The *Suśrutasaṃhitā* on the Plastic Surgery of the Ears and Nose: The Nepalese Recension

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Introduction

The Aim of the Article

The Compendium of Suśruta (*Suśrutasaṃhitā*) is amongst the most important treatises on medicine to survive from the ancient world. It has been studied seriously by historians since it first became available in print in the mid-nineteenth century.¹ Meulenbeld listed forty-four editions of the work since the first edition of 1835 by Gupta in Calcutta, and eight translations, starting from the Latin translation of 1844 by Hessler.² Many more translations have appeared in recent decades.

The study of this work has yielded rich historical discoveries about the earliest history of surgery, ancient pharmacology, toxicology and many other social and medical topics. Yet there remain fundamental unanswered questions about the history of the text itself and about related issues in the history of medicine in Asia.³

In January 2007, a previously unknown manuscript of the *Suśruta-saṃhitā* was brought to scholarly attention.⁴. MS Kathmandu KL 699 is a Nepalese manuscript covering about two thirds of the text. It is dated to 878 CE and is amongst the earliest dated manuscripts known from South Asia (Harimoto 2011: 87–88). The manuscript has been declared by UNESCO to be part of the Memory of the World (UNESCO 2013).

The newly-discovered manuscript in Nepal is related to two other early palm-leaf manuscripts in the National Archives in Kathmandu (MSS NAK 5/333 and 1/1079). Klebanov (2010; 2021a) has assembled compelling evidence for believing that these Nepalese manuscripts present a version of the text that was in wider circulation in northern India, especially Bengal, in the period up to about 1200 ce. Generally speaking, the Nepalese version of the *Suśrutasaṃhitā* is more rudimentary than the versions commented on by Cakrapāṇidatta (*fl.* tenth century ce) and Dalhaṇa (*fl.* twelfth century ce), the latter of which has formed the basis of modern printed editions,

A selection of some prominent contributions includes: Hoernle 1897; 1906*a,b*; 1907*a,b*; Strauss 1934; Singhal et al. 1972–82; P. V. Sharma 1975; Rây et al. 1980; R. Adriaensen et al. 1984; Yano 1986; HIML; P. V. Sharma 1999–2001*a*; Valiathan 2007.

² HIML: IB, 311 ff.

³ HIML: IA, 203-389.

⁴ Dimitrov and Tamot 2007.

such as those of Trivikramji Acharya and others (Su 1915; Su 1938; P. V. Sharma 1999–2001*b*).

This article presents a critical edition and annotated translation of the sixteenth chapter of the Ślokasthāna, the first book of the Nepalese version of the *Suśrutasaṃhitā* (SS.1.16).⁵ This chapter is important in the history of Indian medicine because of its discussion of surgical methods for repairing torn ears and severed noses. In addition to discussing the manuscripts and published editions used in this new edition, the introduction of the article addresses some of the challenges of editing the Nepalese manuscripts and the salient differences between the Nepalese version and those known to Cakrapāṇidatta and Dalhaṇa, as exemplified by the sixteenth chapter. The notes to the edition incorporate alternative readings mentioned by the commentators, and the annotations to the translation discuss instances where the text is uncertain; non-standard spellings and syntax; the meaning of technical and obscure terms; relevant remarks by the commentators; ambiguities in the identification of medical ingredients, in particular, plant names; and the additional compounds, verses and passages in Dalhana's version of the text. In short, this article is a pilot for undertaking a complete edition and translation of the Nepalese version of the Suśrutasaṃhitā.

Importance of SS.1.16 in the History of Medicine

Simple forms of surgery have a long history in South Asia. In works datable to at least 1200 BCE we learn how a reed was used as a catheter to cure urine retention. Cauterization too was used to prevent wounds from bleeding. The *Brāhmaṇa* literature of the early first millennium BCE contains more detailed descriptions of animal butchery in the context of religious sacrifice that involved the enumeration of internal organs and bones. This exemplifies an early Sanskrit vocabulary for internal parts of bodies, but it is not the same as medical dissection, whose methods and purpose is quite different. With the *Suśrutasaṇhitā* we find ourselves in the presence of something quite different and more developed, in which the body was

⁵ This book is called the *Sūtrasthāna* in subsequent versions of the *Suśrutasaṃhitā*.

⁶ Zysk 1985: 70–71.

⁷ Malamoud 1996.

⁸ Keith (1908) pointed out that the enumeration of the bones in the Brāhmaṇas was derived from correspondences with the numbering of various verse forms, not from anatomical observation.

studied specifically for medical and surgical purposes. The text gives us a historical window onto a school of professionalised surgical practice which existed almost two millennia ago, and which in its day was perhaps the most advanced school of surgery in the world.

The author of the *Suśrutasaṃhitā* describes how a surgeon should be trained and how various operations should be done. There are descriptions of ophthalmic couching (the dislodging of the lens of the eye), perineal lithotomy (cutting for stone in the bladder), the removal of arrows and splinters, suturing, the examination of dead human bodies for the study of anatomy, and other procedures. The author of *Suśrutasaṃhitā* claimed that surgery is the most ancient and most efficacious of the eight branches of medical knowledge (1.1.15–19 (Su 1938: 4)). Discussion with contemporary surgeons suggests that many details in the descriptions could only have been written by a practising surgeon: it is certain that elaborate surgical techniques were a reality in the author's circle.

see my comments in the input file

Torn ear lobes Suśruta's description of the repair of torn ear lobes is again unique for its time. Majno noted that 'through the habit of stretching their earlobes, the Indians became masters in a branch of surgery that Europe ignored for another two thousand years'. The different types of mutilated ear lobe which the *Suśrutasaṃhitā* describes are not always easy to understand from the Sanskrit: the illustrations supplied in Majno's text help visualization.

Rhinoplasty One of the best-known surgical techniques associated with *Suśrutasaṃhitā* is rhinoplasty, the repair or rebuilding of a severed nose. The history of this operation and a translation of the Sanskrit passage from the vulgate edition of the *Suśrutasaṃhitā* have been published in Wujastyk (2003: 67–70, 99–100). ¹⁴ This fascinating technique is certainly old in South

⁹ Zysk 1986.

¹⁰ Wilson 1823; Mukhopādhyāya 1913; Deshpande 2000; Wujastyk 2003; Narayana and Thrigulla 2011 and many other studies.

¹¹ The comprehensive study of ears in the history of Indian culture by Bollée (2010) oddly omits reference to *Suśrutasaṃhitā*'s surgery, although it mentions the text's description of ear diseases.

¹² Majno 1975: 291.

¹³ Majno 1975: 290–291; reproduced with permission in Wujastyk 2003: 92–93.

¹⁴ See also HIML: IB, 327–328, note 186 for further literature and reflections.

Asia, having been witnessed by travellers from Marco Polo in the seventeenth century onwards. Many witnesses, including the most famous, Cruso and Findlay, describe an operation that differs from $Su\acute{s}rutasamhit\bar{a}$ in that it takes the grafting skin from the forehead, not the cheek. But the nineteenth-century account of Thorburn is especially interesting, since the technique follows $Su\acute{s}rutasamhit\bar{a}$ exactly in taking flesh from the cheek, not the forehead.

As noted by Meulenbeld, none of the known commentators – Jejjaṭa, Gayadāsa, Cakrapāṇi or Ḍalhaṇa – explained the technique in any detail beyond lexical glosses. This suggests that the commentators did not in fact know the technique at first-hand. Perhaps by the late first millennium, the technique had moved into the professional competence of barbersurgeons? On the other hand, perhaps the influence was in the other direction, and a technique known to practitioners elsewhere in South Asia in the late first millennium was written into the text of *Suśrutasaṃhitā*. The description consists of only five verses and they are written in the Upendravajrā metre, which is different from the rest of the chapter. The description's appearance at the very end of the chapter, its terseness, its ornate metre, and the paucity of the commentators' treatment could all be taken as pointing in this direction.

Perhaps, it is worth mentioning (pace. Meul) the comment by Dalhana –discussed in fn 113–which indicates that he knew the grafted skin had to be connected. And this is not clear in the müla.

¹⁵ Manucci 1907–8: ii.301.

¹⁶ Longmate 1794: 883, 891 f.

¹⁷ Thorburn 1876: 352-3.

¹⁸ HIML: IB, 328. Dalhaṇa also noted that a rather different version of the text, cast in śloka metre, was also known to him from other sources (1.16.27–31 (Su 1938:81a)). Dalhaṇa's variant bears a resemblance to the description of the operation given in printed editions of the *Aṣṭāṅgaḥrḍayasaṃhitā* (Ah Utt.18.59–65 (Ah 1939:841)).

The Transmission of the Work

The Nepalese Version

In the present article and other publications of our research group, we focus on the study of what we call the 'Nepalese version' of the <code>Suśrutasaṃ-hitā</code>. The primary rationale behind using this designation was outlined in Klebanov (2021a: 2-3), but but we consider it necessary to reflect upon its meaning here given the conceptual significance that this term occupies in our research. It is likely that in the course of our research, we will refine our understanding of the phenomenon and, consequently, review and modify our current interpretation.

Put plainly, the 'Nepalese version' refers to a hypothetical text-critical reconstruction of the wording of the *Suśrutasaṃhitā* that is based primarily on the evidence of three ancient Nepalese manuscripts, which we have briefly introduced above and which we will describe in more detail in a later section. We call these MSS 'Nepalese' not just because they were preserved and discovered by modern scholarship in the Kathmandu valley but also because we believe that they were produced in the same area. We conclude this because all three MSS are written in a specific variety of Indic scripts, which, to the best of our knowledge, was not used outside of the region.

Furthermore, we speak of a single 'version' because we hold that these manuscripts attest to a peculiar line of transmission of the text, that is, in terms of stemmatic analysis, they share a common ancestor (hyparchetype) or a group of ancestors, while at the same time, bear no signs of significant contamination. This hypothesis was postulated in Klebanov (2010) and reiterated in Klebanov (2021b) as the result of a systematic analysis of two complete chapters (SS.1.3 and SS.1.15) as well as several shorter excerpts from the Suśrutasaṃhitā transmitted in the Nepalese manuscripts. On the one hand, these studies highlight that all three MSS preserve a highly uniform text with very few variations, virtually all of which can be explained as standard scribal errors or corrections. On the other hand, Klebanov (2010; 2021b) has systematically compared the concerned textual excerpts with four printed editions, alternative readings ($p\bar{a}thas$) reported by several commentators, parallel passages in other texts, and, only sporadically, with a few additional manuscripts of the *Suśrutasamhitā*. This analysis demonstrates that the text of the Suśrutasamhitā preserved in the Nepalese MSS differs decidedly from all the above standards of comparison. In this way, for example, we establish that another Nepalese manuscript of the *Su-śrutasaṃhitā*, NAK 1-1146,¹⁹ does not belong to the peculiar line of textual transmission and need not be taken into consideration when reconstructing the reading of its hyparchetype. However, in view of the vast number of handwritten copies of the *Suśrutasaṃhitā* preserved in different libraries across South Asia and in the absence of their systematic inclusion into the project's current collation, the assumption about the regional character of the transmission line remains purely hypothetical. As a matter of fact, we believe that the Nepalese MSS preserve many original features of the *Su-śrutasaṃhitā* it is possible, even likely, that some of these features will be found in other manuscripts of this work that have yet to be studied.

new paragraph?

Our research group builds upon the above hypothesis about the existence of a distinct Nepalese version of the *Suśrutasaṃhitā* and concentrates primarily on the study of this text in its own right and, additionally, in comparison to a single version of the compendium popularized by its late medieval commentator Dalhaṇa and recorded in the widely used Su 1938. Nevertheless, the present study of SS.1.16 also considers the readings found in Su 1939 and incorporates various observations made by both medieval commentators (Cakrapāṇidatta and Dalhaṇa) into the notes of the edition and some annotations of the translation.

The current paper and several earlier publications²⁰ furnish a vast catalogue of uniform features, which are characteristic of the Nepalese MSS and set them apart from the text known from the vulgate version. These features of the Nepalese MSS pertain to orthographic variants, peculiarities in the structure and structuring elements, as well as the actual wording of the text. As argued elsewhere in this article, many of these variants are likely to be closer to the original, not just because they preserve what appears to be a less edited, that is, less understandable, version of the text, and thus invoke the principle *lectio difficilior potior*.

We assign a high value to many Nepalese readings mainly because they constitute internally more consistent and coherent text that is at times further supported by external sources.

Additionally, we want to highlight that we do not think that the

known as

[...], that is, a less easily understood, [...]

I'm not too meaning of the last invoking this prin-ciple' a reason for these variants being likely closes to the original? Maybe you thing like,
[...] text, which sug gests it was loser to according ciple of lec-tio difficilior

See http://ngmcp.fdm.uni-hamburg.de/mediawiki/index.php/A_224-9_Suśrutasaṃhitā (accessed on November 8, 2021).

²⁰ See, for example, Harimoto (2011), Wujastyk (2013), Birch, Wujastyk, Klebanov, Parameswaran, et al. (2021), Birch, Wujastyk, Klebanov, Rimal, et al. (2021).

Nepalese MSS attest to the original text of the *Suśrutasaṃhitā*. On the contrary, in reconstructing the Nepalese version, we occasionally make use of corrections and emendations, and, as far as the reconstructed text is concerned, we believe that it bears signs of secondary editorial effort. Nevertheless, we think that the Nepalese MSS provide a unique opportunity for assessing a single line of textual transmission that goes back to a hyparchetype, which likely predates the composition of all major commentaries on the *Suśrutasaṃhitā*, and that, due to its regional character, has suffered relatively little contamination. The hypothetical readings of this hyparchetype we term the 'Nepalese version'.

Cakrapāṇidatta and Dalhaṇa's Versions

The commentaries of Cakrapāṇidatta and Palhaṇa, called the *Bhānumatī* and *Nibandhasaṅgraha* respectively, are based on similar versions of the *Suśrutasaṃhitā*, both of which are significantly different to the Nepalese version. Palhaṇa was aware of Cakrapāṇidatta's work and reiterated many of his predecessor's remarks, so the commentator's interpretation of the root text is largely consistent.

Trikamajī Ācārya's edition of the *Sūtrasthāna* of the *Bhānumatī* (Su 1939) duplicates the version of the *Suśrutasaṃhitā* in his edition of the *Nibandhasaṅgraha* (Su 1938), except in a few obvious cases where Cakrapāṇidatta glosses a word or compound that is different to the one glossed by Dalhaṇa.²¹ The duplication of the root text creates the somewhat misleading impression that both commentators had an almost identical version of the *Suśrutasaṃhitā*. However, there is evidence in SS.1.16 that this was not the case. For example, Dalhaṇa comments on four verses (1.16.11–14, Su 1938:78) that Cakrapāṇidatta cites separately in his commentary (Su 1939:128–129), introducing each one as 'some people read' (*ke cit paṭhanti*). This clearly indicates that these verses were not in the version of the *Suśrutasaṃhitā* upon which Cakrapāṇidatta was commenting, yet Ācārya includes them in the root text of the *Bhānumatī*.

Also, Cakrapāṇidatta does not acknowledge or comment on some verses in the version of the *Suśrutasaṃhitā* known to Dalhaṇa. Although it

This is not mean to say that the Nepalese test to a hyparchetype rather than the ar chetype of the *Suśru*tasamhitā. Our use of emendacorrections is not proof of this, because these methods are needed whether we are constructing an archetype or hyparchetype. Signs of past redactors editing the text is possible proof (and lo you have refs or examples?) but such signs might also be the author's attempt pile older materials. The point you make below about the colophons strikes me as more of a scribal is sue rather than authorial one

²¹ For example, in SS.1.16.18, Cakrapāṇidatta glosses *rājasarṣapa* whereas Ḍalhaṇa glosses *gaurasarṣapa*, and Ācārya reflects this in the root texts of the *Bhānumatī* (Su 1939: 130) and *Nibandhasaṅgraha* (Su 1938: 79).

is possible that a commentator may not have remarked on a verse because its meaning was clear, in some cases the commentarial convention of citing the first words of a new verse or passage provides firmer ground for suspecting the absence of a verse in the root text. For example, the prose passage of SS.1.16.18 in the the Bhānumatī (Su 1939: 130), which is SS.1.16.19 in the *Nibandhasangraha* (Su 1938:79), is followed by several verses that elaborate on the content of the prose passage, and both commentators introduce these verses and cite the opening words of the first verse before glossing specific terms. However, Cakrapānidatta does not introduce, cite or comment on the same verses as Dalhana (SS.1.16.20–22ab, Su 1938: 79), and yet the first of the verses commented on by Dalhana appears in the root text of Acarya's edition of the Bhanumatī (SS.1.16.19, Su 1939: 130), and the others (SS.1.16.20-21ab) are included in parenthesis. A similar instance of this occurs at *Bhānumatī* SS.1.16.31, where Acārya includes a verse in parenthesis that was commented on by Dalhaṇa (SS.1.16.32, Su 1938:81) but not by Cakrapāṇidatta. It appears that the manuscript on which Acārya's edition of the *Bhānumatī* was based does not include the root text.²² Therefore, the inclusion of SS.1.16.19–21ab and 31 in the root text of the *Bhānumatī* is an unsubstantiated hypothesis.

In fact, there is some evidence that the Nepalese version was more similar to Cakrapāṇidatta's version than to Dalhaṇa's. For example, 1.16.5 of the Nepalese version begins with the compound doṣasamudayāt whereas the version known to Dalhaṇa (SS.1.16.6, Su 1938:77) inserts two compounds, kliṣṭajihmāpraśastasūcīvyadhāt and gāḍhataravartitvāt, before this. Cakrapāṇidatta (SS.1.16.5, Su 1939:126–127) begins his comment on this passage by glossing doṣasamudayāt, which suggests that he was not aware of any compounds prior to this one. If one looks beyond SS.1.16, there are instances where the Nepalese version (1.1.28) and the root text of Cakrapāṇidatta have the same reading, which Dalhaṇa mentions as an alternative read by others. For example, 1.1.28 of the Nepalese version has tatrāsmiñ chāstre, which is the reading commented on by Cakrapāṇidatta (Su 1939:17). However, Dalhaṇa (SS.1.1.22, Su 1938:5) comments on asmiñ chāstre and states that others read tatrāsmiñ chāstre. Also, in his commentary on SS.1.1.8.1, Dalhaṇa (Su 1938:5) notes the variant reading

This observation is based on the opening passage of MS 1887-1935 of the *Bhānumatī*, which is transcribed in Eggling 1896: 928. The transcription has the commentary without the root text. See the section below on Ācārya's 1939 edition for details of the sources Ācārya used for this edition.

ṣaṣṭyā vidhānaiḥ, which is not in his root text but evidently was in Cakra-pāṇidatta's (SS.1.1.6, Su 1939:11). As discussed elsewhere (Birch 2021), the reading of ṣaṣṭyā vidhānaiḥ is likely a corruption of ṣaṣṭyābhidhānaiḥ in the Nepalese version (1.1.9).

Differences between the Nepalese and Subsequent Versions of SS.1.16

Several differences between the text of the *Suśrutasaṃhitā* as found in its multiple printed versions and as reconstructed on the basis of the Nepalese MSS have been already pointed out in previous publications. In terms of the overall organization and structuring themes and elements of the text, Klebanov (2021a: 27f.) lists differences in the chapter sequence, Wujastyk (2013), Klebanov (2021a: 28-32) and most recently Birch, Wujastyk, Klebanov, Parameswaran, et al. (2021) and Birch, Wujastyk, Klebanov, Rimal, et al. (2021: 2-4) talk about variations in the frame story, Klebanov (2021a: 32-36) highlights the interchangeable use of two names (*Ślokasthāna* and *Sūtrasthāna*) of the first book of the text, and Klebanov (2021a: 37-44) examines another peculiarity of the Nepalese version, namely, additional verse or prose colophons found at the end of each book but also each decade of chapters of the *Suśrutasaṃhitā*.

As the current paper demonstrates, many distinct features pertaining to the actual content of the Nepalese version continuously come to light as we proceed with our study of the manuscripts. Among observations made in previous literature, Klebanov (2021a: 44-47) makes some general remarks, along with a few arbitrary examples, and details two case studies (Ibid.:47-55). The first study deals with the list of skin lesions associated with urinary disease (*pramehapiṭakā* in the Nepalese spelling), whose signs and pathogenesis are described in *nidānasthāna* 6 and whose treatment is the subject of *cikitsāsthāna* 12. The second study focuses on the variation in another list, that of vital energies (*prāṇas*), mentioned in śārīrasthāna 4. The list of skin lesions exemplifies a case where the text of the *Suśruta-saṃhitā* transmitted in the Nepalese MSS is internally more coherent than that commented on by Dalhaṇa, and where the incoherence of the latter version already had been identified by an early commentator, Gayadāsa, who, based on text-external evidence, effectively had proposed a textual

This is a complicated sentence. It might be better to use semi-colons, e.g., [...] sequence; [...] frame story; [...] of the text; [...]

You could tition by placing this sentence before The discussion of the textual variant in the second case study
[...] and change this sentence to 'The disthe textual variant in vital energies also recourses

conjecture that corresponds to the reading of the Nepalese version.²³ The study at hand also provides a rare example of interpolation, for which we can postulate its likely source, namely, the medical theory associated with the *Carakasaṃhitā*. The discussion of the textual variant in the second case study, the list of vital energies, also recourses to Gayadāsa's learned remarks. Here, the scholar commented on the reading transmitted in the Nepalese MSS as the original one and reported an alternative reading and its interpretation preferred by another ancient commentator, Jejjaṭa. It is precisely this reading that is known to modern readers of the *Suśrutasaṃhitā* from the vulgate version of the text. Another exemplary investigation of textual variants in the Nepalese version is found in Harimoto (2011: 101–104). This study looks at the classification of snakes in *kalpasthāna* 4 and reveals that, compared to the versions of the *Suśrutasaṃhitā* found in different printed sources, the Nepalese MSS preserve a text that is internally more consistent and coherent.

this study?

new paragraph?

the referent of this is not so clear. 'this alternative reading'?

On the whole, these observations indicate that many features of the Nepalese version of the *Suśrutasaṃhitā* are likely to go back to an older state of the textual development common to other versions of the compendium. However, other textual peculiarities, such as the text-structuring colophons concluding every tenth chapter, are likely to have occurred within a local transmission of the text, and it is improbable that they are attested in the MSS from other regions. When evaluating the Nepalese readings historically, however, it is further necessary to keep in mind that there is plentiful evidence suggesting an ancient age of the readings accepted into Dalhaṇa's version of the text.

The following detailed comparison of 1.16 of the Nepalese version with Palhaṇa's *Nibandhasaṅgraha* unfolded as the chapter was edited. The differences appear to emanate largely from attempts to standardise, simplify or clarify the language of the Nepalese version, add and redact information, and introduce changes to recipes and treatments. Examples from 1.16 have been provided to demonstrate the general observations which, it is hoped, a larger survey of the text will verify.

Table 1 reveals the extent to which 1.16 of the Nepalese version was redacted to create the one known by Palhana. In this particular case, twenty-

[...] suggesting that some of the readings accepted by D were ancient, if not original (?)

According to our current knowledge, KL 699 was copied before the time in which Gayadāsa flourished. This relative chronology excludes the possibility that the Nepalese version incorporates Gayadāsa's conjecture rather than transmitting an original variant.

seven verses have been added, eight (11-14, 21–22ab, 23cd–24, 32) of which are well-integrated with the existing material in so far as they reiterate and elaborate on the content of passages in the Nepalese version. A block of nineteen verses (26.1–19) at the end of this chapter in Ācārya's edition of the *Nibandhasangraha* (Su 1938: 80) was known by Palhaṇa. These verses cover additional diseases of the ear lobes, as well as their treatment and complications. Although Palhaṇa concedes that some read them in this chapter, he concludes that they were not composed by sages and, therefore, should not be read. Ācārya probably included these verses because they were in his manuscripts,²⁴ and Palhaṇa's comments prompted him to place them in parentheses. Be this as it may, this large block of verses is absent in the Nepalese version.

In Table 1, one can also see that verses 17 and 18 of the Nepalese version were transposed in the redaction of Dalhana's version, in which they are 26 and 25 respectively. Although this only occurs once in 1.16, such transposing of verses and even their hemistiches is more prevalent in the redaction of other chapters of the *Suśrutasaṃhitā*.

Apart from the addition of verses, the redacting of the version known to Dalhana involved many small, yet sometimes significant, changes that are summarised below.

Changing Spelling, Sandhi and Syntax

In the majority of cases, efforts were made by redactors to standardise, simplify or improve the language of the Nepalese version. Such changes include the standardising of spelling,²⁵ sandhi,²⁶ and verbal forms,²⁷ as well

²⁴ Ācārya (Su 1938: 80) does not state that these verses were absent in some or all of his manuscripts, which he usually does in a footnote if this is the case. A broader survey of manuscripts would be helpful for establishing whether these verses were part of the transmission of the *Suśrutasaṃhitā* in India. For example, they are in MS Hyderabad Osmania 137-3(b).

For example, $patt\bar{a}nga$ (SS.1.16.21) $\rightarrow patanga$ (1.16.29, Su 1938: 81). For more information on this, see the relevant footnote to the translation.

²⁶ or example, °hastena rju (SS.1.16.2) \rightarrow °hastena rju (1.16.3, Su 1938: 76).

²⁷ For example, $unn\bar{a}mayitv\bar{a}$ (SS.1.16.21) $\rightarrow pr\bar{a}nnamya$ (1.16.29, Su 1938: 81); $avac\bar{u}rnay\bar{t}ta$ (SS.1.16.21) $\rightarrow upaharet$ (1.16.29, Su 1938: 81).

Nepalese version Dalhana's version

-	·
1	1
_	2
2–9	3–10
_	11–14
10–15	15–2 0
_	21–22ab
16	22cd–23ab
-	23cd-24
- 7	2 5
17	26
	26.1-19
18 🖍	_
19–23	27-31
<u> </u>	32
,	

Table 1: A Comparison of Verses in 1.16 of the Nepalese and Dalhaṇa's Versions

as interventions to simplify and clarify syntax,²⁸ which often involved splitting compounds.²⁹ In some instances, these changes improved the grammar,³⁰ or altered the meaning.³¹ However, some prefixes of verbal forms,³² case endings,³³ and indeclinables were changed for less apparent reasons.³⁴ There is also a tendency to replace uncommon words with generic ones,³⁵ add indeclinables,³⁶ omit the verb to be at the end of sentences,³⁷ and introduce verses after a prose passage with the phrase *bhavati cātra*.³⁸

Changing Technical Terms

There is evidence of standardising and altering technical terminology in subsequent versions of the *Suśrutasaṃhitā*. Two examples of this in SS.1.16 are the terms for joins (*bandha*) and a slice of flesh (*vadhra*). The Nepalese version uses three terms for joining (*bandha*, *sandhāna*, *sandhi*) splits in the ear flaps and the flesh of nose. Redactors of subsequent versions appear to have tried to standardise this terminology by replacing *sandhāna* and *sandhi*

- 28 For example, śoṇitabahutvanivedanāyāṃ cānyadeśaviddham iti jānīyāt | nirupadravatā taddeśaviddhalingam | (SS.1.16.3) → śoṇitabahutvena vedanayā cānyadeśaviddham iti jānīyāt | nirupadravatayā taddeśaviddham iti | (1.16.4, Su 1938:76); āmatailapariṣekeṇopacaret (SS.1.16.6) → āmatailena pariṣecayet (1.16.7, Su 1938:77); suparigṛhītaṃ (SS.1.16.10) → suparigṛhītaṃ ca kṛtvā (1.16.15, Su 1938:78); anena (SS.1.16.15) → snehenaitena (1.16.20, Su 1938:79).
- 29 For example, yadṛcchāviddhāyāṃ sirāyām (SS.1.16.4) → yadṛcchayā viddhāsu sirāsu (1.16.5, Su 1938: 76); dhānyāmlakapālacūrṇaṃ (SS.1.16.10) → dhānyāmlaṃ kapālacūrṇaṃ (1.16.20, Su 1938: 78).
- 30 For example, surāmaṇḍakṣīram (SS.1.16.10) → surāmaṇḍaṃ kṣīram (1.16.15, Su 1938: 78).
- 31 For example, $k\bar{s}\bar{i}n\bar{a}lpam\bar{a}msah$ (SS.1.16.12) $\rightarrow k\bar{s}\bar{i}no$ ' $lpam\bar{a}msah$ (1.16.17, Su 1938: 79).
- 32 For example, samvarddhitaḥ (SS.1.16.8) → vivarddhitaḥ (1.16.9, Su 1938:77); niveśya (SS.1.16.10) → sanniveśya (1.16.15, Su 1938:78); avabadhya (SS.1.16.10) → ca baddhvā (1.16.15, Su 1938:78).
- 33 For example, $m\bar{a}se$ (SS.1.16.2) $\rightarrow m\bar{a}si$ (1.16.3, Su 1938: 76).
- 34 For example, api (SS.1.16.13) $\rightarrow v\bar{a}$ (1.16.18, Su 1938:79); ca (SS.1.16.16) $\rightarrow tu$ (1.16.23, Su 1938:79); tu (SS.1.16.18) $\rightarrow ca$ (1.16.25, Su 1938:80).
- 35 For example, $mrak = 4 (SS.1.16.15) \rightarrow yojayet (1.16.20, Su 1938: 79); nahyet (SS.1.16.21)$ $<math>\rightarrow baddhv\bar{a} (1.16.29, Su 1938: 81).$
- 36 For example, [absent] (SS.1.16.6) \rightarrow *ca* (1.16.7, Su 1938:77); [absent] (SS.1.16.10) \rightarrow *tatra* (1.16.15, Su 1938:78); [absent] (SS.1.16.12) \rightarrow *api* (1.16.17, Su 1938:79).
- The words *bhavati* or *bhavanti* are omitted four times in Dalhana's version (1.16.10 (twice), 1.16.17 and 1.16.18, Su 1938: 77, 79).
- 38 For example, [absent] (SS.1.16.11) \rightarrow bhavati cātra (1.16.16, Su 1938: 79).

with *bandha* in prose passages.³⁹ However, the use of the term *sandhāna* was retained in verses, perhaps because of the metrical challenges of making such a change. Also, the names of joins which incorporate *sandhāna* and *sandhi* remained the same.⁴⁰

The Nepalese version (SS.1.16.20,23) contains the rather obscure term *vadhra* for the slice of flesh that a surgeon cuts from the cheek in order to construct a new nose. Modern dictionaries define *vadhra* as a leathern strap (Apte: 1385, MW: 917) or a slice of bacon (MW: 917), the latter of which is more indicative of its meaning in the Nepalese version. This word was written out of subsequent versions,⁴¹ and it was not mentioned as an alternative reading by either Cakrapāṇidatta or Ḍalhaṇa, which suggests that its use and meaning may not have been known to them. However, *vadhra* was used by the author of the *Aṣṭāṅgaḥṛdayasaṇḥitā* (Ah Utt.18.62 (Ah 1939: 841)) in the context of rhinoplasty, so it likely to be the correct reading in the Nepalese version.

Augmenting the Text

Apart from adding whole passages and verses (as seen in Table 1), redactors of subsequent versions augmented the text by expanding existing compounds and inserting new compounds and words. Within the microcosm of 1.16, adjectives and adverbs were inserted to clarify statements,⁴² and phrases added to elaborate on diseases and treatments.⁴³ In particular, the characteristics and number of symptoms of a disease, as well as their reasons for arising, tend to increase in subsequent versions. For example, the Nepalese version (SS.1.16.5) says that the wick in a newly

³⁹ For example, pañcadaśasandhānākṛtayaḥ (SS.1.16.9) → pañcadaśabandhākṛtayaḥ (SS.1.16.10, Su 1938:77); daśakarṇasandhivikalpāḥ (SS.1.16.9) → karṇabandhavikalpāḥ (SS.1.16.10, Su 1938:77)

⁴⁰ These names are *nemīsandhānaka*, *kapāṭasandhika*, and *ardhakapāṭasandhika* in SS.1.16.9.

⁴¹ vadhram (SS.1.16.20) \rightarrow baddham (SS.1.16.28, Su 1938:81) and tadvadhraśeṣam (SS.1.16.23) \rightarrow tad ardhaśeṣam (SS.1.16.31, Su 1938:81).

⁴² For example, chidre (SS.1.16.2) \rightarrow chidra ādityakarāvabhāsite (1.16.3, Su 1938:76); [absent] (SS.1.16.2) \rightarrow śanaiḥ śanaiḥ (1.16.3, Su 1938:76); [absent] (SS.1.16.3) \rightarrow āśu (1.16.5, Su 1938:77).

⁴³ For example, dhātryaṅke (SS.1.16.2) \rightarrow dhātryaṅke kumāradharāṅke vā (1.16.3, Su 1938: 76); [absent] (SS.1.16.2) \rightarrow bālakrīḍanakaiḥ pralobhya (1.16.3, Su 1938: 76); [absent] (SS.1.16.3) \rightarrow picuvartiṃ praveśayet (1.16.5, Su 1938: 77).

pierced ear should be removed because of aggravated humours or a culpable piercing whereas the version known to Dalhaṇa (1.16.6, Su 1938:77) includes two further reasons, namely, because of piercing with a painful, crooked and unrecommended needle or because of a wick that is too thick. Some of the split ear flaps in Dalhaṇa's version have additional characteristics, 44 and a list of four symptoms associated with incurable joins in the Nepalese version (SS.1.16.19) was increased to six in Dalhaṇa's version (1.16.10, Su 1938:77). Also, models of classifying symptoms were introduced in subsequent versions. For example, the Nepalese version (SS.1.16.4) lists the symptoms of mistakenly piercing a duct in the ear whereas the version known to Dalhaṇa (1.16.5, Su 1938:76–77) classifies these symptoms according to three ducts called *kālikā*, *marmarikā* and *lohitikā*, which results in some repetition of the symptoms mentioned. 45

Transposing Words, Verses and Passages

A close comparison of the Nepalese version with subsequent ones reveals changes in the order of words, sentences and verses. Examples of such transpositions occur in SS.1.16. In most cases, the changes in word order are insignificant and may be result of different preferences in syntax or even scribal eye-brain-hand miscommunication.⁴⁶ However, the transposition of verses and passages is usually the result of efforts at redacting the text to add new material. A good example of this is the transposition of SS.1.16.17

⁴⁴ For example, pīṭhopamapālir nirvedhimaḥ (SS.1.16.9) → pīṭhopamapālir ubhayataḥ kṣīṇaputrikāśrito nirvedhimaḥ (1.16.10, Su 1938:77); itarālpapāliḥ saṃkṣiptaḥ (SS.1.16.9) → utsannapālir itarālpapāliḥ saṃkṣiptaḥ (1.16.10, Su 1938:77); tanuviṣamapāliḥ (SS.1.16.9) → tanuviṣamālpapāliḥ (1.16.10, Su 1938:77).

⁴⁵ In Palhaṇa's version (1.16.5, Su 1938: 76–77), the symptoms of fever (*jvara*) and pain (*vedanā*) are repeated. This repetition does not occur in the Nepalese version. It is possible that this classification was not in the version of the *Suśrutasaṃhitā* known to Cakrapāṇidatta (1.16.4, Su 1939: 126) because he mentions that some read classifications of ducts at this point in the text and he cites verses from Bhoja on *kālikā*, *marmarikā* and *lohitikā*, but he does not gloss or comment on the passage known to Palhaṇa.

⁴⁶ For example, aṇusthūla° (SS.1.16.9) → sthūlāṇu° (1.16.10, Su 1938:77); tatraite daśakarṇa° (SS.1.16.9) → tatra daśaite karṇa° (1.16.10, Su 1938:77); nātigāḍhan nātiśithilaṃ sūtreṇāvabadhya (SS.1.16.9) → sūtreṇānavagāḍhaman atiśithilaṃ ca baddhvā (1.16.10, Su 1938:77); pūrvan dakṣiṇaṃ kumārasya vāman kanyāyāḥ | pratanuṃ sūcyā bahalam ārayā (SS.1.16.2) → pratanukaṃ sūcyā bahalam ārayā | pūrvaṃ dakṣiṇaṃ kumārasya vāman kanyāyāḥ (1.16.3, Su 1938:76).

and SS.1.16.18 in the Nepalese version to 1.16.26 and 1.16.25, respectively, in Dalhana's. It seems that this transposition may have resulted from the insertion of new verses 1.16.23cd-24 and 1.16.26.1-19 in the latter.

Redacting Recipes and Elaborating on Treatments

Some of the additional text in subsequent versions of the *Suśrutasaṃhitā* introduces new ingredients in recipes and different procedures in treatments. In many instances, the new material merely clarifies or elaborates on the original but sometimes it changes the recipe or treatment significantly. An example of a suppletion that clarifies the text of the Nepalese version can be seen in 1.16.3 of Dalhaṇa's version (Su 1938: 76), which contains a statement that the physician should insert a wick of cotton after the ear has been pierced.⁴⁷ This statement anticipates the instructions in the the Nepalese version (SS.1.16.5–6) on removing the wick because of aggravated humours and replacing the wick with a thicker one every three days. In this case, the additional statement of Dalhaṇa's version elucidates the role of the wick in the procedure of piercing the ear.

A similar clarification occurs in 1.16.18 of Dalhaṇa's version (Su 1938:79), which reiterates the cure for an ear tainted by a humour that was described in 1.16.7 (= SS.1.16.6). The reiteration is quite apt because it follows a passage (1.16.17, Su 1938:79 = SS.1.16.12) that outlines the various symptoms of ear disease arising from each of the three humours. The author of the Nepalese version probably assumed that, after reading SS.1.16.12, the reader would refer back to SS.1.16.6 for the cure of an ear affected by a humour. However, in Dalhaṇa's version, the treatment is reiterated at 1.16.18.

In Dalhaṇa's version of 1.16, there are two instances in which ingredients were added to recipes of medicines in the Nepalese version. The first is the recipe of an anointment that should be applied to a pierced ear that has not healed. In Dalhaṇa's version (1.16.7, Su 1938:77) the recipe was rewritten to include sesame seeds.⁴⁸ A more significant change occurs in another recipe for an admixture of an oil that is supposed to be rubbed into a healthy ear to enlarge it. Dalhaṇa's version (1.16.7, Su 1938:77) of

⁴⁷ For example, [absent] (SS.1.16.2) \rightarrow picuvartim praveśayet (1.16.3, Su 1938: 76).

⁴⁸ yavamadhukamañjiṣṭhāgandharvahastamūlair madhughṛtapragāḍhair ālepayet (SS.1.16.5) → madhukairaṇḍamūlamañjiṣṭhāyavatilakalkair madhughṛtapragāḍhair ālepayet (1.16.7, Su 1938: 77).

the admixture has five additional ingredients, namely, prickly chaff-flower ($ap\bar{a}m\bar{a}rga$), Withania ($a\acute{s}vagandh\bar{a}$), giant potato ($ks\bar{i}ra\acute{s}ukl\bar{a}$), the 'sweet' savour (madhuravarga)⁴⁹ and 'milk flower' ($payasy\bar{a} \rightarrow vid\bar{a}ri\bar{b}^{50}$). It also has beggarweed ($vid\bar{a}rigandh\bar{a}$) instead of milk flower ($vid\bar{a}ri$).⁵¹ This method of redacting a recipe of Nepalese version appears to be somewhat typical in so far as most of the ingredients of the original were retained and new ones simply added.

Perhaps, Dr Madhu could add a comment on whether these additional ingredients would change the effects of the treatment in any significant way?

⁴⁹ The items which exemplify the 'sweet' savour (*madhuravarga*) are enumerated at SS.1.42.11.

⁵⁰ Pueraria tuberosa (Willd.) DC. (ADPS 510, IMP 1.792f., AVS 4.391; not Dymock 1.424f. See GJM supplement 444, 451, IMP 1.187, but IMP 3.1719 = Ipmoea mauritiana, Jacq.).

⁵¹ arkālarkabalātibalānantāvidārīmadhukajalaśūkaprativāpan tailam pācayitvā (SS.1.16.14) → arkālarkabalātibalānantāpāmārgāśvagandhāvidārigandhākṣīraśuklājalaśūkamadhuravargapayasyāprativāpaṃ tailam vā pācayitvā (1.16.19, Su 1938: 79).

The Edition

The Printed Editions

The careful survey of printed editions of the *Suśrutasaṃhitā* by Meulenbeld lists no fewer than 44 entries.⁵² These range from the first edition by Madhusūdana Gupta (1835) to editions in the 1970s. The number of reprints and editions since that time might almost double that number. Translations begin with Hessler's Latin translation in 1844 and continue up to the present in scores of publications in many languages.⁵³

The Vulgate

The great ayurvedic scholar Yādavaśarman Trivikrama Ācārya produced three successive editions of the *Suśrutasaṃhitā* with the commentary of Dalhaṇa, in 1915, 1931 and 1938. These editions, especially the last, are generally considered the most scholarly and reliable editions of the work, and have been constantly reprinted up to the present day.⁵⁴ We refer to the last of these editions as "the vulgate."

The 1915 edition was based on three manuscripts. The 1931 edition used another seven manuscripts plus two printed editions. For his final 1938 edition, Ācārya used a further three manuscripts.⁵⁵ These sources are described as follow, with an overview in Table 2.

The sources of the 1915 edition

- 1 Calcutta, Royal Asiatic Society. Covers the *sūtra*, *nidāna*, *śārīra and kalpa sthānas*.
- 2 Jaipur, Pandit Gaṅgādharabhaṭṭaśarman, lecturer at the Royal Sanskrit University. Covers the *cikitsāsthāna* and the *uttaratantra*.
- 3 Bundi, my great friend the royal physician Pam. Srīprasādaśarman Covers the *uttaratantra*.

⁵² HIML: IIB, 311-314.

⁵³ Zysk 1984: E.g., HIML: IIB, 314–315.

⁵⁴ See also the study of these editions by Klebanov (2021*a*: §1.2) and Wujastyk (2013: 143–144).

The following account of the sources is paraphrased from Y. T. Ācārya and N. R. Ācārya's own account of his sources (Su 1938: 22).

The sources of the 1931 edition

- 1 Vārāṇasī, professor of literature, the great Gaurīnāthapāṭhaka. With the *Nibandhasaṅgraha*. Covers the *nidānasthāna* and *uttaratantra*.
- 2 Ahmedabad. My friend Sva. Vā. Vaidya Raṇachoḍalāla Motīlālaśarman. With the *Nibandhasaṅgraha*. Covers the śārīrasthāna.
- 3 From the personal library of my great friend Sva. Vā. Vaidya Murārajīśarman. Extremely old. No commentary. Covers the śārīrasthāna.
- 4 Puṇe, BORI library. With the *Nibandhasaṅgraha*. Covers the śārīra-sthāna.⁵⁶
- 5 Puṇe, BORI library. With the *Nibandhasaṅgraha*. Complete. With some damaged folia.
- 6 Bombay, Asiatic Society. Incomplete.⁵⁷
- 7 Varanasi, the private library of Vaidya Tryambakaśāstrī. Covers the *cikitsāsthāna*. The variant readings of this MS were compiled by Prof.
- 8 A printed edition together with the commentary *Suśrutasandīpana-bhāṣya* by Professor Hārāṇacandra Cakravārtti. Complete work. This is the 1910 Calcutta edition numbered "t" by Meulenbeld (HIML: IB, 312).⁵⁸
- 9 A printed edition of the first 43 chapters of the *sūtrasthāna*, printed in Bengali script, with the commentaries *Bhānumatī*, *Nibandhasaṅgraha*, edited by Vijayaratnasena and Niśikāntasena. This is the 1886 Calcutta edition numbered "g" by Meulenbeld (HIML: IB, 311).⁵⁹

The sources of the 1938 edition

1 Gwalior, from the library of my great friend Pam. Rāmeśvaraśāstrin Śukla. Covers the *sūtra*, *nidāna*, *śārīra*, *cikitsā and kalpasthāna*s.

⁵⁶ Not one of the three MSS of the śārīrasthāna described in H. D. Sharma 1939.

⁵⁷ Possibly MS Mumbai AS B.I.3 or MS Mumbai AS B.D.109 (Velankar 1925–30: v. 1, # 212 and 213). But both these have the *Nibandhasaṅgraha*. The first covers only the śārīrasthāna; the second may be complete, but Velankar calls it only "disorderly."

⁵⁸ Bhaṭṭācārya 1910–7.

⁵⁹ Sena et al. 1886–93.

⁶⁰ Covers chapters 1–43 only.

⁶¹ Covers chapters 1–9 only.

Table 2: The sources of Yādavaśarman T. Ācārya's three editions: manuscript coverage (\bullet) and print coverage (\circ) .

edition		1915	;					1931	-					193	8
source	1	2	3	1	2	3	4	5	6	7	8	9	1	2	3
sthāna															
$s\bar{u}.$	•								?		0	060	•		,
ni.				•					?		0		•		
śā.									?		0		•4		•
ci.									?	lacktriangle	0				6 1
ka.	•								?		0				
utt.		•	•	•				•	?		0				

- 2 Bikaner, from the library of the Royal Palace, supplied by Pam. Candraśekharaśāstrin. Contains the commentary *Nyāyacandrikāpañjikāvyākhyā* by Gayadāsa. Covers the *nidānasthāna*.

 This is almost certainly MS Bikaner Anup 4390.⁶²
- 3 Kathmandu, located in the private library of the Royal Guru Hemarāja Śarman. An extremely old palm-leaf manuscript. Readings from this MS were compiled by Paṃ Nityānandaśarman Jośī and sent to Ācārya. Covers from the beginning of the work to the end of the ninth chapter of the *cikitsāsthāna*. The siglum for this manuscript in footnotes was ता for तालपत्रपुस्तके.

Evaluation

Estimates show that there are approximately 230 extant manuscript witnesses for the *Suśrutasaṃhitā*.⁶³ Many of these manuscripts cover only one or more or its chapters. Nevertheless, this is an order of magnitude more evidence than was considered by Ācārya for his vulgate editions.

While the descriptions provided by Ācārya of his source materials

⁶² See Dominik Wujastyk, "MS Bīkāner AnupLib 4390." Pandit. http://panditproject.org/entity/108068/manuscript.

⁶³ This figure is arrived at by summing the MSS mentioned in NCC and in the NGMCP. The real figure could be many scores higher.

seems at first to be moderately comprehensive, Table 2 reveals the underlying paucity of textual sources for these editions. At first, it appears that fifteen manuscripts were consulted. However, we quickly see that two of the sources were other people's printed editions, and one of those covered less than a quarter of the work (no. 9 of 1931). That reduces the manuscript base to 13 manuscripts. Acarya does not appear to have seen two of the manuscripts at all, having been sent collations prepared for him by others (7 of 1931 and 3 of 1938). Thus, Acārya's final edition was based on the personal consultation of eleven partial manuscripts. One of them remains unidentified (6 of 1931). Only a single manuscript covers the whole of the *Suśrutasaṃhitā*, no. 5 of the 1931 edition. Manuscript 1 of 1938 is the next most complete, but it omits the uttaratantra, which comprises a third of the work. Manuscript 1 of the 1915 edition is third in size, but it still omits both of the longest chapters, and thus offers less than half the work. For the rest, the evidence is spotty, with each part of the work being supported by only between four and eight manuscripts, excluding the printed editions.

Two sources stand out for their historical importance. The first is no. 3 of 1931, which Ācārya calls "extremely old." It covered the śārīrasthāna only, and unfortunately we know nothing of the later history of this manuscript. The second is no. 3 of 1938, which is one of the important Nepalese manuscripts being considered in the present project. Ācārya's remarks and references to Hemarājaśarman's introduction to the *Kāśyapasaṃhitā* allow us to identify this manuscript as MS Kathmandu NAK 5-333.⁶⁴ But that manuscript covers the whole work, not just up to the ninth chapter of the *cikitsāsthāna* as Y. T. Ācārya and N. R. Ācārya stated.⁶⁵ Perhaps the editors only received collations for this portion of the manuscript and did not know that it was a witness for the whole work.

The 1939 edition

In 1939, Yādavaśarman Trivikrama Ācārya and Nandakiśora Śarman coedited an edition of the *sūtrasthāna* of the *Suśrutasaṃhitā* that was published by the Swami Laxmi Ram ayurvedic centre in Jaipur, and printed at the

⁶⁴ Su 1938: 22; Hemarāja Śarman 1938: 56–57. Discussed by Klebanov (2021*a*: §1.1, 2.3). See also HIML: IIB, 25–41; Wujastyk 2003: 161–169.

⁶⁵ Su 1938: 22.

famous Nirṇayasāgara Press in Mumbai (see Fig. 1). 66 The text was edited on the basis of the following sources.

For the Bhānumatī

- 1. A printed edition. Covered the *Bhānumatī* up to chapter Su.sū.40. The siglum was Ḥ for *mudrita*.⁶⁷
- 2. A manuscript in the India Office Library library provided through the Bhandarkar Oriental Research Institute in Pune. This manuscript covered the Bhānumatī b up to the end of the sūtrasthāna. The siglum was ह for हस्तलिखित. 69

For the Suśrutasamhitā

- 1. A palm leaf manuscript from Hemarājaśarman's personal library.⁷⁰ The siglum was না for নাভ্যন্ন.
- 2. His own published edition. The siglum was ड for डल्हणसंमतः पाठः.71
- 3. Hārāṇacandra Cakravarti's published edition with his own commentary.⁷² The siglum was हा.
- 66 Su 1939. The description of the sources below is based on Yādavaśarman T. Ācārya's remarks in his introduction (pp. 3–4). See also the remarks on this edition by Klebanov (2021*b*:7). On the Swami Laxmi Ram centre, see Hofer 2007
- 67 Sena et al. 1886–93. The manuscript on which this edition was based is probably in the library of the Calcutta Sanskrit College, and described in H. Sastri and Gui 1895–1917: v. X.1, which is not available to me. See also HIML: IB, 495, n. 57 for mention of this manuscript. The reference at Rama Rao et al. 2005: 217 to CSCL accession number 97 in Bengali script may be this manuscript.
- 68 At this time, manuscripts from Britain were routinely lent to scholars in India and vice versa.
- 69 Wujastyk 2021 MS London BL H. T. Colebrooke 908 (PanditProject #109978, consulted on July 03, 2021).
- 70 I.e., MS Kathmandu NAK 5-333.
- 71 Su 1938. It is noteworthy that Ācārya refers to his 1938 edition as representing "the Dalhana recension."
- 72 Bhaṭṭācārya 1910-7.

चरके—''लाभोपायो हि शस्तानां रसावीनां रसायनम्'' (च.चि. अ. १ पा. १)। पारिशेष्याद्वाजीकरणतन्त्रम् । अवाजिनं वाजीकुर्वेन्ति येन तद्वाजीकरणम् । 'अन्येषामिष दृश्यते' (पा. अ. ६।३।१३७) इति वीर्घलम् । येन वाऽत्यर्थं स्त्रीषु व्यज्यते तद्वाजी-करणम् । तद्वकं चरके—''येन नारीषु सामध्यं वाजिवल्लमते नरः । वजेचाप्यधिकं येन वाजीकरणमेव तत्'' (च.चि. अ. २, पा. ४) इति ॥ ५॥

अथास्य प्रत्येकाङ्गलक्षणसमासः—तत्र, शल्यं नाम विविधत्णकाष्टपाषाणपांशुलोहलोष्टास्थिवालनलपूर्यास्वावदुष्टवणान्तर्गर्भशाल्योद्धरणाथ षष्ट्या विधानैः, यन्त्रश्रास्थ्रसाराग्निप्रणिधानवणविनिश्चयार्थं चः शालाक्यं नामोध्वेजन्नगतानां श्रवणनयनवद्नन्नाणादिसंश्रितानां व्याधीनामुपश्मनार्थः, कायचिकित्सा नाम सेवाङ्मसंश्रितानां व्याधीनां ज्वररक्तपित्तशोषोन्मादापसारक्रष्टमेहातिसारादीनामुपश्मनार्थः, भूतविद्या नाम देवासुरगन्धवेयक्षरक्षःपितृपिशाचनागम्बाद्यपस्प्रचेतसां
शान्तिकर्मविष्ठहरणादिश्रहोपश्मनार्थः, कौमारभृत्यं नाम कुमारमरणधात्रीक्षीरदोपसंशोधनार्थं दुएस्तन्यग्रहसमुत्थिनां च व्याधीनामुपशमनार्थमः, अगदतन्त्रं नाम सप्कीटल्लामूषकादिद्प्विषव्यक्षनार्थं
विविधविपसंशोगोपश्मनार्थं चः, रसायनतन्त्रं नाम वयःस्थापनमार्थुमेधावलकरणं रोगापहरणसमर्थं चः वाजीकरणतन्त्रं नामाहण्दुएक्षीणशुकरेतसामाण्यार्यनप्रसादोपचयजनननिसत्तं प्रहर्षणजननार्थं च ॥ ६॥

शस्याङ्गविशेषात्र् शातुं प्रतिलक्षणं संक्षेपेणाह्—अथास्यस्यादि । एकमेकमङ्गं प्रति लक्ष-णानां समासः संक्षेपः प्रत्यकाङ्गलक्षणसमासः । तृणादीनां, तथा दुष्टवणस्य, तथाऽन्त-र्गत(भेशस्य)स्य उद्धरणार्थमिति प्रत्येकमुद्धरणशब्दः संवध्यते । दुष्टवणस्यान्तस्तृणाद्या-हरणार्थमित्यन्ये । षष्ट्या विधानिरिति द्विवणीयोक्तैरपतर्पणावै रक्षाविधानान्तैः; इत्थंभूतलक्षणे तृतीया । जतु प्रीवामूलं, जतुण उद्धवमूद्ध्वेजतु । प्राणादीत्यादिप्रहणान्छिरःकपालादिप्रह-णम् । उत्तरतन्त्रे प्रतिपादितकमप्राप्त्या ज्वरानन्तरमतीसारः पठितः, तस्यान्ते पाठोऽतिसा-रस्य सर्वाङ्गीणदोपार्व्यवाद्, अन्येपामि तन्मध्यपाठेन सर्वाङ्गीणदोषार्व्यवप्रतिपादना-ध्यतिकमं वदन्ति । शान्तिकमं विष्टहरणादिना प्रहाणां देवादीनामुपशमो यस्तदर्थः, यदि वा ग्रहृणं ग्रहो देवानामावेशस्तदुपशमार्थम् । दुष्टस्तन्यमहसमुत्यितानामिति दुष्टस्तन्यन

Figure 1: A page of the 1939 $Bh\bar{a}numat\bar{\iota}$ edition, showing the variant readings in the footnotes.

१ 'सर्वशरीरावस्थितार्नी व्याधीनां सुपश्चमकरणार्थ ज्वरश्चोफगुरमरक्तिपत्तोनमादापसार-भमेदातीसारादीनां च' इति सा.। १ 'देवदानव' शति सा.। १ 'विनायकनागग्रहोप-सृष्टचितसां' इति सा.। ४ 'विषयेगोपश्चमनार्थ' इति सा.। ५ 'श्चमाप्यायन' इति सा.। ६ 'सृणादीनां शस्यान्तानां' शति सु. ७ 'अन्ये तु तस्यान्ते पाठेन' इति पा०। ८ 'अहणाद्' इति सु.।

Evaluation

The main innovation of this publication was to present the only surviving part of the commentary on the *Suśrutasaṃhitā* by the great eleventh-century medical scholar Cakrapāṇidatta, namely the *Bhānumatī*.⁷³ A secondary purpose was to present the text of the *sūtrasthāna* as read in MS Kathmandu NAK 5-333, that had recently been brought to the editors' attention. In their judgement, the Kathmandu manuscript presented a text that was closer to what Cakrapāṇidatta had before him than the text according to Dalhaṇa. This was the first *Suśrutasaṃhitā* edition in which Ācārya used sigla to identify the sources from which variant readings were reported, so while it has limitations, it for the first time enables us to get some idea of origins of the text (see Figure 1).

Ācārya noted in his introduction that the manuscripts containing the Palhaṇa's commentary all came together with the root-text of the *Suśrutasaṃhitā*, and thus the main *Suśrutasaṃhitā* text reflected the readings chosen by Palhaṇa. But the manuscripts of the *Bhānumatī* contained the commentary alone, without the root-text, and had many explanations based on different readings of the root-text than those of Palhaṇa. In many of these cases it was hard to know what the text that Cakrapāṇidatta had before him. But Ācārya noted that Cakrapāṇidatta had a text before him that had much in common with the text of the Nepalese manuscript.⁷⁴

There is compelling evidence that Cakrapāṇidattas's *Bhānumatī* commentary once covered the whole text of the *Suśrutasaṇhitā*.⁷⁵ The loss of the rest of the work ranks amongst the greatest disasters in Āyurvedic literature. Remarkably, the whole *Bhānumatī* may still have existed in the early twentieth century. In 1903, Palmyr Cordier reported being privately informed of a complete copy of the work in a personal manuscript collection in Benares.⁷⁶

⁷³ HIML: IA, 374–375 and IB, 495–496.

⁷⁴ Su 1939: 3–4. See discussion by Klebanov (2021*b*: 7).

⁷⁵ HIML: IA, 375.

⁷⁶ Cordier 1903: 332.

The Manuscripts

Our edition results from considering the textual evidence of three manuscripts, all of which were preserved and most likely produced in Nepal, in Kathmandu valley, to be more precise. Klebanov (2021a: §2.1) furnishes a comprehensive description of the individual manuscripts, quotes and translates their colophons and thoroughly examines various problems involved in their interpretation. That is why we will present only the key data essential for the study of our edition in the present paper. In referring to the manuscripts, we use the sigla K, N and H, which correspond to the initial letters in the names of the libraries and collection where the respective bundles were discovered.

Siglum K: The MS has been preserved at the Kaiser Shamsher (KL) library in Kathmandu, accession number KL 699. It was microfilmed and catalogued by the NGMPP/ NGMCP as C 80-7.77 The MS comprises 152 palm-leaf folios that originally belonged to several different codicological units written by different scribes.⁷⁸ The folios are 53.5×4.4 cm in size and have two string holes. The text is written in the so-called transitional Gupta script, with six to eight lines per folio.⁷⁹ The MS is incomplete and contains a large part of the Suśrutasaṃhitā as well as the Sauśrutanighaṇṭu.80 The date stated in the colophon at the end of the compendium is verified for Sunday, April 13, AD 878. However, some controversy is involved in interpreting the exact roles of two persona mentioned in the same concluding remarks, someone Srī Harşacandra and Vaidya Vasuvarman. Klebanov (2021a: 16) thinks that the former "either sponsored the copying enterprise or wrote the manuscript himself" and that he subsequently "donated it to Vaidya Vasuvarman on the condition that he (Vasuvarman) would study the text and explain it to others. The second condition was that the manuscript should remain in the family and not

⁷⁷ See http://catalogue-old.ngmcp.uni-hamburg.de/mediawiki/index.php/C_80-7_Suśrutasaṃhitā (accessed on October 22, 2021).

⁷⁸ Bhattarai (2020: 46) and Klebanov (2021a: 11) agree that four to five scribes were involved in the manuscript's production.

Codicological features of the manuscript, such as the layout, peculiarities of the script, various ornamental and text-dividing symbols and many more, were scrutinized in Bhattarai (2020).

⁸⁰ See Klebanov (2021a: 11) for a detailed description of the content.

be given away either for sale or as a pawn. If the manuscript sat unused, it should be returned to Śrī Harṣacandra."81

Siglum N: This MS is kept at the National Archives Kathmandu (NAK), under accession number 1-1079 क. It was microfilmed twice by the NGMPP as A 45-5(1) and A 1267-11(2). The MS comprises 65 palmleaf folios, 56 × 5 cm in size, with two string holes each, and it is bundled together in a composite manuscript with at least one other medical work. The text is written in a variety of Newari script, with ca. seven lines per folio. Although the text contained in the MS does not cover the entire *Suśrutasaṃhitā* and breaks off abruptly in the second chapter of the śārīrasthāna, the actual MS, as a codicological unit, appears complete, that is, no leaf seems to be missing from the originally unitary artefact. Based on paleographic considerations, the MS can be dated tentatively to the 12th or 13th century.

Siglum H: The MS belongs to the historical collection of Hemarāja Śarman (fl. 1878-1953) and is currently kept at the NAK under accession number NAK 5-333. It is microfilmed twice by the NGMPP as B 29-19 and B 30-15, but the latter microfilm is incomplete. The MS comprises 435 palm-leaf folios, 34 × 5 cm in size, with one string-hole in the middle. It is written in a type of Newari script that is more recent than the one used in N, with approximately six lines per folio. The MS is exceptionally well-preserved and complete, containing the text of the *Suśrutasaṃhitā* as well as the *Sauśrutanighaṇṭu*. The final colophon identifies the scribe of the MS as Vaidya Amarasiṃhaka, son of Kamaladatta, and states the date on which he concluded the copying of the text. Both reading, that is, deciphering the actual characters, and interpretation of the concerned passage involve diverging opinions, all of which concur, however, in assigning the MS to the 16th century. Klebanov (2021a: 21–26) gives an analytical account of the

⁸¹ See Klebanov (2021a: 13–17) for a translation and a study of the colophon, as well as an exposition of different positions related to its interpretation.

⁸² See http://ngmcp.fdm.uni-hamburg.de/mediawiki/index.php/A_45-5_ (Suśrutasaṃhitā) (accessed on October 22, 2021)/

⁸³ See http://ngmcp.fdm.uni-hamburg.de/mediawiki/index.php/B_29-19_ Suśrutasamhitā (accessed on October 22, 2022).

views expressed in literature, considers further options and puts forward his understanding that the MS was completed on Sunday, July 29, AD 1543.

Palaeographical features

- śrita for śrta.
- yātri for yātr (Su.ka.1.63)
- punarṇṇavā (Su.ka.1.61)
- ś and s in KL 699.
- b and v in KL 699 and NAK 5-333.
- cha and ccha
- line-fillers
- n for n (punarnnavā)
- vyājī-kṛ for vājī-kṛ

Editorial Principles

Method

The data for the critical edition comes from the witnesses of the Nepalese version, which are MS KL 699, NAK 5-333 and NAK 1-1079. Diplomatic transcriptions of SS.1.16 of these manuscripts have been created by researchers of the Suśruta Project according to a subset of TEI Guidelines that has been formulated by Charles Li.⁸⁴ MS NAK 5-333 was transcribed first because its script is easy to read, the scans are clear, and it is the most complete of the manuscript witnesses. Then, MS KL 699 and MS NAK 1-1079 were transcribed.

The diplomatic transcripts were uploaded to Charles Li's platform Saktumiva, which automatically collates them. An electronic text of the vulgate of the *Suśrutasaṃhitā*, which was transcribed without the commentaries by Tsutomu Yamashita and Yasutaka Muroya on the basis of Ācārya's 1931 and 1938 Bombay editions, ⁸⁵ has also been included in the collation.

⁸⁴ These guidelines are at https://saktumiva.org/wiki/tei, accessed 20/10/2021.

⁸⁵ This e-text is available on the SARIT website; https://sarit.indology.info/susrutasamhita.xml?view=div, accessed 20/8/2021.

Saktumiva's automatic collation function standardises punctuation and orthographic variants according to filters which can be turned off or on. These filters enable the editors to ignore daṇḍas, numbers and puṣpikās in the transcripts, as well as orthographic variants, such as ba and va, certain germinated consonants, and visarga variants. On the basis of the automatic collation, Jason Birch created a provisional edition of SS.1.16, which the project's researchers read together at weekly seminars. Manuscript images were routinely checked to verify the transcripts, particularly when a reading was uncertain; the commentaries of Cakrapāṇidatta and Palhaṇa were read, and variant readings reported by these commentators were included in notes to the edition. Also, various reference books were consulted, such as the Nadkarni (1954) and V. Jośī and N. H. Jośī (1968) and Meulenbeld (HIML), to elucidate the meaning of technical terms and identify relevant information in other medical works.

An initial draft of the translation and many annotations were written by Dominic Wujastyk during the seminars as the Project researchers discussed the text's meaning. The transcripts, provisional edition and translation were uploaded to the project's repository at Github on a weekly basis. Therefore, the project's work has been publicly available as it evolves. The following software tools have been selected by Wujastyk for the procedures described above:

- 1. oXygen XML editor (which has plugins for Github and TEI, and can validate the code).
- 2. Saktumiva (a platform for producing and publishing critical editions of Sanskrit texts).
- 3. Quick Palaeographer (a browser-based tool for reading MS images and developing a catalogue of character shapes).
- 4. Filezilla (document transfer to Saktumiva).
- 5. Github (document sharing, security and versioning).
- 6. LaTeX (document preparation).
- 7. qdpm (project management).

Stemma

The data from transcripts collated by Saktumiva can be exported as a FASTA file and aligned according to characters, syllables or words by a program called Helayo. The resulting NEXUS file can be read by phylogenetics software to build a stemmatic tree.⁸⁶ This procedure was done with transcripts of several chapters of the Nepalese witnesses, and the results confirmed the editors' provisional stemmatic hypothesis that K and H are more closely related to one another than K and N.⁸⁷ Given the early date of K and the small number of other surviving witnesses of the Nepalese version, the relationship between the manuscripts at our disposal is reasonably clear and, in the case of SS.1.16, the manuscript data was largely confined to N and H owing to a missing folio of K. Rather than have to assess numerous variant readings from a large number of witnesses, the challenge of editing has been to repair the text where it has become corrupt in the few witnesses available to us.

The Edition and Apparatus

The critical edition of SS.1.16 in this article retains many of the peculiarities of MS KL 699 because the editors have endeavoured to present to the reader an archetype of the text that was transmitted by this ninth-century manuscript. Therefore, the Sanskrit has been standardised as minimally as possible and, although the text has been corrected and repaired wherever it was corrupt in the witnesses, it has not been normalized or conventionalized to the extent of many modern editions of Sanskrit works.

The editors have assumed that the authors of the Nepalese *Suśrutasaṃ-hitā* were familiar with Pāṇinian Sanskrit and, although there are some non-standard spellings and grammatical forms in the text, there are very few instances of hyper-Sanskritization, Buddhist-hybrid Sanskrit or Epic forms that would suggest that this assumption is unreasonable. Therefore, the editors of SS.1.16 have opted to retain some unusual features of the Sanskrit in MS KL 699 when they are grammatically correct. For example, in external *sandhi*, the class nasal is usually used at the end of a word instead of an *anusvāra* (e.g.,1.16.3, °vācanan dhātry°), although the *anusvāra* is sometimes used (1.16.15, *udakaṃ dhānyāmla*°). In most cases, the consonant following a *repha* is doubled, but this is not always the case. ⁸⁸ Since these

⁸⁶ This process is discussed in greater detail by Charles Li at https://chchch.github.io/sanskrit-alignment/docs/index.html#tree, accessed 21/8/2021.

⁸⁷ See section 'Features of the Manuscript Transmission' for further discussion of this.

⁸⁸ Examples of the germination of consonants are *karnṇa* (1.16.1 ff), *muhūrtta* (1.16.2), *pūrvva* (1.16.2), *gandharvva* (1.16.5), *°mūlair mmadhu* [°] (1.16.5), *vartti* (1.16.6) and *punar vvidhyet* (1.16.6). Examples where it does not occur in 1.16 are [°]*ārtham* (1.16.8,19),

inconsistencies seem inherent to the transmission of the text and may have even been authorial, the critical edition reflects them as they occur in K and, when the testimony of K is not available, the witness most similar to K, which is H.

The Nepalese manuscripts often have an <code>anusvāra</code> before a <code>daṇḍa</code> at the end of a sentence or verse. Whether these <code>anusvāras</code> should be changed to the consonant <code>m</code> is a moot question because there is no Pāṇinian concept of 'end-of-sentence' and his rules on <code>sandhi</code> are contingent on the close contact of sounds (<code>saṃhitā</code>). However, it is reasonable to assume that at the end of a verse, paragraph or sentence the speakers would have paused for breath or thought, so <code>sandhi</code> should be applied, in which case a final <code>anusvāra</code> or class nasal of the following consonant is changed to <code>m</code>. Nonetheless, this remains an assumption about how the text would be pronounced. Therefore, in a critical edition, inserting <code>daṇḍas</code> and changing <code>anusvāras</code> to <code>m</code> before them are subjective decisions by the editors. The scribal use of <code>daṇḍas</code> and <code>anusvāras</code> in the Nepalese manuscripts can be seen in the digital edition if one switches off the filters for ignoring <code>dandas</code> and final <code>anusvāra</code> variants.

Unconventional spellings and grammatical forms have been retained and noted in the annotations to the translation. However, the editors have corrected scribal errors and repaired corruptions in the transmitted text with conjectures wherever possible. Therefore, although the edition retains many of the peculiarities of the Nepalese manuscripts, it is not a diplomatic transcript or a hybrid of diplomatic and critical editing because the features of the transmitted text have been retained or changed deliberately, and the reasons for doing so are given in either the introduction or, in more specific cases, the annotations to the translation.

Printed Edition

[To be written when the printed edition of SS.1.16 is finalised]

Digital Edition

Instructions for reading the digital edition have been provided by Charles Li on Saktumiva. In brief, the reader is able to generate the apparatus by

 $kury\bar{a}t$ (1.16.16, 32), ° $p\bar{a}lir$ $vall\bar{u}ra$ ° (1.16.10); ° $p\bar{a}lir$ $vy\bar{a}yojimah$ (1.16.10) and $d\bar{\iota}rghaika$ ° (1.16.10).

choosing a base text and one or more of the other witnesses. The reader can also choose to hide or ignore in varying degrees TEI tags, punctuation and orthographical variants in the transcripts of the witnesses. On the right side of the text, the digital edition displays an apparatus that is negative in so far as the lemma and its witnesses are not included. This apparatus truncates variants wherever possible.

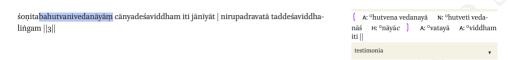


Figure 2: The digital edition of SS.1.16.3

For example, as seen in Figure 2, the apparatus for the highlighted words bahutvanivedanāyāṃ is on the right side between the purple square brackets. This entry means that the editors have chosen to read °bahutvanivedanāyāṃ, which is the reading of K, whereas A has °bahutvena nivedanayā, N °bahutveti vedanāś and H °bahutvanivedanāyāc. The final c in the reading of H is italicised because it has been marked by the transcriber as unclear.

A positive apparatus is available if one highlights with the cursor one or more words, and even entire passages or verses, and clicks on the collapsed menu icon. As seen in Figure 3, the positive apparatus of *bahutvanivedanāyāṃ* appears in a pop-up window in which the lemma and variants are aligned according to letters, and the variations are highlighted in yellow.

In both the negative and positive apparatuses of the digital edition, the reader must infer conjectures and corrections by the editors at the time of writing this article. Testimonia and notes are in the apparatus on the right side of the text.



śoṇitabahutvanivedanāyāñ cānyadeśaviddham iti jānīyāt | nirupadravatā taddel liṅgam $||\mathbf{3}||$

Figure 3: The digital edition of SS.1.16.3

The Translation

Sūtrasthāna, adhyāya 16

- 1 Now we shall expound the method for piercing the ear. 89
- 2 One may pierce a child's ears for the purpose of preserving and decorating. On renowned days, half days, hours and constellations during the first half of the sixth or seventh lunar month, the physician sits the boy, who has received a benediction (*kṛtamaṅgala*) blessings pronounced (*svastivācana*)⁹⁰ –, on the lap of a wet-nurse and pacifies him.⁹¹ Then, having pulled his ear with the left hand, he should use his right hand to pierce the ear straight through at a naturally occurring cleft.⁹² For a
- 89 The topic of piercing the ear (karnavyadha) is not discussed in the Carakasamhitā (HIML: IB, 326, n. 175), but it is mentioned in some texts that followed the Suśrutasaṃhitā, such as the Kaśāpyasaṃhitā (HIML: IIA, 30). Also, the instrument for piercing the ear is described in the *Aṣṭāngahṛdayasūtra* 1.26.26 (kunt-1902). In the versions of the text known to Dalhana (Su 1938: 76) and Cakrapānidatta (Su 1939: 125), the heading of this chapter is karnavyadhabandhavidhi ('the method of piercing and joining the ear'), instead of the Nepalese version's karnavyadhavidhi. The topic of karnabandha is discussed in passages 17-20 of the Nepalese version. However, it appears that only subsequent redactors reflected its importance by including it in chapter headings. The Nepalese version also omits the opening remark on Dhanvantari that appears in subsequent versions. For a discussion of the frame story in the Nepalese version, see Birch, Wujastyk, Klebanov, Parameswaran, et al. 2021. Dalhana (Su 1938: 76) and Cakrapāṇidatta (Su 1939: 125) state that only the ears of healthy people should be pierced, and they quote Bhoja to affirm this: 'When piercing the ears of children who are free of disease at these times, their ear flaps and apertures, as well as limbs, increase' (for the Sanskrit, see Su 1938: 76).
- 90 The syntax here is unclear. The expression *svastivācana* may have been a gloss inserted into the text at an earlier period to clarify *maṅgala*. But as it stands, it is not syntactically connected to the rest of the sentence. In the versions of 1.16.3 known to Cakrapāṇidatta (Su 1939: 126) and Palhaṇa (Su 1938: 76), the words are united in a compound that reads more naturally.
- 91 The versions of 1.16.3 known to Cakrapāṇidatta (Su 1939: 126) and Dalhaṇa (Su 1938: 76) have the additional compound kumāradharāṅke ('on the lap of one who holds the child') after dhātryaṅke. The gender of kumāradhara is made clear by Dalhaṇa's gloss 'a man who holds the child'. Also, both versions add bālakrīḍanakaiḥ pralobhya ('having enticed with children's toys') to indicate that the child should be tempted with toys to stay on the assistant's lap. According to Dalhaṇa on 1.16.3 (Su 1938: 76), the toys include replica elephants, horses, bulls and parrots. Dalhaṇa further mentions that others read bhakṣyaviśeṣair vā ('or by special treats') before bālakrīḍanakaiḥ.
- 92 The versions of 1.16.3 of Cakrapāṇidatta (Su 1939: 126) and Dalhaṇa (Su 1938: 76) add

- boy, do the right ear first; for a girl, do the left one. Use a needle on a thin ear; an awl $(\bar{a}r\bar{a})$ on a thick one.⁹³
- 3 If there is excess blood or pain one should know that it was pierced in the wrong place. The absence of side-effects is a sign that it has been pierced in the right place.⁹⁴
- In this context, if an ignorant person accidentally pierces a duct (*sirā*) there will be fever, burning, swelling (*śvayathu*), pain, lumps (*granthi*), paralysis of the nape of the neck (*manyāstambhā*), convulsions (*apatānaka*), headache or sharp pain in the ear.⁹⁵
- Having removed the wick (varti) in the hole because of the aggravation of humours or a culpable piercing, 96 one should smear it with a paste of the roots of barley, liquorice, Indian madder ($ma\tilde{n}jisth\bar{a}$), and the castor

Add reference in the fn for the article on samudāya

- ādityakarāvabhāsite to clarify that this naturally occurring cleft is illuminated by sunshine.
- palhaṇa on 1.16.3 (Su 1938: 76) clarifies that the awl is a shoe-maker's knife for piercing leather. He also cites the authority of "the notes of Lakṣmaṇa" (Lakṣmaṇaṭip-paṇaka) on the issue of the thickness of the needle. The Notes of Lakṣmaṇa is not known from any earlier or contemporary sources and was presumably a collection of glosses on the Suśrutasaṇḥitā that was available in twelfth-century Bengal. See Meulenbeld (HIML: IA, 386, and the footnotes for further literature).
- 94 At this point, MS Kathmandu KL 699 is missing a folio, so the rest of this chapter is constructed on the basis of witnesses MS Kathmandu NAK 5-333 and MS Kathmandu NAK 1-1079.
- This passage is significantly augmented in 1.16.4 of Cakrapāṇidatta's version (Su 1939: 126) and 1.16.5 of Palhaṇa's (Su 1938: 77) to outline the specific problems caused by piercing three ducts called *kālikā*, *marmikā* and *lohitikā*. In fact, the order of the problems mentioned in the Nepalese version has been retained in the other versions and divided between each duct. Cakrapāṇidatta's commentary on 1.16.4 (Su 1939: 126) cites several verses attributed to Bhoja on the problems caused by piercing these three ducts in the ear flap: 'Lohitikā, marmikā and the black ones are the ducts situated in the earflaps. Listen in due order to the problems that arise when they are pierced. Paralysis of the nape of the neck and convulsions, or sharp pain arise from piercing *lohitikā*. Pain and lumps are thought to arise from piercing *marmikā*. Piercing *kālikā* gives rise to swelling, fever and burning.'
- In addition to these reasons, 1.16.6 of Dalhaṇa's (Su 1938:77) adds kliṣṭajihmā-praśastasūcīvyadhāt ('because of piercing with a painful, crooked and unrecommended needle') and gāḍhataravartitvāt ('because of a wick that is too thick'). Dalhaṇa was aware of the reading in the Nepalese version because he notes in his commentary on 1.16.6 (Su 1938:77) that some read 'because of the accummulation of humours' rather than 'because of piercing with a painful, crooked and unrecommended needle or because of a wick that is too thick.' On the meaning of samudāya, see ?? and Meulenbeld 1992:1–5.

- oil tree (*gandharvahasta*), thickened with honey and ghee. When it has healed well, one should pierce it again.
- 6 One should treat the properly-pierced ear by sprinkling it with raw sesame oil. After every three days one should apply a thicker wick (*varti*) and sprinkle oil right on it.⁹⁷
- Once the ear is free from humours or side-effects, one should loosen it with a light dilator (*pravardhanaka*) in order to enlarge it.⁹⁸
- 8 A person's ear enlarged in this way can split in two, either as a result of the humours⁹⁹ or a blow. Listen to me about the joins (*sandhāna*) it can have.
- 9 Here, there are, in brief, fifteen ways of mending the ear flap. They are as follows: Rim-join (nemīsandhānakaḥ), Lotus-splittable (utpalabhedyaka), Dried Flesh (vallūraka), Fastening (āsaṅgima), Cheek-ear (gaṇḍakarṇa), Take away (āhārya), Ready-Split (nirvedhima), Multi-joins (vyāyojima), Door-hinge (kapāṭasandhika), Half door-hinge (ardhakapāṭasandhika), Compressed (saṃkṣipta), Reduced-ear (hīna-karṇa), Creeper-ear (vallīkarṇa), Stick-ear (yaṣṭīkarṇa), and Crow's lip (kākauṣṭha). 101

In this context, among these,

"Rim-join" (*nemīsandhānaka*): both flaps are wide, long, and equal.

"Lotus-splittable" (*utpalabhedyaka*): both flaps are round, long, and equal.

⁹⁷ The manuscripts support the reading *sthūlatarīm* that is either a non-standard form or a scribal error.

⁹⁸ Cakrapāṇidatta on 1.16.6 (Su 1939: 127) and Palhaṇa on 1.16.8 (Su 1938: 77) point out that the dilator can be made of wood, such as that of the prickly chaff flower ($ap\bar{a}marga$), the neem tree (nimba) and the cotton plant ($k\bar{a}rp\bar{a}sa$). Palhaṇa adds that it can also be made of lead ($s\bar{s}saka$) and should have the shape of the datura flower ($dhatt\bar{u}-rapuṣpa$).

⁹⁹ Dalhaṇa on 1.16.9 (Su 1938:77) notes that the word doṣa here can refer to either a humour, such as wind $(v\bar{a}ta)$, as we have understood it, or a disease generated from a humour.

¹⁰⁰ The Nepalese version uses the word <code>sandhāna</code> to refer to joining a split in an ear flap, which is consistent with the terminology in the verse cited above (8). However, 1.16.10 of <code>Dalhaṇa</code>'s version (Su 1938: 77) uses the term <code>bandha</code> here and at the very beginning of the chapter (i.e., 1.16.1) to introduce the topic of repairing the ear.

¹⁰¹ For an artist's impression of these different kinds of joins in the ear flap, see Majno 1975: 290 (reproduced as Figure 3.2 in Wujastyk 2003: 154).

"Dried flesh" (vallūraka): both flaps are short, round, and equal.

"Fastening" (āsaṅgima): one flap is longer on the inside.

"Cheek-ear" (gaṇḍakarṇa): one flap is longer on the outside. 102

"Take-away" ($\bar{a}h\bar{a}rya$): the flaps are missing, in fact, on both sides.

"Ready-split" (*nirvedhima*): the flaps are like a dais (*pīṭha*).

"Multi-joins" (*vyāyojima*): one flap is small, the other thick, one flap is equal, the other unequal.

"Door-hinge" (*kapāṭasandhika*): the flap on the inside is long, the other is small.

"Half door-hinge" (ardhakapāṭasandhika): the flap on the outside is long, the other is small.

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

¹⁰² For an artist's impression of this join, see Majno 1975: 291 (reproduced as Figure 3.3 in Wujastyk 2003: 155).

¹⁰³ Cakrapāṇidatta on 1.16.9–13 (Su 1939: 128–129) and Dalhaṇa on 1.16.10 (Su 1938: 77–78) provide examples of how the names of these joins describe their shapes. For example, the rim-join (nemīṣandhānaka) is similar to the join of the rim of a wheel (cakradhārā).

¹⁰⁴ Palhaṇa on 1.16.10 (Su 1938:77–78) mentions that some do not read the statement that only five are incurable, and they understand the causes of unsuccessful joins given below (i.e., heat, inflammation, suppuration and swelling) as also pertaining to the first ten when they do heal.

¹⁰⁵ The version of 1.16.11–13 known to Dalhana (Su 1938: 78) has four verses (śloka) at this point that are not in the Nepalese manuscripts. The additional verses iterate the types of joins required for ear flaps that are missing, elongated, thick, wide, etc.

A person wishing to perform any of these joins should therefore have supplies prepared according to the recommendations of the 'Preparatory Supplies' chapter. And in this regard, he should particularly gather decanted liquor (surāmaṇḍa), milk, water, fermented rice-water (dhānyāmla), and powdered earthenware crockery (kapālacūrna). 108

Next, having made the woman or man tie up the ends of their hair, eat lightly and be firmly held by qualified attendants, one considers the joins (bandha) and then applies them by means of cutting (chedya), splitting (bhedya), scarification (lekhya), or piercing (vyadhana). Next, he should examine the blood of the ear to know whether it is tainted (duṣṭa) or not. If it is tainted by wind, the ear should be bathed with fermented rice-water (dhānyāmla) and water; if tainted by choler, then cold water and milk should be used; if tainted by phlegm, then decanted liquor (surāmaṇḍa) and water should be used, and then he should scarify it again.

Then, arranging the join in the ear so that it is neither proud, depressed, nor uneven, one should make the join. Having seen that the blood has stopped, one should anoint it with honey and ghee, bandage each ear with cotton (*picu*) and gauze (*prota*), and bind it up with a thread,

All four verses were probably absent in the version of the $Su\acute{s}rutasamhit\bar{a}$ known to Cakrapāṇidatta. He cites the verses separately in his commentary, the $Bh\bar{a}numat\bar{\imath}$ (Su 1939: 128–129), introducing each one as 'some people read' (ke cit paṭhanti). However, in Trikamajī Ācārya's edition of the $S\bar{u}trasth\bar{a}na$ of the $Bh\bar{a}numat\bar{\imath}$, the root text is largely identical to the one commented on by Dalhaṇa (Su 1938), even in instances like this where Cakrapāṇidatta's commentary indicates that he was reading a different version of the $Su\acute{s}rutasamhit\bar{a}$.

- 106 Suśrutasaṃhitā 1.5 (Su 1938: 18–23), probably verse 6 especially, that lists the equipment and medications that a surgeon should have ready.
- 107 The reading in the Nepalese manuscripts of *viśeṣataś cāgropaharaṇīyāt* has been emended to *viśeṣataś cātropaharet* to make sense of the list of ingredients, which is in the accusative case. Also, the repetition of *agropaharaṇīyāt* in the Nepalese version suggests that its second occurrence, which does not make good sense here, is a dittographic error.
- 108 The term *kapālacūrṇa* is unusual. Dalhaṇa (Su 1938: 79) defines it as the powder of fragments of fresh earthen pots and Cakrapāṇidatta (Su 1939: 129) as the powder of earthenware vessels.
- 109 There are syntactic difficulties in this sentence. We have adopted the reading in Dalhaṇa's version (Su 1938: 78), which has *ca kṛtvā* following *suparigṛhītaṃ*. It is likely that a verb, such as *kṛtvā*, dropped out of the Nepalese transmission.

- neither too tightly nor too loosely. Then, the earthenware powder should be sprinkled on, and medical advice ($\bar{a}c\bar{a}rika$) given. And he should supplement with food as taught in the 'Two Wound' chapter.¹¹⁰
- One should avoid rubbing, sleeping during the day, exercise, overeating, sex, getting hot by a fire, or the effort of speaking.
- One should not make a join when the blood is too pure, too copious, or too thin. For when the ear is tainted by wind, then it is obstructed by blood (raktabaddha), unhealed and will peel. When tainted with choler, is becomes pinched ($g\bar{a}dha$), septic ($p\bar{a}ka$) and red. When tainted by phlegm, it will be stiff (stabdha) and itchy. It has excessively copious suppuration ($sr\bar{a}va$) and is sopha ($puffed\ up$). It has it has a small amount of wasted ($ks\bar{i}na$) flesh and it will not grow.
- When the ear is properly healed and there are no complications, one may very gradually start to expand it. Otherwise, it may be inflamed (saṃrambha), burning, septic or painful. It may even split open again.
- Now, massage for the healthy ear, in order to enlarge it. One should gather as much as one can the following: a monitor lizard (*godhā*), scavenging (*pratuda*) and seed-eating (*viṣkira*) birds, and creatures that live in marshes or water, fat, marrow, milk, and sesame oil, and white mustard oil. Then cook the oil with an admixture (*prativāpa*) of the following: purple calotropis (*arka*), white calotropis (*alarka*), country mallow (*balā*), strong Indian mallow (*atibalā*), country sarsaparilla (*anantā*), beggarweed (*vidāri*), liquorice (*madhuka*) and

¹¹⁰ Suśrutasamhitā 4.1 (Su 1938: 396–408).

^{111 1.16.17} of Þalhaṇa's version (Su 1938: 79) reads "impure" for the Nepalese "too pure," which would appear to make better medical sense. Emending the text to nāśuddha- for nātiśuddha- in the Nepalese recension would yield the same meaning as the Þalhaṇa's version.

¹¹² In his edition of *Suśrutasaṃhitā*, Ācārya (Su 1938:79 n. 1) includes in parentheses the following treatment for these conditions, which according to a footnote is not found in the palm-leaf manuscript he used: 'One should sprinkle it with raw sesame oil for three days and one should renew the cotton bandage after three days' (āmatailena trirātraṃ pariṣecayet trirātrāc ca picuṃ parivartayet).

¹¹³ For such classifications, see Zimmermann (1999) and Smith (1994).

^{114 1.16.19} of Palhaṇa's version (Su 1938:79) includes ghee (sarpis). However, Palhaṇa's remarks on 1.16.19 and Cakrapāṇidatta's on 1.16.18 (Su 1939: 130) indicate that they knew a version of this recipe (perhaps, similar to the Nepalese) that does not have ghee. Palhaṇa also notes that others simply read four oils, beginning with fat and without milk, whereas Cakrapāṇidatta says some read that it is made with four oils and milk.

- hornwort ($jalaś\bar{u}ka \rightarrow jalan\bar{l}ik\bar{a}^{115}$).¹¹⁶ This should then be deposited in a well-protected spot.
- The wise man who has been sweated should rub the massaged (*mardita*) ear with it. Then it will be free of complications, and will enlarge properly and be strong.¹¹⁷
- 16 Ears which do not enlarge even when sweated and oiled, should be scarified at the edge of the hole (*apānga*), but not outside it.¹¹⁸
- In this tradition, experts know countless repairs to ears. So a physician who is very intent (*suniviṣṭa*) on working in this way may repair (*yojayed*) them.¹¹⁹
- 18 If an ear has grown hair, has a nice hole, a firm join, and is strong and even, well-healed, and free from pain, then one can enlarge it slowly.¹²⁰
- Now I shall describe the proper method of repairing a severed nose. First, take from the trees a leaf the same size as the man's nose and hang it on him.
- 115 Ceratophyllum demersum, L. This name is not certain. In fact, Dalhana on 1.16.19 (Su 1938: 79) notes that some people interpret it as a poisonous, hairy, air-breathing, underwater creature.
- 116 The version of 1.16.19 known to Dalhaṇa (Su 1938:79) adds several ingredients to this admixture, including apāmārga, aśvagandhā, kṣīraśuklā, madhuravarga and payasyā. Also, it has vidārigandhā instead of vidāri. When commenting on 1.16.19, Dalhaṇa (Su 1938:79) notes that some do not read madhuravarga and payasyā. Therefore, there were probably other versions of this recipe with fewer ingredients, as seen in the Nepalese version.
- 117 For these aims (i.e., healing and enlarging the ear), the text known to Dalhana (Su 1938:79) has an additional verse and a half describing an ointment for rubbing the ear (*udvartana*) and sesame oil (*taila*) cooked with various medicines for massage. Cakrapāṇidatta (Su 1939:131) does not comment on these verses, nor verse 15 of the Nepalese version, and so the version of the *Suśrutasaṃhitā* known to him may not have included them.
- 118 Dalhaṇa's version of 1.16.23 adds another hemistich that states more explicitly that the scarification should not be done on the outside of hole as it will cause derangement.
- 119 After verse 17, the 1938 edition of Ācārya (Su 1938:80) has in parentheses nineteen verses on diseases of the ear lobes, treatments and complications. It is possible that these verses were in some of the witnesses used by Ācārya to construct the text as they occur in other manuscripts, such as MS Hyderabad Osmania 137-3 (b). However, Cakrapāṇidatta (Su 1939:132) and Palhaṇa (Su 1938:80) state that some read about the diseases of the ear lobes in this chapter whereas others read about them in the chapter on various treatments (*miśrakacikitsa*) (SS 5.25), which does indeed begin with a discussion of the disease *paripoṭa*. Palhaṇa goes on to say that some believe that these verses were not composed by sages and, therefore, do not read them.
- 120 The order of verses 17 and 18 are reversed in Dalhana's version (Su 1938: 80).

- Next, having cut a slice of flesh $(vadhra)^{121}$ with the same measurements off the cheek, the end of the nose is then scarified. Then the diligent (apramatta) physician, should quickly put it back together so that it is well joined $(s\bar{a}dhubaddha)$.
- Having carefully observed that it has been well sown up, two tubes should be fixed in place. Then, having lifted them up, the powder of sappanwood (pattāṅga), liquorice and Indian barberry. Should be applied to it.

añjana

- The wound should be covered properly with cotton (picu) and should be moistened repeatedly with sesame oil. Ghee should be given to the man to drink. His digestion being complete, he should be oiled and purged in accordance with the instructions specific to him.¹²⁷
- And once healed and really come together, what is left of that slice of flesh (vadhra) should then be trimmed. If it is reduced ($h\bar{\imath}na$), however, one should make an effort to stretch it, and one should make its overgrown flesh smooth.¹²⁸
 - 121 The version of 1.16.28b known to Palhaṇa (Su 1938: 81) reads bound, connected (*bad-dham*) instead of slice of flesh (*vadhra*). This is a critical variant from the surgical point of view. If the slice remains connected, it will have a continuing blood supply. This is one of the effective techniques that so astonished surgeons witnessing a similar operation in Pune in the eighteenth century (see Wujastyk 2003: 67–70).
- 122 Or 1.16.20 could be mean, '... off the cheek, it is fixed to the end of the nose, which has been scarified.' Unfortunately, the Sanskrit of the Nepalese version is not unambiguous on the important point of whether or not the flap of grafted skin remains connected to its original site on the cheek. However, Dalhana (Su 1938: 81) clarifies the meaning of the vulgate here by stating that one should supply the word 'flesh' when reading 'connected,' thus indicating that he understood the flesh to be connected to the face.
- 123 Dalhaṇa notes that the two tubes should be made of reed (nala) or the stalk of the leaf of castor oil plant (eraṇḍapatranāla) (on 1.16.21 (Su 1938: 81)). They should not be made of lead or betel nut because the weight will cause them to slip down.
- 124 The Sanskrit term *unnāmayitvā* in 1.16.21 is non-Pāṇinian.
- 125 Caesalpinia sappan, L. For *pattāṅga* there are manuscript variants *pattrāṅga* (MS Kathmandu NAK 5-333) and *pattaṅga* (MS Kathmandu NAK 1-1079). Also, MS Kathmandu KL 699 (f. 14r:1) has *pattrāṅga* in a verse in 1.14 (cf. 1.14.36 (Su 1938: 66)). The text known to Dalhaṇa has *pataṅga* (1.16.29 (Su 1938: 81)) and this term is propagated in modern dictionaries.
- 126 Berberis aristata, DC. Dalhana understands it as elixir salve (rasāñjana) (Su 1938: 81).
- 127 The expression *svayathopadeśa* is ungrammatical but supported in all available witnesses.
- 128 Palhana accepts a verse following this, which points out that the procedure for joining

the nose is similar to that of joining the lips without fusing the ducts ($Su\ 1938:81$). He notes that earlier teachers did not think this statement on the nose and lips was made by sages, but includes it because it was accepted by Jejjaṭa, Gayadāsa and others. However, Cakrapāṇidatta does not comment on this additional verse, which suggests that either he did not know of it or was not inclined to accept it ($Su\ 1939:133$).

Abbreviations

Ah 1939 Kuṃṭe, Aṇṇā Moreśvara, Navare, Kṛṣṇaśāstrī, and Parādkar,

Hariśāstrī (1939) (eds.), श्रीमद्वाग्भटविरचितम् अष्टाङ्गहृदयम्, श्रीमद्ररुणदत्तविरचितया सर्वाङ्गसुन्दराख्यया व्याख्यया, हेमाद्रिप्रणीतया आयुर्वेदरसायनाह्वया टीकया च समुल्लसितम् = The Astāngahṛidaya (6th edn., Muṃbayyām: Nirṇayasāgara Press), ark:/13960/t3tt6967d.

Anup Anup Sanskrit Library (n.d.).

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9069801248.

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

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Glossary

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Todo list

see my comments in the input file	5
grafted skin had to be connected. And this is not clear in the	
mūla	6
new paragraph?	8
known as	8 8
[], that is, a less easily understood, []	0
I'm not too sure of the meaning of the last phrase. Is 'invoking	
this principle' a reason for these variants being likely closer to the original? Maybe you mean something like, [] text, which	
suggests it was closer to the original according to the principle	
of lectio difficilior potior.	8
I'd drop the 'not just because' in the previous sentence. If you	O
retain it, you need something at the beginning of the next sen-	
tence to link to it, such as [not just because]. On the contrary	
[]. Both reasons are important, so you could just say, many	
of these variants are likely to be closer to the original for two	
reasons. Firstly, []. Secondly and more importantly, []	8
an internally []	8
This is not clear. I think you mean to say that the Nepalese mss	O
attest to a hyparchetype rather than the archetype of the <i>Suśru</i> -	
tasaṃhitā. Our use of emendations and corrections is not proof	
of this, because these methods are needed whether we are con-	
structing an archetype or hyparchetype. Signs of past redactors	
editing the text is possible proof (and do you have refs or ex-	
amples?) but such signs might also be the result of an author's	
attempt to compile older materials. The point you make below	
about the colophons strikes me as more of a scribal issue rather	
than authorial one	9
This is a complicated sentence. It might be better to use semi-	,
colons, e.g., [] sequence; [] frame story; [] of the text;	
[]	11

You could save repetition by placing this sentence before 'The discussion of the textual variant in the second case study [] and change this sentence to 'The discussion of the textual variant in the list of vital energies also recourses [] do you mean to say that Gayadāsa has text-external evidence? That how it sounds. Perhaps, omit the phrase. this study? new paragraph? the referent of this is not so clear. 'this alternative reading? [] suggesting that some of the readings accepted by D were ancient, if not original. (?). Perhaps, Dr Madhu could add a comment on whether these additional ingredients would change the effects of the treatment in any significant way? refs? Add reference in the fn for the article on samudāya anjana.	11 11 12 12 12 12 19 32 36 42