EARLIEST VEDIC CALENDAR

K D ABHYANKAR*

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It is shown that the Brahmanical stories associated with Pravargya ceremony and Śunahsepha legend, as well as the verses of Aśvini-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: Aśvini-śāstra, 5-year yuga, Gavāmayanam sacrifice, Pravargya, Śunahsepha legend, Utsarjina 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 Aśvini-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: Agnīrtu, Śūryartu and Candramārtu akin to caturmāsya 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 sacrifice which regulated the earliest Vedic Calendar, is described in the 12th kāṇḍa of the Śatapatha Brāhmaṇa3. It lasted for 361 days and divided into two semesters (satras) of 180 days each with a

* 5-76, Vivekananda Nagar, Habshiguda St, No. 8/26, Hyderabad 500007
**Visuvat** 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) the Sun reached its highest altitude on the **Visuvat** 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 (*daksināyana*). 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 Šatapatha-Brāhmaṇa. Its contents and the story associated with it show that the yearly sacrifice was started with the heliacal rising of As‘vinī-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 *Rathasaptami* day in Maharashtra. Now, *Makara-saṅkrānti* was the day of winter solstice at the beginning of Siddhānta period. Similarly, *Rathasaptami* was the winter solstice day during *Vedāṅga-Jyotisā* 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 Šatapatha-Brāhmaṇa 3.4.4. 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 Āśvinīkumāras 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'viníkumáras put back Dadhyáńka's head. This ia an allegoric story telling how As'viníkumáras found that winter solstice was related to As'vini-nakṣatra which resembles the head of a horse. In this way the Gavāmayanam sacrifice could be restarted with the heliacal rising of As'vini-nakṣatra.

**As'vini-śāstra**

We find further corroboration for this in the As'vini-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'viníkumáras, Uṣas and the Sun, in that order, which points to the heliacal rising of As'vini-nakṣatra. The number of dawns on which As'vini-śāstra was recited is given in Taittiriya Samhitā (IV 3.11)⁵⁷ that contain the verses for the dawn bricks of Vedic altars. We give below the first six verses of As'vini-śāstra;

iyameva sā yāprathamā vyaucchadantarasyām carati praviṣṭhā/
  vadhur jagdna navagarjānibhitraya enām mātimānah 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).'

chandasvastri uṣasā pepisānā samānāṃ yonimanu saṅ carantī /
  sūryapatnī vicarata prajanati ketum kṛśvāne 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).'

nasya panthāmanutisra āgustraya adhamisō amujotisāguḥ/
  prajāmekā sakṣatyrjamekā rakṣati devayunām // 3 //

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

catusṭoma abhavadhā turiyā yajñasya pakṣa vṛṣayo bhavantī /
  gāyatrimi trisūbhamjagatimanustubham brhadarkam yujjānā
  savarā bharantidam // 4 //
That which was the fourth, acting as rṣis of the two wings of the sacrifice, has become the four-fold stoma using Gāyatrī, Trṣṭubh, Jagati, Anuṣṭubh, Brḥati in the great song, which brought their light.

The creator did it with the five; heralded five sisters with each of them, their five courses (kṛtavah) assuming various forms, move in combination (prayavena).

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 sadahānas, 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 trimśadaṁge trayodasaṁ māsam māsimirtite /

The connection of Rohita with the adhikamāsa can be inferred from the story of Śunahṣepha 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 Śunaḥsepha (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. Śunaḥsepha 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: Śamvatsara, Parivatsara, Iḍāvatsara, Iḍuvatsara, Idvatsara and Vatsara.

That the legends about Aśvinīkumāras concerning their healing powers represented some physical phenomenon was realized by several Indologists like Bonfey. As the Aśvinīkumāras 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. As the sun’s tropical longitude would be 330° the beginning of Vasanta-ṛtu, Sengupta derived an epoch of 3800 BC for Rgveda, which agreed with the epoch derived by B. G. Tilak 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 us, which would start on 25th December on an average.

**Further Development**

(a) Replacement of Gavāmayanam by Utsarjina-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-yāṣṭi were performed on
those days as described in the 1st and 11th kāṇḍas of Śatpatha Brāhmaṇa. 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 Paurnimā (S15) and Kṛṣṇa-pratipada (K1) to Amāvasyā (K15).

The use of lunar month required a modification of the yearlong Gavāmāyana sacrifice. Taittirīya-Samhitā (VII.5.6) describes this so called Utsarjīnāyanam sacrifice which covered 360 tithis of the 12 lunar months containing 354 days. In this sacrifice the last sadahas of the 2nd, 4th and 6th month during the first satra and last sadahas of the 7th, 9th and 11th month in the second satra were reduced by one, and there was no Viṣuvat day in the middle. As 354 days fell short of the 365 by 11 days in the seasonal year, atrītra sacrifices were performed on 11 days at the end of Utsarджīnā ayanam sacrifice. In the Taittirīya Samhitā (VII.2.6.1) 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. 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 Rgveda IV.33.7). Rbbus introduced the pracice of formally adding 12 atrītra at the end of the year, or, cumulatively 2 additional months (60 tithis) in 5 years. In the beginning, one adhikamāsā was added at the end of the 3rd year and the second at the end of the 5th year. It was called Sāmsarpa. Later it was found convenient to introduce the adhikamaśa at the end of every 30 months. They were called Malimlucha when introduced in the middle of the year and Sāmsarpa 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 Iduvatsara 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. Shamasrastry in Chapter II. The mathematical treatment of the
5-year yuga calendar described in *Vedāṅga-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**

9. B.G. Tilak, Orion, Tilak Press, Pune, 1925.
14. Rbhus came into prominence during the Mṛgāśiṛṣa (Orion) period of 3800 BC found by B. G. Tilak. There were three Rbhus who divided the celestial cup (ecliptic) in three different ways. The eldest Rbhū called Rbhavan divided it into two parts as before, viz. Uttarāyana from Bhadrpaḍās to Maghā (lunar Phālguṇa to Śrāvana), and Dakṣināyana from Phālguṇa to Śatabhiṣaga (lunar Bhadrapāda to Māgha). The second Rbhū named Vibhavan divided it into three parts corresponding to the three R̥tu, viz. Ágni R̥tu from Bhadrpaḍās to Punarvasu (lunar Phālguṇa to Jyeṣṭha), Śūrya R̥tu from Puṣyā to Viśākhā (lunar Asāḍha to Āśvin) and Ĉandramā R̥tu from Anurādhā to Śatabhiṣaga (lunar Kārtik to Māgha). The youngest Rbhū named Vaja divided the ecliptic into four parts on the basis of the four cardinal points, viz. Winter Solstice at Bhadrpaḍās (lunar Phālguṇa), Vernal Equinox at Mṛgāśiṛṣa (lunar Jyeṣṭha), Summer Solstice at Phālguṇa (lunar Bha drapāda), and Autumnal Equinox at Mūlā (lunar Mārgāśiṛṣa) vide masānam mārgāśiṛṣoham of *Bhāgavatagītā* (referred to as best full moon (of *Śaradṛtu*) in Mṛgāśiṛṣa nakṣatra.