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“On Leeches” in a Medical Treatise for Humans: The Nepalese Version of *Suśrutasamhitā* 1.13

Lisa Allette Brooks

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INTRODUCTION

A SERIES OF RECENT PUBLICATIONS by The Suśruta Project has begun to revise and flesh out the early history of one of the most important early Sanskrit medical treatises, the *Suśrutasamhitā* (“The Compendium of *Suśruta*”).¹ This encyclopedic early first-millennium treatise is famous for its description of the training, material preparations, and procedures of surgical physicians. Recent scholarship has explored the modern history of how Sanskrit texts, such as the *Suśrutasamhitā*, came to play a role in the contemporary pedagogy of ayurvedic medicine in India. This has included examining the prioritization of classical texts by Orientalists during the British colonial period, how they were engaged (or not) in local practices of medicine during the colonial and post-colonial periods, and how they figured regionally in pre- and post-independence nationalisms.² However, as we travel farther back in time, gaps emerge in our knowledge about the circulation, reception, and importance of this treatise.³ In January 2007, Dragomir Dimitrov and Kashinath Tamot described the history and holdings of the Kaiser Shamsher Library and Manuscript Collection for a newsletter of the Nepal-German Manuscript Cataloguing Project, calling attention to a Nepalese manuscript of the *Suśrutasamhitā* that was copied in 878 CE.⁴ This highlighting of one of the earliest preserved South Asian manuscripts has opened up

¹ Refer to “Outputs” at Wujastyk, Birch, Brooks, et al. 2020–24. In particular, see Wujastyk, Birch, Klebanov, Parameswaran, Rimal, et al. 2023.

² Sivaramakrishnan 2006; Berger 2013; Mukharji 2016; Cerulli 2022.

³ Birch et al. 2021; Klebanov 2021b.

⁴ Dimitrov and Tamot 2007: 33; Wujastyk,

Birch, Klebanov, Parameswaran, Rimal, et al. 2023: 1. The newsletter interprets the date given as 877 CE whereas Harimoto (2011: 87–88), Klebanov (2021a), and Wujastyk, Birch, Klebanov, Parameswaran, Rimal, et al. (2023) have interpreted the date based on the manuscript’s colophon as 878 CE.



new possibilities for understanding the early history of the *Suśrutasaṃhitā*. Although the manuscript, MS Kathmandu KL 699, is incomplete, it covers approximately two thirds of the treatise as we presently know it.

The Suśruta Project team, led by Dominik Wujastyk at the University of Alberta, has transcribed the full manuscript MS Kathmandu KL 699 along with two other related Nepalese manuscripts, MS Kathmandu NAK 1-1079 (possibly twelfth century) and MS Kathmandu NAK 5-333 (sixteenth century), to produce a critical edition of KL 699.⁵ Andrey Klebanov has shown that these manuscripts appear to have been both written and found in Nepal, and that they likely represent a version of the treatise that came to Nepal "possibly from Bengal or elsewhere in eastern India".⁶ Wujastyk et al. describe the Nepalese version produced from these manuscripts as a "hypothetical text-critical edition" of the text that "predates the composition of all major commentaries of the *Suśrutasaṃhitā*".⁷ In this article I follow Klebanov and Wujastyk et al. in referring to the hypothetical version of the *Suśrutasaṃhitā* generated by The Suśruta Project as the "Nepalese version".⁸ Likewise, I also refer to the most widely circulated edition of the treatise, Jādavji Trikamji Ācārya's 1938 edition, published with twelfth century commentator Dalhaṇa's *Nibandhasaṅgraha* commentary, as "Dalhaṇa's version".⁹

This article discusses the Nepalese version of the *Suśrutasaṃhitā*'s "Chapter on Leeches" (*jalāyukādhyāya*), shortened to "On Leeches," and presents a critical edition and translation of the chapter.¹⁰ The edition presented here relies upon the sixteenth-century manuscript MS Kathmandu NAK 5-333 up to 1.13.22

⁵ For a detailed discussion of these manuscripts see Klebanov 2021a. In the apparatus below Manuscript K refers to MS Kathmandu KL 699, Manuscript N refers to MS Kathmandu NAK 1-1079, and Manuscript H refers to MS Kathmandu NAK 5-333.

⁶ Klebanov 2021a: 2 and 56

⁷ Wujastyk, Birch, Klebanov, Parameswaran, Rimal, et al. 2023: 9 and 12.

⁸ Klebanov 2021a: 2; Wujastyk, Birch, Klebanov, Parameswaran, Rimal, et al. 2023: 2. Refer to pp. 9–11 of the latter for a discussion of the terminology Nepalese version. Wujastyk, Birch, Klebanov, Parameswaran, Rimal, et al. note that they prefer to call this a version rather than a recension because not all north Indian manuscripts have yet been examined.

⁹ Wujastyk, Birch, Klebanov, Parameswaran, Rimal, et al. 2023: 2; *Suśrutasaṃhitā* 1938. I follow Wujastyk et al. in referring to this as "Dalhaṇa's version"

because the manuscripts used to produce the edition very often align with Dalhaṇa's citations of the *Suśrutasaṃhitā* in his commentary, and this version of the treatise, compiled by contemporary editors, is published and most often read, alongside Dalhaṇa's *Nibandhasaṅgraha*. In the beginning of his commentary on the *Suśrutasaṃhitā*, Dalhaṇa names himself a descendant of a lineage of brāhmaṇa physicians who lived in Āṅkolā near Mathurā associated with the court of Sahapāla (Su 1938: 1). Meulenbeld reports that some scholars associate this location with "the old state of Bharatpur (Rājasthān) and others with the Pāla dynasty of Bengal" Meulenbeld 1999: vol 1A, 379.

¹⁰ The translation and critical edition of *Suśrutasaṃhitā* 1.13 appended to this article were a collaborative endeavor. Please refer to the section "Acknowledgements and Attributions."

where we find the text attested in the oldest manuscript, MS Kathmandu KL 699, continuing through to the end. The title “On Leeches” gestures to the fact that this is an unusual chapter in a medical treatise that is otherwise focused on human health. In Ḏalhaṇa’s version the title can be translated as “On Leech Therapy” or “On Bloodletting by Leeches” (*jalaukāvacāraṇīyam*), both of which emphasize the process of bloodletting as a medical treatment for humans. But the title of the chapter in the Nepalese edition, *jalāyukādhyāya*, highlights the chapter’s focus on describing the classification and care of leeches, and providing humans with instructions for interpreting and interacting with leeches in medical practice.

First, I consider the importance of the chapter “On Leeches,” and then turn to a comparative study of places in the *Suśrutasaṃhitā* that mention leeches as part of lists in the treatise. Through the list comparison I suggest that Ḏalhaṇa’s version both expands upon and further systematizes categories present in both version of the treatise. This feature aligns with Wujastyk et al.’s observation that in the “microcosm” of *Suśrutasaṃhitā* chapter 1.16 on earlobe and nose repair, Ḏalhaṇa’s version represents an “augmenting of the text”.¹¹ Wujastyk et al.’s observations span a range of types of textual “augmentation,” including the expansion of compounds, the insertion of new compounds and words, and the addition of other types of words and phrases. Here, I focus primarily on what I refer to as “list expansion,” taking the form of either 1) an increase in specificity of terms in the list, or 2) a category expansion, which I define as the addition of items that are grouped elsewhere in the text into a category with items present in the list. The discussion of lists also serves to contextualize the chapter “On Leeches” through an examination of overlapping categories that leeches inhabit within the text. The next section of this study examines a verse in the Nepalese edition that appears to cite the teachings of Bhāluki, which are only known to us through citations found in ayurvedic treatises and commentaries. I then turn to a discussion of textual variants in descriptions of the procedure of leech therapy. Finally, I will outline the contents of the chapter to introduce the edition and translation of “On Leeches.”

The *Suśruta* Project makes an important contribution by providing an interface for a comparison of the Nepalese version of treatise with Ācārya’s 1938 edition of the *Suśrutasaṃhitā* and Ḏalhaṇa’s *Nibandhasaṅgraha*. This comparison has much yet to tell us about the diversity of versions of the text in regional circulation through the medieval to early modern periods, and it also opens up new modes of inquiry into the history of textual reception and transmission of the *Suśrutasaṃhitā*. As Wujastyk et al. write,

¹¹ Wujastyk, Birch, Klebanov, Parameswaran, Rimal, et al. 2023: 21.

... the Nepalese manuscripts appear to present us with the last recoverable snapshot of this stage of the work when it was still open to absorbing new materials, most notably the *Uttaratantra*, and before the text was fixed as a result of the authority of the major commentators, Cakrapāṇidatta and Ḑalhana.¹²

This "snapshot" of the treatise before it was fixed by popular commentators renders comparisons between the Nepalese version and Ḑalhana's version particularly valuable even if broader conclusions cannot be drawn until more data has been collected from across the *Suśrutasaṃhitā*. To facilitate this type of comparative study, the current project interface, Saktumiva, designed by Charles Li, provides scholars with the choices in the way that they view and study the text.¹³ For example, the reader can choose which versions of the text they want to include in their view of the critical editions (i.e. which manuscripts and/or Ḑalhana's version), the script in which they want to view the text (i.e Devanagari, Malayalam, Roman, etc.), and how they want to view orthographic variants. This highlights the variety of versions of the *Suśrutasaṃhitā*, but it also performatively and interactively raises important questions about the ways that scholars of the present and of the past, including commentators, have played an active role in constructing and historicizing texts through acts of re-construction. We encourage you to explore the e-text of the Nepalese version of the *Suśrutasaṃhitā*.

1 WHY THE CHAPTER "ON LEECHES"?

IN THE FIRST PAGES of Mahesh Chandra's *The Leeches of India—A Handbook*, published by the Zoological Survey of India in 1991, Chandra explains:

The leeches are of two types, i.e., venomous and non-venomous. Only the non-venomous leeches should be applied for blood sucking. The non-venomous leeches are found in sweet scented waters, live on non-poisonous weeds and suck blood from the affected part of human organisms without causing any discomfort.

The venomous leeches are thick about the middle, elongated of slow locomotion, look fatigued, capable of sucking only a small quantity of blood, should not be taken as belonging to the commendable type. They have their origin in the decomposed urine and faecal matters of toads and venomous fishes in pools of stagnant and turbid waters and the common zoophytes which live in clear waters.¹⁴

¹² Wujastyk, Birch, Klebanov, Parameswaran, Rimal, et al. 2023:12.

¹³ Li 2017; 2018: ch. 4; 2022.

¹⁴ Chandra 1991: 1.

As will become clear from our chapter edition below, this passage seems to be taken almost directly from the *Suśrutasaṃhitā*. Found in a zoological text, this schema presents two types of leeches, with qualities homologous to their respective habitats, as suitable or not suitable for blood sucking interaction with humans. This binary ecological classification of leeches, offered by Chandra following a discussion of the Linnaean classification for leeches in the text's introduction, renders two genealogically distinct forms of classification both commensurable and complimentary. This is but one example of the vast afterlife—or present life—of this chapter of the *Suśrutasaṃhitā*. In my ethnographic research, I have seen the representation of leeches and leech therapy offered in the treatise continue to inform and animate both institutionalized ayurvedic education about leech therapy and the contemporary ayurvedic practice of leech therapy in South India.¹⁵

The chapter on leech therapy in the *Suśrutasaṃhitā* is the oldest extant detailed description of leech therapy in the world, yet it is usually only mentioned in passing in summaries of the history of leech therapy. These summaries can be found in historical scholarship and across a range of contemporary medical journals for practitioners working with leeches both in “traditional” medicines and in biomedicine.¹⁶ Descriptions of leech therapy in the ancient world often begin by stating that the earliest evidence for medicinal leeching comes from a wall painting in an ancient Egyptian tomb dating to 1500 BCE.¹⁷ Nathan Wasserman suggests that leeches appear even earlier in old Babylonian medical texts, where they are often misidentified as a non-toothed worm.¹⁸ It is not clear, however, if they were engaged in medical bloodletting in the Babylonian context.¹⁹ Nicander of Colophon's poem, *Theriaca*, dating between 200–130 BCE, is the earliest written prescription from ancient Greece for bloodletting with leeches. In this poem, leeches are prescribed as a treatment for scorpion and spider bites.²⁰ Nicander also mentions leeches in the *Alexipharmaka*, but as a pathology, as in the case of accidental swallowing of a leech.²¹ Themison of Laodicea and other Methodic physicians used leeches extensively in their treatments of diseases caused

¹⁵ Brooks 2020b; 2021a,b.

¹⁶ Leeches are used in many major North American and European hospitals today for revascularization after skin and digit reattachment. As a result of this there has been a renewed interest among biomedical practitioners in the history of this form of multispecies medicine.

¹⁷ Kirk and Pemberton (2013: 47) note the painting was found on the tomb of the scribe Userhat (c. 1567–1308 BCE). I am not trained in the visual analysis of Egyptian wall paintings and was unable to confirm this ref-

erence in two separate visual and narrative sources describing Userhat's tomb, located in Thebes (Hodel-Hoene 2000: 65–84; Benderitter and Engel n.d.: “Userhat – TT 56”).

¹⁸ Wasserman 2008: 73–79.

¹⁹ Wasserman 2008: 80.

²⁰ Nicander et al. 1953: 127–29.

²¹ Several secondary sources repeat in error that Nicander's poem, *Alexipharmaka*, mentions the medicinal use of leeches. E.g., Wittke-Michalsen 2007; “Suckers for Success” 2012; Montinari and Minelli 2022.

by "constriction" (in contrast to "dilation") such as in instances of headache, liver disease, and gout.²² Like Nicander, Hippocrates mentions the treatment of a leech stuck in the throat.²³ Although Hippocratic physicians did not discuss leeching as a treatment, the Hippocratic humoral understanding of the body led to the use of bloodletting.²⁴ As Shigehisa Kuriyama argues in his comparative history of classical Greek and Chinese medicine, "The transformation of bloodletting from a relatively minor remedy to an indispensable pillar of Greek therapeutics turned, I suggest, on the concept of plethora. Underlying the earnest commitment to phlebotomy was the dread of excess blood".²⁵

The concept of plethora was also central to the writings of the second century CE Roman physician Galen, who outlined leech therapy in one of his three treatises on bloodletting, *De hirundinibus, cucurbitula, incisione et scarificatione*. Helen Papavramidou and N. Christopoulou-Aletra summarize Galen's writings and note that Galen understands leeches to be "poisonous." He therefore advises that, in preparation for therapy, "leeches just found should be kept in a vase for a day and fed with a little blood, in order to decrease their 'poison'".²⁶ This provides a contrast to the understanding of leeches in the roughly contemporaneous *Suśrutasamhitā* which is based upon the ecological binary of venomous and non-venomous leeches that we saw employed by Mahesh Chandra. In this binary, only non-venomous leeches are to be engaged in bloodletting, as they transmit healing qualities during treatment rather than poison. While most contemporary histories of leech therapy in ancient times mention the *Suśrutasamhitā*, they elide the rich detail on leeches and human-leech interactions offered in the chapter "On Leeches" that will be examined below.

In the thousand years following the compilation of the *Suśrutasamhitā*, at least five other South Asian medical works draw upon, add to, and modify the detailed and rich description of leech identification, classification, and care found in the earlier treatise. In particular, two important medical treatises attributed to Vāgbhaṭa in the seventh or eighth century CE, the *Aṣṭāṅgahṛdaya* and the *Aṣṭāṅgasaṅgraha*, both clearly draw some of their material on leech therapy from the *Suśrutasamhitā*, and they add additional details. The ninth-century Jain author Ugrāditya's *Kalyāṇakāraka* also appears to adapt material from the *Suśrutasamhitā*, as does the *Hastyāyurveda*, a treatise on elephant medicine.²⁷ For example, both of these latter texts take some of their names and descriptions of venom-

²² Papavramidou and Christopoulou-Aletra 2009: 624.

²³ Westfall 1949: 6.

²⁴ Papavramidou and Christopoulou-Aletra 2009: 626.

²⁵ Kuriyama 1995: 27.

²⁶ Papavramidou and Christopoulou-Aletra 2009: 625.

²⁷ According to Meulenbeld *Hastyāyurveda* was composed later than the *Suśrutasamhitā* but earlier than the twelfth century. See Meulenbeld 1999: 2A: 574.

ous and non-venomous leeches directly from the *Suśrutasaṃhitā*.²⁸ The writings of the *Suśrutasaṃhitā* were also part of the Indo-Persianate exchange of knowledge, as attested in the writings of tenth-century Persian physician and scholar Abū Bakr al-Rāzī. As Prabhulla Chandra Rāy has noted, al-Rāzī's presentation of leech therapy "agrees almost word for word with that of the *Susruta* (Sanasrad) in many places".²⁹ Suffice it to say the representation of human-leech medicine found in the *Suśrutasaṃhitā* has been foundational and enduring in its influence.

2 LEECHES AND LISTS: SITUATING "ON LEECHES"

THE ŚLOKASTHĀNA (OR SŪTRASTHĀNA) of the *Suśrutasaṃhitā* is the first of six substantive sections (*sthānas*) of the treatise.³⁰ This section is divided into forty-six chapters (*adhyāyas*) and in both the Nepalese version and Ḑalhaṇa's version the discussion of leeches and leech therapy is found in the thirteenth chapter. First, I will track leeches through their initial appearances in the *Suśrutasaṃhitā* and comparatively examine lists in chapters five and eight in which leeches are mentioned in one or both versions of the text. Then, I turn to chapter thirteen, "On Leeches," situating its location in the treatise in terms of the explicit classification of leeches as both a type of instrument and a method for bloodletting, and comparatively examining lists across the versions of this chapter. Taken together, the comparison of lists in this section suggests that Ḑalhana's version of the treatise exhibits category expansion, that is, an addition or elaboration of items within a category present in the Nepalese version of the treatise.

The first four chapters of the *Ślokasthāna* discuss the origins of the treatise, how to initiate and instruct surgical students, the contents of the treatise, and how to interpret it through a combination of theoretical and practical knowledges. The fifth chapter describes the conditions and prearrangements for surgical practice. It is here that leeches appear for the first time in Ḑalhaṇa's version—but not in the Nepalese version—in an example of what I am calling a category expansion. The following is a list of materials given in *Suśrutasaṃhitā* 1.5.6 that a surgeon should have on hand. The list of items in the Nepalese version reads:

²⁸ Further description of these texts is beyond the scope of this article, but I am currently working on a comparative study of representations of leech therapy across first-millennium Sanskrit medical literature.

²⁹ Rāy 1903: cxvi–cxxii. Rāy seems to be translating from the thirteenth-century Latin translation of the al-Rāzī's *Kitab al-Hawi fi al-tibb* which was published as *Continens Rasis* by Faraj Ben Salim. See Rāzī

1529; Kahl 2015: 78–83.

³⁰ Although the term *sūtrasthāna* is used in the printed editions of the *Suśrutasaṃhitā*, including Ḑalhana's version, Andrey Klebanov has shown that the term *ślokasthāna* is more commonly used in the Nepalese version. In this article, for clarity, I will use the term *ślokasthāna* to refer to this section in both version of the treatise. See Birch et al. 2021; Klebanov 2021a.

instruments, sharp instruments, caustic alkali, cautery, rod, cotton, cloth, leaf, suture, ghee, honey, milk, oil, saturation fluid, decoction, ointment, paste, cold water, fan, cauldron, and so on...

यन्त्र-शास्त्र-क्षार-अग्नि-शलाका-पिचु-स्रोत-पत्र-सूत्र-घृत-मधु-पयस-तैल-तर्पण-कषाया-
लेपन-कल्क-शीतोष्णोदक-व्यजन-कटाहादीनि...³¹

Contrast this with Ḏalhaṇa's edition, with expanded items in bold:

instruments, sharp instruments, caustic alkali, cautery, rod, **cow's horn**, **leech**, **gourd**, **bulb-wick**,³² cotton, cloth, suture, leaf, **bandage**, honey, ghee, honey, **muscle fat**, milk, oil, saturation fluid,³³ decoction, ointment, paste, cold and **hot** water, fan, cauldron, and so on...

यन्त्र-शास्त्र-क्षार-अग्नि-शलाका-शृङ्ग-जलौक-अलाबू-जाम्बवौष्ठ-पिचु-प्रोत-सूत्र-पत्र-
पट्ट-मधु-घृत-वसा-पयस-तैल-तर्पण-कषाया-लेपन-कल्क-व्यजन-शीतोष्णोदक-
कटाहादीनि...³⁴

These two lists of items contain broad categories of tools that are described in subsequent chapters of the treatise, including "instruments" (*yantras*) and "sharp instruments" (*śastras*), specific techniques, such as "caustic alkali" (*ksāra*), "cautery" (*agni*), as well as categories of materials or substances, such as "cotton" (*picu*) and "leaves" (*patra*).³⁵ Some of these items, including cautery, leaves, and (in Ḏalhaṇa's version), caustic alkali, are found in the list of "auxiliary sharp instruments" (*anuśastras*) given in chapter eight of the *Suśrutasamhitā*. In both treatises, the list from this chapter includes leeches.³⁶

In the lists presented above, the items found only in Ḏalhaṇa's version appear to represent an expansion of the categories of items in the list from the Nepalese version. Let us take the items "caustic alkali" and "cautery" found in the Nepalese version as our point of departure. As noted above, leeches are listed

³¹ Nepalese Version: 1.5.6. Translations are my own unless otherwise noted. Translations of the Nepalese version of 1.13 are drawn from our collaborative translation appended to this article. For Sanskrit quotations, we generally follow the orthography of the version of the text being cited.

³² Dalhana glosses "bulb-wick" (*jāmbavavauṣṭha*) as a "wick (*varti*) with a front tip that resembles a *jāmbu* fruit" (जाम्बवौष्ठं जाम्बुफलसदशमुखात्रा कृष्णापाषाणरचिता वर्तिः), (Su 1938: 19). Also, on the identity of the *jāmbu* as a black plum see Wujastyk 2004.

³³ Dalhaṇa glosses "saturation fluid" (*tarpaṇa*) as "barley meal or thickened milk etc., submerged in water" (तर्पणं जलसूतं शकुरीरादि) (Su 1938: 19).

³⁴ I have not used bold text in places where list items are spelled differently but indicate the same thing (as in the case of *plota* and *prota*) or where the word order varies.

³⁵ Instruments (*yantras*) are enumerated and described in *Ślokasthāna* chapter 7 and sharp instruments (*śastras*) in *Ślokasthāna* chapter 8.

³⁶ Refer to Table 1 in this article.

as an auxiliary sharp instrument in chapter eight of both versions of the *Suśrutasamhitā* along with cautery, and in Ḟalhaṇa's also with caustic alkali. Further, in both versions of the treatise, leeches, caustic alkali, and cautery each receive their own explanatory chapter early in the *Ślokasthāna*, and as such, each item constitutes a category of auxiliary sharp instrument requiring additional explanation for the surgeon. We can therefore understand the inclusion of "leech" in Ḟalhaṇa's version as a form of category expansion, as it is the third category of auxiliary sharp instruments that receives its own chapter in the first half of the *Ślokasthāna*. Further, in both versions of the treatise, the chapter on bloodletting with leeches states that leeches are the gentlest method of bloodletting, and along with cow's horn (*śṛīga*) and gourd (*alābu*) constitute a triad of gentle methods of bloodletting. This triad is echoed in Ḟalhaṇa's version of 1.5.6 by the inclusion of the "horn" and "gourd" in their association with "leech," the latter which is, in turn, associated with "caustic alkali" and "cautery." This category expansion results from the way in which leeches exceed the available categories of auxiliary sharp instrument and gentle method.³⁷

In a similar manner, in Ḟalhaṇa's expanded list, the "bulb-wick" and "bandage" are included in the set of things that can be used for bandaging, along with "cotton" and "cloth" as found in the Nepalese version. "Muscle fat" from animals is an addition to the other oily substances in the Nepalese version's list such as "ghee" and "oil." As these examples illustrate, these category expansions may express additional details, serve as attempts to reconcile other sections of the treatise, or, as we shall see below, present options for contingencies in practice.

After an exposition on seasonal regime (*rtucarya*) in the sixth chapter, the treatise turns to a description of the surgeon's tools in the seventh and eighth chapters. In the seventh chapter the treatise describes the use of instruments, including an enumeration of 101 instruments (*yantras*) and shorter list of accessory or substitute instruments (*upayantras*).³⁸ The eighth chapter lists the twenty-one sharp instruments (*śastras*) and the auxiliary sharp instruments (*anuśastras*), which includes the leech (*jalaukas*) in all of the manuscripts that we consulted, as well as in Ḟalhaṇa's version. Whereas the Nepalese version contains a list of twenty-one sharp instruments, Ḟalhaṇa's version of the text enumerates only twenty, so the Nepalese version, in this case, actually contains one additional instrument. This instrument is listed first in the passage, and it is called "half of

³⁷ See Brooks in press.

³⁸ Both versions of the text state that the surgeon's most important instrument is his hand because the actions of the other instruments depend on it. In the Nepalese version *Sūtrasthāna* 7.3 reads: "Instruments are one more than a hundred.

Here, indeed one must understand that the instrument of the hand is the foremost among instruments because the actions of the other instruments are dependent upon it." (यन्त्रशतमेकोत्तरम्; अत्र हस्तयन्त्रमेव प्रयानतम् यच्चाणामवगच्छ तद्यीनत्वाद्यन्त्रकर्मणां (Su 1938: 30)). Also, see Brooks 2020a.

Table 1: List of *anuśastras* from SS 1.8.15.^a

<i>Nepalese version</i>	<i>Ḍalhaṇa’s version</i>
bamboo (<i>tvakkṣāra</i>)	bamboo (<i>tvaksāra</i>)
rock crystal (<i>sphatika</i>)	rock crystal (<i>sphatika</i>)
glass (<i>kāca</i>)	glass (<i>kāca</i>)
<i>kuravinda</i>	corundrum (<i>kuruvinda</i>) ^b
leech (<i>jalaukas</i>)	leech (<i>jalaukas</i>)
cautery (<i>agni</i>)	cautery (<i>agni</i>)
—	caustic alkali (<i>kṣāra</i>)
nails (<i>nakha</i>)	nails (<i>nakha</i>)
leaves (<i>patrāṇi</i>)	gojī, śephālikā, and śāka leaves (<i>goji-śephālikā-śāka-patrāṇi</i>)
—	bamboo shoots (<i>karīra</i>)
—	hair (<i>bāla</i>)
—	fingers (<i>aṅgulī</i>)

^a Provisional edition of *adhyāya* 1.8; vulgate text at Su 1938: 41.

^b Here, I follow Wujastyk, Birch, Klebanov, Parameswaran, Rimal, et al. 2023: 7, n. 21.

an arrow tip” (*śalāgrārdha*).³⁹ However, the list of auxiliary sharp instruments is substantially shorter in the Nepalese version as is illustrated in Table 1.

In the longer list found in Ḍalhaṇa’s version, we find two instances of category expansion. First, “leech” and “cautery” are expanded to include their third (as discussed above), “caustic alkali.” Second, the generic term “leaves” is replaced with an expanded list of three types of leaves: *gojī*, *śephālikā*, and *śāka*. Even though the leaf types are not present in the list of auxiliary sharp instruments in the Nepalese version, these three are named in the subsequent verses in both the Nepalese version and Ḍalhaṇa’s version, 1.8.16–18, which describe their use. Thus, they may have been incorporated in Ḍalhaṇa’s version, into the list found at 1.8.15, for the sake of comprehensiveness.

Verses 1.8.16–18 also explain the situations in which a surgical physician should use an auxiliary sharp instrument, demonstrating an instance of what Wujastyk et al. call “augmentation.” The Nepalese version states:

A wise person should use auxiliary sharp instruments for children and people who are afraid of sharp instruments, and the four mater-

³⁹ Both texts give the number of items in their respective lists of auxiliary sharp

instruments.

ials starting with bamboo in the case of cutting and splitting. One should use a nail in cases of extraction, cutting, and splitting, when feasible. The use of cautery, caustic alkali, and leeches will be explained subsequently. If diseases are located in the mouth and in the eyelids, then one should let them flow with the leaves of *gojī*, *śephālikā*, and *śāka*.

शिशूनां शस्त्रभीरूणामनुशस्त्राणि योजयेत् ।
त्वक्षारादिच्चतुर्वर्गं भेद्ये च्छेद्ये च बुद्धिमान् ॥
आहार्ये च्छेद्ये भेद्ये च नखं शक्येषु योजयेत् ।
विधिः प्रवक्ष्यते पश्चादग्निक्षारजलौकसां ॥
ये स्युर्मुखगता रोगा नेत्रवर्त्मगताश्च ये ।
गोजीशेफालिकाशाकपत्रैविस्तावयेत्तु तान् ॥
(SS 1.8.16–18)⁴⁰

Compare this with *Dalhaṇa*'s version; the notable differences are presented in bold:

A wise person should use the four materials starting with bamboo in the case of cutting and splitting, for children, those afraid of sharp instruments (*śastras*), and **in the absence of sharp instruments**. One should use a nail when feasible in cases of extraction, cutting, and splitting. The use of caustic alkali, cautery, and leeches will be explained subsequently. If diseases are located in the mouth and in the eyelids, then one should let them flow with the leaves of *gojī*, *śephālikā*, and *śāka*. **And, when they should be probed and a probe is not available, hairs and nails are suitable.**

शिशूनां शस्त्रभीरूणां शस्त्राभावे च योजयेत् ।
त्वक्सारादिच्चतुर्वर्गं छेद्ये भेद्ये च बुद्धिमान् ॥
आहार्यच्छेद्यभेद्येषु नखं शक्येषु योजयेत् ।
विधिः प्रवक्ष्यते पश्चात् क्षारवहिजलौकसाम् ।
ये स्युर्मुखगता रोगा नेत्रवर्त्मगताश्च ये ।
गोजीशेफालिकाशाकपत्रैविस्तावयेत्तु तान् ॥
एष्येष्वप्यलभे तु बालाङ्गुल्यङ्कुरा हिताः ॥ (SS 1.8.16–8.18)⁴¹

The Nepalese version emphasizes that the tools in this list are to be used for specific types of people: children and people afraid of sharp instruments. The clause, “in the absence of sharp instruments” (*शस्त्राभावे*) in *Dalhaṇa*'s version expresses the additional possibility that an auxiliary sharp instrument can be used in a situation where one of the sharp instruments is not available. The surgeon

40 Nepalese Version: *Sūtrasthāna* 8.

41 Su 1938: 41.

then has the option to use an auxiliary sharp instrument as a substitute. This is further emphasized in the final line of Dalhaṇa’s version, which explains the final three items on the list that are not in the Nepalese version are to be used when “a probe is not available” (एषण्यलाभे). This augmentation of the text provides additional options for the physician in relation to the contingencies of practice.

We next encounter leeches in the treatise in *Suśrutasamhitā* 1.13, the chapter “On Leeches.” With the exception of the mention of Dhanvantari in Dalhaṇa’s version the introductory section of the chapter is similar in both versions, so although I will cite the Nepalese version in this paragraph the discussion of context and classification pertains to both.⁴² “On Leeches” follows chapters that focus on the two other auxiliary sharp instruments that have unique actions: cautery and caustic alkali. The sense of an “auxiliary sharp instrument” as indicated for specific types of people that we saw above, aligns with the initial explanation given at **Nepalese Version: 1.13.2** (1.13.3 Dalhaṇa’s version) concerning the use of leeches for bloodletting.⁴³ The Nepalese version of the text reads: “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”.⁴⁴ This statement moves beyond an understanding of the leech as an auxiliary sharp instrument by describing the leech more broadly as a “means” or “method” (*upāya*).

The verses that follow specify a correlation between the *dosa* that is afflicting a patient’s blood and the best method for letting blood: “In relation to that, one should let blood that is corrupted by wind (*vāta*), bile (*pitta*) or phlegm (*kapha*) with a horn (*śrṅga*), a leech (*jalaukas*), or a gourd (*alābu*), respectively”.⁴⁵ As mentioned above, leeches are often found as part of a triad of three gentle methods for bloodletting, along with the horn and the gourd. Each of these methods is understood to have “attributes” (*guṇas*) that are suitable to treat a specific *dosa*.⁴⁶ In contrast to bloodletting through venesection, which relies upon gravity, these three methods involve smaller openings in the human body and the letting of blood through specific agents of suction: in the case of the horn, a human sucking; in the case of the leech, a leech sucking; and in the case of the gourd, a flame that produces a vacuum. The statement of *dosa* and method specificity, however, is immediately qualified in both versions of the treatise by a statement that, as in

⁴² Birch et al. (2021) discuss the presence of Dhanvantari in the framing narrative and chapter introductions in Dalhaṇa’s version of the treatise.

⁴³ In some places the numbering of the Nepalese version and Dalhaṇa’s version differs due to editorial choices.

⁴⁴ Nepalese Version: 1.13.2: नृपात्क्षसुकुमा-
रवालस्थविरभीरुनारीणामनुग्रहार्थं परमसुकुमारोऽयं

शोणितावसेचनोपायोऽभिहितो जलौकसः ।

⁴⁵ Nepalese Version: 1.13.3: तत्र वातपित्तकफ-
दुष्टशोणितं यथासंरच्यं शङ्खजलौकलावुभिरवसेचयेत् ।

⁴⁶ See Nepalese Version: 1.13.3. The three *dosas* (often translated as “humors”), *vāta*, *pitta*, and *kapha* are constituents of the body that cause illness when they are in the wrong quantity or location.

the example of auxiliary sharp instruments discussed above, reflects the contingencies of practice. The treatise states, “Alternatively, each kind can be made to flow by any of them in their particular way”.⁴⁷

A similar statement is found in Ḏalhaṇa’s version 1.13.4, and because this seems to contradict the prior statement on method-*dosa* specificity, Ḏalhaṇa reads an additional line of text that the editors provide in parenthesis (differently in the 1931 and 1938 edition). In the version from the 1938 edition, Ḏalhaṇa’s resolves the contradiction by saying, “With this intention he says, ‘but situationally, one should take the blood to be let with horn, leech, or gourd.’ The sense is, blood that requires excessive flow, is let, i.e., extracted, using the horn, etc. because of its powerful flow”.⁴⁸ The idea in this case seems to be that these gentle methods allow for the calibration of blood flow in cases where a lot of bloodletting is needed, and that they all can be used for this purpose. Cakrapāṇidatta resolves the issue allowing for the use of any of the methods in any contingency: “When the prescribed method is not available and the method available is not ideal, or when the ideal method is present—blood should indeed be forcibly taken by that means. That is the sense”.⁴⁹ The latter statement suggests a flexibility in the possible uses of each of the three gentle means of bloodletting in practice.

After the discussion of these three gentle methods of bloodletting, “On Leeches” enumerates, describes, and names six types of venomous leeches and six types of non-venomous leeches. To conclude the discussion of the six venomous leeches, the treatise explains the symptoms caused by their bites. The Nepalese Version reads, “The symptoms are: a swelling at the site of the bite, excessive itching and fainting, fever, burning, and vomiting”.⁵⁰ Here again we see an instance of list expansion, as Ḏalhaṇa’s version adds “intoxication” (*mada*) and “lassitude” (*sadhana*), expanding the list of possible symptoms of a venomous-leech bite.⁵¹

“On Leeches” is followed by chapter fourteen “On the Properties of Blood” (*śonitavarnanīya*), which discusses the formation and qualities of blood (*śonita/rakta/asṛk*) as well as cases in which blood is “to be caused to flow”

47 Nepalese Version: 1.13.3: सर्वाणि सर्वैर्वि विस्तार्य।

48 अभिप्रायेणाह विशेषतस्तु विस्तार्य शृङ्गजलौकालावुभिर्गृह्णीयादिति अतिशयेन विस्तारणार्ह यद्वाति शोणितमतिप्रवलतया तच्छङ्गादभिर्गृह्णीयाच्चिह्नरद्यर्थः, Su 1938: 55.

49 उक्तप्रासादयोग्यतायां यत् प्राप्यते यद्वा योग्यं भवति तेनैव हर्तव्यमित्यर्थः (alt. कर्तव्यम्), see

Su 1939: 95.

50 ताभिदैषे दंशे श्वयथुरतिमात्रं कण्डूमूर्च्छा ज्वरो दाहश्लिर्हरिति लिङ्गानि भवन्ति, Nepalese edition 1.13.11.

51 The list in Ḏalhaṇa’s version reads: तभिदैषे पुरुषे दंशे श्वयथुरतिमात्रं कण्डूमूर्च्छा ज्वरो दाहश्लिर्हर्मदः सदनमिति लिङ्गानि भवन्ति (*Sūtrasthāna* 13.11, Su 1938: 56).

(*visrāvya*).⁵² A notable difference between the Nepalese version and Dalhaṇa's version is that the latter presents a more systematized discussion of bloodletting through the enumeration of categories. As noted above, both of the versions discuss the three gentle methods of bloodletting. Throughout the chapter "On the Properties of Blood" in the Nepalese version, instructions on letting blood are given using the Sanskrit causative gerundive *visrāvya* when instructions are given about conditions where blood "should be caused to flow." This construes adjectivally with the term for "blood," thereby emphasizing the substance. In the same chapter from Dalhaṇa's version we find a Sanskrit causative nominalization of the same prefix and verbal root (*vi+ √sr*) as *visrāvaya*, which can be translated as "causing to flow out" or, given the context, "bloodletting." The use of this nominalized term suggests an emphasis on the action of bloodletting rather than the substance, blood.⁵³ In Dalhaṇa's version the term *visrāvaya* is used in a sentence enumerating two types of bloodletting: "There are two types of bloodletting with sharp instruments, pricking (*pracchāna*) and piercing the channels (*sirāvyadhana*)," (शरविस्त्रावाणं द्विविधं प्रच्छानं सिराव्यधनं च).⁵⁴ Reading this passage in the context of the discussion of the three methods for bloodletting with auxiliary sharp instruments in the prior chapter yields an expanded category of three plus two methods for letting blood: three gentle and two non-gentle methods. This enumeration is not attested in the Nepalese version and may also represent a category expansion, further detailing, and greater systematization of Dalhaṇa's version.

The placement of the chapter "On Leeches" between chapters that instruct the physician on techniques for using two specific auxiliary sharp instruments, caustic alkali and cautery, on one hand, and a chapter that provides general instructions on blood and causing it to flow out, on the other, gestures towards leeches' ambiguous classificatory status between instrument and method of bloodletting. As I have written elsewhere, the figure of the leech challenges ayurvedic classificatory schemes that are available in the *Suśrutasamhitā*.⁵⁵ The prominent location of the chapter "On Leeches" early in the text also suggests that bloodletting with leeches was an important form of medical treatment for a surgical physician to understand, and perhaps, to practice.

⁵² We retain gemination in the Nepalese version where it is attested in manuscript K, and in H when K is not available (as in "śonitavarṇanāṇya"). For further details on the critical edition and apparatus see Wujastyk, Birch, Klebanov, Parameswaran, Rimal, et al. 2023: 42.

⁵³ The term *visrāvaya* is found in the Nepalese version of the *Ślokasthāna* 1.8.5 and 1.8.10 in the chapter describing sharp instruments and their use and function

and also in 1.17.16 in instruction on how to deal with a specific type of swelling (*śopha*) (Nepalese Version). In both of these contexts blood is not necessarily the substance being caused to flow.

⁵⁴ *Suśrutasamhitā* 1.14.25 in Dalhaṇa's version (Su 1938: 64). I thank Paras Mehta for pointing out that this passage is missing from the Nepalese version.

⁵⁵ Brooks in press.

3 TEXTUAL TRACES

AT THE TIME of the *Suśrutasaṃhitā*'s compilation in the early first-millennium there were multiple surgical schools in South Asia, but the *Suśrutasaṃhitā* is the only medical compendium with a focus on surgery that survives in its accreted entirety. Jan Meulenbeld has concluded that the *Suśrutasaṃhitā* draws upon the surgical knowledge of a number of earlier and contemporaneous surgical works.⁵⁶ As evidence for this, he notes that the schools of Bhāluki and Bhoja are cited in later treatises and commentaries on the *Suśrutasaṃhitā*.⁵⁷ Both Cakrapāṇidatta's *Bhānumatī* (eleventh century) and Ḏalhaṇa's *Nibandhasaṅgraha* (twelfth century) cite Bhoja, in particular, in reference to chapter eight of the *Ślokasthāna* which discusses sharp instruments (*śastras*).⁵⁸ Furthermore, the Nepalese version of the *Suśrutasaṃhitā*, in contrast to Ḏalhaṇa's version, includes Bhoja in its framing narrative, as one of the sages present when the treatise is expounded by Divodāsa, King of Kāśī.⁵⁹

In the Nepalese version presented below, we find a direct but not explicitly cited example of this intertextuality included in the text of the chapter "On Leeches" itself. In the discussion of the three gentle methods of bloodletting, a set of verses discusses the attributes of each method in relation to the *doṣas*. The Nepalese version reads:

And there are the following verses about this:
भवन्ति चात्र ॥

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

स्निग्धं श्लक्षणं समधुरं गवां शृङ्गं प्रकीर्तिंतं ।
तस्माद्वातोपसृष्टे तु हितन्तदवसेच्ने ॥ SS 1.13.4⁶⁰

⁵⁶ Meulenbeld 1999: vol 1A, 346.

⁵⁷ Meulenbeld 1999: vol 1A, 346, 689–91.

⁵⁸ Su 1939: 71–72; Su 1938: 36–38. The published edition of the *Suśrutasaṃhitā* with Cakrapāṇidatta's *Bhānumatī* only contains the portion of the commentary on the *Sūtrasthāna* that is known today.

⁵⁹ Nepalese Version: 1.1.3.

⁶⁰ The same text for SS 1.13.4ab is also attested in the edition of the *Suśrutasaṃhitā* published together with the eleventh-century commentator Cakrapāṇidatta's *Bhānumatī* (Su 1939: 55). This is notable because Wujastyk, Birch, Klebanov, Parameswaran, Rimal, et al. (2023: 12–13) conclude that Cakrapāṇidatta seems have

read from a manuscript or manuscripts that closely aligns with those included in the Nepalese version, specifically NAK-533 (Wujastyk, Birch, Klebanov, Parameswaran, Rimal, et al. 2023: 15, 33). However, they also observe that Trikamji Ācārya and Nandakiśora Śarman, the editors of the published version of the *Bhānumatī* (Su 1939), primarily followed the version of the *Suśrutasaṃhitā* printed in Ḏalhaṇa's version rather than the Nepalese manuscript. This appears not to be the case for the *Suśrutasaṃhitā* 1.13.4ab, as Ḏalhaṇa's version reads, instead: "A cow's horn is reputed to be hot, sweet, and unctuous." (उण्ठं समधुरं स्निग्धं गवां शृङ्गं प्रकीर्तिम्; SS 1.13.5ab

A horn shaped like a half-moon with a large body and a length of seven fingers should first be placed on an incision. A strong person should suck with the mouth.

अर्धचन्द्राकृति महत्तनु सप्ताङ्गुलायतं ।

प्रच्छिते दापयेत्पूर्वमास्येनाचूषयेद्वली ॥ SS 1.13.5

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.

शीताधिवासा मधुरा जलौका वारिसंभवा ।

तस्मात्पित्तोपसृष्टे तु हितास्ता अवसेचने ॥ SS 1.13.6

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

कटु रुक्षश्च तीक्ष्णश्च अलाबु परिकीर्तिं ।

तस्माच्छृंखोपसृष्टे तु हितन्तदवसेचने ॥ SS 1.13.7

In that context, at the incised 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.

तत्र प्रच्छिते तनुबस्तिपटलावनद्वेन श्वेषण शोणितमवसेचयेत् ।

आचूषणादन्तद्वासेनालाबुना ॥ SS 1.13.8⁶¹

Verse 1.13.5, which specifies the dimensions and method of using the cow's horn, is not present in *Dalhana*'s edition. However, the editors of *Dalhaṇa*'s edition provide this exact citation in a note, suggesting that they had access to manuscript witnesses that included verse 1.13.5a.⁶²

In his commentary on *Sūrutasāṃhitā* 1.13.8, *Dalhana* cites *Bhāluki* in order to elaborate on the mechanism of action of both the cow's horn and the gourd, a statement that appears to inform the content of 1.13.5a in the Nepalese version. Here, *Dalhaṇa* explains the kind of information that one gets from *Bhāluki*, as well as his rationale for not including it in his version of the text (italics added for emphasis):

Measurement of the horn and gourd is to be understood directly from *Bhāluki*. And moreover, the statement: "*Horn of a white cow, bent like a moon, having the length of seven finger-widths*, with a piece of cotton

in Su 1938: 55). This instance of alignment between the printed version of the *Sūrutasāṃhitā* with the *Bhānumatī* and the Nepalese version suggests that we may be able to learn more about Cakrapāṇidatta's commentary in relation to the manuscripts of the Nepalese version through further study of Ācārya and Śarman's 1939 edition.

⁶¹ Refer to the critical edition below, p. 31, to read this section in context.

⁶² Su 1938: 55, n. 4. A similar citation is also given at this point in the published edition of Cakrapāṇidatta's *Bhānumatī*; refer to Su 1939: 95, note 4. *Pāda* a of the latter is slightly different and reads: अर्धचन्द्राकृति श्वेषं तनु सप्ताङ्गुलायतं ।

placed inside, is to be used when blood is accompanied by *vāta*. It's root is like the root of a finger, and the hole at the top is like a mung bean." And, "The best gourd for bloodletting has a nice opening with a circumference of eight finger-widths and a diameter of four finger-widths, its body smeared with black clay." But others read the measurement of the horn and gourd in this very spot [in the *Suśrutasamhitā*], and likewise the characteristic of blood spoiled by *vāta*, etc. We have not cited that reading because of its absence.

शङ्गालाबुप्रमाणं भालुकिसकाशाद्वगन्तव्यम्। तथाच तद्वचः "विषाणं श्वेतगोरिन्दुवकं सप्ताङ्गुलायतम्। क्षिसान्तःपिन्चुपेशीकं योज्यं वातयुतेऽसृजि॥ अङ्गुष्ठमूलवन्मूले छिद्रमग्रेऽस्य मुद्रवत्" इति "अष्टाङ्गुलपरिणाहा चतुरङ्गुलनालसंमिता सुमुखी। कृष्णमृदालिसतनुः श्रेष्ठा रक्तावसेचनेऽलाबुः" इति। अन्ये तु शङ्गालाबुप्रमाणमत्रैव पठन्ति तथा वातादिरक्तलक्षणं च स च पाठोऽस्माभिरभावान्न लिखितः॥⁶³

Here, Dalhaṇa identifies Bhāluki's work as a source from which to learn about the materiality and practical details of the cow's horn and the gourd. In particular, Bhāluki's description of the measurement of the horn to be used for bloodletting as having the "length of seven finger-widths" (*saptāṅgulāyata*) as well as its shape, "bent like a moon" (*induvakra*), is similar to what we find in the Nepalese version, where the cow's horn is described as having a "a large body the shape of a half-moon and length of seven fingers" (अर्द्धचन्द्राकृति महत्तनु सप्ताङ्गुलायतम्). Dalhaṇa also notes that, while other commentators read these details in this place in the text, he has not done so because the citation is not attested in the manuscripts he is working with. That Dalhaṇa had several manuscript witnesses of the text available to him is clear from the number of variant readings that he cites in his commentary. Here, Dalhaṇa gives us a glimpse into his own text critical reasoning, and in this case, his version seems to differ from the Nepalese manuscripts.⁶⁴

4 TEXTUAL VARIANTS/VARIANTS IN PRACTICE?

THE NEPALESE VERSION and Dalhaṇa's version of *Suśrutasamhitā* 1.13 are very similar in terms of their descriptions of leech classification, identification, capture, care and the practice of leech therapy. However, it is in the descriptions of the practice itself, found in the latter half of the chapter, that we encounter the most substantive textual variations. While these variants may be a result of scribal intervention, uncertainty, or error, if we take the commentarial literature along with other representations of leech therapy into account, then it appears

⁶³ Su 1938: 55–56.

⁶⁴ As stated earlier, for this part of the chapter we were only working with the two

more recent manuscripts, N and H, but they both attest to this reading.

possible that they may represent differences in the philosophy and perhaps in the practice of leech therapy. In this section I will also draw upon Vāgbhaṭa's (seventh or eighth century) *Aṣṭāṅgahṛdaya* and *Aṣṭāṅgasaṅgraha* for comparison, where applicable, because they both draw upon the *Suśrutasaṅhitā* in their expositions on leech therapy. Comparisons with Vāgbhaṭa's work are particularly valuable because they date to a period for which "witnesses are limited and also broadly the period at which the Nepalese version was current".⁶⁵

The first such variant is found in the description from 1.13.19, which describes how to prepare a patient who has a condition suitable for bloodletting by leeches. Ailments treatable by bloodletting with leeches described in the *Suśrutasaṅhitā Cikitsasthāna* ("Section on Treatment") range from those in which a patient's flesh would be open, such as in the case of a wound (4.1.29) or abscess (4.16.12), to a closed lump or cyst (4.18.8), or scrotal swelling (4.19.11). In the Nepalese version, the physician is first instructed to situate the patient in either a seated or lying position. The next instruction is as follows: "Having dried any area where there might be an ailment with powdered earth and cow-dung".⁶⁶ Here, the term *saruja* could be interpreted as diseased or painful. However, rubbing drying powders onto a place that is painful would potentially exacerbate the situation, so diseased seems to be a better choice. As noted above, ailments, or diseased locations on the body that would be treatable through bloodletting with leeches include those in which the skin is opened or closed. Dalhaṇa's version presents a procedural difference that hinges upon this flexibility, in that powders of earth and cow-dung are instructed to be used only "if there is no wound" (यद्यरुज स्यात्), rather than places where "there might be an ailment (or wound)" (सरुजं स्यात्).⁶⁷ If we follow Dalhaṇa's reading of this passage, the term *aruja*, "no wound," means *avrāja*, "no open wound".⁶⁸ Both Cakrapāṇidatta and Dalhaṇa argue forcefully against the idea of rubbing powders onto a wound. Cakrapāṇi states,

The meaning of "if there is no wound" is that when there is a wound, that should not be done because of fear that the wound will increase with drying.⁶⁹

Dalhaṇa also comments on this, giving two reasons why drying is not a helpful practice when a wound is present,

⁶⁵ See Wujastyk, Birch, Klebanov, Parameswaran, Rimal, et al. 2023: 24.

⁶⁶ विरुक्ष्य तमवकाशं मृद्दोमयचूर्णैर्यद्यत् सरुजं स्याद्। This is only attested in manuscript H, the youngest manuscript of the triad. See the

critical edition below, p. 33, line 51.

⁶⁷ Su 1938: 57.

⁶⁸ Su 1938: 57.

⁶⁹ यद्यरुज इति सरुजे विरुक्षणेन रुजावृद्धभयात्तत्र कर्तव्यमिति (Su 1939: 98).

“No wound” [means] “without a wound,” but when there is a wound, they (leeches) take hold only because of odor and moisture. Or rather, the excessive increase of the wound through drying is painful.⁷⁰

He first states that leeches only bite on a wound because of the smell and moisture, so drying with these powders would hamper their desire to bite. Second, building on Cakrapāṇi’s point, made a century earlier, Ḏalhaṇa states that this would increase the wound and the effects would be painful for the patient. Both commentators argue forcefully against the practice of drying a wound by rubbing powders into it, cautioning physicians against misinterpreting the treatise and practicing in this way.

As noted earlier, the *Suśrutasamhitā*’s chapter on bloodletting with leeches had a substantial and formative influence on subsequent first-millennium Sanskrit medical instructions on leech therapy. One of these texts, the *Aṣṭāṅgasaingraha*, addresses this topic directly, by stating without mention of the presence or absence of a disease or wound (*ruja*), that the leech should be applied after comfortably/agreeably (*anusukham*) drying the site for the bite with powders of earth and cow dung (मूद्रोमयचूर्णाभ्यामनुसुखं विरक्ष्य दंशदेशं योजयेत्).⁷¹ Vāgbhaṭa’s statement represents a position of compromise in which the default method is to dry the area that is about to be bitten, but that it should be done in a way that is comfortable or agreeable, either to the physician, patient, or more likely, to both. Given the range of ailments treatable by leeches, and taken alongside the variant readings and commentarial material above, this passage suggests a range of options in practice. This further supports my reading that the Nepalese version and Ḏalhaṇa’s version of the treatise express different, and possibly earlier or regionally variant, views on how to prepare the patient for leech therapy.

A unique feature of the chapter on leech therapy in the context of the general content of the *Suśrutasamhitā* is the ways in which the physician is instructed on how to interpret the behavior of the leech before, during, and after treatment. It is here that we see another difference in the two versions of the text. The practice of leech therapy as represented in the *Suśrutasamhitā* implicates leeches in a cyclic interaction of feeding and purging mediated by the physician and the needs of the patient. Leeches are selected for bloodletting, blood is let, and then leeches are purged, cleaned, and observed to ascertain if the purging was complete. Then, at a future date, they are observed to determine whether they are ready to be engaged in the process again. According to the Nepalese version, a

⁷⁰ अरुजमब्रणं सवणे तु गन्धकेदाभ्यामेव गृह्णन्ति: अथवा रुजावति विरक्षणेन रुजातिवृद्धिः, *Su* 1938: 57. The printed text reads गृह्णन्ति: which I have taken as a typo and read as the finite verb

गृह्णन्ति. Likewise विरक्षणेन in the text has been emended to विरक्षणे.

⁷¹ As 2006: 244.

leech is suitable to be selected again for bloodletting if it is moving. The text at 1.13.19 reads:

Making the leeches **free from impurities**, their bodies smeared with Indian mustard and turmeric, **moving about in the middle of a cup of water**, causes them to attach to the site of the ailment.

अथ जलौकसः सर्षपरजनीप्रदिग्धगात्र्यः सलिलसरकमध्यसञ्चारिणी विगतमला: कृत्वा रोगञ्चाहयेत्।⁷²

Later in the chapter, in the description of leech purging, both versions of the text note that a leech is adequately purged if it is moving around in the water. If a leech is not moving around after purging (presumably because it is sated), it requires more purging. The passage above echoes the idea that leeches are ready to be reengaged in bloodletting only once they are observed to be moving around. Further, it states that leeches should be cleaned by being smeared with mustard and turmeric. The leeches are to be free of impurities, or bodily waste (*vigatamala*), which probably refers to their own feces and mucus on their bodies. Ḏalhaṇa's version (1.13.19) gives a less specific and more interpretive description: when leeches are situated in water and one can observe that they are relieved of fatigue (*vigataklama*), they are then ready to be engaged in bloodletting.

And those that have been taken, whose bodies have been smeared with water mixed with a paste of mustard and turmeric, **situated for a moment in the middle of a cup of water, having recognized that they are relieved from fatigue**, should be made to attach to the diseased area.

गृहीताश्च ताः सर्षपरजनीकल्कोदकप्रदिग्धगात्रीः सलिलसरकमध्ये मुहूर्तस्थिता विगतक्लमा ज्ञात्वा तामी रोगं ग्राहयेत्।⁷³

At stake here is the interpretation of leech behavior on the part of the physician. How is one to know if a leech is ready to bite and feed? The two versions of the treatise present slightly different views on this, both of which reveal the importance of close observation of leeches in the course of practice.

The issue of how to care for a leech and maintain their life for participation in the cycle of human treatment is foregrounded in a detailed description of how to purge a leech found slightly later in the chapter on leech therapy in both versions of the treatise (1.13.22). At the end of the description of purging is an instance similar to that mentioned above, where the physician must be able to interpret leech behavior in order to ascertain proper purging. The Nepalese version instructs:

⁷² Refer to the critical edition below, p. 33, line 51.

⁷³ Su 1938: 57.

A properly purged leech placed in a cup of water moves about, wanting to eat. If it sinks down, not moving, it is badly purged; one should make it properly vomit once again. A badly purged leech develops an incurable disease called “Indramada.”

सम्यग्वान्ता सलिलसरके न्यस्ता भोक्तुकामा सती चरेद्। या सीदति न चेष्टते सा दुर्वान्ता
तां पुनः सम्यग्वामयेत्। दुर्वान्तायास्तु इन्द्रमदो नाम व्याधिरसाध्यो भवति ।⁷⁴

There seems to be some ambiguity or scribal confusion around the name of the fatal leech malady mentioned in the verse. In this location in the text the three manuscripts consulted for the Nepalese version all attest some variation of *indrapada* (K: *indrapada*, N: *indrāpada*, H: *indrapada*). However, as we shall see below, in the next instance of the term in the Nepalese version, the two older manuscripts replace the syllable 'pa' with 'ma.' In Dalhana's version the term is given as *indramada*, a term that we also find attested in the *Aṣṭāṅgasaṅgraha Nidānasthāna*, as a description of the type of fever that afflicts beings born in water (*jalaja*).⁷⁵ This term is also found in *Gārudapurāṇa* 1.147.3 in a section on disease classification, where it indicates a type of fever that affects "rain clouds".⁷⁶ In the twelfth-century *Mānasollāsa*, it is the name of a type of fever that affects fish.⁷⁷ Thus, the malady *indramada* aligns with the deity Indra's association with water, and seems to be a type of fever or "intoxication" (*mada*) that afflicts water-related entities such as clouds and fish. This naturally fits with leeches and their ecological association with water in the case of the *Suśrutasaṃhitā*.⁷⁸ Given all of this evidence, we have read *indramada* here, instead of *indrapada*. It is worth noting that both Cakrapāṇidatta and Dalhaṇa state that some scholars do not read the term *indramada* at all, specifically, because a list of its symptoms of the malady is not provided. This hints at the fact that there were more "versions" of the *Suśrutasaṃhitā* present by the early medieval period than the two addressed in this article and it also indicates that the lack of description of *indramada* was considered a problem by commentators.⁷⁹

⁷⁴ Refer to the critical edition below, p. 34, line 61.

⁷⁵ *Aṣṭāṅgasaṅgraha* 1.3.7 (As 2006: 352). Note that the numbering here varies across editions. The term *indramada* also appears in commentaries written on the *Aṣṭāṅgahṛdaya* in the *Nidānasthāna* portion of the treatise which deals with etiology. The Bengali commentator Aruṇadatta's thirteenth-century *Sarvāṅgasundarā* directly cites the long passage from the *Aṣṭāṅgasaṅgraha* that contains the phrase इन्द्रमद जलजेषु (Ah 1902: 440). Hemadri's slightly later

commentary, the *Āyurvedarasā�ana*, uses the term in a discussion of the etiology of fever, stating that *indramada* is in reference to fish (मत्स्येष्व इन्द्रमदः), although the editors place this in brackets noting that it is not present in a number of the manuscripts that they consulted (Ah 1902: 447).

⁷⁶ Dutt 1987: vol 2, 426.

⁷⁷ Shrigondekar 1925: vol 1, 87.

⁷⁸ The *Aṣṭāṅgahṛdaya* describes leeches in this state as "intoxicated" (*mada*) at 1.26.44 (Ah 1902: 324).

⁷⁹ Dalhaṇa states of *indramada*: "According



Figure 1: *idramadaḥ* with extra ink in manuscript N.

The Nepalese version of the treatise, in fact, does contain a verse that describes the appearance and behavior of leeches with this deadly malady:

One that wraps its deflated head with its sinking body and makes the water warm is traditionally said to have "Indramada."

अप्रहृष्टशिरः पात्यकायेनोद्देष्टते सकृत्। या चोष्णं कुरुते तोयन्तस्यामिन्द्रमदः स्मृतः ॥⁸⁰

Here, the two oldest manuscripts attest *idamada* and *idramada*, respectively, in place of *indrapada*. While there is some variation around the term *indra*^o (K: *ida*^o; N: *idra*^o) in the manuscripts, they clearly favor the reading ^o*mada* over ^o*pada*. There is some scribal ambiguity in manuscript N where the scribe has placed a dab of ink over the character *ma*, as shown in Figure 1. To broaden our comparison, the *Aṣṭāṅgahṛdaya* uses the term *raktamatta*, "blood-intoxication," to describe the condition of an insufficiently purged leech.⁸¹ The *Aṣṭāṅgasaṅgraha* refers to a leech in this condition as *mūrccha*, meaning "stupefied".⁸² Thus, in the case of both *indramada* and *raktamatta*, the use of *mada*, *matta*, and *mūrccha* can all be understood to describe a leech who is not moving because there is still too much human blood in the leech's body. The reading and attendant meaning of *pada* is less clear and is probably a case of the replication of a scribal error across multiple manuscripts.

The visceral description offered in the verse cited above, found only in the Nepalese version, explains how to identify a mortally ill leech: they assume a protective position by curling up. But what does it mean that the leech makes

to some, 'But because the symptoms of this disease are not explained in the treatise, it should not be read.'"^o (अस्य तु व्याधे: शास्त्रे लक्षणानिर्देशात्र पठनीयः इत्येके, Su 1938: 58); Cakrapānidatta explains: "They read the disease Indramada in the case of the insufficient vomiting of some leeches. Others say it should not be read because its symptoms are not explained"

(केचिजलायुकाया असम्यग्वामने इन्द्रमदं व्यष्टिं पठन्ति, तल्लक्षणानिर्देशात्र पठनीय इत्यन्ये।, Su 1938: 98).

⁸⁰ Edition below, p. 34, line 64. This verse is given as an alternate reading in a footnote by Ācārya's 1938 edition but with the term "indramada" (Su 1938: 58, n. 3).

⁸¹ *Aṣṭāṅgahṛdaya* 1.26.44 (Ah 1902: 324).

⁸² *Aṣṭāṅgasaṅgraha* 1.35.4 (As 2006: 244).

the water “warm” (*uṣṇa*)? Leeches are extremely sensitive to water quality. As attested in the earlier passages from the *Suśrutasamhitā* and also observed in my field research, leeches require clean water, and physicians are instructed to change their water frequently.⁸³ Based on the fact that all leeches in a container die when one leech dies due to a subsequent change in water quality, as I observed in multiple clinical contexts, the term *uṣṇa* here also has the sense of “acrid.” Living non-venomous leeches engaged in bloodletting are described as having the property of coolness due to their close ecological association with clean water. The term *uṣṇa* as it is used in this passage is an upset of its opposite—the positive and cool quality of the living leech. A diseased or dead leech does not literally warm the water, rather, they invert its cool quality and spoil the water, rendering it acrid. The addition of this verse further reflects the ways in which interacting with and observing actual leeches would have been essential to the composition of the chapter “On Leeches.”

5 SUMMARY OF THE CHAPTER “ON LEECHES”

HERE, I BRIEFLY ENUMERATE the contents of the chapter “On Leeches” as a guide to the translation. This enumeration also highlights the level of knowledge that the physician is instructed to have in identifying, caring for, and engaging with leeches in medical practice. These divisions have emerged from my detailed study of this chapter across both versions of the treatise, and while they follow the order of the text’s contents, they are not themselves explicitly enumerated in the treatise.

The topics covered in the chapter are as follows: 1) a description of who the technique is beneficial for; 2) a description of the three gentle methods of bloodletting—leech, horn, and gourd and their indications according to *dosa*; 3) etymology of terms for leeches; 4) enumeration and description of six venomous leeches along with symptoms of and treatment for their bites; 5) enumeration and description of the six non-venomous leeches; 6) where to obtain effective non-venomous leeches; 7) contrasting ecologies of venomous and non-venomous leeches; 8) how to catch a leech; 9) constructing a leech aquarium and taking care of leeches; 10) how to let blood with leeches by (a) positioning the patient, b) preparing the leeching site; c) cleaning and observing the leeches for readiness; d) making them attach; e) what to do if they don’t attach; f) selecting another leech if necessary; g) how to know that the leech has attached; and h) covering and maintaining the leech; 11) how to know if the leech has sucked for too long and what to do in that case; 12) purging the leech; 13) evaluating the efficacy of purging; 14) diagnosing a terminal leech illness; 15) aftercare for the patient; 16) summary of the post-procedure; 17) statement of expertise.

⁸³ See *Suśrutasamhitā* 1.13.17 in the translation below, p. 27.

6 TRANSLATION AND CRITICAL EDITION OF SUŚRUTASĀMHITĀ 1.13: ON LEECHES

- 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 (*alābu*), respectively. Or, each kind can be made to flow by any of them in their particular way.⁸⁴
- 4 And there are the following verses about this:

A cow's horn is praised for being unctuous, smooth, and sweet. Therefore, when wind is troubled, that is good for bloodletting.⁸⁵
- 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.⁸⁶
- 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.⁸⁷
- 7 A gourd (*alābu*) 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 incised location, one should let blood using a horn wrapped in a covering of a thin bladder, or with a gourd (*alābu*) with a flame

⁸⁴ This sentence is hard to construe grammatically, although its meaning seems clear.

In place of विशेषस्तु, Cakrapāṇidatta and Dalhāṇa both read विशेषतस्तु, 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 MS Kathmandu NAK 1-1146, a much later Devanāgarī manuscript.

There is an insertion in the text, printed in parentheses in the vulgate at 1.13.4 (Su 1938: 55) as विशेषस्तु विस्ताव्यं श्वजलौकालावुभिर्गृह्णीयात्. This insertion is not included in the earlier edition of the vulgate, but is replaced by विशेषशीतस्तुक्षत्वात् (Su 1931: 54). Dalhāṇa noted that, "this reading is discussed to some extent by some compilers (निवन्धकार), but it is defin-

itely rejected by most of them, including Jejjhāta."

⁸⁵ The vulgate replaced "smooth" with "hot."

⁸⁶ This passage is not found in the vulgate, but it is similar to the passage cited by Dalhāṇa at 1.13.8 (Su 1938: 56) and attributed to Bhāluki. Bhāluki was the author of a *Bhālukitantra* that may have predicated Jejjhāta and might even have been one of the sources for the *Suśrutasāṃhitā* (Meulenbeld 1999: vol 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).

⁸⁷ 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.

inside it because of the suction.⁸⁸

9 Leeches are called “*jala-āyu-ka*” because their life (*āyu-*) is in water (*jala*).⁸⁹ “Home” (*okas*) means “dwelling;” their home is water, so they are called “water-dwellers (*jalaukas*).”

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

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

- Black (*kṛṣṇā*)
- Mottled (*karburā*)
- Sting-gush (*alagardā*)⁹⁰
- Rainbow (*indrāyudhā*)
- Oceanic (*sāmudrikā*)
- Cow-praising (*govandana*)⁹¹

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 (*varmimatsya*), 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.⁹² A bite by the Rainbow leech is not treatable. These venomous ones have been explained together with their remedies.

⁸⁸ 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.

⁸⁹ The lexeme *-āyu-* is known almost exclusively from the *R̥gveda*.

⁹⁰ Treating *गर्द* as *गल्दा* and translating as in RV 8.1.20, with Jamison and Brereton

(2014: 1023, verse 20 and cf. commentary). But if *गर्द* is to be taken from $\sqrt{\text{गर्द}}$ then we might have “crying from the sting.”

⁹¹ The manuscripts all read *गोवन्दना* against the vulgate’s *गोचन्दना*.

⁹² Dalhaṇa and the vulgate included er-rhines in the list of therapies, and Dalhaṇa added that “etc.” indicated sprinkling and immersion too. The “Great Antidote” is described in the *Kalpasthāna*, at 5.5.61–63ab (Su 1938: 578).

12 Now the ones without venom.⁹³

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

Among these,

- The one called Tawny has sides that look as if they are dyed with realgar and is the colour of glossy mung beans on the back.⁹⁴
- 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.⁹⁵ Those in particular have large bodies and are strong, they drink rapidly, consume a lot, and are without venom.

⁹³ The translations of the names of these leeches are slightly whimsical, but give a sense of the original; सावरिका remains etymologically puzzling.

⁹⁴ The compound खिंधमुद्वरण्णा is supported by all the manuscript witnesses and is translated here. Nevertheless, the reading of the vulgate, that separates खिंधा, f., "slimy" as an adjective for the leech, seems more plausible: "it is slimy and the colour of a mung bean."

⁹⁵ This passage is discussed by Karttunen (2015: 109–110, 388–389). At the time of the composition of the *Suśrutasaṅghītā*, 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

ent (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 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 Godāvārī, and Paithan is flanked to the south west and south east by this river.

Some scholars have identified the name with modern Bodhan in Telangana (Sircar 1971: 189; Schwartzberg, Bajpai, et al.

14 In reference to that, venomous leeches are those originating in decomposing venomous insects, frogs, urine, feces and in polluted water.⁹⁶ Non-venomous ones originate in decomposing sacred lotus (*padma*), blue water-lily (*utpalā*), white water-lily (*kumuda*), fragrant lotus (*saugandhika*), pondweed (*śevāla*) 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.⁹⁷

16 They can be caught with a fresh hide or one may catch them by other means.⁹⁸

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 (*śevāla*), dried meat (*vallūra*), 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 there is a verse on this:

One should not nurture those that are thick in the middle, that are

^{1978: E6, p. 14, 140 *et passim*; Sen 1988: 102), but this implausible identification is traceable to a speculative suggestion by Raychaudhuri (1953: 89, n. 5, 143) based on a variant form "Podana" found in some early manuscripts of the *Mahābhārata*: "This name reminds one of Bodhan in the Nizam's dominions," "possibly to be identified with Bodhan."}

Dalhaṇa on 1.13.13 (Su 1938: 57) anachronistically identified "Yavana" as the land of the Turks (तुर्क्ष) 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.

⁹⁶ The vulgate on 4.13.14 (Su 1938: 57) includes fish in this list.

⁹⁷ Dalhaṇa on 1.13.14 (Su 1938: 57) discussed why non-venomous leeches would not "behave in a confused manner" (सङ्कीर्णचारिन), 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). Dalhaṇa there noted that such foods are explained in the chapter on wholesome and unwholesome foods (हिताहिताच्याय, 1.20 (Su 1938: 94–99)).

⁹⁸ "Fresh hide" (आर्द्रचर्मन) may suggest that the animal skin still includes meat or blood that is attractive to a leech.

Dalhaṇa on 1.13.15 (Su 1938: 57) quoted "another treatise" (तत्रान्तरवचनात) 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.

injured,⁹⁹ 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 Have the patient with a disease curable by bloodletting with leeches sit or lie down, then dry any area where there might be an ailment with powdered earth and cow-dung. Making the leeches free from impurities, their bodies smeared with Indian mustard (*sarṣapa*) and turmeric (*rajanī*), moving about in the middle of a cup of water, cause them to attach to the site of the ailment. Now, for one that is not attaching, one should provide a drop of milk or a drop of blood. Alternatively, one should make some marks with a knife (*śastrapada*).¹⁰⁰ 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, when pain and itching arise on the bite, one should know that it takes clean blood. Then, one should remove the leech. When it does not release because of the scent of blood, one should sprinkle its mouth with rock salt (*saindhava*) powder.
- 22 Then one should coat it with rice-grain chaff (*śālitaṇḍulakāṇḍana*), 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.¹⁰¹ A properly purged leech placed in a cup 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 "Indramada".¹⁰²

- 23 One that wraps its deflated head with its sinking body and makes the water warm is traditionally said to have "Indramada".¹⁰³

⁹⁹ Pace Ḑalhaṇa on 1.13.18 (Su 1938: 57) who glossed परिक्लिप्त “injured” as अमन्ताज्जदशीन “disagreeable looking.”

¹⁰⁰ The word पट् as a “mark,” “imprint,” or “place of application,” is also used to refer to the puncture marks made by the teeth of a venomous snake (see *Suśrutasanhitā* 5.4.15 (Su 1938: 571), etc.).

¹⁰¹ The expression शालितण्डुलकाण्डन, “rice-grain chaff” could be read as “paddy rice (*śāli*), rice grains (*taṇḍula*) and chaff (*kāṇḍana*)” but this seems unlikely in the context.

¹⁰² At this point, the Nepalese witnesses read इन्द्रपद/इन्द्रपट्, but the vulgate reads

इन्द्रमद्, a term that is found in other texts such as the *Aṣṭāṅgasaṅgraha* *Nidanasthāna* 1.7 (ed. As 2006: 352), where it is a fever that afflicts beings born in water, the *Mānasollāsa* 6.641 (ed. *Mānasollāsa*: vol 1, 87), where it is a fever affecting fish, and the *Garudapurāṇa* 1.147.3 (ed. *Garuḍapurāṇa*, tr. A Board of Scholars 1957: vol 2, 425) where it is fever affecting clouds; see further Brooks *in press*.

¹⁰³ At this point, witness H, the latest MS, reads इन्द्रपद् as before, but the older witnesses K and N read इदमदः and इद्रमदः. The scribes may have been responding to a -पद्।-मद् confusion about the name of this condition.

24 Thus, one should keep such a one as before.¹⁰⁴

25 After observing the proper or improper flow of the blood, one should rub the opening made by the leech with honey.¹⁰⁵ Alternatively, one may bind it up and smear it with ointments that are astringent, sweet, oily and cold.

26 And there are two verses about this:

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

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

¹⁰⁴ The vulgate includes “well purged” as the object in this sentence, which makes better sense.

¹⁰⁵ In the Nepalese witnesses, the object of this passage is जलौकामुखम् “the mouth of the leech,” that we have interpreted, per-

haps 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.

7 SANSKRIT TEXT EDITION

Numbers in the right margin are references to the canonical numbering of the vulgate edition, *Su* 1938. In the apparatus, wavy underlining indicates unclear readings; double underlining indicates scribal deletion; **bold** indicates scribal insertion.

१ अथातो जलायुकाध्यायं व्याख्यास्यामः ॥ १ ॥

1.13.1

नृपाद्यसुकुमारबालस्थविरभीरुनारीणामनुग्रहार्थं परमसुकुमारोऽयं
शोणितावसेचनोपायोऽभिहितो जलौकसः ॥ २ ॥

1.13.3

४ तत्र वातपित्तकफदुष्टशोणितं यथासंरब्धं शृङ्गजलौकालाबुभिरवसेचयेत् । सर्वाणि
सर्वैर्वा विस्त्राव्यम् ॥ ३ ॥^१

1.13.4

भवन्ति चात्र ॥

५ स्निग्धं श्लक्षणं समधुरज्जवां शृङ्गं प्रकीर्तिं ।
तस्माद्वातोपसृष्टे तु हितन्तदवसेचने ॥ ४ ॥

1.13.5

अर्द्धचन्द्राकृति महत्तनु सप्ताङ्गुलायतं ।

१० प्रच्छिते दापयेत्पूर्वमास्येनाचूषयेद्वली ॥ ५ ॥^२

MS variants

१ जलायुकाध्यायं] जलायुक्ता० H. २ ०नारीणाम्] णारीणां N. ३ ०सेचनोपायो] ०सेचनोपाया N; ०सेनोपायो H.
४ यथासंरब्धं] यथासंरब्धं N. ५ विस्त्राव्यम्] विश्वाव्यं N. ७ समधुर०] सुमधुर० H. ७ ०गवां शृङ्गं] ०गवाङ्गं N.
१० ०चूषयेद्वली] ०चूषयन्वली N.

Variants from *Su* 1938

१ जलायुकाध्यायं] जलौकावचारणीयमध्यायं A. १ व्याख्यास्यामः] add यथोवाच भगवान् धन्वन्तरिः ॥ २ ॥ A. २
०सुकुमार०] om. A. २ ०भीरु०] add दुर्वल A. २ ०नारीणाम्] नारीसुकुमाराणाम् A. ५ विस्त्राव्यम्] (विशेषस्तु
विस्त्राव्यं शृङ्गजलौकालाबुभिर्गृहीयात्) A. ६ भवन्ति चात्र] add श्लोकाः A. ७ स्निग्धं श्लक्षणं समधुर] उर्णो समधुरं स्निग्धं
A.

Notes

^१ The 1931 and 1938 editions report insertions at this point in the text, but the insertions are different across the two editions. The text of both of the insertions is mentioned by Dalhaṇa. In the 1931 edition the editors insert *snigdhaśītarūkṣatvāt* after *avasecayet*. Dalhaṇa explains that while some people cite this as an example to explain the reason that one would use the horn, gourd and leech to treat conditions of wind, bile and phlegm, respectively, it is not read by commentators. The text inserted into the 1938 edition can be found in the apparatus above in parentheses. Dalhaṇa states that while some commentators discussed this reading, many, including Jejjāta, omit it.

^२ The 1938 edition of the vulgate reports the insertion of this verse after 1.13.5 at this point (*Su* 1938: 55, n. 4). Dalhaṇa also reported this reading.

शीताधिवासा मधुरा जलौका वारिसंभवा ।
तस्मातित्तोपसृष्टे तु हितास्ता अवसेचने ॥ ६ ॥

1.13.6

१३ कटु रुक्षश्च तीक्ष्णश्च अलाबु परिकीर्तिं ।
तस्माच्छेष्मोपसृष्टे तु हितन्तदवसेचने ॥ ७ ॥

1.13.7

तत्र प्रच्छिते तनुबस्तिपटलावनद्वेन शृङ्खण शोणितमवसेचयेत् ।
आचूषणादन्तर्दीप्तिनालाबुना ॥ ८ ॥

1.13.8

जलमासामायुरित्यतो जलायुकाः । ओको निवासो जलमासामोक इत्यतो
जलौकसः ॥ ९ ॥

1.13.9

१९ ता द्वादशा । सविषाः षट् । तावन्त्य एव निर्विषाः ॥ १० ॥

1.13.10

२२ कृष्णा कर्बुरा अलगर्दा इन्द्रायुधा सामुद्रिका गोवन्दना चेति । तास्वञ्जनवर्णा
पृथुशीर्षा कृष्णा नाम । वर्मिमत्त्यवदायता च्छिन्नोन्नतकुक्षिः कर्बुरा नाम ।
रोमशा महापार्श्वा कृष्णमुखा अलगर्दा नाम । इन्द्रायुधवदूर्ध्वराजी चित्रा
इन्द्रायुधा नाम । ईषदसितपीतिका विचित्रपुष्पाकृतिचिता सामुद्रिका नाम ।
गोवृषणवदधोभागे द्विधाभूताकृतिरणुमुखी गोवन्दना नाम । ताभिर्देष्टे दंशो
श्वयथुरतिमात्रं कण्डू मूर्च्छा ज्वरो दाहश्छर्दिरिति लिङ्गानि भवन्ति । तत्र

MS variants

१३ अलाबुः N. १५ बस्ति०] बस्ति० N. १५ पटलाव०] पटलाबु० N. १६ आचूषणाद्
N. १९ द्वादशा०] द्वादशा० N. १९ एव०] add निव N. २१ वर्मिमत्त्य०] चर्मिमत्त्य० H; वर्मिवत्त्य० N. २२
रोमशा०] रोमशा H. २३ इन्द्रायुधा०] इन्द्रायुधा N. २३ नाम०] om. N. २३ ईषदसित०] ईषदषित० N. २४ अणुमुखी०]
अणुमुखी० N. २५ दाहश्छर्दिं०] दाहश्छर्दिं० N.

Variants from Su 1938

१२ हितास्ता अव०] हिता सा त्वव० A. १३ कटु रुक्षश्च तीक्ष्णश्च अलाबु०] अलाबु कटुं रुक्षं तीक्ष्णं च A. १६
०चूषणादन्तर्दीप्तिनालाबुना०] चूषणात् सान्तर्दीप्याऽलाब्वा०] (जलायुका वक्ष्यन्ते) A. १७ अतो०] om. A. १७ ओको
निवासो०] om. A. १७ अतो०] om. A. १९ द्वादशा०] द्वादशा० तासां A. १९ तावन्त्य०] तावन्त्य A. २० कृष्णा०] तत्र
सविषाः—कृष्णा A. २० गोवन्दना०] गोचन्दना A. २० तास्वञ्जनवर्णा०] तासु० अञ्जनचूर्णवर्णा० A. २१ पृथुशीर्षा०]
पृथुशीरा० A. २१ नाम०] om. A. २१ नाम०] om. A. २२ कृष्णमुखा०] कृष्णमुखी० A. २२ नाम०] om. A. २२
राजी० चित्रा०] राजिमिश्रित्रा० A. २३ नाम०] om. A. २३ अकृतिचिता०] अकृतिचित्रा० A. २३ नाम०] om. A. २४
गोवन्दना०] गोचन्दनेति० A. २४ नाम०] om. A. २४ दष्टे०] add पुरुषे० A. २५ कण्डू मूर्च्छा०] कण्डूर्मूर्च्छा० A. २५
दाहश्छर्दिं०] add अर्मदः० सदनम् A.

Notes

^३ The hiatus between *ca* and *alābu* is required for correct metre.

महागदः पानालेपनादिषूपयोज्यः । इन्द्रायुधादृष्टमसाध्यमित्येताः सविषाः
सन्चिकित्सिता व्याख्याताः ॥ ११ ॥

1.13.11

२८ अथ निर्विषाः । कपिला पिङ्गला शङ्कमुखी मूषिका पुण्डरीकमुखी सावरिका
चेति । तत्र मनःशिलारञ्जिताभ्यामिव पार्श्वाभ्यां पृष्ठे स्निग्धमुद्रवण्णा कपिला
नाम । किञ्चिद्रक्ता वृत्तकाया पिङ्गल्याशुगा पिङ्गला नाम । यकृद्वण्णा शीघ्रपायिनी
३१ दीर्घमुखी शङ्कमुखी नाम । मूषिकाकृतिकृतिवण्णानिष्टगन्धा मूषिका नाम
मुद्रवण्णा पुण्डरीकतुल्यवक्रा पुण्डरीका नाम । पद्मपत्रवण्णाष्टादशाङ्गुलप्रमाणा
सावरिका नाम सा पश्वर्थे त्वविषा व्याख्याताः ॥ १२ ॥

1.13.12

३४ तासां यवनपाण्ड्यसद्यपोतनादीनि क्षेत्राणि भवन्ति । तासां महाशरीरा बलवत्यः
शीघ्रपायिन्यो महाशना निर्विषाश्च विशेषेण भवन्ति ॥ १३ ॥

1.13.13

३७ तत्र सविषकीटदृष्टमूत्रपुरीषकोथजाताः कलुषेष्वम्भःसु च सविषाः ।
पद्मोत्पलकुमुदसौगन्धिकशैवालकोथजाता विमलेष्वम्भःसु च
निर्विषाः ॥ १४ ॥

1.13.14

४० भवति चात्र ॥
क्षेत्रेषु विचरन्त्येताः सलिलाढ्यसुगन्धिषु ।
न च सङ्कीर्णचारिण्यो न च पङ्केशयाः स्मृताः ॥ १५ ॥

1.13.15

MS variants

२६ महागदः] add । H. २६ योज्यः] योज्याः H. २८ मूषिका] मूषिका N. २९ पृष्ठे] पृष्ठे N. २९ मुद्र०]
om. N. ३० नाम] om. N. ३१ नाम] om. N. ३१ मूषिकाकृतिं] विदूषिकाकृतिं N. ३२ वक्रा] वक्रा N.
३३ सावरिका] शावरिका N. ३३ व्याख्याताः] व्याख्याता N. ३६ वक्रा] वक्रा N. ३६ कलुषेष्व] कलुषेष्व
N. ३७ पद्मोत्पल०] पद्मोपल० N. ३७ शैवाल०] शैवाल० H. ३७ विमलेष्वम्भःसु] विमलेष्वम्भःसु H. ४१
पङ्केशयाः] पङ्केशयाः N. ४१ स्मृताः] स्मृता N.

Variants from Su 1938

२६ पानालेपनादिं] पानालेपनस्यकर्मादिं A. २९ स्निग्ध] स्निग्धा ३० नाम] om. A. ३० पिङ्गल्याशुगा]
पिङ्गल्याशुगा च A. ३० नाम] om. A. ३१ दीर्घमुखी] दीर्घतीक्षणमुखी A. ३१ नाम] om. A. ३१ गन्धा] add
च A. ३१ नाम] om. A. ३२ पुण्डरीका] पुण्डरीकमुखी A. ३२ नाम] om. A. ३२ पद्म०] स्निग्धा पद्म० A. ३३
नाम] om. A. ३३ सा] add च A. ३३ त्वविषा] इत्येता अविषा A. ३४ योतनां] योतनां A. ३४ भवन्ति]
om. A. ३४ तासां] तेषु A. ३६ सविष०] add यस्त्व्य० A. ३७ पद्मोत्पल०] add नक्तिन० A. ३७ सौगन्धिक०]
add यकृवल्यपुण्डरीक० A. ३७ शैवाल०] शैवाल० A. ४१ स्मृताः] सुखा: A.

तासां ग्रहणमार्द्दचर्मणान्यैर्वा प्रयोगैर्गृहीयात् ॥ १६ ॥^४

1.13.16

४३ अथैता नवे महति घटे सरस्तडाकोदकपङ्कानापङ्कानावाप्य निदध्यात्।
भक्तार्थञ्चासामुपहरेत्। शेवालं वल्लूरमोदकांश्च कन्दांश्चूर्णीकृत्य शास्यार्थे
तुणमोदकानि पत्राणि त्र्यहात्यहाच्चासां जलभक्तं दद्यात्।
४६ सप्तरात्रात्सप्तरात्राद्वटमन्यं सङ्कामयेत् ॥ १७ ॥

1.13.17

भवति चात्र श्लोकः ।
स्थूलमध्याः परिक्लिष्टास्तन्यश्चाक्षेत्रजाश्च याः ।
४९ अग्राहिण्योऽल्पपायिन्यः सविषाश्च न पोषयेत् ॥ १८ ॥^५

1.13.18

अथ जलौकावसेकसाध्यव्याधिं व्याधितमुपवेश्य संवेश्य वा विरुद्ध्य तमवकाशं
मृद्गोमयचूर्णीर्यद्यत्सरुजं स्यादथ जलौकसः सर्षपरजनीप्रदिग्धगात्राः
५२ सलिलसरकमध्यसञ्चारिणीर्विगतमलाः कृत्वा रोगङ्गाहयेत् ॥^६ अथ न गृह्णत्या:
क्षीरबिन्दुं शोणितबिन्दुं वा निदध्यात्। शस्त्रपदानि वा कुर्वीत । अथैवमपि न
गृहीयात्। अन्याङ्गाहयेत् ॥ १९ ॥

1.13.19

MS variants

४३ घटे] घटो N. ४३ निदध्यात्] निदयात् N. ४४ ओदकाश्च N; ओदकांश्च H. ४४ कन्दांश्च०
कन्दां च० N; कन्दांश० H. ४८ स्थूलमध्याः] स्थूलमध्या N H. ४८ परिक्लिष्टास्त०] परिक्लिष्टा त० N H. ५०
०साध्यव्याधिं] ०साध्यं व्याधिं H. ५० संवेश्य] संवेष्य N. ५१ यद्यत्सरुजं] यद्यत्सरुजा H. ५१ ०गात्राः] ०गात्र्यः
N H. ५२ ०मध्यसञ्चारिणीर्] ०मध्यसञ्चारिणी N H. ५२ रोगङ्गां] रोग यां N. ५३ अथैवमपि] अथैवमपि N.
०-५५ ग्राहयेत्] यदा] ग्राहयदा N H.

Variants from Su 1938

४२ ०चर्मणान्य०] ०चर्मणा, अन्यै० A. ४३ अथैता] अथैनां A. ४३ जलडाकोदक०] ०जलडागोदक० A. ४३ पङ्कानावाप्य]
पङ्कमावाप्य A. ४४ भक्तार्थञ्चा०] भक्तार्थं चा० A. ४४ ०हरेत्। शेवालं] ०हरेच्छैवलं A. ४४ ओदकांश्च] ओदकांश्च
A. ४४ शास्यार्थं] शास्यार्थं A. ४५ ओदकानि] ओदकानि च A. ४५ आसां जलभक्तं] आप्योऽन्यजलं भक्तं च A.
४६ रात्राद्वट०] रात्राच्च घट० A. ४८ तन्यश्चाक्षेत्रजाश्च याः] पृथ्व्यो मन्दविचेष्टिता: A. ४९ पोषयेत्] पूजिता: A.
५० जलौकावसेक०] जलौकोवसेक० A. ५० ०साध्यव्याधिं व्याधित०] ०साध्यव्याधित० A. ५० विरुद्ध्य] add चारस्य A.
५१ यद्यत्सरुजं] यद्यरुजः A. ५१ स्यादथ जलौकसः] स्यात्। ग्रहीताश्च ताः A. ५१ सर्षपरजनी०] add जलक्षोदक०
A. ५१ ०गात्राः] ०गात्री: A. ५२ ०मध्यसञ्चारिणीर्] ०मध्ये मुहूर्तस्थिता A. ५२ विंगतमलाः] विंगतङ्कमा A. ५२
कृत्वा ज्ञात्वा तामी A. ५२ रोगङ्गाहयेत्] add श्लक्षणशुक्राद्विपिचुप्रोतावच्छज्ञां कृत्वा मुखमपावृण्यात्; A. ५२ अथ
न गृह्णत्या:] अगृह्णन्त्यै A. ५३ निदध्यात्] दद्यात् A. ५३ अथैवमपि] यद्यैवमपि A. ५४ गृहीयात्। अन्याङ्गं
गृहीयात्तदाऽन्यां A.

Notes

^४ The transmitted Nepalese reading *gr̥hītāvā* is hard to construe unless taken over to the start of the next paragraph. However, then it would sit uneasily before *atha*, which seems to demarcate the start of different procedural stages.

^५ The vulgate edition notes “other readings” that correspond to those in the the Nepalese witnesses for *tanvyaś cākṣetrajāś ca yāḥ* and *poṣayet*.

^६ Note the irregular sandhi of f. pl. -*sañcāriṇī*.

५५ यदा निविशतेऽश्वरवदाननङ्कृत्वोन्नाम्य च स्कन्धमेवञ्चानीयादृह्णातीति ।
अथैनामार्द्धप्लोतावच्छन्नाङ्कृत्वा धारयेत् ॥ २० ॥ 1.13.20

अथ दंशो तोदकण्डूप्रादुर्भावो जानीयाच्छुद्धमाददातीति । तामपनयेत् ॥
५८ शोणितगन्धेन न मुच्चेत् । मुखमस्याः सैन्धवचूर्णोनावकिरेत् ॥ २१ ॥ 1.13.21

अथैनां शालितण्डुलकाण्डनप्रलिप्तान्तैललवणाभ्यक्तमुखीं
वामहस्तगृहीतपुच्छान्दक्षिणहस्ताङ्गुष्ठाङ्गुलीभ्यां शनैः
६१ शनैरनुलोममार्जयन्नामुखाद्वामयेद्यावत्सम्यगवान्तोति । सम्यगवान्ता
सलिलसरके न्यस्ता भोक्तुकामा सती चरेद् । या सीदति न चेष्टते सा दुर्वान्ता तां
पुनः सम्यगवामयेत् । दुर्वान्तायास्तु इन्द्रमदो नाम व्याधिरसाध्यो भवति ॥ २२ ॥ 1.13.22a

६४ अप्रहृष्टशिरः पात्यकायेनोद्देष्टते सकृत् ।
या चोष्णं कुरुते तोयन्तस्यामिन्द्रमदः स्मृतः ॥ २३ ॥ ६

MS variants

५५ न्त्वोन्नाम्य] न्त्वोन्नाम्य N. ५५ स्कन्ध०] स्कन्ध० N. ५५ स्कन्धमेवज्] एव पाठः । ३ कन्धं एवज् H. ५६
०च्छन्नाङ्कृत्वा] ०च्छन्न कृत्वा N; ०च्छन्नाङ्कृत्वा H. ५७ ०ददातीति । ताम्] ०ददातीति ताम् H. ५९ अथैनां] अथैनां N.
५९ तैल०] ०न्तौल० N. ५९ ०लवणाभ्यक्त०] ०लवणोभ्यक्त० H. ६१ वामयेद्यावत्] वामये वत् N. ६२ सलिलसरके]
शलिलशरके N. ६२ चरेद् । या] चरेद्या K N H. ६२ सीदति] शीति N. ६२ दुर्वान्ता तां] दुर्वान्तां K; सा दुर्वान्ताम्
H. ६३ सम्यगवा०] सम्यक् वा० K N. ६३ इन्द्रमदो] इन्द्रापदो N. ६४ पात्य] पाति N. ६५ तस्याम्] तस्यान्
N. ६५ इन्द्रमदः] इदमदः K; इद्रमदः N_{pc}.

Variants from Su 1938

५५ यदा] add च A. ५५ न्त्वोन्नाम्य] न्त्वोन्नाम्य A. ५५ स्कन्धमेवज्] स्कन्धं तदा A. ५६ अथैनामार्द्धप्लोतावच्छन्नाङ्कृ-
त्वा] गृहन्तीं चाद्रवस्त्रावच्छन्नां कृत्वा A. ५७ अथ] om. A. ५७ ०कण्डू०] ०कण्डू० A. ५७ ०भावो०] ०भावैर् A. ५७
०च्छुद्धमाददातीति] ०च्छुद्धमियमादत्त इति A. ५७ तामप०] शुद्धमाददानामप० A. ५८ मुच्चेत् । मुख०] मुच्चेन्मुख० ५९
अथैनां] अथ पतितां A. ५९ शालिं०] om. A. ५९ काण्डन०] कण्डन० A. ५९ व्यलिप्ता०] व्यादिगंधगार्ती० A. ६०
वामहस्त०] वामहस्ताङ्गुष्ठाङ्गुलीभ्यां A. ६० ०ङ्गुलीभ्यां०] ०ङ्गुलिभ्यां० A. ६१ ०रनुलोममार्जयन्ना०] ऋनुलोममनुमार्जयेदा०
A. ६१ मुखाद्वामयेद्यावत्] मुखात् वामयेत् तावद्यावत् ६१ सम्यगवान्तोति । सम्यगवान्तलिङ्गानीति A. ६२ सीदति]
सीदती० A. ६२ दुर्वान्ता तां] दुर्वान्ता तां A. ६३ दुर्वान्तायास्तु...भवति] दुर्वान्ताया व्याधिरसाध्य इन्द्रमदो नाम भवति
A. ० अप्रहृष्टशिरः...स्मृतः ॥] om. A.

Notes

६ The vulgate includes a variant that is identical with the reading of the Nepalese witnesses (Su 1938: 58, n. 2).

८ The vulgate, third edition, reports the reading of this verse in a Nepalese witness, probably H: अप्रहृष्टशिरः पादकायेनोद्देष्टते सकृत् । या चोष्णं कुरुते तापं तस्यामिन्द्रमदः स्मृतः (Su 1938: 58, n. 4).

अथैनां पूर्ववत्सन्निदध्यात् ॥ २४ ॥

1.13.22b

६७ शोणितस्य च योगायोगमवेक्ष्य जलौकामुखं मधुनावघट्येत् । बधीत वा
कषायमधुरस्त्रिग्धशीतैश्च प्रदेहैः प्रदिद्यादिति ॥ २५ ॥

1.13.23

७० भवतश्चात्र ॥
पीतमात्रे जलौकाभिर्धृतेन परिषेचयेत् ।
शोणितस्थापनीयैश्च शोणितम्परिषेचयेत् ॥ २६ ॥

७२ क्षेत्राणि ग्रहणश्चापि पोषणं सावचारणम् ।
जानीयाद्यो जलौकानां स राज्ञः कर्तुमर्हति ॥ २७ ॥

1.13.24

॥ १३ ॥

MS variants

६८ कषाय०] कशाय० K N. ७४ ॥ १३ ॥] १० ३ N H.

Variants from Su 1938

६६ अथैनां] अथ सुवान्तां A. ६७ च] om. A. ६७ योगायोगम्] योगायोगान् A. ६७ वेक्ष्य] add शतघौतघृताभ्यङ्गः;
ततिपञ्चायरणं वा; A. ६७ जलौकामुखं] जलौकोवणान् A. ६७ घट्येत् ।] add शिताभिरद्दिः परिषेचयेत् A. ७०-७१
पीतमात्रे...परिषेचयेत् ॥ २६ ॥] om. A. ७२ ग्रहणश्चापि] ग्रहणं जातीः A. ७३ जानीयाद्यो ... अर्हति] जलौकसां च
यो वेत्ति तत्साध्यान् स जयेददान् ७४ ॥ १३ ॥] इति सुश्रुतसंहितायां सूत्रस्थाने जलौकावचारणीयो नाम त्रयोदशो ऽध्यायः
॥ A.

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The translation and critical edition of *Suśrutasaṃhitā* 1.13 presented in this article were a collaborative endeavor by the members of The Suśutra Project in 2023. Lisa Brooks was the lead translator for this chapter, while Dominik Wujastyk composed the majority of the notes for the translation and, together with Deepro Chakraborty, was responsible for the extensive LATEX editing. Deepro also contributed his careful reading and expertise to our final editing of the chapter critical edition. Harshal Bhatt, Deepro Chakraborty, Vandana Lele, Paras Mehta, and Madhusudan Rimal brought their effort and expertise to the painstaking work of producing the manuscript transcriptions. Together with Jason Birch, they also contributed to the edition and the translation. I thank the entire Suśruta Project team for their contributions to the production of the edition of the text.

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INDEX OF MANUSCRIPTS

Kathmandu KL 699: 2f
 Kathmandu NAK 1-1079: 2, 24
 Kathmandu NAK 1-1146: 24
 Kathmandu NAK 5-333: 2

ABBREVIATIONS

Nepalese Version Wujastyk, Dominik, Birch, Jason, Klebanov, Andrey, Parameswaran, Madhu K., Brooks, Lisa Allette, et al. (2025), "A Digital Critical Edition of the Suśrutasamhitā Based on the Earliest Nepalese Manuscripts," <https://sushrutaproject1.github.io/project-outputs/>, (viewed 29 Oct. 2025).

TEXT EDITIONS

Ah 1902 Kumṭe, Ananta Moreśvara, and Navare, Kṛṣṇaśāstrī Rāmacandra (1902) (eds.), श्रीमद्वाग्भटविरचितम् अष्टाङ्गहृदयम्, सूत्र-शारीर-निदान-चिकित्सा-कल्प-उत्तरस्थानविभक्तम् श्रीमद्रुणदत्त-प्रणीतया सर्वांगसुन्दर्यारब्ध्यया व्याख्यया समर्लंकृतम् = *The Astāṅgahṛidaya. ... by Vāgbhaṭa with the Commentaries (Sarvāṅgasundarā) of Arunadatta and (Āyurvedarasāyana) of Hemādri* (Muṇḍbayyām: Nirṇayasāgara Press), ARK: ark:/13960/t3tt6967d; consulted in the reprint of 2014.

As 2006 Śarmā, Śivaprasāda (2006) (ed.), अष्टाङ्गसङ्कहः: इन्दोः शशिलेखारब्ध्यव्याख्यया संवलितः = *Aṣṭāṅgasamgrahaḥ of Vāhaṭa or Vṛddha Vāgbhata with the Śāsilekhā Sanskrit Commentary by Indu* (Banaras Ayurveda Series; Varanasi: Chowkhamba Sanskrit Series Office), ISBN: 9788170801863; consulted in the reprint of 2012.

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