

EARLIEST VEDIC CALENDAR

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It is shown that the Brahmanical stories associated with *Pravargya* ceremony and *Śunaḥsepha* legend, as well as the verses of *As̥vini-śāstra* corroborate our earlier conclusions about the earliest Vedic calendar. Its further development after the adoption of lunar month is briefly discussed here.

Key words: *As̥vini-śāstra*, 5-year yuga, *Gavāmayanam* sacrifice, *Pravargya*, *Śunaḥsepha* legend, *Utsarjinā ayanam*.

INTRODUCTION

In an earlier paper¹ we had shown that the earliest Vedic calendar envisaged a year of 360 days consisting of 12 months of 30 days each, in which 4 to 6 days were added at the end of the year to complete the 'year of seasons'. It was later converted into a six-year yuga in which six years of 360 days were followed by an *adhikamāsa* of 30 days (*ahorātras*) by Rohita. The year was started at winter solstice heralded by the heliacal rising of *As̥vini*-nakṣatra, which was the case around 7000 BC. The twelve months had tropical names from Aruṇa to Sambhara and the *adhikamāsa* was called *Mahāsvān*. The year was divided into three seasons: *Agniṛtu*, *Sūryar̥tu* and *Candramārtu* akin to *caturmāsyas* of the later period that are appropriate for the Indian climate. We had provided there several vedic quotations in support of these conclusions. Now, we present here evidence from the Brāhmaṇa texts of three vedas for the same.²

GAVĀMAYANAM SACRIFICE

Gavāmayanam, the yearlong sacrificial which regulated the earliest Vedic Calendar, is described in the 12th kāṇḍa of the *Śatapatha Brāhmaṇa*³. It lasted for 361 days and divided into two semesters (*satras*) of 180 days each with a

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Viṣuvat day in between. It is stated that the sacrificial rituals in the second half retraced their path in the first half. Now, according to *Aitareya-Brāhmaṇa* (18.18 and 18.22)⁴ the Sun reached its highest altitude on the *Viṣuvat* day, which thus, coincided with the summer solstice. This makes it clear that *Gavāmayanam* sacrifice was started on winter solstice day. So, the first *satra* of 180 days which was divided into 6 months of 30 days each, covered the northward passage of the Sun (*uttarāyana*). Similarly, the second *satra* of 180 days, which was also divided into 6 months of 30 days each, covered the southward passage of the Sun (*dakṣiṇāyana*). Each month was further divided into 5 *ṣaḍahas* of 6 days each. As the annual sacrifice falls short of the tropical year by about 4 or 5 days, it was the practice of conducting the *Pravargya* and *Upāsad* rituals lasting for 4 or 5 days, before the beginning of the next year's sacrifice.

The *Pravargya* ritual is described in the 14th kāṇḍa of the *Śatapatha-Brāhmaṇa*.³ Its contents and the story associated with it show that the yearly sacrifice was started with the heliacal rising of *Aśvinī-nakṣatra*. *Pravargya* mainly consists of baking three earthen pots called *Mahāvīra* pots which were used for boiling milk to produce the hot drought of milk called *Gharma*. The rudiments of this ritual are still extant in some parts of India. Milk is boiled in an earthen pot on *Makara-saṅkrānti* day in south India and on *Rathasaptamī* day in Maharashtra. Now, *Makara-saṅkrānti* was the day of winter solstice at the beginning of Siddhānta period. Similarly, *Rathasaptamī* was the winter solstice day during *Vedāṅga-Jyotiṣa* period and it is connected with the passing away of Bhīṣma on the next day in *Mahābhārata*. So, it is clear that the *Pravargya* ritual was performed at winter solstice before the *Gavāmayanam* sacrifice. The *Pravargya* ritual lasted for three days and it was followed by the *Upāsad* days of consecration (*dīkṣā*). Although *Upāsad* days were also three in number they could be observed simultaneously with some *Pravargya* days so that the total number of days could be 4 or 5, as required, vide *Śatapatha-Brāhmaṇa* 3.4.4.³ *Pravargya* and *Upāsads* represented the head and the neck of the sacrifice respectively. According to the story associated with the ritual of *Pravargya*, the head of the sacrifice, was lost due to the breaking of Viṣṇu's bowstring. Sage Dadhyāṅka, who knew how to put the head back, was threatened by Indra that he would cut off Dadhyāṅka's head if he reveals the secret to others. So *Aśvinīkumāras* came to help. They cut off Dadhyāṅka's head and put a horse's

head in its place. When Indra cut off that head, *As'vinī*kumāras put back Dadhyānka's head. This is an allegoric story telling how *As'vinī*kumāras found that winter solstice was related to *As'vinī*-nakṣatra which resembles the head of a horse. In this way the *Gavāmayanam* sacrifice could be restarted with the heliacal rising of *As'vinī*-nakṣatra.

AS'VINI-ŚĀSTRA

We find further corroboration for this in the *As'vinī*-śāstra which is referred to by B.G. Tilak⁵ and A C Das⁶. It consists of the *stotras* to be recited before the beginning of the *Gavāmayanam*. They are addressed to *As'vinī*kumāras, Uṣas and the Sun, in that order, which points to the heliacal rising of *As'vinī*-nakṣatra. The number of dawns on which *As'vinī*-śāstra was recited is given in *Taittīrīya Saṃhitā* (IV 3.11)^{5,7} that contain the verses for the dawn bricks of Vedic altars. We give below the first six verses of *As'vinī*-śāstra;

*iyameva sā yāprathamā vyauchhadantarasyāṃ carati praviṣṭhā /
vadhurjagāna navagarjjā nibhitraya enām mātīmānaḥ sacante // 1 //*

‘This, verily, is that dawned first and moved above the horizon like a new bride, followed by three great ones (*Agni, Sūrya, Vāyu*).’

*chandasvastrī uṣasāpepisānā samānaṃ yonimanu sañ caranti /
sūryapatnī vicarata prajanati ketuṃ kṛṣvāne ajare bhuriretasā // 2 //*

‘Possessed of songs, the two Dawns, the two wives of the Sun, unwasting, rich in seed, move about displaying their banner and knowing well (their way).’

*ṛtasya panthāmanutisra āgustraya adhamiso anujyotisāguḥ /
prajāmekā sakṣatyurjamekā rakṣati devayunām // 3 //*

‘The three maidens have come along the path of *Ṛtu*; the three fires with light have followed. One projects progeny, one the vigour and one ordinance of the pious’.

*catuṣṭomo abhavadhā turiyā yajñasya pakṣa vṛṣayo bhavanti /
gāyatrīṃ triṣṭubhaṃ jagatimanuṣṭubhaṃ bṛhadarkam yujjānā
savarā bharantidam // 4 //*

‘That which was the fourth, acting as *r̥ṣis* of the two wings of the sacrifice, has become the four-fold stoma using *Gāyatrī*, *Tr̥ṣṭubh*, *Jagati*, *Anuṣṭubh*, *Br̥hati* in the great song, which brought their light.’

*pañcabhidhānāvidadhāvidam yajñāsām svasṛrajanayan pañcapañca /
tāsāyu yānti prayaveṇa pañcanānārūpāṇi r̥tavodhamānāḥ // 5 //*

‘The creator did it with the five; heralded five sisters with each of them, their five courses (*kṛtavaḥ*) assuming various forms, move in combination (*prayaveṇa*).’

*triṃśatsvasāra uṣayanti niṣkṛtam samānamketum pratimuñcamānāḥ /
r̥tustanvate kavayaḥ prajānatibḥamadhya dhandasaḥ pariyanti
bhāsvatiḥ // 6 //*

‘The thirty sisters, bearing the same banner, move on the appointed place (*niṣkṛtam*). They, the wise, create the seasons. Refulgent, knowing (their way), they go by (*pariyānti*) amidst songs.’

We see that the first five verses refer to five dawns separately, from which we gather that during earlier times five days were added at the end of the year of 360 days. The sixth verse, however, speaks of 30 dawns in groups of six that created the seasons. It thus becomes clear that during later times an intercalary month (*adhikamāsa*) of 30 days divided into 5 *śadaḥas*, was added at the end of the sixth year. B.G. Tilak⁵ had used this piece from *Aitareya-Brāhmaṇa* to support his theory of the Arctic home of vedas that it indicated a long night of 30 normal days. But we now find a simpler interpretation appropriate for the Indian tropical latitudes, as argued by A.C. Das.⁷

ŚUNAḤSEPHA LEGEND

It has earlier been stated that according to *Atharvaveda* (13.3.8) Rohita created the *adhikamāsa* of 30 *ahorātras*:

ahorātraivimirtam triṃśadaṅge trayodaśam māsam nimirtite /

The connection of Rohita with the *adhikamāsa* can be inferred from the story of Śunaḥsepha in *Aitareya-Brāhmaṇa* (III).⁸ Rohita, the son of king

Hariścandra, is identified with the rising sun, particularly the rising sun of the winter solstice. Varuṇa, who formed the heavenly path (ecliptic) for the Sun and the Moon, had given Hariścandra a boon that he would be blessed with a son on the condition that the son (Rohita) was to be sacrificed to Varuṇa. This means that the sacrifice was to be started with the rising sun on the winter solstice day. However Rohita ran away at the time of the sacrifice (due to the wrong length of the year). He wandered for six years after which the sacrifice was conducted with the replacement of Rohita by Śunaḥṣepha (*adhikamāsa*) at the end of the sixth year. This refers to the institution of the *adhikamāsa* of 30 civil days at the end of six years by Rohita as referred in above quotation from the *Atharvaveda*. Śunaḥṣepha saved himself from being killed by prayers to *Prajāpati* (the lord of the year), *Agni* (sacrificial fire), *Savitar* (the sun), *Aśvins* and *Uṣas* (dawn), all pointing to the heliacal rising of *Aśvinī*-nakṣatra at the start of the year with winter solstice. The six years had names: *Samvatsara*, *Parivatsara*, *Iḍāvatsara*, *Iḍuvatsara*, *Idvatsara* and *Vatsara*.

That the legends about *Aśvinī*kumāras concerning their healing powers represented some physical phenomenon was realized by several Indologists like Bonfey.¹⁰ As the *Aśvinī*kumāras are the deities of the dawn, the heliacal rising of *Aśvinī*-nakṣatra was identified with the beginning of *Vasanta-ṛtu* (*madhumāsa*) by P. C. Sengupta.⁹ As the sun's tropical longitude would be 330° the beginning of *Vasanta-ṛtu*, Sengupta derived an epoch of 3800 BC for *Ṛgveda*, which agreed with the epoch derived by B. G. Tilak¹¹ in his book *Orion*. But we identify it with that of heliacal rising of *Aśvinī*-nakṣatra at winter solstice, because the sun gets rejuvenated at that time. Around 7000 BC, when *Aśvinī*-nakṣatra had a tropical longitude of 270°, the helical rising of *Aśvinī*-nakṣatra occurred around 6th January. Then with the practice of *adhikamāsa* after 6 years we get the *Aśvinī* calendar discussed by us¹, which would start on 25th December on an average.

FURTHER DEVELOPMENT

(a) *Replacement of Gavāmayanam by Utsarjinā-ayana*: The thirty-day month was suggested by the repetition of the lunar phases after about 30 days. The new moon and full moon phases were considered particularly auspicious; so special sacrifices known as *Darśa* and *Pūrṇamasa-yaṣṭi* were performed on

those days as described in the 1st and 11th kāṇḍas of *Śatpatha Brāhmaṇa*.³ Their observations showed that the lunar phases repeated at intervals of about 29½ days. Hence, later, when it was decided to base the calendar on lunar months, the lunar month was also divided into 30 equal parts called *tithis*, which is a unique feature of the Indian calendar. The lunar month was also divided into two halves like the year. The bright half is called *Śukla-pakṣa*, and the dark half is called *Kṛṣṇa-pakṣa*. The *tithis* are numbered *Śukla-pratipada* (S1) to *Paurṇimā* (S 15) and *Kṛṣṇa-pratipada* (K1) to *Amāvasyā* (K 15).

The use of lunar month required a modification of the yearlong *Gavāmayanam* sacrifice. *Taittirīya-Saṃhitā* (VII.5.6)⁷ describes this so called *Utsarjināyana* sacrifice which covered 360 *tithis* of the 12 lunar months containing 354 days. In this sacrifice the last *ṣaḍahas* of the 2nd, 4th and 6th month during the first *satra* and last *ṣaḍahas* of the 7th, 9th and 11th month in the second *satra* were reduced by one, and there was no *Viśuvat* day in the middle¹². As 354 days fell short of the 365 day by 11 days in the seasonal year, *atirātra* sacrifices were performed on 11 days at the end of *Utsarjinā ayanam* sacrifice. In the *Taittirīya Saṃhitā* (VII.2.6.1)⁷ they are said to be the children of seasons in the sense that they complete the year of seasons.

(b) *5-year yuga*: Further evolution of the vedic calendar is discussed by us elsewhere.¹³ We give below a gist of the same. The above method of adjusting the year-length was found to be inconvenient in a calendar based on the lunar months, because the *tithi* of the year beginning changed from year to year (vide *R̥gveda* IV.33.7). R̥bus¹⁵ introduced the practice of formally adding 12 *atirātra* at the end of the year, or, cumulatively 2 additional months (60 *tithis*) in 5 years. In the beginning, one *adhikamāsa* was added at the end of the 3rd year and the second at the end of the 5th year. It was called *Saṃsarpa*. Later it was found convenient to introduce the *adhikamāsa* at the end of every 30 months. They were called *Malimlucha* when introduced in the middle of the year and *Saṃsarpa* when introduced at the end of the year. The five years were given the same names as in the 6–year yuga except the difference that *Iḍuvatsara* was renamed *Anuvatsara* and the sixth year *Vatsara* was dropped.

The five-year *yuga* system is illustrated by several quotations from Vedic literature by R. Shamasastri¹² in Chapter II. The mathematical treatment of the

5-year *yuga* calendar described in *Vedānga-Jyotiṣa* with its modifications and improvements by 30-year *Dakṣayanīya* sacrifice and 95-year *Agnicayana-vidhi* is discussed by us in another paper.¹⁴

NOTES AND REFERENCES

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12. K. D. Abhyankar, 'On pre-Siddhantic evolution of Indian calendar', *Bull. Aston. Soc. India*, 26 (1998) 67-74.
13. K. D. Abhyankar, 'On two important provisions in *Vedānga-Jyotiṣa*', *IJHS*, 37.3, (2002) 213-221.
14. R̥bhus came into prominence during the Mṛgaśirṣa (Orion) period of 3800 BC found by B. G. Tilak. There were three R̥bhuv who divided the celestial cup (ecliptic) in three different ways. The eldest R̥bhuv called R̥bhavan divided it into two parts as before, viz. *Uttarāyana* from Bhadrāpādas to Maghā (lunar Phālguṇa to Śrāvāṇa), and *Dakṣiṇāyana* from Phālguṇa to Śatabhiṣag (lunar Bhadrāpāda to Māgha). The second R̥bhuv named Vibhavan divided it into three parts corresponding to the three *R̥tus*, viz. *Agni R̥tu* from Bhadrāpādas to Punarvasu (lunar Phalguṇa to Jyeṣṭha), *Sūrya R̥tu* from Puṣyā to Viśākhā (lunar Āsāḍha to Āśvin) and *Candramā R̥tu* from Anurādhā to Śatabhiṣag (lunar Kārtik to Māgha). The youngest R̥bhuv named Vaja divided the ecliptic into four parts on the basis of the four cardinal points, viz. Winter Solstice at Bhadrāpādas (lunar Phālguṇa), Vernal Equinox at Mṛgaśirṣa (lunar Jyeṣṭha), Summer Solstice at Phālguṇa (lunar Bhadrāpāda), and Autumnal Equinox at Mūlā (lunar Mārgaśirṣa) vide *masānam mārgaśirṣoḥam* of *Bhāgavatagītā* (referred to as best full moon (of Śaradṛtu) in Mṛgaśirṣa nakṣatra.