

DEVELOPMENT OF HINDU ASTRO-MATHEMATICAL SCIENCES IN MITHILĀ

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It is proposed to set out the characteristics of Hindu astronomy as it developed in Mithilā and to investigate into its major achievements and high lights. Quite an extensive literature in astronomy has been cultivated and developed in this region. A number of astronomical and mathematical texts, big and small, original as well as commentative, have been compiled in different ages by several scholars. The paper seeks to identify separately the works pertaining to the three *Skandhas-Ganita (Siddhānta)*, *Samhitā* and *Jātaka* of *Jyotiṣa* and also the texts relating to *Siddhānta*, *Karaṇa* and *Tantra*. Several unknown astronomers as also unknown or less known astronomical and mathematical texts have been identified.

INTRODUCTION

Mithilā, the northern part of Bihar, has played a noteworthy part in the cultural tradition of ancient India. It has ever remained a seat of Sanskrit learning since times immemorial. Ancient sages and seers, viz., Gautama, Kaṇāda, Jaimini, Kapila, Yājñavalkya, Janaka and others were great dispensors of spiritual wisdom and later scholars received highest distinction in the academic field. Notable contributions to different branches of knowledge, viz., *Vedānta*, *Mīmāṃsā*, *Nyāya* and *Jyotiṣa* have been made by the unrivalled scholars of the land. Several attempts have been directed in the past to take stock of their philosophical and allied literature, but little efforts have been made to bring to light their achievements in the twin disciplines of Astronomy and Mathematics. Consequently, Mithilā's contributions in these fields could not yet be properly assessed. The present study is an attempt in this direction.

ASTRONOMY

The first glimpse of the science of Hindu astronomy in Mithilā is found in the works of Yājñavalkya (1000-600 B.C.) who adorned the court of the King Janaka (of Mithilā). A number of astronomical elements and constants

relating to eclipses, *vyatīpāta*, *ayana*, *muhūrta*, enumeration of *nakṣatras* etc., have been discussed by him in the *Yājñavalkya Smṛti* and *Śatapatha Brāhmaṇa*. Thus the discipline of astronomy developed in Mithilā at least with Yājñavalkya, if not earlier. It is an established fact that Hindu astronomy attained its highest glory during the period ranging from the 5th to the 12th century A.D. which might have left its imprint on the scholars of Mithilā as well, but we come across a very few astronomical texts written in Mithilā during this period. It seems that due to political upheavals in the region, invasion after invasion by foreigners and other historical reasons there did not exist congenial and proper environment for the cultivation of literary as well as scientific treatises. Consequently very few works that might have been written during the period might have been lost. It is as late as the 10th century A.D. that we find references of different aspects of astronomy in the distiches of Dāka. Since then a number of texts were compiled by the scholars of Mithilā in different ages and the tradition of learning and cultivation of astronomy continued unabated till modern times.¹

Work on Gaṇita Skandha :

The first available work on the *Gaṇita Skandha* of Hindu astronomy is *Sūrya Siddhānta Bhāṣya*, a commentary on the famous astronomical text, *Sūrya Siddhānta*. This *Bhāṣya* was written by Caṇḍeśwārācārya, a native of Mithilā in śaka 1107 (1185 A.D.) and is perhaps the earliest commentary on the *Sūrya Siddhānta* available so far.² It will be worthy of note that the *Sūrya Siddhānta* continued to be studied in Mithilā in some form or the other till the present time and a large number of commentaries and calendrical works have been written on its basis. The next work we come across is *Vidyādharī*, a *Karṇa grantha* of Vidyādharma (Vijjāhara) of the 12th century A.D. who was a reputed scholar and a veteran minister of Jayacandra (1170-1189 A.D.) of Kannauja.³ We have also got the mention of a commentary on Bhāskarācārya's *Karṇa Kautuhalam* by Rāmadatta who was the cousin of Caṇḍeśvara Ṭhākura, Minister of war and peace of Mahārājā Harisinghadeo (1307-21 A.D.) of the Karṇāta dynasty.⁴ According to the *Varṇa Ratnākara* of Jyotirīśwar Ṭhākura, a number of *Karṇa* texts, namely, (Laghu) *Mānasa* of Muñjāla (10th century), *Khaṇḍakhādyaka* of Brahmagupta, *Bhāsvatī* of Śātānanda (1092 A.D.), *Tithicakra*, *Somaśekhara*, and *Vidyādharī* were popular in Mithilā during the 13th-14th century.⁵ There are evidences to believe that Bhāskara II's astronomical work, *Siddhānta Śiromani* has played a leading role in the propagation and practice of astronomy in Mithilā. His work was studied and numerous commentaries on it have been written by the scholars of this region. One such commentary is *Gaṇita Tattva Cintāmaṇi* which was written by Lakṣmīdāsa Mīśra, son of Vācaspati Mīśra II (14th century A.D.) in Śaka 1423 (1501 A.D.) on both the parts—*Grahaṇaṇitādhyāya* and *Golādhyāya* of the *Si.Śi*. This work contains many new ideas and mathematical elaborations. In it the author has illustrated the principles with several examples and established rationales of various rules as propounded by Bhāskarācārya.⁶

It is believed that the *Jyotiṣa Sāra Samuccaya* of the famous poet Vidyāpati was also popular in Mithilā on this aspect of astronomy.⁷ Rājarsi Parmānanda Thākura (b.1540-50), son of M.M. Maheśa Thākura, composed a work *Siddhānta Sudhā* dealing with the position of planets during *ayana*, mean and true planets and such other topics. Viṣṇudeva (1646 A.D.) wrote a commentary on it titled *Siddhānta Sudhā Ṭikā* in Śaka 1603 (1681 A.D.).⁸ During the same period *Rasālā*, an astromathematical work was composed by Bharata Upādhyāya (c.1650 A.D.) dealing with different aspects of arithmetic and astronomy.⁹ *Bhāsvatī* of Śatānanda (c.1092 A.D.) was also studied with keen interest by scholars of Mithilā and commentaries on it were written by Kamala Nayana Miśra (early 18th century), Yogendra (1742 A.D.) and others.¹⁰ *Dikakālanirupanam*, an astronomical text containing methods for determining the direction and time, by Gokulanātha Upādhyāya (18th century) is also very important. Again, five aspects of *Siddhānta Siromani* of Bhāskarācārya viz., *Dr̥kakarma*, *Jyotpati*, *Pras̥nottara*, *Valana*, and *Mahāpraśna* have been commented upon by Nīlāmbar Jha (1823-1883 A.D.), the reputed astronomer and author of fifteen works on different aspects of astronomy and mathematics. He wrote a commentary on the *Tattva Viveka* of Kamalākara as well. In the 20th century too, a considerable number of commentaries on the important *Siddhānta* works, namely, *Āryabhaṭīya*, *Brāhmasphuṭa Siddhānta*, *Siddhānta Śekhara*, *Graha Lāghava*, *Siddhānta Tattva Viveka* and others were compiled by scholars of Mithilā.

Works on Computation of Eclipses :

References to lunar and solar eclipses are found to occur in the *Ācārādhyāya* of the *Yājñavalkya Smṛti*. The distiches of Dāka (10th century) describe the good and bad effects of eclipses and also mention the conditions under which lunar and solar eclipses take place. *Kṛīya Cintāmaṇi* of Caṇḍeśvara Thākura (13th century) and Gaṅgā Vākyāvalī of the poet Vidyāpati also speak of occurrences of eclipses. We do not find any separate treatise written by Maithilān scholars exclusively dealing with computation of eclipses till the 15th century A.D. The credit of composing the first independent work on this aspect goes to M.M. Hemāngada Thākur (b.1550-60 A.D.), the son of Gopāla Thākura of the Khaṇḍavalā dynasty. His work, *Rāhūparāgapañjī* or *Grahaṇamālā* (chain of eclipses) contains a list of almost all lunar and solar eclipses for about 1100 years. The first result mentioned therein begins with Śaka 1542 (1620 A.D.) and the last one ends with Śaka 2630 (2708 A.D.).¹¹ Only the results of calculations specifying year, dates, time, duration of eclipses, time of its conjunction and separation have been given in it.

Formation of Calendar :

Since the *Siddhānta* works deal with all the requisite aspects of a calendar, it is not unreasonable to believe that the knowledge of its formation might have

existed in Mithilā during the time of Caṇḍeśvarācārya (12th century A.D.) who composed *Sūrya Siddhānta Bhāṣya*. Moreover, the description of almost all essential aspects of calendar-making found in *Varṇa Ratnākara* of Jyotirīśwar Ṭhākura (14th century) makes us believe that the preparation of annual almanacs was in vogue in the land during the 13th-14th century or a somewhat earlier.¹² The most popular and useful treatise on the formation of calendar has been, here, the *Tithi Patra* or *Makaranda Sārīṇī* of Makaranda Miśra (1478 A.D.) since its composition.¹³ It is believed that Hemāṅgada Ṭhākura (b.1540-50) of the Kaṇḍavalā dyansty wrote a commentary on it but these days it is not available. *Makarandodāharaṇam*, a commentary on the *Makaranda Sārīṇī* by Jīvanātha Jha (b.1818 A.D.), *Makaranda Karaṇam*, an original work of Apūcha Jha (c.1860), *Makaranda Vāsanā* of Gokulanātha Upādhyāya (18th century), Pañcāṅga Vāsanā by Nīlāmbara Jha (1823-1881 A.D.), *Makaranda Sāraṇyupapattiḥ* (a commentary on the Makaranda Sārīṇī) by Nṛsīṃhadatta Miśra, son of Haradatta Miśra and several such texts written in different ages make us believe that scholars of Mithilā did not lag behind in the development of this branch of astronomy.¹⁴

Practical Astronomy (Vedha) :

Astronomy being a practical science requires observation of heavenly bodies as well as computational skill. Astronomers, in ancient days, used to perform *Vedha* either with naked eyes or with crude instruments. They were not so well-equipped as the modern astronomers are. There are evidences to believe that *Vedha* was in vogue in Mithilā also. Ballāla Sen, son of Lakṣmaṇa Sen (whose reign was established in Mithilā in Śaka 1082) in his work *Abhūia Sāgara* informs us about several celestial happenings like the conjunction of Sun and Mercury and also of Sun and Venus and has also mentioned the precessional point on the basis of his own observation. Moreover, the contents of the work *Ratnāvalī* by Sudhākar Jha (15th century A.D.) also reveal that correction by *Vedha* (*Vedhasiddhi*) was prevalent during his time.¹⁵

Samhitā or Muhūrta Works :

The literature cultivated in Mithilā on different aspects of *Phalita Jyotiṣa* viz., *Samhitā*, *Muhūrta*, *Jātaka*, *Śakuna*, *Praśna* and others are no less striking. *Samhitā* or *Muhūrta Granthas* deal with the rules pertaining to auspicious times for the numerous religious and social ceremonies, namely, *yajñopavita*, marriage, *yātrā*, construction of a house, coronation of a king, *yājñas*, fasts, etc., which are required by a house holder. The earliest literature on this aspect available to us is the *Suddhi-Dīpikā* by Śrīnivāsa Miśra of the 12th century A.D. Raghudeva Miśra (17th century), daughter's son of Mahārājā Śubhāṅkara Ṭhākura of the Kaṇḍavalā dynasty and Kavikaṅkana of Bengal composed commentaries on it.¹⁶ The popularity of this work may also be judged from the fact that it has been approvingly quoted by several Maithila scholars, and even

the scholars of Bengal and the Deccan have quoted him in their works on *Dharma Śāstra*.¹⁷ *Kṛiya Cintāmaṇi* of Caṇḍeśvara Thākura (13th century) has also been popular and respected in Mithilā.¹⁸ Moreover, *Rāja Mūrtanda*, *Bṛhat Saṃhitā*, *Śrīpati Saṃhitā*, *Nanda Saṃhitā*, *Devala Saṃhitā*, *Candra Saṃhitā* and *Halāyudha Saṃhitā* were very popular in Mithilā during the 13th-14th century.¹⁹ *Varṣa Kṛiya* of the famous poet Vidyāpati (1350-1450) deals with various customs and ceremonies of a house holder throughout the year. Mm. Pakṣadhara Jha (15th century) son of Vaṭeśvara composed *Tīthi Candrikā*, and Mm. Rudradhar Upādhyāya (15th century) son of Laksmidhara, wrote the *Varṣa-Kṛiya*, *Tīthi Nirṇaya* and *Dvaita Nirṇaya* of Vācaspati Miśra II (15th century),²⁰ *Ratnāvalī* of Sudhākara Jha (15th century) and *Ratnāvalī Vyākhyā*, a commentary on it by his disciple Pradyumna,²¹ *Śīsubodha* of Pakṣadhara Miśra (Jaideva) (15th century) and *Daivajña Bāndhava* of Haradatta Thākura (15th-16th century)²² are some of the important works of the period. The *Aticāra Nirṇaya* of Mm. Maheśa Thākura (b.1500-1510 A.D.), the founder of the Darbhanga Raj, has always remained as a guideline for the later Maithilā scholars. This work deals with the accelerated motion of planets mainly Jupiter and their adverse effects on the performance of religious rites especially marriages. Among the important manuals of this type of later period may be mentioned *Kunda Kādambarī* and *Māsa Mīmāṃsā* of Mm. Gokulanātha Upādhyāya (b.1640), *Vāstu Vicāra* and *Bhāva Kautūhalaṃ* of Jainātha Jha (b.1818), *Laghu Saṃgraha* of Lakṣmīnārāyaṇa (early 19th century), *Kṛiya Śīromaṇi* of Tūphānī Jha (19th century), *Vyavahāra Ratna* of Bhānuātha Jha (19th century) and others.²³ It will not be out of place to mention here that the work on Dharmaśāstra dealing with *Tīthivicāra*—auspicious moments—for religious ceremonies comes under the purview of *Smṛti Jyotiṣa* and hence all such works may also be placed in the category of works on *Smṛti Jyotiṣa*.

Jātaka (or Horā) Skandha :

While the classical texts on *Jātaka* used in Mithilā are *Bṛhajjātaka* of Varāhamihira (6th century) and *Jātaka Karma Paddhati* of Śrīpati (1039 A.D.), a number of indigenous texts on the subject have also been composed by Maithilā scholars. The first available work on this aspect is *Jātakapaddhati*, *Gaṇitodāharaṇaṃ*, a commentary on the *Jātaka Paddhati* of Śrīpati by Bhaveśa (13th century).²⁴ *Vyavahāra Pradīpikā* of Harapati Thākur (early 15th century), the eldest son of the famous poet Vidyapati and *Bhāvaprakāśa* of Mudhusūdana Śarmā (15th century)²⁵ are the two original treatises on *Jātaka* written in the 15th century A.D. *Tājika Ṭippanī*, a commentary on the *Tājika* of Nilakanṭha was composed by Dullaha Miśra (c.1576 A.D.)²⁶ and Mahidhara (16th century) compiled *Bṛhajjātaka Ṭippanī*,²⁷ a commentary on the *Bṛhajjātaka* of Varāhamihira in Śaka 1520 (1598 A.D.). *Grahabhāva prakāśa* of Kaviratna, *Jātaka Paddhati* and *Janma Paddhati* of Jyotisvida Nīlkanṭha Jha, who flourished during the reign

of Sundara Thākura (1643-1670), of the Khaṇḍavalā dynasty, *Jātaka Candrikā* of Prāṇadhara Miśra, *Janma paddhati* of Kamala Nayana Miśra and *Jātakadarpaṇam* of Vasant Miśra (grand son of Prāṇadhara Miśra) are some of the important original works written during the period 16th century to the 18th century.²⁸ Bhāvaprakāśa of Jīvanāth Jha (b.1823 A.D.) and *Janmapatrodāharaṇam* of Nīlāmbār Jha (b.1823 A.D.) are again the two indigenous treatises on the *Jātaka*, a number of copies of which have been found in the personal possessions of different individuals of the region. *Jātakapaddhativāsanā*, a commentary on the *Jātakapaddhati* of Keśavācārya was composed in Saka 1767 (1845 A.D.) by Dharmeśvara, son of Rāmcandra.²⁹ In the 20th century too, a number of commentaries on the standard works as well as original works on *Jātaka* have been written by the scholars of Mithilā.

Śakuna :

While making a survey of the works on *Śakuna Śāstra* written in Mithilā mention may be made of *Vidyādhari* of Vidyādhara (12th century) which is not available in the present state of our knowledge, but it is believed that Vidyādhara was an expert in predictive astrology as his appointment as minister in the court of Jayacandra was due to the correct prediction made by him regarding his (Jayacandra's) rise to the royal position.³⁰ Mm. Narahari Miśra (15th century), son of Narasingh Miśra, composed a commentary named *Svarodaya Vyākhyā* on *Svarodaya* of Narapati.³¹ *Ratna Kalāpa* was written by Viṣṇudeva (early 17th century), son of Raghunandan³² and *Adbhuta Darpanam*, a manual dealing with omens and portents, was composed by Mādhava Śarmā (early 18th century), son of Raghunātha.³³

Praśna Śāstra (Astrological Queries) :

In this respect too, Vidyāpati's name may be mentioned first. Though no independent work of his on this aspect is available, yet his literary works help us to trace out a historical background. His work, *Purūṣa Parīkṣā*, which is a collection of 44 interesting tales in Sanskrit, speaks of a number of examples relating to astrological queries.³⁴ The first work available so far on *Praśna Śāstra* is *Utpala Saptativyākhyā*, a commentary on *Utpala Saptati* of Bhattotpala by Śrīdatta Miśra (14th century), son of Ābaśayīka Nāgeśvara Miśra.³⁵ *Ahibalacakram*, a manual dealing with questions regarding treasures hidden under the ground was written by Narahari Miśra (early 15th century)³⁶ and a treatise in verse on *Praśna Śāstra* named *Praśna Kaumudī* was composed by Vibhākācārya (early 16th century).³⁷ Iśvaradatta Śarmā (19th century) wrote *Akṣaracūḍāmaṇi* in Śaka 1735 (1813 A.D.) dealing with certain astronomical theories and practices in answer to queries.³⁸ Jīvanātha Jha (b.1818 A.D.) compiled *Praśna Bhūṣaṇa* dealing with astronomical queries regarding pregnancy, life and death of an ailing person, marriage, etc. which was commented upon

by Darbārī Jha. Besides these, several anonymous treatises viz., *Praśnadīpikā*, *Praśna Manormāvyākhyā*, *Praśna Vinodah*, *Praśna Saṃgraha* and others, dealing with different aspects of *Praśna Śāstra* have been located in the possession of different individuals of Mithilā. All these manuscripts make us believe that numerous texts comprehending all aspects of *Praśna Śāstra* came to be composed in Mithilā.

MATHEMATICS :

We have not been able to trace any book written in Mithilā exclusively on mathematics till the 12th century A.D. but references to some mathematical principles are found to exist in earlier works on philosophy and religion. It is as late as the 9th century A.D. that we come across a brilliant scholar named Vācaspati Miśra (841 A.D.) who is credited with the authorship of a large number of works on philosophy. From his monumental work *Bhāmāī Tīkā*, a commentary on Śaṅkara's Bhāṣya on the *Vedānta Sūtra*, we are able to know that he was the first mathematician who introduced the idea of co-ordinate geometry and paved the way for its discovery. Not only this, even the classification of motion of a particle is believed to have been found in his works.³⁹ Again, the commentary of Halāyudha (10th century A.D.) on Piṅgala's *Chanda Sūtra* contains principles of Permutation and Combination and also of Binomial Theorem. Piṅgala (200 B.C.) in his *Sūtra* enunciated a method for finding the number of combination of metres, though in a crude form. Halāyudha elucidated the method more explicitly with the help of a diagram and designed it as a *Merū Prastāra* which is now known as Pascal's triangle. This was introduced by Pascal in Europe in 1665 A.D., at least six centuries later than Halāyudha. Hence the credit of discovering the Binomial Theorem may be ascribed to Halāyudha, if not to Piṅgala. Mithilā's *Pañjī Prabandha* (genealogical record) reveals the fact that Halāyudha was born in the family of Sodarapur origin and belonged to the illustrious family of Vararuci (one of the nine jewels of Chandragupta II), Padmanābha and Jaideo Pakṣadhara Miśra, the eminent scholars of Mithilā.⁴⁰

Bhāskarācāryās works on mathematics, viz., *Līlāvati* and *Bījagaṇita* dominated mathematical studies throughout India for a long time and practically superseded all previous works. In Mithilā too, *Līlāvati* remained the most popular text book on general mathematics and its studies were taken up through the centuries by a succession of scholars. The first available commentary on *Līlāvati* is *Līlāvati Vyākhyā*, perhaps the earliest one, written by Bhaveśa in Śaka 1185 (1263 A.D.).⁴¹ *Līlāvati Vivaraṇaṃ* by Paraśurāma, *Līlāvatyupapattiḥ* by Nilāmbara Jha (b.1823), *Līlāvati Kaṭāksa* of Chummana Jha (early 20th century) and several other commentaries were written by the scholars of Mithilā.⁴² In the 20th century too a number of scholars, viz., Muralīdhara Ṭhākura, Dāmodara Miśra and Payanātha Jha, Sitārāma Jha, Lakhan Lāl Jha and others commented upon it. *Bījagaṇita* of Bhāskarācārya was also studied

here with keen interest. Among the commentaries written on it mention may be made of *Subodhinī* of Jīvanātha Jha (b.1818 A.D.) and the commentary of Sudhākara Dvivedī edited by Mm. Muralidhara Jha (early 20th century) who added expository notes and several examples to it.

Besides these commentaries, some indigenous mathematical works dealing with algebra, arithmetic, geometry and other branches, viz., *Gaṇitanāmmālā* by Haradatta Ṭhākura (15th century A.D.),⁴³ *Rasālā* by Bharata Upādhyāya (17th century),⁴⁴ *Kṣetra Paribhāṣā* by Nilāmar Jha (b.1823 A.D.) and others, were also composed by the scholars of Mithilā.

Thus from the informations gathered so far it may be conveniently said that from the 12th century onwards quite an extensive literature on different aspects of Hindu astronomy has been produced and cultivated by the scholars of Mithilā. A number of astronomical texts, big or small, original as well as commentative, have been composed in different ages. Almost all branches of Hindu astronomy, no doubt, have been nourished to a great extent but a good number of treatises are related to *Karaṇa*, *Samhitā* and *Jātaka* types. The literature on mathematics is scanty. As a matter of fact the bulk of writings still remains locked up in old palmleaf manuscripts hundreds of which are gathering dust or are getting rotten or eaten away by white ants. It is quite possible that further examinations of the manuscript repositories, individual or institutional, may result in more discoveries and identifications of rare works. Hence there is need for taking early steps in this direction so that Mithilā's salient achievements in the field may be re-evaluated and properly assessed.

REFERENCES AND NOTES

- ¹ Cf. Jha P., Historical Background of Mathematics and Astronomy in Mithilā, *Gaṇita Bhārati*, Vol.4, Delhi, 1982, pp. 26-40.
- ² One copy of its manuscript is available in the Darbar Library, Nepal. Cf. Sāstri, H.P., *A Catalogue of Palm-leaf and Selected Paper Mss. Belonging to the Darbar Library, Nepal*, vol.I, Calcutta, 1905, pp.132-33.
- ³ *Varṇa Ratnākara of Jyotirīśvara Ṭhākura*, (ed.) S.K. Chatterjee and Babuaji Miśra, Calcutta, 1940, p.23 ; also *History and Culture of Indian People* (ed.) R.C. Majumdar and others, vol.V, Bombay, 1966, pp.331 and 334.
- ⁴ Dixit, Śānkara Bālakṛṣṇa, *Bhāratiya Jyotisa*, Allahabad, 1975, p.347.
- ⁵ *Varṇa Ratnākara*, p.23 : 'मानस खण्डखाद्य भास्वती तिथिचक्र सोमशेखर
विद्याधरी विलसप्रभृति अनेक करणग्रंथक व्युत्पन्न ।'
- ⁶ *A Descriptive Catalogue of Mss. in Mithilā*, vol.III, Patna, 1937, pp.38-42.
- ⁷ Cf. *Kṛtya Sāra Samuccaya*, (ed.) Gangādhara Miśra, Banaras, 1953, p.178 and *Des. Cat. of Mss. in the Ganganath Jha Sanskrit Vidyapeeth, Allahabad*, Vol.II, Part-II, 1973, Cat. No. 8417/642 & 8418/643.
- ⁸ *A Des. Cat. of Mss. in Mithilā*, III, pp.499 and 501.

- ⁹ *Ibid.*, p.348.
- ¹⁰ *Ibid.*, p.281 and 280.
- ¹¹ *A Descriptive Cat. of Rāj. Mss.*, Darbhanga, 1969, SN.1850, p.74.
- ¹² *Cf. Varṇa Ratnākara*, p.23.
- ¹³ As many as 15 copies of *Makaranda Sārini* have been searched out in the possession of different individuals of Mithilā, *Cf. A Des. Cat. of Mss. in Mithilā*, III, pp.287-94.
- ¹⁴ *Ibid.*, pp.288, 291 and 292.
- ¹⁵ *A Des. Cat. of Mss. in Mithilā*, III, pp.340-41.
- ¹⁶ *Ibid.*, pp.439-41.
- ¹⁷ Jha, R., (edited), *Purūṣa Parikṣā*, Patna, 1959, p.186.
- ¹⁸ *A Des. Cat. of Rāj. Mss.*, S.N.1741, p.70.
- ¹⁹ *Varṇa Ratnākara*, p.23 :
 'राजमार्तण्ड हलायुध बराहमिहिर श्रीपतिसंहिता नन्दसंहिता
 देवलसंहिता चन्द्रसंहिता ये अनेक फलग्रंथक व्युत्पन्न ।'
- ²⁰ Diwakara, R. R., *Bihar Through the Ages*, Calcutta, 1958, p.439.
- ²¹ Jha, P., *Mithilā Tattva Vimarśa*, Darbhanga, 1953, p.174 ; Ṭhakur, U., *History of Mithilā*, Darbhanga, 1956, p.327.
- ²² *A Des. Cat. of Mss. in Mithilā*, III, p.430 ; pp.169-75.
- ²³ *Cf. Jha, P., ep.cit.*, (Ref.21), pp.47-48 ; *A Des. Cat. of Mss. in Mithilā*, III, p.374 ; *A Des. Cat. of Rāj. Mss.*, p.70-77.
- ²⁴ *A Des. Cat. of Mss. in Mithilā*, III, pp.105 and 445.
- ²⁵ *Ibid.*, p.419 ; *A Des. Cat. of Rāj. Mss.*, p.70-77 ; Miśra, J.K., *A History of Maithili Literature*, Allahabad, 1949, pp.212-13.
- ²⁶ *A Des. Cat. of Mss. in Mithilā*, III, p.153.
- ²⁷ *Ibid.*, p.264 ff.
- ²⁸ *Ibid.*, pp.58, 75, 80, 85, 91 and 100.
- ²⁹ *Ibid.*, pp. 31 and 105.
- ³⁰ Śarmā, Daśaratha, *Journal of Bihar Research Society*, XXXV, 1949, p.159.
- ³¹ *A Des. Cat. of Mss. in Mithilā*, III, p.521.
- ³² *Ibid.*, p.330.
- ³³ *A Des. Cat. of Rāj. Mss.*, pp.70-71.
- ³⁴ Jha, Surendra, (ed.) *Purūṣa Parikṣā*, Darbhanga, 1970, p.65.
- ³⁵ *A Des. Cat. of Mss. in Mithilā*, III, pp.18-19.
- ³⁶ *Ibid.*, p.15.
- ³⁷ *Ibid.*, p.211.
- ³⁸ *Ibid.*, p.2.
- ³⁹ *Cf. Jha, P., ep.cit.*, (Ref.1), p.27.
- ⁴⁰ *Ibid.*, p.28.
- ⁴¹ *A Des. Cat. of Mss. in Mithilā*, III, p.382 ; *A Des. Cat. of Rāj. Mss.*, S.N.1856, p.74.
- ⁴² *A Des. Cat. of Rāj. Mss.*, S.N.1855, p.74 ; *A Des. Cat. of Mss. in Mithilā*, III, pp.385-86, 380.
- ⁴³ *A Des. Cat. of Mss. in Mithilā*, III, p.43.
- ⁴⁴ *Ibid.*, p.348.