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On the Identity of *Arka*, an Āyurvedic Class of Medicines¹

DAMODARAN SURESH KUMAR

Āyurveda employs several classes of medicine in the treatment of diseases. According to the medieval text *Śārīṅgadharaśaṃhitā*, considered today to be the authoritative work on āyurvedic pharmacy, expressed juices, decoctions, spirituous liquors, oils, clarified butter, electuaries, pastes, powders and tablets are the important classes of medicines.² However, the Sanskrit treatise *Arkaprakāśa* (AP³), traditionally ascribed to King Rāvaṇa of Rāmāyaṇa fame, describes another variety called *arka*.⁴ In modern times the term *arka* is often equated with hydrodistillates, essences and medical tinctures.⁵ Nevertheless, several contradictory points were noticed during the course of a careful study of this not so popular text and are presented hereunder to serve as pointers for future research.

Ingredients with no volatile constituents

Flesh

At the beginning of the text the author extols the virtues of the *arka* of flesh and recommends it as an effective medicine for almost all diseases (2:58-62). The *arka* prepared from human flesh is said to offer protection from snake-bite (4:96). Administration of an *arka* of ovine heart prepared in goat milk is recommended in oedema and consumption (5:39). The *arka* of the meat of a black rooster is said to cure *koṣṭharoga* (6:30). A classification of meat and recipes of *arkas* of oysters, fish, monkeys, and birds are to be found in chapters 2 (verses 63-71;81-83) and 4 (verses 76-95).

Blood

An *arka* of blood is indicated in trauma of the heart (5:55).

Egg

There is an interesting recipe for an *arka* of eggs (4:97).

Milk, honey, etc.

The text describes recipes of many *arkas* involving milk, buttermilk, clarified butter, honey etc. References to such ingredients are presented in Table 1.

¹ Dr. G.J. Meulenbeld read the manuscript of this study critically and offered valuable suggestions, for which I would like to thank him here. I am also beholden to my supporting agency, the AVR Educational Foundation of Ayurveda, Coimbatore.

² Murthy 1984: 1-45.

³ References to this text will be to its chapters and verses.

⁴ Vaisya 1981: 1-190.

⁵ Anonymous 1978: 21-22; Nesamony 1985: 481; Meulenbeld 1981.

Salt, sugar, minerals, etc.

A striking example of an *arka* of salts is the *śaṅkhadrāva* (2:72-80). References to several non-volatile ingredients identified in the recipes are presented in Table 1.

TABLE 1

Ingredients having little volatile constituents

Name of ingredient	References to chapter and verse
<i>Liquids</i>	
Clarified butter	5:1, 6:11, 6:35
Milk	5:41, 5:42, 5:48, 5:55, 5:57, 5:90, 6:11, 6:34, 7:3, 7:29-30
Buttermilk	5:10, 5:26, 5:30, 6:32
Cow urine	5:31, 5:75, 5:95, 5:101
Calf urine	5:62
Goat urine	7:1, 7:32
Honey	5:55, 6:5, 6:11, 7:31, 7:35-36, 7:44, 7:88
Sesamum oil	7:31
<i>Solids</i>	
Sugar	5:38, 6:11, 7:8, 7:88
Rock-salt	5:59, 5:62, 5:73, 6:32, 7:8, 7:31, 7:32, 7:35-36, 7:41, 7:43, 7:77, 7:88
Ruma salt	6:6
Vida salt (<i>viḍlavaṇa</i>)	5:91
Ash of plants (<i>kṣāra</i>)	5:4, 5:95, 6:4
Alkali from barley straw (<i>yavakṣāra</i>)	5:89
Bamboo manna (<i>vaṃśalocana</i>)	3:18, 5:38
Lac	3:35, 5:101, 6:28
Soot from chimneys of houses (<i>grhadhūma</i>)	6:5, 7:43
Chalk of reddish brown colour (<i>gairika</i>)	7:35-36
Cuttle-fish bone (<i>samudraphena</i>)	3:19, 7:35-36
Marine oyster (<i>samudraśukṭi</i>)	5:90
Mineral bitumen (<i>śilājīṭ</i>)	4:18-23, 5:31
Orpiment (<i>haritāla</i>)	5:25
Sulphur (<i>gandhaka</i>)	5:27, 5:101
Realgar (<i>manaḥśilā</i>)	6:5, 7:29-30, 7:35-36
Iron rust (<i>ayomala</i>)	7:1

Identical formulae from *Cakradatta*

Careful study shows that some plants not described in classical treatises are mentioned in the text. Examples are *Capsicum annum* L. var. *acuminatum* Fingh. (*javāla-*

marīca, 3:11), *Lepidium sativum* L. (*candraśūra*, 3:13) and *Smilax china* L. (*dvīpāntara-vacā*, 3:16). The sequence of listing the plants in chapter 3 bears striking resemblance to that of the *Bhāvaprakāśanighaṇṭu*.⁶ Moreover, syphilis (*phiraṅgaroga*), first reported in Āyurveda by Bhāvamiśra in the 16th century AD,⁷ also finds its place in the text (3:16, 6:39, 6:41). This evidence suggests that the extant version of AP may have been composed in the medieval period.⁸ To confirm the medieval origin of the text, an attempt was made to trace the source of some of the formulae described in it.

Single drug remedies

Interesting findings emerged from a comparison of the single drug formulae of AP with similar recipes of the *Cakradatta* (CD)⁹, composed in the 11th century AD by Cakrapānidatta¹⁰. Several examples are given below.

- 1) An *arka* of *palāśa* seeds (*Butea monosperma* [Lam.] Kuntze) and buttermilk is said to kill worms (5:26). The recipe available in CD recommends a paste of the seeds in buttermilk (p.109).
- 2) An *arka* of *kūśmāṇḍa* (*Benincasa cerifera* Savi) with *yavakṣāra* and *hiṅgu* (*Ferula foetida* Regel) is prescribed in the treatment of urolithiasis (5:95). CD prescribes the same combination with the juice of *kūśmāṇḍa* (pp.281;285).
- 3) AP recommends oral administration of an *arka* of tender leaves of the *padmini* (*Nelumbo nucifera* Gaertn.) mixed with sugar for curing a prolapse of the rectum (7:10). CD recommends a paste of the tender leaves (p.424).
- 4) An *arka* of the bark of *aśoka* (*Saraca asoka* [Roxb.] De Wilde) mixed with clarified butter and milk is indicated in the treatment of dysfunctional bleeding (7:70). CD recommends a decoction of the bark (p.503).
- 5) An *arka* of *aśvagandhā* (*Withania somnifera* Dunal) mixed with clarified butter and milk is said to cure female infertility (7:75). The same formula occurring in CD includes a decoction of the drug (p.509).

Compound medicines

Some of the compound formulae of AP bear striking resemblance to those of CD.

- 1) The formula of *bhagnasandhipara arka* (6:28) is identical with that of *asthisamhārādicūrṇa* of CD (p.371).
- 2) The formula of *ślipadarogapara arka* (6:7) is identical with that of *dhasṭūrādīpra-yoga* (p.337).
- 3) The only difference between *visarparogapara arka* (6:35) and *daśāṅgalepa* of CD (p.410) is that the latter includes *dāruharidrā* (*Berberis aristata* DC.) as an extra ingredient.

⁶ Pandey 1984: 1-984.

⁷ Mishra 1949: 530-534.

⁸ Meulenbeld 1981.

⁹ Mishra 1983.

¹⁰ Meulenbeld 1984.

- 4) The formula of the *arka* for blackening hair (7:1) is exactly identical with that of the paste prescribed in CD (p.433).
- 5) The formula of *pūtināsārogapara arka* (7:41) is presented in CD as *vyāghrītāila* (p.464).
- 6) The *mukhapākarogapara arka* (7:56) and CD's *jātipatrādikvātha* (p.452) have identical ingredients.
- 7) While CD prescribes *bālacaturbhadrikā* powder mixed with honey for curing children's ailments (p.523), AP recommends an *arka* of the same drugs mixed with honey (7:84).
- 8) The only difference between the *bālarogapara arka* (7:86-87) and *rajanyādicūrṇa* of CD (pp.523-524) is that the latter includes *bṛhatīdvaya* instead of *bṛhañī*.
- 9) *Pradararogapara arka* (7:71) and *dārvyādikvātha* (p.503) have more or less the same ingredients. The only difference is that *arkapūṣpi* in AP is substituted in CD with *bhallātaka*.
- 10) While CD recommends a warm mixture of ginger juice, honey, rock-salt and sesamum oil for curing pain in the ear (p.456), AP prescribes an *arka* of the same drugs (7:31).
- 11) The ingredients of the *netrarogapara arka* (7:29-30) and *candrodayavartī* (pp.480-481) are exactly the same.
- 12) The same is the case with the *mūrcchāpara arka* (5:58) and *kōlamajjādicūrṇa* (p.167).

It is remarkable that the preparation of not even one of the seventeen identical medicines from CD involves distillation.

Fermented decoctions

The term *arka* is also applicable to fermented decoctions as evidenced by the statement that an *ariṣṭa* is an *arka* prepared from boiled drugs (2:91). According to standard treatises of Āyurveda an *ariṣṭa* is a decoction fermented by the addition of jaggery, honey and other sweet substances.¹¹ Several fermented products like *surā*, *sīdhu*, *vāruṇī* etc., are also described (2:92-98).

Use of preservatives

In chapter 1 the author states that one should never administer *arkas* which have developed a foul odour. He further stipulates that malodorous *arkas* are to be scented with fragrant flowers (1:76-78). Directions for imparting fragrance to *arkas* of substances like milk, curd, buttermilk, meat soup, honey, oil, clarified butter and other liquids are available (2:30-33).

It is stated that all *arkas* should be "fumigated" with sulphur and that such a treatment renders them "powerful and noble like the sun" (2:41). Sulphur is an ingredient of *jaṭā-māṃsyādivāsana* and *daśāṅgadhūpa* recommended for this purpose (2:46-50). As sulphur

¹¹ Sharma—Dash 1983: 524-527.

dioxide is known from modern research to be a good preservative,¹² fumigation with sulphur is suggested apparently to prevent decomposition of the *arka*.

Is *arka* a decoction?

Salig Ram Vaisya remarks in the introduction to the Hindi translation of AP¹³ that the term *arka* means a decoction (pages 7-12). The *Vācaspatya* also translates *arka* as a type of decoction (*kvāthaviśeṣa*).¹⁴ Curiously, Rāvaṇa does not include *kvātha* among the five classes of medicines, viz., *kalka* (paste), *cūrṇa* (powder), *rasa* (expressed juice), *taila* (oil) and *arka* (1:46). It may be mentioned in this context that a procedure for making *arka* is described in Sōḍhala's *Gadanigraha* the of 13th century AD¹⁵ In modern times some authors have used the word *arka* as a synonym of expressed juice.¹⁶

However, from the description given in the beginning of the AP one gets the impression that the contraption to be used for making an *arka* is a crude version of the modern day distillation apparatus (1:55-60). It seems likely that certain intricacies of the art of making an *arka* might have been intentionally concealed by the author and his school of thought. This is substantiated by the statement that the *arka* of flowers is to be prepared 'according to the technique learnt from the master' (4:36-38). There is also mention of *arkas* prepared without the use of fire (1:61-73). The occurrence of various formulae for witchcraft and sorcery in the eighth chapter and the unconventional concepts of *rasa*, *guṇa*, *vīrya*, *vipāka* and *prabhāva* (1:24-45) cannot have made the text very popular among the scholarly practitioners of Āyurveda, while at the same time lending an aura of mystification to its contents.

It is mentioned in AP that for preparing *arkas* one should use a distillation vessel which holds the same volume as the volume of the *arka* required (1:55-60). This and the other evidence suggest that an *arka* may be a pooled mixture of the hydrodistillate fraction representing essential oils and the aqueous extract remaining in the distillation vessel. This tentative hypothesis can explain the alleged superiority of *arkas* over decoctions which are practically devoid of the volatile compounds. Comparison of the chemical and pharmacological profiles of *arkas* and decoctions of single and compound drugs can be useful in solving this problem. The need for such experimental studies using an apparatus (*arkayantra*) made according to the instructions of Rāvaṇa is therefore strongly felt to clear the confusion regarding the exact meaning of the Sanskrit technical term *arka*.

¹² O. Rahn and J.E. Conn, *Industrial and Engineering Chemistry*, 36, 1944, 185, cited by Egan-Kirk-Sawyer 1981: 60-61.

¹³ Vaisya 1981.

¹⁴ Bhattacharya 1969: 362.

¹⁵ Meulenbeld 1981; Pandey 1968: 387-388.

¹⁶ Ayurvedacharya 1951: 260.

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