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

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Draft of 10th November 2021

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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] The study of this work has yielded rich historical discoveries, for example 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 (HIML: IA, 203–389).

In January 2007, a previously unknown manuscript of the *Suśrutasaṃhitā* was brought to scholarly attention (Dimitrov and Tamot 2007). 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; 2021*a*) 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 Ḍalhaṇa (*fl.* twelfth century CE), the latter of which has formed the basis of modern printed editions, such as those of Trivikramji Acharya and others (Su 1915; Su 1938; P. V. Sharma 1999–2001).

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).[2] This chapter is important in the history of

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1   A selection of prominent contributions includes: Hoernle 1897; 1906; 1907; Strauss 1934; Singhal et al. 1972–82; Sharma 1975; Râyt

 et al. 1980; Adriaensen et al. 1984; Yano 1986; Meulenbeld 1999–2002; Sharma 1999–2001; Valiathan 2007.

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

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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 Ḍalhaṇa, 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 Ḍalhaṇa'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.[3] 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.[4] 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.[5] With the *Suśrutasaṃhitā* we find ourselves in the presence of something quite different and more developed, in which the body was studied specifically for medical and surgical purposes.[6] 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

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3   Zysk 1985: 70–71.

4   Malamoud 1996.

5   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.

6   Zysk 1986.

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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.[7] 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.

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'.[8] 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.[9]

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).[10] This fascinating technique is certainly old in South Asia, having been witnessed by travellers from Marco Polo in the seventeenth century onwards.[11] Many witnesses, including the most famous, Cruso and Findlay,[12] describe an operation that differs from *Suśrutasaṃhitā* 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

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

8   Majno 1975: 291.

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

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

11 Manucci 1907–8: ii.301.

12 Longmate 1794: 883, 891 f.

follows *Suśrutasaṃhitā* exactly in taking flesh from the cheek, not the forehead.[13]

As noted by Meulenbeld, none of the known commentators – Jejjaṭa, Gayadāsa, Cakrapāṇi or Ḍalhaṇa – explained the technique in any detail beyond lexical glosses.[14] 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 barber-surgeons? 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 Ḍalhaṇa –discussed in fn 113– which indicates that he knew the grafted skin had to be connected. And this is not clear in the mūla.

The Sanskrit Text

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 *Suśrutasaṃhitā*. The primary rationale behind using this designation was outlined in Klebanov (2021*a*: 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

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13 Thorburn 1876: 352–3.

14 HIML: IB, 328. Ḍalhaṇa 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)). Ḍalhaṇa's variant bears a resemblance to the description of the operation given in printed editions of the *Aṣṭāṅgahṛdayasaṃhitā* (Ah Utt.18.59–65 (Ah 1939: 841)).

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 (2021*b*) 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; 2021*b*) has systematically compared the concerned textual excerpts with four printed editions, alternative readings (*pāṭha*s) reported by several commentators, parallel passages in other texts, and, only sporadically, with a few additional manuscripts of the *Suśrutasaṃhitā*. This analysis demonstrates that the text of the *Suśrutasaṃhitā* 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 *Suśrutasaṃhitā*, NAK 1-1146,[15] 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 *Suśrutasaṃhitā*and 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.

Our research group builds upon the above hypothesis about the exist-

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15   See   http://ngmcp.fdm.uni-hamburg.de/mediawiki/index.php/A_224-9_
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ence 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 Ḍalhaṇa 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 Ḍalhaṇa) into the notes of the edition and some annotations of the translation.

The current paper and several earlier publications[16] 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 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'.

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

Cakrapāṇidatta and Ḍalhaṇa's Versions

The commentaries of Cakrapāṇidatta and Ḍalhaṇa, called the *Bhānumatī* and *Nibandhasaṅgraha* respectively, are based on similar versions of the *Suśrutasaṃhitā*, both of which are significantly different to the Nepalese version. Ḍalhaṇa 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 Ḍalhaṇa.[17] 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, Ḍalhaṇa 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 Ḍalhaṇa. Although it 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 *Nibandhasaṅgraha* (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, Cakrapāṇidatta does not introduce, cite or comment on the same verses as Ḍalhaṇa (SS.1.16.20–22ab, Su 1938: 79), and yet the first of the verses commented on by Ḍalhaṇa appears in the root text of Ācārya's edition of the *Bhānumatī* (SS.1.16.19, Su 1939: 130),

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17 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).

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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 Ācārya includes a verse in parenthesis that was commented on by Ḍalhaṇa (SS.1.16.32, Su 1938: 81) but not by Cakrapāṇidatta. It appears that the manuscript on which Ācārya's edition of the *Bhānumatī* was based does not include the root text.[18] 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 Ḍalhaṇa's. For example, 1.16.5 of the Nepalese version begins with the compound *doṣasamudayāt* whereas the version known to Ḍalhaṇa (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 Ḍalhaṇa 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, Ḍalhaṇa (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, Ḍalhaṇa (Su 1938: 5) notes the variant reading *ṣaṣṭyā vidhānaiḥ*, which is not in his root text but evidently was in Cakrapāṇidatta'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

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18 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.

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 (*prāṇa*s), mentioned in *śārīrasthāna* 4. The list of skin lesions exemplifies a case where the text of the *Suśrutasaṃhitā* transmitted in the Nepalese MSS is internally more coherent than that commented on by Ḍalhaṇa, 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 conjecture that corresponds to the reading of the Nepalese version.[19] 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 *Suśrutasaṃ-*

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19   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 vari-

hitā 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.

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 Ḍalhaṇa's version of the text.

The following detailed comparison of 1.16 of the Nepalese version with Ḍalhaṇa'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 Ḍalhaṇa. In this particular case, twenty-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 *Nibandhasaṅgraha* (Su 1938: 80) was known by Ḍalhaṇa. These verses cover additional diseases of the ear lobes, as well as their treatment and complications. Although Ḍalhaṇa 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,[20] and Ḍalhaṇa's comments prompted him to

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

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ant.

20 Ācārya (Su 1938: 80) does not state that these verses were absent in some or all of his

| Nepalese version	Ḍalhaṇa's version
1	1
–	2
2–9	3–10
–	11–14
10–15	15–20
–	21–22ab
16	22cd–23ab
–	23cd–24
–	25
17	26
–	26.1-19
18	–
19–23	27–31
–	32

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

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 Ḍalhaṇa'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

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).

redaction of other chapters of the *Suśrutasaṃhitā*.

Apart from the addition of verses, the redacting of the version known to Ḍalhaṇa 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,[21] sandhi,[22] and verbal forms,[23] as well as interventions to simplify and clarify syntax,[24] which often involved splitting compounds.[25] In some instances, these changes improved the grammar,[26] or altered the meaning.[27] However, some prefixes of verbal forms,[28] case endings,[29] and indeclinables were changed for less apparent reasons.[30] There is also a tendency to replace uncommon words with generic ones,[31]

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21 For example, *pattāṅga* (SS.1.16.21) → *pataṅga* (1.16.29, Su 1938: 81). For more information on this, see the relevant footnote to the translation.

22 or example, *°hastena ṛju* (SS.1.16.2) → *°hastena rju* (1.16.3, Su 1938: 76).

23 For example, *unnāmayitvā* (SS.1.16.21) → *prānnamya* (1.16.29, Su 1938: 81); *avacūrṇayīta* (SS.1.16.21) → *upaharet* (1.16.29, Su 1938: 81).

24 For example, *śoṇitabahutvanivedanāyāṃ cānyadeśaviddham iti jānīyāt | nirupadravatā taddeśaviddhaliṅgam |* (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).

25 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).

26 For example, *surāmaṇḍakṣīram* (SS.1.16.10) → *surāmaṇḍaṃ kṣīram* (1.16.15, Su 1938: 78).

27 For example, *kṣīṇālpamāṃsaḥ* (SS.1.16.12) → *kṣīṇo 'lpamāṃsaḥ* (1.16.17, Su 1938: 79).

28 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).

29 For example, *māse* (SS.1.16.2) → *māsi* (1.16.3, Su 1938: 76).

30 For example, *api* (SS.1.16.13) → *vā* (1.16.18, Su 1938: 79); *ca* (SS.1.16.16) → *tu* (1.16.23, Su 1938: 79); *tu* (SS.1.16.18) → *ca* (1.16.25, Su 1938: 80).

31 For example, *mrakṣayet* (SS.1.16.15) → *yojayet* (1.16.20, Su 1938: 79); *nahyet* (SS.1.16.21) → *baddhvā* (1.16.29, Su 1938: 81).

add indeclinables,[32] omit the verb to be at the end of sentences,[33] and introduce verses after a prose passage with the phrase *bhavati cātra*.[34]

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* with *bandha* in prose passages.[35] 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.[36]

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 1992: 1385, **moni-sans**) or a slice of bacon (**moni-sans**), the latter of which is more indicative of its meaning in the Nepalese version. This word was written out of subsequent versions,[37] 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 *Aṣṭāṅgahṛdayasaṃhitā* (Ah Utt.18.62 (Ah 1939: 841)) in the context of rhinoplasty, so it likely to be the correct reading in the Nepalese version.

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32 For example, [absent] (SS.1.16.6) → *ca* (1.16.7, Su 1938: 77); [absent] (SS.1.16.10) → *tatra* (1.16.15, Su 1938: 78); [absent] (SS.1.16.12) → *api* (1.16.17, Su 1938: 79).

33 The words *bhavati* or *bhavanti* are omitted four times in Ḍalhaṇa's version (1.16.10 (twice), 1.16.17 and 1.16.18, Su 1938: 77, 79).

34 For example, [absent] (SS.1.16.11) → *bhavati cātra* (1.16.16, Su 1938: 79).

35 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)

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

37 *vadhram* (SS.1.16.20) → *baddham* (SS.1.16.28, Su 1938: 81) and *tadvadhraśeṣaṃ* (SS.1.16.23) → *tad ardhaśeṣaṃ* (SS.1.16.31, Su 1938: 81).

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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,[38] and phrases added to elaborate on diseases and treatments.[39] 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 pierced ear should be removed because of aggravated humours or a culpable piercing whereas the version known to Ḍalhaṇa (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 Ḍalhaṇa's version have additional characteristics,[40] and a list of four symptoms associated with incurable joins in the Nepalese version (SS.1.16.19) was increased to six in Ḍalhaṇa'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 Ḍalhaṇa (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.[41]

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

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

40 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).

41 In Ḍalhaṇa'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 Ḍalhaṇa.

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.[42] 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 and SS.1.16.18 in the Nepalese version to 1.16.26 and 1.16.25, respectively, in Ḍalhaṇa'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 Ḍalhaṇa's version (Su 1938: 76), which contains a statement that the physician should insert a wick of cotton after the ear has been pierced.[43] 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 Ḍalhaṇa's version elucidates the role of the wick in the procedure of piercing the ear.

A similar clarification occurs in 1.16.18 of Ḍalhaṇa'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

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42 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 sūtreṇāv-abadhya* (SS.1.16.9) → *sūtreṇānavagāḍhaman atiśithilaṃ ca baddhvā* (1.16.10, Su 1938: 77); *pūrvan dakṣiṇaṃ kumārasya vāmaṅ kanyāyāḥ | pratanuṃ sūcyā bahalam ārayā* (SS.1.16.2) → *pratanukaṃ sūcyā bahalam ārayā | pūrvaṃ dakṣiṇaṃ kumārasya vāmaṅ kanyāyāḥ* (1.16.3, Su 1938: 76).

43 For example, [absent] (SS.1.16.2) → *picuvartiṃ praveśayet* (1.16.3, Su 1938: 76).

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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 Ḍalhaṇa's version, the treatment is reiterated at 1.16.18.

In Ḍalhaṇa'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 Ḍalhaṇa's version (1.16.7, Su 1938: 77) the recipe was rewritten to include sesame seeds.[44] 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. Ḍalhaṇa's version (1.16.7, Su 1938: 77) of the admixture has five additional ingredients, namely, prickly chaff-flower (*apāmārga*), Withania (*aśvagandhā*), giant potato (*kṣīraśuklā*), the 'sweet' savour (*madhuravarga*)[45] and 'milk flower' (*payasyā → vidāri*[46]). It also has beggarweed (*vidārigandhā*) instead of milk flower (*vidāri*).[47] 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.

The Edition

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 (2021*a*: §2.1) furnishes a comprehensive description of the individual manuscripts, quotes and

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

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

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

46 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.).

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

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.[48] The MS comprises 152 palm-leaf folios that originally belonged to several different codicological units written by different scribes.[49] 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.[50] The MS is incomplete and contains a large part of the *Suśrutasaṃhitā* as well as the *Sauśrutanighaṇṭu*.[51] 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 Śrī Harṣacandra and Vaidya Vasuvarman. Klebanov (2021*a*: 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 be given away either for sale or as a pawn. If the manuscript sat unused, it should be returned to Śrī Harṣacandra."[52]

Siglum N: This MS is kept at the National Archives Kathmandu (NAK), under accession number 1-1079 ka. It was microfilmed twice by the

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

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

50 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).

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

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

NGMPP as A 45-5(1) and A 1267-11(2).[53] The MS comprises 65 palm-leaf 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.[54] 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 (2021*a*: 21–26) gives an analytical account of the 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 śṛta.
- yātri for yātṛ (Su.ka.1.63)

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

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

- 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
- ṇ for n (punarṇṇavā)
- vyājī-kṛ for vājī-kṛ

The Printed Editions

The careful survey of printed editions of the *Suśrutasaṃhitā* by Meulenbeld lists no fewer than 44 entries.[55] 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.[56]

The Vulgate

The great ayurvedic scholar Yādavaśarman Trivikrama Ācārya produced three successive editions of the *Suśrutasaṃhitā* with the commentary of Ḍalhaṇa, 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.[57] 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.[58] These sources are described as follow, with an overview in Table 2.

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55 HIML: IIB, 311–314.
56 Zysk 1984: E.g., HIML: IIB, 314–315.
57 See also the study of these editions by Klebanov (2021*a*: §1.2) and Wujastyk (2013: 143–144).
58 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 1915 edition

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

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 *śārīrasthāna*.[59]
5 Puṇe, BORI library. With the *Nibandhasaṅgraha*. Complete. With some damaged folia.
6 Bombay, Asiatic Society. Incomplete.[60]
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 *Suśrutasandīpanabhāṣya* by Professor Hārāṇacandra Cakravārtti. Complete work. This is the 1910 Calcutta edition numbered "t" by Meulenbeld (HIML: IB, 312).[61]
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).[62]

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59 Not one of the three MSS of the *śārīrasthāna* described in H. D. Sharma 1939.
60 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."
61 Bhaṭṭācārya 1910–7.
62 Sena et al. 1886–93.

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

| edition | 1915 | | | 1931 | | | | | | | | | 1938 | | |
source	1	2	3	1	2	3	4	5	6	7	8	9	1	2	3
sthāna															
sū.	●							●	?		○	○[63]	●		●
ni.	●			●				●	?		○		●	●	●
śā.	●				●	●	●	●	?		○		●		●
ci.		●						●	?	●	○		●		●[64]
ka.	●							●	?		○		●		
utt.		●	●	●				●	?		○				

The sources of the 1938 edition

1 Gwalior, from the library of my great friend Paṃ. Rāmeśvaraśāstrin Śukla. Covers the *sūtra, nidāna, śārīra, cikitsā and kalpasthāna*s.
2 Bikaner, from the library of the Royal Palace, supplied by Paṃ. Candraśekharaśāstrin. Contains the commentary *Nyāyacandrikāpañjikāvyākhyā* by Gayadāsa. Covers the *nidānasthāna*. This is almost certainly MS Bikaner Anup 4390.[65]
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 **tā** for **tālapatrapustake**.

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63 Covers chapters 1–43 only.
64 Covers chapters 1–9 only.
65 See Dominik Wujastyk, "MS Bīkāner AnupLib 4390." *Pandit*. <http://panditproject.org/entity/108068/manuscript>.

Evaluation

Estimates show that there are approximately 230 extant manuscript witnesses for the *Suśrutasaṃhitā*.[66] 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 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. Ācārya 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, Ācārya'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.[67] 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.[68] Perhaps the editors only received collations for this portion of the manuscript and did not

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

67 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.

68 Su 1938: 22.

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know that it was a witness for the whole work.

The 1939 edition

In 1939, Yādavaśarman Trivikrama Ācārya and Nandakiśora Śarman co-edited an edition of the *sūtrasthāna* of the *Suśrutasaṃhitā* that was published by the Swami Laxmi Ram ayurvedic centre in Jaipur, and printed at the famous Nirṇayasāgara Press in Mumbai (see Fig. 1).[69] 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 **mu** for *mudrita*.[70]
2. A manuscript in the India Office Library library provided through the Bhandarkar Oriental Research Institute in Pune.[71] This manuscript covered the *Bhānumatī* b up to the end of the *sūtrasthāna*. The siglum was **ha** for **hastalikhita**.[72]

For the Suśrutasaṃhitā

1. A palm leaf manuscript from Hemarājaśarman's personal library.[73] The siglum was **tā** for **tāḍapatra**.
2. His own published edition. The siglum was **ḍa** for **ḍalhaṇasaṃmataḥ pāṭhaḥ**.[74]

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69 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

70 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.

71 At this time, manuscripts from Britain were routinely lent to scholars in India and vice versa.

72 Wujastyk 2021
MS London BL H. T. Colebrooke 908 (PanditProject #109978, consulted on July 03, 2021).

73 I.e., MS Kathmandu NAK 5-333.

74 Su 1938. It is noteworthy that Ācārya refers to his 1938 edition as representing "the Ḍalhaṇa recension."

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चरके—"लाभोपायो हि शस्त्राणां रसादीनां रसायनम्" (च. चि. अ. १ पा. १)।
पारिशेष्याद्वाजीकरणत्वम् । अवाजिनं वाजीकुर्वन्ति येन तद्वाजीकरणम् । 'अन्येषामपि
दृश्यते' (पा. अ. ६।३।१३७) इति दीर्घत्वम् । येन वाऽऽर्थं स्त्रीषु व्यज्यते तद्वाजी-
करणम् । तदुक्तं चरके—"येन नारीषु सामर्थ्यं वाजिवल्लभते नरः । व्रजेच्चाप्यधिकं येन
वाजीकरणमेव तत्" (च. चि. अ. २, पा. ४) इति ॥ ५ ॥

अथास्य प्रत्येकाङ्गलक्षणसमासः—तत्र, शल्यं नाम विविधतृणकाष्ठ-
पाषाणपांशुलोहलोष्ट्रास्थिबालनखपूयास्रावदुष्टव्रणान्तर्गर्भशल्योद्धरणा-
र्थं षष्ठ्या विधानैः, यन्त्रशस्त्रक्षाराग्निप्रणिधानव्रणविनिश्चयार्थं च; शा-
लाक्यं नामोर्ध्वजत्रुगतानां श्रवणनयनवदनघ्राणादिसंश्रितानां व्याधी-
नामुपशमनार्थं; कायचिकित्सा नाम सर्वाङ्गसंश्रितानां व्याधीनां ज्वर-
रक्तपित्तशोषोन्मादापस्मारकुष्ठमेहातिसारादीनामुपशमनार्थं; भूत-
विद्या नाम देवासुरगन्धर्वयक्षरक्षःपितृपिशाचनागग्रहाद्युपसृष्टचेतसां
शान्तिकर्मबलिहरणादिग्रहोपशमनार्थं; कौमारभृत्यं नाम कुमारभर-
णधात्रीक्षीरदोषसंशोधनार्थं दुष्टस्तन्यग्रहसमुत्थितानां च व्याधीनामुप-
शमनार्थम्; अगदतन्त्रं नाम सर्पकीटलूतामूषकादिदष्टविषव्यञ्जनार्थं
विविधविषसंयोगोपशमनार्थं च; रसायनतन्त्रं नाम वयःस्थापनमायुर्मे-
धाबलकरणं रोगापहरणसमर्थं च; वाजीकरणतन्त्रं नामाल्पदुष्टक्षीणशु-
ष्करेतसामाप्यायनप्रसादोपचयजनननिमित्तं प्रहर्षणजननार्थं च ॥ ६ ॥

शल्याङ्गविशेषान् ज्ञातुं प्रतिलक्षणं संक्षेपेणाह—अथास्येत्यादि । एकमेकमङ्गं प्रति लक्ष-
णानां समासः संक्षेपः प्रत्येकाङ्गलक्षणसमासः । तृणादीनां, तथा दुष्टव्रणस्य, तथान्तः-
गर्त(भेंचस्य)स्य उद्धरणार्थमिति प्रत्येकमुद्धरणशब्दः संबध्यते । दुष्टव्रणस्यान्तस्तृणाद्या-
हरणार्थमिलन्ये । षष्ठ्या विधानैरिति द्विवणीयोक्तैरपतर्पणादौ रक्षाविधानान्तैः; इत्थंभूतलक्षणे
तृतीया । जतु श्रीवामूलं, जतुन ऊर्ध्वमूर्ध्वेजतु । प्राणादीलादिग्रहणाच्चिरःकपालादिग्रह-
णम् । उत्तरतन्त्रे प्रतिपादितक्रमप्राप्या ज्वरानन्तरमतीसारः पठितः, तस्यान्ते पाठोऽतिसा-
रस्य सर्वाङ्गीणदोषारब्धत्वात्, अन्येषामपि तन्मध्यपाठेन सर्वाङ्गीणदोषारब्धत्वप्रतिपादना-
ल्यतिक्रमं वदन्ति । शान्तिकर्म बलिहरणादिना ग्रहाणां देवादीनामुपशमो यस्तदर्थं; यदि
वा ग्रहणं ग्रहो देवानामावेशस्तदुपशमार्थम् । दुष्टस्तन्यग्रहसमुत्थितानामिति दुष्टस्तन्येन

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१ 'सर्वशरीरावस्थितानां व्याधीनामुपशमकरणार्थं ज्वरश्रोफ्ग्ल्मरक्तपित्तोन्मादापसार-
प्रमेहातीसारादीनां च' इति सा. । २ 'देवदानव॰' इति ता. । ३ '॰विनायकनागग्रहोप-
सृष्टचेतसां' इति ता. । ४ '॰विषवेगोपशमनार्थं' इति ता. । ५ 'शुक्राप्यायन॰' इति ता. ।
६ 'तृणादीनां शल्यान्तानां' इति मु. ७ 'अन्ये तु तस्यान्ते पाठेन' इति पा॰ । ८ 'ग्रहणाद्'
इति मु. ।

Figure 1: A page of the 1939 *Bhānumatī* edition, showing the variant read-
ings in the footnotes.

3. Hārāṇacandra Cakravarti's published edition with his own commentary.[75] The siglum was **hā**.

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*.[76] 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 Ḍalhaṇa. 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 Ḍalhaṇa's commentary all came together with the root-text of the *Suśrutasaṃhitā*, and thus the main *Suśrutasaṃhitā* text reflected the readings chosen by Ḍalhaṇa. 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 Ḍalhaṇa. 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.[77]

There is compelling evidence that Cakrapāṇidattas's *Bhānumatī* commentary once covered the whole text of the *Suśrutasaṃhitā*.[78] 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.[79]

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75 Bhaṭṭācārya 1910–7.
76 HIML: IA, 374–375 and IB, 495–496.
77 Su 1939: 3–4. See discussion by Klebanov (2021*b*: 7).
78 HIML: IA, 375.
79 Cordier 1903: 332.

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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.[80] 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,[81] has also been included in the collation.

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 *daṇḍa*s, numbers and *puṣpikā*s 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 Ḍalhaṇa 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.

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

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

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.[82] 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.[83] 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

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82 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.

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

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 *Suśrutasaṃhitā* 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.[84] Since these 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 *anusvāra* before a *daṇḍa* at the end of a sentence or verse. Whether these *anusvāra*s should be changed to the consonant *m* is a moot question because there is no Pāṇinian concept of 'end-of-sentence' and his rules on *sandhi* are contingent on the close contact of sounds (*saṃhitā*). 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 *sandhi* should be applied, in which case a final *anusvāra* or class nasal of the following consonant is changed to *m*. Nonetheless, this remains an assumption about how the text would be pronounced. Therefore, in a critical edition, inserting *daṇḍa*s and changing *anusvāra*s to *m* before them are subjective decisions by the editors. The scribal use of *daṇḍa*s and *anusvāra*s in the Nepalese manuscripts can be seen in the digital edition if one switches off the filters for ignoring *daṇḍa*s and final *anusvāra* variants.

Unconventional spellings and grammatical forms have been retained

refs?

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84 Examples of the germination of consonants are *karṇṇa* (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), *kuryāt* (1.16.16, 32), *°pālir vallūra°* (1.16.10); *°pālir vyāyojimaḥ* (1.16.10) and *dīrghaika°* (1.16.10).

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 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.

śoṇitabahutvanivedanāyāṃ cānyadeśaviddham iti jānīyāt | nirupadravatā taddeśaviddha-liṅgam ||3||

{ A: °hutvena vedanayā   N: °hutveti veda-nāś   H: °nāyā*c* }   A: °vatayā   A: °viddham iti ||

testimonia ▾
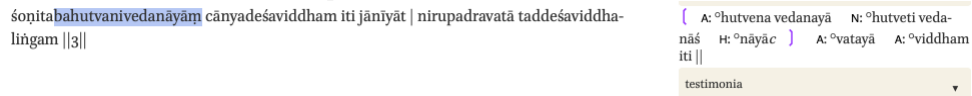
Figure 2: The digital edition of SS.1.16.3

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

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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.
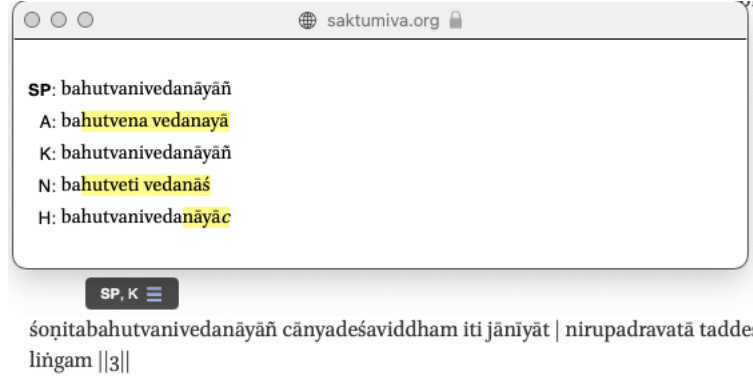
Figure 3: The digital edition of SS.1.16.3

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.

The Translation

Sūtrasthāna, adhyāya 16

1 Now we shall expound the method for piercing the ear.[85]

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*)[86] –, on the lap of a wet-nurse and pacifies him.[87] 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.[88] For a

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85 The topic of piercing the ear (*karṇavyadha*) is not discussed in the *Carakasaṃhitā* (HIML: IB, 326, n. 175), but it is mentioned in some texts that followed the *Suśrutasaṃhitā*, such as the *Kaśāpyasaṃhitā* (HIML: IIA, 30). Also, the instrument for piercing the ear is described in the *Aṣṭāṅgahṛdayasūtra* 1.26.26 (**kunt-1902**). In the versions of the text known to Ḍalhaṇa (Su 1938: 76) and Cakrapāṇidatta (Su 1939: 125), the heading of this chapter is *karṇavyadhabandhavidhi* ('the method of piercing and joining the ear'), instead of the Nepalese version's *karṇavyadhavidhi*. The topic of *karṇabandha* 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. Ḍalhaṇa (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).

86 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 Ḍalhaṇa (Su 1938: 76), the words are united in a compound that reads more naturally.

87 The versions of 1.16.3 known to Cakrapāṇidatta (Su 1939: 126) and Ḍalhaṇa (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 Ḍalhaṇa'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 Ḍalhaṇa on 1.16.3 (Su 1938: 76), the toys include replica elephants, horses, bulls and parrots. Ḍalhaṇa further mentions that others read *bhakṣyaviśeṣair vā* ('or by special treats') before *bālakrīḍanakaiḥ*.

88 The versions of 1.16.3 of Cakrapāṇidatta (Su 1939: 126) and Ḍalhaṇa (Su 1938: 76) add

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boy, do the right ear first; for a girl, do the left one. Use a needle on a thin ear; an awl (*ārā*) on a thick one.[89]

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.[90]

4 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 (*apatā-naka*), headache or sharp pain in the ear.[91]

5 Having removed the wick (*varti*) in the hole because of the aggravation of humours or a culpable piercing,[92] one should smear it with a paste of the roots of barley, liquorice, Indian madder (*mañjiṣṭhā*), and the castor

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ādityakarāvabhāsite to clarify that this naturally occurring cleft is illuminated by sunshine.

89 Ḍalhaṇa on 1.16.3 (Su 1938: 76) clarifies that the awl is a shoe-maker's knife for piercing leather. He also cites the authority of "the notes of Lakṣmaṇa" (*Lakṣmaṇaṭippaṇaka*) 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 *Su-śrutasaṃhitā* that was available in twelfth-century Bengal. See Meulenbeld (HIML: IA, 386, and the footnotes for further literature).

90 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.

91 This passage is significantly augmented in 1.16.4 of Cakrapāṇidatta's version (Su 1939: 126) and 1.16.5 of Ḍalhaṇa'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.'

92 In addition to these reasons, 1.16.6 of Ḍalhaṇa'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'). Ḍalhaṇa 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.

34

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.[93]

7   Once the ear is free from humours or side-effects, one should loosen it with a light dilator (*pravardhanaka*) in order to enlarge it.[94]

8   A person's ear enlarged in this way can split in two, either as a result of the humours[95] 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.[96] 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 (*hīnakarṇa*), Creeper-ear (*vallīkarṇa*), Stick-ear (*yaṣṭīkarṇa*), and Crow's lip (*kākauṣṭha*).[97]

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.

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

94   Cakrapāṇidatta on 1.16.6 (Su 1939: 127) and Ḍalhaṇa 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 (*apāmarga*), the neem tree (*nimba*) and the cotton plant (*kārpāsa*). Ḍalhaṇa adds that it can also be made of lead (*sīsaka*) and should have the shape of the datura flower (*dhattūrapuṣpa*).

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

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

97   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.[98]

"Take-away" (*āhārya*):   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.[99] The five from compressed (*saṃkṣipta*) on are incurable.[100] 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.[101]

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

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

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

101 The version of 1.16.11–13 known to Ḍalhaṇa (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. All four verses were probably absent in the version of the *Suśrutasaṃhitā* known to

10 A person wishing to perform any of these joins should therefore
have supplies prepared according to the recommendations of the
'Preparatory Supplies' chapter.[102]   And in this regard, he should
particularly gather[103] decanted liquor (*surāmaṇḍa*), milk, water, fer-
mented rice-water (*dhānyāmla*), and powdered earthenware crockery
(*kapālacūrṇa*).[104]

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*).[105] 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 decan-
ted 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,
neither too tightly nor too loosely. Then, the earthenware powder

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Cakrapāṇidatta. He cites the verses separately in his commentary, the *Bhānumatī*
(Su 1939: 128–129), introducing each one as 'some people read' (*ke cit paṭhanti*). How-
ever, in Trikamajī Ācārya's edition of the *Sūtrasthāna* of the *Bhānumatī*, the root text
is largely identical to the one commented on by Ḍalhaṇa (Su 1938), even in instances
like this where Cakrapāṇidatta's commentary indicates that he was reading a differ-
ent version of the *Suśrutasaṃhitā*.

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

103 The reading in the Nepalese manuscripts of *viśeṣataś cāgropaharaṇīyāt* has been emen-
ded to *viśeṣataś cātropaharet* to make sense of the list of ingredients, which is in the ac-
cusative 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.

104 The term *kapālacūrṇa* is unusual. Ḍalhaṇa (Su 1938: 79) defines it as the powder of
fragments of fresh earthen pots and Cakrapāṇidatta (Su 1939: 129) as the powder of
earthenware vessels.

105 There are syntactic difficulties in this sentence. We have adopted the reading in Ḍal-
haṇa'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.

37

should be sprinkled on, and medical advice (*ācārika*) given. And he
should supplement with food as taught in the 'Two Wound' chapter.[106]

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

12 One should not make a join when the blood is too pure, too copious, or too thin.[107] 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 (*gāḍha*), septic (*pāka*) and red. When tainted by phlegm, it will be stiff (*stabdha*) and itchy. It has excessively copious suppuration (*srāva*) and is śopha (*puffed up*). It has it has a small amount of wasted (*kṣīṇa*) flesh and it will not grow.[108]

13 When the ear is properly healed and there are no complications, one may very gradually start to expand it. Otherwise, it may be inflamed (*saṃrambha*), burning, septic or painful. It may even split open again.

14 Now, massage for the healthy ear, in order to enlarge it.
One should gather as much as one can the following: a monitor lizard (*godhā*), scavenging (*pratuda*) and seed-eating (*viṣkira*) birds, and creatures that live in marshes or water,[109] fat, marrow, milk, and sesame oil, and white mustard oil.[110] 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

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

107 1.16.17 of Ḍalhaṇa's version (Su 1938: 79) reads "impure" for the Nepalese "too pure," which would appear to make better medical sense. Emending the text to *nāśuddha-* for *nātiśuddha-* in the Nepalese recension would yield the same meaning as the Ḍalhaṇa's version.

108 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*).

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

110 1.16.19 of Ḍalhaṇa's version (Su 1938: 79) includes ghee (*sarpis*). However, Ḍalhaṇa'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. Ḍalhaṇa 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 (*jalaśūka* → *jalanīlikā*[111]).[112] This should then be deposited in a well-protected spot.

15 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.[113]

16 Ears which do not enlarge even when sweated and oiled, should be scarified at the edge of the hole (*apāṅga*), but not outside it.[114]

17 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.[115]

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.[116]

19 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.

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111 Ceratophyllum demersum, L. This name is not certain. In fact, Ḍalhaṇa on 1.16.19 (Su 1938: 79) notes that some people interpret it as a poisonous, hairy, air-breathing, underwater creature.

112 The version of 1.16.19 known to Ḍalhaṇa (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, Ḍalhaṇa (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.

113 For these aims (i.e., healing and enlarging the ear), the text known to Ḍalhaṇa (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.

114 Ḍalhaṇa'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.

115 After verse 17, the 1938 edition of Ācārya (Su 1938: 80) has in parentheses nineteen verses on diseases of the ear lobes, treatments and complications. It is possible that these verses were in some of the witnesses used by Ācārya to construct the text as they occur in other manuscripts, such as MS Hyderabad Osmania 137-3 (b). However, Cakrapāṇidatta (Su 1939: 132) and Ḍalhaṇa (Su 1938: 80) 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*. Ḍalhaṇa goes on to say that some believe that these verses were not composed by sages and, therefore, do not read them.

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

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20 Next, having cut a slice of flesh (*vadhra*)[117] with the same measurements off the cheek, the end of the nose is then scarified.[118] Then the diligent (*apramatta*) physician, should quickly put it back together so that it is well joined (*sādhubaddha*).

21 Having carefully observed that it has been well sown up, two tubes should be fixed in place.[119] Then, having lifted them up,[120] the powder of sappanwood (*pattāṅga*),[121] liquorice and Indian barberry.[122] should be applied to it.

añjana

22 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.[123]

23 And once healed and really come together, what is left of that slice of flesh (*vadhra*) should then be trimmed. If it is reduced (*hīna*), however, one should make an effort to stretch it, and one should make its overgrown flesh smooth.[124]

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117 The version of 1.16.28b known to Ḍalhaṇa (Su 1938: 81) reads bound, connected (*baddham*) 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).

118 Or 1.16.20 could be mean, '… off the cheek, it is fixed to the end of the nose, which has been scarified.' Unfortunately, the Sanskrit of the Nepalese version is not unambiguous on the important point of whether or not the flap of grafted skin remains connected to its original site on the cheek. However, Ḍalhaṇa (Su 1938: 81) 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.

119 Ḍalhaṇa 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.

120 The Sanskrit term *unnāmayitvā* in 1.16.21 is non-Pāṇinian.

121 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 Ḍalhaṇa has *pataṅga* (1.16.29 (Su 1938: 81)) and this term is propagated in modern dictionaries.

122 Berberis aristata, DC. Ḍalhaṇa understands it as elixir salve (*rasāñjana*) (Su 1938: 81).

123 The expression *svayathopadeśa* is ungrammatical but supported in all available witnesses.

124 Ḍalhaṇa accepts a verse following this, which points out that the procedure for joining

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Abbreviations

Ah 1939   Kuṃṭe, Aṇṇā Moreśvara, Navare, Kṛṣṇaśāstrī, and Parādkar, Hariśāstrī (1939) (eds.), śrīmadvāgbhaṭaviracitam aṣṭāṅga-hṛdayam, śrīmadaruṇadattaviracitayā sarvāṅgasundarā-khyayā vyākhyayā, hemādripraṇītayā āyurvedarasāyanā-hvayā ṭīkayā ca samullasitam = *The Astāṅgahṛidaya* (6th edn., Muṃbayyām: Nirṇayasāgara Press), `ark:/13960/t3tt6967d`.

Anup   *Anup Sanskrit Library* (n.d.).

AS   *Asiatic Society* (n.d.).

As 1980   Āṭhavale, Anaṃta Dāmodara (1980) (ed.), *Aṣṭāṅgasaṅgrahaḥ. Śrīmad Vṛddhavāgbhaṭaviracitaḥ Induvyākhyāsahitaḥ* (Puṇe: Maheśa Anaṃta Āṭhavale, Śrīmad Ātreya Prakāśanam), `ark:/13960/t9773bb9z`.

Bhela 1921 Mookerjee, Ashutosh and Ananta Krishna Shastri, Vedantabisharad (1921) (eds.), *The Bhela Samhita. Sanskrit Text* (Calcutta: University of Calcutta), `ark:/13960/t3sv3157j`; Based on two copies made of the Thanjavur codex unicus (MS Thanjavur TMSSML 10773, Burnell 1880: 63–4, P. P. S. Sastri 1933: #11085).

Bhela 2000 Krishnamurthy, K. H. (2000), *Bhela-saṃhitā. Text with English Translation, Commentary and Critical Notes* (Haridas Ayurveda Series, 8; Varanasi: Chaukhambha Visvabharati).

BL   *British Library* (n.d.).

Ca. 1941   Ācārya, Yādavaśarma Trivikrama (1941) (ed.), maharṣiṇā punarvasunopadiṣṭā, tacchiṣyeṇāgniveśena praṇītā, carakadṛḍhabalābhyāṃ pratisaṃskṛtā carakasaṃhitā, śrīcakrapāṇidattaviracitayā āyurvedadīpikāvyākhyayā saṃvalitā (3rd edn., Mumbayyāṃ: Nirnaya Sagara Press), URL, accessed 01/01/2018.

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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).

HIML   Meulenbeld, Gerrit Jan (1999–2002), *A History of Indian Medical Literature*, 5 vols. (Groningen: E. Forsten), ɪsʙɴ: 9069801248.

KL   *Kaiser Library* (n.d.).

NAK   *National Archives of Kathmandu* (n.d.).

NCC   Raghavan, V. et al. (1949–), *New Catalogus Catalogorum, an Alphabetical Register of Sanskrit and Allied Works and Authors*, 39 vols. (Madras University Sanskrit Series; Madras: University of Madras); v.1: revised edition, 1968.

NGMCP   NGMCP (2014), 'Nepal-german Manuscript Cataloguing Project. Online Title List and Descriptive Catalogue', Universität Hamburg and Deutsche Forschungsgemeinschaft, ᴜʀʟ.

RORI   *Rajasthan Oriental Research Institute* (n.d.).

Su 1889   Bhaṭṭācāryya, Jīvānanda Vidyāsāgara (1889) (ed.), suśrutaḥ. sūtra-nidāna-śārīra-cikitsā-kalpottara-tantra-kalpita āyurveda. bhagavatā dhanvantariṇopadiṣṭaḥ suśruta-nāmadheyena tacchiṣyeṇa viracitaḥ (3rd edn., Calcutta: Saratī Press), `ark:/13960/t1nh6j09c`; HIML: IB, 311, edition b.

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Su 1938   Ācārya, Yādavaśarma Trivikrama and Ācārya, Nārāyaṇa Rāma (1938) (eds.), **śrīḍalhaṇācāryaviracitayā nibandha-saṃgrahākhyavyākhyayā nidānasthānasya śrīgayadāsā-cāryaviracitayā nyāyacandrikākhyapañjikāvyākhyayā ca samullasitā maharṣiṇā suśrutena viracitā suśrutasaṃhitā** (3rd edn., Bombay: Nirṇayasāgara Press), `ark :/ 13960 / t09x0sk1h`; HIML: IB, 313, edition cc ('the vulgate').

Su 1938[2]   Ācārya, Yādavaśarma Trivikrama and Ācārya, Nārāy-aṇa Rāma (2004) (eds.), **maharṣiṇā suśrutena viracitā suśrutasaṃhitā, śrīḍalhaṇācāryaviracitayā nibandha-saṃgrahākhyavyākhyayā nidānasthānasya śrīgayadāsā-cāryaviracitayā nyāyacandrikākhyapañjikāvyākhyayā ca samullasitā** (Vārāṇasī: Caukhambhā Kṛṣṇadāsa Akādamī); Reprint of the third, 1938 edition (Su 1938).

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TMSSML   *Tanjore Maharaja Serfoji Saraswati Mahal Library* (n.d.).

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