<i>apadesa</i>	अनेन कारणेना ति अपदेशो ।
(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>	पकतस्स अनागतेन अत्यसाधनं पटिदेशो ।
(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>	पकतस्स अतिक्रान्तेन साधनं अतिदेशो ।
(S) 11.	<i>apavarga</i>	अभिप्रमृज्यापकर्षणमपवर्गः ।
(V) 11.	<i>apavarga</i>	अभिप्रायानुकर्षणमपवर्गः ।
(A) 22.	<i>apavarga</i>	अभिप्लुतव्यपकर्षणमपवर्गः ।
(N) 11.	<i>apavagga</i>	अतिव्यापेत्वा अपनयनं अपवर्गो ।
(S) 12.	<i>vākyaśeṣa</i>	येन पदेनानुक्तेन वाक्यं समाप्यते स वाक्य- शेषः ।
(V) 12.	<i>vākyaśeṣa</i>	येनार्थः परिसमाप्यते पदेनाहार्येण स वाक्य- शेषः ।

Sequence	Terms	Definitions
(A) 17. (N) 12.	<i>vākyāśeṣa</i> <i>vākyadosa</i>	येन वाक्यं समाप्यते स वाक्यशेषः । येन पदेन अवुत्तेन वाक्यपरिसमापनं भवति, सो वाक्यदोषो ।
(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>	यदकीर्तितमर्थादापद्यते सार्थापत्तिः । यदकीर्तितमर्थादापद्यते सार्थापत्तिः । यदनुक्तमर्थादापद्यते सार्थापत्तिः । यद् अकिञ्चित्तं अत्यतो 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 केनचिदुपोद्धातेन पुनरु- च्यमानः प्रसङ्गः ।
(A) 15. (N) 15.	<i>prasaṅga</i> <i>pasaṅga</i>	प्रकरणान्तरेण समानोऽर्थः प्रसङ्गः । प्रकरणान्तरेण समानो अर्थो 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. (S) 18.	<i>anekānta</i> <i>pūrvapakṣa</i>	यो पन कत्थचि अञ्जुथा सो अनेकान्तो । यस्तु निःसंशयमभिधीयते स पूर्वपक्षः । <sup>830</sup>

830 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>pubbapakṣa</i>	[यो] तु निस्सन्देहम् अभिधीयते, सो पुब्बप- क्खो ।
(S) 19.	<i>nirṇaya</i>	तस्योत्तरं निर्णयः ।
(V) 18.	<i>nirṇaya</i>	उत्तरवचनं निर्णयः ।
(A) 25.	<i>uttarapakṣa</i>	निर्णयवाक्यमुत्तरपक्षः ।
(N) 19.	<i>niṇṇaya</i>	तस्स यं उत्तरं, सो निण्णयो ।
(S) 20.	<i>anumata</i>	परमतमप्रतिषिद्धमनुमतम् ।
(V) 25.	<i>anumata</i>	परमतमप्रतिषिद्धमनुमतम् ।
(A) 18.	<i>anumata</i>	परवाक्यमप्रतिषिद्धमनुमतम् ।
(N) 20.	<i>anumata</i>	परमतम् अप्पटिसिद्धं अनुमतं ।
(S) 21.	<i>vidhāna</i>	प्रकरणानुपूर्व्यादभिहितं विधानम् ।
(V) 19.	<i>vidhāna</i>	प्रकरणानुपूर्वं विधानम् ।
(A) 2.	<i>vidhāna</i>	शास्त्रस्य प्रकरणानुपूर्वी विधानम् ।
(N) 21.	<i>vidhāna</i>	प्रकरणानुपुब्बं 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 वक्खामि ति अनागतापेक्खनं ।
(S) 23.	<i>atīkrāntāpekṣaṇa</i>	इत्युक्तमित्यतिक्रान्तापेक्षणम् ।
(V) 21.	<i>atīkrāntāpekṣaṇa</i>	इत्युक्तमतिक्रान्तावेक्षणम् ।
(A) 28.	<i>atīkrāntāvekṣaṇa</i>	पुरस्तादेवं विहितमित्यतिक्रान्तावेक्षणम् ।
(N) 23.	<i>atītāpekkhana</i>	इति वुत्तन् ति अतीतापेक्खनं ।
(S) 24.	<i>saṃśaya</i>	उभयहेतुनिर्दर्शनं संशयः ।
(V) 23.	<i>saṃśaya</i>	उभयतो हेतुदर्शनं संशयः ।
(A) 14.	<i>saṃśaya</i>	उभयतो हेतुमानर्थः संशयः ।
(N) 24.	<i>saṃsaya</i>	उभयहेतुदस्सनं 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>	संवण्णना व्याख्यानम् ।

Sequence	Terms	Definitions
(S) 26.	<i>svasaṃjñā</i>	अन्यशास्त्रासामान्या स्वसंज्ञा ।
(V) 26.	<i>svasaṃjñā</i>	परैरसम्मतः शब्दः स्वसंज्ञा ।
(A) 23.	<i>svasaṃjñā</i>	परैरसमितः शब्दः स्वसंज्ञा ।
(N) 26.	<i>anaññā sakasaññā</i>	भूतानं पवत्ता आरम्भचिन्ता अनञ्ज्ञा, सस्स सा- धारणा सकसञ्ज्ञा ।
(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>	लोकप्पतीतम् उदाहरणं निब्बचनं ।
(S) 28.	<i>nidarśana</i>	दृष्टान्तव्यक्तिर्निदर्शनम् ।
(V) 28.	<i>nidarśana</i>	तद्युक्तिनिदर्शनं दृष्टान्तः ।
(A) 21.	<i>nidarśana</i>	दृष्टान्तो दृष्टान्तयुक्तो निदर्शनम् ।
(N) 28.	<i>nidassana</i>	दिट्ठन्तसंयोगो निदस्सनं ।
(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 विकप्पो ।
(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>	अनुक्तकरणमूह्यम् ।
(N) 32.	<i>upānīya</i>	यद् अनिर्दिष्टं बुद्धिया अवगमनीयं, तद् उपानी- यन् 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-* *saṃhitās*, as well as the *Aṣṭāṅgasaṅgraha*. The *Carakasamhitā* and *Aṣṭāṅgasaṅgraha* present an identical list of *tantrayuktis* contained in a stanza of four *anuṣṭubh* verses.<sup>831</sup> However, unlike the *Suśrutasamhitā* 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 *Aṣṭāṅgasaṅgraha* (150–153, chapter 50, *Uttarasthāna*). The same has been quoted by Aruṇadatta in his commentary *Sarvāṅgasundarī* on the *Aṣṭāṅgahrdaya* while elucidating the concept of *tantraguṇa* (qualities of the system)<sup>832</sup> and by Śrīdāsa Paṇḍita in the prefatory section of his commentary *Hṛdayabodhikā* on the *Aṣṭāṅgahrdayasamhitā*.<sup>833</sup> Notably, this list consists of 36 *tantrayuktis* instead of 32 found in the *Suśrutasamhitā* 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 *Aṣṭāṅgahrdayasamhitā*, *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.<sup>834</sup> The

831 तत्राधिकरणं योगो हेत्वर्थोऽर्थः पदस्य च ।

प्रदेशोद्देशनिर्देशवाक्यशेषाः प्रयोजनम् ॥

उपदेशापदेशातिदेशार्थापत्तिनिर्णयाः ।

प्रसङ्गैकान्तनैकान्ताः सापवर्गो विपर्ययः ॥

पूर्वपक्षविधानानुमतव्याख्यानसंशयाः ।

अतीतानागतापेक्षास्वसंज्ञोह्यसमुच्चयाः ॥

निदर्शनं निर्वचनं नियोगोऽथ विकल्पनम् ।

प्रत्युत्सारस्तथोद्धारः सम्भवस्तन्त्रयुक्तयः ॥

*Aṣṭāṅgasaṅgraha* 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.

832 Aruṇadatta on the *Aṣṭāṅgahrdayasamhitā* 6.40.78 (Ah 1939: 946).

833 AHS 1940: 1–2.

834 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: षट्त्रिंशद्विचित्राभिर्भूषितं 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.<sup>835</sup> 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 षट्त्रिंशता विचित्राभिर्भूषितं तन्त्रयुक्तिभिः। 8.12.41a (Ca 1941: 735). In the same edition, the reading of Cakrapāṇi's *Āyurvedadīpikā* supports the reading: षट्त्रिंशत्तन्त्रयुक्तिभिर्भूषितमपूरयदृढबल 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 षट्त्रिंशत्तन्त्रयुक्तयो व्याहृताः।<sup>836</sup> Moreover, the edition of Rāmaprasāda Vaidyopādhyāya reads the half-verse as— पञ्च-त्रिंशद्विचित्राभिर्भूषितं तन्त्रयुक्तिभिः.<sup>837</sup> Rāmaprasāda Vaidyopādhyāya excludes *ūhya*.<sup>838</sup> The same reading is found in Satīśacandra Śarmā's third edition of the *Carakasamhitā*.<sup>839</sup> 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 Ḍṛḍhabala, who lived in a town called Pañcanada sometime between 300 and 500 AD.

Cf. अखण्डार्थं दृढबलो जातः पञ्चनदे पुरे ।

कृत्वा बहुभ्यस्तन्त्रेभ्यो विशेषोच्छशिलोच्चयम् ॥

सप्तदशौषधाध्यायसिद्धिकल्पैरपूरयत् ।

8.12.39–40a (Ca 1941: 735)

835 षट्त्रिंशता विचित्राभिर्भूषितं तन्त्रयुक्तिभिः ॥ 8.12.70a (Ca 1933: 972).

836 Ca 1941: 737.

837 Ca 1911: 1913.

838 Understanding the *tantrayukti samuccaya* as *asamuccaya*, he reads the verse where *ūhya* appears as— अतीतानागतापेक्षा स्वसंज्ञा ह्यसमुच्चयाः. Surely, this reading is erroneous as the plural ending after *samuccaya* does not make sense.

839 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.”<sup>840</sup>

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, पञ्चत्रिंशत्तन्त्रयुक्तिभिर्भूषितमपूरयद्दृढबल इति योजना.<sup>841</sup> Again, after the illustrations of the 36 *tantrayuktis* it reads, इत्येताः षट्त्रिंशत्तन्त्रयुक्तयो व्याहृताः.<sup>842</sup> In his edition of the *Tantrayuktivicāra*, Muthuswami also mentions that 35 *tantrayuktis* are reckoned in the *Carakasamhitā*.<sup>843</sup> Jivānanda Vidyāsagara’s edition gives no number at all— तथा च ता विचित्राभिर्भूषितं तन्त्रयुक्तिभिः.<sup>844</sup>

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.<sup>845</sup> 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

840 “গঙ্গাধর পাঠ— তন্ত্রযুক্তি ছত্রিশ প্রকার। তিনি ঢীকাতে সংশয়কে দুই বার উল্লেখ করিয়া ছত্রিশ প্রকার গণনা করিয়াছেন, কিন্তু তাঁহার মূলে পঁয়ত্রিশ প্রকার আছে; গ্রন্থান্তরে ৩৪ প্রকার আছে; তাহাতে ‘অপদেশ’ ধৰ্তব্য হয় নাই। এই অনুবাদের মূলে চতুস্ত্রিংশ বা ষট্‌ত্রিংশ স্থলে পঞ্চত্রিংশ লিখিত হইল।” Ca 1923: 1022.

841 Ca 1928-33: III, 3814.

842 Ca 1928-33: III, 3822.

843 ‘পঞ্চত্রিংশবিচিরাभिर्भूषितं तन्त्रयुक्तिभिः।’ इति चरके। द्वात्रिंशदिति सुश्रुतः। (TYV: 2, fn. 2).

844 Ca 1877: 961.

845 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),<sup>846</sup> who authored his commentary *Sarvāṅgasundarī* on the *Aṣṭāṅgaḥṛdaya* 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).<sup>847</sup>

Aruṇadatta, while discussing the concept of *tantraguṇa* at the end of the *Aṣṭāṅgaḥṛdaya*, provided an elaborate description of *tantrayuktis*, considering them as part of a system of ninety-five *tantraguṇas*. Śrīdāsa Paṇḍita (14th century), a commentator on the *Aṣṭāṅgaḥṛdaya*, echoed Aruṇadatta's exploration of *tantrayuktis* in the beginning of his commentary, *Hṛdayabodhikā*.<sup>848</sup> Thus, both Hariścandra and Śrīdāsa Paṇḍita 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

<sup>846</sup> [HIML](#): IA, 663–664.

<sup>847</sup> 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 युक्तयोऽधिकरणाद्याश्चत्वारिंशत् ।... युक्तयस्तावदधिकरणं योगो हेत्वर्थ उद्देशो [निर्देश] उपदेशोऽपदेशोऽतिदेशः प्रदेशो निर्णयोऽर्थापत्तिर्वाक्यशेषः प्रयोजनं प्रसङ्ग एकान्तोऽनेकान्तो विपर्ययोऽपवर्गः पूर्वपक्षो विधानमनुमतं व्याख्यानं परिप्रश्नो व्याकरणमतीतापेक्षणमनागतापेक्षणं संशयः स्वसंज्ञोद्भवः समुच्चयो निदर्शनं निर्वचनं नियोगो विकल्पः प्रत्युत्सार उद्धारः सम्भवो व्युत्क्रान्ताभिधानं हेतुरिति ।

<sup>848</sup> [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 *vyutkrāntābhidhāna* under the *tantrayuktis uddeśa*, *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 *Jalpakaḥpataṛu*, 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 *Tantrayuktivivāra* 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 Bhiṣagārya (also known as Nārāyaṇa Bhiṣaj). Both Nīlamegha and the author of *Tantrayukti* are likely from Kerala or coastal Karnataka.<sup>849</sup> According to Kolatteri Śaṅkaramenon and Meulenbeld,

<sup>849</sup> Kolatteri Śaṅkaramenon, the first editor of the *Tantrayuktivivāra*, believes that Nīlamegha hails from Kerala. This conclusion is drawn from Nīlamegha's reference to his guru as Sundara, whom Śaṅkaramenon identifies as the same individual credited with composing the *Lakṣaṇāmṛta*, a treatise on toxicology. This assertion is plausible because the only known manuscript of *Tantrayuktivivāra* 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.<sup>850</sup> The *Tantrayukti* was very likely composed after the sixteenth century.<sup>851</sup>

Nīlamegha's *Tantrayuktivīcāra* 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 *pūrvarūpa sandhi*— *sāpavargah + aviparyayah → sāpavargo viparyayah* (See footnote 831.).

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 *Tantrayuktivīcāra* because the available manuscripts were mostly corrupt.<sup>852</sup> It is evident that there are substantial reproductions of parts of the *Tantrayuktivīcāra* and its autocommentary. The total number of *tantrayuktis* and their enumeration remains identical to that of the *Tantrayuktivīcāra*. What distinguishes it from the *Tantrayuktivīcāra* is the incorporation of a list of other *tantraguṇas* and 14 *tantradoṣas*. 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 Gokaṇṇa which is in coastal Karnataka. (TY: 30).

850 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, HIML: IIA, 143.)

851 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 Kairālī commentary on the *Aṣṭāṅgahṛdayasaṃhitā* frequently quotes from Bhiṣagārya's *Abhidhānamāñjarī*, 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 Kairālī (HIML: IA, 675). Moreover, he views *Abhidhānamāñjarī* as a work composed after the sixteenth century, citing details within it that affirm its posteriority to the *Rājanighaṇṭu* and *Bhāvaprakāśa* (HIML: IIA, 442).

852 वैद्यनाथोपसृष्टानां लक्ष्यलक्षणवासुषाम् ॥  
तासां प्रायः प्रकाशानां दुर्लैखापङ्कदूषणात् ।  
क्रियते साम्प्रतं कृच्छ्रादुद्धृत्य परिमार्जनम् ॥  
TY: 1

*vyākhyā*, 7 types of *kalpanā*, 20 types of *āśraya*, and 17 types of metaphoric and metonymic devices, such as *tācchīlyā* 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*, *Suśrutasaṃhitā*, *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 *Suśrutasaṃhitā* 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.<sup>853</sup> Even though there are sometimes different *tantrayuktis* enumerated in different lists, the total count always remains consistent at 32. As demonstrated in Table 5, 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-saṃhitā*, the commentaries on the *Caraka-saṃhitā*, *Aṣṭāṅgasaṅgraha* and *Aṣṭāṅgahrdayasaṃhitā* and the two monographs, the *Tantrayuktivicāra*

<sup>853</sup> तद् द्वात्रिंशद् युक्तियुक्तम् । (5.1.3 Kangle 1965: 1, 280) “that (*Arthaśāstra*) is furnished with thirty-two logical methods of the system”, तत्र द्वात्रिंशत् तन्त्रयुक्तयो भवन्ति । (*Suśrutasaṃhitā* 6.64.2) “there are thirty-two logical methods of the system”, battiṃsa 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*, *Carakasamhitā* and Aruṇadatta's commentary on the *Aṣṭāṅgahrdayasamhitā*. It remains unclear whether these verses initially appeared in the Dr̥ḍhabala's redaction of the *Carakasamhitā* 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 *Suśrutasamhitā*, 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 *Suśrutasamhitā* such as in Singhal and J. Mitra 1980: 171–172, and P. V. Sharma 1999–2001: 3, 631–639; in translations of the *Carakasamhitā* such as in R. K. Sharma and Dash 2006: 436–444 and in Shree Gulabkunverba Ayurvedic Society 1949: 1050, in the translation of the *Arthaśāstra* such as in Shamasastri 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 Prets 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 Samhitā* in comparison with their definitions in other texts. As indicated in Table 5, the definitions of *tantrayuktis* in the *Suśrutasamhitā* 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 *Suśrutasaṃhitā*, 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 *Suśrutasaṃhitā* 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.<sup>854</sup> Clearly, *adhikaraṇa* is the topic or theme.

Cakrapāṇi and Gaṅgādhara define *adhikaraṇa* in almost the same way as does the *Suśrutasaṃhitā*.<sup>855</sup> 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*).<sup>856</sup> Śrīdāsa Paṇḍita follows Aruṇadatta.<sup>857</sup> 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.<sup>858</sup> Thus disease is the *adhikaraṇa* or theme of their discussion. Indu identifies *adhikaraṇa* as a binding force that links

<sup>854</sup> They are chapters 63 and 66 in A (Su 1938: B).

<sup>855</sup> यमर्थमधिकृत्य प्रवर्तते कर्ता । यथा “विघ्नभूता यदा रोगा” इत्यादि । अत्र रोगादिकमधिकृत्यायुर्वेदो महर्षिभिः कृत इति ‘रोगाः’ इत्यधिकरणम् । *Āyurvedadīpikā* (Ca 1941: 736). तद् यमर्थमधिकृत्योच्यते; *Jalpakaḥpataru* (Ca 1928-33: III, 3815).

<sup>856</sup> तत्र अधिकरणं नाम, यदधिकृत्य प्रवर्तते शास्त्रं स्थानमध्यायं प्रकरणं वाक्यं वा ।... (Ah 1939: 947).

<sup>857</sup> AHS 1940: 2.

<sup>858</sup> 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, *adhikaraṇa* as an introductory reference and it exposes a general statement to a specific context.<sup>859</sup>

Nīlamegha defines *adhikaraṇa* using the Paninian terminology. According to him, *adhikāraṇa* is the locus in which the *tātparya*, “reference” lies.<sup>860</sup> *Adhikaraṇa* is one of the six *kāraka*-s (a sort of semantic roles recognized by Sanskrit grammarians). Pāṇini calls it a locus (*ādhāra*).<sup>861</sup> 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 adhikaraṇa*. Patañjali considers *vaiśayika* as one of the three types of *adhikaraṇa*.<sup>862</sup> Nīlamegha applies this idea to his definition of the *tantrayukti adhikaraṇa*. He quotes *Aṣṭāṅgahṛdaya-saṃhitā Sūtrasthāna* 1.5b-6a and explains how the eight limbs of Āyurveda serve as the *adhikaraṇas* of *cikitsā* “treatment”. In Nīlamegha’s understanding, *adhikaraṇa* “theme” is the domain of a reference. The *Tantrayukti* repeats Nīlamegha’s idea but it also adds different types of *adhikaraṇa* as suggested by Aruṇadatta.

In the *Tolkāppiyam*, however, the equivalent expression for this *tantrayukti* remains unclear, as commentators, namely Iḷampūraṇar and Pērācīriyar, list the item differently. In Sastri’s translation of the *Tolkāppiyam*, *adhikaraṇa* was identified with *atikāra muraḷai*, the second element in Iḷampūraṇar’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.”<sup>863</sup> However, Dikshitar, in his brief article on the *tantrayuktis*, equates *adhikaraṇa* with *nutaliyatū arital*, the first element in Pērācīriyar’s list, and translates it as “that division of a book which centers around a chief topic and deals wholly with that topic.”<sup>864</sup> Clearly, Dikshitar’s interpretation stands close to our definition of *adhikaraṇa*. 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*.<sup>865</sup>

The translators usually translated this *tantrayukti* as “topic” or “subject

859 अधिकरणं प्रस्तावः सामान्येनोक्तमप्यर्थजातं यद्वलाद्विशेषेऽवस्थाप्यते तदधिकरणम् । (As 1980: 959).

860 तत्राधरोऽधिकरणं तात्पर्यं तत्र तिष्ठति । 1 TYV: 2.

861 आधरोऽधिकरणम् । *Aṣṭādhyāyī* 1.4.45.

862 On *Aṣṭādhyāyī* 6.1.72 *Mahābhāṣya*: 3, 51.

863 Sastri 2002: 233.

864 Dikshitar 1930: 85

865 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 Ḍalhana with a minor variation.<sup>866</sup> 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*.<sup>867</sup>

For illustration, a verse from chapter 18 of the *Cikitsāsthāna* is quoted in the *Suśrutasamhitā*—

तैलं पिबेच्चामृतवल्लिनिम्बहंसाह्वयावृक्षकपिप्पलीभिः ।  
सिद्धं बलाभ्याञ्च सदेवदारु हिताय नित्यं गलगण्डरोगे ॥<sup>868</sup>

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*

<sup>866</sup> See 6.65.9 (*Su* 1938: 815).

<sup>867</sup> See Table 5.

<sup>868</sup> 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*.<sup>869</sup> 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.<sup>870</sup> In the second alternative, *yoga* is reasoning (*yukti*) having five types: (1) *pratijñā* “proposition”, (2) *hetu* “reason”, (3) *udāharaṇa* “exemplification” (4) *upanaya* “application”, and (5) *nigamana* “conclusion”, resembling the five-membered syllogism of inference (*anumāna*) in the Nyāya-Vaiśeṣika school.<sup>871</sup> Śrīdāsa Paṇḍita’s comment is similar to that of Aruṇadatta.<sup>872</sup> 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.<sup>873</sup> Cakrapāṇi, while defining *yoga* in a fashion similar to the *Suśrutasamhitā*, exemplifies it as a connection between five logical elements, namely *pratijñā*, *hetu*, *udāharaṇa*, *upanaya* and *nigamana*, conflating the definition of *yoga* with Hariścandra’s second alternative i.e. *yoga* is reasoning (*yukti*).<sup>874</sup> Nīlamegha defines *yoga* as connecting words one by one coherently.<sup>875</sup> 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

869 योगो नाम योजना ग्रन्थानां यथार्थसूत्रभाष्यसूत्रयोः... पञ्चलक्षणो वा योगः। प्रतिज्ञाहेतूदाहरणनिगमनानि... यद् इह युज्यते स योग इत्येके। (MS Jamnagar GAU 114, p.5.)

870 योगो नाम योजना, उद्देशनिर्देशयोः सूत्रभाष्ययोर्वा। *Sarvāṅgasundarī* on 6.40.80 (Ah 1939: 947).

871 युक्तिर्वा योगः, प्रतिज्ञा हेतुर्दृष्टान्त उपनयो निगमनमिति पञ्चविधः। 6.40.80 (Ah 1939: 947).

872 AHS 1940: 2.

873 योगो नाम योगः सम्बन्धः स च पदार्थयोर्वाक्यार्थयोर्वा। *Śaśilekhā* on 6.50.150aa (As 1980: 959).

874 योगो नाम योजना व्यस्तानां पदानामेकीकरणम्। उदाहरणं तावद्यथा प्रतिज्ञाहेतूदाहरणोपनयनिगमनानि। 8.12.41 (Ca 1941: 736).

875 योगः पदानामेकैकमर्थोचित्येन योजना। 2 TYV: 3.

and the discourse.<sup>876</sup> Neither V. R. Ramachandra Dikshitar nor P. S. Subrahmanya Sastri identified the *tantrayukti yoga* with any *utti* mentioned in the *Tolkāppiyam*.<sup>877</sup>

The word *yoga* derives from the Sanskrit root  $\sqrt{\text{yuj}}$  “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.<sup>878</sup> Hence, it refers to a morphosemantic or syntaco-semantic connection. Patāñjali uses this term several times in his *Mahābhāṣya*. In the *Suśrutasamhitā* 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 *Suśrutasamhitā*, 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. 261), *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 *Suśrutasamhitā* dedicates more words to describing this *tantrayukti* than any other early texts.

<sup>876</sup> TYV: 3.

<sup>877</sup> Chevillard 2009: 84.

<sup>878</sup> 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.<sup>879</sup> Ḍalhaṇa also supports this perspective, indicating that the term *padārtha* refers to a specific meaning of a word or words.<sup>880</sup>

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 Ḍalhaṇa. 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 Ḍalhaṇa’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*.<sup>881</sup> The *Viṣṇudharmottarapurāṇa* adopts a definition of *padārtha* close to this variant reading.<sup>882</sup>

The *tantrayukti padārtha* is illustrated with two examples in the *Suśrutasaṃhitā*. In the first example, three polysemous words—*sneha*, *sveda* and *abhyañjana*—are provided. Ḍalhaṇa gave various meanings of these words—*sneha* can mean lubricity or grease or affection; *sveda* can mean sauna either with fire (*sāgni*) or without fire (*niragni*); *abhyañjana* may mean the black

<sup>879</sup> See fn. 933.

<sup>880</sup> अधुना बहुषु पदार्थेषु निर्धार्य विशिष्टपदार्थग्रहणाय पदार्थबहुत्वं प्रतिपादयति— अपरिमिता इत्यादि । Ḍalhaṇa on 6.65.10 (Su 1938: 816).

<sup>881</sup> अन्ये तु सूत्रपदे इति पठित्वा व्याख्यानयन्ति--- सूत्रस्य पदं सूत्रपदं तस्मिन् योऽर्थः स पदार्थः । fn.2 (Su 1938: 813).

<sup>882</sup> See table 5.

eye make-up or oil rub (*abhyāṅga*).<sup>883</sup> In the case of such polysemy, *padārtha* or relevant meaning will be the meaning which coheres with the prior and subsequent elements (*pūrvāparayogasiddha*). The definition of this *tantra-yukti* in *Saddanīti* corresponds to this explanation.<sup>884</sup> 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 *Suśrutasaṃhitā* is talking about the origin of *āyurveda*, specifically. The same issue is also addressed by Ḍalhaṇa 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.<sup>885</sup> 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.<sup>886</sup> 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 *Bṛhatrayī* 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

883 तत्र स्नेहशब्दे निर्दिष्टे हि गुणप्रेमसर्पिषां त्रयाणामर्थानामुपपत्तिर्दृश्यते, स्वेदशब्देनापि साग्निरग्निप्रयोरुष्मणोः प्राप्तिः, अञ्जनशब्देनापि नयनाञ्जनाभ्यङ्गयोः प्राप्तिः। Ḍalhaṇa on 6.65.10 (*Su* 1938: 816).

884 See table 5.

885 पदावधिकः पदार्थः। (15.1.10 Kangle 1965: 1, 280).

886 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*).<sup>887</sup> 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.<sup>888</sup> 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.<sup>889</sup> Gaṅgādhara, however, defined *padārtha* in the line of the *Suśrutasaṃhitā* considering *padārtha* as relevant word sense.<sup>890</sup>

Nīlamegha presents a distinct perspective, defining *padārtha* as polysemy within a given context.<sup>891</sup> In his autocommentary, he also acknowledges another viewpoint that perceives *padārtha* as synonymy within a context.<sup>892</sup> 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.<sup>893</sup> Neither V. R. Ramachandra Dikshitar nor P. S. Subrahmanya Sastri identified the *tantrayukti padārtha* with any *utti* mentioned in the *Tolkāppiyam*.<sup>894</sup>

From the discussion above, it is clear that *Suśrutasaṃhitā*'s understanding of the *tantrayukti padārtha* is distinct from its definition offered

887 पदार्थो नाम य एकेन पदेनानेकार्थो गम्यते । यथा द्रव्यं गुणः कर्म सामान्यं विशेषः समवायः । MS Jam-nagar GAU 114, p.6.

888 पदार्थो नाम येनार्थो गम्यते । यथा गुर्वादयो गुणशब्दादवगम्यते । *Śaśilekhā* 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).

889 पदस्य पदयोः पदानां वाऽर्थः पदार्थः । तत्र द्रव्यमिति पदेन खादयश्चेतनाषष्ठा उच्यन्ते; पदयोरर्थो नाम यथा—'आयुषो वेद' इति पदयोरायुर्बोधकं तन्त्रमित्यर्थः, एवं पदानामप्यर्थ उदाहार्यः । *Āyurvedadīpikā* on 8.12.41 (*Ca* 1941: 736).

890 अर्थः पदस्य चेति पदार्थो नाम तन्त्रयुक्तिः सा योऽर्थोऽभिहितः सूत्रे पदे वा । पदार्थस्त्वनेकस्तत्र योऽर्थः पूर्वापरयोगसिद्धो भवति सोऽर्थो ग्राह्यः । *Jalpakaḥpataru* on (*Ca* 1928-33: 3, 3816).

891 पदार्थस्तु पदैक्येऽपि भिन्नमर्थं प्रकाशयेत् । 4 *TYV*: 4.

892 केचित्तु "पदार्थः पदभेदेऽपि न भेदः पुनरर्थतः ।" *TYV*: 5.

893 पदार्थस्तु य ऐक्येऽपि भिन्नमर्थं प्रकाशयेत्  
...पदार्थोऽपि च भेदेऽपि न भेदः पुनरर्थतः ।  
पदेन योऽर्थो ज्ञायते यथा गुर्वादयो गुणे ॥

*TY*: 8-10.

894 Chevillard 2009: 84.

by the later commentators of the works of Dṛḍhabala and Vāgbhaṭa. The *Arthaśāstra*, which most often defines the *tantrayuktis* similarly to the *Suśrutasamhitā*, provides a definition of *padārtha* that is closer to the understanding of the commentators such as Hariścandra and so on. In the *Suśrutasamhitā*, *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 *Suśrutasamhitā*, *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 Dikṣita uses the term *hetvartha* to mean simply the sense of a cause.<sup>895</sup> As a *tantrayukti*, *hetvartha* is a logical device that serves as the purpose (*artha*) of a reason (*hetu*).

The *Suśrutasamhitā* 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.<sup>896</sup> The *Suśrutasamhitā* does not mention that water moistens a lump of earth; this is understood from general empirical knowledge. The *Suśrutasamhitā* prescribes moistening of a wound in certain cases but does not explicitly state how

<sup>895</sup> हेत्वर्थे तृतीया स्यात् | SiddhKau: 137.

<sup>896</sup> Cf. अत्र बाह्येन मृत्पिण्डदृष्टान्तेन माषदुग्धयोगादिभिराभ्यन्तरो व्रणप्रक्लेदः 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.<sup>897</sup> 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.<sup>898</sup> The author of the *Viṣṇudharmottarapurāṇa* as well as commentators such as Hariścandra, Cakrapāṇi, Indu, Aruṇadatta, and Śrīdāsa Paṇḍita define this *tantrayukti* similarly.<sup>899</sup> 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*.<sup>900</sup> This definition by Nīlamegha is not found elsewhere. This may explain why the author of the *Tantrayukti* does not refer to this

897 The 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 5.

898 यदन्यदुक्तमन्यार्थसाधकं भवति स हेत्वर्थः। 6.65.11 (Su 1938: 813). The testimonium in Gaṅgādhara's *Jalpakaḥpātara* supports the reading of (Su 1938). In his own definition, Gaṅgādhara merely reproduces the definition of the *Suśrutasamhitā*. Ca 1928-33: 3, 3815.

899 The 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 यदेकत्रोच्यमानमन्यत्रापि तथैवोपयुज्यते। *Śaśilekhā* 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).

900 हेत्वर्थो 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.<sup>901</sup> Neither V. R. Ramachandra Dikshitar nor P. S. Subrahmanya Sastri identified *hetvartha* with any *utti* mentioned in the *Tolkāppiyam*.<sup>902</sup>

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."<sup>903</sup> 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*).<sup>904</sup> 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*.<sup>904</sup> They are also similarly defined and exemplified in the *Yuktidīpikā*.<sup>905</sup> Commentators on the works of Dṛḍhabala and Vāgbhaṭa also defined *uddeśa* and *nirdeśa* similarly.<sup>906</sup>

901 हेतुना सह यत्रोक्तिः स हेत्वर्थः प्रकीर्तितः ॥ TY: 8.

902 Chevillard 2009: 84.

903 Olivelle 2013: 436.

904 See table 5.

905 *Yuktidīpikā*: 7.

906 उद्देशो नाम सङ्क्षेपाभिधानम्...निर्देशो नाम विस्ता... MS Jamnagar GAU 114 p. 6. उद्देशो नाम सङ्क्षेपाभिधानम्...निर्देशो नाम संख्येयोक्तस्य (सङ्क्षेपोक्तस्य ?) विवरणम्। *Āyurvedadīpikā* on 8.12.42 (Ca 1941: 736). उद्देशो नाम सङ्क्षेपाभिधानम्...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.<sup>907</sup>

There is a difference between the examples of *uddeśa* and *nirdeśa* in the *Suśrutasaṃhitā* and other texts. In the *Suśrutasaṃhitā*, 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, Aruṇadatta and Śrīdāsa Paṇḍita 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 सूक्ष्मश्चलोऽनिलः।, “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 *Suśrutasaṃhitā*, 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.<sup>908</sup> He also provides a versified definition of these two *tantrayuktis*, in addition to repeating Nīlamegha's statements.<sup>909</sup> Nīlamegha also defined these *tantrayuktis* in a similar fashion.<sup>910</sup> 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। *Jalpakaḥpataru*, Ca 1928-33: 3, 3816.

907 उद्देशो नाम यत्रार्थानां शब्दमात्रेणैव कीर्तनमुद्देशः।...निर्देशो नाम यच्छब्दमात्रेण निर्दिष्टानां स्वरूपविशेषप्रदर्शनाय पुनः कीर्तनं निर्देशः। *Śaśilekhā* on 6.50.150ba (As 1980: 960).

908 उद्देशनिर्देशकयोरन्योन्यापेक्षिता भवेत्।

यत्तदोरिव नित्यैव शास्त्रे सर्वत्र सर्वदा ॥

TY: 12.

909 प्राक् सङ्क्षेपेण कथनमुद्देश इति कीर्तितम्।

निर्देशो नाम तस्यैव विस्तरोक्तिरुदाहृतः ॥

TY: 12.

910 उद्देशः समवायोक्तिरिति प्राहुर्मनीषिणः।

निर्देशः स्याद् विवरणं पूर्वोक्तानामनुक्रमात् ॥

TYV: 6.

However, Sastri and Dikshitar differently identified these *tantrayuktis* with the *uttis* of *Tolkāppiyam*.<sup>911</sup>

*Uddeśa* is a common technical term in Sanskrit literature.<sup>912</sup> 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 (*parīkṣā*), and the triad of these three is called the course of the discipline.<sup>913</sup>

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*.<sup>914</sup> 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.”

911 Chevallard 2009: 85.

912 For more references to the term *uddeśa* check Prets and Prandstetter 1991–2006: 2, 28–30.

913 त्रिविधा चास्य शास्त्रस्य प्रवृत्तिः, उद्देशो लक्षणं परीक्षा चेति । तत्र नामधेयेन पदार्थमात्रस्याभिधानमुद्देशः । तत्रोद्दिष्टस्यातत्त्वव्यवच्छेदको धर्मो लक्षणम् । लक्षितस्य यथालक्षणमुपपद्यते न वेति प्रमाणैरवधारणं परीक्षा । Jośī 1922: 14.

914 तत्र परिप्रश्न उद्देशोऽन्तर्भवति, ... व्युत्क्रान्ताभिधानं निर्देशप्रभेदः *Āyurvedadīpikā* 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 स्नेहस्वेदाभ्यञ्जनेषु...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 Ḍalhaṇa’s commentary in which the exact clause was used.<sup>915</sup> 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 *Suśrutasaṃhitā* cited in the *Jalpakaḷpataru* read ऋग्वेदादयस्तु वेदाः, ê “*R̥gveda* and so on are the Vedas.” Traditionally, the *R̥gveda*, being the earliest composed *Veda*, is often considered the prototype. However, the selection of *Sāmaveda* as the prototype in the Nepalese Version of the *Suśrutasaṃhitā* is intriguing. This choice brings to mind a verse from the *Bhagavadgīta* where Kṛṣṇa

<sup>915</sup> तत्र योऽर्थ इत्यादि । पूर्वोक्तपरोक्तवाक्यसम्बन्धेनोपपन्नो योऽर्थो भवति स ग्रहीतव्य इत्यर्थः Ḍalhaṇa on 6.65.10 (Su 1938: 816).

declares, वेदानां सामवेदोऽस्मि<sup>916</sup>, "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.<sup>917</sup> However, this reading not just appear in the Nepalese version. Another early *Suśrutasaṃhitā* manuscript from 1595 also keeps the same reading.<sup>918</sup>

### ...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 *Jalpakaḥpataru*.

(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,<sup>919</sup> forms ending in *-a*,<sup>920</sup> ending in *-i*,<sup>921</sup> or with the ending *-ti* in the present stem,<sup>922</sup> or sometimes with indicatory sounds (*anubandha*) as found in the *Dhātupāṭha*<sup>923</sup> In the reading of the Nepalese version of the *Suśrutasaṃhitā*, 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:  $\sqrt{vid}$  "to know" belongs to the second class (*adādi* or the root class),  $\sqrt{vid}$  "to find,

916 10.22 [BhaGī](#): 456.

917 Cf. Madhusūdana Sarasvatī's comment on the same verse: चतुर्णां 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."

918 MS Jodhpur RORI 20060 f.265r5.

919 E.g. as  $\sqrt{gup}$ ,  $\sqrt{tij}$ , and  $\sqrt{kit}$  are mentioned in गुप्तिज्जिह्वयः सन् ([Aṣṭādhyāyī](#): 3.1.5).

920 E.g. as  $\sqrt{gam}$ ,  $\sqrt{han}$ ,  $\sqrt{vid}$ , and  $\sqrt{viś}$  are mentioned in विभाषा गमहनविदविशाम् ([Aṣṭādhyāyī](#): 7.2.68).

921 E.g. as  $\sqrt{mrj}$  is mentioned in मृजेर्विभाषा ([Aṣṭādhyāyī](#): 3.1.113).

922 E.g. as  $\sqrt{as}$ ,  $\sqrt{vac}$ , and  $\sqrt{khyā}$  are mentioned in अस्यतिवक्तिख्यातिभ्योऽङ् ([Aṣṭādhyāyī](#): 3.1.52).

923 E.g. as  $\sqrt{iṣ}$  is mentioned in इषुगमियमां छः ([Aṣṭādhyāyī](#): 6, 7.3.77). Cf. इषुमं 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).<sup>924</sup> 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 *Suśrutasaṃhitā*, is the *vid* of the 6th class. The form *vinda* is, therefore, the present stem of the sixth-class verb *vid*.<sup>925</sup> 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: विद विचारणे, विद् लाभे.<sup>926</sup> However, the citation from the *Jalpakaḥpataru* presents another variant— विद् विचारणे विद् विन्दति<sup>927</sup>. 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.<sup>928</sup>

### ...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:

1. पूर्वापरम् उपलक्ष्य विन्द विद इत्येतयोश्च धात्वोरेकार्थः । पश्चात् पदम् भवति आयुर्वेदोत्पत्तिमयं विवक्षुरिति (Nepalese version)

924 Cf. सत्तायां विद्यते ज्ञाने वेत्ति विन्दे विचारणे । विन्दते विन्दति प्राप्तौ श्यन्लुक्श्रमोष्विदं क्रमात् ॥ ([SiddhKau](#): 402).

925 Mentioning verbs in their present stem forms is not uncommon. The same 6th class verb  $\sqrt{vid}$  is mentioned as *vinda* in this rule: अनुपसर्गाह्मिन्विन्दधारिपारिवेद्युदेजितिसाति-साहिभ्यश्च ([Aṣṭādhyāyī](#): 3.1.138).

926 6.65.10 ([Su 1938](#): 813).

927 [Ca 1928-33](#): 3, 3816.

928 Scholars 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 विन्दतीत्येतयोश्च 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 (*Jalpakaḥpataru*)
4. विद 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 *Jalpakaḥpataru* and (*Su 1938*) adhere to the latter. Dalhaṇa'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.<sup>929</sup> Hence, the reading अनेकार्थयोः appears less tenable. But if we take the meaning of the word *artha* as “meaning,” the phrase विन्द विद 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 *GHañ*, 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 विद इत्येतयोश्च धात्वोरेकार्थः” and “पश्चात् पदम् भवति...”, whereas all other witnesses present a unified sentence. The fact of having two different sentences in the Nepalese

929 Cf. ‘आयुर्वेदमिच्छाम इहोपदिश्यमानम्’ इत्यस्मिन्नायुर्वेदशब्दः श्रूयते, अतोऽत्र वेद आयुर्वेद इत्यभिप्रायः ॥ (Dalhaṇa 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 testimony in the *Jalpakaḥpataru*. 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 माषदुग्धप्रभृतिभिर्ब्रणः क्लिद्यते

The reading माषदुग्ध...presents some challenges. The Nepalese manuscripts, (Su 1938), Ḍalhaṇa'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 *Suśrutasamhitā*, 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 *Suśrutasamhitā*.

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 *ṣa*.

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 *Jalpakaḥpataru* 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>adhikaraṇa</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>hetvārtha</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>atīkrāntāpekṣaṇa</i> )
7. prescription ( <i>upadeśa</i> )	24. doubt ( <i>saṁśaya</i> )
8. statement of reason ( <i>apadeśa</i> )	25. explication ( <i>vyākhyāna</i> )
9. indication ( <i>pradeśa</i> )	26. field-specific term ( <i>svasaṁjñā</i> )
10. prediction ( <i>atideśa</i> )	27. interpretation ( <i>nirvacana</i> )
11. exception ( <i>apavarga</i> )	28. illustration ( <i>nidarśana</i> )
12. ellipsis ( <i>vākyaśeṣa</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”.<sup>930</sup>
- 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.*

<sup>930</sup> Ḍalhaṇa 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 (*adhikaraṇa*)” refers to the object, with reference to which statements are made, such as flavour (*rasa*) or humour (*doṣa*).<sup>931</sup>
- 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.<sup>932</sup> 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.<sup>933</sup>

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

931 The 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

932 See note on 275.

933 Contrary 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, अपरिमिताश्च पदार्थाः, 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.<sup>934</sup> 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 (*hetvārtha*) 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 (*samuddēśa*) is a brief statement such as "spike (*śalya*)".<sup>935</sup>
- 13 A exposition (*nirdeśa*) is a detailed statement. For example, "in the body or exogenous".<sup>936</sup>
- 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.<sup>937</sup>
- 16 Substantiation of the subject matter through past evidence is "indication (*pradeśa*).". 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*).". For example, if his wind moves upwards, that will cause him to have colic."<sup>938</sup>

934 The 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 *Suśrutasaṃhitā* 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  $\sqrt{\text{vind}}$  or  $\sqrt{\text{vid}}$ ? Context ("prior and subsequent elements") can help us to know that "*veda*" means only "*āyurveda*" and that the *Suśrutasaṃhitā* is talking about the origin of *ayurveda*, specifically. This same issue is also addressed by Ḍalhaṇa at 1.1.1 ([Su 1938](#): 1).

935 Generally, शल्य refers to any painful foreign body embedded in the flesh that requires surgical removal.

936 This is a reference to 1.26.4 ([Su 1938](#): 121) where शल्य is described in more detail as being of two kinds.

937 A technical term also in Nyāyaśāstra (Jhalakīkar [1978](#): 54).

938 A 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; **emetic nut** 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?<sup>939</sup>
- 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

See chapter  
40 of Sūtra-  
sthāna.

vasā / me-  
das / maj-  
jan

939 The 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 यस् तु संशयम् अभिधीयते स पूर्वपक्षः, but our manuscripts are unanimous in their reading.

- sequentially in a chapter.
- 30 A statement like “Thus will be stated” is future reference (*anāg-atāpekṣaṇa*) 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 (*atīkrāntāpekṣaṇa*) such as when one says in the *Cikitsāsthāna*, “As mentioned in the *Sūtrasthāna*....”
- 32 An indication pointing to causes on both sides is doubt (*saṁśaya*). For example, a blow to the sole-heart (*talahr̥daya*)<sup>940</sup> 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 (*svasaṁjñā*) 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 part-ridge.<sup>941</sup>
- 38 A summarized statement is aggregation (*samuccaya*).<sup>942</sup> For example, let there be rice with meat broth, rice with milk, or burley with ghee.

Does  
bhūtādi a  
compound  
or it means  
ahankāra or  
ego?

triad? –DW

A meaningful reading of these two rules would be

940 तलहृदय is one of the muscle-group of lethal points mentioned in 3.6.7 (Su 1938: 370).

941 The 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 Hārānacandra’s commentary Bhaṭṭācārya 1908–11: 2, in the same way as in the Nepalese version.

942 As stated in the previous footnote, the example here is of विकल्प, not समुच्चय.

39 idaṃ vedaṃ veti vikalpaḥ / yathā rasodanaḥ kṣīrodanaḥ  
saghṛtā vā yavāgūr bhavatv iti //

38 saṃkṣepavacanāṃ samuccayaḥ / yathā māṃsavarge eṇa-  
hariṇalāvatittirāḥ 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      Kuṇṭe, Aṇṇā Moreśvara, Navare, Kṛṣṇaśāstrī, and Parādkar, Hariśāstrī (1939) (eds.), श्रीमद्वाग्भटविरचितम् अष्टाङ्गहृदयम्, श्रीमदरुणदत्तविरचितया सर्वाङ्गसुन्दराख्यया व्याख्यया, हेमाद्रिप्रणीतया आयुर्वेदरसायनाह्वया टीकया च समुल्लसितम् = *The Astāṅgahṛidaya* (6th edn., Mumbayyām: Nirṇayasāgara Press), ARK: <https://n2t.net/ark:/13960/t3tt6967d>.
- AHS 1940      Müss, C. N. Nārāyaṇan (1940) (ed.), श्रीमद्वाहटाचार्यप्रणीतम् अष्टाङ्गहृदयम् | श्रीदासपण्डितविरचितया हृदयबोधिकाख्यया व्याख्यया समलङ्कृतम् (Śrīcitṛāyurveda-granthamālā, 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-apte**.
- Arthaśāstra*      Kangle, R. P. (1960), *The Kauṭīliya Arthaśāstra* (University of Bombay Studies Sanskrit, Prakrit and Pali, 1; Bombay: University of Bombay), accessed 23/09/2021.
- As 1980      Āṭhavale, Ananta Dāmodara (1980) (ed.), अष्टाङ्गसङ्ग्रहः श्रीमद्वाग्भटविरचितः इन्दुव्याख्यासहितः [= *Vāgbhaṭa's Aṣṭāṅgasaṅgraha with Indu's Commentary*] (Pune: 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 Paṇṣīkar, Wāsudev Laxman Shāstrī (1936) (ed.), श्री-मद्भगवद्गीता श्रीमच्छाङ्करभाष्येण-आनन्दगिरिकृतव्याख्यायुजा संवलिता तथा नीलकण्ठी-भाष्योत्कर्षदीपिका-श्रीधरीयसुबोधिनी-अभिनवगुप्ताचार्यव्याख्या-श्रीमधुसूदनसरस्वतीस्वामिकृतगूढार्थदीपिकारव्यव्यासहिता तद्व्याख्यानेन श्रीधर्मदत्तशर्म(प्रसिद्धबच्चाशर्म)विरचित-गूढार्थतत्त्वालोकेन युता च (2nd edn., Bombay: Nirṇaya-Sāgar Press), ARK: <https://n2t.net/ark:/13960/t7jq76w6m>.
- Bhela 1921 Mookerjee, Ashutosh, and Ananta Krishna Shastri, Ved-antabisharad (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, **burn-clas, sast-desc16**).
- Bhela 2000 Krishnamurthy, K. H. (2000), *Bhela-saṃhitā. 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 अग्निवेश-नामधेयेन तत् शिषेण विरचिता चरकाभिधेयेन ऋषिणा प्रतिसंस्कृता (Calcutta: Sarasvatī Yantra), ARK: <https://n2t.net/ark:/13960/t0sq9gf44>.
- Ca 1904 Śarmā, Satīśacandra (1904) (ed.), चक्रमंशु (1st edn., Kalikātā: Bhaiṣajya Steam Machine Press), ARK: <https://n2t.net/ark:/13960/t51g4nm8m>.
- Ca 1911 Vaidyopādhyāya, Rāmaprasāda (1911) (ed.), चरकसंहिता । श्रीमन्महर्षिप्रवरचरकप्रणीता । पण्डितरामप्रसादवैद्योपाध्यायविरचितप्रसादनी-भाषाटीकासंहिता । (mumbayī: Kṣemarāja-Śrīkṛṣṇadāsaśreṣṭhin), ARK: <https://n2t.net/ark:/13960/t2r59q189>.
- Ca 1923 Śarmā, Satīśacandra (1923) (ed.), चक्रमंशु (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 भगवताग्निवेशेन प्रणीता महर्षिचरकेण दृढबलेन च प्रतिसंस्कृता चरकचतुरानन-श्रीमच्चक्रपाणिदत्तप्रणीतया आयुर्वेददीपिकाख्यटीकया महामहोपाध्याय-श्रीगङ्गाधरकविरत्नकविराजविरचितया जल्पकल्पतरुसमाख्यया टीकया च समलङ्कृता, 3 vols. (kalikātānagari: Dhanvantari Electric Machine Yantra).
- Ca 1933 Ācārya, Yādavaśarma Trivikrama (1933) (ed.), महर्षिणा अग्निवेशेन प्रणीता चरकदृढबलाभ्यां प्रतिसंस्कृता चरकसंहिता (3rd edn., Mumbayyām: Nirnaya Sagara Press), ARK: <https://n2t.net/ark:/13960/t42s3kk45>.
- Ca 1941 Ācārya, Yādavaśarma Trivikrama (1941) (ed.), महर्षिणा पुनर्वसुनोपदिष्टा, तच्छिष्येणाग्निवेशेन प्रणीता, चरकदृढबलाभ्यां प्रतिसंस्कृता चरकसंहिता, श्रीचक्रपाणिदत्तविरचितया आयुर्वेददीपिकाव्याख्यया संवल्लिता (3rd edn., Mumbayyām: 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/>.
- DED<sub>2</sub> 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, Paṇḍita-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, Veṇīmādhavaśāstrī, and Jośī, Nārāyaṇa Harī (1968), *आयुर्वेदीय महाकोशः अर्थात् आयुर्वेदीय शब्दकोशः संस्कृत-संस्कृत* (Mumbai: Mahārāṣṭra Rājya Sāhitya āṇi Saṃskṛti Maṇḍala), ARK: <https://n2t.net/ark:/13960/t22c41g8t>.
- Mānasollāsa* Shrigondekar, Gajanan K. (1925–61) (ed.), *मानसोल्लासः = Mānasollāsa [or Abhilaṣitārthacintāmaṇi] of King Someśvara* (Gaekwad's Oriental Series; Baroda: Oriental Institute), ARK: <https://n2t.net/ark:/13960/t87h8tn95>; v. 2: [ark:/13960/t3gz41v8m](https://n2t.net/ark:/13960/t3gz41v8m).
- MN<sub>1</sub> Ācārya, Yādavaśarma Trivikrama (1920) (ed.), *महामति-श्रीमाधवकरप्रणीतं माधवनिदानम् श्रीविजयरक्षित-श्रीकण्ठदत्ताभ्यां विरचितया मधुकोशाख्यव्याख्या, श्रीवाचस्पतिवैद्यविरचितया आतङ्कदर्पणव्याख्याया विशिष्टांशेन च समुल्लसितम् = Mādhavanidāna by Mādhavakara with the Two Commentaries, Madhukosha by Vijayarakshita & Shrikanthadatta and Ātānkadarpaṇa by Vāchaspati Vaidya* (1st edn., Bombay: Nirṇaya Sagara Press), ARK: <https://n2t.net/ark:/13960/t9z08jn5j>.

- MN<sub>3</sub> Ācārya, Yādavaśarma Trivikrama (1932) (ed.), *महामति-श्रीमाधवकरप्रणीतं माधवनिदानम् श्रीविजयरक्षित-श्रीकण्ठदत्ताभ्यां विरचितया मधुकोशाख्यव्याख्या, श्रीवाचस्पतिवैद्यविरचितया आतङ्कदर्पणव्याख्या विशिष्टांशेन च समुल्लसितम्* = *Mādhavanidāna by Mādhavakara with the Two Commentaries, Madhukosha by Vijayarakshita & Shrikanthadatta and Ātānkadarpaṇa 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 pereptive and comprehensive translation in English* (Madurai: MK Sripathi).
- 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.
- PWK Böhrling, 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.
- Śabdasindhu 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'Aggavaṃsa: III Sūttamālā (Pariccheda XX–XXVIII)* (Skrifter utgivna av Kungl. Humanistiska Vetenskaps-samfundet 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.), तत्त्वबोधिनीसमाख्यव्याख्यासंवलित सिद्धान्तकौमुदी नाम भट्टोजिदीक्षितप्रणीता पाणिनीयव्याकरणसूत्रवृत्तिः (3rd edn., Mumbai: 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>; HIML: IB, 311, edition b.
- Su 1931 Ācārya, Yādavaśarma Trivikrama (1931) (ed.), सुश्रुत-संहिता, वैद्यवरश्रीडल्हणाचार्यविरचितया निबन्धसंग्रहाख्यव्याख्यया समुल्लसिता, महर्षिणा सुश्रुतेन विरचिता, सूत्र-निदान-शारीर-चिकित्सा-कल्पस्थानोत्तरतन्त्रात्मकः. आचार्योपाह्वेन त्रिविक्रमात्मजेन यादवशर्मणा संशोधिता = *The Sushrutasaṃhitā of Sushruta with the Nibandhasaṅgraha Commentary of Shree Dalhaṇāchārya* (2nd edn., Mumbai: Pāṇḍuraṅga Jāvajī at the Nirṇayasāgarā-mudrāyantrālaye), ARK: <https://n2t.net/ark:/13960/t9j41sg94>, accessed 09/06/2020; HIML: IB, 312 edition \*v.
- Su 1938 Ācārya, Yādavaśarma Trivikrama, and Ācārya, Nārāyaṇa Rāma (1938) (eds.), श्रीडल्हणाचार्यविरचितया निबन्धसंग्रहाख्यव्याख्यया निदानस्थानस्य श्रीगयदासाचार्यविरचितया न्यायचन्द्रिकाख्यपञ्जिकाख्यव्याख्या च समुल्लसिता महर्षिणा सुश्रुतेन विरचिता सुश्रुतसंहिता (3rd edn., Bombay: Nirṇayasāgara Press), ARK: <https://n2t.net/ark:/13960/t09x0sk1h>; HIML: IB, 313, edition cc ('the vulgate').
- Su 1939 Ācārya, Yādavaśarma Trivikrama, and Śarman, Nandakiśora (1939) (eds.), सुश्रुतसंहितायाः सूत्रस्थानम्. श्रीचक्रपाणिदत्तविरचितया भानुमतीव्याख्याया समेतम् = *Sushrut-saṃhitā (sūtra Sthān) with Bhānumatī Commentary by Chakrapāṇi Datta with Introduction by Gaṇanāth Sen (Śrīsvāmī Lakṣmīrāma Nidhi Granthamālā = Shri Swāmī Lakshmi 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 Suśrutasaṃhitā of Suśruta with Various Readings, Notes and Appendix etc.* (Mumbāi: Nirṇayasāgarākhyamudraṇālaye), ARK: <https://n2t.net/ark:/13960/t8kd4jh7n>.
- TY Nārāyaṇa, Śaṃkaraśarman (1949), *Tantrayuktiḥ*, ed. Vayaskara N. S. Mooss (Vaidyasārathigranthāvaliḥ, 6; Koṭṭayanagaryāṃ: Vaidyasarathi Press), ARK: <https://n2t.net/ark:/13960/t6zx3wv30>.
- TYV Muthuswami, Nurani Easwara (1976) (ed.), *Tantrayuktivicāraḥ [by Nīlameghabhiṣaj]* (Kerala Praśāsanāyurveda Granthāvaliḥ, 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* = [*Viṣṇudharmottara-purāṇa*] (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: 139

Cambridge CUL Add.1693: 135

Hyderabad Osmania 137-3(b): 59

Jamnagar GAU 114: 269, 271f

Jodhpur RORI 20060: 276, 279f

Kathmandu KL 699: 14, 17, 54, 60, 138, 237

Kathmandu NAK 1-1079: 14, 23, 37, 55, 60

Kathmandu NAK 1-1146: 38

Kathmandu NAK 1/1648: 255

Kathmandu NAK 5-333: 14, 23, 55, 60, 135, 140, 160, 164

London BL IOLR 1842: 278f

MS Jamnagar GAU 114: 257, 262, 274

NAK 5-333: 152

Paris BNF Greek suppl. 247: 129

Thanjavur TMSSML 10773: 288





# General Bibliography

- Ācārya, Yādavaśarma Trivikrama (1933) (ed.), *महर्षिणा अग्निवेशेन प्रणीता चरकदृढबलाभ्यां प्रतिसंस्कृता चरकसंहिता* (3rd edn., Mumbayyām: Nirṇaya Sagara Press), ARK: <https://n2t.net/ark:/13960/t42s3kk45>.
- (1941) (ed.), *महर्षिणा पुनर्वसुनोपदिष्टा, तच्छिष्येणाग्निवेशेन प्रणीता, चरकदृढबलाभ्यां प्रतिसंस्कृता चरकसंहिता, श्रीचक्रपाणिदत्तविरचितया आयुर्वेददीपिकाव्याख्यया संवलिता* (3rd edn., Mumbayyām: Nirṇaya 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 संवलिता = the Suśrutasaṃhitā 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.
- 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* (Mongraph 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](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.
- Bailey, Harold W. (1970), "Vāsta," *Acta Orientalia*, 30: 20, ISSN: 0001-6438. DOI: <https://doi.org/10.5617/ao.5229>.
- Baingrigge 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>.
- 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 प्रथमखण्डम् सूत्रस्थानात्मकम् हाराणचन्द्रचक्रवर्तिकविराजविरचितसुश्रुतार्थसन्दीपनभाष्य-समेतम्...चन्द्रकान्त भट्टाचार्य-प्रमुखैः संशोधितम् = [The *Suśrutasaṃhitā* with the Commentary *Suśrutārthasandīpanabhāṣya* by *Hārāṇacandra Cakravartī*] (Kalikātā: Satya Press); edition "t" in HIML: 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 Suśrutasamhitā," *Academia Letters*. DOI: <https://doi.org/10.20935/AL2992>.
- Birch, Jason, Wujastyk, Dominik, Klebanov, Andrey, Rimal, Madhusudan, et al. (2021), "Dalhaṇa and the Early 'Nepalese' Version of the Suśrutasamhitā." 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.
- 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>.

- Brooks, Lisa Allette (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 Fayrer, 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>.
- 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 Taurinensia*, 8–9, URL: [http://www.asiainstitutetorino.it/Indologica/volumes/vol08-09/vol\\_08-09\\_art09\\_byrski.pdf](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%811iya%20%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](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:/13960/t5j969876](https://n2t.net/ark:/13960/t5j969876); v.2 [ark:/13960/toms3vr71](https://n2t.net/ark:/13960/toms3vr71); v.3 [ark:/13960/t7mp55t98](https://n2t.net/ark:/13960/t7mp55t98); v.4 [ark:/13960/t2p61wr9z](https://n2t.net/ark:/13960/t2p61wr9z); v.5 ; v.6 (1907) [ark:/13960/tojt8933k](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 Banarsidass), 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 Probat 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/s21qsb3jff1v>; 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 Religioin 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 Taurinensia*, 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 and 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.
- 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/s2sdmmt8nf8>.
- Froese, R., and Pauly, D. (2022) (eds.), “Fishbase: The Global Encyclopedia about Fish,” URL: <https://www.fishbase.org.au/v4>.
- Gaṇapatiśāstrī, T. (1920–25), *Āryamañjuśrīmūlakalpāḥ* (Trivandrum Sanskrit Series, 70; Anantaśayane: Rājākīyamudraṇayantrālaye), ARK: <https://n2t.net/ark:/13960/t4pk5sj0j>.
- Ghāṇekara, Bhāskara Govinda (1936–41), *महर्षिणा सुश्रुतेन विरचिता सुश्रुतसंहिता आयुर्वेदरहस्यदीपिकाख्यया हिन्दीव्याख्यया समुल्लसिता = Sushruta Saṃhitā with Hindi Commentary Named “Ayurveda Rahasyadīpikā”*, 2 vols. (1st edn., Lahore: Meharacandra Lakṣmaṇadāsa); no more published. Edition “ee” in HIML: IB, 313, 2: शारीरस्थानात्मकः द्वितीयो भागः = *Shārīrsthān* (1941), 2: सूत्रनिदानस्थानात्मकः प्रथमो भागः = *Volume 1, Sutra and Nidānsthān* (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>.
- 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, Tsering, and Willis, Michael (2018), "How to Use a Text and What to Expect: Translation of the Instructions Appended to the Ārya-tathāgatoṣṇīṣasītātapatre Aparajītamahāpratyaṃgīraparamasiddhānāma 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 latin ou 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 Nibandha 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.), *सुश्रुत आयुर्वेद. गुजराती भाषान्तर* = [*Suśrutasaṃhitā with a Gujarati Translation*] (Mumbai: Nirṇaya Sāgara Press), ARK: <https://n2t.net/ark:/13960/t08w8r74f>; edition \*r in HIML.
- 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 Suśruta-saṃhitā*] 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), *आयुर्वेदार्थ चन्द्रिका* [= *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 *Suśrutasaṃhitā*: 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 मारीचकश्यपेनोपदिष्टा ... हेमराजशर्मणा लिखितेन विस्तृतेन उपोद्धातेन सहिता ... सत्यपाल भिषगा कृतया विद्योतिनी हिन्दीव्याख्यया ... समुल्लसिता* (1st edn., Mumba: Nirṇayasāgara 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).
- 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 Uṣaybiʿah: His Life and Career," in Emily Savage-Smith (ed.), *A Literary History of Medicine – The 'Uyūn al-anbā' fī ṭabaqāt al-aʿtibā' of Ibn Abī Uṣaybiʿah*, 1 (Leiden: Brill), chap. 2, 13–26. DOI: [https://doi.org/10.1163/9789004545564\\_003](https://doi.org/10.1163/9789004545564_003).
- Hirschberg, Julius, and Leffler, Christopher T. (2024) (eds.), *A New History of Catract 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/t05z1bg4q>.
- (1897), *सुश्रुतसंहिता* = *The Suçruta-Saṃhitā or the Hindū System of Medicine According to Suçruta 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-bfcb-856e338b5486>, accessed 18/01/2025.
- Ihm, Sibylle (1995), *Der Traktat περί 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.alc.ucla.edu/>.

- Jhalakīkar, Bhīmācārya (1978), *न्यायकोशः (सकलशास्त्रोपकारकन्यायादिशास्त्रीयपदार्थप्रकाशकः)* = *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 (Samjīvanī) of Mallinātha, Edited with a Literal English Translation...* (4th edn., Bombay: B. D. Mulgaokar, of Gopal Narayen & Co), ARK: <https://n2t.net/ark:/13960/t3fz6x53f>.
- Kangle, R. P. (1965), *The Kauṭīliya 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 Suśrutasaṃhitā (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 Suśrutasaṃhitā, (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](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](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), "Garbhāvākṛāntau ('In the Garbhāvākṛānti'): Quotations from the Garbhāvākṛāntisūtra 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>.
- Kunjatal 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-rs-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 Waḥshīya 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 Indra-gopa," *Indologica taurinensia*, 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>.
- Maas, Philipp André (2008), "The Concepts of the Human Body and Disease in Classical Yoga and Āyurveda," *Wiener Zeitschrift für die Kunde Südasien = Vienna Journal of South Asian Studies*, 51: 125–62. DOI: <https://doi.org/10.1553/wzkslis123>.
- Mahādeva Śāstrī, K. (1958) (ed.), ജ്യോത്സനിക: വിഷവൈദ്യം *Jyotsnika (Viṣa Vaidya)* [*The Jyotsnikā of Kārāṭṭu Nārāyaṇan Nampūtir*] (Srī Vañci Setu Lakṣmī series, 9; 3rd edn., Trivandrum: The Government of His Highness The Maharaja 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 (2019), "Kaiṭabha, Poison and Death: Meanderings through Tradition," mAnasa-taraMgiNI Blog (1 Sept.), URL: <https://tinyurl.com/kaitabha>, accessed 31/01/2023.
- Manevskaia, 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 Błocerowicz 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 Mādhavanidāna 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>.
- (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.

- Meulenbeld, Gerrit Jan (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 Kauṭīliya 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 Vijayarakṣita and Śrīkaṇṭhadatta* (Ch. 1–10). Introduction, Translation, and Notes (Delhi: Motilal Banarsidass).
- (2011), "The Relationships between Doṣas and Dūṣyas: A Study on the Meaning(s) of the Root Murch-/mūrca," *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 Kauṭīliya* (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.

- 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 Tantrayukti-s," *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.
- (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>.
- Osbaldeston, 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: 0-620-23435-0, URL: <https://web.archive.org/web/20160301000627/http://panaceavera.com/demateriaindex.html>.

- 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 Nemacanda Granthamālā, 129; Solāpura: Seṭha Goviṃdajī Rāvajī Doṣī), 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: Araṇyakāṇḍa*, 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.), *Pramāṇakīrtiḥ. 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](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](https://n2t.net/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-समाख्यया व्याख्यया सहितम् तेनैव संशोधितम्* = [The *Carakasamhitā* edited by Kavirāja Gaṅgādhara with his Commentary *Jalpakalpatāru*] (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 Taurinensia*, 40, URL: [http://www.asiainstitutetorino.it/Indologica/volumes/vol40/14\\_ROSSI.pdf](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](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>.
- 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 Śrīkṛṣṇadāsa at Śrīveṅkaṭeśvara Press), ARK: <https://n2t.net/ark:/13960/t6n066p8x>; Volume 1 (sūtrasthāna): [ark:/13960/t6n066p8x](https://n2t.net/ark:/13960/t6n066p8x); vol. 2 (nidāna and śārīra): [ark:/13960/t3328jf4n](https://n2t.net/ark:/13960/t3328jf4n); vol. 3 (cikitsāsthāna and kalpasthāna): [ark:/13960/t5q87zp52](https://n2t.net/ark:/13960/t5q87zp52); vol. 4 (uttaratantra): [ark:/13960/t24b84s9c](https://n2t.net/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](https://doi.org/10.1163/9789004251410_014).
- Sastri, P. S. Subrahmanya (2002), *Tolkāppiyam. The Earliest Extant Tamil Grammar, with a Short Commentary in English: Volume II. Poruḷatikāram* (2nd edn., Chennai: The Kuppaswami Sastri Research Institute), ISBN: 81-85170-27-4, ARK: <https://n2t.net/ark:/13960/t7jq8k19s>; reprint of 1936 edition.
- Śāstrī, Paraśurāma (1931) (ed.), *दामोदरसूनुशार्ङ्गधराचार्यविरचिता शार्ङ्गधरसंहिता* [= *The Śārṅgadharasamhitā by Śārṅgadharā with the Commentaries of Āḍhamalla and Kāśīrāma*] (2nd edn., Mumbai: Nirṇayasāgara Press), ARK: <https://n2t.net/ark:/13960/t7wn11g9r>; 1st ed. 1920.
- 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 Uṣaybi‘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. Varanas: Chaukhambha 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/10.1163/15734210577996638>.
- (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/uuwxd2urvkke5uv/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>.



- Shamasastri, R. (1951), *Kauṭilya's Arthaśāstra* (4th edn., Mysore: Sri Raghuvir Printing Press), ARK: <https://n2t.net/ark:/13960/t04z1mp6c>.
- Sharma, Priya Vrat (1982), *Ḍalhaṇa and his Comments on Drugs* (Delhi: Munshiram Manoharlal).
- (1999–2001), *Suśruta-Saṃhitā, with English Translation of Text and Ḍalhaṇa's Commentary Alongwith (sic) Critical Notes*, 3 vols. (Haridas Ayurveda Series, 9; Varanasi: Chaukhambha Visvabharati), ARK: <https://n2t.net/ark:/13960/s2gpx8453k1>.
- Sharma, Priyavrat (1994), *Caraka-saṃhitā. Critical Notes (Incorporating the commentaries of Jejjāta, Cakrapāṇi, Gaṅgādhara and Yogīndranātha)* (Jaikrishnadas Ayurveda Series, 36; 1st edn., Varanasi, Delhi: Chaukhambha 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 Gulabkunverba 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 Gulabkunverba 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>.
- 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 *Suśrutasaṃhitā* 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 Banarsidass), ARK: <https://n2t.net/ark:/13960/t85h7f98n>.
- (1971), *Studies in the Geography of Ancient and Medieval India* (2nd edn., Delhi: Motilal Banarsidass), ARK: <https://n2t.net/ark:/13960/t72w2zd8w>.
- Śiromaṇi, Bharatacandra (1873) (ed.), *चतुर्वर्गचिन्तामणि-दानखण्डम्* (Calcutta: Asiatic Society of Bengal), ARK: <https://n2t.net/ark:/13960/t1rf9jd94>.
- Slaje, Walter (1995), "Ṛtú-, Ṛtv(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 Bheruṇḍā: 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 āyurvédique,” *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>.
- Srikantha Murthy, K. R. (1991), *Vāgbhaṭa’s Aṣṭāṅga Hṛdayam (Text, English Translation, Notes, Appendices and Indices)* (1st edn., Varanas: Krishnadas Academy).
- (2000–02), *Illustrated Suśruta Saṃhitā: Text, English Translation, Notes, Appendices and Index* (Jaikrishnadas Ayurveda Series, 102; 1st edn., Varanasi: Chaukhambha 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.
- Suvedī, K. S., and Tivārī, N. (2000) (eds.), *सौश्रुतनिघण्टुः ग्रन्थादौ विस्तृतेन ग्रन्थ-वैशिष्ट्यप्रकाशकेनोपोद्धातेन अवसाने च द्रव्याणामनेकभाषानामावली-पर्यायसङ्ग्रहाभ्यां समलङ्कृतः सुश्रुतसंहितायां प्रयुक्तानामौषधद्रव्याणां पर्याय-गुणकर्मवर्णात्मकोऽपूर्वग्रन्थः* (Belajhuṇḍī, Dāñ: Mahendrasaṃskṛtaviśvavidyālayaḥ).
- 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* (Calcutt: 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.
- Tivārī, Premvatī (1990), *Āyurvedīya prasūti-tantra evaṃ strī-roga; pratham bhāga: Prasūti-tantra, dvitīya bhāga: Strī-roga* (Jayakṛṣṇadāsa Āyurvedīya Granthamālā, 41; Varanas: Caukhamba Orientalia).
- Touwaide, Alain, Aslanoff, Grégoire, and Föerstel, Christian (1997) (eds.), *Theriaka y Alexipharmaka de Nicandro. Facsimil y transcripción con estudio* (Barcelona: Moleiro), ISBN: 9788488526298; digital images of the MS are online at [ARK](https://n2t.net/ark:/13960/t5s841v5m).

- 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 । पण्डितरामप्रसादवैद्योपाध्यायविरचितप्रसादनी-भाषाटीकासहिता ।* (mumbai: Kṣemarāja-Śrīkrṣṇadāsaśreṣṭhin), ARK: <https://n2t.net/ark:/13960/t2r59q189>.
- Van Bladel, Kevin Thomas (2011), “The Bactrian Background of the Barmakids,” in Anna Akasoy, Charles Burnett, and Ronit Yoeli-Tlalim (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.), [Suśrutasaṃhitā] (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>.

- Wall, Frank (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 Toxinology 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.
- 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 Iatrochemical 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 (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.
- (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>.

- Wujastyk, Dominik (2021), "A New Translation of Carakasamhitā, 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](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 Suśrutasamhitā," version 2, The Suśruta Project (12 Sept.), URL: <https://sushrutaproject.org/2024/09/12/candrata/>, accessed 29/09/2023; first published 2023-07-04.
- Wujastyk, Dominik, et al. (2023), *On the Plastic Surgery of the Ears and Nose. The Nepalese Version of the Suśrutasamhitā* (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 Nīlamata. Aspects of Hinduism in Ancient Kashmir* (Kyoto: Kyoto Institute for Research in Humanities, Kyoto University).
- 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), <i>Ayurvedic Drugs and Their Plant Sources</i> (New Delhi, Bombay, Calcutta: Oxford & IBH Publishing).
AVS	Warrier, P. K., Nambiar, V. P. K., and Ramankutty, C. (1994–96) (eds.), <i>Indian Medicinal Plants: A Compendium of 500 Species</i> . Vaidyaratnam P. S. Varier's Arya Vaidya Sala, Kottakal (Madras: Orient Longman).
BIA	Prater, S. H. (1993), <i>The Book of Indian Animals</i> (3rd edn., Bombay, Delhi, etc.: Oxford University Press), ARK: <a href="https://n2t.net/ark:/13960/t6356w32f">https://n2t.net/ark:/13960/t6356w32f</a> ; 4th impression of 3rd corrected 1980 edition.
Chevillard	Chevallier, Andrew (2000), <i>The Encyclopedia of Herbal Medicine</i> , ed. Penny Warren et al. (1st edn., New York: Dorling Kindersley), ISBN: 9780751303148, ARK: <a href="https://n2t.net/ark:/13960/s2bh76qc88s">https://n2t.net/ark:/13960/s2bh76qc88s</a> .
Chopra	Chopra, R. N., Nayar, S. L., and Chopra, I. C. (1956), <i>Glossary of Indian Medicinal Plants</i> (3rd reprint, 1992, New Delhi: Council of Scientific and Industrial Research); vol. 2: <b>chop-1969</b> .
Chopra IDG	Chopra, R. N., Chopra, I. C., et al. (1958), <i>Chopra's Indigenous Drugs of India</i> (2nd edn., Calcutta: Dhur & Sons), ARK: <a href="https://n2t.net/ark:/13960/t9673t140">https://n2t.net/ark:/13960/t9673t140</a> .

- 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 Brhatrayi* (Varanasi: Chowkhamba Sanskrit Series Office), ARK: <https://n2t.net/ark:/13960/s2cvp72x58j>.
- HK Hilgenberg, Luise, and Kirfel, Willibald (1941), *Vāgbhaṭa's Aṣṭāṅghṛdayasaṃhitā, 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<sub>rev</sub> Wren, R. C., Williamson, Elizabeth M., and Evans, Fred J. (1994), *Potter's New Cyclopaedia of Botanical Drugs and Preparations* (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://powo.science.kew.org>.
- Reptiles Daniel, J. C. (1983), *The Book of Indian Reptiles* (Bombay: Oxford University Press).
- Trees Bole, P. V., and Vaghani, Yogini (1986), *Field Guide to the Common Trees of India* (Bombay, Delhi, Oxford, etc.: World Wildlife Fund – India and Oxford University Press), ISBN: 0-19-561595-6; 4th reprint.
- Watt<sub>Comm</sub> Watt, George (1908), *The Commercial Products of India, Being an Abridgement of "the Dictionary of the Economic Products of India"* (London: John Murray), ARK: <https://n2t.net/ark:/13960/t8cg7dm79>.
- Watt<sub>Dict</sub> Watt, George (1889–96), *A Dictionary of the Economic Products of India* (Calcutta: Dept. Revenue and Agriculture, Government of India), URL: <https://tinyurl.com/watt1889>, accessed 28/04/2021.

## Flora

- aconite leaf (?) (*viṣapatrikā*) Unknown. Cf. perhaps, **Indian aconite** (*viṣā*) (but that is feminine). Cf. **GVDB**: 373, “unidentified” : 149
- agarwood (*aguru*) *Aquilaria malaccensis* Lam., **GVDB**: 3 : 106, 107, 210
- ‘alas, alas’ (?) (*hālāhala*) unknown. See Cf. *Soḍhalanighantu* p.43 (sub *bola*) = *stomaka* = **Indian aconite** (*vatsanābha*) : 150, 152
- Alexandrian laurel (*punnāga*) *Calophyllum inophyllum*, L. See **AVS**: 1, 338, **NK**: 1, #425 : 191, 210
- amaranth (*tanḍulīya*) see **amaranth** (*tanḍulīyaka*) : 192
- amaranth (*tanḍulīyaka*) *Amaranthus spinosus* L. See **GVDB**: 174, **Dutt**: 321, **NK**: 1, #144, **Potter**<sub>rev</sub>: 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 *tanḍulīyaka*, but *A. spinosus* L. is better known and attested in S. Asia in the first millennium BCE (Saraswat 1991) : 141, 199, 203, 208, 335
- Arabian jasmin (*trṇaśūnya*) see **Arabian jasmine** (*mallikā*), **GVDB**: 190 **MW**: 453 says *Jasminium sambac*. **GVDB**: 190 also suggest **screwpine** (*ketaka*) : 335
- Arabian jasmine (*mallikā*) *Jasminum sambac* (L.) Aiton, **GVDB**: 300 : 335
- Arabian jasmine (*trṇaśūlya*) probably an alternative pronunciation for **Arabian jasmine** (*trṇaśūnya*), **GVDB**: 190 : 210
- arjun (*arjuna*) *Terminalia arjuna*, Bedd. See **HK**: 738 : 50, 86, 207
- Asoka tree (*aśoka*) *Saraca indica* Linn., **GVDB**: 26 : 107, 109, 192, 210, 224, 351
- atis root (*śṛṅgīviṣa*) *Aconitum heterophyllum*, Wall. ex Royle. See **AVS**: 1, 42, **NK**: 1, #39 : 150, 152
- axlewood (*dhava*) *Anogeissus latifolia* (Roxb. ex DC.) Wall. ex Guill & Perr. See **AVS**: 1, 163 f, **Chopra**: 20 : 50, 85, 162, 207, 210
- bamboo leaves (*veṇupatrikā*) *Bambusa bambos*, Druce. See **NK**: 1, #307 : 141
- banyan (*nyagrodha*) *Ficus benghalensis*, L., **GVDB**: 356, **HK**: 748 : 335
- banyan (*vaṭa*) see **banyan** (*nyagrodha*) : 86, 89
- barley (*yava*) *Hordeum vulgare*, L. See **HK**: 752 : 117
- barley ash (*yavakṣāra*) The preparation method is described at **GVDB**: 327 : 120, 335
- barley ash (*yavanāla*) see **barley ash** (*yavakṣāra*), **GVDB**: 327 : 200
- bayberry (*kaṭphala*) *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 Chuneekar (**GVDB**: 66), is native to East Asia, not India : 192
- bearded premna (*vasuka*) *Premna barbata* Wall. (← *vasuhaṭṭa*), according to Cakrapāṇidatta. See the discussion by T. B. Singh and Chuneekar (**GVDB**: 362–363), where other candidate species such as *Osmanthus*, *Calotropis*, and *Trianthema* are discussed. T. B. Singh and Chuneekar (**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 : 85
- beautyberry (*śyāmā*) *Callicarpa macrophylla*, Vahl. See **AVS**: 1, 334, **NK**: 1, #420 : 112, 139, 141, 193
- beggarweed (*aṃśumatī*) see **beggarweed** (*śālapanī*), **GVDB**: 1, mentioning that the pair of these refers to **beggarweed** and ?? : 157, 202

- beggarweed (*sthirā*) see **beggarweed** (*śālaparṇī*), **GVDB**: 458: 202
- beggarweed (*vidārigandhā*) see **beggarweed** (*śālaparṇī*): 59, 117, 346
- beggarweed (*śālaparṇī*) *Desmodium gangeticum* (L.) DC. See **Dymock**: 1, 428, **GJM1**: 602, **NK**: 1, #1192; **ADPS**: 382, 414 and **AVS**: 2, 319, 4.366 are confusing: 335, 336
- beleric myrobalan (*bibhītaka*) *Terminalia bellirica* Roxb. One of the components of the **three myrobalans** (*triphalā*) **GVDB**: 274, 196: 354
- Bengal quince (*bilva*) *Aegle marmelos* (L.) Corr. See **AVS**: 1, 62, **Chevillard**: 161, **NK**: 1, #62, i(**MW**: 732a): 85, 107, 109, 114, 193, 336, 341, 352
- big poison (?) (*mahāviṣa*) unknown.: 150, 152
- big thorn apple (?) (*mahākarambha*) Perhaps *Datura metel*, L.?. See **thorn apple** (*karambha*): 149
- bitter gourd (*paṭolī*) see **pointed gourd** (*paṭola*), cite[233]gvd: 192
- bitumen (*adrija*) → *śilājī*. A tar-like, black, resinous rock exudate. See **Mahākośa**: 1, 21: 173
- black Bengal quince (*kṛṣṇasrīphalikā*) **GVDB**: 412, on *śrīphala*, synonym of **Bengal quince** (*bilva*) fruit: 342
- black creeper (*kālānusārī*) *Ichnocarpus frutescens* R. Br. or *Cryptolepis buehneri* Roemer & Schultes. Probably a synonym for *kṛṣṇasārīvā* (**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 *kālānusārīṇī*, *kālānusārīvā*. *kālānusārīya* may be a synonym of *tagara*, itself hard to identify: 191, 336
- black creeper (*pālindī*) *Ichnocarpus frutescens*, (L.) R.Br. or *Cryptolepis buehneri*, Roemer & Schultes. See **AVS**: 3, 141, 145, 203, **NK**: 1, #1283, 1210, **ADPS**: 434. Ḍalhaṇa on SS 5.1.82 identified *pālindī* with *trivṛt* (**turpeth**) and T. B. Singh and Chuneekar (**GVDB**: 246) supported this as a usual identification: 141, 144, 157, 192
- black nightshade (*kākamācī*) *Solanum nigrum*, Linn., **GVDB**: 86–87. May also be the less poisonous *S. dulcamara*, “bittersweet nightshade,” **K & B**: 1, 889–892: 202, 209, 339
- black pepper (*marica*) *Piper nigrum*, L. See **ADPS**: 294, **NK**: 1, #1929. Known to ancient Greek authors (Ball 1888: 341): 118, 208, 224, 341, 354
- black sarsaparilla (*kālānusārīvā*) see **Indian sarsaparilla** (*sārīvā*); see also **black creeper** (*kālānusārī*). Problems about identifying this plant are discussed at **GVDB**: 94–95 and **GVDB**: 429–431: 210
- blackboard tree (*saptachada*) *Alstonia scholaris* R. Br. **GVDB**: 420: 140, 336
- blackboard tree (*saptaparṇa*) see **blackboard tree** (*saptachada*): 208
- blackbuck (*hariṇa*) *Antelope cervicapra*, L. See **BIA**: 270 **IW**: 95, 165, *et passim*: 144
- blue water-lily (*utpala*) *Nymphaea stellata*, Willd. See **GJM1**: 528, **IGP** 790; **Dutt**: 110, **NK**: 1, #1726: 41, 139, 157, 210, 224, 225, 340
- bluebell barleria (*kuravaka*) see **bluebell barleria** (*kuruvaka*): 193
- bluebell barleria (*kuruvaka*) Or *kurubaka*. T. B. Singh and Chuneekar (**GVDB**: 108) notes that this is sometimes listed as a type of rice, as at *Suśrutasaṃhitā* 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 Chuneekar (**GVDB**) finally propose a red-flowering *Rhododendron*, admitting that this is a novel suggestion: 149, 336
- bluebell barleria (*sahā*) see **bluebell**



- barleria** (*sahācara*), GVDB: 428 : 116, 201  
 bluebell barleria (*sahācara*) see **bluebell**  
**barleria** (*saireyaka*), GVDB: 427 : 336  
 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 : 336, 337
- bread flower (*āsphota*) GVDB: 41 argue for *Vallisneria spiralis* (Roth ex Roem. & Schult.) Kuntze. This has the right distribution in S. Asia POWO: s.v. : 203
- bull's head (*gokṣura*) *Tribulus terrestris* L. GVDB: 144–145, 193. A component of **lesser five roots** : 337
- bull's head (*trikaṇṭaka*) → **bull's head** (*gokṣura*) GVDB: 193. A component of **lesser five roots** : 346
- bulrush (*kaṣeru*) "Two species, *Scirpus kysoor* Roxb., and *S. grossus* Linn. f., are used" GVDB: 85. Also *kaṣeruka* and *kaseru* : 112, 113, 116
- calabash gourd (*kūṣmāṇḍa*) → *puṣpaphala*. *Beninkasa hispida*, (Thunb.) Cogn. See AVS: 2, 1127; cf. AVS: 1, 261 : 341
- camphor (*karpūra*) → *śītaśiva*. *Cinnamomum camphora*, (L.) Sieb. See IGP 253 : 337
- camphor (*śītaśiva*) rarely mentioned. Taken as **rock salt** (*saindhava*) or **shami tree** (*śamī*), etc., by some authors, GVDB: 402. Ḍalhaṇa on 5.6.18 (Su 1938: 581) glossed it as **camphor** (*karpūra*), but noticed other interpretations : 210
- cardamom (*elā*) *Elettaria cardamomum*, Maton. See AVS: 2, 360, NK: 1, #924, Potter<sub>rev</sub>: 66 : 106, 107, 157, 163, 191, 192, 200, 210, 337
- cardamom (*kṣudrailā*) see **cardamom** (*elā*), GVDB: 128. This expression, "small cardamom" is only used at *Suśrutasaṃhitā* Kalpasthāna 6.17 : 210
- carry cheddie (*viśvadevā*) → *gāṅgerukī* *Canthium parviflorum*, Lam. See AVS: 1, 366 f. Or *Sida rhombifolia* Linn. (GVDB: 372, 444 ff. et passim) : 89
- castor oil tree (*gandharvahaṣṭa*) see **castor-oil** (*eraṇḍa*). GVDB: 135, K & B: 3, 2277 : 55, 109
- castor-oil (*eraṇḍa*) *Ricinus communis*, L. See NK: 1, #2145, Chopra: 214 : 60, 337
- castor-oil tree (*vardhamāna*) see **castor-oil** (*eraṇḍa*), GVDB: 361 : 208
- catechu (*khadira*) *Senegalia catechu* (L.f.) P. J. Hurter & Mabb = *Acacia catechu* Willd. GVDB: 129–130 : 86
- certain minerals (*tārāvitāra*) Unknown. It is not even certain that these are minerals. The variant reading in the vulgate, *tāraḥ sutāraḥ* was glossed by Ḍalhaṇa on 5.3.14 (Su 1938: 568) as follows *tāro rūpyaṃ, sutāraḥ pāradah*, "tāra means silver; sutāra means mercury." : 162
- chaff (*kāṇḍana*) The word *kāṇḍana* is not found in dictionaries; *kaṇḍana* is threshing, separating the chaff from the grain in a mortar. Cf. Hemādri's *Caturvargacintāmaṇi* (PWK: 2, 8) (Śiromaṇi 1873: 1, 138: 21, citing the *Vāyupurāṇa*) : 43, 351
- champak (*campaka*) *Magnolia champaca* (L.) Baill. ex Pierre, GVDB: 154 : 210
- chebulic myrobalan (*harītakī*) *Terminalia chebula* Retz. GVDB: 466 : 115, 140, 210, 354
- cherry (*elavālu*) *Prunus cerasus*, L. See GVDB: 58 for a thoughtful discussion NK: 1, #2037 : 157, 210, 337
- cherry (*elavāluka*) see **cherry** (*elavālu*) : 208
- chir pine (*sarala*) *Pinus roxburghii*, Sarg. GVDB: 423 : 85, 116, 208, 210
- cinnamon (*tvac*) *Cinnamomum cassia*, Blume. See NK: 1, #579 : 202, 210, 337
- cinnamon (*tvac*) see **cinnamon** (*tvac*) : 192
- cinnamon (*varāṅga*) see **cinnamon** (*tvac*), GVDB: 360 : 208
- citron (*mātulūṅga*) *Citrus medica*, Linn.

- GVDB: 276, 306. Also spelled *mātuliṅga*, *mātulaṅga*, *mātulāṅga*: 85, 114, 119, 120, 192
- cluster fig (*udumbara*) *Ficus racemosa*, L. See ADPS: 487: 207
- cobra's saffron (*nāgapuṣpa*) → *nāgakeśara*. *Mesua ferrea*, L. See NK: 1, #1595, GVDB: 220: 157
- 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*: 208, 210, 338
- colocynth (*mṛgādanī*) see *colocynth* (*indravāruṇī*) GVDB: 46, 318: 192
- common smilax (*śvadamśtra*) *Smilax aspera* L., GVDB: 414: 85
- convolvulus (*lakṣmaṇā*) Sivarajan and Balachandran (ADPS: 273–275) suggest *Ipomoea marginata* (Desr.) Verdc. or *I. obscura* (Linn.) AVS: 3, 237–238 suggests *Ipomoea sepriaria* Roxb. (looks like a little boy (*putraka*), and generates a boy (*putrajananī*), 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 officinalum*, Linn., known as *putrada*: 89
- coriander (*dhānyaka*) *Coriandrum sativum* L., GVDB: 213: 338
- coriander (*kustumburya*) see *coriander* (*dhānyaka*), GVDB: 113: 210
- corky coral tree (*pāribhadra*) *Erythrina suberosa* Roxb. See GVDB: 245: 162, 338
- corky coral tree (*pāribhadraka*) see *corky coral tree* (*pāribhadra*): 109, 207
- costus (*kuṣṭha*) *Dolomiaea costus* (Falc.) Kasana & A. K. Pandey. See GVDB: 112, NK: 1, #2239. Known to ancient Greek authors (Ball 1888: 345): 106, 107, 114, 141, 157, 163, 191, 192, 200, 208, 210
- cottony jujube (*kākolī*) *Ziziphus mauritanica*, Lam. See IGP: 1233, NK: 1, #2663; IGP 1233. Cf. NK: 1, #1170: 105, 113, 114, 188
- country mallow (*atibālā*) *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, 113, 116, 282
- country mallow (*sahadevā*) → *balā* (GVDB: 428). Contains ephedrine: 89, 116
- 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 frutescens* R. Rr. (GVDB: 429–431): 59, 149, 157, 162
- 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 *Nymphoides* (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: 106, 107, 114, 141, 157, 191, 210, 342, 355
- 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: 341, 356
- croton tree (*nāgadantī*) *Croton persimilis* Müll.Arg., GVDB: 222: 208, 339, 350
- croton tree (*nāgavinnā*) *Croton persimilis* Müll.Arg. GVDB: 222 I have taken this as croton tree (*nāgadantī*) because of context in *Suśrutasaṃhitā* Kalpasthāna 5: 193
- crow (?) (*kāka*2) an unidentified poisonous plant apparently called “crow.” T. B. Singh and Chuneekar (GVDB: 86) note that several drugs named after the crow are unidentifiable. Black nightshade, (*kākamācī*) is toxic, but this is a stretch: 149
- datura (*dhattūra*) *Datura metel*, L. See AVS: 2, 305 (cf. *Abhidhānamañjarī*), NK: 1, #796 ff. Potter<sub>rev</sub>: 292 f, ADPS: 132: 56, 339
- datura (*dhuttūrakā*) see datura (*dhattūra*): 204
- deodar (*bhadradāru*) *Cedrus deodara*, (Roxb.ex D.Don) G. Don. See AVS 41, NK: 1, #516: 50, 113, 117, 157, 208
- deodar (*devadāru*) *Cedrus deodara* (Roxb.) Loud. GVDB: 206–207: 85, 114, 210, 282, 339
- deodar (*suradāru*) see deodar (*devadāru*): 191
- devil’s dung (*hiṅgu*) *Ferula foetida* Regel., GVDB: 471–472: 86, 87, 191
- dried ginger (*nāgara*) → dried ginger (*śuṇṭhī*) GVDB: 221–222: 87, 191
- dried ginger (*śuṇṭhī*) *Zingiber officinale*, Roscoe. See ADPS: 50, NK: 1, #2658, AVS: 5, 435, IGP: 1232: 112, 339, 354
- 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 (?) (*lambaradā*) Unknown; cf. GVDB: 348: 149
- elixir salve (*rasāñjana*) cf. Indian barberry (*añjana*): 50, 60, 343
- embelia (*viḍaṅga*) *Embelia ribes*, Burm. f. See ADPS: 507, AVS: 2, 368, NK: 1, #929, Potter<sub>rev</sub>: 113: 50, 85, 107, 157, 191, 192, 208
- emblic myrobalan (*āmalaka*) *Phyllanthus emblica*, L. See AVS: 4, 256: 85, 115, 116, 224, 354
- emetic nut (*karaghāṭa*) Probably a synonym for *karahāṭa* (emetic nut), q.v., GVDB: 74: 339
- emetic nut (*karaghāṭaka*) see emetic nut (*karaghāṭa*): 150, 207
- emetic nut (*karahāṭa*) *Randia dumetorum*, Lamk. See GVDB: 291–292 and NK: 1, #2091. T. B. Singh and Chuneekar (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.: 339
- emetic nut (?) (*karatā*) Not in GVDB. Cf. perhaps *karahāṭa* (emetic nut): 148
- emetic nut (*madana*) *Randia dumetorum*, Lamk. See NK: 1, #2091: 140, 284
- false daisy (*bhṛṅga*) *Eclipta prostrata* (L.) L. See GVDB: 288: 85
- false daisy (*subhaṅgurā*) (su)bhaṅgura = *bhṛṅga*? *Eclipta prostrata* (L.) L. See GVDB: 288: 148
- fermented rice-water (*dhānyāmla*) → *kāñjī*, *kāñjikā*, *sauvīra*. GVDB: 458, NK: 2, appendix VI, #18: 57, 58
- fern (*ajaruḥā*) *Nephrodium* species GVDB: 7, uncertain. Perhaps *Christella dentata* (Forssk.) Brownsey & Jermy, which is reported to have folk applications against skin diseases in India: 143
- fire-flame bush (*dhātakī*) *Woodfordia fruticosa* (L.) Kurz. See AVS: 5, 412, NK: 1, #2626. Known to ancient Greek authors (Ball 1888: 344): 86, 140

- five roots (*pañcamūla*) Described at *Suśrutasaṃhitā* 1.38.66–69 (Su 1938: 169). There are two *pañcamūlas*, the *laghupañcamūla* (the lesser five roots) and *br̥hatpañcamūla* (greater five roots), with differing properties. Combined they are called *daśamūla* (ten roots). See also *Mahākośa*: 1, 468: 85
- flame-of-the-forest (*kiṃśuka*) see flame-of-the-forest (*palāśa*), GVDB: 97–98: 200
- flame-of-the-forest (*palāśa*) *Butea monosperma* (Lam.) Taub. GVDB: 241. *palāśa* in some sources: 86, 109, 340
- flax (*atasī*) *Linum usitatissimum*, L. See NK#1495: 113
- 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, 157, 163, 191, 192, 224, 340
- foxtail millet (*priyaṅgū*) see foxtail millet (*priyaṅgu*): 210
- fragrant lotus (*saugandhika*) A type of white water-lily (*kumuda*) or blue water-lily (*utpala*), GVDB: 457: 41
- fruit of the marking-nut (*āruṣkara*) see marking-nut tree (*aruṣkara*). “*āruṣkara* = *aruṣkara phala*” ADPS: 23; see also MW: 151: 192
- gajpipul (*gajapippalī*) GVDB: 469, 132, syn. *hastipippalī*. A controversial plant, but the conjecture of T. B. Singh and Chuneekar that *Scindapsus officinalis* (Roxb.) Schott is the more ancient identity is accepted here: 340, 359
- gajpipul (*hastipippalī*) see gajpipul (*gajapippalī*), GVDB: 469, 132: 208
- 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): 341
- galls (?) (*karkaṭa*) almost impossible to identify with certainty, GVDB: 78–80. Perhaps *Rhus succedanea*, L. See NK: 1, #2136: 150
- garjan oil tree (*aśvakarṇa*) *Dipterocarpus turbinatus* Gaertn. f. See GVDB: 28, Chopra: 100: 162, 207, 210
- giant potato (*kṣīravidārī*) possibly → *kṣīraśukla*. *Ipomoea mauritiana*, Jacq. See ADPS: 510, AVS: 3, 222, AVS: 3, 1717 ff: 113, 344, 348, 349, 351
- ginger (*mahaṣadha*) *Zingiber officinale*, Roscoe. See ADPS: 50, NK: 1, #2658, IGP: 1232: 144
- gold (*hema*) gold: 157
- gold and sarsaparilla (*surendragopa*) Unknown. Ḍalhana 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”: 163
- golden shower tree (*rājadruma*) see golden shower tree (*āragvadha*): 162
- golden shower tree (*rājavarṣa*) see golden shower tree (*āragvadha*): 85
- 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: 115, 190, 200, 202, 340
- 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, 140, 188

gourd (*vallija*) see [gourd](#) (*vallija*) : 150

gourd (*vallija*) This is a guess. According to some lexical sources, syn. for [black pepper](#) (*marica*) ([MW](#): 929). See [NK](#): 1, #1929. T. B. Singh and Chuneekar ([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 *Bṛhatsaṃhitā* 8.13ab and 16.24ab, Bhaṭṭotpala glossed it as *mudgādi*, "mung beans etc.": [341](#)

grapes (*drākṣā*) *Vitis vinifera* L.

[GVDB](#): 208–209 : [192](#)

greater five roots (*br̥hatpañcamūla*)

Described at *Suśrutasaṃhitā* 1.38.68–69 ([Su](#) 1938: 169). Consists of [Bengal quince](#), [migraine tree](#), [Indian trumpet tree](#), [crimson trumpet-flower tree](#), and [white teak](#) : [340](#), [345](#), [354](#)

green gram (*māṣa*) *Vigna radiata* (L.) R.

Wilcz. See [ADPS](#): 296, [IGP](#) 1204 : [50](#), [113](#), [283](#)

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." : [85](#), [112](#), [114](#), [191](#), [340](#)

gummy gardenia (*pr̥thvīkā*) ←

*hingupatrikā*, *Gardenia gummifera* L.f., [GVDB](#): 257, q.v. for discussion : [192](#), [210](#)

hairy bergenia (*pāṣāṇabheda*) *Bergenia*

*ligulata* (Wall.) Engl. [GVDB](#): 246–247 :

85

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 : [109](#), [115](#), [156](#), [157](#), [200](#), [202](#), [346](#)

halfa grass (*darbha*) *Demostachya*

bipinnata Stapf. [GVDB](#): 201. Synonym of *kuśa* : [88](#), [113](#)

halfa grass (*kuśa*) *Desmostachya bipinnata*,

(L.) Stapf. [GVDB](#): 111, [AVS](#): 2, 326 : [113](#), [185](#), [208](#)

hare foot uraria (*kroṣṭakamekhalā*) see [hare](#)

[foot uraria](#) (*pr̥śniparṇī*)

*Mahākośa*: 1, 246. *kroṣṭaka* can mean "jackal" *śṛgāla*, as in *śṛgālavinna*, "a kind of *pr̥śniparṇī*" *Mahākośa*: 1, 839 : [192](#)

hare foot uraria (*pr̥thakparṇī*) → [hare](#) [foot](#)

[uraria](#) (*pr̥śniparṇī*) and [rajmahal hemp](#) (*mūrvā*) [GVDB](#): 257. A component of [lesser five roots](#) : [115](#), [346](#)

hare foot uraria (*pr̥śniparṇī*) → *sahā*?

*Uraria lagopoides*, DC. and *U. picta* Desv. See [GVDB](#): 257–258, [GJM](#)1: 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](#) : [112](#), [113](#), [341](#)

heart-leaf sida (*balā*) *Sida cordifolia*, Linn.

See [ADPS](#): 71, [NK](#): 1, #2297 : [59](#), [113](#), [116](#), [118](#), [157](#), [282](#)

heart-leaved moonseed (*amṛtā*) → *guḍūcī*.

*Tinospora cordifolia*, (Willd.) Hook.f. & Thoms.? See [ADPS](#): 38, [NK](#): 1, #2472, 624, [Dastur](#) #229 : [141](#), [156](#), [202](#)

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](#)) : 85, 114
- heart-leaved moonseed (*somavallī*)  
*Tinospora cordifolia* (Thunb.) Miers.  
 GVDB: 456. Likely, but uncertain : 141
- heart-leaved moonseed creeper  
 (*amṛtavallī*) See *amṛtā* : 282
- hedge caper (*hiṃsrā*) *Capparis sepia* L.,  
 GVDB: 471, IHR: 124, K & B: 1, 109 : 342
- hedge caper (*kākādanī*) synonym of [hedge caper](#) (*hiṃsrā*), GVDB: 88, 471,  
 IHR: 124, K & B: 1, 109. This name is not used in the *Carakasamhitā*. At 5.7.31 (Su 1938: 583), Ḍalhaṇa glossed *kādādanī* as [black Bengal quince](#) (*kṛṣṇaśrīphalikā*). GVDB: vi, 471 note that they have identified *kākādanī* as *Cardiospermum halicacabum* L. “balloonvine” : 202
- henna (*madayantikā*) *Lawsonia inermis*, L. See AVS: 3, 303, NK: 1, #1448, Potter<sub>rev</sub>: 151 : 142
- hibiscus (?) (*ambaṣṭhā*) possibly *Hibiscus rosa-sinensis* L.? T. B. Singh and Chuneekar (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 Chuneekar propose that *ambaṣṭhā* is either the fruit of *Hibiscus* or the galls of a *Quercus* or *Tamarix* species. According to Meulenbeld 1974b: 599, *vanakārpāsī* is more likely a name for a [hibiscus](#) : 193
- Himalayan birch (*bhūja*) see [Himalayan birch](#) (*bhūrja*) : 208
- Himalayan birch (*bhūrja*) *Betula utilis* D. Don, GVDB: 287 : 342
- 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)) : 163, 191, 192, 202
- Himalayan yew (*sthaṇṇeya*) see [Himalayan yew](#) (*sthaṇṇeyaka*) : 210
- Himalayan yew (*sthaṇṇeyaka*) T. B. Singh and Chuneekar (GVDB: 458–459) suggested *Taxus baccata* L., but that tree is endemic to the Mediterranean 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 : 191, 342
- hogweed (*punarnavā*) *Boerhaavia diffusa*, L. See ADPS: 387, AVS: 1, 281, NK: 1, #363 : 115, 142, 156, 193, 342
- hogweed (*punarnavā*) see [hogweed](#) (*punarnavā*) : 201
- hogweed (*punarnavā*) see [hogweed](#) (*punarnavā*) : 204
- hogweed (*varṣābhū*) see [hogweed](#) (*varṣābhū*) : 201
- 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*) : 342
- Holostemma creeper (*jīvantī*) → *sūryavallī*? *Holostemma ada-kodien*, Schultes. See ADPS: 195, AVS: 3, 167, 169, NK: 1, #1242 : 116, 349
- holy basil (*surasa*) *Ocimum tenuiflorum*, Linn. GVDB: 438–439 : 193
- honey (*kṣaudra*) Eight varieties of honey are described in the *Suśrutasaṃhitā* (NK: 2, Appendix 192). *Kṣaudra* is the product of a small bee of tawny colour, called *kṣudra* : 121, 144, 224, 225
- horned pondweed (*śaivāla*) also *śaivāla, śevāra*. *Zannichellia palustris* L. The uncertainties of this identification are discussed by T. B. Singh and Chuneekar

- (GVDB: 409). Sometimes identified with **scutch grass** (*dūrvā*) (GVDB: 409). Identified as *Ceratophyllum demersum* Linn. ("hornwort") by AVS: 2, 56–57x: 114, 343, 350
- hornwort (*jalaśūka*) → *jalanīlikā*. *Ceratophyllum demersum*, L. See AVS: 2, 56, IGP: 232. T. B. Singh and Chuneekar (GVDB: 166) suggest **horned pondweed**. Ḍalhaṇa 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*): 186
- horse gram (*kulattha*) *Macrotyloma uniflorum* (Lam.) Verdcourt, syn. *Dolichos biflorus*, L., *D. uniflorus*, Lam., GVDB: 109, POWO: sub *Macrotyloma uniflorum*: 117, 118, 190, 211, 343
- horseradish tree (*madhukaśigru*) *Moringa oleifera* Lam., GVDB: 398–399. See **horseradish tree** (*śigru*): 207
- horseradish tree (*murungī*) see **horseradish tree** (*śigru*) (GVDB: 311): 192
- horseradish tree (*śigru*) *Moringa oleifera* Lam. See IGP: 759, GJM1: 603, Dymock: 1, 396, GVDB: 398–399: 114, 115, 343
- hyacinth beans (*niṣpāva*) *Lablab purpureus* (L.) Sweet (1826) GVDB: 228: 103
- Indian aconite (*ativiṣā*) *Aconitum ferox*, Wall. ex Ser., or perhaps *A. heterophyllum* Wall. ex Royle, GVDB: 12, NK: 1, #39. Also called "atis roots" or just *viṣā*. *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: 104, 142, 144, 163, 208, 210, 343
- 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<sub>rev</sub>: 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): 150, 151, 335, 343
- Indian aconite (*viṣā*) see **Indian aconite** (*ativiṣā*), GVDB: 12, 373: 335, 350
- Indian barberry (*añjana*) see **Indian barberry** (*dāruharidrā*) Cf. **elixir salve** (*rasañjana*): 60, 143, 339
- Indian barberry (*dāruharidrā*) *Berberis holstii* Engl., Dymock: 1, 65, NK: 1, #335, #685, GJM1: 562, IGP: 141, GVDB: 203: 156, 157, 343, 354
- Indian barberry (*dārvī*) see **Indian barberry** (*dāruharidrā*): 225
- Indian barberry (*kālīyaka*) see **Indian barberry** (*dāruharidrā*): 141
- Indian bat tree (*śuṅgā*) → *parkaṭīvṛkṣa* according to *Śabdasindhu*: 1058; idem also suggests *vaṭavṛkṣa*, i.e., *Ficus benghalensis* Linn. and *āmṛātaka*, *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.: 89
- Indian bdellium-tree (*guggula*) See **Indian bdellium-tree** (*guggulu*): 191
- 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): 121, 343
- Indian beech (*naktamāla*) *Pongamia pinnata*, (L.) Pierre. See AVS: 4, 339, NK: 1, #2003: 50, 109

- 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](#) (*śleṣmātakī*): 115, 156
- Indian cherry (*śelū*) see [Indian cherry](#) (*śleṣmātakī*), [GVDB](#): 408: 210
- Indian cherry (*śleṣmātakā*) see [Indian cherry](#) (*śleṣmātakī*): 207
- Indian cherry (*śleṣmātakī*) *Cordia dichotoma* G. Forst., [AVS](#): 2, 180–183. See [POWO](#): [C. dichotoma](#); *Cordia myxa* L., according to T. B. Singh and Chuneekar ([GVDB](#): 413–414), although they also suggest *C. dichotoma* (synonym of *C. wallichii* G. Don.) and *C. rothii* (synonym of *Cordia sinensis* Lam.): 192, 344
- Indian dill (*śatapuspā*) *Anethum graveolens* L. May also be *Foeniculum vulgare* Mill. See [GVDB](#): 388 for discussion: 116, 210
- Indian elm (*ciribilva*) *Holoptelea integrifolia* (Roxb.) Planch. [GVDB](#): 158, who also say that *pūtika* is a synonym; but that must be different than *pūtikā*: 344
- Indian elm (*ciribilva*) see [Indian elm](#) (*ciribilva*): 207
- Indian frankincense (*agavṛttikā*) see [Indian frankincense](#) (*śallakī*), according to Ḍalhaṇa's comment on *Suśrutasaṃhitā* 5.7.29. A variant form of [Indian frankincense](#) (*agavṛttikā*): 202
- Indian frankincense (*agavṛttikā*) see ?? (*nagavṛttikā*), [GVDB](#): 3, 392: 344
- Indian frankincense (*gajavṛttikā*) *Boswellia serrata* Roxb.; equated with [Indian frankincense](#) (*śallakī*) by some, [GVDB](#): 392. See also ?? (*nagavṛttikā*): 192
- Indian frankincense (*śallakī*) *Boswellia serrata* Roxb., [GVDB](#): 392: 202, 344
- Indian fumitory (*parpaṭa*) 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: 344
- Indian fumitory (*reṇu*) see [Indian fumitory](#) (*parpaṭa*), [GVDB](#): 339. To be distinguished from pollen (?) (*reṇukā*): 149
- Indian ipecac (*payasyā*) Uncertain. Possibly *Tylophora indica* (Burm.f.) Merr. Perhaps a synonym of [panacea twiner](#), [giant potato](#), [purple roscoe](#), and [plants like asthma plant and Gulf sandmat](#) ([GVDB](#): 237–238). Also “curds” when not a plant: 59, 114, 349
- Indian jujube (*sauvīraka*) *Zizphus jujuba* Mill., [GVDB](#): 458, [MBG](#): sub jujuba: 113, 186
- Indian kudzu (*vidārī*) → *payasyā*. *Pueraria tuberosa* (Willd.) DC. See [ADPS](#): 510, [AVS](#): 1, 792 f, [AVS](#): 4, 391; not [Dymock](#): 1, 424 f. See [GJM2](#): 444, 451, [AVS](#): 1, 187, but [AVS](#): 3, 1719 = *Ipomoea mauritiana*, Jacq: 59, 85
- Indian laurel (*plakṣa*) *Ficus microcarpa*, L. f. See [ADPS](#): 377: 208
- Indian madder (*mañjiṣṭhā*) *Rubia cordifolia*, L. See [IGP](#), [Chopra](#): 215, [GVDB](#): 289: 55, 157, 191, 192, 201, 208
- 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, 150, 208, 347
- Indian pennywort (*maṇḍūkapaṇī*) Centella asiatica (L.) Urban. See [GVDB](#): 290, [ADPS](#): 289–291 : 193
- Indian sarsaparilla (*sugandhikā*) see [Indian sarsaparilla](#) (*śvetasārivā*) [GVDB](#): 430, 436 : 192, 210
- 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 : 157, 336, 340, 345
- Indian sarsaparilla (*śvetasārivā*)  
Hemidesmus indicus, (L.) R. Br. See [Indian sarsaparilla](#) (*sārivā*). [ADPS](#): 434, [AVS](#): 3, 141–145, [NK](#): 1, #1210, [GVDB](#): 430 : 345
- Indian snakeroot (*sarpagandhā*) Rauvolfia serpentina, (L.) Benth. ex Kurz. See [NK](#): 1, #2099, [ADPS](#): 439, [GVDB](#): 425; cf. SS 5.5.76–78 : 193, 345
- Indian snakeroot (*sarvagandhā*) common spelling in Nepalese MSS for [Indian snakeroot](#) (*sarpagandhā*), q.v. : 202
- Indian symphorema (*ananta*) Not in [GVDB](#) but [MW](#): 25 says "*sinduvāra*" on no authority (see [Indian symphorema](#) : 208)
- Indian symphorema (*sinduvāra*)  
T. B. Singh and Chuneekar ([GVDB](#): 435) settles on Symphorema 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 : 191, 193, 201, 210, 345
- Indian trumpet tree (*śyonāka*) Oroxylum indicum (L.) Benth. ex Kurz. [GVDB](#): 172–173. A component of greater five roots : 345
- Indian trumpet tree (*ṭiṇṭuka*) → [Indian trumpet tree](#) (*śyonāka*). Oroxylum indicum (L.) Benth. ex Kurz. [GVDB](#): 172–173. A component of greater five roots : 341
- Indian trumpet tree (*ṭiṇṭuka*) see [Indian trumpet tree](#) (*śyonāka*), [GVDB](#): 172–173 : 208
- 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) : 202, 345
- indigo (*nīlā*) see [indigo](#) (*nīlinī*). Although T. B. Singh and Chuneekar ([GVDB](#): 229) refer to an unidentified creeper mentioned in *Carakasamhitā* Ci.1-4.7, the use in the Nepalese *Suśrutasaṃhitā* 5.6.24 is likely to refer to [indigo](#) (*nīlī*) : 201
- indigo (*nīlī*) see [indigo](#) (*nīlinī*) : 210, 345
- Indrajao (*indrayava*) see *vr̥kṣaka* ([Indrajao](#))  
Holarrhena pubescens Wall. ex G.Don 1837 [GVDB](#): 376, 45 and 84 : 104
- Indrajao (*vr̥kṣaka*) → *indrayava*, *indrabīja*, *kaliṅga*, and *kuṭaja*. Holarrhena pubescens Wall. ex G.Don 1837 [GVDB](#): 376, 45 and 84 : 87, 282, 345
- itchytrees (*nicula*) Barringtonia acutangula (L.) Gaertn., [GVDB](#): 224 : 208
- jambul (*jambū*) Syzygium cumini, (L.) Skeels. See [ADPS](#): 188, [NK](#): 1, #967, [Potter<sub>rev</sub>](#): 168, Wujastyk 2003a : 140, 225
- jequirity (*guñjā*) Abrus precatorius, L. See [AVS](#): 1, 10, [NK](#): 1, #6, [Potter<sub>rev</sub>](#): 168. See further [jequirity](#) (*kālakūṭa*) : 148, 149
- jequirity (*kālakūṭa*) see [jequirity](#) (*kālakūṭa*) : 151, 345
- jequirity (*kālakūṭa*) possibly Abrus

- precatorius, L. Cf. RRS 21.14. See [AVS](#): 1, 10, [NK](#): 1, #6, [Potter<sub>rev</sub>](#): 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: [150](#), [345](#)
- kutki (*kaṭukā*) *Picrorhiza kurroa* Royle ex Benth. ([GVDB](#): 64–65): [104](#), [121](#), [346](#), [348](#)
- kutki (*kaṭurohañī*) → [kutki](#) (*kaṭukā*), [GVDB](#): 66, 64–65: [191](#)
- kutki (*kaṭurohiñī*) see [kutki](#) (*kaṭukā*), [GVDB](#): 66, 64–65: [210](#)
- leadwort (*agniśikhā*) *Plumbago zeylanica* (or *rosea*?), L. See [NK](#): 1, #1966, 1967: [346](#)
- leadwort (*citraka*) *Plumbago zeylanica* (or *indica*?), L. See [RĀ](#). 6.124, [ADPS](#): 119, [NK](#): 1, #1966, 1967: [50](#), [86](#), [104](#), [109](#), [120](#), [191](#)
- leadwort (*pālaka*) → *citraka*. *Plumbago zeylanica* (*indica*? *rosea*?), L. See [Rā](#). 6.124, [ADPS](#): 1, 119, [NK](#): 1, #1966, 1967: [150](#), [151](#)
- leadwort (*vidyutśikhā*) see [leadwort](#) (*agniśikhā*): [148](#)
- lemon grass (*uśīrabheda*) → *lāmajja*. *Cymbopogon jwarancusa* (Jones ex Roxb.) Schult.. See [NK](#): 1, #176: [355](#)
- 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](#): [337](#), [340](#), [341](#), [354](#), [358](#)
- liquorice (?) (*klītaka*) *Glycyrrhiza glabra*, L.? [GVDB](#): 123–124 discuss the many difficulties in identifying this plant: [148](#)
- liquorice (*madhuka*) also *yaṣṭi* (*ka/kā*), *yaṣṭīmadhuka*, *Glycyrrhiza glabra*, L. [AVS](#): 3, 84, [NK](#): 1, #1136, [GVDB](#): 329 f.: [59](#), [85](#), [112–117](#), [119](#), [144](#), [155](#), [157](#), [191](#), [207](#), [210](#), [225](#), [346](#)
- liquorice (*yaṣṭī*) see [liquorice](#) (*madhuka*): [192](#)
- liquorice (*yaṣṭīmadhuka*) see [liquorice](#) (*madhuka*): [60](#)
- lodh tree (*lodhra*) *Symplocos racemosa*, Roxb. See [GJM](#)1: 597, [ADPS](#): 279 f, [NK](#): 1, #2420. T. B. Singh and Chuneekar ([GVDB](#): 351–352) notes that there are two varieties, *S. racemosa*, qualified as *śāvara*, and *S. crataegoides* Buch.-Ham. for *paṭṭikā lodhra*: [50](#), [157](#), [191](#), [225](#)
- long pepper (*kṛṣṇā*) see [long pepper](#) (*pippalī*): [224](#)
- long pepper (*māgadha*) see [long pepper](#) (*pippalī*): [143](#)
- long pepper (*pippalī*) see [long pepper](#) (*pippalī*): [191](#)
- long pepper (*pippalī*) *Piper longum*, L. See [ADPS](#): 374, [NK](#): 1, #1928, [GVDB](#): 249–250, but cf. [AVS](#): 3, 245: [85](#), [109](#), [115](#), [116](#), [120](#), [121](#), [144](#), [157](#), [208](#), [211](#), [224](#), [282](#), [346](#), [354](#)
- long pepper root (*pippalīmūla*) see [long pepper](#) (*pippalī*): [208](#)
- long-stamen *Wendlandia* (?) (*prapaundarika*) See the substantial discussion by T. B. Singh and Chuneekar ([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 : 150, 191, 210, 347
- long-stamen *Wendlandia* (?) (*tilaka*) see long-stamen *Wendlandia* (?) (*prapaṇḍarika*), *GVDB*: 183–184. Sometimes thought to be a synonym of *viburnum* (*tilvaka*), q.v., but this is probably erroneous : 210, 355
- lotus (*nalina*) see sacred lotus (*kamala*), *GVDB*: 218 : 224, 225
- lotus stalk (*mṛṇāla*) “Leaf stalk of sacred lotus” *GVDB*: 318 : 114
- luffa (*jālinī*) see luffa (*koṣātakī*), *GVDB*: 168 : 150, 200
- luffa (*koṣavatī*) see luffa (*koṣātakī*) : 156
- luffa (*koṣātakī*) *Luffa cylindrica*, (L.) M. J. Roem. or *L. acutangula*, (L.) Roxb. *ADPS*: 252–253, *NK*: 1, #1514 etc. “*Koṣātakī* 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 : 347
- mahua (*madhūka*) *Madhuca longifolia*, (J. Koenig) J. F. Macbride. See *AVS*: 3, 362 f. Known to ancient Greek authors (Ball 1888: 339–340) : 85, 228–230
- maidenhair fern (*haṃsāhvayā*) *Adiantum lunulatum* Burm f. *GVDB*: 463 : 282
- 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 *Nymphoides indica* (L.) Kuntze, not a tree (Osbaldeston and Wood 2000: 17) : 106, 107, 114, 141, 157, 199, 200, 210
- Malay beechwood (*śrīparṇī*) → *kāśmarī*. *Gmelina arborea* Linn., *GVDB*: 412, 96–97 : 85
- maloo creeper (*aśmantaka*) T. B. Singh and Chuneekar (*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 : 193, 207
- mango (*āmra*) *Mangifera indica* Linn. *GVDB*: 37 : 140, 193, 208, 224
- mangosteen (*amla*) *Garcinia pedunculata* Roxb. ex Buch.-Ham. See *GVDB*: 20–21 : 190
- 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 *Sauśrutaniḥṣaṇṭu* (156) gives *rakṣoghṇā* 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) : 151
- marking-nut tree (*aruṣkara*) see marking-nut tree (*bhallātaka*) : 149, 340
- marking-nut tree (*bhallātaka*) *Semecarpus anacardium*, L. See *NK*: 1, #2269, *AVS*: 5, 98, *ADPS*: 85–86, *GVDB*: 23,

- 283 : 109, 143, 347  
marsh barbel (*ikṣuraka*) *Hygrophila auriculata* (Schumach.) Heine (syn. *Asteracantha longifolia* (L.) Nees.), **GVDB**: 42–43 : 208
- medhshingi (*viṣayā-2*) *Dolichandrone falcata* (Wall. ex DC.) Seem. The *Sauśrutaniḥaṇṭu* gives a number of synonyms for *viṣayā* (Suvedī and Tivārī 2000: 5.77, 10.143). But one of them, *viṣāṇī* (also *meṣaśṛṅgī*), is sometimes equated with *Dolichandrone falcata* (DC.) Seemann (**GVDB**: 373 f; **ADPS**: 518, a plant used as an abortifacient and fish poison (NK: #862) : 149
- migraine tree (*agnimantha*) *Premna corymbosa*, Rottl. See **AVS** 1927, **ADPS**: 21, NK: 1, #2025, **AVS**: 4, 348; **GJM1**: 523: = *P. integrifolia/serratifolia*, L: 156, 341
- milk-white (*kṣīraśuklā*) An unidentified plant. **GVDB**: 126: see **purple roscoe** and **giant potato**: 59, 351
- monkey (?) (*markaṭa*) T. B. Singh and Chuneekar (**GVDB**: 299) said of *markaṭa*, “an unidentified vegetable poison.” Cf. Suvedī and Tivārī 2000: v.36 for synonyms that lead to the non-toxic jujube tree : 152
- muddy (?) (*kardama*) unknown. : 150, 152
- mulberry (*kramuka*) probably the **mulberry** (*tūda*); see discussion by T. B. Singh and Chuneekar (**GVDB**: 122) : 192
- mulberry (*tūda*) *Morus indica* L., **GVDB**: 189 : 348
- mung beans (*mudga*) *Phaseolus radiatus* L. **GVDB**: 310–311 : 113, 116, 231
- mung beans (*māṣaka*) *Phaseolus mungo* Linn. **GVDB**: 308 : 141
- munj grass (*nārācaka*) *Saccharum bengalense*, Retz.?. See NK: 1, #2184 : 150
- musk mallow (*latākastūrikā*) *Abelmoschus moschatus* Medik., **GVDB**: 348 : 348
- 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) : 348
- musk mallow (*ullika*) see **musk mallow** (*ullaka*) : 149
- myrobalan (*abhayā*) *Terminalia chebula*, Retz. See **ADPS**: 172, NK: 1, #2451, **Potter<sub>rev</sub>**: 214 : 104, 156, 163
- myrobalans (*pathyā*) *Terminalia chebula* Retz. See NK: 1, #2451 : 224
- natron (*suvarcikā*) Sodium carbonate. NK: 2, #45. Ḍalhaṇa identifies *suvarcikā* with svarjikṣāra 4.8.50 (**Su 1938**: 441) : 120, 157, 191
- neem (*picumarda*) see **neem tree** (*nimba*), **GVDB**: 247–248 : 207
- neem tree (*nimba*) *Azadirachta indica* A. Juss., **GVDB**: 226 : 56, 282, 348
- nutgrass (*kuruvinda*) Unknown. Ḍalhaṇa on 5.3.15 (**Su 1938**: 568) glossed the term as **nutgrass**, but noted other opinions that it was a whetstone or a very special metallic gem. T. B. Singh and Chuneekar (**GVDB**: 108) added that it could be a variety of rice, *ṣaṣṭika dhānya* : 163
- nutgrass (*mustaka*) *Cyperus rotundus*, L. See **ADPS**: 316, **AVS**: 2, 296, NK: 1, #782 : 150, 152
- nutgrass (*mustā*) *Cyperus rotundus*, L. See **ADPS**: 316, **AVS**: 2, 296, NK: 1, #782 : 348
- odal oil plant (*iṅgudi*) see **odal oil plant** : 199
- odal oil plant (*iṅgudī*) Kirtikar et al. (K & B: 5, 79) also firmly identify *iṅgudī* as *Sarcostigma kleinii* Wight & Arn., a liana well known in the Western Ghats and widely used in āyurveda, including for skin diseases. Balanites agyptiaca (L.) Delile, **GVDB**: 43 is an African plant and unlikely to be the

- original āyurvedic *ingudi*. : 348
- oleander spurge (*mahāvṛkṣa*) see [oleander spurge](#) (*snuhī*), [GVDB](#): 302-303 : 207
- oleander spurge (*nandā*) see [oleander spurge](#) (*snuhī*), [GVDB](#): 215 : 353
- oleander spurge (*snuhā*) see [oleander spurge](#) (*snuhī*) : 109, 150, 201
- 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 : 349, 353
- 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) : 186
- paddy rice (*śālī*) Oriza sativa, Linn. [GVDB](#): 395–396 mentioning 33 Sanskrit sub-variety names; [AVS](#): 4, 193 : 43, 351
- painted uraria (*prṣṇaparnī*) 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 : 202
- pale Java tea (*arjaka*) Orthosiphon pallidus Royle ex Benth., [GVDB](#): 24, based on Ḍalhaṇa's descriptions, and by P. V. Sharma 1982: 127, #60. But Ocimum basilicum L., according to [AVS](#): 4, 160 : 210
- panacea twiner (*arkapuṣpī*) → *arkaparnī*, 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 annuus Linn., but this plant is native to the Americas : 156, 344
- 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 Symphorema polyandrum Wight : 114, 156, 157, 163, 192, 224, 349, 350
- peas (*hareṇukā*) see [peas](#) (*hareṇu*) : 210
- peas (*satīna*) see [peas](#) (*hareṇu*), [GVDB](#): 419-420 : 349
- peepul tree (*aśvattha*) Ficus religiosa, L. See [ADPS](#): 63. Known to ancient Greek authors (Ball 1888: 338–339) : 165
- periploca of the woods (*meṣaśṛṅga*) Gymnema sylvestre (Retz.) R. Br. See [AVS](#): 3, 107, [NK](#): 1, #1173 : 143
- phalsa (*parūṣaka*) Grewia asiatica Linn., [GVDB](#): 238 : 86
- plants like asthma plant and Gulf sandmat (*dugdhikā*) synonym of [plants like asthma plant and Gulf sandmat](#) (*kṣīriṇī*), [GVDB](#): 204–205, 127 : 349
- 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) : 344, 349
- 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 : 210
- 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. : 354



- pointed gourd (*paṭola*) *Trichosanthes dioica*, Roxb., *GVDB*: 232–233 : 114, 156, 336
- poison-altar (?) (*viṣavedikā*) Unknown. Possibly, at a guess, *strychnine tree* (*viṣamuṣṭika*)? *GVDB*: 373 Or *Indian aconite* (*viṣā*) : 149
- pollen (?) (*reṇukā*) An unidentifiable plant. Perhaps a misreading for *peas* (*hareṇu*), although this is a long shot. T. B. Singh and Chuneekar (*GVDB*: 339) suggest, on no authority, the synonyms *vr̥kṣaruhā*, *māmsarohiṇī*, or *durvā*, none of which help : 149, 344
- pomegranate (*dāḍima*) *Punica granatum* Linn. *GVDB*: 201–202 : 85, 86, 119, 120, 193, 202
- pondweed (*paripelavā*) Normally a neuter noun. T. B. Singh and Chuneekar (*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. : 157
- pondweed (*śevāla*) *Zannichellia palustris* L. See *horned pondweed* : 41, 42
- pongame oiltree (*karañja*) see *pongame oiltree* (*karañjikā*) : 121, 202
- pongame oiltree (*karañjikā*) T. B. Singh and Chuneekar (*GVDB*: 74–76) discuss complications, but probably *Pongamia pinnata* (L.) Pierre in *Suśrutasaṃhitā* 5.6.3 : 208, 350
- 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 : 210, 350
- powdered ruffle lichen (*śaileyaka*) see *powdered ruffle lichen* (*śaileya*) : 191
- prickly chaff-flower (*apāmārga*) *Achyranthes aspera*, L. See *GVDB*: 14, *GJM*1: 524 f, *AVS*: 1, 39, *ADPS*: 44 f, *AVS*: 3, 2066 f, *Dymock*: 3, 135 : 55, 59, 113, 209, 350
- prickly chaff-flower (*vasira*) also *vaśira*. Perhaps *Achyranthes aspera*, L. *GVDB*: 362 describes several possible identities, including *sūryāvarta*, *prickly chaff-flower* and *markaṭatṛṇa*. See also *vasukavasira* (*GVDB*: 363) : 85
- prickly-leaved elephant's foot (*gojihvā*) syn. *gojī*. *Elephantopus scaber*, L. See *AVS*: 2, 357. T. B. Singh and Chuneekar (*GVDB*: 145–146) argue that *gojihvā śāka* is *Launaea asplenifolia* (Willd) Hook. f. (creeping *Launaea*), a plant with Himalayan to SE Asian distribution : 350
- prickly-leaved elephant's foot (*gojī*) T. B. Singh and Chuneekar (*GVDB*: 145–146) observe that this plant name is unique to the *Suśrutasaṃhitā*. 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. : 208
- products of the wood-apple (*kāpitta*) a reading in the Nepalese MSS for *products of the wood-apple* (*kāpittha*), q.v. : 203
- products of the wood-apple (*kāpittha*) relating to or derived from the *wood-apple* (*kapittha*) : 350
- purging nut (*dravantī*) *Jatropha curcas*, L. See *AVS*: 3, 261, *NK*: 1, #1374. A.k.a. *mūṣikaparṇī* : 350
- purging nut (*mūṣikā*) *Jatropha curcas*, L. See *AVS*: 3, 261, *NK*: 1, #1374 : 143
- purging nut (*putraśreṇī*) Commonly identified as *croton tree* (*nāgadantī*), *GVDB*: 253 “a variety of *red physic nut* (*dantī*).” But it appears in a list with *nāgadantī* at *Suśrutasaṃhitā* 5.6.3, and Ḍalhaṇa identified it there as *purging nut* (*dravantī*) : 208
- purging nut tree (*mūṣikakarṇī*) *Jatropha curcas*, L. *AVS*: 3, 261, *NK*: 1, #1374,

- GVDB: 317. GVDB: 317; ADPS: 23–25 discuss this issue well : [141](#), [142](#)
- purple calotropis (*arka*) Calotropis gigantea, (L.) R. Br. See ADPS: 52, AVS: 1, 341, NK: 1, #427, Potter<sub>rev</sub>: 57, Chopra IDG: 305–308 : [50](#), [59](#), [109](#), [186](#), [204](#), [207](#)
- 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. : [210](#)
- purple roscoeia (*kṣīrakākolī*) GVDB: 89 notes that many physicians use *Roscoeia procera* Wall. in this context. But the identification is uncertain. Possibly connected to [milk-white](#) or [giant potato](#) : [113](#), [344](#), [348](#)
- pussy willow (*vetasa*) Salix caprea L., GVDB: 380–381, q.v. for the argument that this is not the same as [rattan](#) (*vetra*) : [351](#)
- pussywillow (*vañjula*) see [pussy willow](#) (*vetasa*); T. B. Singh and Chuneekar (GVDB: 356) note that this is a tree in the *nyagrodha* group and has sometimes been equated with [Asoka tree](#) (*aśoka*) and sometimes with [sandan](#) (*tiniśa*) : [114](#), [208](#)
- radish (*mūlaka*) Raphanus sativus, L. See NK: 1, #2098 : [118](#), [150](#), [152](#)
- rajmahal hemp (*moraṭa*) → *mūrvā*, Marsdenia tenacissima (Roxb.) Wight et Arn. Good discussion at GVDB: 314–316, 324 : [156](#)
- 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 Chuneekar 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 : [116](#), [341](#)
- rattan (*vetra*) Calamus rotang, L. See AVS: 1, 330, NK: 1, #413. T. B. Singh and Chuneekar (GVDB: 381) prefer C. tenuis, Roxb., which is also native to S. and S.E. Asia : [351](#)
- realgar (*manaḥśīlā*) Arsenii disulphidium NK: 2, #11 : [224](#)
- red gourd (*bimbī*) Coccinia indica, W. & A. See PVS 1994.4.715; NK: 1, #534 : [140](#)
- red ochre (*gairika*) Hellwig 2009: 140–141. NK: 2, #40; the same source, at #6, gives kaoolinum or china clay : [157](#), [191](#), [193](#), [210](#), [224](#), [225](#)
- red physic nut (*dantī*) Baliospermum solanifolium (Burm.) Suresh, GVDB: 200 : [107](#), [150](#), [202](#), [208](#), [350](#)
- resin of white dammer tree (*sarjarasa*) GVDB: 424–425. See [white dammer tree](#) (*sarja*) : [116](#), [210](#)
- rice grains (*taṇḍula*) Oriza sativa, Linn. Same as [paddy rice](#) (*śālī*) GVDB: 174; or just “grains” : [43](#)
- rice-grain chaff (*śālitaṇḍulakāṇḍana*) See [chaff](#) : [43](#)
- rock salt (*saindhava*) See NK: 2, M#48, Watt<sub>Comm</sub>: 963–971 : [42](#), [85](#), [120](#), [191](#), [224](#), [337](#)
- rosha grass (*dhyāmaka*) Cymbopogon martinii (Roxb.) Wats. See AVS: 2, 285, NK: 1, #177 : [157](#), [191](#), [210](#)
- royal jasmine (*mālatī*) Jasminium grandiflorum, L. See NK: 1, #1364, ADPS: 285–288 : [141](#), [351](#)
- royal jasmine (*sumanā*) see [royal jasmine](#) (*mālatī*), GVDB: 437 : [210](#)

- sacred lotus (*kamala*) *Nelumbo nucifera*, Gaertn., *GVDB*: 73–74, *Dutt*: 110, *NK*: 1, #1698 : 347, 352
- sacred lotus (*padma*) see [sacred lotus](#) (*kamala*), *GVDB*: 235–236 : 41, 114, 141, 210, 356
- saffron (*bāhlīka*) syn. of [saffron](#) (*kuṅkuma*), q.v., *GVDB*: 273–274 : 208
- saffron (*kuṅkuma*) *Crocus sativus* Linn., *GVDB*: 100. On the history of confusions between saffron and turmeric, see Cox 2011 : 202, 352
- sage-leaved alangium (*aṅkolla*) *Alangium salvifolium* (Linn. f.) Wang., *GVDB*: 5–6. See also *AVS*: 1, 77; cf. *NK*: 1, #88 : 140, 193, 200, 202, 352
- sage-leaved alangium (*aṅkoṭha*) see [sage-leaved alangium](#) (*aṅkolla*) : 207
- 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 : 86
- sal tree (*śālā*) *Shorea robusta*, Gaertn.f. See *AVS*: 5, 124 : 224
- 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.)) : 87, 114, 116, 157, 186, 192, 210, 356
- 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 Chuneekar (*GVDB*) suggest *Lagerstroemeia parviflora* Roxb. (*sidhraka/siddhaka*) and *L. flos-reginae* Retz. (*jārula* by some). See *GVDB*: 432 : 207, 210, 351
- sappanwood (*pattāṅga*) Also *pattāṅga*. *Caesalpinia sappan*, L. *AVS*: 1, 323, *K & B*: 2, 847 f, *GVDB*: 234 : 50, 60
- scarlet mallow (*bandhujīva*) *Pentapetes phoenicea*, L. *NK*: #1836, *GVDB*: 268 : 142
- scented pavonia (*bālaka*) *Pavonia odorata*, Willd. See *ADPS*: 498, *NK*: 1, #1822 : 157
- scented pavonia (*toya*) → *bālaka*? *Pavonia odorata*, Willd. *ADPS*: 498, *NK*: 1, #1822 : 210
- scramberry (*tālīsapatra*) see [scramberry](#) (*tālīśa*) : 210
- scramberry (*tālīśa*) T. B. Singh and Chuneekar (*GVDB*: 179, 458–459) discusses the several identifications and regional differences in identifying this plant. *Taxus baccata* Linn. is a common candidate, as is *Flacourtia jangomas* (Lour.) Raeusch. (scramberry) : 114, 225, 352
- screwpine (*ketaka*) *Pandanus tectorius* Parkinson ex Du Roi, *GVDB*: 116 : 335
- scurfy pea (*bākucī*) Identified as *Cullen corylifolia* (L.) Medik. *ADPS*: 69–70, *GVDB*: 272 : 351
- scutch grass (*dūrvā*) *Cynodon dactylon* (Linn.) Pers., *GVDB*: 205 : 343, 352
- scutch grass (*granthilā*) see [scutch 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., Veltd grape (Ś. Gupta 1887: 272), or [Bengal quince](#) (*bilva*) : 210
- sedge (*kuṭannaṭa*) → *plava*, *tagara*, or *śyonāka*, according to commentators (*GVDB*: 102–103). T. B. Singh and Chuneekar leans towards the *plava*, but that plant too is difficult to identify. Various sources identify *kuṭannaṭa* 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 : 191, 353  
 sedge (*kuṭannaṭā*) see [sedge](#) (*kuṭannaṭā*) : 210
- sesame (*tila*) *Sesamum indicum* L.  
 GVDB: 183. Known to ancient Greek authors (Ball 1888: 344) : 210, 211
- sesame oil (*taila*) *Sesamum indicum* L.  
 GVDB: 183 : 59, 186
- shami tree (*śamī*) *Prosopis cineraria* (L.) Druce GVDB: 390 : 207, 337
- silk-cotton tree (*śālmālī*) *Bombax malabarica*. See [Issar](#): 152 : 210
- siris (*śirīṣa*) *Albizia lebbbeck*, Benth. See [AVS](#): 1, 81, [NK](#): 1, #91, [GVDB](#): 399–400. Cf. [white siris](#) : 156, 186, 199–203, 209, 210, 224, 356
- siris seeds (*śirīṣamāṣaka*) *Albizia lebbbeck*, Benth. See [AVS](#): 1, 81, [NK](#): 1, #91 : 140, 201
- small-flowered crape myrtle (*sidhraka*) *Lagerstroemia parviflora* Roxb., [GVDB](#): 432 : 162
- smooth angelica (*coraka*) *Angelica glauca* Edgw. [GVDB](#): 161. Distribution: Afghanistan, Himalaya, western Tibet ([POWO](#)). Edgeworth even recorded the indigenous name “chura” (Edgeworth 1851: 53) : 193, 208, 353
- smooth angelica (*taskara*) see [smooth angelica](#) (*coraka*), [GVDB](#): 176 : 210
- 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) : 148
- spikenard (*jaṭā*) see [spikenard](#) (*jaṭāmāṃsī*) : 201, 210
- spikenard (*jaṭāmāṃsī*) *Nardostachys jatamansi* (D.Don) DC, [GVDB](#): 163. See also [NK](#): 1, #1691. Known to ancient Greek authors (Ball 1888: 343–344) : 353
- spikenard (*māṃsī*) see [spikenard](#) (*jaṭāmāṃsī*) : 157, 192, 210
- spikenard (*nalada*) see [spikenard](#) (*jaṭāmāṃsī*) : 138, 192, 210
- 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 cochinchinensis* has poisonous seeds ([NEH](#): 279) : 341
- 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*) : 149
- spurge (*saptalā*) T. B. Singh and Chuneekar ([GVDB](#): 421–422) discuss the four candidates for this plant, three of which are *Euphorbias* : 118, 193
- strychnine tree (*viṣamuṣṭika*) *Strychnos nux vomica* Linn., [GVDB](#): 373 : 350
- sugar (*sitā*) Ḍalhaṇa makes this equation at 1.37.25 ([Su 1938](#): 162) : 157, 192
- sugar (*śarkara*) *Saccharum officinarum*, Linn. [NK](#): #2182 : 144
- sugar cane (*ikṣu*) *Saccharum officinarum*, Linn. [NK](#): #2182 : 144
- sunflower (*sūryavallī*) → *ādityavallī*, *sūryamukhī*, *Helianthus annuus* Linn. [GVDB](#): 35, 443 : 156
- sweet flag (*vacā*) *Acorus calamus* Linn. See [GVDB](#): 352–355 : 113, 120, 208
- sweet plants (*madhuravarga*) The sweet plants are enumerated at *Suśrutasaṃhitā* 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 : 148
- teak (*śāka*) *Tectona grandis*, L.f. See [AVS](#): 5, 245, ([MW](#): 1061) : 207

- Tellicherry bark (*kuṭaja*) *Holarrhena pubescens* Wall. ex G.Don, with *Wrightia tinctoria* and *W. arborea* considered [GVDB](#): 101–102, [ADPS](#): 267–270 : 109, 207, 340
- ten roots (*daśamūla*) Described at *Suśrutasaṃhitā* 1.38.70–71 ([Su](#) 1938: 169) as a combination of the [lesser five roots](#) and the [greater five roots](#) : 340
- the three myrobalans (*triphālā*) [chebulic myrobalan](#) [beleric myrobalan](#) and [emblic myrobalan](#) (*harītakī bibhītaka* and *āmālaka*) One of the most-often mentioned drugs in the *Bṛhatrayā* [GVDB](#): 194–196 : 107, 191, 192, 201, 202, 336
- the three pungent drugs (*kaṭutrika*) see the [three pungent drugs](#) (*trikaṭu*) : 203, 210
- the three pungent drugs (*trikaṭu*) dried [ginger](#), [long pepper](#), and [black pepper](#) (*śuṇṭhī*, *pippalī*, and *marica*) [GVDB](#): 193 : 191, 354
- the three pungent drugs (*vyoṣa*) see the [three pungent drugs](#) (*trikaṭu*), [GVDB](#): 382–383 : 202
- the two types of clitoria (*śvete*) see [white clitoria](#) (*śvetā*) : 210
- the two types of turmeric (*haridre*) see [turmeric](#) (*haridrā*) and [Indian barberry](#) (*dāruharidrā*), [GVDB](#): 465–466 : 210
- thorn apple (*karambha*) *Datura metel*, L. See [GVDB](#): 76 for useful discussion. Also, [AVS](#): 2, 305 (cf. *Abhidhānamāñjarī*), [NK](#): 1, #796 ff. [Potter](#)<sub>rev</sub>: 292 f, [ADPS](#): 132. Possibly the same plant as [plumed cockscomb](#) (*indīvara*) ([GVDB](#): 76, 44–45) : 149, 150, 336, 349
- three heating spices (*tryūṣaṇa*) *śuṇṭhī* (Dried ginger) *Zingiber officinale*, Roscoe. [ADPS](#): 50, [NK](#): 1, #2658, [AVS](#): 5, 435, [IGP](#) 1232, *pippalī* (long pepper) *Piper longum*, L. [ADPS](#): 374, [NK](#): 1, #1928, and *marica* (black pepper) *Piper nigrum*, L. [ADPS](#): 294, [NK](#): 1, #1929 : 87, 156
- three-leaved caper (*varuṇa*) *Crataeva magna* (Lour.) DC. See [AVS](#): 2, 202; cf. [NK](#): 1, #696 : 143, 193, 208, 354
- three-leaved caper (*varuṇaka*) see [three-leaved caper](#) (*varuṇa*) : 210
- toothed-leaf limonia (*surasī*) *Naringi crenulata* (Roxb.) *Nicolson* (formerly *Limonia crenulata* Roxb.), [GVDB](#): 439 : 192, 210
- 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 Chuneekar ([GVDB](#): 92, 247), since *G. barbadense* L. is native to South America and *G. herbaceum* L. is native to Africa : 56, 354
- tree cotton (*picu*) See [tree cotton](#) (*kārpāsa*) : 58, 60
- tree of heaven (*arala*) probably *Alianthus excelsa* Roxb., [GVDB](#): 21–22 : 207
- turmeric (*gaūrī*) *Curcuma longa*, L. See [ADPS](#): 169, [AVS](#): 2, 259, [NK](#): 1, #750 : 114
- turmeric (*haridrā*) *Curcuma longa* Linn. [GVDB](#): 465. On the history of confusions between saffron and turmeric, see [Cox](#) 2011 : 115, 156, 163, 191, 354
- turmeric (*rajanī*) *Curcuma longa*, L. [ADPS](#): 169, [AVS](#): 2, 259, [NK](#): 1, #750 : 42, 157, 192, 202
- turpeth (*trivṛt*) → *trvṛtā*. *Operculina turpethum* (Linn.) *Silva Manso* = *Ipomoea turpethum* R. Br. [GVDB](#): 197 : 107, 144, 191, 284, 336
- turpeth (*trvṛt*) The common spelling in Nepalese MSS of *trivṛt* : 202
- two kinds of salt (*vasukavasira*) See the discussion by T. B. Singh and Chuneekar ([GVDB](#): 362–363), who note that when *vasuka* is mentioned together with *vasira*, two varieties of salt are often

- meant (see *vasukavasirā*) : 85
- unknown fruit poison (*veṇuka*) see [unknown fruit poison](#) (*veṇukā*) : 149
- unknown fruit poison (*veṇukā*) Bambusa bambos, Druce?. See [NK](#): 1, #307, [GVDB](#): 380. The Nepalese transmission has the m. *veṇuka*, not the f. *veṇukā* T. B. Singh and Chuneekar ([GVDB](#): 380) note that this is an unknown fruit-poison : 355
- velvet bean (*svayaṃguptā*) Mucuna pruriens (L.) DC., [GVDB](#): 461, who say that the plant is known in the *Carakasamhitā* but not the *Suśrutasamhitā* : 224, 355
- velvet bean (*ārṣabhī*) see [velvet bean](#) (*rṣabhī*) and [velvet bean](#) (*svayaṃguptā*). [Mahākośa](#): 1, 94, citing the *Rājanighaṇṭu* 3.50, 201 : 200
- velvet bean (*rṣabhī*) see [velvet bean](#) (*svayaṃguptā*), [MW](#): 226, [GVDB](#): 56 : 355
- velvet-leaf (*pāṭhā*) Cissampelos pariera, L. See [ADPS](#): 366, [NK](#): 1, #592, [GJM](#)<sub>1</sub>: 573, [AVS](#): 1, 95; cf. [AVS](#): 2, 277 : 50, 87, 104, 120, 156, 191, 192, 342
- velvet-mite (*indragopa*) Kerria lacca (Kerr.). Lienhard 1978 : 139
- verbena (*bhārgī*) see [verbena](#) (*bhāringī*) : 192, 210
- verbena (*bhāringī*) → phaṇjī. Clerodendrum serratum (L.) Moon or C. serratum; see [AVS](#): 2, 121, [ADPS](#): 87 : 355
- verbena (*phaṇjī*) Clerodendrum serratum, L. See [AVS](#): 2, 121, [ADPS](#): 87 : 142
- vetiver (*uśīra*) Chrysopogon zizanioides (L.) Roberty, also called “khus.” [NK](#): 1, #180, [GVDB](#): 54 identify it as vetiver : 86, 141, 186, 355
- vetiver and lemon grass (?) (*uśīre*) “the two uśīras,” perhaps [vetiver](#) (*uśīra*) and [lemon grass](#) (*uśīrabheda*) : 210
- viburnum (*tilva*) see [viburnum](#) (*tilvaka*) : 202
- viburnum (*tilvaka*) Viburnum nervosum D.Don. In their thoughtful article, T. B. Singh and Chuneekar ([GVDB](#): 185–186) separate *tilvaka* from *lodhra*, a conflation they attribute to Dr̥ḍhabala. They identify V. nervosum because of its use under a similar local name in Garhwal 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 : 107, 208, 347, 355
- viburnum extract (*tailvaka*) see [viburnum](#) (*tilvaka*), [GVDB](#): 185, also a ghee compound of [viburnum](#) (*tilvaka*) : 224
- ‘Virāṭa’s plant’ (*vairāṭaka*) unknown. See ? : 150, 152
- water snowflake (?) (*kumudavati*) see [water snowflake](#) (?) (*kumudavatī*) : 150
- 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*)) : 149, 338, 355

- watered buttermilk (*udaśvit*) MW: 183 : 140
- weaver's beam tree (*mokṣaka*) see [weaver's beam tree](#) (*muṣkaka*) : 356
- weaver's beam tree (*muṣkaka*) Schrebera swietenoides, Roxb. See AVS: 5, 88, Lord, NK: 1, #2246, GVDB: 242–243 : 109, 162, 356
- weaver's beam tree (*pāṭalī*) usually a synonym for [crimson trumpet-flower tree](#) (*pāṭalā*), but T. B. Singh and Chuneekar (GVDB: 242–243) argue that it is [weaver's beam tree](#) (*mokṣaka*) because some authors distinguish two colours (unlike *pāṭalā*) : 109, 207, 210
- weaver's beam tree (*viśalyā*) Schrebera swietenoides Roxb. ← *kuberākṣī*. T. B. Singh and Chuneekar (GVDB: 371) notes that this name is a synonym for many other plants, including *lāṅgālī*, *indravāruṇī*, *guḍūcī* etc. Ḍalhaṇa identified it with *pāṭalā*, *kāṣṭhapāṭalā*, and *agniśikhā* tree, all of which may be called *śvetamokṣaka* or *kuberākṣī* : 191
- weevil wort (*tālamūlikā*) GVDB: 178–179 : 356
- weevil wort (*tālapatrī*) → *tālamūlikā*, [weevil wort](#), q.v. GVDB: 178 : 193
- white babool (*arimeda*) Acacia leucophloea, (Roxb.) Willd. See AVS: 1, 23 : 50, 208
- 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, *kṣudrā* (white, according to Ḍalhaṇa) and *mahā* (blue, according to Ḍalhaṇa). Sometimes given as a synonym for [winged-stem canscora](#), but sometimes as a contrasting plant : 141, 192, 201, 204, 209, 354
- white cutch tree (*somavalka*) Acacia polyacantha, Willd. See AVS: 1, 30, IGP 7, GJM1: 602, AVS: 2, 935; pace NK: 1, #1038 : 142, 162
- 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 Chuneekar (GVDB: 424) discussed whether this term might be broadened to any resinous tree and decided against : 50, 85, 351, 356
- white dammer tree (*sarjja*) see [white dammer tree](#) (*sarja*) : 207
- white lotus (*punḍarika*) see [sacred lotus](#) (*padma*), GVDB: 252 : 152
- white sandalwood (*bhadraśriya*) Santalum album Linn. See [white sandalwood](#) (*bhadraśrī*) : 114, 210
- white sandalwood (*bhadraśrī*) Santalum album Linn. see [sandalwood](#) (*candana*) GVDB: 152, 282 and Carakasamhitā ci.4.102 (Ca 1941: 434) where it is contrasted with *lohitacandana* : 87, 356
- white siris (?) (*kapītana*) T. B. Singh and Chuneekar (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 : 207
- white siris (*kaṭabhī*) Albizia procera (Roxb.) Benth. or A. lebbeck (Linn.) Benth. GVDB: 63–64, AVS: 1, 81–84. Cf. [siris](#) : 186, 353
- white siris (*kiṇihī*) Albizia procera (Roxb.) Benth., GVDB: 98, which also discusses past confusions; NK: 1, #93 : 156, 192
- white teak (*kārśmarī*) → *kāśmarī* : 225
- white teak (*kāśmarya*) see [white teak](#) (*kāśmarī*) : 210
- white teak (*kāśmaryā*) see [white teak](#) (*kāśmarī*) : 85
- white teak (*kāśmarī*) → *kāśmarya*, *kārśmarī*, *madhuparnī*. Gmelina arborea, Roxb. See GJM1: 543, Trees: 51, ADPS: 240,

- GVDB: 96–97 : 114, 116, 341, 356  
 white teak (*madhuparṇī*) → *kāśmarī* : 85  
 white water-lily (*kumuda*) *Nymphaea alba*, Linn., GVDB: 105 : 41, 210, 340  
 wild asparagus (*bahuputrā*) *Asparagus racemosus*, Willd. See further [wild asparagus](#) (*śatāvārī*) Possibly a syn. for *nandana*. The bark of wild asparagus is toxic : 142  
 wild asparagus (*śatāvārī*) *Asparagus racemosus*, Willd. See ADPS: 441, AVS: 1, 218, NK: 1, #264, IGP: 103, AVS: 4, 249 ff, Dymock: 3, 482 ff : 112–114, 116, 230, 357  
 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). Ḍalhaṇa 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) : 156, 357  
 wild celery (*ajamodā*) *Apium graveolens*, L. Sometimes identified with *agnika* ([wild celery](#)), q.v. : 156, 191  
 wild Himalayan cherry (*padmaka*) *Prunus cerasoides* D.Don, GVDB: 236, AVS: 4, 353–355. MW: 585 is wide of the mark : 114–116, 191, 192, 210  
 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 : 120  
 wild spider flower (*tailaparṇika*) see [wild spider flower](#) : 210  
 wild spider flower (*tilaparṇī*) *Cleome gynandra* L., GVDB: 184–185, but see the discussion of the other drug plants sometimes intended by this name : 357  
 wild sugar cane (*kāṇḍekṣu*) *Saccharum spontaneum* L., GVDB: 90 : 85  
 winged-stem canscora (*giriḥvā*) see [winged-stem canscora](#) (*girikarṇikā*) : 192  
 winged-stem canscora (*girikarṇikā*) sometimes → *śvetā*, in which case possibly *Clitoria ternatea*, L., see AVS: 2, 129, NK: 1, #621. Since *śvetā* and *giriḥvā* are cited as separate constituents of one formula (e.g., *Suśrutasamhitā* 5.5.75 (Su 1938: 579) they cannot be the same plant. GVDB: 138–139 argued for *Symphorema polyandrum* Wight, which they also assigned to *sinduvāra*. When discussing *śaṅkhaṇḍapūṣpī*, 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* Choisy. The former has a more appropriate distribution and is chosen here : 357  
 winged-stem canscora (*giryāḥvā*) see [winged-stem canscora](#) (*girikarṇikā*) : 356  
 Withania (*aśvagandhā*) *Withania somnifera* (L.) Dunal. See AVS: 5, 409 f, Dymock: 2, 566 f, 150, GVDB: 29, Chevillard: 152 : 59, 108, 115, 192  
 wood-apple (*kapittha*) *Limonia acidissima*, L. See AVS: 3, 327, NK: 1, #1021 : 115, 141, 143, 193, 202, 203, 207, 224, 350  
 woody turmeric (*kāleyaka*) *Coscinium fenestratum* (Goetgh.) Colebr., GVDB: 95. See V. K. Gupta et al. 2015: 173–175 : 210  
 woody-fruited jujube (*gopaghonṭā*) *Ziziphus xylopyra* (Retz.) Willd. GVDB: 147 → *ghonṭā* : 208  
 yellow-berried nightshade (*kaṇṭakārī*) *Solanum virginianum* L. (syn. *Solanum*



surattense Burm. f. and *Solanthum xanthocarpum*, Schrad. & Wendl.)  
 GVDB: 68–69. See also IHR: 430. A  
 component of lesser five roots: 346, 358

yellow-berried nightshade (*kṣudrā*) see  
 yellow-berried nightshade (*kaṇṭakārī*),  
 ADPS: 100, NK: 1, #2329, AVS: 5, 164:  
 156, 157

## Fauna

arala rat (*arala-animal*) a hapax legomenon  
 in Sanskrit, probably a Dravidian loan  
 word or cognate from forms like Pengo,  
 Maṇḍa, Kuwi etc., *orli*, *urli*, etc.,  
 DED<sub>2</sub>: #994: 198, 200, 201  
 aṭakī (*aṭakī*) unknown: 217  
 bad-marked rat (*kuliṅga*) etymologically,  
 “having bad-marks” MW: 286, but  
 unidentifiable: 198, 201  
 beaked (*tunḍikerī*) neologism insect-name  
 based on the etymology of *tunḍa*.  
 Probably *tunḍikera* and *tunḍicela* are  
 variants of the same lexeme. *tunḍa* 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”: 216  
 bee (*bhramara*) bee or bumble-bee,  
 MW: 769, etc.: 217  
 bhaṭābha (*bhaṭābha*) unknown: 217  
 black drongo (*dhūmyāṭa*) *Dicrurus*  
*adsimilis*, Bechstein, Dave 1985: 63, 65,  
 199: 138  
 black rat (*kṛṣṇa*) perhaps the widespread  
 Black Rat or Common House Rat,  
*Rattus Rattus* L., BIA: 210: 198, 200  
 black-beak (*kṛṣṇatunḍa*) unknown insect,  
 name based on etymology; MW: 307.  
 But possibly “black-belly” based on the  
 lexeme *tunda*, CDIAL: 1, #5858: 217  
 brown rat (*kapila-animal*) name from  
 etymology; unidentified; see tawny rat  
 (*aruṇa*): 198, 201  
 bull (*vṛṣabha*) MW: 1012, etc. *Bos taurus*,

Linn.: 138  
 celestial (*svarga-insect*) unknown insect,  
 name based on etymology: 217  
 centipede (*śatapādaka*) the name’s meaning  
 is, “hundred-foot” MW: 1049,  
 CDIAL: 1, #12281: 217  
 chital deer (*prṣata*) *Axis axis*, Erxleben.  
 BIA: 295–296. In *Suśrutasaṃhitā* 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: 138, 144, 192  
 chukar partridge (*cakora*) *Alectoris chukar*,  
 J. E. Gray, Woodcock 1980: 45,  
 distributed from NW India to Nepal  
 and Assam: 138  
 civet (*mārjāra*) BIA: ch. 4 *et passim*,  
 McHugh 2012: 192  
 common crane (*kroñca*) *Grus grus*, Linn.,  
 Woodcock 1980: 47, Dave 1985: ch. 62:  
 138  
 cone snail (*śambūka*) a bivalve or snail  
 (MW: 1055), but presumably a  
 poisonous one such as the cone-snail:  
 160  
 cook-fish insect (*pākamatsya*) unknown  
 insect, name based on etymology. A  
 kind of fiery insect according to  
 Ḍaḥaṇa on 5.3.5 (Su 1938: 567):  
 160, 217  
 cricket (*uccīṭiṅga*) The suggestion “cricket”  
 is from Assamese *usāṅgā* 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 : 216
- devout (*brahmaṇīkā*) unknown insect, name based on etymology : 217
- droplet (*bindula*) unknown insect, name based on etymology. Dalhaṇa on 5.8.9 ([Su](#) 1938: 586) noted that some people read *viluṭa* instead of *bindula* : 217
- drummer (*duṇḍubhaka*) 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” : 217
- enemy-liquor (*arimedaka*) unknown insect, name based on etymology. Perhaps a variant of *ali*- “bee”, [CDIAL](#): 1, #716 or *āla* “poison” [CDIAL](#): 1, #1352 : 217
- fidgety 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”, [DED](#)<sub>2</sub>: #2675 : 198, 201
- fiery (*agni-insect*) unknown insect, name based on etymology. Cf. Marāṭhī *āghī* “a kind of stinging fly” [CDIAL](#): 1, #57 : 216, 359
- fiery insect (*agnikīṭa*) see [fiery](#) (*agni-insect*) : 217
- five-venom (*pañcālaka*) unknown insect, name based on etymology : 217
- fondling rat (*lālana*) based on etymology. An unknown rat or mouse : 198, 199
- gajpipul 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 [gajpipul](#) (*gajapippalī*)). Lianas are known for providing a habitat for many arboreal animals, including rodents. The vulgate *Suśrutasaṃhitā* reads *haṃsira* as the name of this rat : 198, 200
- grey peacock-pheasant (*jīvajīvaka*) *Polyplectron bicalcaratum*, Linn., Dave 1985: 270, 273, 274, 281 : 138
- hill myna (*sārikā*) *Acridotheres tristis*, L., etc. See Ali and Ripley 1983: #1006, Dave (1985: 28 ff.), Woodcock (1980: 119) : 138
- horned (*śṛṅgī*) unknown, based on etymology : 216
- house gecko (*grhagoḍikā*) [MW](#): 362, [CDIAL](#): 1, #4324. Hemacandra’s *Abhidhānacintāmaṇi* (4.364) mentions that *grhagoḍhikā* and *grhagolikā* are synonyms (*Rādhākāntā Deva* 1876: 691a, *sub māṇikyā*) : 160
- house shrew (*chuchundara*) *Suncus murinus* (Linnaeus, 1766), [Wikipedia](#), [BIA](#): 168–169 and plate 38. Probably a Dravidian loan word related to Tamil *cunṭaṇ*, “grey musk shrew,” see [DED](#)<sub>2</sub>: #2661 and [CDIAL](#): 1, #5053 : 198, 200
- hundred-creeper (*śatakurda*) unknown insect, name based on etymology. Cf. *śarāvākurda* “creeping among dishes” ([MW](#): 1057), apparently also the name of a snake : 216
- hundred-kulimbhaka (*śatakulimbhaka*) unknown insect class. Perhaps centipedes : 216
- iguana (*godheraka*) The गौधेरक is described in the *Carakasaṃhitā* 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 : 218, 360
- Indian monitor lizard (*godhā*) *Varanus bengalensis* (Daudin, 1802), [Reptiles](#): 58–60, ill. : 59, 144, 359
- Indian peafowl (*mayūra*) *Pavo cristatus*, Linn., Woodcock 1980: 39 : 138
- invincible rat (*ajita*) etymological meaning; unidentifiable : 198, 201
- kaṣāyavāsika (*kaṣāyavāsika*) unknown : 217

- kiṭibha (*kiṭibha*) unknown : 217
- koel (*kokila*) *Eudynamys scolopaceus*, Linn., *Wikipedia*, Woodcock 1980: 66 : 138
- kokila-insect (*kokila-insect*) unknown : 217
- koṇṭāgīrī (*koṇṭāgīrī*) unknown : 217
- krīmikara (*krīmikara*) unknown : 217
- kṛṣṇagodhā (*kṛṣṇagodhā*) unknown : 217
- kuṣṭa-insect (*kuṣṭa-insect*) unknown : 217
- lac (*lākṣā*) *Kerria lacca* (Kerr.). See GJM1: 445, NK: 2, #32, Varshney 2000. Watt (*WattComm*: 1053–1066) is characteristically informative, and is definite about the antiquity of lac in India : 163, 192, 210
- large Brown rat (*mahākapiḷa*) from the etymology of the name, “large brown,” perhaps a bandicoot : 201
- large gecko (*galagoḍikā*) A poisonous insect, amphibian or reptile described in *Suśrutasaṃhitā* 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., गलगोलिका, गलदोडी, गलगोली. Cf. the remarks on geckos in note 517, p. 160. 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 (DED<sub>2</sub>: #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 *Suśrutasaṃhitā*. See further IW: 40, 135–136; Deuti 2020 : 90
- leaf-scorpion (*patravṛścika*) unknown insect, name based on etymology : 217
- legume-insect (*vaidala*) unknown insect, name based on etymology : 216
- lentil insect (*masūrika-insect*) usually the name of a lentil or the “lentil disease,” namely smallpox. But here, an insect : 216
- little rat (*cikkira*) likely related to the Tuḷu “cikkeli, a small variety of mouse,” and other Dravidian works related to Tamil *cikka* “small,” DED<sub>2</sub>: #2495. See also CDIAL: 1, #4779 on *cikka* “mouse or muskrat,” from lexical sources, and #4781 *cikkā* “small” from Drav., Burrow 1948: #141 : 198, 200
- little-voice (*alpavāca*) unidentified insect; possibly a wrong reading : 216
- lotus-insect (*padmakīṭa*) unknown insect, name based on etymology : 217
- maggot (*kīra-insect*) unknown insect. See Lahndā, Panjābī, Bengali, Oriya *kīrā*, etc., CDIAL: 1, #3193 and similar forms in Bihārī, Maithilī Bhojpurī, etc. Obviously a variant of *kīṭa* : 217
- maṇḍalapuṣpaka (*maṇḍalapuṣpaka*) unknown : 217
- 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” DED<sub>2</sub>: 2030. This is possibly supported by Kannada *kok* and Telugu *golatta*, *koku* for the mole-rat, reported by Prater (BIA: 205) : 198, 201
- mongoose (*nakula*) *Urva edwardsii* or the often sympatric *U. auropunctatus* (small Indian mongoose, usually an



- eater of smaller creatures than snakes) (BIA: ch. 5), On mongooses and snakes, see IW: 112; BIA: 98–99: 144, 192
- mosquito (*maśaka*) a mosquito, gnat, gadfly or any stinging fly, MW: 793, CDIAL: 1, #9917: 217
- myna-face (*śārikāmukha*) unknown insect, name based on etymology: 216
- nāhana (*nāhana*) unknown: 217
- noseless (*vināsikā*) unknown insect, name based on etymology: 217
- outsider (*bāhyaka*) unknown insect, name based on etymology: 217
- pañcakṛṣṇa (*pañcakṛṣṇa*) unknown: 217
- pañcaśukla (*pañcaśukla*) unknown: 217
- parakeet (*śuka*) *Psittacula krameri*, Scopoli (or *P. eupatria* or *cyanoccephala*), See Woodcock 1980: 64: 138, 202
- picciṭā (*picciṭā*) unknown insect; etymologically perhaps similar to *piccata* “squashed flat” (MW: 624): 217
- pigeon rat (*kapota-animal*) a rat “like a pigeon;” presumably of grey colour: 198, 201
- pitcher-like (*kaunḍinya-insect*) unknown insect, name based on etymology: 217
- 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”: 362
- pot-turd (*kumbhīvarcas*) unknown insect, name based on etymology (on *-varcas*, see *Mahākośa*: 1, 725: 217
- pravalāka (*pravalāka*) unknown: 217
- racket-tailed drongo (*bhr̥ṅgarāja*) *Dicrurus paradiseus*, Linn., Woodcock 1980: 123: 138
- 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”: 198, 201
- red-toothed shrew (*kaṣāyadanta*) see red-toothed shrew (*kaṣāyadaśana*): 201
- red-toothed shrew (*kaṣāyadaśana*) 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. schmidi*): 198, 361
- revolver (*āvarttaka*) unidentified insect: 216
- river dolphin (*śiśumāra*) *Platanista gangetica* (Lebeck), BIA: 313–314, plate on p. 289, MW: 1076: 211
- śairyaka-insect (*śairyaka-insect*) unknown: 217
- śambuka (*śambuka*) unknown: 217
- sarṣapaka (*sarṣapaka*) unknown: 217
- she-ass insect (*gardabhī-insect*) unknown insect, name based on etymology: 217
- sheep-insect (*urabhra-insect*) unidentified insect: 216
- shining-like-grain (*kaṇabha*) unknown insect, name based on etymology: 217
- slimy (*śleṣmaka-insect*) unknown insect, name based on etymology: 217
- sonny rat (*putraka*) unidentified mouse or rat. Perhaps related to Dravidian forms like Pengo *puṭki*, DED<sub>2</sub>: #4257 (itself perhaps just a form related to Tamil *poṭi* “little”): 198, 199
- speckle-head (*citraśīrṣaka*) unknown insect, name based on etymology: 216
- spoṭaka (*spoṭaka*) unknown: 217
- spotted (*paruṣa*) unknown insect, name based on etymology, which could be anything from dirty-coloured, stiff, or rough to shaggy: 216

- stripy (*abhirājī*) unknown insect, name based on etymology : 216
- sucīmukha (*sucīmukha*) unknown : 217
- swan (*haṁsa*) *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 : 138
- 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) : 210
- 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” ?? : 198, 201, 202, 358
- 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” (DED<sub>2</sub>: #150). Possibly remotely related to Dravidian lexemes for “tick,” *uḷuṅgu*, *uḍum*, *urūm*, *uṇṇi*, etc. DED<sub>2</sub>: #591, #604. The vulgate of the *Suśrutasamhitā* reads *pot-nose wasp* (?) (*kumbhīnāsa*) “pot-nose” in place of this lexeme, q.v. : 216
- tolaka (*tolaka*) unknown : 217
- tortoise (*kūrma*) Perhaps *Geochelone elegans* (Schoepff), *Reptiles*: 30 and plate, MW: 1076 : 211
- tuṇḍavakra (*tuṇḍavakra*) unknown : 217
- tuṅgīnāsa (*tuṅgīnāsa*) unknown : 217
- vaiśvambhara (*vaiśvambhara*) unknown : 217
- valabhika (*valabhika*) unknown insect : 217
- vicitiṅga (*vicitiṅga*) unidentified insect (not in MW) : 216
- warding off (*vāraṇī*) unknown insect, name based on etymology. Cf. *Ōriyā bāraṇī* “charm against wild animals or noxious insects” CDIAL: 1, #11553 : 217
- 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 : 198, 201
- worm-dish (*krimisarāvī*) unknown insect, name based on etymology. *śarāva* “dish, plate, etc.” (MW: 1057) : 217

## Minerals

- ashes (*bhasma*) ashes, corrosive when wet : 150
- 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. : 150
- orpiment (*haritāla*) *Arsenii trisulphidum*. See NK v. 2, p. 20 ff : 150

vermilion (*rakta*) speculative, based on  
*Mahākośa*: 1, 667, under *raktadhātu*,

citing the *Dhanvantarīyanighaṇṭu* : 150



## Glossary

'angry beetles' - *toṭaka*: 160  
 'bellied' - *kukṣita*: 161  
 'darts' - *śārikā*: 161  
 'earth scorpions' - *viśvambhara*: 161  
 'flat insects' - *picciṭā*: 160  
 'lids' - *śārava*: 161  
 'liquors' - *medaka*: 161  
 'orange-dwellers' - *kaṣāyavāsika*: 160  
 'pepper snakes' - *sarṣapaka*: 160  
 'poisonous snakes' - *pracalāka*: 160  
 'pot insects' - *kaunḍinya*: 160  
 'speckle-heads' - *citraśīrṣa*: 161  
 'wing-scorpions' - *patravṛścika*: 161  
 'wood-enemies' - *dārukāri*: 161  
 √*pīḍ* - pain: 180  
 √*rakṣ* - protect: 88  
 √*śodh* - purge: 187  
 √*ūh* - propelled: 180  
 abdomen - *pakvāśa*: 104  
 abdominal gripes - *śūla*: 209  
 abdominal lump - *gulma*: 242  
 abdominal swelling - *gulma*: 72  
*abhayā* - chebulic myrobalan: 226  
*abhramukta* - free from clouds: 232  
*abhyaṅga* - massage oil: 137, 143 - oil  
 massage: 141 - oil rub: 104, 268  
*abhyañjana* - oil rubs: 191  
*abīja* - seedless: 84  
*ācamana* - lavages: 87  
*ācāra* - regimen: 25  
*ācārika* - medical advice: 58  
 accents - *svara*: 186  
 accumulation - *samudāya*: 55 - *sañcaya*: 26  
 acidic - *amla*: 86  
*ādarśamaṇḍala* - the mirror ring: 175  
*adhikaraṇa* - topic: 281f  
*adhimantha* - irritation: 234  
*adhiṣṭhāna* - base, foundation: 159  
 - carriers: 159 - located: 25  
*ādhmāna* - distension: 151 - tympanites:  
 79  
*ādhmāta* - swollen: 178  
*adhodṛṣṭitva* - downward vision: 234

*adhyāya* - sections: 28  
 afflicted - *upasṛṣṭa*: 84  
 affliction - *upasarga*: 143  
 afterbirth - *aparā*: 123  
*agada* - antidote: 155, 186f, 191, 204  
 - antitoxic: 186  
*āgantū* - external factors: 27  
*āgāradhūma* - soot from the chimney: 50,  
 105  
 aggregation - *samuccaya*: 281, 285  
*āgneya* - of the nature of agni: 98  
*agni* - digestive fire: 71 - heat: 70  
*agnika* - the flame: 175  
*agnikarma* - cauterization: 104  
*agnisaṅga* - diminished digestive fire: 72  
*agra* - supernatant layer: 229  
*agramukta* - free from the point: 232  
*āhāra* - diet: 25  
*āhārya* - take away: 56  
*ahipatāka* - the snake flag: 176  
*ahorātra* - day and night: 26  
 aids - *aṅga*: 227  
 air - *samīraṇa*: 180  
*ajagara* - constrictor: 178 - the goat  
 swallower: 176  
*ajākṣīrārdita* - stirred with goat's milk:  
 234  
*ajeya* - invincible: 144 - invincible: 157  
*akhiladehavyāptirūpam* - takes the form of  
 pervading the whole body: 153  
*akriya* - inactive: 78  
*ākṣepa* - contractions: 76  
*ākṣepaka* - convulsion: 76, 79  
 - convulsions: 76  
*ākula* - permeated: 218  
 al layers - *kalā*: 180  
*alagardā* - sting-gush: 39  
*alagarda* - the hungry sting: 175  
*alanīkṛtvā* - made accessible: 23  
*ālepa* - liniment: 224  
*ālepana* - liniments: 39, 143 - ointments:  
 104  
 alleviated - *yāpya*: 227

- alleviation - *pratīkāra*: 26  
 along these lines - *evam*: 27  
*āmāśaya* - stomach: 154f  
*amla* - acidic: 86  
*amṛta* - immortal: 144  
*anāgatāpekṣaṇa* - future reference: 281, 285  
*ānāha* - constipation: 151, 154, 157  
*anāyūṣya* - not conducive to long life: 99  
*aṇḍaja* - born from eggs: 26  
*aṇḍīnī* - with testicles: 243  
*anekānta* - variable statement: 281, 284  
*aṅga* - aids: 227 - component: 24 - parts: 27  
*aṅgamarda* - bruising of the limbs: 154  
 anger - *krodha*: 25  
*aṅgulirāji* - the finger stripe: 175  
 animals - *paśu*: 26  
*añjana* - application of collyrium: 224, 229 - collyrium: 187f, 191f, 223–226, 228ff, 235 - eye make-up: 137, 143 - eye ointment: 143 - eye salve: 155 - stibnite: 229  
*annamada* - intoxication from food: 154  
*antarāyāma* - emprosthotonos: 76  
 antidote - *agada*: 155, 186f, 191, 204  
 antitoxic - *agada*: 186  
*antra* - entrails: 226 - gut: 155  
 ants - *pipīlika*: 26  
*aṇu* - minute: 98  
*anubandha* - indicatory sounds: 276  
*anulepana* - massage ointment: 137, 141 - ointment: 141  
*ānulomya* - rightness: 70  
*anumata* - consent: 281, 284  
*anuvāsana* - oily enema: 85  
*anya* - other: 271  
*apadeśa* - statement of reason: 281, 283  
*apakṣāghāta* - paralysis: 76  
*apāna* - apāna: 71  
*apāna* - apāna: 71  
*apāṅga* - outer corner of the eye: 231  
*aparā* - afterbirth: 123  
*apatānaka* - spasmodic contraction: 76  
*āpatantraka* - spasmodic contradiction: 77  
*apavarga* - exception: 281, 284  
 apertures of the head - *kha*: 142  
 aphorism - *sūtra*: 282  
 application of collyrium - *añjana*: 224, 229  
 application of oil to the head - *śirobasti*: 106  
*apuṣpa* - the grass flower: 174  
*araga timira* - non-bloodshot blindness: 231  
*ardhakapāṭasandhika* - half door-hinge: 56  
*ardita* - paralysis of the jaw-bones: 77, 79 - spasm of the jaw-bones: 77  
 arid-land animals - *jāṅgala*: 229  
*ariṣṭā* - bandage: 184f, 189f  
*ariṣṭa* - omens: 63  
*arṇavamala* - cuttle fish: 226  
*arocaka* - loss of appetite: 154  
*arśas* - prolapses: 242  
*ārtava* - menses: 100 - menstrual blood: 98, 242 - seasonal blood: 84  
*ārtava* - menstrual blood: 86f  
*artha* - purpose: 270  
*arthāpatti* - implication: 281, 284  
*aruci* - disinterest in food: 189  
*asādhya* - incurable: 84, 223 - untreatable: 231  
*āsaṅgima* - fastening: 56  
*āsekya* - having diminished seed: 91  
*aśmarī* - urinary stones: 209  
*āśoka* - grief: 25  
*āśraya* - substrata: 147  
*āśrayin* - substrate: 25  
*aśrupāta* - weeping tears: 88  
*āsthāpana* - enema: 85  
*asthi* - bones: 27  
*aṣṭhīlā* - pebble: 139  
 asthma - *śvāsa*: 209  
*asūyā* - jealousy: 25  
*atibalā* - strong mallow: 227  
*atideśa* - prediction: 281, 283  
*atikrāntāpekṣaṇa* - past reference: 281, 285  
*ātmaka* - nature: 24

*āṭopa* - flatulence: 140  
 attribute - *guṇa*: 268  
*atyānandā* - extremely excited: 243  
*avabāhuka* - avabāhuka: 79  
*avabāhuka* - *avabāhuka*: 79  
*avadāraṇa* - fissuring: 143  
*avakāśa* - place: 42  
*avalekhana* - combs: 137  
*avapīḍa* - sternutatory: 188  
*āvarta* - spiral: 231  
*avaśardhita* - fart: 160  
 aversion to food - *bhaktadveṣa*: 209  
 axelwood - *dhava*: 235  
*ayana* - half-year: 26  
*āyatta* - depends on: 25  
*āyu* - life: 38  
*āyur* - life, longevity: 21  
*āyurveda* - the science of life: 22  
  
*babhru* - the brown: 175  
*babhrūkuṭīmukha* - the brown hut mouth:  
 174  
*baddham* - bound, connected: 60  
*balā* - country mallow: 227  
*bala* - strength: 25  
*balāsa* - phlegm: 105  
*bali* - morsel: 138 - sacrificial offerings:  
 185  
 bandage - *ariṣṭā*: 184f, 189f - *bandha*: 184  
*bandha* - bandage: 184  
 base, foundation - *adhiṣṭhāna*: 159  
*bāṣpa* - vapour: 138f, 142  
*basti* - enema: 106  
*basti* - instillation: 85  
 be exhausted - *sāda*: 155  
 bearers - *voḍhāra*: 137  
 beauty berry - *priyaṅgu*: 229  
 being like a vertical stick - *uddaṇḍaka*: 75  
 belly - *kukṣi*: 91  
 bellyache - *jaṭhara*: 157  
 bent brow and eye - *vakrabhrūnetra*: 233  
 benumbed - *jāḍya*: 180  
 beryl - *vaiḍūrya*: 235  
 between the shoulder-blades - *trika*: 106  
 bewilderment - *moha*: 74  
*bhadradāru* - deodar: 235

*bhakṣya* - masticable: 286  
*bhaktadveṣa* - aversion to food: 209  
*bhaṅga* - leaves: 232  
*bhavet* - it may be: 231  
*bhāvita* - cooked: 229 - infused: 225  
*bherī* - drum: 192  
*bheṣaja* - treatment: 242  
*bhojya* - edible: 286  
*bhrama* - dizziness: 74  
*bhramaraka* - drongo: 138  
*bhūmī* - black earth: 193  
*bhūta* - element: 98  
*bhūtātman* - elemental self: 98  
*bīja* - seed: 91 - semen: 242  
 bile-fever - *pittajvara*: 190  
 bile - *pitta*: 227  
 bilious / choleric - *pittalā*: 243  
*bindurāji* - the drop stripe: 175  
 black earth - *bhūmī*: 193  
 black part - *kṛṣṇa*: 231  
 black soot - *maṣī*: 224  
 black - *kṛṣṇā*: 39  
 blanket sweating - *prastara*: 104  
 blindness - *timira*: 231  
 blink of the eye - *nimeṣa*: 26  
 blisters - *piṭaka*: 199, 202  
 blockage of the vision - *drṣṭyavarodha*:  
 179  
 blood-bile - *raktapitta*: 223  
 blood-bile - *śonita-pitta*, *rakta-pitta*: 227  
 blood-letting - *sirāvedha*: 224  
 blood - *rakta*: 84 - *rudhira*: 26 - *śonita*: 227  
 - *śonita*: 83f  
 bloodshot blindness - *rāgin timira*: 228  
 - *rāgiṇi timire*: 231  
 blossom - *prasūna*: 192  
 blue dot cataract - *mlāyin*: 230  
 blue vitriol - *tuttha*: 229  
 bodily constituents - *dhātu*: 153  
 bodily element - *dhātu*: 73  
 bodily tissues - *dhātu*: 70 - *dhātu*: 180  
 body language - *inḡita*: 137  
 body tissue - *dhātu*: 154  
 bones - *asthi*: 27  
 born from eggs - *aṇḍaja*: 26

- born in in a caul - *jarāyujā*: 26  
 born of sweat - *svedaja*: 26  
 bound, connected - *baddham*: 60  
 box myrtle - *kaṭphala*: 226  
*brahma* - holiness: 185  
*brahmacāriṇī* - chaste woman: 88  
*brahmaṛṣi* - holy sages: 185  
 breath - *prāṇa*: 71  
 brilliance - *tejas*: 90  
 bristles - *śūka*: 160  
*bṛṇhāṇa* - nourishment: 25  
 bruising of the limbs - *aṅgamarda*: 154  
 bubbling - *budbuda*: 234  
*budbuda* - bubbling: 234  
 bulbs - *kanda*: 26  
 burning sensation in feet - *pādadaḥa*: 78  
 burning sensation - *dāha*: 75  
  
*cakradhārā* - rim of a wheel: 57  
*cakraka* - the ringed: 176  
*cala* - liquid: 232  
 can be mitigated - *yāpya*: 231  
*caraṇī* - *caraṇī*: 243  
*caraṇī* - *caraṇī*: 243  
 cardamom - *elā*: 226  
*carman* - pelt: 26  
*carmānta* - leather: 184  
 carnivore - *kravyabhuj*: 228  
 carriers - *adhiṣṭhāna*: 159  
 cassia cinnamon - *patra*: 234  
 castor oil - *pañcāṅgulataila*: 227  
 cataract - *liṅganāśa*: 231  
*caturvarga* - fourfold grouping: 27  
*catuṣṭaya* - four factors: 27  
 caused by wind - *pavanodbhava*: 227  
 causes - *hetu*: 243  
 causing a fall - *sraṃsanī*: 243  
 causing the destruction of actions such  
     as moving - *gamanādikriyāvināśakarī*:  
     233  
 caustic - *kṣāra*: 85, 87, 207  
 cauterization - *agnikarma*: 104  
 cauterized - *paridāhita*: 204  
 character - *prakṛti*: 216  
 chaste woman - *brahmacāriṇī*: 88  
 chebulic myrobalan - *abhayā*: 226  
  
*chedya* - excision: 27  
 cheek-ear - *gaṇḍakarna*: 56  
 chest - *hr̥d*: 155  
*chidra* - opening: 231  
 child bearing - *kaumārabhṛtya*: 238  
 child-murderess - *putraghnī*: 243  
*chinna* - segmented: 39  
 choler - *pitta*: 243  
 chyle - *rasa*: 154  
 chyle - *rasa*: 45  
 chyle - *rasa*: 72  
*cihna* - signs: 243  
 circuit of the pupil - *dr̥ṣṭimaṇḍala*: 232  
*citraka* - the mark: 175  
*citraśīrṣa* - 'speckle-heads': 161  
 citron - *mātuluṅga*: 234  
 clean - *pra*√ *sādh*: 143  
 cloth - *plota*: 184  
 clumps - *granthi*: 83, 87  
 clusters - *samplava*: 26  
 cock - *tāmracūḍa*: 228  
 cohesion - *yoga*: 281  
 cohesion - *yoga*: 282  
 collection - *varga*: 27  
 collyrium - *añjana*: 187f, 191f, 223–226,  
     228ff, 235  
 combination - *sannipāta*: 98  
 combined - *upahita*: 227  
 combs - *avalekhana*: 137  
 comfort - *sukha*: 27  
 compendium of diseases - *rogasamgraha*:  
     240  
 complexion - *varṇa*: 25, 63, 90  
 component - *aṅga*: 24  
 compounds - *yoga*: 224  
 compressed - *saṃkṣipta*: 56  
 compressed - *saṃkṣipta*: 57  
 compulsion - *niyoga*: 281, 285  
 conch - *salilotthita*: 230  
 congenital blindness - *jātyandha*: 90  
 congested humours - *sannipāta*: 27  
 consent - *anumata*: 281, 284  
 constipation - *ānāha*: 151, 154, 157  
 constitution - *prakṛti*: 189  
 constrictor - *ajagara*: 178



contamination dropsy - *duṣyodara*: 154  
 contractions - *ākṣepa*: 76  
 contraposition - *viparyaya*: 281, 284  
 convulsion - *ākṣepaka*: 76, 79  
 convulsions - *ākṣepaka*: 76  
 cooked barley - *yavaudana*: 231  
 cooked - *bhāvita*: 229 - *siddham*: 264  
 copper - *tāmra*: 233  
 coral - *vidruma*: 235  
 coṣa - driness: 234  
 cottony jujube - *kākolī*: 235  
 counteraction - *pratiṣedha*: 223  
 country mallow - *balā*: 227  
 cow snout - *gonasa*: 176  
 cow-dung - *gośakṛt*: 225  
 cow-praising - *govandanā*: 39  
 cow's flesh - *gomāṃsa*: 224  
 cow's urine - *gomūtra*: 226  
 crabs - *uccītiṅga*: 161  
 creeper-ear - *vallīkarṇa*: 56  
 creepy-crawlies - *sarīsrpa*: 23, 26  
 crow's foot - *kākapada*: 156  
 crow's lip - *kākauṣṭha*: 56  
 cumucumāyana - itching: 73  
 cuñcumālaka - little ring of spots: 172  
 curable - *sādhya*: 84, 223f  
 curds - *dadhi*: 140, 144  
 cure - *siddhi*: 156  
 cured - *sādhya*: 157  
 cuscus grass - *uśīra*: 229  
 cut - *pra*√*chā*: 203  
 cutting with a blade - *śastrakṣata*: 224  
 cuttle fish - *aṇṇavamala*: 226  
 cuttlefish bone - *phena*: 235  
   - *samudraphena*: 226  
  
*dadhi* - curds: 140, 144  
*dadhimukha* - the curd mouth: 174  
*dadru* - ringworm: 218  
*dāha* - burning sensation: 75 - feeling of  
   heat: 201 - overheating: 223  
*dainya* - misery: 25  
*dais* - *pīṭha*: 56  
*daivakṛte* - naturally-occurring: 231  
*dantamāṃsa* - gum: 140  
*dantaveṣṭa* - tooth socket: 140

*darbhapuṣpa* - the grass flower: 176  
*dardru* - ringworm: 218  
*darita* - torn: 172  
 dark brown - *śyāma*: 90  
 dark colour - *dhyāma*: 152  
 dark, rough patches of skin - *kiṭibha*: 199,  
   218  
 dark - *kṛṣṇa*: 90  
 dart-mouth - *śaṅkumukhī*: 40  
*dārukāri* - 'wood-enemies': 161  
*datta* - given: 138  
 day and night - *ahorātra*: 26  
 deadly substance - *kālakalpa*: 180  
 decoction - *kaṣāya*: 85 - *kvātha*: 87, 155,  
   200ff - *niḥkvātha*: 87  
 decoctions - *kaṣāya*: 137, 232  
 decomposition - *kuṇapa*: 83f  
 deducible - *ūhya*: 281, 286  
 deer - *eṇa*: 228  
 defect - *doṣa*: 86  
 defects - *doṣa*: 242  
 deity - *devatā*: 185  
 delirium - *moha*: 151  
 demons - *graha*: 238  
 demons - *graha*: 238  
 deodar - *bhadrādāru*: 235  
 depends on - *āyatta*: 25  
 depression - *viśāda*: 25  
 desert date - *iṅgudī*: 229  
 desire - *icchā*: 25  
 determination - *nirṇaya*: 281  
*devadinna* - the gift of god: 175  
*devatā* - deity: 185  
*dhamanī* - pipes: 100  
*dharma* - virtue: 91  
*dhātrī* - emblic: 226  
*dhātu* - bodily constituents: 153 - bodily  
   element: 73 - bodily tissues: 70  
   - body tissue: 154 - element: 148, 151  
   - mineral: 150 - tissues: 211  
*dhātu* - bodily tissues: 180  
*dhava* - axelwood: 235  
*dhūma* - inhaled smoke: 137  
*dhūmadarśin* - seeing smoke: 224  
*dhyāma* - dark colour: 152 - grimy: 137

- diet - *āhāra*: 25  
*digdha* - poisoned: 190f  
digestive fire - *agni*: 71  
dilator - *pravardhanaka*: 55  
diminished digestive fire - *agnisaṅga*: 72  
*dīpyaka* - the stimulator: 176  
discharge - *praseka*: 152 - *srāva*: 141, 143  
discolouration - *vaivarṇya*: 72  
disease - *vyadhi*: 27  
diseases - *roga*: 242  
disinterest in food - *aruci*: 189  
disjunction - *viśleṣa*: 154  
disorders of the female reproductive system - *yonivyāpat*: 242  
disorientation - *moha*: 72  
distension - *ādhmāna*: 151  
dizziness - *bhrama*: 74  
door-hinge - *kapāṭasandhika*: 56  
*doṣa* - defects: 242 - humour: 153, 231, 282 - humours: 242 - humours: 26, 70  
*doṣa* - defect: 86 - pathology: 85  
*doṣapariplava* - unsteadiness of the humours: 233  
double - *yamalā*: 140  
doubt - *saṁśaya*: 281, 285  
downward vision - *adhodṛṣṭitva*: 234  
*drākṣā* - grapes: 234  
*dravāñjana* - liquid collyrium: 229  
*dravya* - liquid: 191 - substance: 63, 268  
dried flesh - *vallūraka*: 56  
dried ginger - *nāgara*: 225  
driness - *coṣa*: 234  
drinkable - *peya*: 286  
drongo - *bhramaraka*: 138  
drowsiness - *supti*: 105  
*drṣṭi* - eye: 90 - pupil: 223, 232f  
*drṣṭimaṇḍala* - circuit of the pupil: 232  
*drṣṭivibhrama* - faulty vision: 143  
*drṣṭyavarodha* - blockage of the vision: 179  
drum - *bherī*: 192  
dry rub - *utsādana*: 141  
dry rubs - *utsādana*: 137  
dry - *rūkṣa*: 153  
duct - *sirā*: 186  
ducts - *sirā*: 27, 104 - *srotas*: 93, 177  
*duḥkha* - suffering: 25  
dumb - *mūka*: 78  
*duṇḍubhi* - kettle drum: 207  
dung beetles - *varcaḥkīṭa*: 160  
*dūrvā* - panic grass: 234  
*dūṣī-viṣa* - slow-acting poison: 154  
*dūṣīviṣa* - slow poisoning: 187  
- slow-acting poison: 157, 203  
*dūṣīviṣāri* - enemy of slow-acting poison: 157 - slow-acting poison antidote: 140  
dust - *rajas*: 70  
*duṣyodara* - contamination dropsy: 154  
*dveṣa* - hatred: 25  
*dvyaḥika* - the two-day: 176  
*dvyaṅgulirāji* - the two finger stripe: 175  
dwindling away - *kṣaya*: 154  
dysfunctional eyes - *vikṛtākṣa*: 90  
ear-ache - *karnaśūla*: 78  
earth products - *pārthiva*: 26  
earth - *pāṁśu*: 184  
earthen products - *pārthiva*: 27  
edible - *bhojya*: 286  
*ekāṅgaroga* - monoplegia: 76  
*ekānta* - invariable statement: 281  
- invariable statement: 284  
*ekarasa* - one essence: 193  
*elā* - cardamom: 226  
element - *bhūta*: 98 - *dhātu*: 148, 151  
elemental self - *bhūtātman*: 98  
elephant/snake - *nāga*: 162  
elixir salve - *rasāñjana*: 225, 228, 230  
elixir-salve - *rasāñjana*: 225  
elixir-salve - *śīta*: 225  
ellipis - *vākyaśeṣa*: 281  
ellipsis - *vākyaśeṣa*: 284  
embelia - *vidaṅga*: 229  
emblic - *dhātrī*: 226  
emprothotonos - *antarāyāma*: 76  
eṇa - deer: 228  
enclosed roasting - *puṭākhyā*: 228  
- *puṭapāka*: 229  
ends - *vaktra*: 233  
enema - *āsthāpana*: 85 - *basti*: 106

enemy of slow-acting poison - *dūṣīviṣāri*:

157

energy - *ojas*: 63

*eṇīpada* - the deer foot: 175

entrails - *antra*: 226

envy - *īrṣyā*: 25

errhine - *nasya*: 227

errhines - *nasya*: 143

essence - *sāra*: 26

evacuation - *saṁśodhana*: 205

*evam* - along these lines: 27

exception - *apavarga*: 281, 284

excision - *chedya*: 27

expansive - *vikāsin*: 153

expert - *vicakṣaṇa*: 89

explication - *vyākhyāna*: 281, 285

exposition - *nirdeśa*: 281, 283

expressed juice - *svarasa*: 224

extensive meaning of the collection of  
statements - *vāksamūhārthavistāra*:

177

external factors - *āgantū*: 27

extract of rohu carp - *rauḥita*: 225

extract - *niryāsa*: 143

extracted juice - *surasa*: 87

extracted juice - *svarasa*: 142

extracts - *rasa*: 229

extremely excited - *atyānandā*: 243

eye make-up - *añjana*: 137, 143

eye ointment - *añjana*: 143

eye salve - *añjana*: 155

eye - *drṣṭi*: 90

eyewash - *tarpaṇa*: 143, 224, 228f

fainting - *mūrcchā*: 190 - *mūrchā*: 74

fart - *avaśardhita*: 160

fastening - *āsaṅgima*: 56

fat - *vasā*: 228

faulty medical treatment - *mithyopacāra*:  
242

faulty vision - *drṣṭivibhrama*: 143

feeling of heat all over - *paridāha*: 179

feeling of heat - *dāha*: 201

female reproductive organ - *yoni*: 242f

female reproductive system - *yoni*: 242

fever - *jvara*: 69

field-specific term - *svasaṁjñā*: 281, 285

filaments - *kiñjalka*: 225

first point of view - *pūrvapakṣa*: 284

fissuring - *avadāraṇa*: 143

flag - *patāka*: 192

flame of the forest - *palāśa*: 229

flatulence - *āṭopa*: 140

flavour - *rasa*: 282

flavours - *rasa*: 25, 63

flesh - *māṁsa*: 27

flooded - *pariplutā*: 243

flowering trees - *vrkṣa*: 25

flowers - *puṣpa*: 26

follicles - *kha*: 141

force - *vega*: 106

formal procedure - *kalpa*: 159, 184

formulation - *yoga*: 103

fortnight - *pakṣa*: 26

foul-smelling pus - *pūtipūya*: 84

four factors - *catuṣṭaya*: 27

fourfold grouping - *caturvarga*: 27

free from clouds - *abhramukta*: 232

free from the point - *agramukta*: 232

frogs - *maṇḍūka*: 26

fruit trees - *vanaspati*: 25

fruits - *phala*: 26

future reference - *anāgatāpekṣaṇa*: 281,  
285

*gadgad* - stammers: 78

*gāḍha* - pinched: 58

*gairikaḥ* - red chalk: 234

*gamana* - intercourse: 86

*gamanādikriyāvināśakarī* - causing the  
destruction of actions such as  
moving: 233

*gaṇḍakarna* - cheek-ear: 56

*gara* - toxic potion: 209

*garbha* - offspring: 93f

*garbhāśaya* - uterus: 98

garlands - *sraja*: 137

garuḍa - *tārṣya*: 192

gasping - *vijṛmbhikā*: 200

gauze - *plota*: 58

*gavedhuka* - the gavedhuka: 174

general rule - *paribhāṣā*: 229

- gently - *mṛdu*: 234  
 ghee - *sarpiṣ*: 144 - *sarpis*: 224  
*girisarpa* - the mountain snake: 175  
 given - *datta*: 138  
 giving of fumes - *paridhūpāyana*: 178  
 giving off fumes - *paridhūpana*: 178  
 glassy opacity - *kāca*: 229  
*godhā* - monitor lizard: 226  
 gold - *śātakumbhī*: 233  
*gomāṃsa* - cow's flesh: 224  
*gomūtra* - cow's urine: 226  
*gonasa* - cow snout: 176  
*gośakṛt* - cow-dung: 225 - juice of  
     cow-dung: 225  
 gout - *vātarakta*: 79  
*govandanā* - cow-praising: 39  
*graha* - demons: 238 - demons: 238  
*grahaṇī* - seat of fire in the gut: 179  
*grahaṇī* - seat of fire in the gut: 179  
*grahaṇīdoṣa* - humours of the abdomen:  
     209  
*granthi* - clumps: 83, 87 - knots: 152  
     - lumps: 141, 151, 199, 201  
 grapes - *drākṣā*: 234  
*gr̥dhrasī* - sciatica: 77, 79  
 great antidote - *mahāgada*: 39  
 great fragrance - *mahāsugandha*: 143  
 greed - *lobha*: 25  
 green vitriol - *kāsīsa*: 230  
*gr̥hadhūma* - soot: 165, 208  
 grief - *āśoka*: 25  
 grimy - *dhyāma*: 137  
 gripes - *śūla*: 72  
 grooming - *vilekhana*: 88  
 gruel - *yavāgū*: 156, 187  
*guḍikā* - pill: 225  
*gulma* - abdominal lump: 242  
     - abdominal swelling: 72  
 gum - *dantamāṃsa*: 140  
*guṇa* - attribute: 268 - qualities: 152  
 gut - *antra*: 155  
  
 haemorrhaging - *śonitāgamana*: 178  
 half door-hinge - *ardhakapāṭasandhika*: 56  
 half litre - *prastha*: 202  
 half-year - *ayana*: 26  
  
 hare foot uraria - *pr̥thakparṇī*: 234  
*hareṇu* - hareṇu: 225f  
*hareṇu* - hareṇu: 225f  
*hari* - sun: 232  
*haridrā* - turmeric: 229  
*harṣa* - horripilation: 154  
     - overexcitement: 25  
*hastābharaṇaka* - the hand decoration: 175  
 hatred - *dveṣa*: 25  
 having diminished seed - *āsekya*: 91  
 having made small cuts - *pracchita*: 202  
 heart-seizure - *hṛdgraha*: 72, 201  
 heat - *agni*: 70 - *tejas*: 90  
 herbs - *oṣadhi*: 25  
*hetu* - causes: 243 - reason: 270  
*hetvartha* - purpose of a reason: 281, 283  
 himalayan cherry - *padmaka*: 234f  
*hīnakarṇa* - reduced-ear: 56  
 hives - *koṭha*: 201  
 hoarseness - *pāruṣya*: 151  
 holiness - *brahma*: 185  
 holostemma - *payasyā*: 234  
 holy sages - *brahmarṣi*: 185  
 honey collyrium - *kṣaudrāñjana*: 226  
 honey - *madhu*: 224 - *madhus*: 138  
 horripilation - *harṣa*: 154  
 horseradish tree - *śigru*: 230  
 hot all over - *samantatastāpaḥ*: 178  
 hot over the whole body  
     - *sarvāṅgasantāpaḥ*: 178  
*hṛd* - chest: 155  
*hṛdgraha* - heart-seizure: 72, 201  
 huge - *mahatī*: 243  
 human being - *puruṣa*: 24f, 27  
 humoral colligation - *sannipāta*: 84  
 humour - *doṣa*: 153, 231, 282  
 humours of the abdomen - *grahaṇīdoṣa*:  
     209  
 humours - *doṣa*: 242  
 humours - *doṣa*: 26, 70  
 hydrophobia - *jalatrāsa*: 204  
  
*icchā* - desire: 25  
 if, then not - *na ced*: 231  
*ilikinī* - the ilikinī: 176  
 illness - *ruj*: 226

illustration - *nidarśana*: 281, 285  
 immortal - *amṛta*: 144  
 implication - *arthāpatti*: 281, 284  
 impotent - *śaṇḍhī*: 243  
 in those cases - *tatra*: 227  
 in yama's direction - *yāmya*: 166  
 inactive - *akriya*: 78  
 incised - *pracchāna*: 190 - *pracchita*: 190  
 incising - *pracchāna*: 186  
 incurable - *asādhya*: 84, 223  
 indian madder - *mañjiṣṭhā*: 234  
 indian sarsaparilla - *kālānusāriva*: 225  
     - *sāriva*: 226 - *śārīvā*: 234  
 indication - *pradeśa*: 281, 283  
 indicatory sounds - *anubandha*: 276  
 indigo - *nīlī*: 140  
 individuality - *viśeṣa*: 269  
*indragopa* - red velvet mites: 26  
*indrāyudhā* - rainbow: 39  
 infertile - *vandhyā*: 243  
 inflamed - *saṃrambha*: 59 - *vidagdha*: 224  
 infused - *bhāvita*: 225  
*inḡita* - body language: 137  
*inḡudī* - desert date: 229  
 inhaled smoke - *dhūma*: 137  
 inherence - *samavāya*: 269  
 inherent factors - *svabhāva*: 27  
 inherent - *svābhāvika*: 25  
 injured - *utpīḍita*: 231  
 insect - *kīṭa*: 216  
 inspissation - *rasakriyā*: 230  
 instillation - *basti*: 85  
 intended - *vyākhyāta*: 27  
 intercourse - *gamana*: 86  
 interpretation - *nirvacana*: 281, 285  
 intestines - *pakvādhāna*: 155 - *pakvāśaya*:  
     140, 154  
 intoxication from food - *annamada*: 154  
 invariable statement - *ekānta*: 281  
 invariable statement - *ekānta*: 284  
 investigation - *parikṣā*: 274  
 invincible - *ajeya*: 144  
 invincible - *ajeya*: 157  
 irregularities - *vaiśamya*: 25  
 irrigated - *pratipūraṇa*: 142

irrigation - *seka*: 224 - *tarpaṇa*: 242  
 irritation - *adhimantha*: 234 - *prakopa*: 26  
*īrṣyā* - envy: 25  
 it may be - *bhavet*: 231  
 itching - *cumucumāyana*: 73  
 itemization - *vidhāna*: 281, 284  
 items created by time - *kālakṛta*: 26  
     - *kālakṛta*: 27  
  
*jāḍya* - benumbed: 180  
*jāḍyatā* - rigidity: 189  
*jala* - water: 38  
*jalatrāsa* - hydrophobia: 204  
*jalaaukas* - water-dwellers: 38  
*jāṅgala* - arid-land animals: 229  
*jaṅgama* - mobile: 148 - moving: 25  
*jaṅgama* - moving: 27  
*japa* - mantra repetition: 185  
*jarāyujā* - born in in a caul: 26  
*jaṭhara* - bellyache: 157  
*jātī* - royal jasmine: 235  
*jatru* - neck: 71  
*jātyandha* - congenital blindness: 90  
 jealousy - *asūyā*: 25  
*jīva* - life: 91  
 joints - *sandhi*: 27  
 juice extract - *svarasa*: 26  
 juice of cow-dung - *gośakṛt*: 225  
 juice - *rasa*: 105  
 juices - *rasa*: 228  
*jvara* - fever: 69  
*jyotīratha* - the chariot of light: 176  
  
*kāca* - glassy opacity: 229  
*kākapada* - crow's foot: 156  
*kākauṣṭha* - crow's lip: 56  
*kākolī* - cottony jujube: 235  
*kalā* - layer: 169 - minutes: 26  
*kalā* - al layers: 180 - layers of skin: 180  
*kālakalpa* - deadly substance: 180  
*kālakṛta* - items created by time: 26  
*kālakṛta* - items created by time: 27  
*kālānusāriva* - indian sarsaparilla: 225  
*kalāyakhāṇja* - lathyrism: 78f  
*kalka* - mash: 157 - paste: 85, 87

- kalpa* - formal procedure: 159, 184  
 - procedure: 136, 170, 198, 207, 216  
*kalyāṇaka* - the salutary: 209  
*kāma* - lust: 25  
*kaṇabha* - wasps: 161  
*kanda* - bulbs: 26  
*kaṇṭaka* - spots: 142  
*kapālacūrṇa* - powdered earthenware  
 crockery: 57  
*kapāṭasandhika* - door-hinge: 56  
*kapha* - mucus: 142 - phlegm: 151, 153,  
 155, 179, 243  
*kapilā* - tawny: 40  
*kapittha* - wood apple: 224  
*karburā* - mottled: 39  
*kardama* - the mud: 175  
*karma* - regimen: 233  
*karman* - movement: 269 - therapies: 27  
*karṇasūla* - ear-ache: 78  
*kaṇnavyadhā* - piercing the ear: 53  
*karṇika* - small ear-like growths: 199,  
 202f  
*karṇikā* - small ear-like growths: 218  
*karṇinī* - protuberant: 243  
*karṣū* - trench sweating: 104  
*kaśāya* - decoction: 85 - decoctions: 137,  
 232 - the ochre: 175  
*kaśāyavāsika* - 'orange-dwellers': 160  
*kāśīpati* - lord of kāśī: 136  
*kāśīsa* - green vitriol: 230  
*kāśṭhā* - trice: 26  
*kaṭphala* - box myrtle: 226  
*kaumārabhṛtya* - child bearing: 238  
*kaumārī* - young girl: 93  
*kauṇḍinya* - 'pot insects': 160  
*kavala* - mouthwash: 141  
*kettle drum* - *duṇḍubhi*: 207  
*kevala* - simply: 188  
*kha* - apertures of the head: 142  
 - follicles: 141  
*khaluṣa* - the khaluṣa: 175  
*khaṇḍaphaṇa* - the break hood: 174  
*khañja* - limpness: 78  
*khara* - rough: 233  
*kikkisāda* - the worm eater: 176  
*kinihī* - white siris: 229  
*kiñjalka* - filaments: 225  
*kīṭa* - insect: 216  
*kitchen* - *mahānasa*: 137  
*kiṭibha* - dark, rough patches of skin: 199,  
 218  
*kiṭipa* - lice: 160  
*knots* - *granthi*: 152  
*knowledge* - *veda*: 21, 268  
*kohl* - *srotas*: 228 - *srotoja*: 225, 235  
*koṣṭha* - trunk of the body: 179  
*koṭha* - hives: 201 - skin disease: 154  
*kravyabhuj* - carnivore: 228  
*kṛcchra* - with difficulty: 231  
*kriyā* - procedures: 24, 27 - treatment:  
 229f  
*kriyā* - treatment: 27, 85  
*kriyākāla* - the time for therapies: 27  
*kriyāsaṅga* - loss of function: 233  
*kṛmi* - worms: 26  
*krodha* - anger: 25  
*krōṣṭukaśīrṣa* - synovitis of knee joint: 78f  
*kṛṣṇa* - black part: 231  
*kṛṣṇā* - black: 39  
*kṛṣṇa* - dark: 90  
*kṛṣṇasarpa* - the black snake: 174  
*kṛṣṇodara* - the black belly: 174  
*kṣaṇadāndhya* - night blindness: 225  
*kṣāra* - caustic: 85, 87, 207  
*kṣārāgada* - the caustic antidote: 208  
*kṣāraka* - lye: 228  
*kṣaudrāñjana* - honey collyrium: 226  
*kṣaya* - dwindling away: 154  
*kṣīṇa* - low volume: 83 - wasted: 58  
*kṣīra* - milky sap: 148, 150f - sap: 26  
*kṣīrikāpuṣpa* - the milk flower: 176  
*kukṣi* - belly: 91  
*kukṣita* - 'bellied': 161  
*kūkuṭa* - the kūkuṭa: 174  
*kunakha* - ugly nails: 88  
*kuṇapa* - decomposition: 83f - smell of  
 decomposition: 84  
*kūni* - shrivelled hand: 94  
*kunta* - small insects: 26  
*kupyaka* - metal: 224

kuśa grass - *kuśa*: 228  
*kuśa* - kuśa grass: 228  
*kuṣṭha* - pallid skin disease: 88, 154  
*kuṭī* - sauna: 104  
*kvātha* - decoction: 87, 155, 200ff  
  
 lac - *lākṣā*: 234  
*lākṣā* - lac: 234  
 lame - *paṅgu*: 78  
 lathyrism - *kalāyakhañja*: 78f  
 lavages - *ācamana*: 87  
 layer - *kalā*: 169 - *paṭala*: 231  
 layers of skin - *kalā*: 180  
 leather - *carmānta*: 184  
 leaves - *bhaṅga*: 232 - *patra*: 26  
*lehya* - suckable: 286  
*lekhana* - scarification: 25  
 lice - *kiṭiṭa*: 160  
 life, longevity - *āyur*: 21  
 life - *āyu*:- 38 - *jīva*: 91  
 limpid - *viśada*: 153  
 limpness - *khañja*: 78  
*liṅga* - symptom: 142 - symptoms: 154  
*liṅganāśa* - cataract: 231  
 liniment - *ālepa*: 224  
 liniments - *ālepana*: 39, 143  
 liquid collyrium - *dravāñjana*: 229  
 liquid - *cala*: 232 - *dravya*: 191  
 liquorice - *madhukair*: 234  
 little ring of spots - *cuñcumālaka*: 172  
 liver extract - *yakṛdrasa*: 225  
 liver - *yakṛt*: 226  
*lobha* - greed: 25  
 located on the limb - *śākhāśrayā*: 186  
 located - *adhiṣṭhāna*: 25  
 lodh tree - *lodhra*: 229  
*lodhra* - lodh tree: 229  
 logical methods of the system  
 - *tantrayukti*: 281  
*lohitākṣa* - the red eye: 174, 176  
 long pepper - *māgadha*: 229 - *māgadhi*:  
 226 - *māgadhi*: 226, 228  
 loose stool - *viḍbheda*: 151, 162  
 lord of kāśī - *kāśīpati*: 136  
 loss of appetite - *arocaka*: 154  
 loss of function - *kriyāsaṅga*: 233

lotus-mouth - *puṇḍarikamukhī*: 40  
 lotus-splittable - *utpalabhedyaka*: 56  
 lotus-spots - *padminīkaṇṭaka*: 142  
 low volume - *kṣīṇa*: 83  
 lumps - *granthi*: 141, 151, 199, 201  
 lust - *kāma*: 25  
*lūtā* - spiders: 23  
 lye - *kṣāraka*: 228  
  
*madanaka* - the intoxicator: 175  
 made accessible - *alanīkṛtvā*: 23  
*madhu* - honey: 224 - mead: 185  
*madhukair* - liquorice: 234  
*madhus* - honey: 138  
*madirā* - spirits: 226  
*madira* - spirits: 229  
 madness - *unmāda*: 209  
*māgadha* - long pepper: 229  
*māgadhi* - long pepper: 226  
*māgadhi* - long pepper: 226, 228  
*mahāgada* - great antidote: 39 - the great  
 antidote: 201  
*mahāgada* - *The Great Antidote*: 191  
*mahākapota* - the big pigeon: 174  
*mahākṛṣṇa* - the big black: 174  
*mahānasa* - kitchen: 137  
*mahāpadma* - the great lotus: 174  
*mahāpanasaka* - the big jackfruit: 175  
*mahāsarpa* - the great snake: 174  
*mahāśīrṣa* - the big head: 175  
*mahāsugandha* - great fragrance: 143  
*mahatī* - huge: 243  
*mākuli* - *mākuli*: 176  
*mākuli* - *mākuli*: 176  
 malice - *mātsarya*: 25  
*māṃsa* - flesh: 27  
*māṃsanirgama* - prolapse: 234  
*māṃsarasa* - meat broth: 105  
*manahśilā* - realgar: 225, 228f, 235 - red  
 arsenic: 226  
*mānasa* - mental: 25  
*maṇḍala* - round blotches: 154  
*maṇḍūka* - frogs: 26  
*mañjiṣṭhā* - indian madder: 234  
 mantra repetition - *japa*: 185  
 manual agitation - *pāṇimantha*: 104

- manyāstambha* - stiffness of the neck: 180  
*manyāsthambha* - rigidity of neck: 77  
*mardana* - rubbing: 104  
marks with a knife - *śastrapada*: 42  
*māruta* - wind: 84  
*māsa* - month: 26  
mash - *kalka*: 157  
*maṣī* - black soot: 224  
massage oil - *abhyāṅga*: 137, 143  
massage ointment - *anulepana*: 137, 141  
masticable - *bhakṣya*: 286  
*mātrā* - measures: 106  
*mātsarya* - malice: 25  
*mātuluṅga* - citron: 234  
matured - *vipakva*: 225  
mead - *madhu*: 185  
meaning of one or more words  
- *padārtha*: 282  
measures - *mātrā*: 106  
meat broth - *māṃsarasa*: 105  
*medaka* - 'liquors': 161  
medical advice - *ācārika*: 58  
medicines cooked in a crucible  
- *puṭapāka*: 224  
men - *nara*: 160  
menses - *ārtava*: 100  
menstrual blood - *ārtava*: 98, 242 - *ārtava*:  
86f  
mental - *mānasa*: 25  
mention - *samuddēśa*: 281, 283  
*meṣaśṛṅga* - periploca of the woods: 235  
*meṣaviṣāṇa* - periploca of the woods: 227  
metal - *kupyaka*: 224  
metamorphopsia - *viparītadarśana*: 178  
milk - *payas*: 144  
milky sap - *kṣīra*: 148, 150f  
*mimmira* - mumbles: 78  
mineral - *dhātu*: 150  
minute - *aṇu*: 98  
minutes - *kalā*: 26  
misery - *dainya*: 25  
*miśrakacikitsa* - various treatments: 60  
misshapen eyeball - *vilocana*: 233  
*mithuna* - pair: 285 - triad: 285  
*mithyopacāra* - faulty medical treatment:  
242  
mitigatable - *yāpya*: 223  
*mlāyin* - blue dot cataract: 230  
mobile - *jaṅgama*: 148  
*moha* - bewilderment: 74 - delirium: 151  
- disorientation: 72  
monitor lizard - *godhā*: 226  
monkey - *vānara*: 160  
monoplegia - *ekāṅgaroga*: 76  
month - *māsa*: 26  
morsel - *bali*: 138  
mottled - *karburā*: 39  
mouse - *mūṣikā*: 40  
mouth ulcer - *sarvasara*: 209  
mouthwash - *kavala*: 141  
movement - *karman*: 269  
moving - *jaṅgama*: 25 - *jaṅgama*: 27  
*mṛdu* - gently: 234  
mucous - *śleṣman*: 179  
mucus - *kapha*: 142  
*muhūrta* - three-quarters of an hour: 26  
*mūka* - dumb: 78  
*mukhasaṃdamśā* - nipping with the  
mouth: 160  
*muktā* - pearl: 231  
*muktvā* - separate: 231  
*mūla* - root: 25 - roots: 26  
multi-joins - *vyāyojima*: 56  
mumbles - *mimmira*: 78  
*mūrcchā* - fainting: 190 - stupor: 139  
*mūrchā* - fainting: 74  
*mūṣikā* - mouse: 40  
*mūṣikā* - rats: 198  
*mūṣika* - rodents: 23  
*mustā* - nutgrass: 234  
*na ced* - if, then not: 231  
*nāḍī* - tube: 104  
*nadīja* - salt: 225  
*nāga* - elephant/snake: 162  
*nāgara* - dried ginger: 225  
*nalada* - spikenard: 229  
*napuṃsaka* - neither male nor female: 99  
*nara* - men: 160  
nasal medicine - *nasya*: 155



nasal medicines - *nasya*: 224  
*nasya* - errhine: 227 - errhines: 143 - nasal  
 medicine: 155 - nasal medicines: 224  
 - snuff: 137, 142  
 naturally-occurring - *daivakṛte*: 231  
 nature - *ātmaka*: 24  
 nausea - *praseka*: 100  
 neck - *jatru*: 71  
 needle - *sūcī*: 232  
 neither male nor female - *napuṃsaka*: 99  
*nemīsandhānaka* - rim-join: 56 - rim-join:  
 57  
 newborn - *prasava*: 90  
*nidarśana* - illustration: 281, 285  
 night blindness - *kṣaṇadāndhya*: 225  
*nīḥkvātha* - decoction: 87 - stewed juice:  
 156  
*nīlī* - indigo: 140  
*nimeṣa* - blink of the eye: 26  
 nipping with the mouth  
 - *mukhasaṃdamśā*: 160  
*nirdeśa* - exposition: 281, 283  
*nirṇaya* - determination: 281  
*nirvacana* - interpretation: 281, 285  
*nirvedhima* - ready-split: 56  
*nirviṣa* - without venom: 172  
*niryāsa* - extract: 143 - resin: 26, 148, 150f  
*niśācara* - nocturnal creature: 230  
*niṣevita* - prepared: 228 - used: 226  
*nivāta* - no wind: 26  
*niyoga* - compulsion: 281, 285  
 no wind - *nivāta*: 26  
 nocturnal creature - *niśācara*: 230  
 non-bloodshot blindness - *araga timira*:  
 231  
 non-flowering tree - *vanaspati*: 229  
 not conducive to long life - *anāyusya*: 99  
 nourishment - *bṛṃhaṇa*: 25  
*numb* - *stabdha*: 105  
 numbness - *supti*: 73 - *svāpa*: 73, 143  
 nutgrass - *mustā*: 234  
 objection - *pūrvapakṣa*: 281  
 oblations - *upahāra*: 185  
 obligation - *ṛṇa*: 89  
 oceanic - *sāmudrikā*: 39

of the nature of agni - *āgneya*: 98  
 of the nature of soma - *saumya*: 98  
 off his hand - *sapāṇa*: 227  
 offspring - *garbha*: 93f  
 oil massage - *abhyāṅga*: 141  
 oil rub - *abhyāṅga*: 104, 268  
 oil rubs - *abhyāṅjana*: 191  
 oil stripe - *snigdharāji*: 176  
 oil - *sneha*: 26  
 oily enema - *anuvāsana*: 85  
 oily stripe - *snigdharāji*: 176  
 ointment - *anulepana*: 141 - *pralepa*: 139,  
 142  
 ointments - *ālepana*: 104  
*ojas* - energy: 63 - vital energy: 25  
 oleation - *sneha*: 104  
 omens - *ariṣṭa*: 63  
 one essence - *ekarasa*: 193  
 opening - *chidra*: 231  
 ophidian - *sarpita*: 172  
 option - *vikalpa*: 281, 285  
 or not distorted - *vāvikṛtā*: 140  
*oṣadhī* - remedies: 25  
*oṣadhi* - herbs: 25 - remedies: 27  
 other - *anya*: 271  
 outer corner of the eye - *apāṅga*: 231  
 overexcitement - *harṣa*: 25  
 overheating - *dāha*: 223  
 pacification - *saṃśamana*: 25 - *upaśama*:  
 26  
*pada* - word: 267, 269  
*pādadaḥa* - burning sensation in feet: 78  
*padārtha* - meaning of one or more  
 words: 282 - relevant meaning: 278,  
 281f - word-meaning: 269  
*padma* - the lotus: 174  
*padmaka* - himalayan cherry: 234f  
*padminikaṇṭaka* - lotus-spots: 142  
 pain and injury - *vedanābhighāta*: 22  
 pain - *√pīd*: 180 - *śūla*: 155  
 pair - *mithuna*: 285  
*pāka* - sepsis: 143  
*pakṣa* - fortnight: 26  
*pakṣāghāta* - paralysis of one side: 79  
 - paralysis: 76f

- pakvādhāna* - intestines: 155  
*pakvāśa* - abdomen: 104  
*pakvāśaya* - intestines: 140, 154  
*palāśa* - flame of the forest: 229  
*pāṇḍaka* - the morning glory: 175  
*pallava* - shoots: 232  
*pallid skin disease* - *kuṣṭha*: 88, 154  
*pāṇṣu* - earth: 184  
*panasaka* - the jackfruit: 175  
*pañcāṅgulatāila* - castor oil: 227  
*paṅgu* - lame: 78  
*panic grass* - *dūrvā*: 234  
*pāṇimantha* - manual agitation: 104  
*paralysis of arms and back* - *viśvañci*: 77, 79  
*paralysis of one side* - *pakṣāghāta*: 79  
*paralysis of the jaw-bones* - *ardita*: 77, 79  
*paralysis* - *apakṣāghāta*: 76 - *pakṣāghāta*: 76f  
*pārāvata* - the pigeon: 175  
*paribhāṣā* - general rule: 229  
*paridāha* - feeling of heat all over: 179  
*paridāhita* - cauterized: 204  
*paridhūpana* - giving off fumes: 178  
*paridhūpāyana* - giving of fumes: 178  
*parīkṣā* - investigation: 274  
*pariplutā* - flooded: 243  
*parisarpa* - the snake around: 174  
*parīṣeka* - shower: 141  
*parśvabheda* - ribs crack: 155  
*pārthiva* - earth products: 26  
*pārthiva* - earthen products: 27  
*partial blindness* - *timira*: 227  
*particulars* - *vikalpa*: 27  
*parts* - *aṅga*: 27  
*pāruṣya* - hoarseness: 151  
*paryuṣita* - stale: 86  
*past reference* - *atīkrāntāpekṣaṇa*: 281, 285  
*paste* - *kalka*: 85, 87  
*paśu* - animals: 26  
*paṭaha* - tabors: 192  
*patāka* - flag: 192  
*paṭala* - layer: 231  
*pāthā* - velvet leaf: 229  
*pathology* - *doṣa*: 85  
*patra* - cassia cinnamon: 234 - leaves: 26  
*patravṛścika* - 'wing-scorpions': 161  
*paṭṭa* - strip of cloth: 105  
*pavanodbhava* - caused by wind: 227  
*payas* - milk: 144  
*payasyā* - holostemma: 234  
*pearl* - *muktā*: 231  
*pebble* - *aṣṭhīlā*: 139  
*pelt* - *carman*: 26  
*periploca of the woods* - *meṣaviṣāṇa*: 227  
*permeated* - *ākula*: 218  
*periploca of the woods* - *meṣaśṛṅga*: 235  
*person* - *puruṣa*: 285  
*pervasive* - *vyavāyīn*: 153  
*peya* - drinkable: 286  
*phala* - fruits: 26  
*phena* - cuttlefish bone: 235  
*phlegm* - *balāsa*: 105 - *kapha*: 151, 153, 155, 179, 243  
*phlegmatic* - *śleṣmalā*: 243  
*physical* - *śārīravat*: 27  
*picciṭā* - 'flat insects': 160  
*pīḍ-* - press: 231  
*piercing the ear* - *kaṇnavyadha*: 53  
*piercing* - *vyadha*: 232  
*pigs' eye* - *sūkarākṣitā*: 234  
*pilindaka* - the pilindaka: 175  
*pill* - *guḍikā*: 225  
*pinched* - *gāḍha*: 58  
*piṅgalā* - ruddy: 40  
*pipes* - *dhamanī*: 100  
*pipilika* - ants: 26  
*piṭaka* - blisters: 199, 202  
*pith* - *sāra*: 148, 150f  
*pīṭha* - dais: 56  
*pitta* - bile: 227 - choler: 243  
*pittajvara* - bile-fever: 190  
*pittalā* - bilious / choleric: 243  
*pittaviṣa* - poison in the bile: 185  
*place* - *avakāśa*: 42  
*plīhan* - spleen: 226  
*plota* - cloth: 184 - gauze: 58  
*plutā* - sprung: 243  
*poison in the bile* - *pittaviṣa*: 185  
*poison-stink* - *viṣapūti*: 190

poisoned - *digdha*: 190f  
 poṭa throat - *poṭagala*: 176  
*poṭagala* - poṭa throat: 176  
 potency - *vīrya*: 191, 201  
 poultice - *upanāha*: 104  
 powdered earthenware crockery  
   - *kapālacūrṇa*: 57  
*pra*√ *sādh* - clean: 143  
*pra*√ *chā* - cut: 203  
*pra*√ *kuth* - rot: 140  
*prabha* - shine: 231  
*pracalāka* - 'poisonous snakes': 160  
*pracchāna* - incised: 190 - incising: 186  
*pracchita* - having made small cuts: 202  
   - incised: 190  
 practical purposes - *prayojanavat*: 26  
*pradeśa* - indication: 281, 283  
*pragāḍha* - steeped: 227  
*prakopa* - irritation: 26  
*prakṛti* - character: 216 - constitution: 189  
   - temperament: 25  
*pralāpa* - ranting: 151  
*pralepa* - ointment: 139, 142  
*prameha* - urinary diseases: 72  
*prāṇa* - breath: 71 - *prāṇa*: 71 - vital wind:  
   71  
*prāṇa* - *prāṇa*: 71  
*prasaṅga* - recontextualization: 281  
   - recontextualization: 284  
*prasava* - newborn: 90  
*praseka* - discharge: 152 - nausea: 100  
*prastara* - blanket sweating: 104  
*prastha* - half litre: 202  
*prasūna* - blossom: 192  
*pratīkāra* - alleviation: 26 - remedy: 224  
*pratipūrāṇa* - irrigated: 142  
*pratisāraṇa* - rub: 140 - rubbing: 140  
*pratiśedha* - counteraction: 223  
*pratitūnī* - *pratitūnī*: 79  
*pratitūnī* - *pratitūnī*: 79  
*pratyādhmāna* - *pratyādhmāna*: 79  
*pratyādhmāna* - *pratyādhmāna*: 79  
*pratyasṭhīla* - *pratyasṭhīla*: 79  
*pratyasṭhīla* - *pratyasṭhīla*: 79  
*pravardhanaka* - dilator: 55

*prayojanavat* - practical purposes: 26  
 prediction - *atideśa*: 281, 283  
 premise - *sādhana*: 270, 283  
 prepared with turpeth - *traivṛta*: 224  
 prepared - *niṣevita*: 228  
 prescription - *upadeśa*: 281, 283  
 press - *pīḍ*:- 231  
 priest - *upādhyāya*: 89  
*priyaṅgu* - beauty berry: 229  
 probe - *śalākā*: 231f  
 procedure - *kalpa*: 136, 170, 198, 207, 216  
 procedures - *kriyā*: 24, 27  
 prolapse - *māṃsanirgama*: 234  
 prolapses - *arśas*: 242  
 propelled - √ *ūh*: 180  
 protect - √ *rakṣ*: 88  
 protuberant - *karṇinī*: 243  
*prṣata* - the speckled: 175  
*prṭhakparṇī* - hare foot uraria: 234  
 pulse interval - *vegāntara*: 180  
 pulse - *vega*: 169  
 pulses - *vega*: 147  
*puṇḍarīka* - the lotus: 175  
*puṇḍarīkamukha* - the lotus mouth: 174  
*puṇḍarīkamukhī* - lotus-mouth: 40  
 pupil - *dr̥ṣṭi*: 223, 232f  
 purge - √ *sodh*: 187  
 purification - *saṃśodhana*: 25  
 purpose of a reason - *hetvartha*: 281, 283  
 purpose - *artha*: 270  
*puruṣa* - human being: 24f, 27 - person:  
   285  
*pūrvapakṣa* - first point of view: 284  
   - objection: 281  
*puṣpa* - flowers: 26  
*puṣpābhikīrṇnābha* - the flower sprinkle  
   beauty: 175  
*puṣpapāṇḍu* - the pale as a flower: 175  
*puṣpasakalī* - the flower all: 176  
*puṭāhvaya* - taken hot: 228  
*puṭākhyā* - enclosed roasting: 228  
*puṭapāka* - enclosed roasting: 229  
   - medicines cooked in a crucible: 224  
   - roasting: 242

- pūtipūya* - foul-smelling pus: 84  
 - stinking pus: 83  
*putraghnī* - child-murderess: 243  
*putrid* - *śīrṇa*: 190  
  
 qualities - *guṇa*: 152  
  
*rāgin timira* - bloodshot blindness: 228  
*rāgiṇi timire* - bloodshot blindness: 231  
*rainbow* - *indrāyudhā*: 39  
*rainy seasons* - *varṣā*: 26  
*rajana* - turmeric: 225  
*rajas* - dust: 70  
*rājicitra* - the stripe speckle: 175  
*rājimat* - striped snake: 156  
*rakta* - blood: 84  
*raktakṣayā* - with bloodloss: 243  
*raktamaṇḍala* - the red ring: 175  
*raktapitta* - blood-bile: 223  
*ranting* - *pralāpa*: 151  
*rarefied* - *sūkṣma*: 153  
*rasa* - chyle: 154 - chyle: 45 - chyle: 72  
 - extracts: 229 - flavour: 282  
 - flavours: 25, 63 - juice: 105 - juices: 228 - the blood of birds and animals: 225  
*rasakriyā* - inspissation: 230  
*rasāñjana* - elixir salve: 225, 228, 230  
 - elixir-salve: 225  
*rats* - *mūṣikā*: 198  
*rauhita* - extract of rohu carp: 225  
*ready-split* - *nirvedhima*: 56  
*realgar* - *manaḥśilā*: 225, 228f, 235  
*reason* - *hetu*: 270  
*recontextualization* - *prasaṅga*: 281  
*recontextualization* - *prasaṅga*: 284  
*red arsenic* - *manaḥśilā*: 226  
*red chalk* - *gairikaḥ*: 234  
*red velvet mites* - *indragopa*: 26  
*reduced-ear* - *hīnakarṇa*: 56  
*regimen* - *ācāra*: 25 - *karma*: 233  
*regular* - *sama*: 211  
*relevant meaning* - *padārtha*: 278, 281f  
*religious power* - *tapas*: 185  
*remedies* - *oṣadhī* - 25 - *oṣadhi*: 27  
*remedy* - *pratīkāra*: 224  
  
*required knowledge* - *vijñānīya*: 148, 170  
*resin* - *niryāsa*: 26, 148, 150f  
*restrictions* - *yantraṇā*: 232  
*resuscitator* - *sañjīvana*: 192  
*retas* - semen: 83  
*retas* - semen: 91  
*rheum* - *upadeha*: 143  
*ribs crack* - *parśvabheda*: 155  
*rightness* - *ānulomya*: 70  
*rigid* - *sthirā*: 233  
*rigidity of neck* - *manyāsthambha*: 77  
*rigidity* - *jāḍyatā*: 189  
*rim of a wheel* - *cakradhārā*: 57  
*rim-join* - *nemīsandhānaka*: 56  
*rim-join* - *nemīsandhānaka*: 57  
*ringworm* - *dadru*: 218 - *dardru*: 218  
*ṛjusarpa* - the straight snake: 175  
*ṛṇa* - obligation: 89  
*roasting* - *puṭapāka*: 242  
*rodents* - *mūṣika*: 23  
*roga* - diseases: 242  
*rogasaṃgraha* - compendium of diseases: 240  
*rohita tree* - *rohita*: 229  
*rohita* - *rohita tree*: 229  
*root* - *mūla*: 25  
*roots* - *mūla*: 26  
*rot* - *prā√kuth*: 140  
*rough* - *khara*: 233  
*round blotches* - *maṇḍala*: 154  
*royal jasmine* - *jātī*: 235  
*ṛtu* - season: 26, 88, 99  
*rub* - *pratisāraṇa*: 140  
*rubbing* - *mardana*: 104 - *pratisāraṇa*: 140  
 - *unmardana*: 104  
*ruddy* - *piṅgalā*: 40  
*rudhira* - blood: 26  
*ruj* - illness: 226  
*rūkṣa* - dry: 153  
*rūkṣa* - sere: 86  
  
*sacrificial offerings* - *bali*: 185  
*sacrum* - *triṇa*: 72  
*sāda* - be exhausted: 155  
*sadana* - tiredness: 100  
*ṣaḍaṅga* - the six part: 175

*ṣaḍdharāṇa* - six-units: 103  
*sādhana* - premise: 270, 283  
*sādhya* - curable: 84, 223f - cured: 157  
*saindhava* - salt: 155  
*śākhāśrayā* - located on the limb: 186  
*śalākā* - probe: 231f  
*salilotthita* - conch: 230 - water-born: 230  
*saliva* - *śleṣman*: 139  
*salt* - *nadīja*: 225 - *saindhava*: 155  
*śalya* - spike: 272f, 283 - splinter: 283  
*sama* - regular: 211  
*samāna* - *saṁāna*: 71  
*saṁāna* - *saṁāna*: 71  
*samāñjana* - same collyrium: 229  
*samantatastāpaḥ* - hot all over: 178  
*sāmānya* - universality: 269  
*samavāya* - inherence: 269  
*same collyrium* - *samāñjana*: 229  
*saṁīraṇa* - air: 180  
*śaṁkhaṇḍa* - the conch keeper: 174  
*saṁkṣipta* - compressed: 56 - compressed:  
 57  
*samplava* - clusters: 26  
*saṁrambha* - inflamed: 59  
*saṁśamana* - pacification: 25  
*saṁśaya* - doubt: 281, 285  
*saṁśodhana* - evacuation: 205  
 - purification: 25  
*samuccaya* - aggregation: 281, 285  
*samudāya* - accumulation: 55  
*samuddeśa* - mention: 281, 283  
*samudraphena* - cuttlefish bone: 226  
*sāmudrikā* - oceanic: 39  
*saṁvatsara* - year: 26  
*sanakha* - thorny: 210  
*sañcaya* - accumulation: 26  
*sandal* - *sugandhi*: 227  
*śaṇḍhī* - impotent: 243  
*sandhi* - joints: 27  
*sañjīvana* - resuscitator: 192  
*śaṅkumukhī* - dart-mouth: 40  
*sannipāta* - combination: 98 - congested  
 humours: 27 - humoral colligation:  
 84  
*sap* - *kṣīra*: 26

*sapāṇa* - off his hand: 227  
*sāra* - essence: 26 - pith: 148, 150f  
*śārava* - 'lids': 161  
*śārikā* - 'darts': 161  
*śārīravat* - physical: 27  
*sarīśrpa* - creepy-crawlies: 23, 26  
*sāriva* - indian sarsaparilla: 226  
*śārīvā* - indian sarsaparilla: 234  
*śarkarā* - small urinary stones: 209  
*sarpāṅkuśa* - snakes' controlling hook:  
 209  
*sarpīṣ* - ghee: 144  
*sarpis* - ghee: 224  
*sarpita* - ophidian: 172 - serpented: 172  
*sarṣapaka* - 'pepper snakes': 160  
*sarvākṣṇa* - the all black: 174  
*sarvāṅgasantāpaḥ* - hot over the whole  
 body: 178  
*sarvasara* - mouth ulcer: 209  
*sarvātmikā* - *sarvātmikā*: 243  
*sarvātmikā* - *sarvātmikā*: 243  
*śastrakṣata* - cutting with a blade: 224  
*śastrapada* - marks with a knife: 42  
*śātakumbhī* - gold: 233  
*sātmya* - suitability: 189  
*saumya* - of the nature of soma: 98  
 - watery: 217  
*sauna* - *kuṭī*: 104  
*sauvīraka* - stibnite: 225  
*sāvarikā* - *sāvarikā*: 40  
*sāvarikā* - *sāvarikā*: 40  
*scarification* - *lekhaṇa*: 25  
*sciatica* - *grdhraśī*: 77, 79  
*scramberry* - *tālīśapatra*: 225  
*season* - *ṛtu*: 26, 88, 99  
*seasonal blood* - *ārtava*: 84  
*seat of fire in the gut* - *grahaṇī*: 179  
 - *grahaṇī*: 179  
*secondary ailments* - *upadrava*: 189  
*sections* - *adhyāya*: 28  
*seed* - *bīja*: 91  
*seedless* - *abīja*: 84  
*seeing smoke* - *dhūmadarśin*: 224  
*segmented* - *chinna*: 39  
*seka* - irrigation: 224

- semen - *bīja*: 242  
 semen - *retas*: 83  
 semen - *retas*: 91 - *śukra*: 91  
 separate - *muktvā*: 231  
 sepsis - *pāka*: 143  
 sere - *rūkṣa*: 86  
 serpented - *sarpita*: 172  
 sesame oil - *taila*: 190 - *tailam*: 264  
 sharp - *tīkṣṇa*: 187  
 shine - *prabha*: 231  
 shooting pain - *śūla*: 233  
 shoots - *pallava*: 232 - *udbhid*: 26  
 shower - *parīṣeka*: 141  
 shrivelled hand - *kūni*: 94  
 shrubs - *vīrudh*: 25  
*siddham* - cooked: 264  
*siddhārthaka* - white mustard: 234  
*siddhi* - cure: 156  
 side-effects - *upadrava*: 143, 157  
 signs - *cihna*: 243  
*śigru* - horseradish tree: 230  
 simply - *kevala*: 188  
 sinews - *snāyu*: 27  
*sirā* - duct: 186 - ducts: 27, 104 - veins:  
 202  
*sirāvedha* - blood-letting: 224  
*siris* - *śirīṣa*: 235  
*śirīṣa* - *siris*: 235  
*śīrṇa* - putrid: 190  
*śirobasti* - application of oil to the head:  
 106  
*śīśuka* - the kid: 175  
*śīta* - elixir-salve: 225  
*sitā* - white sugar: 234  
 six-units - *ṣaḍdharaṇa*: 103  
 skin disease - *koṭha*: 154  
 skin - *tvac*: 169 - *tvak*: 26f  
 sleep - *svāpa*: 151  
*śleṣmalā* - phlegmatic: 243  
*śleṣman* - mucous: 179 - saliva: 139  
 slice of flesh - *vadhra*: 60f  
 slow poisoning - *dūṣṭvīṣa*: 187  
 slow-acting poison antidote - *dūṣṭvīṣāri*:  
 140  
 slow-acting poison - *dūṣṭvīṣa*: 154  
 - *dūṣṭvīṣa*: 157, 203  
 small ear-like growths - *karnika*: 199,  
 202f - *karnikā*: 218  
 small insects - *kunta*: 26  
 small urinary stones - *śarkarā*: 209  
 smell of decomposition - *kuṇapa*: 84  
 snakes' controlling hook - *sarpāṅkuśa*:  
 209  
*snāyu* - sinews: 27  
*sneha* - oil: 26 - oleation: 104  
 sniffing - *ucchiṅgana*: 232  
*snigdharāji* - oil stripe: 176 - oily stripe:  
 176  
 snuff - *nasya*: 137, 142  
 sole-heart - *talahr̥daya*: 285  
 solid - *styāna*: 232  
 soma creeper - *somalatā*: 139  
*somalatā* - soma creeper: 139  
*śonita-pitta*, *rakta-pitta* - blood-bile: 227  
*śonita* - blood: 227  
*śoṇita* - blood: 83f  
*śonitāgamana* - haemorrhaging: 178  
*śonitena* - with blood: 233  
 soot from the chimney - *āgāradhūma*: 50,  
 105  
 soot - *gr̥hadhūma*: 165, 208  
 sour - *śukta*: 86  
 spasm of the jaw-bones - *ardita*: 77  
 spasmodic contraction - *apatānaka*: 76  
 spasmodic contradiction - *āpatantraka*:  
 77  
 special property - *viśeṣa*: 98  
 sperm - *śukra*: 83  
*sphoṭa* - spots: 142f  
 spiders - *lūtā*: 23  
 spike - *śalya*: 272f, 283  
 spikenard - *nalada*: 229  
 spiral - *āvarta*: 231  
 spirits - *madirā*: 226 - *madira*: 229  
 spleen - *plīhan*: 226  
 splinter - *śalya*: 283  
 spots - *kaṇṭaka*: 142 - *sphoṭa*: 142f  
 spreading rashes - *visarpa*: 199, 218  
 sprung - *plutā*: 243

*sraja* - garlands: 137  
*sraṃsanī* - causing a fall: 243  
*srāva* - discharge: 141, 143  
*śreyas* - welfare: 22  
*srotas* - ducts: 93, 177 - kohl: 228 - tubes: 179  
*srotoja* - kohl: 225, 235  
*stabdha* - numb: 105  
*stale* - *paryuṣita*: 86  
*stalk* - *vr̥nta*: 224  
*stammers* - *gadgad*: 78  
*stated* - *ukta*: 271  
*statement of reason* - *apadeśa*: 281, 283  
*stationary* - *sthāvara*: 25, 148 - *sthāvara*: 27  
*steeped* - *pragāḍha*: 227  
*sternutatory* - *avapīḍa*: 188  
*stewed juice* - *niḥkvātha*: 156  
*sthāvara* - stationary: 25, 148  
*sthāvara* - stationary: 27  
*sthirā* - rigid: 233  
*stibnite* - *añjana*: 229 - *sauvīraka*: 225  
*stick-ear* - *yaṣṭīkarṇa*: 56  
*stiffness of the neck* - *manyāstambha*: 180  
*sting-gush* - *alagardā*: 39  
*stings* - *śūla*: 161  
*stinking pus* - *pūtipūya*: 83  
*stirred with goat's milk* - *ajākṣīrārdita*: 234  
*stomach* - *āmāśaya*: 154f  
*strength* - *bala*: 25  
*strip of cloth* - *paṭṭa*: 105  
*striped snake* - *rājimat*: 156  
*strong mallow* - *atibalā*: 227  
*stupor* - *mūrcchā*: 139  
*styāna* - solid: 232  
*substance* - *dravya*: 63, 268  
*substrata* - *āśraya*: 147  
*substrate* - *āśrayin*: 25  
*sūcī* - needle: 232  
*sūcīvaktrā* - with a needle-like opening: 243  
*suckable* - *lehya*: 286  
*suffering* - *duḥkha*: 25  
*sugandhi* - sandal: 227  
*suitability* - *sātmya*: 189

*śūka* - bristles: 160  
*śukapatra* - the white leaf: 176  
*sūkarākṣitā* - pigs' eye: 234  
*sukha* - comfort: 27  
*śukla* - white: 91  
*śukra* - sperm: 83  
*śukra* - semen: 91  
*sūkṣma* - rarefied: 153  
*śukta* - sour: 86  
*śūla* - abdominal gripes: 209 - gripes: 72  
   - pain: 155 - shooting pain: 233  
   - stings: 161  
*sun* - *hari*: 232  
*supernatant layer* - *agra*: 229  
*suppressing* - *vegāghāta*: 86  
*supti* - drowsiness: 105 - numbness: 73  
*surā* - wine: 211  
*surasa* - extracted juice: 87  
*sūtra* - aphorism: 282  
*svabhāva* - inherent factors: 27  
*svābhāvika* - inherent: 25  
*svāpa* - numbness: 73, 143 - sleep: 151  
*svara* - accents: 186  
*svarasa* - expressed juice: 224 - extracted juice: 142 - juice extract: 26  
*śvāsa* - asthma: 209 - wheezing: 71, 151  
*svasaṃjñā* - field-specific term: 281, 285  
*svedaja* - born of sweat: 26  
*śvetadara* - the white rip: 175  
*svetahanu* - the white jaw: 175  
*śvetakapota* - the white pigeon: 174  
*śvetamaṇḍala* - the white ring: 175  
*swollen belly* - *udara*: 209  
*swollen* - *ādhmāta*: 178  
*śyāma* - dark brown: 90  
*syanda* - watery eye: 230  
*symptom* - *liṅga*: 142  
*symptoms* - *liṅga*: 154  
*synovitis of knee join* - *kroṣṭukaśīrṣa*: 78f  
*tabors* - *paṭaha*: 192  
*taila* - sesame oil: 190  
*tailam* - sesame oil: 264  
*tailasugandhi* - the fragrant one in oil: 227  
*take away* - *āhārya*: 56  
*taken hot* - *puṭāhvaya*: 228

- takes the form of pervading the whole  
body - *akhiladehavyāptirūpam*: 153  
*takṣaka* - the snake prince *takṣaka*: 192  
*talahṛdaya* - sole-heart: 285  
*tālīśapatra* - scramberry: 225  
*tāmra* - copper: 233  
*tāmracūḍa* - cock: 228  
*tantrayukti* - logical methods of the  
system: 281  
*tantuka* - the stretch: 175  
*tapas* - religious power: 185  
*tārṣya* - garuḍa: 192  
*tarpaṇa* - eyewash: 143, 224, 228f  
- irrigation: 242  
*tatra* - in those cases: 227 - the *tatra*: 175  
tawny - *kapilā*: 40  
*tejas* - brilliance: 90 - heat: 90  
temperament - *prakṛti*: 25  
the all black - *sarvākṣṇa*: 174  
the bamboo leaf - *veṇupatraka*: 175  
the big black - *mahākṣṇa*: 174  
the big cow snout - *vṛddhagonasa*: 175  
the big head - *mahāśīrṣa*: 175  
the big jackfruit - *mahāpanasaka*: 175  
the big pigeon - *mahākapota*: 174  
the black belly - *kṛṣṇodara*: 174  
the black snake - *kṛṣṇasarpa*: 174  
the blood of birds and animals - *rasa*: 225  
the break hood - *khaṇḍaphaṇa*: 174  
the brown hut mouth - *babhrūkuṭīmukha*:  
174  
the brown - *babhru*: 175  
the caustic antidote - *kṣārāgada*: 208  
the chariot of light - *jyotīratha*: 176  
the conch keeper - *śaṃkhapāla*: 174  
the curd mouth - *dadhimukha*: 174  
the deer foot - *eṇīpada*: 175  
the drop stripe - *bindurāji*: 175  
the finger stripe - *aṅgulirāji*: 175  
the flame - *agnika*: 175  
the flower all - *puṣpasakalī*: 176  
the flower sprinkle beauty  
- *puṣpābhikīrṇnābha*: 175  
the fragrant one in oil - *tailasugandhi*: 227  
the gavedhuka - *gavedhuka*: 174  
the gift of god - *devadinna*: 175  
the goat swallower - *ajāgara*: 176  
the grass drier - *ṭṛṇaśoṣaka*: 175  
the grass flower - *apuṣpa*: 174  
- *darbhapuṣpa*: 176  
*The Great Antidote* - *mahāgada*: 191  
the great antidote - *mahāgada*: 201  
the great lotus - *mahāpadma*: 174  
the great snake - *mahāsarpa*: 174  
the hand decoration - *hastābharaṇaka*: 175  
the hungry sting - *alagarda*: 175  
the ilikinī - *ilikinī*: 176  
the intoxicator - *madanaka*: 175  
the jackfruit - *panasaka*: 175  
the khaluṣa - *khaluṣa*: 175  
the kid - *śīśuka*: 175  
the kūkuṭa - *kūkuṭa*: 174  
the little tree - *vṛkṣaka*: 176  
the lotus mouth - *puṇḍarīkamukha*: 174  
the lotus - *padma*: 174 - *puṇḍarīka*: 175  
the mark - *citraka*: 175  
the milk flower - *kṣīrikāpuṣpa*: 176  
the mirror ring - *ādarśamaṇḍala*: 175  
the morning glory - *pālindaka*: 175  
the mountain snake - *girisarpa*: 175  
the mud - *kardama*: 175  
the ochre - *kaṣāya*: 175  
the pale as a flower - *puṣpapāṇḍu*: 175  
the pigeon - *pārāvata*: 175  
the pilindaka - *pilindaka*: 175  
the rain cloud - *valāhako*: 174, 176  
the red eye - *lohitākṣa*: 174, 176  
the red ring - *raktamaṇḍala*: 175  
the ringed - *cakraka*: 176  
the salutary - *kalyāṇaka*: 209  
the science of life - *āyurveda*: 22  
the six part - *ṣaḍaṅga*: 175  
the snake around - *parisarpa*: 174  
the snake prince *takṣaka* - *takṣaka*: 192  
the speckled - *prṣata*: 175  
the stimulator - *dīpyaka*: 176  
the straight snake - *ṛjusarpa*: 175  
the stretch - *tantuka*: 175  
the stripe speckle - *rājicitra*: 175  
the *tatra* - *tatra*: 175



- the three fruits - *triphalā*: 229  
 the three spices - *vyoṣa*: 226  
 the time for therapies - *kriyākāla*: 27  
 the two finger stripe - *dvyaṅgulirāji*: 175  
 the two-day - *dvayāhika*: 176  
 the variegated - *vicitra*: 175  
 the white jaw - *svetahanu*: 175  
 the white leaf - *śukapatra*: 176  
 the white pigeon - *śvetakapota*: 174  
 the white ring - *śvetamaṇḍala*: 175  
 the white rip - *śvetadara*: 175  
 the worm eater - *kikkisāda*: 176  
 the year-snake - *varṣāhika*: 176  
 thei snake flag - *ahipatāka*: 176  
 therapies - *karman*: 27  
 thorny - *sanakha*: 210  
 three fruits - *triphalā*: 224, 226  
 three-quarters of an hour - *muhūrta*: 26  
*tīkṣṇa* - sharp: 187  
*timira* - blindness: 231 - partial  
     blindness: 227  
 tiredness - *sadana*: 100  
 tissues - *dhātu*: 211  
 tooth socket - *dantaveṣṭa*: 140  
 topic - *adhikaraṇa*: 281f  
 torn - *darita*: 172  
*toṭaka* - 'angry beetles': 160  
 toxic potion - *gara*: 209  
 toxic pulse - *vega*: 198  
 toxic reaction - *vega*: 170, 187, 191 - *vega*:  
     180f - *viṣavega*: 178  
 toxic shock - *vega*: 146, 218  
*traivṛta* - prepared with turpeth: 224  
 treatable - *yāpya*: 157  
 treatment - *bheṣaja*: 242 - *kriyā*: 229f  
     - *kriyā*: 27, 85  
 trench sweating - *karṣū*: 104  
 triad - *mithuna*: 285  
 trice - *kāṣṭhā*: 26  
*trika* - between the shoulder-blades: 106  
     - sacrum: 72  
*triphalā* - the three fruits: 229 - three  
     fruits: 224, 226  
*trivṛt* - turpeth: 227  
*trṇaśoṣaka* - the grass drier: 175  
 trunk of the body - *koṣṭha*: 179  
 tube - *nāḍī*: 104  
 tubes - *srotas*: 179  
*tūnī* - *tūnī*: 79  
*tūnī* - *tūnī*: 79  
 turmeric - *haridrā*: 229  
 turmeric - *rajana*: 225  
 turpeth - *trivṛt*: 227  
*tuttha* - blue vitriol: 229  
*tvac* - skin: 169  
*tvak* - skin: 26f  
 twins - *yama*: 91  
 tympanites - *ādhmāna*: 79  
  
*ucchiṅgana* - sniffing: 232  
*uccīṭiṅga* - crabs: 161  
*udāna* - *udāna*: 71  
*udāna* - *udāna*: 71  
*udara* - swollen belly: 209  
*udāvartā* - *udāvartā*: 243  
*udāvartā* - *udāvartā*: 243  
*udbhīd* - shoots: 26  
*uddaṇḍaka* - being like a vertical stick: 75  
*udveṣṭana* - writhing: 151  
 ugly nails - *kunakha*: 88  
*ūhya* - deducible: 281, 286  
*ukta* - stated: 271  
 universality - *sāmānya*: 269  
*unmāda* - madness: 209  
*unmardana* - rubbing: 104  
 unsteadiness of the humours  
     - *doṣapariplava*: 233  
 untreatable - *asādhya*: 231  
*upadeha* - rheum: 143  
*upadeśa* - prescription: 281, 283  
*upādhyāya* - priest: 89  
*upadrava* - secondary ailments: 189  
     - side-effects: 143, 157  
*upahāra* - oblations: 185  
*upahita* - combined: 227  
*upanāha* - poultice: 104  
*upaśama* - pacification: 26  
*upasarga* - affliction: 143  
*upasṛṣṭa* - afflicted: 84  
 urethral instillation - *uttarabasti*: 85, 87  
     - *uttarabasti*: 85 - *uttaravasti*: 86

- urinary diseases - *prameha*: 72  
 urinary stones - *aśmarī*: 209  
*ūrṇa* - wool: 105  
 used - *niṣevita*: 226  
*uśīra* - cuscus grass: 229  
 uterus - *garbhāśaya*: 98  
*utpalabhedyaka* - lotus-splittable: 56  
*utpīḍita* - injured: 231  
*utsādana* - dry rub: 141 - dry rubs: 137  
*uttarabasti* - urethral instillation: 85, 87  
*uttarabasti* - urethral instillation: 85  
*uttaravasti* - urethral instillation: 86  
  
*vadhra* - slice of flesh: 60f  
*vaiḍūrya* - beryl: 235  
*vaiṣamya* - irregularities: 25  
*vaiṣarṇya* - discolouration: 72  
*vakrabhrūnetra* - bent brow and eye: 233  
*vāksamūhārthavistāra* - extensive meaning  
     of the collection of statements: 177  
*vaktra* - ends: 233  
*vākyāśeṣa* - ellipsis: 281 - ellipsis: 284  
*valāhako* - the rain cloud: 174, 176  
*vallīkarṇa* - creeper-ear: 56  
*vallūraka* - dried flesh: 56  
*vāminī* - vomiting: 243  
*vānara* - monkey: 160  
*vanaspati* - fruit trees: 25 - non-flowering  
     tree: 229  
*vandhyā* - infertile: 243  
 vapour - *bāṣpa*: 138f, 142  
*varaki* - wasps: 161  
*varcaḥkīṭa* - dung beetles: 160  
*varga* - collection: 27  
 variable statement - *anekānta*: 281, 284  
 various treatments - *miśrakacikitsa*: 60  
*varṇa* - complexion: 25, 63, 90  
*varṣā* - rainy seasons: 26  
*varṣāhika* - the year-snake: 176  
*varṭti* - wick: 55 - wicks: 235  
*vasā* - fat: 228  
*vāta* - wind: 69, 242f  
*vātagulma* - wind-swelling: 209  
*vātakaṇṭaka* - *vātakaṇṭaka*: 79  
*vātakaṇṭaka* - *vātakaṇṭaka*: 79  
*vātalā* - windy: 243  
  
*vātarakta* - gout: 79  
*vātāṣṭhīlā* - *vātāṣṭhīlā*: 79  
*vātāṣṭhīlā* - *vātāṣṭhīlā*: 79  
*vāvīkṛtā* - or not distorted: 140  
*veda* - knowledge: 21, 268  
*vedanābhighāta* - pain and injury: 22  
*vega* - force: 106 - pulse: 169 - pulses: 147  
     - toxic pulse: 198 - toxic reaction: 170,  
     187, 191 - toxic shock: 146, 218  
*vega* - toxic reaction: 180f  
*vegāghāta* - suppressing: 86  
*vegāntara* - pulse interval: 180  
 veins - *sirā*: 202  
 velvet leaf - *pāthā*: 229  
*veṇupatraka* - the bamboo leaf: 175  
*vicakṣaṇa* - expert: 89  
*vicitra* - the variegated: 175  
*vidagdha* - inflamed: 224  
*vidaṅga* - embelia: 229  
*viḍbheda* - loose stool: 151, 162  
*vidhāna* - itemization: 281, 284  
*vidruma* - coral: 235  
*vijñānīya* - required knowledge: 148, 170  
*vijṛmbhikā* - gasping: 200  
*vikalpa* - option: 281, 285 - particulars: 27  
*vikāsin* - expansive: 153  
*vikṛtākṣa* - dysfunctional eyes: 90  
*vilekhana* - grooming: 88  
*vilocana* - misshapen eyeball: 233  
*vipakva* - matured: 225  
*viparītadarśana* - metamorphopsia: 178  
*viparyaya* - contraposition: 281, 284  
 virtue - *dharma*: 91  
*vīrudh* - shrubs: 25  
*vīrya* - potency: 191, 201  
*viśāda* - depression: 25  
*viśāda* - limp: 153  
*viśapūti* - poison-stink: 190  
*visarpa* - spreading rashes: 199, 218  
*viśavega* - toxic reaction: 178  
*viśeṣa* - individuality: 269 - special  
     property: 98  
*viśleṣa* - disjunction: 154  
*viśvambhara* - 'earth scorpions': 161

*viśvañci* - paralysis of arms and back: 77,

79

vital energy - *ojas*: 25

vital wind - *prāṇa*: 71

*voḍhāra* - bearers: 137

vomiting - *vāminī*: 243

*ṛddhagonasa* - the big cow snout: 175

*ṛkṣa* - flowering trees: 25

*ṛkṣaka* - the little tree: 176

*ṛnta* - stalk: 224

*vyadha* - piercing: 232

*vyadhi* - disease: 27

*vyākhyāna* - explication: 281, 285

*vyākhyāta* - intended: 27

*vyāla* - wild animals: 26

*vyāna* breath - *vyāna*: 179

*vyāna* - *vyāna* breath: 179 - *vyāna*: 71

*vyāna* - *vyāna*: 71

*vyavāyin* - pervasive: 153

*vyāyojima* - multi-joins: 56

*vyoṣa* - the three spices: 226

wasps - *kaṇabha*: 161 - *varaki*: 161

wasted - *kṣīṇa*: 58

water-born - *salilotthita*: 230

water-dwellers - *jalaukas*: 38

water - *jala*: 38

watery eye - *syanda*: 230

watery - *saumya*: 217

weeping tears - *āsrupāta*: 88

welfare - *śreyas*: 22

wheezing - *śvāsa*: 71, 151

white mustard - *siddhārthaka*: 234

white siris - *kinihī*: 229

white sugar - *sitā*: 234

white - *śukla*: 91

wick - *vartti*: 55

wicks - *vartti*: 235

wild animals - *vyāla*: 26

wind-swelling - *vātagulma*: 209

wind - *māruta*: 84 - *vāta*: 69, 242f

windy - *vātalā*: 243

wine - *surā*: 211

with a needle-like opening - *sūcīvaktrā*:

243

with blood - *śonitena*: 233

with bloodloss - *raktakṣayā*: 243

with difficulty - *kṛcchra*: 231

with testicles - *aṇḍinī*: 243

without venom - *nirviṣa*: 172

womb - *yoni*: 238

wood apple - *kapittha*: 224

wool - *ūrṇa*: 105

word-meaning - *padārtha*: 269

word - *pada*: 267, 269

worms - *kṛmi*: 26

writhing - *udveṣṭana*: 151

*yakṛdrasa* - liver extract: 225

*yakṛt* - liver: 226

*yama* - twins: 91

*yamalā* - double: 140

*yāmya* - in yama's direction: 166

*yantraṇā* - restrictions: 232

*yāpya* - alleviated: 227 - can be mitigated:

231 - mitigatable: 223 - treatable: 157

*yaṣṭīkarṇa* - stick-ear: 56

*yavāgū* - gruel: 156, 187

*yavaudana* - cooked barley: 231

year - *saṃvatsara*: 26

*yoga* - cohesion: 281 - cohesion: 282

- compounds: 224 - formulation: 103

*yoni* - female reproductive organ: 242f

- female reproductive system: 242

- womb: 238

*yonivyāpat* - disorders of the female

reproductive system: 242

young girl - *kaumārī*: 93

*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 . . . . .	85
■ to what? . . . . .	86
■ 29, 30 missing? . . . . .	89
■ Problematic passage in the edition. . . . .	89
■ unsolved problem . . . . .	94
■ Perhaps <i>kalka</i> here could also mean the <i>Terminalia Bellerica</i> (विभीतक). . . . .	106
■ Perhaps <i>kalka</i> here could also mean the <i>Terminalia Bellerica</i> (विभीतक). . . . .	106
■ Euphorbia Antiquorum (Antique spurge) . . . . .	109
■ The webpage <a href="https://hindi.shabd.in/vairagya-shatakam-bhag-acharya-arjun-tiwari/post/117629">https://hindi.shabd.in/vairagya-shatakam-bhag-acharya-arjun-tiwari/post/117629</a> says that this verse belongs to the <i>Nītiratna</i> . I could not find this text. . . . .	113
■ The provisional edition should be modified accordingly. . . . .	115
■ There, Ḍalhaṇa commented that deliberation on <i>avapīḍa</i> had been done earlier when it was mentioned. Find that description to know more details. . . . .	117
■ Search for the section where the treatment of <i>ākṣepaka</i> is described. . . . .	118
■ Make the first letter of sentence capital. . . . .	118
■ ? . . . . .	124
■ ? . . . . .	124
■ ? . . . . .	124
■ (?) . . . . .	124
■ Is Dh. the teacher of Su. elsewhere? . . . . .	136
■ Cf. Arthaśāstra 1.21.8. . . . .	137

■ I'm still unhappy about this verse. . . . .	140
■ Mention this in the introduction as an example of the scribe knowing the vulgate. . . . .	140
■ fn about sadyas+ . . . . .	140
■ Bear's bile instead of deer's bile. . . . .	141
■ punarṇṇavā in the N & K MSS . . . . .	142
■ śrita for śṛta . . . . .	142
■ explain more . . . . .	142
■ Medical difference from Sharma. . . . .	143
■ example where the vulgate clarifies that these should be used separately; appears to be a gloss inserted into the vulgate text. . . .	143
■ 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. . . . .	143
■ √ vyadh not √ vedh (also elsewhere and for the ears), causative optative. . . . .	143
■ Look up the ca. reference. . . . .	152
■ Come back to the issue of "kalpa". Look up passages in the Kośa. . . .	159
■ got to here - 2023-01 continue with table for #5 . . . . .	161
■ write footnote: don't repeat ativiṣā; vulgate similar to H. . . . .	163
■ Include info on Hidas 2019 . . . . .	169
■ 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? . . . . .	171
■ grammar . . . . .	172
■ ri- ṛ-? . . . . .	175
■ varṇa means "colour" elsewhere? . . . . .	176
■ write note on pariṣekān pradehāmś . . . . .	188
■ where is cutting with a knife related to removing bile or phlegm. . . .	224
■ maṣī burned charcoal. Find refs. . . . .	224
■ find ref. . . . .	230
■ Check out these refs. . . . .	230
■ meaning of kalpa . . . . .	230
■ or a dual? . . . . .	235
■ See chapter 40 of Sūtrasthāna. . . . .	284
■ vasā / medas / majjan . . . . .	284
■ Does bhūtādi a compound or it means ahaṅkāra or ego? . . . . .	285

---

 triad? –DW . . . . .	285
--	-----

