

A Translation of the Nepalese Text of the
Suśrutasamhitā

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Draft of 2nd June 2024
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Part 1. Sūtrasthāna

Part 2. Nidānasthāna

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Part 5. Kalpasthāna

Kalpasthāna 4: Snakes and Envenomation

Introduction

The fourth chapter of the Kalpasthāna of the *Suśrutasamhitā* addresses the topic of snake bites and snake venom. Exceptionally for the Nepalese version of the *Suśrutasamhitā*, the discussion is framed as a question from Suśruta to the wise Dhanvantari. Suśruta's questions are about the number of snakes, how they are classified, the symptoms of their bites and the pulses or stages of toxic shock experienced by a victim of snakebite and related topics. The taxonomy of snakes is presented in tabular form in Figures 1 and 2.⁴³⁶ The *Carakasamhitā* also addressed this topic of snake taxonomy, but only included the first three of the *Suśrutasamhitā*'s types, namely Darvīkara, Maṇḍalī and Rājimān.⁴³⁷ These three categories of snakes are framed within a humoral scheme, aggravating wind, bile and phlegm respectively, a scheme that is carried forward into symptoms and therapy.⁴³⁸ The *Suśrutasamhitā* does not use this snake–humour parallelism. By contrast, the system of seven pulses or toxic shocks (*vega*) that is central to the *Suśrutasamhitā*'s understanding of envenomation is absent from the *Carakasamhitā*.⁴³⁹

⁴³⁶ On the idea of notational variants in scientific translation, see Elshakry 2008; Sarukkai 2016; Wujastyk 2021a: 81–83.

⁴³⁷ 6.23.124 ff. (Ca 1941: 577).

⁴³⁸ *Carakasamhitā* 6.23.165–176 (Ca 1941: 579). Note that the *Carakasamhitā* then described symptoms and therapies without reference to the three-humour scheme: 6.23.177–254 (Ca 1941: 579–582).

⁴³⁹ One mention of the term in the *Carakasamhitā* refers to the peak of a tertian fever (6.3.70 (Ca 1941: 404). In other contexts, it had the ordinary-language meaning of a natural “impulse” or “pressure” that should not be suppressed (1.25.40 et passim

Literature

A brief survey of this chapter's contents and a detailed assessment of the existing research on it to 2002 was provided by Meulenbeld.⁴⁴⁰ There also exists a substantial herpetological literature from colonial India as well as more recent studies of snakes in the context of cultural and religious life.

The ophiological literature of the colonial period began in the late nineteenth century with the work of Fayrer, whose publication included striking colour paintings of snakes.⁴⁴¹ Fayrer provided a biological taxonomy of snakes as well as chapters on mortality statistics during the nineteenth century, treatment and effects of poison, and experimental data. Ewart (1878) included descriptions of appearance and behaviour of poisonous snakes and sometimes their local names and reproducing Fayrer's illustrations.⁴⁴² Wall (1913: 75–124) provided a useful analysis of the medical effects of snake envenomation in India arranged by the varied symptomatology of different snakes. He also discussed the difference between the symptoms of toxicity and fright (69–75) and also the difficulties arising out of uncertainty about the effects of snake-bite (124–126). The *Suśrutasamhitā* too recognized the emotional and somatic effects of fright (see note 458 below). Wall (1921) provided a wealth of detail of the snakes of Sri Lanka, including line drawings.

Doniger (2015) provided a good survey of snakes as protagonists in religious literature from the *Atharvaveda* through the epics, *Purāṇas* and Buddhist literature. Semeka-Pankratov (1979) traced semiotics of the term *nāga* through Vedic, Pali and Sanskrit literature. Slouber (2016a: 31–33 *et passim*) discussed the *Suśrutasamhitā*'s *Kalpasthāna* as a precursor and influence on later Tantric traditions of snake-bite interpretation and therapy. In particular, the Tantric *Kriyākālaguṇottara* text that Slouber presented divided snakes into two basic categories, divine and mundane, as the *Su-*

(Ca 1941: 131–132)).

440 HIML: IA, 292–294. In addition to the translations mentioned by Meulenbeld (HIML: IB, 314–315), a translation of this chapter was included in P. V. Sharma 1999–2001: 3, 35–45. The classic work of Jolly (1951: ¶93) offered a short but accurate overview of Indian toxicology.

441 Fayrer 1874, first published in 1872.

442 Calling his work a supplement to Fayrer (1874), but also being cited by Fayrer, Ewart 1878 evidently also collected local indigenous knowledge from his “snake-man” (p. 22).

śrutasaṃhitā does.⁴⁴³ But unlike the *Suśrutasaṃhitā*, in the *Kriyākālaguṇot-tara* the chief taxonomic principle for both groups is the four *varṇas*.

A discussion of this chapter specifically in the light of the Nepalese manuscripts was published by Harimoto.⁴⁴⁴ After a close comparative reading of lists of poisonous snakes, Harimoto concluded that, “the Nepalese version is internally consistent while the [vulgate] editions are not.” Harimoto showed how the vulgate editions had been adjusted textually to smooth over inconsistencies, and gave insights into these editorial processes.⁴⁴⁵

The Seven Stages of Toxic Shock

A prominent feature the *Suśrutasaṃhitā*’s interpretation of envenomation symptoms is the concept of seven successive stages or pulses (*vega*) of toxic shock after a bite. This is interestingly coordinated with the *Suśrutasaṃhitā*’s concept of the *kalās*, which are either seven layers of skin that come into existence during embryonic development or seven interstitial tissues that separate the various parts of the body.⁴⁴⁶

Contemporary clinical studies of snake envenomation and treatment do not show any awareness of such a seven-stage symptomology of traditional Indian medicine.⁴⁴⁷ Exceptionally, the studies by Barceloux and Özbulat et al., do identify and tabulate three stages of envenomation.⁴⁴⁸ The symptoms of these three stages are mainly characterized by increasing degrees

443 Slouber 2016a: 144–145.

444 Harimoto 2011: 101–104.

445 The two editions that Harimoto noted, Su 1938 and Su 1889, present identical texts.

446 The system of the कला is described at 4.4.4–20 (Su 1938: 355–357). Cf. *Mahākośa*: 1, 183–184, *Śabdasaṃdhu*: 227–228, Kutumbiah 1962: 6, *HIML*: 1, 247–248 and notes. This system of dermal and interstitial कला was not known to the *Carakasamhitā* as such; rather, the *Carakasamhitā* mentioned six kinds of skin (त्वक्) (4.7.4 (Ca 1941: 337)), with different names and characteristics, a contradiction discussed by the commentator Cakrapāṇidatta (*idem*). It appears in later works such as the fourteenth-century *Śārṅgadharasaṃhitā* (1.1.60 (P. Śāstrī 1931: 15)).

447 E.g., Ellenhorn 1997; Weinstein et al. 2009; Pillay 2013: 1747–1749; WHO 2019: 19; Mehta and Sashindran 2002; Hamza et al. 2021; A. M. Deshpande et al. 2022.

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

of edema. This differs from the *Suśrutasaṃhitā*'s detailed characterization of changes in skin colour etc.⁴⁴⁹

Translation

- 1 Now we shall explain the procedure (*kalpa*) that is what should be known concerning the venom in those who have been bitten by snakes.⁴⁵⁰
- 3 Suśruta, grasping his feet, questions the wise Dhanvantari, the expert in all the sciences.
- 4 “My Lord, please speak about the number of snakes, and their divisions, the symptoms of someone who has been bitten, and the knowledge about the toxic reactions of poisoning”.⁴⁵¹

[The Taxonomy of Snakes]

- 5 On hearing his query, that distinguished physician spoke.
“The venerable snakes such as Vāsukī and Takṣaka are uncountable.
- 6–9ab “They are snake-lords who support the earth, as bright as the ritual fire, ceaselessly roaring, raining and scorching. They hold up the earth, with its oceans, mountains and continents. If they are angered, they can destroy the whole world with a breath and a look. Honour to them. They have no role here in medicine.
“The ones that I shall enumerate in due order are those mundane ones with poison in their fangs who bite humans.”⁴⁵²

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

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

451 The expression “toxic reactions” translates वेग, which in other contexts may mean “(natural) urge.” Here, it is rather the discrete stages or phases of physiological reaction to envenomation. Cf. the symptoms of cobra poisoning described by Wall (1913: 80).

452 The next few verses are discussed in detail by Harimoto (2011: 101–104), who shows that in the taxonomy of snakes, the Nepalese version of the *Suśrutasaṃhitā* has greater internal coherence than the vulgate recension.

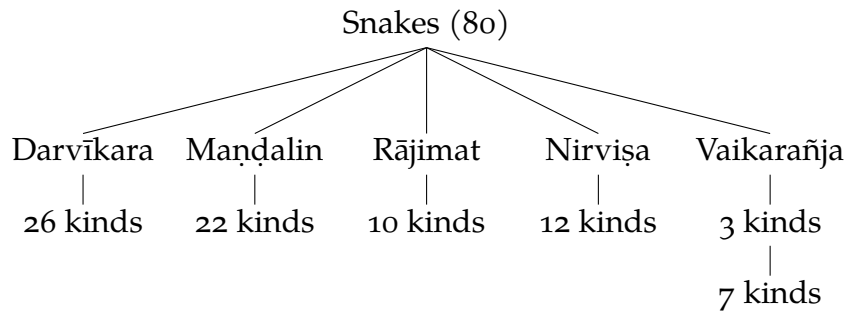


Figure 1: The taxonomy of snakes in the vulgate, 5.4.9–13ab (Su 1938: 571).

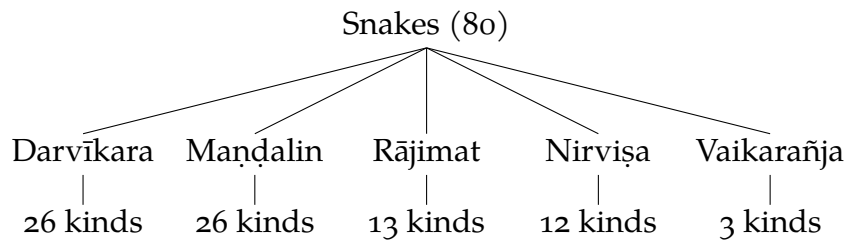


Figure 2: The taxonomy of snakes in the Nepalese version.

- 9cd–10 “There are eighty kinds of snakes and they are divided in five ways: Darvīkaras, Maṇḍalins, Rājīmat, and Nirviṣas. And Vaikarañjas that are traditionally of three kinds.⁴⁵³
- 11 “Of those, there are twenty and six hooded snakes, and the same number of Maṇḍalins are known. There are thirteen Rājīmat.⁴⁵⁴
- 12 “There are said to be twelve Niriviṣas and, according to tradition, three Vaikarañjas.

[Behaviours]

- 13–14ef “If they are trodden on, ill-natured or provoked or even just looking for food, those very angry snakes will bite. And that is said to happen in three ways: serpented (*sarpita*), torn (*darita*) and thirdly without

⁴⁵³ Harimoto (2011) translated these names as “hooded,” “spotted,” “striped,” “harmless,” and “hybrid.” Figure 1 shows the taxonomy described in the vulgate text; Figure 2 shows the different and more logical division of the Nepalese version of the *Suśrutasaṃhitā*.

⁴⁵⁴ The phrasing of this śloka is awkward.

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

venom (*nirviṣa*). Some experts on this want to add “hurt by the snake’s body”.⁴⁵⁵

- 15–16 “The physician can recognize the following as “ophidian (*sarpita*)”: Where a rearing snake makes one, two or more puncture-marks of its teeth, when they are deep and without much blood,⁴⁵⁶ accompanied by a little ring of spots (*cuñcumālaka*),⁴⁵⁷ lead to degeneration, and are close together and swollen.
- 17 Where there are streaks with blood, whether it be blue or white, the physician should recognize that to be “torn (*darita*),” having a small amount of venom.
- 18 The physician can recognize the locations of the bites of a person in a normal state as being free from poison, when the location is not swollen, and there is little corrupted blood.
- 19 The wind of a timid person who has been touched by a snake can get irritated by fear. It causes swelling.⁴⁵⁸ That is “hurt by a snake’s body.”
- 20 Locations bitten by sick or frightened snakes are known to have little poison. Similarly, a site bitten by very young or old snakes has little poison.

grammar

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

456 The word उद्धृत “aroused” was glossed by Ḍalhaṇa at 5.4.15 (Su 1938: 571) as उन्मोद्य, a word not found as such in standard dictionaries (MW; KEWA; *Mahākośa*; Apte). Semantic considerations suggest that the word is not related to √muṭ “break” or *mūta*/*mūṭa* “woven basket.” Perhaps it is related to the Tamil மோதி (*mōṭi*), whose meanings include “arrogance, grandeur, display” (DED₂: #5133) or to faintly-documented forms like *moṭyate* “is twisted” (CDIAL: #10186). Ḍalhaṇa’s उन्मोद्य may thus mean “twisting up” or “making an arrogant display.”

Note that पद “puncture-mark” (more literally, “footprint”) is being used in the same sense as in 1.13.19 (Su 1938: 57) when describing the marks on the body where a knife scarifies the skin before leeching. See footnote 50.

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

458 Wall (1913: 69) remarked on the difficulty of separating toxicity symptoms from the psychosomatic effects of terror:

The gravity of symptoms due to fright does not appear to me to be sufficiently recognised, though there is no doubt in my mind that fatal cases from this cause are abundant, especially among the timid natives of this country.

Wall went on to give several case studies in which patients experienced syncope or even died as a result of bites from toxicologically harmless creatures.

- 21 Poison does not progress in a place frequented by eagles,⁴⁵⁹ gods, holy sages, spirits, and saints, or in places full of herbs that destroy poison.⁴⁶⁰

[Characteristic Features of Snakes]

- 22 Darvīkara snakes are known to have hoods, to move rapidly, and to have rings, ploughs, umbrellas, crosses, and hooks on them.
- 23 Maṇḍalin snakes are known for being large and slow-moving. They are decorated with many kinds of circles. They are like a flaming fire because of their poisons.
- 24 Rājimat snakes are smooth and traditionally said to be, as it were, mottled with multicoloured streaks across and above.

[Classes of Snake]

- 25 Snakes that shine like pearls and silver, and that are amber and that shine like gold, and smell sweet are traditionally thought of as being of the Brāhmaṇa caste.
- 26 Warrior snakes, however, are those that look glossy and get very angry. They have the mark of the sun, the moon, the earth, an umbrella and bitumen.
- 27 Merchant snakes may traditionally be black, shine like diamond or have a red colour or be grey like pigeons.
- 28 Any snakes that are coloured like a buffalo and a tiger, with rough skin and different colours are known as servants.⁴⁶¹

459 Dalhaṇa on 5.4.21 (Su 1938: 571) identified the सुपर्ण as a गरुड. On the bird called सुपर्ण, Dave (1985: 72 ff, 514) too noted that it may be a synonym for Garuḍa, and in some contexts may refer to the Golden Eagle, Golden Oriole, Lammergeyer, etc. Dave (1985: 199 ff, 492) noted again that the Garuḍa is a mythical bird but may refer to the Himalayan Golden Eagle and other species of eagle. He pointed out that historically, The original physical basis for गरुड as the नागाशी (snake-eater) was most probably the Sea-Eagle who picks up sea-snakes from the sea or sand-beach and devours them on a nearby tree... (Dave 1985: 201).

Dave continued with interesting reference to Śrīharṣa's *Nāgānanda*.

460 For "spirits" the Nepalese version has भूत while the vulgate reads यक्ष.

461 Presumably "different" from the earlier-mentioned castes.

The sequence of the following three verses is slightly different from the vulgate (5.4.29–31 (Su 1938: 572)).

- 31 All snakes that are variegated (Rājīmats) move about during the first watch of the night. The rest, on the other hand, the Maṇḍalins and the Darvīkaras, are diurnal.⁴⁶²
- 29 Wind is irritated by all hooded snakes; bile by Maṇḍalins and phlegm by those with many stripes.
- 30 Because of the two classes having greater, lesser or equal class, there is the characteristic of irritating two humours.
And he will explain the opposing view that is to be known as a result of the non-union of a male and female.⁴⁶³

[Enumeration of Snakes]

- 34.1 In that context, here are the Darvīkaras.
- | | |
|--|---|
| 1. The Black snake (<i>kṛṣṇasarpa</i>); | (<i>mahāpadma</i>); |
| 2. The Big Black (<i>mahākṛṣṇa</i>); | 16. The Grass Flower (<i>apuṣpa</i>); |
| 3. The Black Belly (<i>kṛṣṇodara</i>); | 17. The Curd Mouth |
| 4. The All Black (<i>sarvakṛṣṇa</i>); ⁴⁶⁴ | (<i>dadhimukha</i>); |
| 5. The White Pigeon | 18. The Lotus Mouth |
| (<i>śvetakapota</i>); ⁴⁶⁵ | (<i>punḍarīkamukha</i>); |
| 6. The Rain Cloud (<i>valāhako</i>); | 19. The Brown Hut Mouth |
| 7. The Great Snake | (<i>babhrūkuṭīmukha</i>); |
| (<i>mahāsarpa</i>); | 20. The Variegated (<i>vicitra</i>); |
| 8. The Conch Keeper | 21. The Flower Sprinkle Beauty |
| (<i>śaṅkhaṭṭhā</i>); | (<i>puṣpābhikīrṇnābha</i>); |
| 9. The Red Eye (<i>lohitākṣa</i>); | 22. The Mountain Snake |
| 10. The Gavedhuka (<i>gavedhuka</i>); | (<i>girisarpa</i>); |
| 11. The Snake Around | 23. The Straight Snake |
| (<i>parisarpa</i>); | (<i>ṛjusarpa</i>); |
| 12. The Break Hood | 24. The White Rip (<i>śvetadara</i>); |
| (<i>khaṇḍaphaṇa</i>); | 25. The Big Head (<i>mahāśīrṣa</i>); |
| 13. The Kūkuṭa (<i>kūkuṭa</i>); | and |
| 14. The Lotus (<i>padma</i>); | 26. The Hungry Sting (<i>alagarda</i>); |
| 15. The Great Lotus | |

462 The readings of the vulgate, that Rājīmats are active in the early night, the Maṇḍalins in the later night, and Darvīkaras in the day, seem clearer.

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

464 Not in vulgate.

465 The vulgate adds The Big Pigeon (*mahākapota*).

34.2 Here are the Maṇḍalins

- | | |
|--|---|
| 1. The Mirror Ring
(<i>ādarśamaṇḍala</i>); | 13. The Morning Glory
(<i>pālindaka</i>); |
| 2. The White Ring
(<i>śvetamaṇḍala</i>); | 14. The Stretch (<i>tantuka</i>); |
| 3. The Red Ring (<i>raktamaṇḍala</i>); | 15. The Pale as a Flower
(<i>puṣpapāṇḍu</i>); |
| 4. The Speckled (<i>prṣata</i>); | 16. The Six Part (<i>ṣaḍaṅga</i>); |
| 5. The Gift of God (<i>devadinna</i>); | 17. The Flame (<i>agnika</i>); |
| 6. The Pilindaka (<i>pilindaka</i>); | 18. The Brown (<i>babhru</i>); |
| 7. The Big Cow Snout
(<i>vṛddhagonasa</i>); | 19. The Ochre (<i>kaṣāya</i>); |
| 8. The Jackfruit (<i>panasaka</i>); | 20. The Khaluṣa (<i>khaluṣa</i>); |
| 9. The Big Jackfruit
(<i>mahāpanasaka</i>); | 21. The Pigeon (<i>pārāvata</i>); |
| 10. The Bamboo Leaf
(<i>veṇupatraka</i>); | 22. The Hand Decoration
(<i>hastābharāṇaka</i>); |
| 11. The Kid (<i>śiśuka</i>); | 23. The Tatra (<i>tatra</i>); ⁴⁶⁶ |
| 12. The Intoxicator (<i>madanaka</i>); | 24. The Mark (<i>citraka</i>); |
| | 25. The Deer Foot (<i>eṇīpada</i>). ⁴⁶⁷ |

34.3 Here are the Rājīmats.⁴⁶⁸

- | | |
|---|---|
| 1. The Lotus (<i>punḍarīka</i>); | 7. The Grass Drier (<i>trṇaśoṣaka</i>); |
| 2. The Stripe Speckle (<i>rājicitra</i>); | 8. The White Jaw (<i>svetahanu</i>); |
| 3. The Finger Stripe (<i>aṅgulirāji</i>); | 9. The Grass Flower
(<i>darbhapuṣpa</i>); ⁴⁶⁹ |
| 4. The Two Finger Stripe
(<i>dvyaṅgulirāji</i>); | 10. The Red Eye (<i>lohitākṣa</i>); ⁴⁷⁰ |
| 5. The Drop Stripe (<i>bindurāji</i>); | 11. The Ringed (<i>cakraka</i>); |
| 6. The Mud (<i>kardama</i>); | 12. The Worm Eater (<i>kikkisāda</i>); |

34.4 Here are the Nirviṣas.

⁴⁶⁶ This seems implausible, but otherwise the list of Maṇḍalins would be short.

⁴⁶⁷ The list is short by one item. Perhaps the one of the snakes named in the vulgate, *citramaṇḍala*, *gonasa* or *piṅgala*, should be considered here.

⁴⁶⁸ The following list is one item short. The vulgate text, however, has several names that do not appear in the Nepalese Rājīmat list, for example *Sarṣapaka* and *Godhūmaka*.

⁴⁶⁹ Also in the Darvīkara list.

⁴⁷⁰ Also in the Darvīkara list.

- | | |
|---|--|
| 1. The Rain Cloud (<i>valāhako</i>); ⁴⁷¹ | 8. The Two-day (<i>dvvyāhika</i>); |
| 2. Thei Snake Flag (<i>ahipatāka</i>); | 9. The Milk Flower |
| 3. The White Leaf (<i>śukapatra</i>); | (<i>kṣīrikāpuṣpa</i>); |
| 4. The Goat Swallower | 10. The Flower All (<i>puṣpasakalī</i>); |
| (<i>ajagara</i>); | 11. The Chariot of Light |
| 5. The Stimulator (<i>dīpyaka</i>); | (<i>jyotīratha</i>); |
| 6. The Ilikinī (<i>ilikinī</i>); | 12. The Little Tree (<i>vṛkṣaka</i>); |
| 7. The Year-Snake (<i>varṣāhika</i>); | |

[Breeding and Gender]

- 34.5 The Vaikarañjas originate out of contrary unions amongst the three colours.⁴⁷² Thus:

1. The Mākuli (*mākuli*);
2. The Poṭa Throat (*poṭagala*);
3. The Oil Stripe (*snigdharāji*);

Amongst those, the Mākuli (*mākuli*); is born when a male Black Snake mates with a female Cow Snout (*gonasa*), or the reverse. The Poṭa Throat (*poṭagala*) is born when a male Rājila mates with a female Cow Snout (*gonasa*) or the reverse. The Oily Stripe (*snigdharāji*) is born when a male Black Snake mates with a female Rājimat, or the reverse. Their poison is like that of their father, because it is the superior one out of the two; but others say it is like the mother. Thus eighty of these snakes have been described.

- 35 Amongst them, males have large eyes, tongues and heads.⁴⁷³ Females have small eyes, tongues and heads. Neuters have both characteristics, and are slow to exert themselves or be angry.⁴⁷⁴
- 36 In that context we shall give instruction in a general way about the sign of having been bitten by any of the snakes.
For what reason?

⁴⁷¹ Also in the Darvīkara list.

⁴⁷² The word *varṇa* in this chapter normally means “colour” not “class.” (“Class is expressed by “jāti.”) While *kṣṇasarpa* is clearly a colour-type, it is less obvious that *gonasī* is a special colour, and *rājimat* is a group of snakes.

⁴⁷³ The vulgate includes the snake’s mouth in this and the next list.

⁴⁷⁴ The reading मन्दचेष्टाक्रोधा is an awkward compound; possibly the original reading was मन्दचेष्टा: + अक्रोधा and sandhi was applied twice.

varṇa
means “col-
our” else-
where?

Because poison acts quickly, like a fire with an oblation, a honed sword, or a thunderbolt.⁴⁷⁵ And ignored for even a period of time, it can drag the patient away. There is not even an opportunity to follow the literature.⁴⁷⁶

And when the symptom of being bitten is stated, there will be three ways of treating it because there are three kinds of snake. Therefore we shall explain it in three ways. “For this is good for people who are ill, and it removes confusion and in this very case it prevents all symptoms”.⁴⁷⁷

[Symptoms of snakebite]

- 37 In this context, the poison of a Darvīkara causes the skin, nails, eyes, mouth, urine, feces, and the bitemark to be black; there is driness, the joints hurt and the head feels heavy; the waist, back and neck feel weak; there is yawning, the voice becomes faint, there is gurgling, paralysis, dry throat, cough, wheezing, and hiccups; the wind goes upwards, the patient convulses with sharp pain, black saliva dribbles out, foam appears, the ducts (*srotas*) are blocked and every kind of pain that is due to wind.⁴⁷⁸

The poison of a Maṇḍalin causes the skin, nails, eyes, teeth, mouth, urine, feces, bitemark to be yellow; there is a desire for cold, a temperature, giving off fumes,⁴⁷⁹ a burning feeling, thirst, intoxication, fainting,

475 Perhaps the image suggested by “a fire with an oblation” is that of the Pravargya, in which a large flame rises suddenly from the ritual fire.

476 The idea seems to be that there is no time to consult the verbose āyurvedic teachings. The “extensive meaning of the collection of statements (वाक्समूहार्थविस्तार)” is singled out as one of Āyurveda’s virtues in 5.8.142 (Su 1938: 594). Alternatively, perhaps the patient is unable to understand what the doctor is saying to him.

477 In the next passage, the symptoms of snake poisoning are indeed explained under three headings.

478 Cf. the similar symptoms of snake venom poisoning by the so-called Brahmin warriors of Harmatelia described by the classical author Diodorus Siculus (fl. ca. 30-60 BCE) (Eggermont 1975: 108).

479 The term “giving off fumes (परिधूपयन)” is not in MW: 596 as such, although परिधूपन, परिधूमन and परिधूमायन are cited and referred to the *Suśrutasaṃhitā*. “Giving off fumes (परिधूपन)” is listed at *Suśrutasaṃhitā* 2.6.13 (Su 1938: 291) amongst the symptoms of urinary disease caused by phlegm. The editors note a variant reading परिधूमायन but do not tell us in which manuscript (Su 1938: 291, n. 3). Ḍalhaṇa on 2.6.13 (Su 1938: 292) glossed परिधूपन as “hot all over (समन्ततस्तापः)” and in our current passage as “hot

fever, haemorrhaging (*śonitāgamana*), and the degeneration of the flesh and fat above and below. There is swelling, suppuration of the bite, metamorphopsia (*viparītadarśana*), anger caused by the suffering, and every kind of pain that is due to bile.⁴⁸⁰

The poison of a Rājimat causes the skin, nails, eyes, teeth, mouth, urine, feces, and bite mark to be pale; there is a cold fever, the hair stands on end, there is stiffness and swelling of the limbs including the site of the bite. There is a discharge of viscous phlegm, vomiting, itchy eyes, and a rattling sound. The breath is obstructed and there is every kind of pain due to phlegm.

- 38 In that context, “someone bitten by a male gazes upwards, by a female horizontally, and by a neuter, downwards.” One bitten by a pregnant snake has a pale face and becomes swollen (*ādhmāta*). One bitten by a recently-delivered snake is afflicted with abdominal pain and urinates with blood. One bitten by a hungry snake craves food. Those bitten by an old snake have delayed and slow reactions. And one bitten by a young snake is fast and keen. One bitten by a non-venomous snake has the characteristic mark of non-poisoning.⁴⁸¹ Some that are bitten by a blind snake become blind. A constrictor (*ajagara*) is deadly because it swallows, not because of poison.

[toxic reactions]

- 39 In that context, all snake toxins have seven toxic reactions.⁴⁸²

[**Darvīkaras**] Thus, at the first pulse of the Darvīkaras the poison corrupts the blood. That corrupted blood turns black. Because of that, blackness and a feeling of ants crawling about on the body develop.⁴⁸³ In the second pulse, it corrupts the flesh. That causes extreme blackness and lumps.

over the whole body (सर्वाङ्गसन्तापः)” (Su 1938: 573). See also *Mahākośa*: 1, 429: धूमायन “अङ्गानां धूमोद्धमनमिव” citing the *Suśrutasaṃhitā*.

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

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

482 Cf. the same concept in the context of plants, at 129

483 Strictly, we would expect a dual verb here, instead of the plural of the witnesses.

In the third, it corrupts the fat. That causes a discharge at the bite, heaviness of the head and an eclipse of the vision.⁴⁸⁴

In the fourth, it penetrates the trunk of the body (*koṣṭha*). From there, it irritates the humors, particularly phlegm. That causes exhaustion and oozing phlegm, and dislocation of the joints.

In the fifth pulse, it penetrates the bones. That causes breaking of the joints, hiccups and burning.

In the sixth pulse, it penetrates the marrow. That causes humours in the seat of fire in the gut (*grahaṇī*), heaviness of the limbs, diarrhoea, pain in the heart and fainting.⁴⁸⁵

In the seventh, it penetrates the semen and greatly irritates the vyāna breath (*vyāna*), and causes the phlegm (*kapha*) to run imperceptibly out of the tubes (*srotas*). That causes the appearance of mucous (*śleṣman*), breaking of the hips, back and shoulders, impediment to all movements and shortness of breath.

[Mandalins] Thus, at the first pulse of the Mandalins, the poison corrupts the blood. Corrupted by that, it turns yellow. That causes a yellow appearance and a feeling of heat all over (*paridāha*).

In the second pulse, it corrupts the flesh. And that causes the limbs to be very yellow and an extreme feeling of heat all over (*paridāha*), and swelling at the bite.

In the third, it corrupts the fat. That causes a discharge at the black bite and sweating.

In the fourth, it penetrates as before and brings on fever.

In the fifth, it causes heat in all the limbs.

In the sixth and seventh, it is the same as before.

[Rājīmats] Thus, in the first pulse of the Rājīmats, the poison corrupts the blood. Corrupted by that, it turns yellow. It causes a person to have hair standing on end and a pale appearance.

484 Dalhana on 5.4.39 (Su 1938: 574) glossed the last expression as “blockage of the vision (दृष्ट्यवरोध).”

485 The “seat of fire in the gut (ग्रहणी)” is an ayurvedic organ in the digestive tract that does not correspond to any specific organ known to contemporary anatomy. For discussion, see *Mahākōśa*: v. 1, 304; Meulenbeld 1974b: 619; Das 2003: 544–545.

In the second pulse, it corrupts the flesh. That causes him to become pale and to become extremely benumbed (*jāḍya*).

In the third, it corrupts the fat. That causes moistness of the bite and runny eyes and nose.

In the fourth, it is the same as before. After penetrating, it brings on stiffness of the neck (*manyāstambha*) and heaviness of the head.

In the fifth, speech is slurred and there is a cold fever.

In the sixth and seventh, it is the same as before.

[Summary Verses]

40 There are verses on this.

*It is well known that there are seven interstitial layers (kalā) in between the bodily tissues (dhātu). Poison passing through these one by one produces the toxic reaction (vega).*⁴⁸⁶

41 *The interval taken by the deadly substance (kālakalpa), propelled (√ūh) by air (samīraṇa), to cut the layers of skin is known as the "pulse interval (vegāntara)".*⁴⁸⁷

42 *In the first pulse, an animal has a swollen body, is distressed and broods.*⁴⁸⁸

In the second, it dribbles somewhat,⁴⁸⁹ the hair stands up on its body, and it has pain (√pīḍ) in the heart.

43 *The third stage brings headache and it breaks the ears and necks.⁴⁹⁰ In the fourth, the bewildered creature trembles and gnashing its teeth, it gives up life.*

44–45 *Some experts say that elephants have three toxic reactions.*⁴⁹¹

⁴⁸⁶ See note 446 above.

⁴⁸⁷ Ḍalhaṇa on 5.4.41 (Su 1938: 574) glossed कालकल्प as मृत्युसदृशं विषं "the poison resembles death."

⁴⁸⁸ The verb √प्रध्वै "meditate, be thoughtful, brood" is unexpected here and in the second class, an epic form. Ḍalhaṇa on 5.4.42 (Su 1938: 574) noted that some manuscripts did not include the text about animals from this point on. The fact that these verses are present in the Nepales witnesses testifies to their antiquity.

⁴⁸⁹ The Nepalese witnesses use लालि-, not लाल-, for "saliva."

⁴⁹⁰ The scribe of MS H emended the text to read कण्ठग्रीव with the vulgate. Intransitive use of pass. भञ्ज.

⁴⁹¹ On अन्तःस्वेद as "elephant," cf. *Arthaśāstra* 9.1.46 (Kangle 1965a: v.1, 219; Olivelle 2013: 351): हस्तिनो ह्यन्तःस्वेदाः कुष्ठिनो भवन्ति ॥ ४६ ॥.

So, at the first toxic reaction, an bird becomes bewildered and is confused from that point on. At the second, the bird is distressed and, crying out, it dies.

Some people claim that where birds are concerned, there is really just a single toxic reaction (vega) and that amongst animals like cats and mongooses, poison does not take much effect.⁴⁹²

⁴⁹² See on this subject: T. L. Brunton and Fayrer 1909: 39-40; S. A. Minton and M. R. Minton 1969: 88-89 (references taken from [HIML](#): 1B, 399, n. 124).

Part 6. Uttarat Tantra

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Perhaps <i>kalka</i> here could also mean the <i>Terminalia Bellerica</i> (विभीतक).	84
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The webpage https://hindi.shabd.in/vairagya-shatakam-bhag-acharya-arjun-tiwari/post/117629 says that this verse belongs to the <i>Nītiratna</i> . I could not find this text.	91
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?	102
?	102
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■ (since the word lagha is not clear to me)	199
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■ (not sure about it)	199
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■ (I am looking for a better translation)	199
■ (I'd need to rework on it).	200
■ (I'd need to rework on it and think about the sequencing of the number).	200
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■ (2nd hemistich is incomplete)	200
■ (not too sure about the meaning of vyapada)	200
■ not so sure about sodāvarte	200
■ not so sure about it, MW mentions others like Cordia Myxa and Alangium hexapetalum	201
■ not sure about it	201
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■ can śṛta mean here boiled milk? Not happy with the last part . . .	203
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■ (not so sure about it). [ghṛtābhyaṅgonavasthāsu should it be like ghṛtābhyaṅgo 'navasthāsu?, svedā lepaḥ ghṛtābhyaṅgonavas- thāsu ca yojayet] (Not so happy with the translation)	204
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