

SOME STUDIES ON VARĀHAMIHIRA

A.K. CHAKRAVARTY

Phulbag South Gate Mahisadal-721 028
Distt. Midnapore (West Bengal)

(Received 16 August, 1990)

Varāhamihira (VM) is almost a legendary figure in India as an astronomer; folk-tales have been composed in all parts of India on his life and talents. This unique honour has been enjoyed by no one else other than epic heroes.

Works of VM include astronomical science, astrological forecastings, and plenty of tit-bits on daily household and domestic matters which appeal directly to the general people. But there are inconsistencies in these forms of VM, and we can hardly reconcile them.

In some of his observations, VM is a top-rate scientist, but curiously, some of his conclusions or remarks drawn from his observations are so much unscientific or casual that we cannot reconcile them. We also cannot correlate his tit-bits of domestic matters with his astronomical talents.

VM (and also his commentators) has quoted profusely from earlier astronomical works; it is through these quotations only that we know something about these earlier works. These references or quotations are essential for compilation of history of early Hindu astronomy.

Varāhamihira (VM) is the only Indian astronomer whose name became a household word throughout India. Neglecting some Pūrānic or Legendary figures, VM is perhaps one of the rare personalities about whom folk-tales and popular stories were composed all over India in admiration of his astronomical genius, life and career, domestic concerns etc. His near-contemporaries, Āryabhaṭa and Brahmagupta even do not match with the popularity of VM among the common Indians.

It may perhaps be a subject of interest to study the cause that made VM such a celebrated figure in India.

VM himself has stated in *Bṛhat Saṃhitā*¹ that an astronomer should be good-looking, sweet-tongued and ready with pat-answers. We may perhaps guess that VM, as an astronomer, himself was gifted with these qualities which alone were enough to make a hero of him in the public eye. We shall, however, consider his contributions to astronomy.

His contributions are distinctly of two-fold nature; as an astronomer proper, he composed only one text, the *Pañcasiddhāntikā* (PS), and as a horoscopic astrologer, he composed the *Br̥hat Saṃhitā* (BS), the *Br̥hat Jātaka* (BJ), and three other smaller editions on marriage and *yātrā* (journey).

The PS is a summarisation of five siddhāntic texts that were known to VM. These are, the *Saura Sid.*, *Paulīṣa Sid.*, *Romaka Sid.*, *Vaśiṣṭha Sid.* and *Paitāmaha Sid.* of these five, according to VM himself, the last two give unreliable results, the second and the third are not so incorrect and the first one is the best among them.

Out of the 18 chapters of this text, 13 are devoted to summarisations of these five siddhāntas as is evident from the colophones of the respective chapters. The other 2 chapters do not bear any colophones; even then, from their contents, and also the link they bear with the preceding or following chapters, they have been indentified with one or another of these siddhāntas. The remaining three chapters (XIII, XIV and XV) are, according to Thibaut, individualistic i.e. VM's own addition. Thus, contributions of VM to pure astronomy is limited to these three chapters only.

We can hardly reconcile these two distinct identities of Varāhamihira, one, the astronomer VM and the other, the horoscopic astrologer VM. We state a few instances to clarify this.

In BS, III-2, VM says: At present, courses of the sun begin from commencements of *Karkaṭa* and *Makara*.

This is confirmed by observing gnomon shadow.

And again, in II -8, he says: Any dispute on *ayanas* should be settled by observing shadows and water appliances.

It at once follows that the first sign Aries, in VM's time, was reconed from the vernal equinox, and also that this fact was experimentally verified using gnomon shadow.

Again, in PS, XIV — 34-37, VM has given the coordinates of 7 *yogatārās*.² We take them as polar longitudes and polar latitudes, the conventional coordinate system used in Indian methods for stellar positions.

We have transformed these polar longitudes into celestial longitudes by applying suitable transformation formulas, and we have compared them with the true celestial longitudes for those stars for the year, 560 A.D., the period of activity of VM. We give these results in a tabular form:

Jogatārā	Polar long. as given by VM	Equivalent celestial long.	True celestial long. in 560 A.D.
Kṛttikās	32°40'	33°46'	39°58'
Rohini	48°	46°36'	49°45'
Punarvasu	88°	88°6'	93°14'
Puṣya	97°20'	97°10'	108°42'
Aślesā	107°40'	107°47'	112°20'
Maghā	126°	126°	129°49'
Citrā	181°50'	182°55'	183°49'

We at once note that no correlation can be made between these two sets of coordinates. Except for *Citrā*, VM's values refer to a period earlier than 560 A.D. All these stars are so prominent and well known that we rule out the possibility of any error in identification of them by VM. We shall attempt a possible answer to this discrepancy in a later section.

About comets, VM says in BS, XI-2, it is not possible to find by calculations the rising or setting of comets.

Indeed, this is a bold statement, in Europe also, the periodic times and orbits of comets were unknown even upto Tycho Brahe's time. VM did not evade this astronomical fact by introducing pūrānic or conjectural stories. Then he describes a particular comet as: It rises in the west with crest turned towards the south. Its length increases as it goes towards the north. After touching the seven sages and the pole star it travells half the sky and then sets. When this comet appears, people in the region between Prayaga and Ujjain will be destroyed.

We do not rule out the possibility that such a comet was really visible and VM got the reference of it. But we cannot reconcile the last remark and astronomer Varāhamihira.

On rainbows, VM made a brilliant observation befitting a top-rate scientist. He says in BS XXXV-1: The rays of the sun which have many colours, being thrown back by the wind in a cloudy sky are seen in the form of a bow, called rainbow.

But in the same chapter in verse 7 VM says again: A rainbow seen in the eastern sky cause ill health to the king, and when seen in the south, west and north, it kills the commander of the army, a leader and a minister respectively.

Here also, we cannot reconcile the scientist VM and his statement on effects of rainbow.

Throughout eastern India, particularly in Bengal, some folk-verses, known as "quotes from Khaṇā" are in wide circulation. These verses relate mostly to agriculture,

weather-forecasting, good or bad omens etc. The legendary story is that VM miscalculated the life-span to be one year only in place of the correct figure 100 years. After many odds, his son was brought up at Lanka where he married a Lankan girl named Khaṇā, who was superior to VM in astrology, and the two came back to India.³

It is interesting to note here that most of these quotes of Khaṇā are mere reproductions from the BS. We give a few examples below.

- Khaṇā : If bow rises in the east, ponds and land will be levelled by water (i.e. there will be rainfall).
- BS XXXV-6 : Rainbow seen in the east produces rain.
- K : If frogs be calling, soon there will be rain.
- BS XXIV-19 : If clouds be followed by cries of peacocks, *Cātaka* birds and frogs, they will pour down torrents of rain.
- K : If the moon be at the 7th sign from the sign of sun, there will be full moon and (under some conditions) there will be an eclipse.
- BS V-10 : If the moon in her course towards the East and placed in the seventh sign from the sun, and also does not swerve much either to the north or south, she enters the shadow of earth.

Most of the quotes of Khaṇā are either reproductions of the verses of BS, or reproduction with some regional modifications only. In one opinion, these quotes came to India through the tantric cult of Tibet. If that be true, we would hold that the popularity of BS extended even upto Tibet also.

We do not know why the myth of Khaṇā was compiled. But we are sure that the observations of VM as given in the BS were already well-known in the eastern part of India through quotes from Khaṇā. Similar folk-verses bearing striking similarity with the BS circulate in all parts of India. Perhaps to add some more popularity to the teaching of VM, the romantic figure Khaṇā was devised and that too related with VM himself, and to give strong touch of reality Khaṇā was made his daughter-in-law. He at least made a scientific approach to this natural phenomenon without taking recourse to pūrānic conjectures.

It requires no elaboration that in the period of VM and in a further later period also, there was no scope for any type of systematic formal education for the rural masses, not to speak of science studies. The teachings of VM as given in the BS are in complete accordance with the superstitious and conservative sentiments of the rural masses. We quote below a few more such teachings of the BS:

XCV — 53: The crow producing the sound *Kākā* foretells ruin; *Kākāṭi*, the vitiation of food; *Kavākavā*, friendship (making friends with somebody); *Kāgaku*, imprisonment.

LXX — 23: A woman whose upper lip is very high and hair rough at the tips is fond of quarrel.

LXXXIX — 9: When a dog scratches the wall of a house, there will be danger of burglary in it.

More surprising is his guideline for constructing an idol of Lord Śiva. Through LVIII — 43 he gives the following instructions on this idol: In the idol of Śiva, a crescent moon, a third eye on the forehead, a trident in one hand and a bow in another hand, called *pināki* should be placed. His ensign is bull. Or, his left-half should be made like the half of the daughter of mountain (i.e. Pārvatī).

In our view, describing the form (*rūpa*) of the gods and their emblems is not a part of investigations of an astronomer.

Major part of the BS contains such observations relating to domestic matters, house-hold affairs, normal village life etc. which directly appeal to the sentiments of conservative masses. We are inclined to believe that all these factors made BS a very popular and useful work throughout India and out of respect and esteem of the author, VM, was made a legendary figure.

The *Bṛhat Jātaka* deals with horoscopic forecastings only. As the sentiment of belief or disbelief is deeply involved here, we prefer not to make any discussion of the contents of this work. Without holding any brief for believers or non-believers, we simply state that professional astrologers use the texts of Parāśara or Vṛgu in preference to BJ for horoscopic forecastings. What we mean to say is that BJ added little to the cause of the high popularity of VM. It is, however, important to mention here that the BJ contains plenty of sanskritised Greek words, and we shall consider it in a later section.

We come to the *Pañcasiddhāntikā* again. Of the five siddhāntas summarised there, the *Paitāmaha Siddhānta* had become obsolete for before the time of VM. The *Romake Siddhānta* has no applications to the Indian methods of astronomical computations. The methods of *Vaśiṣṭha Siddhānta* are crude. In VM's time, mathematics in India had reached a sufficiently advanced form and the rough methods of *Vaśiṣṭha Sid.* cannot fit into that background. Excepting the modern *Sūrya Siddhānta*, *Āryabhaṭṭiyam* is perhaps the most widely commented upon astronomical text in India and, in that background, there remains a doubt if the PS could made VM's name such a house-hold word all over India.

Whatever may be the intrinsic astronomical value of the works of VM, these are invaluable for compilation of history of astronomy in ancient India.

VM has made references to more than 40 teachers and their works on astronomy, and his commentator. Bhatta Utpala has, in many cases, quoted the original verses from the texts referred to by VM. Some of these names like Garga, Parāśara, Kāhapa etc. are wellknown. But there are names which are uncommon in Indian Traditions, e.g. Gurutman, Nagnajit, Kanabhuk, Bhaguri, Yavanācārya etc. Of these names, the last two at least sound like non-aryan. Many of these names and their works are known to us only through the quotations given by VM and his commentator.

It occurs to us that he had access to, or had in his own personal collection, valuable astronomical cum astrological works both by Indian and Greek authors, and he freely consulted these, many of which are lost to-day. His admirations for Greek and Ionian teachers are also well-known. All his contributions are mere a systematic collection of earlier works than an original work. We cite a few examples in support of this observation.

On comments, he says that he is writing in a systematic form the course of Ketu after the views of Garga, Parāśara, Aśśita, Devala and others.

The chapter on geography is only a reproduction from Parāśara with very little changes.

On the course of Venus, he observes that if Venus rises on the 8th or 14th tithi of dark half, or on new moon, there will be abundant rain.

Kāśyapa has also made an exactly similar statement.

On the course of seven sages, he says that he is going to explain Vṛddha Garga's theory of course of seven sages.

In fact, in most of the chapters of BS he has referred to the teacher or teachers whose method he followed.

We have stated earlier that VM has given an incomplete account of stellar coordinates which does not fit into the initial point (i.e. vernal equinox of 560 A.D.) devised by him. We are inclined to believe that he got those figures from one or another foreign work, which is now lost, but neither he, nor his commentator mentioned the original source. What we are sure is that this system of stellar coordinates does not occur in any of the five siddhāntas that VM has summarised in the *PS*, because this chapter is his own contribution.

VM has a unique position in Indian astronomy not enjoyed by any other Indian astronomer or even any other scholar in any subject except perhaps the pūrānic or Epic heroes. He is remembered by the great mass of average Indian for his popular pat-observations connected with daily domestic life, and also by the sophisticated

scholars engaged in tracing the history of pre-Āryabhaṭian astronomy in India for the wealth of authorities and masters quoted.

NOTES AND REFERENCES

¹Sastri, V. Subrahmanya and Bhat, Ramkrishna: *Brhat Saṃhitā* with an English Translation and Notes. V.B. Soobbiah & Sons, Bangalore City, 1947. Adhyaya II, Verses 2 & 3.

We have followed this edition of B.S. in later references also.

²Thiabaut, G. and Dvivedi, M. Sudhakara: *The Pañcasiddhāntikā*. Chowkhamba Sanskrit Series Office, Varanasi, 1968.

The Text (verses 37) reads: “*Citrā ardha aṣṭama bhāge*”; Dvivedi in his Sanskrit Commentary (p. 79) has also written similarly and accordingly, polar long. of Citrā becomes 181° 51'. Thibaut's English translation (p. 83) reads “Citrā (the Yogatārā is) at seven and a half degrees” and thereby the long. Becomes 180° 50'. However, this discrepancy of 1° does not matter very much for our present purpose.

³The story of Khanā is a myth only and has no historical foundation. These quotes are used as proverbs throughout eastern India; perhaps to assign some authenticity to these proverbs, the prodigious character of Khanā and her connections with VM were devised to create an impression. A collection of such quotes will be found in “*Khaṇār Bacan*” (in Bengali) by D.N. Mitra published by Development Dept., Govt. of Bengal 1946.