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VARĀHAMIHIRA and UTPALA: their works and predecessors.\*

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A very extensive Sanskrit literature on Jyotiṣa appears to have existed several centuries before Varāhamihira who may be taken to have flourished in the first half of the 6th century A. D. as indicated by his reference to *śake* 427 (505 A.D.) for *ahargaṇa*<sup>1</sup> in his Pañcasiddhāntikā. Both Varāhamihira and Utpala mention a host of predecessors and the latter quotes very extensively from numerous writers on Jyotiṣa. Both of them were men of encyclopaedic learning. Varāhamihira states (in Br. S. 1.9) that Jyotiṣa has three branches (*skandhas*), viz. *Gaṇita* or *Tantra* (which deals principally with the motion of planets), *Horā* or *Jātaka* (astrology) and *Saṃhitā* (which presents all topics of Jyotiṣa in their entirety). In the Br. J. (28.6) he informs us again that for the benefit of astrologers he collected together the topics of Jyotiṣa in its three branches by writing the works called *Vivāhapaṭala*, a *Karaṇa* (viz. Pañcasiddhāntikā) dealing with (the motions of) planets and also writing on *Sākhā* which is an extensive subject<sup>2</sup>. According to Garga quoted by Utpala on Br. S. I. 9

1. सप्तशिवेदसंहयं शककालमपास्य चैत्रशुक्लादौ । अर्थास्तमिते भानौ यवनपुरे सौम्यदिवसाद्ये ॥ पञ्च०  
I. 8. This is referred to by Alberuni (Sachau, Vol. II p. 51).
2. विज्ञाहकालः करणं ग्रहाणां प्रोक्तं पृथक् तद्विपुला च शाखा । स्कन्धैस्त्रिभिर्ज्योतिषसंप्रदोऽयं मया कृतो देवविदा  
द्विताय ॥ बृहज्जातक 28. 6.

\* In this paper Br. S. stands for Bṛhat-Saṃhitā (edited by M. M. Sudhakar Dvivedi in *sansvat* 1954); Br. J. for Bṛhaj-Jātaka (ed. by Pandit Sitaram Jha at Benares in 1934 with the com. of Utpala); P. S. (Pañcasiddhāntikā edited by Thibaut and Dvivedi); L. J. for Laghujātaka (a Ms. in the Bhadrakamkar collections of the Bombay University with the com. of Utpala); Br. Y. for Bṛhad-yogayātrā (a Ms. in the Bhau Daji Collection of the Bombay Asiatic Society) Y. Y. for Yogayātrā (a Ms. in the Bhau Daji collection with the com. of Utpala). When the Yogayātrā published by Mr. Jagadishlal is relied upon, the words 'Lahore ed.' are added in brackets. M. or m. stands for 'mentioned.'

the three branches of Jyotiṣa are Ganita, Jātaka<sup>a</sup> and Śākhā and one who mastered these was called 'Samhitāpārāga'. He frequently refers to his Karaṇa (Pañcasiddhāntikā) in the Br. S. (e.g. in 5-18, 17-1, 24-5). Varāhamihira wrote a double set of works on these branches, viz ; Brhāj-jātaka and Laghujātaka, Yogayātrā and Brhad-yogayātrā, Brhad-vivāhapaṭala and Vivāhapaṭala, Brhatsamhitā and Samāsa-samhitā. The Laghujātaka consists of 13 chapters and 155 Āryā verses. As stated in the work<sup>4</sup> itself it was composed after the Brhāj-jātaka, Uptala in his com. on the Br. J. frequently quotes verses from the Laghujātaka, sometimes calling it 'Sūkṣma-jātaka' (as on Br. J. II.12 and 21, IV. 16, IX.1) and generally 'Svalpajātaka' (e.g. on Br. J. II. 13, 18, 21 ; IV. 3, 11, 16; V. 2. 18 &c.). Alberuni (Sachau, Vol. I p. 158) states that he translated the Laghujātaka into Arabic. Two chapters of it were published with notes in Indische Studien, Vol. ii p. 277 ff. A portion of the Yogayātrā text with translation was published by Kern in the Indische Studien, Vol. X, XIV and XV. The text of the Yogayātrā was recently published by Mr. Jagadish Lal Shastri at Lahore in 1944. He had, it appears, a defective Ms. and there are many gaps in the text as printed. The Ms. in the Bhau Daji Collection is an excellent one and will be helpful in filling up the gaps in Mr. Jagadish Lal's text. There are in the Yogayātrā 17 chapters (in printed ed., but 16 in Ms) and about 467 verses. The subjects of Yātrā are summarised in Br. S. chap. II viz. the consequences of starting on an expedition on certain *tithis*, week-days, Karaṇas (like Bava), Nakṣatras, *Muhūrtas*; indications from the rising sign, the throbbing of the various limbs of the body, dreams, ceremonial bath for victory, *graha-yajña*, *śakuna*, encamping an army, offering of *bali* with Vedic mantras (such as Apratiratha, Abhayagaṇa, Svastyayana, Āyusya &c. as stated in Yogayātrā VIII. 6-8). The Brhad-Yogayātrā is slightly larger than the Yogayātrā containing about 520 verses in 34 chapters. In the Br. J. (28. 1-5) there is a summary of the subjects of the Brhad-Yogayātrā. Utpala on Yogayātrā quotes the verses on the lords of the 15 muhūrtas by day and by night from Brhad Yogayātrā VI. 2-3 in Yogayātrā V, 10 (folio 43b) and remarks 'parāyām Yātrāyām-uktāḥ'. In Br. S. 42.31 Varāha<sup>a</sup> refers to his Yātrā as the work where he has dealt with the auspicious and inauspicious signs of the fire kindled on starting on an expedition and Utpala explains 'Yātrā' as 'Yogyātrā' here. This is probably a reference to Chap. XIX of the Brhad-Yogayātrā and Chap. VIII of the

3. गणितं जातकशाखां यो वेत्ति द्विजपुङ्गवः । त्रिस्कन्धज्ञो विनिर्दिष्टः संहितापारगश्च सः ॥ गर्ग q. by उत्पल on बृ. सं. I. 9. For the topics of संहिता, vide बृ. सं. chap. II where a long list is given.
4. होराशास्त्रं वृत्तैर्मया निबद्धं निरीक्ष्य शास्त्राणि । यत्तस्याप्यार्याभिः सारमहं संप्रवक्ष्यामि ॥ लघुजातक I. 2.
5. इष्ट्रव्याकारः सुरभिः स्निग्धो घनोऽनलोर्विष्मान् । उत्पल quotes here 7 verses from योगयात्रा five of which are योगयात्रा 4. 9-12 and 14 (Lahore ed.) and last two out of the 7 are again quoted by उत्पल on बृहसं. 43. 14. शुभकृतोन्वोऽनिष्टो यात्रायाम् विस्तरोऽभिहितः ॥ बृ. सं. 42. 31.

Yogayātrā. Utpala on Br. S. I. 10. explains that Br. J., Bṛhad-Yātrā and Bṛhadvivāhapaṭala had already been composed and on Br. J. XX. 10 expressly mentions the Bṛhad-yātrā and Svalpayātrā (i. e. Yogayātrā) and Bṛhad-vivāhapaṭala and Alpa-vivāhapaṭala.<sup>6</sup> From Al-Beruni's 'India' (tr. by Sachau, Vol. I p. 158) it appears that in Alberuni's day it was thought that 'travelling is treated of (by Varāha) in the book Yogayātrā and the book Ṭikani-yātrā.' About this latter something will be said later on. It is doubtful whether Alberuni had read those works in the original or whether he merely reports what he heard from others. In the Br. S. Varāha refers frequently to his work on Yātrā e.g. 43.14 and 18, 47.22. Utpala on Br. J. XII. 19 quotes half an Upajāti from the Vivāhapaṭala. On p. 71 of Br. S. (II) Utpala quotes from the Vivāhapaṭala the first word 'ajñāta' of one verse and a half Āryā of another. For this paper I could not make use of any of the two Vivāhapaṭalas. The Samāsa-saṁhitā, though intended to be a smaller work than the Bṛhatsaṁhitā, as its very name shows, seems to have been comparatively a large work, since Utpala quotes more than 110 verses from it in his com. on the Br. S. Most of the verses are in the Āryā metre but here and there occur verses in Upajāti (e.g. on Br. S. 32. 23, 16. 38), Anuṣṭubh (e.g. on Br. S. 103. 61, 19. 1.4, 19. 19-21, 20. 9), Śārdūla-vikrīḍita (e.g. on Br. S. 12.13, 16.38) &c. The Samāsa-saṁhitā<sup>7</sup> is sometimes referred to as 'Svalpasamhitā' by Utpala (on Br. S. 33.1). Some verses quoted by Utpala from the Samāsa-saṁhitā are almost the same as the verses of the Br. S. Vide note below<sup>8</sup>. The Bṛhatsaṁhitā is Varāhamihira's major work and a product of mature age and experience and probably his last work. The text of the Br. S. was edited by Kern with a valuable Introduction and the translation of 85 chapters of it by him appeared in J. R. A. S. vol. IV, V, VI, VII. In I. 10 of the Br. S. Varāhamihira states that he had already composed his Karaṇa (Pañcasiddhāntikā) dealing with the rising, setting and retrograde motion of planets and stars, that he had dealt exhaustively with Jātaka in his Horāśāstra (Bṛhaj-jātaka) together with the (works on) Yātrā and Vivāha. In Br. S, 106.13 Varāha states that the subjects of the one hundred chapters of the work have been described in order (in that chapter) and that the work contains less than 4000 ślokas (of 32 syllables each). Utpala states (on Br. S. 106. 13) that the number is arrived at by excluding the chapters on 'vātacakra, āngavidyā, piṭaka, aśvalakṣaṇa, gajalakṣaṇa.' On Yogayātrā 1. 2

6. यत्राचार्योणां समसंख्यानां मतभेदसमत्वं भवति तत्र वराहमिहिरो मतद्वयमपि दर्शयति । तथा च बृहदायत्रा-यामन्यरूपां प्रहकुण्डलिकां स्वल्पयात्रायां सामान्यरूपां पठति । एवं बृहदलयोर्विवाहपटलयोरपि । उत्पल on बृहज्जातक XX. 10.

7. द्विविधुक्तश्रमफलानां पततां रूपाणि यानि तान्युक्ताः । बृ. सं. 33. 1 on which उत्पल says 'आचार्येण स्वल्पसंहितायामेवोक्तम् 'अत्राणि लोकपाला लोकाभावाय सन्यजन्युक्ताः । केषांचित्सुष्यकृता तत्रैल्काविच्युतिः स्वर्गात् ' ॥

8. नोत्पातपरिरयक्तः कदाचिदपि चन्द्रजो ब्रजस्युदयम् । जलदहनपत्रनभयकृद्धान्यार्धक्षयवितृद्ध्यै वा ॥ बृ. सं. 7. 1. उत्पल quotes the समाससंहिता verse : उदयं याति शशीसुतो नोत्पातविवर्जितः कदाचिदपि । पवनाग्निसलिलभयदो धान्यार्धवृद्धिक्षयकृद्वा ॥

(folio 2 a.) and Br. J. I. 1 Utpala states that Varāha wrote on gaṇita first, then on Jātaka and then he wrote Yogayātrā and that Varāha thought that his Br. Y. was not quite complete (apari-pūrṇa) and so wrote another Yogayātrā. The Pañcasiddhāntikā (1.22)<sup>9</sup> expressly states that the author will deal with certain astrological matters in his Horāśāstra. From Y. Y. IV. 52 'Jātakoktanṛpa-yogagatānām' (Lahore ed.) it follows that the Br. J. was composed before the Y. Y. Therefore the chronological order of Varāha's works was probably as follows: first the Pañcasiddhāntikā, then Bṛhaj-jātaka, then Laghujātaka, Bṛhad-yogayātrā, Yogayātrā, Bṛhadvivāhapaṭala and Vivāhapaṭala, Bṛhat-saṁhitā and Samāsasaṁhitā. Other works such as the Mayūracitraka are attributed to Varāhamihira (and the D. C. Collection contains two mss., viz No. 838 of 1884-87 and No. 961 of 1886-1892 of Mayūracitraka in the colophons of which the work is attributed to Varāhamihira) but for the purpose of this paper I have not examined them.

In his P. S. I. 3 Varāha states that there were five Siddhāntas, viz. Paulīśa, Romaka, Vāsiṣṭha, Saura and Paitāmaha and that the first two (Paulīśa and Romaka) were expounded by Lāṭadeva. The next verse makes the important statement that the Paulīśasiddhānta is accurate, the Romaka approaches it (in accuracy), that more accurate is the Sūryasiddhānta, while the other two (Vāsiṣṭha and Paitāmaha) are far from the truth. Those five siddhāntas are also named in the Br. S. II. Varāhamihira's position in dealing with the conflicting views of his predecessors is stated in a characteristic verse (Br. S. 9.7)<sup>10</sup> 'Jyotiṣa is a śāstra based on the Veda; in the case of a conflict (among ancient writers on it) it is not proper for us to put forth our own fancies; I shall, however, propound the view held by the majority (of writers)'. His position about Horāśāstra is also worth noting. He states<sup>11</sup> (Br. J. I. 3) that according to some the word 'horā' is derived from 'ahorātra' by dropping the first and last syllables, and that horā merely indicates the fruition of whatever one's acts, good, bad or mixed, laid in store in former births. He therefore appears to hold that the planets do not bring about good or evil effects, but that the horoscope is like a map or simply indicates what is likely to happen i. e. astrology is concerned only with tendencies.\* Astrology was cultivated also in Europe by the side of and in connection with astronomy till the advent of modern science and even now

9. वर्षे यस्य फलं मासे च मुनिप्रणीतमालोक्य । तत्तद्भूतैर्वक्ष्ये होरातन्त्रोत्तरविधाने ॥ पञ्च. I. 22. (it is mutilated), but correctly quoted by उत्पल on बृ. सं. 19. 1.
10. ज्योतिषमागमशास्त्रं विप्रतिपत्तौ न योग्यमस्माकम् । स्वयमेव विकल्पयितुं किं तु बहूनां मतं वक्ष्ये ॥ बृ. सं. 9. 7. This is often stated to be the प्रतिज्ञा of वराह by उत्पल as e.g. on Br. J. 7. 7, 20. 10.
11. होरेत्यहोरात्रविकल्पमेके वाञ्छन्ति पूर्वापरवर्णलोपात् । कर्माजितं पूर्वभवे सदादि यत्तस्य पक्तिं समभिश्यनाक्ति ॥ बृहज्जा. I. 3 ; यदुपचितमन्यजन्मनि शुभाशुभं तस्य कर्मणः पक्तिम् । व्यञ्जयति शास्त्रमेतत्तमसि ब्रव्याणि दीप इव ॥ लघुजातक I. 3 q. by उत्पल on बृहज्जा I. 3.

\* Vide Louis de Wohl's 'Secret service of the sky' p. 31 for the province of astrology being confined to tendencies.

it is not entirely given up in Europe, particularly during and after world war No. II. \*

I shall now set out alphabetically the human authors and works mentioned by Varāhamihira in his works connected with the subjects of his works and add brief notes about them gathered from Varāhamihira and Utpala. Such authors as Kapila and Kaṇāda who are connected with entirely different studies named by him ( Br. S. I.7 ) are omitted.

*Āryabhaṭa*: In the P. S. 15.20 Varāha charges him with making contradictory statements about the beginning of the day being reckoned from midnight in Laṅkā and also at sunrise.<sup>12</sup> Utpala on Br. S., pp.24, 44, 45, 58, 59, 100, 182, 324, quotes 14 Āryās from Āryabhaṭa.

*Atri*: mentioned by Bṛhadyogayātrā 29.3. From Br. S. 45.1 it appears either that Atri wrote a work on *utpātas* from which Garga drew his inspiration or that Atri was the teacher of Garga.

*Asita* Br. S. 11.1 mentions Asita in connection with Ketucāra. Br. Y. XIX. 1 also mentions him along with Devala and Kaśyapa on the Mantras with which oblations were to be offered into fire.

*Bādarāyaṇa*—Br. S. 39.1 states that it will enumerate the good and bad *yogas* for corn ripening in summer or autumn while the sun enters the sign Scorpio or Taurus, as declared by Bādarāyaṇa and Utpala on Br. S. 39 quotes in all five verses from Bādarāyaṇa on that topic, four of which are in the Āryā metre and one is an Anuṣṭubh. Utpala in his com. on the Yogayātrā quotes about 50 verses from Bādarāyaṇa most of which are in the Upajāti metre and the ideas, words and even illustrations of which are closely followed by Varāha e.g. IV. 17 ( Dharmo yathā hetuśatair yugānte; 'dharmo yathā prāpya yugam caturtham' on folio 30 b of the Yogayātrā). Bādarāyaṇa is quoted by Utpala almost on every verse of Yogayātrā chap. IV. It is most remarkable that the latter half of Yogayātrā IV. 32 ( IV. 33 Lahore ed. ) is the same as the latter half of a verse of Bādarāyaṇa quoted by Utpala on the same viz. 'tadā hyavaskandagato narendro bhunkte ripūnśtārṣya iva dvijihvān ). Utpala on Br. J. quotes about twenty-five verses from Bādarāyaṇa many of which are in the Āryā metre, some in Upajāti, and one in Vidyunmālā ( on Br. J. 11.5 ). It may be noted that Utpala on Br. J. 6. 2 quotes an *āryā* from Bādarāyaṇa in which the view of Yavanendra on the premature death of a child is cited. The foregoing shows that Bādarāyaṇa must have preceded Varāha by considerable time.

*Bhāguri*—m. by Br. S. 85. 1 as an ancient author on *Śakuna* from whom along with others Ṛṣabha borrowed for writing his own treatise on Śakunas.

12. लङ्कार्थरात्रसमये दिनप्रवृत्ति जगद् चार्थभटः । भूयः स एव चाकौदयात्प्रभृत्याह लङ्कार्याम् ॥ पञ्च. 15. 20, q. by उपल on वृ. सं. chap. II p. 32.

\* Vide Jastrow's 'Civilization of Babylonia and Assyria' (1915) p. 25 for cultivation of Astrology in Europe in medieval ages.

*Bhāradvāja*—m. by Br. S. 85.2 as an author on whose views Mahārājādhirāja Dravyavardhana, king of Ujjayinī, based his own work on Śākuna. On Br. S.52.76 Utpala quotes a śloka of Bhāradvāja.

*Bhṛgu*—m. in Br. Y. 4.30. Br. S. 85.43 names Bhṛgu for the proposition that the flying and running of *cāśu* and *nakula* to the left is auspicious in the afternoon and Utpala quotes half an Anuṣṭubh from Bhṛgu on this.

*Cyavana*—M. in Br. Y. 29.3.

*Devala*—M. in Br. S. 7.15 for the four *gatis* (motions) of Mercury. Utpala quotes about 12 Anuṣṭubh verses from Devala on Br. S. 5.3, 7.16, 9.1, 10.19, 19.22, 23.4, 30.32. Utpala quotes Devala on Br. Y. 12.15 and 19.1. On Yogayātrā Utpala quotes a verse of Ṛṣiputra in which Devala is mentioned (1.15-16, folio 8b). Yogayātrā IX. 12 (Lahore ed.) mentions Devala.

*Devasvāmin*—M. by Varāha in Br. J. VII. 7 along with Viṣṇugupta and Siddhasena. Utpala (*loc. cit.*) quotes an Āryā of Devasvāmin which speaks of the planetary aspects indicating very long life.

*Dravyavardhana*—M. in Br. S. 86.2. (chap. 86.2 in Kern) Varāha states that he looked into the work of Mahārājādhirāja Dravyavardhana of Avanti on Śākuna who himself composed it after reading the work of Bhāradvāja on the same subject<sup>13</sup>. It would be very useful if antiquarians can find out this king Dravyavardhana of Ujjayinī. To me it is a new kingly name. Whether there is any connection of this king with the family to which Emperor Harṣavardhana belonged is more than I can say.

*Dvaipāyana*—Varāha refers in Yogayātrā 16.4 (Lahore ed.) to the rules laid down by the sage (*muni*) Dvaipāyana and by Manu as regards fighting. This is most probably a reference to Vyāsa the reputed author of the Mahābhārata. In the Bṛhad-yogayātrā 1.15 Varāha refers to certain ślokas uttered by Dvaipāyana and then quotes them.<sup>14</sup> There are numerous places in the Mahābhārata where the relative influence of *daiva* and *puruṣakāra* is dwelt upon (vide H. of Dh. vol. II pp. 168-169), but I have not been able to locate the verses quoted below from the Bṛhad-Yogayātrā. Br. Y. I.13 is a verse<sup>15</sup> which is the same as the Śāntiparva 58.15.

*Garga*—Of all writers Garga is the one most frequently mentioned by Varāhamihira. Garga is named very often in the Br. S. For example, in Br. S. 45.1 Varāha avers that he will describe the *utpātas* that Garga learning from Atri propounded. Br. S. 45.52 states that the following two ślokas (Br. S. 45. 53-54) are

13. भारद्वाजमतं दृष्ट्वा यच्च श्रीद्रव्यवर्धनः । आवान्तिकः प्राह वृषो महाराजाधिराजकः ॥
14. अस्मिन्नर्थे ऋणु श्लोकान् द्वैपायनमुखोद्गतान् । न विना मानुषं दैवं दैवं वा मानुषं विना । नैकं निर्वर्तयत्यर्थे-  
मेकारणिरिवानलम् ॥ सिध्यन्ति सर्वे आरम्भाः संयोगात्कर्मणोर्द्वयोः । दैवात्पुरुषकाराच्च न त्वेकस्मात्कथंचन ॥  
अनुशास्ति नरं दैवं &c. ॥ बृहद्योगयात्रा I. 15 ff.
15. उत्थानवीरः पुरुषो वाग्वीरानधितिष्ठति । उत्थानवीरं वाग्वीरा रमयन्त उपासते ॥ बृहद्योगयात्रा I. 13 ;  
शान्तिपर्व 58. 15.

repeated as *śānti* according to Garga's dictum when twins are born to a mare (or she mule), she-camel, she-buffalo, cow and she-elephant (owned by a person). Similarly Br. S. 45.56 speaks of two other ślokas of Garga as containing the procedure of *śānti* (Br. S. 45. 57-58). Br. S. 45.79 refers to *śānti* performed by Garga. Br. S. 47.38 refers to the materials for *Puṣyasāna* described by Garga. Br. S. 49.15 refers to the view of Garga (matena Gargasya). Br. S. 55.31 refers to the work on *prāsādas* (temples) composed by Garga. Br. S. 64.8 names Garga and 64.9 appears to be a verse of Garga. Br. S. 85.3 speaks of Garga as one of the Yātrākāras and as having written on *śakunas*. The *Yogayātrā* (12.15) quotes the view of Garga about the length of a sword. Br. Y. IV. 6 mentions Garga's view and VI.5 also speaks of Garga and others, while VI.6 appears to be a śloka quoted from Garga. Over three hundred verses are quoted from Garga by Utpala in his commentary on the *Bṛhatsamhitā* alone. Most of those verses are in the Anuṣṭubh metre, though a few verses in other metres also occur e.g. Upajāti on Br. S. 69.7, Indravajrā on Br. S. 69.10. On Br. S. 35.3 Utpala quotes six Anuṣṭubh verses from the *Mayūracitraka* of Garga, while one ms. ascribes these verses to *Vṛddhagarga*. Garga is a somewhat mythical or shadowy figure. Utpala on Br. S. I.5 quotes three verses of Garga in which the latter asserts that the *Vedānga Jyotiṣa* was promulgated by *Brahmā* himself, that he derived it from *Brahmā* and other sages obtained it from him and wrote many works thereon.

*Vṛddha-Garga*—is expressly named by *Varāha* in Br. S. 13.2 in connection with the motion of the constellation of the seven sages (the Great Bear). He avers that he will rely on the views of *Vṛddha-Garga* on this point; then follows the much discussed verse that the constellation of the seven sages was in the *Maghās* when *Yudhiṣṭhira* ruled the earth and that 2526 years added to the *Śakakāla* yield the number of years from *Yuddhiṣṭhira* to the time when a person wants to know how many years ago *Yudhiṣṭhira* flourished.<sup>16</sup> *Alberuni* (tr. by *Sachau*, vol. I. p. 390) refers to this verse of *Varāha* and understands 'ṣaḍ-dvika-pāñca-dviyutaḥ' as equal to 2526. A passage of 25 verses is quoted from Garga by Utpala on Br. 1.11, in which it is stated that the sage *Krauṣṭuki* asked *Vṛddha-Garga* a question how *Jyotiṣa* started, who, whether a deity or a sage, promulgated it in former times, what benefit is derived from the knowledge of *Jyotiṣa* and that *Vṛddha-Garga* replied to these questions (in 16 verses). It may be noted that the verses are cited by Utpala as *Garga's* but in the verses themselves the propounder is *Vṛddha Garga*. Further it is important that the verses refer to the *Rāśis* (*tataḥ kālprasiddhyartham rāśayaḥ pūrvamīritāḥ*). In Br. S. 47.2 *Varāha* states that the *Śānti* which *Bṛhaspati* declared for *Indra* reached *Vṛddha-Garga* who declared it to *Bhāḡuri*. Br. S. 47.24-28 are ślokas (Anuṣṭubh) sung by a sage acc. to it, about which Utpala says they are *Vṛddha-Garga's*. It is therefore desirable to advert to the question whether *Vṛddha-Garga*

16. ध्रुवनायकोपदेशा नरिनर्तावोत्तरा भ्रमाद्भिश्च । यैश्चारमहं तेषां कथयिष्ये वृद्धगर्गमताव ॥ आसन् महासु मुनयः शासन्ति पृथ्वीं युधिष्ठिरे नृपतौ । पञ्चद्विकपञ्चद्वियुतः शककालस्तस्य राशश्च ॥ बृह. सं. 13. 2-3. आसन् महासु is not a verse of वृद्धगर्ग but of बराह. उपल quotes the verse of वृद्धगर्ग in the Anuṣṭubh metre 'कलिद्वापरसन्धौ तु स्थितास्ते पितृदैवतम् ॥

and Garga are identical or distinct authors. At least sixty verses are quoted as Vṛddha-Garga's by Utpala on the Br. S. alone and almost all of them are in the Anuṣṭubh metre. It is most remarkable that in some places Utpala quotes the verses of both Vṛddha-Garga and Garga on the same verse of the Br. S. For example, on Br. S. 5.17 Vṛddha-Garga is quoted as saying that when there is a conjunction of five planets on a paurnimā or amāvāsya and Mercury is not one of them then the astronomer should not make a prophecy that there will be an eclipse.<sup>17</sup> Garga is quoted to the same effect. Varāha in Br. S. 5.17 says that this is all wrong. Similarly, on Br. S. 11.7 Utpala quotes on *Ketucāra* two verses each of Garga and Vṛddha-Garga immediately after one another, which are almost identical.<sup>18</sup> The Br. S. 32 deals with the causes of earth-quakes: According to some ācāryas (32.1 latter half) earthquakes arise from the sighs heaved up by the *diggajas* when tired of carrying the burden of the earth on their heads. Utpala notes that this is the view of Garga and quotes 3½ verses from his work to support this statement. Br. S. 32.2 (latter half) states that according to other ācāryas earthquakes are due to adṛṣṭa (dharma and adharma). According to Utpala this was the opinion of Vṛddha-Garga and Utpala quotes two verses of Vṛddha-Garga which support the latter view. This shows that Garga and Vṛddha-Garga held different views on the causes of earthquakes. The conclusions that may reasonably be drawn from all the above data are that Varāha and Utpala had before them works attributed to both Vṛddha-Garga and Garga, that those works were regarded by Varāha as very ancient in his day and therefore that both of them must be regarded as having flourished some centuries before Varāha. Garga is mentioned also in the Bṛhadyogayātrā IV. 6, VI. 5 and in the Yogayātrā XII. 15 (Lahore ed). On Yogayātrā I. 16 Utpala quotes Vṛddha-Garga. The Sārāvali which is earlier than Utpala mentions in XXI.17 the views of Vṛddha-Garga on *yogas*.

This problem about Garga and Vṛddha-Garga is further complicated by the fact that Utpala quotes about 60 verses in his commentary on the Bṛhaj-jātaka from 'Gārgi' to whom he almost always prefixes the honorific epithet 'Bhagavān' (except on Br. J. VII.8 and VIII.10). Once Utpala mentions 'bhagavatā' Gārgyenā' on Br. J. VI.2. If we look to grammar alone Gārgi and Gārgya would be identical and mean a descendant of Garga from the grandson downwards or an 'apatya' of Garga (vide Pāṇ. IV. 1.162, IV. 1.95, IV. 1.105 'Gargādibhyo yañ').

17. तथा च वृद्धगर्गः । ग्रहपञ्चकसंयोगं दृष्ट्वा न ग्रहणं वदेत् । यदि न स्याद् बुधस्तत्र तद्दृष्ट्वा ग्रहणं वदेत् ॥ ...  
तथा च गर्गः । ... पञ्चग्रहसमायोगं दृष्ट्वा सौम्यान्निर्वाजितम् । ग्रहणं (सु?) वदेत्तत्र सवुषं न (सु?) ग्रहं वदेत् ॥ q. by उत्पल on बृह. सं. 5. 17.
18. तथा च गर्गः । यावत्स्यद्वाग्निं दुःस्यः स्यात्तावन्मासान् फलं भवेत् । मासांस्तु यावद् दुःस्येत तावतोऽब्दाश्च वैकृतम् । त्रिपक्षात्परतः कर्म पच्यतेऽस्य शुभाशुभम् । सद्यस्कमुदिते केतौ फलं नेहादिशेद्बुधः ॥ तथा च वृद्धगर्गः । यावतो दिवसास्तिष्ठेतावन्मासान् विनिर्दिशेत् । त्रिपक्षात्परतश्चापि कर्म केतोः प्रपच्यते ॥ तस्मात्कालपरं त्र्यायत्फलस्य शुभाशुभम् । सद्यस्कमुदिते केतौ फलं नेहादिशेद्बुधः ॥ उत्पल on बृह. सं. 11.7.

Here again we have to contend against further difficulties. On Br. J. VIII.10 Utpala<sup>19</sup> quotes a verse from the Mayūracitraka of Gārgi and on Br. S. 35.3 he quotes six verses from the Mayūracitraka of Garga (of Vṛddhagarga acc. to one Ms.), Mayūracitraka is the name of works on astrology ascribed to several authors such as Garga, Varāha and Nārada. No. 838 of 1884-1887 and 55 of 1919-24 of the Deccan College Collection now lodged in the Bhandarkar Oriental Institute (Poona) are two MSS. of Mayūracitraka ascribed in the colophons to Varāhamihira (the latter contains 322 verses in all in two adhyāyas), while No. 961 of 1886-1892 and 547 of 1895-1902 of the same collection are MSS. of Mayūracitraka attributed to Nārada. It is somewhat difficult to suppose that there existed three works on Jyotiṣa by Vṛddha Garga, Garga and Gārgi. It appears rather more likely that Garga also wrote on Horāśāstra and that the quotations from Gārgi in Utpala's comment on the Br. J. are from a work of Garga wherein probably the interlocutors were Garga and his descendant Gārgi. On Yogayātrā I.15 (folio 8b) Utpala quotes a long passage from Ṛṣiputra wherein the opinions of the pupils of Garga and also of Gārgi are referred to.

*Gautama*:—M. in the Brhad-yogayātrā 29.3 and by Utpala in a quotation from Ṛṣiputra on folio 9 b of the Yogayātrā.

*Jivaśarman*—It appears that he composed a work on Horā or Jātaka which contained Āryā and Anuṣṭubh verses. On Br. J. VII. 9 Varāha tells us that the longest life of a person acc. to Jivaśarman was 120 years and that each planet contributes  $\frac{1}{7}$ th part of it, if the planet is in its ascendant (*ucca*) and only half of this if it was *nīca*. On Br. J. XI. 1 Varāha states the two opposing views of Yavanas and of Jivaśarman, the former holding that if in a horoscope three or more evil planets are in their ascendant, the man becomes a king but he is evil-minded, the latter holding that a man does not become a king at all with evil planets in the ascendant in his horoscope. Utpala quotes two Āryās of Jivaśarman on Br. J. VII. 9 and one Anuṣṭubh on Br. J. XI. 1. Utpala further quotes two Anuṣṭubh verses of Jivaśarman on Br. J. XIII. 3 defining 'Sunaphā', 'Anaphā' 'Durudharā' and 'Kemadruma'. Jivaśarman is also mentioned in Br. Y. IX. 1.

*Kāśyapa*—M. in Br. Y. XIX. 1 along with Asita and Devala.

*Kāśyapa*—He is mentioned by Varāha on Br. S. XXI. 2 along with Garga, Parāśara and Vajra as having written on prophecies about the rainy season. On Br. S. 24.2 Varāha states that he looked into the works of Garga, Parāśara, Kāśyapa and Maya on the consequences of the conjunction of the moon with Robiṇī. Utpala in his commentary on the Br. S. quotes about 260 verses in the Anuṣṭubh metre (the printed edition sometimes reading Kāśyapa and very often Kāśyapa). It is remarkable that in his comment on the 16th chap. of the Br. S. dealing

19. तथा च मयूरचित्रके भगवान्गार्गिः । आयुर्द्वयविभागश्च प्रायश्चित्तक्रियाम् (?) तथा । सावनेनेव कर्त्तव्याः सत्राणामयुपासनम् ॥ उत्पल on बृहज्जा. VIII. 10.

with *graha-bhakti* (what rivers, what countries and what people are under the special influence of the several *grahas*) Utpala quotes 40 verses of Kāśyapa and only three of Garga and none from any other writer or work except the Samāsasambitā of Varāha himself. Similarly, on 57.29 of the Br. S. (dealing with the forms, ornaments and dress of the images of various deities) Utpala quotes 19 verses from Kāśyapa. It is clear therefore that Kāśyapa's work traversed the same ground as the Br. S. and was an extensive work in the Anuṣṭubh metre. The verses quoted on chap. 40 dealing with the materials or things that are under the influence of the several signs of the Zodiac (*rāśis*) show that he was quite cognisant of the *rāśi* system, though on Br. S. 9.35 Kāśyapa is quoted as beginning *nakṣatras* with *Kṛittikās* and ending with *Bharanī*.

*Lāṭadeva*—It has already been stated above that Lāṭadeva expounded Pauliśa and Romaka *siddhāntas* out of the five (P. S. 1.3 'pancabhyo dvāvādyau vyākhyātau Lāṭadevena). In the Pañchasiddhāntikā (15.18) Varāha states that the day of the week is to be determined from the *ahargana* which itself depends upon time and place. Lāṭācārya declares that *ahargana* is to be calculated in Yavanpura when half of the sun's orb has set. Lāṭadeva and Lāṭācārya are most probably the same person. Has this name anything to do with the country of Lāṭa, southern Gujarat of modern times?

*Māṇḍavya*—In Br. S. 103.3 Varāha puns upon the word 'jaghanacapalā' (the name of a metre, also a 'veśyā'), refers to the composition of Māṇḍavya and remarks that after hearing Māṇḍavya's work (which was probably written in various metres) the reader may not like his composition. Utpala quotes two Sragdharā verses of Māṇḍavya on this and on 103.61 mentions Māṇḍavya as having written on metres. Māṇḍavya is quoted by Utpala several times in his commentary on the Br. J. On Br. J. VI.6 Utpala quotes an Upajāti of Māṇḍavya which states how the moon saves the life of an infant if placed in certain aspects. On Br. J. XI. 3, 5, 6 all dealing with *rājayogas* (conjunctions and positions of planets indicating that a person will rise to the position of a king) Utpala quotes three verses of Māṇḍavya respectively in the Pṛthvī, Śārdūlavikrīḍita and Śikhariṇī metres. On Br. J. XIII.2 and XV. 4 Utpala quotes one Śikhariṇī each of Māṇḍavya.

*Maṇittha*—In Br. J. VII. 1. Varāha states that Maya, Yavana, Maṇittha and Parāśara (lit. one whose ancestor was Śakti) have declared the maximum number of years which the sun, moon and other planets indicate as the length of the life of a person. Maṇittha is also named in the Br. Y. XI. 9. Utpala in his commentary on the Br. J. alone quotes about fifteen verses from Maṇittha, all of which (except those on Br. J. VII. 2 and XII. 2, which are Anuṣṭubhs) are in the Āryā metre. From the comment of Utpala on Br. J. VII. 9 it appears that Maṇittha knew the Horāśāstra of Parāśara<sup>20</sup>. The name Maṇittha has a non-Indian ring. It is, however, difficult

20. श्रूयते स्कन्धत्रयमिति पाराशरस्येति । तदर्थं वराहमिहिरः शक्तिपूर्वैरित्याह । चित्रं प्रोज्झ्य पराशरः कथयते दौर्भाग्यदं योषिताम् । इत्येवमादि मयमणित्थयोर्होराशास्त्रे विद्येते ( विद्येते ? ) । उत्पल on बृहज्जा, 7.9.

to hold that a non-Indian attained so much proficiency in classical Sanskrit as to be able to compose in various Sanskrit metres a work on astrology. It is possible that an Indian scholar became familiar with the astrological work of a foreigner and reproduced it in Sanskrit after adopting for himself the foreigner's name. It is said that Manetho was an Egyptian priest who lived in the 3rd century B. C. and was the keeper of the sacred archives of the temple of Heliopolis. \*

*Maya*—He is mentioned several times by Varāhamihira. The Br. S. 24. 2 states that Maya, Garga, Parāśara and Kāśyapa declared to multitudes of their pupils the good and evil consequences of the conjunction of the moon with Rohinī. In Br. S. 55. 29 Varāha states that according to Maya the *bhūmikā* of a *prāsāda* should be of 103 fingerbreadths, while Viśvakarmā said it should be 84 *āngulas* (three and half cubits). In Br. S. 56.8 it is said that Maya prescribed a plaster called *vajrasaṅghāta* made of eight parts of lead, two of *kāśya* (bell-metal) and one of *ritikā* (brass). Maya is named in Br. J. VII.1 along with Yavana, Mañittha and Parāśara<sup>21</sup> as having dealt with the topic of *āyurdāya* (length of life). Br. S. II. 14 is a famous verse: 'the Yavanas are Mlecchas, among whom this śāstra (Jyotiṣa) has attained a position of eminence; even they are honoured like sages; what need is there to say about a brāhmaṇa who knows predictions (that he will be honoured)'. On this verse Utpala quotes two Upajāti verses (without name) in which it is said that the Sun imparted to Maya, the king of Dānavas, the science of Jyotiṣa, that Viṣṇu imparted it to Vasiṣṭha and Parāśara derived it from Soma and that these three (Maya, Vasiṣṭha and Parāśara) spread it among the Yavanas. In the last chapter of the current Sūryasiddhānta it is stated that Maya learnt from the Sun the knowledge of astronomy (verse 25) and that he transmitted it to the sages that flocked round him (verse 27). On Br. S. 52. 39-41 Utpala states that Viśvakarmā and Maya dilated at great length on each kind of *vāstu*, while Varāha compressed such extensive descriptions into a small compass. Utpala quotes an *anuṣṭubh* verse of Maya (on Br. S. 52. 39-41) on five kinds of houses, which names are somewhat strange<sup>22</sup>. Vide above on Mañittha for Maya's reference to Parāśara. On Br. J. VII. 13 Utpala quotes an *Āryā* of Maya. Utpala on *Yogayātrā* IV. 13 (folio 30 a) quotes Maya.

*Manu*:—In Br. S. 55.31 Varāha tells us that he wrote his chapter on the construction of temples after consulting the extensive works of Garga and Manu on the same subject. Utpala adds that not only Manu, but Maya, Vasiṣṭha and Nagnajit also composed works on the topic of the construction of temples. The *Yogayātrā* 16.4 (Lahore ed.) refers to the rules laid down by the sage Dvaipāyana and

21. म्लेच्छा हि यवनास्तेषु सम्यक् शास्त्रमिदं स्थितम् । ऋषिवत्सेऽपि पूज्यन्ते किं पुनर्द्वैविद् द्विजः ॥ बृहत्सं.  
2. 14. Alberuni (Sachau, Vol. 1. p. 23) refers to this verse.
22. पक्वेष्टकृद्गृहाणां सुवर्णैर्नृणवद्वादिदृक्तानां हिरण्यगर्भोक्तानां निषेधार्थं मयेन पञ्चप्रकारा उक्ताः । कटिमं ग्रन्थिमं चैव दायिमं दीपिमं तथा । खालिमं च पुंरुं ह्यातं क्रियाः पञ्चविधा गृहे ॥

\* Vide Davidson's 'The Stars and the mind' p. 26.

by Manu on the subject of war. This is probably a reference to the 7th chapter of the Manusmṛiti. Br. S. 42.39 states that Manu prescribed the making of *Śakra-kumārīs* (dolls of wood as decorations of the banner of Indra) and 42.51 provides that *mantras* laid down by Manu and derived from ancient lore should be recited on the fourth day after the festival of Indra's banner begins and Br. S. 42.52-55 are the four *mantras* of Manu. On Br. S. 53.99 Varāha says that he gave a summary in *Āryā* verses from the work of Sārasvata<sup>33</sup> on 'dakārgala' (indications about where water may be found in the earth) and that he will proceed to dilate upon the same subject in *vṛttas* (metres following the *gaṇa* scheme and differing from *Āryās* which follow the *mātrā* scheme) based upon Manu's treatment of the same. On Br. S. 53.102 Utpala quotes five verses of Manu on the question where water may be found underground. Br. S. 53.111 (which is in the *Upajāti* metre) appears to be a quotation from Manu if we rely on the words of Br. S. 53.110 (*tāh śobhanā munivacoStra ca vṛttam-etat*). Utpala on Br. S. 85.18 quotes a verse in the *Anuṣṭubh* metre from 'Manudharmāḥ' on *Śakunas*. These references show that in Varāha's day there existed a work of Manu which dealt with topics similar to those of the Br. S. It may be noted that Utpala does not quote verses from Manu on such topics as the construction of temples or on the banner of Indra. It may hence be inferred that Utpala had not before him the work of Manu on these topics, though Varāhamihira had it before him. On 57.2 of the Br. S. Utpala quotes without name Manusmṛiti 8.132 about *trasrareṇu* (or *paramāṇu* acc. to *Vāyupurāṇa* 101.118). On Br. S. I. 1 Utpala quotes Manu II.76 (but reads 'hutāhutiḥ') and on I.6 quotes Manu I.5-13.

In chapter 73 of the Br. S. Varāhamihira enters upon a very spirited defence of women against the charges levelled against them by men. In that connection he refers to what Manu has said on the point (73.6 'Manunātra cōktam'). Verses 7 to 11 of chap. 73 (if not two or three more) appear to be meant as quotations<sup>34</sup> from Manu and are held to be so by Utpala. None of these except the verse 'jāmāyo yāni' (73.10) occurs in the same form in the extant Manusmṛiti. The verse 'jāmāyo yāni' is Manu 3.58. Verse 7 (*somastāsām*) is almost the same as Baud. Dh. S. II. 2.64 and Vasiṣṭha 28.6 and resembles Yāj. I. 71. The latter half of verse 8 (*brāhmaṇāḥ pādato medhyāḥ*) is very close to Vasiṣṭha 28.9. Verse 9 (*striyaḥ pavitram*) is the same as Baud. Dh. S. II. 2.63 and Vasiṣṭha 28.4. From this it follows either that Varāha had a text of Manu different from the extant one or that he simply gives in his

23. सारस्वतेन मुनिना दकार्गलं यत् कृतं तदवलोक्य । आर्याभिः कृतमेतद् वृत्तैरपि मानवं वक्ष्ये ॥ बृहत्सं. 53.99.
24. सोमस्तासामदाच्छौचं गन्धर्वः शिक्षितां गिरम् । अग्निश्च सर्वभक्षित्वं तस्मान्निष्कसमाः स्त्रियः ॥  
 ब्राह्मणाः पादतो मेध्या गावो मेध्याश्च पृष्ठतः । अजाश्च मुखतो मेध्याः स्त्रियो मेध्यास्तु सर्वतः ॥  
 स्त्रियः पवित्रमतुलं नैता दुष्यन्ति कर्हिचित् । मासि मासि रजो ह्याषा दुःकृतान्यपकर्षति ॥  
 जामयो यानि गेहानि शपन्त्यप्रतिपूजिताः । तानि कृत्याहृतानीव विनश्यन्ति समन्ततः ॥  
 जाया वा स्याज्जनित्रो वा सम्भवः स्त्रीकृतो नृणाम् । हे कृतमास्तयोर्निन्दां कुर्वता वः कुतः श्रमम् ॥  
 बृहत्सं. 73. 7-11. (chap. 74 in Kern).

own words a summary of Manu's teaching or that, as he quotes from memory, confusion results. This last does not appear to me to be likely and I am inclined to believe that he had a different text of Manu.

*Nagnajit*—Br. S. 57.4 states that, according to Nagnajit, the length of the face of an idol is 14 *āṅgulas* (and not twelve as it should be according to others) of the idol itself and that this is the measure in the Draviḍa country. Utpala quotes here an Anuṣṭubh of Nagnajit to the same effect. On Br. S. 57.15 Nagnajit is again mentioned and Utpala quotes a half *śloka* from Nagnajit. On Br. S. 55.31 Utpala refers to the works of Manu, Vasiṣṭha, Maya and Nagnajit.

*Nārada*—Acc. to Br. S. 11.5 Nārada thought that Ketu was only one but assumed different forms, while some (like Parāśara acc. to Utpala) held that Ketus were 101 and others (like Garga) held that they were a thousand in number. In Br. S. 24.2 Varāha refers to the fact that Nārada learnt from Bṛhaspati on Mount Meru about the conjunctions of the Moon with Rohiṇī. Utpala on Br. S. 11.1 refers to Nārada's work on Ketucāra and on Br. S. 11.5 quotes a verse of Nārada.

*Pañcasiddhāntikā*—This work of Varāha has been already referred to. This is referred to as a *Karaṇa* in Br. J. 28.26 (vide note 2 above). At the end of the Br. S. (106. 14) he mentions his own works called *Yātrā*, *Jātaka* and *Karaṇa* (*bahvāścaryam Jātakam-uktam Karaṇam ca bahucodyam*). Two verses from the *Pañcasiddhāntikā* (13.36–37) occur in the Br. S. also (as 4. 2 and 4). In Br. S. 5.18 Varāha says that certain matters about eclipses have been already explained in his *Karaṇa*.

*Parāśara*—Br. S. 7.8 mentions a work called *Parāśaratāntra* in which seven categories of *nakṣatras* in relation to Mercury were declared. Br. S. 11.1 mentions the *Ketucāra* of Garga, Parāśara, Asita, Devala and others. Br. S. 17.3 states that sages like Parāśara declared four kinds of *grahayuddha*. Br. S. 21.2 mentions that works on prognostications about rainfall were composed by Garga, Parāśara, Kāśyapa, Vajra and others. In Br. S. 23.4 Varāha refers to the views of Garga, Vasiṣṭha and Parāśara on the extent of rainfall. Br. S. 24.2 mentions Garga, Parāśara, Kāśyapa and Maya on the conjunction of the moon with Rohiṇī. In Br. S. 60.1 Varāha states that Parāśara declared to Bṛhadratha the auspicious signs of cows and Utpala adds that Bṛhadratha, a pupil of Parāśara, was also called Śārṅgarava. These references establish that a work of Parāśara on the same topics as those of the Br. S. existed in Varāha's day. Parāśara appears to have written also on *Jātaka* or *Horāśāstra*, since in Br. J. 7.1 the doctrines of Maya, Yavana, Maṇittha and Parāśara on *āyurdāya* are referred to and since Br. J. 12.2 refers to Parāśara's view that two *Yogas* called 'śrak' and 'sarpa' occur when auspicious planets occupy the (four) *kendra* places in the horoscope or evil planets occupy them all. It is however interesting to note that by the time of Utpala Parāśara's work on *Jātaka* had become unavailable, since on Br. J. 7.9 Utpala expressly states that he found only the *Samhitā* work of Parāśara and he could not find his work on *Jātaka*.<sup>95</sup> On Br. S. II.14

25. पाराशरीया संहिता केवलमस्माभिर्दृष्टा न जातकम् । उपल on बृहज्जा. 7. 9; vide note 20 above for the sentences after this sentence.

Utpala quotes a verse (without name) in which it is said that Parāśara learnt Jyotiṣa from Soma and spread it among Yavanas. The saṁhitā work of Parāśara has been quoted hundreds of times by Utpala on Br. S. It must have been a very extensive work in mixed prose and verse. The prose quotations cited by Utpala are often very long (extending sometimes up to even four pages in print) and the total of the prose passages alone will certainly occupy 50 printed pages at least. Besides, many verses in the Anuṣṭubh and Āryā metres are quoted. Vide for Anuṣṭubhs, Utpala on Br. S. 3.39 5.63, 6.6-8, 9.36 (4 verses), 11.22 (3 verses), 21.32, 26.10, 28.18, 30.15, 60.4 (4½ verses), 60.19 (8½ verses), 65.1 (8 verses), 85.14 (4 verses), and for Āryās vide 32.26 (7 Āryās), 97.6, 100.1-14 (27 Āryās on *nakṣatrajātaka*). On 17.27 of the Br. S. Utpala quotes a verse in the Upajāti metre from Parāśara. It is not possible for want of space to draw attention to the interesting information that can be gleaned from the quotations of Parāśara cited by Utpala. A few points only are noted here. On Br. S. 5.80 Utpala quotes a long prose passage where the astrological results are predicated about the months from Kārtika to Āśvina. So the year probably began with the month of Kārtika in Parāśara's day. In several places the *nakṣatras* are enumerated from Kṛttikā to Bharanī (e. g. on Br. S. 5.41-42, 10.18). Both the above passages of Parāśara contain the names of numerous countries in Bharatavarṣa. On Br. S. 8.1 Utpala quotes two verses from Ṛṣiputra in which the view of Vasiṣṭha, Atri and Parāśara on the cycle of Jovian years is mentioned. From Br. J. VII. 1 where the view of Maya, Parāśara and others on *āyurdāya* is mentioned, it follows that Parāśara's work on Jātaka was cognisant of the *rāśi* system. On Yogayātrā 1.16 (folio 10a) Utpala quotes two Anuṣṭubh verses of Parāśara on the prognostications about a marching king facing Ketu. Ṛṣiputra is earlier than Varāha and Parāśara is mentioned by Ṛṣiputra. Therefore Parāśara must have preceded Varāha by some centuries. If we look at the quotation by Utpala from Parāśaratāntra on Br. S. 3.1 which follows the view of the Vedāṅgajyotiṣa on the northern and southern passage of the sun, it would follow that Parāśara's work on Saṁhitā was very ancient. It is possible that too different Parāśaras wrote on Saṁhitā and Jātaka respectively and that owing to the lapse of centuries writers like Varāha identified the two.

*Pauliśa*—It has already been stated that Pauliśa is one of the five Siddhāntas the data of which are summarised in the Pañcasiddhāntikā of Varāha-mihira. Utpala on Br. S. 2. p. 41 quotes an Āryā from the summary of Pauliśasiddhānta (P.S. verse 39 p. 6). He quotes on Br. S. II p. 24 two Āryās from Pauliśa on *prāna*, *vināḍī*, *nādikā* and other measures of time. So on p. 41 (one Āryā), p. 51 (4 Āryās from Pulisācārya), p. 53 (one Anuṣṭubh from Pulisācārya), p. 55 (4 Āryās from Pulisācārya), on p. 57 (one Āryā stating that the earth<sup>20</sup> is round like a wheel, is immoveable in endless space), p. 59 (one Āryā). In other places also Utpala quotes verses from Pulisācārya e. g. on pp. 27 (an Anuṣṭubh), 28, 37, 51, 53, 55, 59. On Br. J. 2.20

26. तथा च पौलिशे । वृत्ता चक्रवदचला नभस्यपारे विनिर्मिता धात्रा । पञ्चमहाभूतमयी तन्मध्ये मेरुमरणाम् ॥  
उत्पल on बृहत्सं. 2. p. 57.