The Seasons in Ancient Indian Medicine: Long Winters or Extensive Rains?

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1 INTRODUCTION

For the practice of medicine in general, an understanding of the seasons (Sanskrit: ṛtu) and their properties is important in more than one way. First, the constitution of human beings changes according to the time of year and, accordingly, gives rise to different ailments. Thus, for each season, distinct medicines, therapies, diet and conduct are advisable. Nutritional and therapeutic substances also undergo changes according to time. In certain seasons, they are strongly effective while in others, they lose their healing power altogether or are not available. Finally, certain climatic and seasonal phenomena can function as remedies.\(^1\) Hence, the segmentation of the year, its influence on nature and its dietary and therapeutic implications for people are elaborated in all of the central compendia of ancient Indian medicine.

In my study, I address the five most eminent compendia of classical Ayurveda, i.e., the Carakasāṃhitā (CS), the Suśrutasaṃhitā (SS) and the Bhelasaṃhitā (BhS), as well as the works credited to Vāgbhaṭa: the Aṣṭāṅghaṛdayasaṃhitā (AHS) and the Aṣṭāṅgasaṃgraha (AS).\(^2\) Where advisable, the commentaries on these texts were also consulted.\(^3\)

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\(^{1}\) SS 1.1.33, after other remedies, lists cures which are “caused by time.” “[Cures] caused by time are peculiarities of the year like wind, breezes, the heat of the sun, shadow, moonlight, darkness, cold and warmth, rain, day and night, fortnights, months, seasons, halves of the year, etc.” (कालकृताः पञ्चातिरिक्ताःपञ्चातिरिक्ताःपञ्चातिरिक्ताःपञ्चातिरिक्ताःपञ्चातिरिक्ताःपञ्चातिरिक्ताःपञ्चातिरिक्ताःपञ्चातिरिक्ताःपञ्चातिरिक्ताःपञ्चातिरिक्ताःपञ्चातिरिक्ताःपञ्चातिरिक्ताःपञ्चातिरिक्ताःपञ्चातिरिक्ताःपञ्चातिरिक्ताःपञ्चातिरिक्ताःपञ्चातिरिक्ताःपञ्चातिरिक्ताः)

\(^{2}\) The CS, the BhS and the SS all date to the period between 250 BCE and 150 CE and were reworked and complemented to different degrees in the following centuries. AS and AHS came into existence around 700 CE and depend heavily on the CS and the SS. On the dating of these works, see Meulenbeld HIML: IA, 105 sqq. (CS), Meulenbeld HIML: IA, 342 sqq. (SS), Meulenbeld HIML: II A, 22 sqq. (BhS), and Meulenbeld HIML: IA, 613 sqq. (AS and AHS).

\(^{3}\) Most notably, I rely on Dalhana’s commentary on the SS, the Nibandhasamgraha,
In each of these works, one can find a lesson devoted to the structure of the year and the characteristics of the seasons. This lesson is usually located in the first section of the books. Generally, the lesson is roughly divided into two sections, the first of which explains the structure of the year and the second of which is dedicated to the characteristics of seasons as well as the appropriate corresponding diets and modes of conduct. In addition to these lessons, we find references to the seasons and their implications for medicine reappearing throughout the works.

One curious aspect of the passages under study is that they seem to apply two different seasonal schemes side-by-side, without explaining this duplication. We will see later that these schemes serve specific purposes in the treatises and, depending on the topic being treated, are used intentionally. Concerning this matter, I review the investigations of Francis Zimmermann (1980) and provide a comprehensive examination of the occurrences of these two schemes throughout the works under consideration in order to prove that the two schemes are nearly always used both intentionally and systematically in specific contexts.

On the other hand, a closer look at the SS lesson on the seasons reveals that here these two schemes alternate every few sentences, sometimes without any specific need. This special feature together with certain textual evidence from the emerging critical edition indicate the posteriority of this lesson compared to its counterparts in the CS and the BhS. But before addressing these issues, I will introduce the underlying concept of the seasons and the division of the year into two halves.

2 TWO HALVES, SIX SEASONS

Following some introductory sentences, each of the lessons on the seasons, with the exception of that found in the BhS, proposes a concept of the year that was written around the twelfth century CE. For more information on Dalhana, see Meulenbeld HIML: IA, 372 sqq.

The ayurvedic compilations (samhitās) are generally structured into sections (sthānas) and subordinate units called adhyāyas. On the translation of adhyāya as “lesson,” instead of the more common “chapter,” in the Carikasamhiti and other works, see Preisendanz 2018.

These lessons, mostly located in the first sections of the compendia, are CS 1.6, SS 1.6 and 6.64, BhS 3.6, AS 1.4 and AHS 1.3. The first sections of these works, usually called Sūtrasthāna, are similar in structure and contain diverse introductory and fundamental contents. The Sūtrasthanas of SS, AS and AHS contain additional lessons on surgery. In the case of the SS, the correct conduct and diet according to the seasons is treated separately near the end of the compendium in 6.64. The BhS lesson is located in the poorly preserved third section, called Vimānasthāna. The lesson on the seasons appears fragmentary as summer is omitted from the seasonal descriptions.

See section 3 of this study.
See p. 268.
See section 4 of this study.
During each season one taste prevails. The arrows show whether the morbific factors (bile, wind and phlegm) become accumulated (↑) or dimished (↓) by the respective taste.

Figure 1: Halves of the year and seasons according to CS 1.6 (śiśra scheme).

comprising two halves. The year is subdivided into two phases according to the course of the sun and variations in the South Asian climate. This is described most precisely in the CS:

इह खलु संवेदरं षड़गम्यविभागेन िवात्। तत्तदेयोदगयनमादानं च तीनृतूिशरादीमाािता दिक्षणायनं िवसगं च।

Here, you should know, the year is to be understood as having six parts, which are achieved by separation into seasons. Among these, one should define the three seasons spanning from frost through summer as the sun’s movement towards the north and also as a period of capture. Rainy season through winter, however, is to be defined as the [sun’s] movement towards the south and as a period of emission.

9 The BhS omits this concept not only in the lesson on the seasons, but also does not mention the halves of the year throughout its entire text. This might hint towards a later introduction of this concept to the ayurvedic corpus. Perhaps it was added to the CS and the SS in later revisions while the less popular BhS remained unchanged regarding this aspect.

10 CS 1.6.4.
The following passage describes how during the period of capture (ādāna), when strong dry winds blow, all of the moisture of earth, plants and creatures is absorbed by the sun. The period of emission (visarga), on the other hand, begins with heavy monsoon rains, which return the moisture and thus allow for everything to grow. While the sun travels higher north, i.e., reaching higher at noon from day to day, its influence grows. Gradually it absorbs the humidity from the earth. Around the summer solstice, the monsoon diminishes the power of the sun and, obscured by clouds, it loses its influence during its return to the south. At this time, the rains water the desiccated earth and humidity returns. This period of emission is associated with the dominance of the moon. Furthermore, the period of capture provides unctuousness (sneha) while the period of emission is responsible for dryness (rauksya). Throughout the first period, the tastes of bitter, astringent and acrid dominate, while the second is characterized by sour, salty and sweet tastes. As shown in figure 1, this cycle of capture and emission influences the strength of the human body, tormenting and weakening it during the hot and dry period and nurturing and strengthening it in times of humidity and coolness.

In the SS, the halves of the year are dealt with in 1.6.7–8 in a slightly shorter fashion. Here the year is divided into a southern (dakṣīna) and a northern (uttara) period. The terms “period of capture” (ādāna) and “period of emission” (visarga) are not mentioned. Thus, while in the CS the celestial bodies of the sun and moon, as well as the wind, play a dominant role, here the movement of the sun alone is the source for the terms used. Other than this, the description appears relatively parallel to the information provided in the CS. AS and AHS follow CS and mention both terminologies (northern and southern, capturing and emitting periods) while the surviving portions of the BhS make no mention of the halves of the year. Table 1 gives an overview of the designations and mentions of the seasons, the halves of the year, and their interrelations in the examined compendia.

While tripartite concepts are frequently used when describing the seasons, binary concepts prevail in discussions surrounding the halves of the year. These binary polarities – temperature and precipitation – are the exact indicators used in modern climate graphs. Thus, it is hardly surprising that such graphs for the northern half of the Indian subcontinent precisely reflect the information from our texts: Starting with the spring, temperatures rise steadily until the onset of

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11 In Indian culture, the moon and its beams have cooling qualities. Further, its designation within this context, soma – which is a synonym for water, also points towards this feature. See Angermeier 2020a.

12 See CS 1.6.5-6.

13 Examples for such tripartite concepts are the influence of sun, moon and wind, the application of the three morbific factors, or the definition of three moderate and three extreme seasons.
The English equivalents for the seasons are frost (*śiśira*), spring (*vasanta*), summer (*grīṣma*), beginning of the rains (*prāvṛṣ*), rainy season (*varṣā*), autumn (*śarad*), and winter (*heman* or *hemanta*). The terms *ādāna* and *visarga* denote a period of capture and a period of release respectively; *uttarāyana*, *uttara*, and *udagayana* all refer to the period in which the sun gradually moves to the north, while *dakṣiṇāyana* and *dakṣiṇa* are describing the period of its southward movement.

<table>
<thead>
<tr>
<th>Season and halves of the year</th>
<th>CS 1.6</th>
<th>SS 1.6a</th>
<th>SS 6.64</th>
<th>BhS 3.6</th>
<th>AS 1.4</th>
<th>AHS 1.3</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>śiśira</em></td>
<td><em>vasanta</em></td>
<td><em>grīṣma</em></td>
<td><em>varṣā</em></td>
<td><em>śarad</em></td>
<td><em>hemanta</em></td>
<td><em>udagayana/ādāna</em></td>
</tr>
<tr>
<td><em>ādāna/uttarāyana</em></td>
<td><em>visarga/dakṣiṇāyana</em></td>
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<td><em>vasanta grīṣma prāvṛṣ</em></td>
<td><em>varṣā</em></td>
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<td><em>varṣā</em></td>
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1 First season in the first part of the lesson.

*II* First season in the latter part of the lesson.

*a* The front section of SS 1.6 introduces two schemes that differ regarding one season. In the back section, and in SS 6.64, all seven mentioned seasons are described.

*b* In the second part of lesson SS 1.6 and in SS 6.64 the description of the beginning of the rains (*prāvṛṣ*) is inserted after that of summer (*grīṣma*).

*c* Summer (*grīṣma*) is missing here, most probably because this part of the lesson was lost in transmission.

Table 1: Seasons and halves of the year

The monsoon after which they decrease until autumn, slowly at first, but then faster during winter, only to rise once more when spring arrives. The average amount of precipitation, on the other hand, rockets upwards with the start of the monsoon and increases still further during the rainy season. It then drops to a low level in autumn and remains there until the next rainy season.

These halves of the year together consist of six seasons, each comprising two months. The most outstanding feature of Indian climate, the monsoon, provides impetus for the implementation of a corresponding season not recognized in
most other parts of the world. So, in addition to autumn, winter, spring and summer there exists a fifth, the rainy season. The full six are traditionally completed by dividing the long winter into two parts, winter (hemanta) and frost (śiśira). The lessons on the seasons in the examined works introduce these seasons at the beginning, during the discussion of the structuring of time. They are mentioned once again in the second parts of the lessons, where they are described separately and in some detail. These descriptions contain information about climatic circumstances and effects on both nature and the human body, as well as recommendations regarding diet and conduct of life during the specific seasons.

Dividing the year into six seasons presents several advantages. Most discernibly, it matches well with the yearly division into twelve months and the two halves concept. Furthermore, it allows for an analogy to be drawn between seasons and tastes (rasa), which in Ayurveda also number six and play an important role. According to tradition, in every season a different flavor dominates, influencing nature, the animal kingdom and humans.

3... AND ONE MORE SEASON

As discussed earlier, the overall picture in these works is quite coherent, although now and again we find certain particularities. For example, Suśruta introduces a parallel concept of the seasons in his lesson on the topic: following

14 Following Zimmermann’s convention, I use “winter” as an equivalent to hemanta and “frost” as translation for the second cold season. As an adjective, śiśira usually means “cool,” “frigid,” or “cooling;” as a substantive it can denote dew and hoar-frost, coldness, or, like here, a frosty season. On the development of the seasons in Indian literature, see Vogel 1971:284 sqq.
15 This part is missing in the BhS lesson. In the CS, only the first and last seasons of the halves of the year are mentioned, i.e. frost, summer, rainy season and winter. See the translated passage above on p. 2.
16 In the case of the SS, the back section of lesson 1.6 only contains rather poetic descriptions of the outer appearance of the seasons. Evidence from the Suśruta Project (see p. 268) clearly shows that nearly the whole section was added later, as it is not present in the oldest available manuscripts.
the introduction and a section pertaining to time and its measurements, in which the seasons as we now know them are already mentioned, he claims:

Here, nevertheless, the seasons rains proper (varṣā), autumn (śarad), winter (hemanta), spring (vasanta), summer (grīṣma) and beginning of the rains (prāvṛṣ) are the cause of accumulation, excitation and pacification of the morbific factors.”

Thus, frost (śiśira) has been omitted and instead replaced by a distinct rainy season. In the following, for the sake of clarity and brevity I will refer to the first concept, containing the frost season, or šiśira, as the “šiśira scheme” and to the second one, containing the beginning of the rains, or prāvṛṣ, as the “prāvṛṣ scheme.”

Several theories are presented in secondary literature about these two concepts. While previous researchers suggested understanding them as a northern and southern calendar, or as a civilian and a medical year, Francis Zimmermann, in his 1980 article on seasonal wholesomeness (ṛtu-sātmya), argued that two schemes prevail, both equally important for medicine and neither developed for geographical regions:

[...] The first schema that we looked at was distributive in form, presenting each season equally. [...] The second schema is, on the other hand, transitive in form: it explains the evolution of humors and diseases by the action of distant causes, it justifies the recurrence of symptoms of a particular season in the next one, phenomena in which we see the most clearly the maturational power of time: aggravations and improvements; the phlegm accumulated in winter causes problems in the spring, but should normally ease off in summer, etc.\(^{21}\)

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19 SS 1.6.10. For the Sanskrit text and a translation of the whole passage, go to p. 255 of this article.
20 See, on this, Vogel 1971: 304 sqq. Dalhana, in his commentary on SS 1.6.10, mentioned this interpretation as a northern and a southern calendar: “Others however explain differently: one should know, that in regions south of the Ganges the classification beginning with the rains exists. This [classification] again is criticized by the teacher Gayadāsa.” (अन्य लघुपत्राल्पनामनित्ताः ग्रह्या दशिण्य देशे आयुष्यविधानस्वभाव शालक्ष इति; अयमात्म ग्रह्याल्पनामनित्ताः दुष्किर्तिः.) Gayadāsa is the author of yet another commentary on the SS (dated around 1000 CE) within which, however, the remarks on this passage are not preserved. On Gayadāsa and his commentary see Meulenbeld HIML: IA, 382 sq. A twentieth-century scholar who supported the theory of a northern and a southern calendar was Hemarājaśarman, who assumed the existence of two Suśrutas. He credited the northern calendar (containing frost) to a hypothetical senior Suśruta and the southern (containing beginning of the rains) to a younger (see Meulenbeld HIML: IA, 335). However, one should keep in mind, that these two calendars are not a unique feature of the SS, but also appear in the other works examined here.
Zimmermann went on to explain how this second scheme, using the beginning of rains (*prāvrṣ*) instead of the frost (*śiśira*), is important for some fields of medicine: In addition to categorization into hot and cold, and dry and humid seasons, some passages also distinguish between extreme and moderate seasons, which are called balanced (*sādhāraṇa*). Summer, due to its heat and dryness, winter due to its cold, and the rainy season owing to its humidity, are classified as extreme while the other three are seen as moderate transitional seasons. By introducing the beginning of the rains (*prāvrṣ*) in place of frost (*śiśira*), the physician acquired a new, better structured system in which every extreme season is followed by a moderate season. This concept matches much better with certain medical ideas, particularly with the theory of accumulation, excitement and pacification of the three morbific factors (*doṣa*) bile, wind and phlegm.  

The other scheme, however, was not abandoned. Somehow physicians found a way for them to coexist peacefully side by side. This phenomenon is especially striking in Suśruta’s lesson on the seasons, in which the frost (*śiśira*) calendar is

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22 See Figure 2.
used at first (in 1.6.6–8)\(^3\), only to be instantaneously replaced in 1.6.10 by the beginning of the rains (prāvarṣ) calendar:

Here, nevertheless the six seasons rainy season, autumn, winter, spring, summer and beginning of the rains are the cause of accumulation, excitation and calmness of the morbific factors. These again are explained using two-month units, beginning with Bhādrapada; namely, the rainy season is Bhādrapada and Āśvayuja, autumn Kārtika and Mārgaśīrṣa, winter Pauṣa and Māgha, spring Phālguna and Caitra, summer Vaiśākha and Jyeṣṭha, and the beginning of the rains Āṣāḍha and Śrāvaṇa.

Prior to this passage, in 1.6.6, the treatise discusses the divisions of the year and lists frost in lieu of the beginning of the rains.\(^4\) The topic that follows this passage is the seasonal accumulation, excitation and treatment of the morbific factors. The most promising track, if we want to understand this change of concept regarding the seasons, is laid by the word “here” (iha), at the beginning of our passage. What is the author referring to by using the term “here”? The commentator Dalhana is somewhat indecisive on this point:

\(\text{संशोधनाशयं दशर्णं दशर्यान् आह -- इहेिदयािे, तुशदः पुनरथर्।}\)

\(\text{a NE: ऋकपशमिनिमितं।}\)
\(\text{b NE: ऋददिः।}\)
\(\text{c NE: हिममिसंभन्यं।}\)
\(\text{d SS 1.6.10.}\)

\(^{23}\) These seasons are listed in 1.6.6: तत्त्वमादयो द्राद्व भान्तः संलक्षतः; हिममिसिसमूहू कुल्या पुत्रको भवितः; ते हिममिसिसमत्तमोपपष्टवाचेतमन्तः; [...].

\(^{24}\) There we also find other, more ancient names for the months, which first occur in the late vedic period in the Yajurveda. In this passage Tapas (= Māgha) and Tapasya (= Phālguna) constitute frost, Madhu (= Caitya) and Mādhava (= Vaiśākha) spring, Śuci (= Jyeṣṭha) and Śukra (= Āṣāḍha) summer, Nabhas (= Śrāvaṇa) and Nabhasya (= Bhādrapada) the rainy season, Iṣa (= Āśvayuja) and Īrjha (= Kāstika) autumn and Sahas (= Mārgaśira) and Sahasya (= Pauṣa) winter. On this concept, see Vogel 1971: 290, 314.
In order to demonstrate the notion based on purification he says: “here” (iha) and so on. “here” means “in this lesson,” the word “nevertheless” (tu) has the meaning of “moreover.”

The first sentence indicates that the author of the original text is now talking about a specific notion or perspective. The second tries to explain the meaning of “here” (iha) but is perplexing because we were already presented with the other seasonal concept in the very same lesson. Subsequently, however, on the question of why Suśruta now starts the list of seasons with the rainy season, when previously frost occupied the starting position, Dalhana explains: “for the sake of [addressing the topic of] the accumulation, etc., of the morbific factors.”

This change of starting point must implicitly include the replacement of frost by the beginning of the rains. Thus, we can also understand this explanation as an answer to our question regarding why the scheme has been changed. Dalhana goes on to explain that in contexts where the development of diseases out of morbific factors (doṣas) is concerned, the second scheme (containing the beginning of rains (prāvṛṣ)) is adequate, while in contexts dealing with impact of tastes on the morbific factors, the first scheme (containing frost (śiśira)) is the one to use. He also provides additional textual evidence from the preceding lesson in support of his argument:

[...]

Regarding the question: “For what reason, however, does he mention the seasons beginning with the rainy season in this lesson?” his response is: “for the sake of [addressing the topic of] the accumulation etc. of the morbific factors.”

Since [here] the topic is the accumulation etc. of wind etc., which

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25 Dalhana ad SS 1.6.10: [...] दोषोपचयायथर्म।

26 Regarding the sequence of the seasons in the various lists see table 1.

27 This means: “the accumulation, excitation/dissolution and pacification of wind, phlegm and bile according to the seasons.”
are the causes of diseases, would it not be appropriate to place this notion in the beginning [of this lesson]? This is not the case. There exactly that [other] notion is positioned in the beginning because of the occurrence of the tastes, which were the causes of wind etc. Or also because in the stanza “In winter, also in frost and also in spring [the bandage] is to be lifted after three days.” frost etc. were mentioned at the beginning.\(^{28}\)

It is because of accumulation that strong excitation occurs; its cure is purification. In this regard, the seasons, beginning with the rainy season, were mentioned. Likewise in Caraka, in the lesson about the remedies, concerning the issue of purification,\(^{29}\) [the seasons] were specified beginning with the rainy season. Even though [the seasons] as conditions for the accumulation etc. of the morbific factors were mentioned as beginning with the rainy season, the main point of this [passage now], however, is that in the case of accumulation etc. purification must be carried out. On the one hand, where taste and strength are the topic, [the seasons] are mentioned as beginning with frost; on the other hand, where purification is the topic, having accumulation etc. as an objective, [they are mentioned] as beginning with the rainy season. This is the [author’s] intended meaning.

Although this sounds quite reasonable and sophisticated, and might well be Zimmermann’s main source for his assumption – can we be sure that Dalhana, who lived roughly a millennium after the Šuśrutasaṃhitā came into existence, understood the passage correctly? Too be more precise, Dalhana’s explanation is apparently compatible with the text he comments upon. However, by referring to the CS, he claims that his explanations are also valid beyond the SS and can be understood as ayurvedic universals. Therefore, to assess the role and consistency of the seasonal concepts throughout early ayurvedic literature and to comprehend Dalhana’s grasp of it, it is necessary to examine the employment of both schemes throughout the relevant sources. Even though the lessons on seasons in the other four compendia don’t mention the second scheme of seasons explicitly, frost (śiśira) and beginning of the rains (prāvorṣ) are both mentioned in these works in several other contexts. These occurrences enable us to check the general consistency of the employment of both schemes as well as the accuracy

\(^{28}\) With this quotation from lesson 5 (SS 1.5.40) Dalhana makes clear that in the preceding lesson, the śiśira scheme prevails. This seems to be maintained across the boundary between the lessons until the change is immediately necessary in 1.6.10.

\(^{29}\) See CS 3.8.125 (8.93 in the critical edition. On the critical edition see p. 268.) where the seasons suitable for purification therapies are mentioned. These comprise the moderate seasons of spring, beginning of the rains, and autumn.
### Table 2: Mentions of beginning of the rains (prāṛṣ) in the examined compendia

<table>
<thead>
<tr>
<th>Passage</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 1.5.57</td>
<td>nasal medicaments (nasyakarma) for the moderate seasons</td>
</tr>
<tr>
<td>CS 1.13.18</td>
<td>treatment with oil in prāṛṣ</td>
</tr>
<tr>
<td>CS 3.8.125–128</td>
<td>purification therapy</td>
</tr>
<tr>
<td>CS 6.1.2.8–9</td>
<td>storage of drugs in prāṛṣ</td>
</tr>
<tr>
<td>SS 1.36.5</td>
<td>collection of drugs</td>
</tr>
<tr>
<td>SS 1.45.8</td>
<td>water that is safe to drink in prāṛṣ</td>
</tr>
<tr>
<td>SS 4.24.105</td>
<td>avoidance of water in prāṛṣ</td>
</tr>
<tr>
<td>SS 4.24.108</td>
<td>treatment with oil in moderate seasons</td>
</tr>
<tr>
<td>SS 4.37.51</td>
<td>rules for the application of oily emesis</td>
</tr>
<tr>
<td>SS 6.64.54</td>
<td>lesson about diet and conduct in the seasons</td>
</tr>
<tr>
<td>BhS 1.8.12</td>
<td>oily emesis that are applied in moderate seasons</td>
</tr>
<tr>
<td>BhS 1.25.13</td>
<td>application of emesis and other treatment in prāṛṣb</td>
</tr>
<tr>
<td>AS 1.23.8</td>
<td>description of the seasons referring to the application of medical treatments: moderate seasons are especially suitable</td>
</tr>
<tr>
<td>AS 1.23.30</td>
<td>moderate seasons are appropriate for the removal of the morbific factors</td>
</tr>
<tr>
<td>AS 1.25.13</td>
<td>treatments including oil in prāṛṣ, treatments including ghee in the rainy season, ...</td>
</tr>
<tr>
<td>AS 6.49.37</td>
<td>preparation of a rasāyana elixir, which has to be buried in ash during prāṛṣc</td>
</tr>
<tr>
<td>AHS 1.13.33–35 (variant reading)</td>
<td>treatment of the morbific factors according to the seasons</td>
</tr>
<tr>
<td>AHS 1.16.12</td>
<td>treatments including oil in prāṛṣ, treatments including ghee in the rainy season, ...</td>
</tr>
</tbody>
</table>

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30 In the case of the beginning of the rains (prāṛṣ), the results were quite striking: Nearly every reference deals with with purification therapies, especially those involving...
oil. That is because these therapies involving the application of oil should be applied during moderate seasons, which are, as previously stated, the beginning of rains, autumn and spring.

On the other hand, the picture is less clear for frost (śīśira), since the term appears in several contexts. Generally speaking the śīśira scheme can be found in three circumstances:

- when diet and conduct are involved,
- where there is talk about collecting drugs according to seasons, and
- while naming times and substances that provoke the morbific factors, bile, wind and phlegm.

However, there is an obvious common ground on these points as well: They all refer to measures to be taken preventatively before the impairment of morbific factors that subsequently causes diseases. With regards to the last point the connection is self-evident. Right diet and conduct are preventive measures par excellence, helping to keep an equilibrium among the morbific factors. Furthermore, drugs have varying availability and qualities according to the seasons. Therefore, it is important to harvest and store them in advance, otherwise they might be unavailable in times of emergency.

4 CONFUSION IN THE SUŚRUTASAMHITĀ

The dichotomy of the two schemes found in these passages is in clear accordance with Dalhaṇa’s interpretation, but does it also work for the remainder of the SS lesson on the seasons? SS 1.6.11 starts its explanations with the rainy season but, contrary to Dalhaṇa’s claim, it does not deal with purification according to the season. Rather, it deals with explanations of how the plants and the water change during the year and, together with climatic phenomena, influence the morbific factors in human bodies:

31 See Angermeier 2020b: 9 sqq. 32 See CS 3.3.4 and Angermeier 2007: 58 sqq.
<table>
<thead>
<tr>
<th>Passage</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 1.6.4–6, 17–21</td>
<td>lesson about the seasons</td>
</tr>
<tr>
<td>CS 1.22.24</td>
<td>fasting in śīśira against certain diseases</td>
</tr>
<tr>
<td>CS 1.27.205</td>
<td>rain water in śīśira is lighter than in winter and useful against phlegm and bile</td>
</tr>
<tr>
<td>(CS 6.16.109)</td>
<td>ripening of a drug in śīśira*</td>
</tr>
<tr>
<td>CS 7.1.10</td>
<td>collection of drugs according to the seasons</td>
</tr>
<tr>
<td>CS 7.10.9</td>
<td>collection of latex from trees in śīśira as an emetic</td>
</tr>
<tr>
<td>SS 1.5.40</td>
<td>removal of bandages according to the seasons</td>
</tr>
<tr>
<td>SS 1.6.6, 7, 25</td>
<td>lesson about the seasons</td>
</tr>
<tr>
<td>SS 1.45.81</td>
<td>curdled milk is healthy in winter, śīśira, and in the rainy season</td>
</tr>
<tr>
<td>SS 6.64.31</td>
<td>lesson about diet and conduct in the seasons</td>
</tr>
<tr>
<td>BhS 1.7.8</td>
<td>recommended frequency of sexual intercourse according to the seasons</td>
</tr>
<tr>
<td>BhS 1.14.17</td>
<td>preventive remedies and drinks according to the seasons</td>
</tr>
<tr>
<td>(BhS 1.18.20)</td>
<td>symptoms of poisoning through razor blades in summer and in śīśira</td>
</tr>
<tr>
<td>BhS 3.6.19</td>
<td>lesson about the seasons</td>
</tr>
<tr>
<td>AS 1.4.4, 6, 19, 22</td>
<td>lesson about the seasons</td>
</tr>
<tr>
<td>AS 1.9.52</td>
<td>recommended frequency of sexual intercourse according to the seasons</td>
</tr>
<tr>
<td>AS 1.9.82</td>
<td>dietary recommendations for seasons with unusual features</td>
</tr>
<tr>
<td>AS 1.21.8</td>
<td>relations between seasons and morbific factors</td>
</tr>
<tr>
<td>AS 1.24.11</td>
<td>fasting in śīśira</td>
</tr>
<tr>
<td>AS 3.1.15</td>
<td>substances and times that lead to excitation of phlegm (śīśira and spring)</td>
</tr>
<tr>
<td>AS 5.2.50</td>
<td>collection of latex from trees in śīśira as an emetic</td>
</tr>
<tr>
<td>AS 5.8.4</td>
<td>roots should be collected in summer or śīśira</td>
</tr>
<tr>
<td>AHS 1.3.1–2, 17-18</td>
<td>lesson about the seasons</td>
</tr>
<tr>
<td>AHS 1.12.25</td>
<td>definition of excitation: excitation of phlegm in śīśira</td>
</tr>
<tr>
<td>AHS 1.14.11</td>
<td>fasting in śīśira</td>
</tr>
<tr>
<td>AHS 5.2.45</td>
<td>collection of latex from trees in śīśira as an emetic</td>
</tr>
</tbody>
</table>

* In some cases śīśira denotes not a specific season but more generally the cold period of the year. Passages in which this understanding of śīśira is more likely are given in brackets.

Table 3: Mentions of frost (śīśira) in the examined compendia
Here, in the rainy season, the plants are tender, have little efficacy, and the waters are not clear, but rich in earthy pollution. When ingested, these [plants and waters] are digested in beings, who, because their digestive fire is inhibited by the cool wind, have moist bodies when the sky is full of clouds and the ground is saturated with water. And, due to their digestion, they cause an accumulation of bile. This accumulation is dissolved by the rays of the sun in autumn – when only scattered clouds are in the sky, when the mud dries – and gives rise to bile-related diseases.

33 If we follow the NE: “Here, in the rainy season tender plants with little efficacy are digested as food, and the waters are not calm, but rich in earthy pollution.” Italics in this and the following footnotes mark the differences between the vulgate and the NE.

34 According to the NE: “... by cool wind and rain.”
Because their effectiveness has changed due to the change of time, these very plants become strong in the winter and the waters are clear,35 lush and especially heavy. When ingested, they remain undigested by the beings whose bodies are inhibited by the frosty wind36 because the sun has weak rays. And due to their oiliness, coldness, heaviness and sluggishness they cause the accumulation of phlegm. This accumulation is dissolved in the spring by the sun’s rays, and gives rise to phlegm-related diseases in beings who have somewhat rigid bodies [at that time].37

These very plants become sapless, arid and excessively light in summer, and [so does] the water. When they are ingested, due to their rough, light and clear nature,38 they cause an accumulation of the wind in beings who have bodies parched by the heat of the sun. And this accumulation, during the beginning of the rains, is stimulated by cool wind and rain in beings who have moist bodies,39 and, when the earth is moistened, gives rise to wind-related diseases.

Thus, this [seasonal] reason for accumulation and excitation of the morbific factors has been stated.

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35 According to the NE: “... the waters calm.”
36 Or “… inhibited by fog and wind”; acc. to the NE: “… inhibited by fog.” Regarding the translation of tusāra as “fog,” see Angermeyer 2020:70. Usually upastambhīta means “erected” or “supported” but this meaning seems unlikely here. Usually the digestive fire is described as strong during winter, able to digest heavy food. This passage however, appears to suggest that it is somehow affected by the climatic circumstances during this season and has difficulties to cope with the ingested food. Regarding the translation of upastambhīta as “inhibited”, see also SS 4.38.17, where the word is used in a similar way.
37 According to the NE: “This accumulation is dissolved in the spring by the sun’s rays, and gives rise to phlegm-related diseases.” (The rest is omitted.)
38 According to the NE: “… due to being rough and light.”
39 According to the NE: “… an exceedingly moist body.”
If we follow Ḍalhana, we would expect the śisīra scheme (beginning with frost) here because this passage deals with the causative factors influencing the morbific factors during the year. In support of Ḍalhana we could argue that these descriptions in SS 1.6.11 are there only in preparation for SS 1.6.13, indeed dealing with the medical treatment of seasonal morbific factors according to the pravṛṣ scheme – however, in a considerably shorter fashion:

तत्र व्याह्यमत्स्रीप्रेषु संचितानां दोषाणां शरदसन्तापाबुद्ध च प्रकुपितानां निहरणं
कर्तव्यम्।

\(^a\) SS 1.6.13. In the NE कर्तव्यम् is omitted. The sequential number 12 is omitted in this edition.

In this regard, in the rainy season, winter and summer, the elimination of accumulated morbific factors is to be carried out, and in autumn, spring and during the beginning of the rains, that of the excited ones.

After this sentence the lesson surprisingly switches back to the śisīra scheme to describe the natural pacification of bile, wind, and phlegm according to the seasons:

तत्र पैतिकानो व्याह्यनमुपशमो हेम्ते । क्षिप्रकारण निदाधे संचितानां शरदि स्वभावत
एव। तेने सन्यकोपसमाः व्याह्यातः।

\(^a\) NE: व्याह्यनम हेम्ते ।
\(^b\) NE: स्वभावततव।
\(^c\) NE: ३कोपसमाः।
\(^d\) SS 1.6.14.

Here, the pacification of bile-related diseases naturally takes place in winter, that of phlegm-related ones in summer, and that of wind-related ones in autumn. These [processes of] accumulation, excitation, and pacification have now been proclaimed.

This does not concur with the description in SS 1.6.11, because there, wind, accumulated in summer, is supposed to reach excitation at the beginning of the rains and should undergo natural pacification already in the rainy season. Thus, 1.6.14, contrary to the preceding passage, clearly follows the śisīra scheme again, according to which natural pacification of wind in autumn is perfectly fine. \(^{40}\) This is also in accordance with Ḍalthanas elaborations but, for consistency’s sake, See Figure 3.
we would then expect to see the śiśira scheme applied also in 1.6.11. To add to the confusion, in 1.6.15 the SS returns to the prāvṛṣ scheme without need, simply to explain that there exists an analogy between the seasons and the daytimes and that we can expect the morbific factors to act during the day in the same way as they do over a whole year:

तत् पुरांच्यं कसतसभ्य विषुः श्रीमभय अपरांच्य प्रावृषं। प्रदोष साविभुक्तं शारदमर्थसोत्रे प्रदेविस हेमन्तमुदर्शक्षेत्रं, एवमहाराजमपि वर्षिमिव शीतोष्णवर्षिमक्ष्यण दोषोपचयकसुपुष्पामिरस्तु जानीयात्।

$^a$ NE: तत् वितस्तस्यांच्यं।

$^b$ NE: कसतसिः।

$^c$ NE: प्रावृषं।

$^d$ NE: शीतोष्णवर्षिमक्ष्यण।

$^e$ SS 1.6.15.

Here one can observe in the morning$^{41}$ the characteristics of spring, at noon those of summer, in the afternoon those of the beginning of

$^{41}$ According to the NE: “... in the morning of the day.”
the rains, in the evening those of the rainy season, at midnight those of autumn and in the morning those of winter. Thus, the day, like the year, should be understood to have the characteristics of cold, heat and rain, together with the accumulation, excitation and pacification of the morbific factors.\textsuperscript{42}

So, what are the reasons for this switching back and forth between the two schemes?\textsuperscript{43} It has been widely accepted that the SS is not simply the work of one author but rather repeatedly underwent substantial modifications until it reached the shape presented nowadays in the existing editions, most of them, based only on a few manuscripts, generally following the reading defined by Dalhana’s commentary.\textsuperscript{44} In the provisional critical edition, based on three Nepalese manuscripts, of which the oldest one (Kathmandu KL 699) dates back to 878 CE, the lesson on seasonal conduct differs considerably from how

\begin{table}[h]
\centering
\begin{tabular}{|l|l|}
\hline
\textbf{Topic} & \textbf{Scheme} \\
\hline
SS 1.6.6 months and seasons & śiśira scheme \\
SS 1.6.7–8 halves of the year & śiśira scheme \\
SS 1.6.10 introduction of the other scheme & prārṣ scheme \\
SS 1.6.11 seasonal change of plants, water, digestion, and doṣas & prārṣ scheme \\
SS 1.6.13 medical removal of seasonal doṣas & prārṣ scheme \\
SS 1.6.14 natural pacification of seasonal doṣas & śiśira scheme \\
SS 1.6.15 analogy: seasons and day periods & prārṣ scheme \\
SS 1.6.38\textsuperscript{a} preventive removal of doṣas & śiśira scheme \\
\hline
\end{tabular}
\caption{Employment of seasonal schemes in SS 1.6.}
\end{table}

\textsuperscript{42} According to the NE: Thus, the day, like the year, should be understood \textit{by the accumulation, excitation and pacification of the morbific factors caused by cold, heat and rain.} \\
\textsuperscript{43} For an overview on the employment of the two schemes in SS 1.6, see Table 4. \\
\textsuperscript{44} On the structure and early development of the SS, see Meulenbeld HIML: IA, 344 sqq. The findings of the Suṣruta Project show that the recension, represented in the examined Nepalese manuscripts, differs considerably from how Dalhana read the text. This suggests that we have to assume at least two different recensions of the the work, and that many passages were added or changed at a later date (on these issues, see Klebanov 2021 and Birch et al. 2021). On the history of the editions of the SS, see Wujastyk 2013: 142 sq.
it is represented in Jādavaji Trikamji’s edition. Most notably, it contains no seasonal descriptions (SS 1.6.22–36 is not there in the Nepalese manuscripts) and therefore has much less resemblance to the lessons on seasonal conduct in CS and BhS than was thought until recently. And even though the passages relevant for our problem (1.6.6–15) contain no major deviations, the overall situation suggests that this lesson as a whole underwent repeated revisions, also before the earliest evidence preserved in KL 699, or it was composed out of slightly discordant pre-existing textual materials. The discrepancies observed in 1.6.6–15 make it very likely that these passages, or at least the ideas presented in them, were taken from different origins and thrown together by someone not very aware of the various underlying concepts. As a consequence of this Dalhana struggled to explain the resulting difficulties.

The CS and the BhS, both belonging to the school of internal medicine (kāya-acikitsā), were probably the earliest āyurvedic compilations to contain lessons on seasonal conduct in their Sūtrasthanas. With the addition of the Uttaratantra the SS obtained a lesson containing descriptions of seasonal processes and recommendations for appropriate diet and conduct, very similar to the parallel content in the CS and BhS lessons on the seasons. Still, apparently a need to compensate for the lack of such a lesson in the Sūtrasthana was felt. Over time, this need led to the formation of SS 1.6. as a lesson on seasonal conduct (ṛtucārya), modelled after the templates in the compilations of the internal medicine school and pieced together somewhat clumsily from other sources, resulting in the observable mix-up of seasonal schemes.

5 RESULTS

Zimmermann already noticed the connection of the prārṣ scheme with the seasonal evolution of the morbific factors, as was also stated in Cakrapāṇidatta’s commentary, and with the discipline of purification treatment (śodhana). In SS 6.64, the second lesson of this compendium that discusses the seasons, it is explicitly stated that one should apply evacuative measures against bile in autumn, against phlegm in spring, and against wind during the beginning of the rains, while for the remaining seasons no such treatments are advised. Zimmermann labeled the śiśīma scheme as “distributive in form, presenting each

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46 On the position and date of the Uttaratantra, see Meulenbeld HIML: IA, 347 sqq.
47 See Zimmermann 1980:103. Especially in the CS, which has an emphasis on internal medicine, the treatments discussed the most are the purificatory ones, including the well known set of “five treatments” (pañcakarma). The whole of the Kalpasthanā and most of the Siddhisthāna are devoted to these treatments.
Figure 4: The *dosas* as a linchpin between the two seasonal schemes.

season equally” and the *prāvṛṣ* scheme as “*transitive* in form [explaining] the *evolution* of humors and diseases by the action of distant causes”. However, with the above observation from section 3 in hand (summarized in the tables 2 and 3) we clearly see that both schemes are connected to the morbific factors and have transitive characteristics. It is more consistent to define the *śiśira* scheme as a system for preventive measures (diets, collecting drugs, diagnosis and prognosis) and the *prāvṛṣ* scheme as a system for reactive measures (i.e., therapies).

The analysis also confirms Ďalhana’s interpretation, consistent with the implementation of the seasonal schemes not only in the CS but in all examined Śaṃhitās. He took the morbific factors of wind, bile and phlegm as a linchpin for his explanation: Everything concerned with their agitation is dealt with under the *śiśira* scheme, whereas for all kinds of reactive, purifying measures against diseases which are caused by these morbific factors the *prāvṛṣ* scheme is adopted.49

Furthermore, we can now see that this construction with two complementary schemes of seasons was not just an idea of Suśruta’s school of medicine, but common knowledge among the physicians of the era and fairly well established in all of the classical Śaṃhitās. The SS lesson, that is apparently of a later date than those in the CS and the BhS, is the only one actually discussing both schemes side by side. Ironically, the schemes got so confused in this lesson, that Ďalhana was stimulated to write his comprehensive explanations, which in turn very likely50 helped Zimmermann in his rather accurate analysis of the two schemes. However, in his apparent desire for consistency, Ďalhana was unwilling to admit the contradictions within the SS lesson on the seasons but rather tried to explain them away in order to maintain the authority of his source text. Consequently, Zimmermann did not pay attention to these textual problems, since they did not directly affect his research subject. Nevertheless, a thorough understanding of the seasonal schemes, their employment and development in the early history

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49 See Figure 4.
50 Zimmermann did not refer to Ďalhana on this issue but the similarity of his analysis strongly suggests that it was based on Ďalhana’s account.
of Āyurveda requires a precise analysis of the convoluted implementation of the schemes in SS 1.6, as provided in the section starting on p. 259 of this study. This analysis, together with the evidence from the Nepalese manuscripts, reveals that the SS lesson is of later date compared to the corresponding lessons in the CS and the BhS.

ACKNOWLEDGEMENTS

Part of the research that forms the basis of this study was undertaken during my activity in the project “Philosophy and Medicine in Early Classical India III,” financed by the Austrian Science Fund.\textsuperscript{51} This project, under the guidance of Karin Preisendanz, aimed at the publication of a critical edition of selected parts of the Carakasamhitā. Where available, I quote the text according to this critical edition. This is the case for passages from CS 3.8. For more information on the project see the project’s website.\textsuperscript{52}

In the case of the Suśrutasamhitā, I include the results of the ongoing Suśruta Project and the current status of its critical edition.\textsuperscript{53} Further information processed in this article is based on research conducted within the project “Epidemics and Crisis Management in Pre-modern South Asia,” also funded by the FWF Austrian Science Fund.\textsuperscript{54}

Finally, I want to thank the anonymous reviewers and my colleagues Ge Ge and Dominik A. Haas for their valuable suggestions that improved this article.

\textsuperscript{51} Preisendanz et al. 2011–6.
\textsuperscript{52} Ibid.
\textsuperscript{53} Wujastyk et al. (NE).
\textsuperscript{54} Angermeier 2022–6.
<table>
<thead>
<tr>
<th>ABBREVIATIONS</th>
<th>DESCRIPTION</th>
</tr>
</thead>
</table>
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— (2020c), Regenzeiten, Feuchtgebiete, Körpersäfte. Das Wasser in der klassischen indischen Medizin (Beiträge zur Kultur- und Geistesgeschichte Asiens, 103; Wien: Verlag der Österreichischen Akademie der Wissenschaften). DOI: 10.1553/0x003be698.


Please write to wujastyk@ualberta.ca to file bugs/problem reports, feature requests and to get involved.

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