

B. V. Subbarayappa: A Writer, Administrator and Veteran Historian of Science

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A saintly figure, an admirable scholar, and a practicing philosopher Pandit Shriram Sharma Acharya (1911–1990), of the Gayatri Pariwar, Haridwar, who is well-known for his pithy remarks once said:

पढ़ने योग्य लिखा जाय, इससे लाख गुणा बेहतर यह है
कि लिखने योग्य किया जाय ।

May you write something that is worth a read;
[in fact] it is a lakh times better to do something
which is worthy of being written about.

Dr Bidare Venkatasubbaiah Subbarayappa (BVS hereafter), a doyen of the historians of science and civilization in India, is a shining example who fulfills both the aspects of the above maxim in its fullest sense. His writings have amply demonstrated a continuing tradition of scientific thought and culture in India from almost pre-historic times through the vedic period unto the classical siddhantic period, and then smoothly sliding into the modern period. Through several initiatives, both as an administrator, as well as in his own individual capacity, BVS played a significant role in the emergence of studies in history of science, as an important discipline by itself to be undertaken with as much rigor as any other discipline of science.

It is primarily because of his steadfast commitment to the promotion of studies in history of science, that the image of India in this arena grew by leaps and bounds. Recognizing his talents and passion, as well as his uncanny ability to motivate people to engage in teamwork, he was made the first Project Coordinator and Member Secretary of the newly established National Commission for History of Science in India, as a part of the Indian National Science Academy (INSA) in the year 1967. He was also



B. V. Subbarayappa (1925–2019)

instrumental, under the direction of the Commission, in starting the *Indian Journal of History of Science (IJHS)*, one of the flagship journals of India, and was its first Associate Editor. He also played a significant role in various capacities at different institutions across India by launching several programs that would foster studies in history of science in India. It may not be out of context to add here that the author of the present article is also one of the beneficiaries of close interaction with BVS who inspired him to work in the area of history of science in India. In what follows, we try offer an appreciation of him both as an individual and as a multifaceted scholar.

1 Early life and academic career

Born in 1925 in Bidare, a small town in Hassan District of Karnataka in south India, BVS took his last breath on

the 8th of April 2019 in Bangalore. He had his early education in Madhugini, Tumkur district and moved to Bangalore subsequently for obtaining his Bachelors degree in chemistry with a gold medal in his final honours from the Central College, Bangalore. Then he obtained his Masters degree from the University of Mysore in 1949.

His first job was as a lecturer in chemistry at Vijaya College, Bangalore, where he soon rose to the position of the head of the department. Having taught chemistry for about seven years in the college, BVS decided to change gears to pursue with his research career at the Central Food Technological Research Institute (CFTRI), Mysore in the year 1956. As he was working in Mysore for CFTRI he got introduced to history of science through his visits to Oriental Research Institute (ORI). It is then, BVS seems to have developed serious interest to take up studies in the History of Indian science, though the subject was purely in its nascent state in India. However, in the subsequent years, he played a significant role in bringing it to prominence. He obtained his doctorate from the University of Mysore in the year 1964 for his thesis titled 'Studies in Indian Concepts in Physical Sciences', which is regarded as one of the first few Ph.D. theses on history of Indian science.

Pursuing his studies further in the history of science in India, BVS turned out to be an excellent scholar of science and civilization, who tried to understand the relation between science in India, its cultural foundation, and the civilizational quest for knowledge that India has had all through the ages. It wouldn't be an exaggeration to say that he is one among those who live even after their death through their immense contribution, and would ever remain as a colossus in the area of history of science, culture and philosophy in India.

2 Contributions to the promotion of studies in history of science in India

In 1963, BVS left Mysore and moved towards Delhi to join the CSIR. He served this institute for about four years before joining the Indian National Science Academy (INSA). By this time, the great passion that he had developed for promoting studies in history of science in India had gained sufficient momentum to give him the necessary strength and ability to create avenues as well as establish centres in order to provide an appropriate ambience for

scholars to pursue studies in this area in the coming years. We list below chronologically some of the major initiatives that he undertook which gives us a glimpse of the continuous efforts that he had put throughout his career towards creating an awareness among the people of India about its scientific heritage and the civilizational genius which is essential to take the nation forward.

1967 BVS was appointed as the first Project Coordinator and Member Secretary of the newly established National Commission for History of Science in India in the Indian National Science Academy. He played a key role, under the direction of the Commission, in starting the *Indian Journal of History of Science (IJHS)* and was its first Associate Editor.

1969–71 Meticulously planned and organized the first National Seminar on Indian Scientific Heritage in 1969. Subsequently played a key role in planning and bringing out the first edition of *A Concise History of Science in India* which he edited with D. M. Bose and S. N. Sen. This prestigious volume came out as the first publication of the National Commission, and the contributions of BVS towards this both as an author of a few articles and also as the over all project coordinator were quite significant.

1973 Took initiative in organizing the International Seminar on Abū Rayḥān Muḥammad ibn Aḥmad Al-Bīrūnī (b. 973) in order to commemorate the millennium year of his birth anniversary. It was indeed quite appropriate on the part of BVS to have done this as Al-Bīrūnī is regarded as one of the greatest scholars of the medieval Islamic era. He was conversant with several languages such as Khwarezmian, Persian, Arabic, besides Greek, Hebrew and Syriac, and is said to have traveled widely to study different cultures across the world and came up with books that are extensively referred today.

1974 Thoughtfully and quite aptly organized a similar Seminar on Āryabhaṭa (b. 476), the most famous Indian astronomer and mathematician, keeping in mind the 1500th anniversary to come in a couple of years. On this occasion, he also meticulously planned to get the right scholars engaged in bringing out important editions of *Āryabhaṭīya* (with translations, mathematical notes, and commentaries) to

be released in 1976 to commemorate the important contributions made by Āryabhaṭa. In fact, organizing such events, in the coming years, became trend-setters in the field of history of science in India, and also paved way for several activities that were taken up later along these directions.

1975–78 In order to keep up the momentum generated by international seminars and important landmark publications, with the approval of the National Commission and the University Grants Commission, BVS initiated steps for the promotion of history of science in some major Indian Universities. As visiting Professor at the Birla Institute of Technology and Science (BITS), Pilani during 1977–78 he offered a course on history of science for graduate students.

1978–83 As the Director of the Nehru Centre, Bombay during his tenure from July 1978 to August 1983, BVS conceived of the “Discovery of India” Project for a permanent exhibition on India through the Ages, which included highlights of the history of science in India. Furthermore, during the Festival of India in London (1981) organized by the Government of India and the U.K. Government, he was appointed as the Academic Adviser for the portrayal of History of Indian Sciences (actual display was accomplished by Science Museum authorities in London).

1982–85 He was commissioned by the Bhartiya Vidya Bhavan to take the initiatives to establish a Centre for Studies in Science and Human values in its Bangalore branch in the early 1980s. Though the centre, currently called Gandhi Centre for Science and Human Values, was formally inaugurated at a much later date on November 4, 1989, by Swami Ranganathananda of the Ramakrishna Mutt, BVS played a significant role in laying the seeds for it.

1985–89 Under the guidance of BVS, based on his initiative a “Centre for History and Philosophy of Science” (the first of its type in India) was set up in 1985 at the Indian Institute of World Culture, Bangalore. As Honorary Director of this Centre, projects aimed at studying iron and copper metallurgy in South India were sanctioned. Critical editions of unpublished manuscripts as well as preparation of Source-Books

on Indigenous Traditions in Indian Navigation, Paper Technology, and Decipherment of Indus Script were undertaken. Summer Programs on history of science for college students, as well as essay competitions to generate interest among young students in history of science were held from time to time. He also was instrumental in the organization of a National Seminar on History of Science in India in 1989 under the auspices of this centre.

3 A few notable contributions

Besides the significant contributions towards fueling the interest in the study of history of science in India—that enabled several scholars to undertake in-depth studies on different source works—over almost four decades, which resulted in well-documented publications on the history of science and technology (astronomy, medicine, chemical practices, metallurgy and so on) BVS conceived of some brilliant projects and either independently or jointly got some intensive research work done in the following areas.

3.1 Compilation of excerpts from Indian astronomy

In the year 1985, BVS along with K V Sarma brought out a volume titled *Indian Astronomy: A Source Book*, which is a splendid compilation of about 3000 verses culled out from various source works on Indian Astronomy. This volume consisting of 22 chapters and arranged in five parts serves as an extremely handy reference for researchers working on Indian astronomy. Besides presenting quotations from various important astronomical works in Sanskrit (with a few exceptions), it also includes a lucid English translation for all those passages. A few short notes presented along with the six appendices provided in this volume are also extremely useful. It may not be an exaggeration to say that those who work on Indian astronomy would indeed be indebted to BVS and KVS for conceiving of such a precious volume providing a thematic overview of the variety of contributions made by Indian astronomers to the advancement of this subject.

3.2 Decipherment of Indus Script

It is well known that several seals and other inscribed objects (about 4,500) which have been unearthed by archaeologists related to the Indus Valley Civilization (IVC) have remained enigmatic for more than a century. Besides the various animal forms, inscribed on over 1500 seals, other objects have defied any meaningful explanation so far. Broadly speaking, there are two views about the Indus script: one, that it represents a language and the other is that it is not of any language but could be symbolic of some ideas of those times, about which we have no clear idea whatsoever.

Having studied this problem for over four years, BVS has proposed a novel view that the basic Indus script forms (14 in number) were used as numerals and that too is of the decimal scale. He called the system of representation as Ciphred System and worked out the numerical values of each of the basic forms and their derivatives (over 400 of them). Adducing paleo-ethno-botanical evidence, and also encompassing other archaeological findings like the grains of barley, wheat, cotton seeds, etc, BVS has reasoned out that the seals are in the nature of records of agricultural production and management, and that the script forms are numerical forms denoting the quantities of agricultural products involved. Setting aside the issue of the reception of this hypothesis among scholarly circles, it must be mentioned that this hypothesis has opened up a new dimension to the studies on Indus script.

3.3 Studies on Indian inscriptions

It has been estimated that the number of Indian inscriptions in Kharoṣṭī, Brāhmī, Devanāgarī, Tamiḷ and other scripts which have been preserved, is about 1,50,000. Of them about 40,000 have been published with their studies by archaeologists and linguists. However, none of these studies had examined them for the records of eclipses. As one of his last research projects, BVS started analyzing the published inscriptions, and by scanning about 13,000 of them, mostly in Sanskrit, has brought to light the recordings of over 1,200 eclipses, that obviously includes both solar and lunar. This work undertaken by BVS is noteworthy as it reveals a continuous recording tradition of eclipses for over 1,500 years, which of course is in tandem with the vibrant tradition of Indian mathematical astronomy.

3.4 Contributions towards Vol. IV of PHISPC

A wide interest on a variety of topics related to history of science and the broad perspective that BVS had developed over the years, perhaps prompted the general editor of the Project of History of Indian Science, Philosophy and Culture (PHISPC) to entirely assign the task of production of Volume IV on the *Fundamental Indian Ideas of Physics, Chemistry, Life Sciences, and Medicine* to BVS. Having undertaken this huge responsibility, BVS produced the following four volumes within a span of 9 years.

1. *Chemistry and Chemical Techniques in India*, PHISPC, Vol. IV, Part 1 (1999).
2. *Medicine and Life Sciences in India*, PHISPC, Vol. IV, Part 2 (2001).
3. *Indian Perspectives on the Physical World*, PHISPC, Vol. IV, Part 3 (2004).
4. *The Tradition of Astronomy in India: Jyotiḥśāstra*, PHISPC. Vol. IV, Part 4 (2008).

Of the four volumes listed above, the first two volumes were edited by him, whereas the latter two were authored. What is remarkable is the fact that BVS undertook the job of bringing out these volumes as he was in late seventies and early eighties! In the third volume titled *Indian Perspectives on the Physical World*, BVS provides a good introduction to the fundamental Indian ideas of Physics based on the study of the *Sāṅkhya* and *Vaiśeṣika* systems of Indian philosophy. Here, wherever necessary, he also presents a brief review of the relevant ideas in other cultures to facilitate the reader and enable him to have a better comprehension and appreciation of the subject. Quotations of the relevant Sanskrit passages from the source works provided at the end of each chapter in the references section are also found extremely useful.

His volume on *The Tradition of Astronomy in India: Jyotiḥśāstra* is a very useful resource book that nicely brings out the various facets of the *Jyotiḥśāstra*, its origin, growth and development in India. The style of writing adopted by BVS has been such that, even an uninitiated person can read the volume and appreciate its contents. Commencing the volume with the social-cultural and religious setting in which the *Jyotiḥśāstra* evolved in India, he proceeds to explain the various aspects of the science without getting into too much of technical details. In the

last chapter titled “On the Transmissions”, he discusses at length (in about 40 pages) the exchanges that took place between India and other civilizations, wherein he coherently presents detailed arguments—perhaps inspired by P. C. Sengupta—against the unreasonable “Babylonian-Greeko-centric” views presented by many scholars.

4 Publications of Subbarayappa

BVS was a prolific writer producing several important treatises on history of science, both as an independent author/editor, as well as in collaboration with others. In all his writings, he remained firmly objective in articulating his views and always remained sober in his judgments. At the same time, he had zero-tolerance for any baseless or incongruent argument presented. He would be the first person to strongly critique, of course, in the most dignified manner, any unjustified claim or hyperbolic statement that was made. He used to repeatedly emphasize the fact that for a proper assessment of the scientific contributions made by a civilization, one must look into a variety of sources (literary and otherwise) keeping in mind the time period as well as cultural context in which the various ideas emerged.

It seems BVS had a natural inclination to write from the early stages of his life. His early writings have been in his own mother tongue, Kannada and the latter ones in English. In what follows we first list out his publications in the form of books/edited volumes (in English and Kannada), and then the papers authored by him.

4.1 Book authored/Edited volumes (in English)

1. *A Concise History of Science in India*, (Eds.), D. M. Bose, S. N. Sen and B. V. Subbarayappa, Indian National Science Academy, New Delhi, 1971 (Besides planning and editing, BVS has contributed five chapters in this volume, which has received generous appreciation from the community of historians of Science; Revised Edn., Universities Press, Hyderabad, 2007).
2. *In Pursuit of Excellence: A History of the Indian Institute of Science*, Tata McGraw-Hill, New Delhi, 1973 (This is a unique and important book of its kind tracing the history of one of the most earliest and

prestigious institutes established in India for the promotion of science. The over all plan and the excellent narrative of BVS received appreciative reviews from important scientific journals like *Nature* and *Science*).

3. *Rasārṇavakalpa*, Translated into English with an Introduction (along with Mira Roy), Indian National Science Academy, New Delhi, 1974.
4. *Indian Astronomy: A Source Book*, Ed. with K. V. Sarma, Nehru Centre Bombay, 1985. (This volume consists of about 3000 Sanskrit verses with translations in English and a fairly long Introduction of more than 20 pages).
5. *Scientific and Technological Exchanges between India and Central Asia*: Ed. with Introduction, Indian National Science Academy, New Delhi, 1985 (This was published as Proceedings of the Indo-Soviet Seminar on Scientific and Technological Exchanges Between India and Soviet Central Asia in Medieval Period, held at Bombay between November 7–12, 1981).
6. *Science in India: A Changing Profile*, Authored with S. K. Mukherjee, Indian National Science Academy, New Delhi, 1985.
7. *Scientific Heritage of India*, Ed. with S. R. N. Murthy, The Mythic Society, Bangalore, 1988.
8. *Science in the West and India: Some Historical Aspects*, Ed. with N. Mukunda, Himalaya Publishing House, Bombay, 1995 (To this volume, which is essentially a compilation of Summer School Lectures, BVS has contributed two chapters).
9. *Indus Script: Its Nature and Structure*, New Era Publications, Madras. 1996 (As indicated in section 3.2, this study is singular of its kind, and is regarded as a novel and original scientific approach).
10. *Chemistry and Chemical Techniques in India*, Project of History of Indian Science, Philosophy and Culture (PHISPC), Vol. IV, Part 1, New Delhi, 1999 (Besides planning and editing the volume, BVS has also contributed four chapters to it).

11. *Medicine and Life Sciences in India*, PHISPC, Vol. IV, Part 2, New Delhi, 2001. (Besides planning and editing the volume, BVS has also contributed two chapters to it).
12. *Indian Perspectives on the Physical World*, PHISPC, Vol. IV, Part 3, New Delhi, 2004.
13. *Science in India: Past and Present*, Nehru Centre, Mumbai, 2006.
14. *Tradition of Astronomy in India*, PHISPC. Vol. IV, Part 4, New Delhi, 2008.
15. *Science in India: A Historical Perspective*, Rupa & Co, New Delhi, 2013.
16. *Numerals and Eclipses in Indian Epigraphy*, Indian Council of Historical Research, New Delhi, 2013.
17. *Modern Science: A Historical and Social Perspective*, Mythic Society, Bengaluru, 2016 (This volume, perhaps authored when he was above 85 years of age, provides a good and balanced introduction to the direction that has been taken by modern science, and emphasizes the need to have multi-dimensional approach, that includes a philosophical perspective, in trying to appreciate and understand the functioning of the nature around us).

4.2 Books authored/translated (in Kannada)

1. *Vikhyata Vijnanigalu* (Lives of Ten Eminent Scientists), Eastern Press, Bangalore, 1954.
2. *Neeru* (On Water), Pratibha Publishing House, Bangalore, 1956.
3. *Bharatiya Vijnanigalu* (Great Indian Scientists), Geetha Publishing House, Mysore, 1958.
4. *Bhumi Mattu Itara Grahalagala Huttu*, Translation of the book *Origin of Earth and Planets* by Boris Levin; *Vichitralokadalli Vidyalkankara*, Translation of the book *Mr. Tompkins in Wonderland* by George Gamow. Peoples' Publishing House, Mysore, 1958.
5. *Bangarada Kathe* (The Story of Alchemy), Adult Education Department, Mysore, 1959.

4.3 Articles (in the form of book chapters)

1. Impact of European Science in Colonial India, in *Revolutions in Science: Their Meaning and Relevance*, (Ed.), William R. Shea, Science History Publications, Canton, USA. 1988, pp. 226–283.
2. Indian Astronomy: A Historical Perspective, in *Cosmic Perspectives*, (Eds.), S. K. Biswas et al, Cambridge University Press, Cambridge, 1989, pp. 25–40.
3. Indus Seals: The Case of the Unicorn, in *Essays on Science: Joseph Needham Felicitation Volume*, (Ed.), Hakim Mohammed Said, Hamdard Foundation, Karachi, 1990, pp. 246–259.
4. Chemistry and Alchemy (see Sec 4.1, Item 1, 76 pages).
5. The Physical World: Views and Concepts (see Sec 4.1, Item 1, 51 pages).
6. Western Science in India upto Independence (see Sec 4.1, Item 1, 83 pages).
7. Agriculture (with two other collaborators) (see Sec 4.1, Item 1, 31 pages).
8. Resume¹ (see Sec 4.1, Item 1, 48 pages).
9. Indian Astronomy: Some Reflections (see Sec 4.1, Item 8, 26 pages).
10. Chemical Practices in India (see Sec 4.1, Item 8, 22 pages).
11. Three Articles on: Indian Astronomy, Cosmetics and Perfumery, and Technology (Tr. into Italian), in *Storia Della Scienza, Estrato Da*, Vol. II, Insituto Della Enciclopedia Italiana, Roma, 2001.
12. Indian Alchemy: Its Origin and Ramifications (see Sec 4.1, Item 10, 32 pages).
13. The Tradition of Cosmetics and Perfumery (see Sec 4.1, Item 10, 22 pages).

¹This chapter (whose title may be intriguing) has been included towards the end in the latter edition of the volume essentially to given a period-wise summary, in contrast to the subject-wise treatment of various branches of science in the volume, though of course in the chronological setting.

14. An Overview of Indian Chemical Practices (see Sec 4.1, Item 10, 24 pages).
 15. Glass in India (see Sec 4.1, Item 10, 8 pages).
 16. Siddha Medicine (see Sec 4.1, Item 11, 26 pages).
 17. A Perspective on Indian Medicine (see Sec 4.1, Item 11, 39 pages).
 18. Traditional Science, Spiritual Quest and Modernity: Some Reflections on Indian Ethos, in *Science and Tradition: Roots and Wings for Development*, Royal Academy of Overseas Sciences and UNESCO, Brussels, 2001, pp. 54–61.
 19. Origin of Alchemy in India: Some Reflections, in *The Human Body at the Crossroads of Indian Ways of Knowing Multiple*; (Eds.), Oscar Botto et al. Université de Bucarest, Bucarest, 2004, pp. 331–337.
 20. Indian Atomism, in *Philosophical Consciousness and Scientific Knowledge: Conceptual Linkages and Civilizational Background*, (Ed.), D. P. Chattopadhyaya, PHISPC, Centre for Studies in Civilizations, New Delhi, 2004, pp. 212–219.
 21. Spirituality and Low-Entropy Culture: A Synergic Vista of the Twentieth Century, *Actas do Forum Internacional Ciencia, Religio e Consciencia*, (Eds.), Jochim Fernandes and Nelson Lima Santos, Porto, Portugal, 2004, pp. 103–106.
 22. Indian Scientific and Technological Achievements, in *Self, Society and Science: Theoretical and Historical Perspectives*; (Ed.), D. P. Chattopadhyaya, PHISPC, Centre for Studies in Civilizations, New Delhi, 2005, pp. 115–126.
 23. The Hinduism and Science, in *Why the Science and Religion Matters*, (Ed.), Fraser Watts and Kevin Dutton, Templeton Press, Philadelphia, 2006, pp. 91–101.
 24. The Vital Tripod: Science, Religion and Humanism for Sustainable Civilization, in *The Future of our Life and the Future of our Civilization*, (Ed.), Vladimir Burdyuzha, Springer, Dordrecht, The Netherlands, 2006, pp. 369–379.
 25. Science in India: Past and Present – An Overview (in Sec 4.1, Item 13, pp. vii–xxxvii).
 26. Indian Astronomy: Some Facets (in Sec 4.1, Item 13, pp. 48–79).
 27. Pioneers of Science and Nationalism in India, in *Science in India*, Nehru Centre, Mumbai, 2007, pp. 284–317.
 28. Science and Spirituality, in *Vachaspati Abhinandana*, (Ed.), Shashi Prabha Kumar, DK Print World, 2009, pp. 302–12. Microcosm and Macrocosm: Some Reflections, in *History of Science and Philosophy of Science*, (Ed.), P. K. Sen Gupta, Centre for Studies in Civilizations, New Delhi, 2010, pp. 17–24.
 29. Indian Institute of Science (jointly authored), in *Science and Modern India: An Institutional History, c. 1781–1947*, (Ed.), Uma Das Gupta, PHISPC, Centre for Studies in Civilizations, New Delhi, 2010, pp. 871–926.
 30. Science and Indic Religions: A Historical Review, in *Science and Religion around the World*, (Eds.), John Headley Brooke and Ronald Numbers, Oxford University Press, New York, 2011, pp. 195–209.
 31. Pre-Modern Science: A Perspective, in *Foundations of Science*, (Ed.), B. V. Sreekantan, PHISPC, Centre for Studies in Civilizations, New Delhi, 2013, pp. 101–130.
- 4.4 Articles (in journals, bulletins, etc.)**
1. On Indian Atomism, *Bulletin of the National Institute of Science of India*, New Delhi, 21 (1961): 118–29.
 2. Production of Bar Iron in South India (Salem region), *Indian Journal of History of Science (IJHS)*, 1.2 (1966): 156–160.
 3. Indian doctrine of *Pañcabhūtas*, (*IJHS*). 1.1 (1966): 60–67.
 4. An Estimate of the *Vaisheshika-sutras* in the History of Science', (*IJHS*), 2.1 (1967): 21–34.
 5. *Matrukabhedantram* and its alchemical ideas, (with Mira Roy), (*IJHS*), 3.1 (1968): 42–49.

6. Some Aspects of Technology and Society in the Classical Age of India, Proceedings of the Symposium on Technology and its impact on Society, *Tekniska Museet*, Stockholm, (1979): 37–44;
7. Dimensions of Scientific, Tradition in India, *Proceedings of International Congress of Human Sciences*: (Ed.), Yamamoto Tatsuro, Tokyo, 1984.
8. Indus Seals: The Womb of Numbers, *Quarterly Journal of Mythic Society (QJMS)*, Bangalore, Lxxviii.1-2(1988): 126–163.
9. A series of 25 articles (bi-weekly) on ‘History of Science’ in *Science Magazine* of a leading newspaper (during 1985-89) for the general readers with a view to popularizing the history of Indian Science in the ancient and medieval periods.
10. Science in India (Tr. into Italian), *Le Scienze fisiche e astronomiche*, Milano, (1991): 26–37.
11. Siddha medicine: An Overview, *Lancet*, 35, Dec 20/27 (1997): 1841–44.
12. Past in the Present in India 1000-2000 A.D., *Indian Express Publication*, Bangalore, 2000.
13. Needham’s Perspectives on Indian Science: Some Reflections, *Studies in the History of Natural Sciences*, Beijing, 19.4 (2000): 325–331.
14. Hinduism: Concepts and Practices (Tr. into Italian), *Treccani Il Libra Dell’anno*, Istituto della Enciclopedia Italiana, Roma, (2001): 321–354.
15. Comments on ‘Mendeleef and his Periodic Table’ by Subhash Kak, *Sādhanā*, 4.2 (2004): 125–126.
16. A Review of ‘Indian Astronomy: An Introduction’ by S. Balachandra Rao, *Sādhanā*, 4.2 (2004): 199–201.
17. Remembering our Scientific Heritage, *QJMS*, XCVIII, (2007): 43–47.
18. Scientific Terminology in Sanskrit, *QJMS*, XCIX, (2008): 81–92.
19. Indus Numeration: Inscriptional Confirmatory Evidence, *QJMS*, C.4 (2009): 105–118.

5 Awards and distinctions

Dr. Subbarayappa was associated with several institutions during his long career. Perhaps his most significant achievement was getting elected as President (1998-2001) of the History of Science division of the International Union of History and Philosophy of Science (a member of ICSU, Paris)—the first non-westerner to get elected for this exalted position. He was a recipient of the Copernicus Medal from the Polish Academy of Sciences (1973) on the occasion of the 500th birth anniversary of Copernicus. He has also received the Karnataka State Award (2008). He was also bestowed with an Honorary Doctorate (1999) from the University of Bologna.

6 A brief note on surviving family members

BVS was married to Smt. Lalitha, a highly devout and pious lady in the year 1949, as he was working as a lecturer in Vijaya college, Bengaluru. Currently she lives in the same apartment in Bengaluru along with her son, where BVS spent his last years. The couple were blessed with three children. The first son Dr. Sundareshu was a physicist who worked for Defence Research and Development Organization (DRDO) and retired from it as its Deputy Director. The second son Dr. Satyanarayana, who pursued higher studies in chemistry as his father, retired as Professor of chemistry from T. John Institute of Technology, Bengaluru. The daughter Dr. Sarvamangala, who did research in Biochemistry, lives in Houston, USA.

7 The unabated passion: A personal appreciation

Another remarkable feature of BVS was the great passion for the promotion of studies in history of science. The enthusiasm he had towards this was so much so, that he would never let go an opportunity to emphasize the need for such studies. We illustrate this with a specific example from a recent email correspondence with BVS:

On receiving a copy of the 2019 year-book published annually by the Indian National Science Academy (INSA), which presents an update of the members who have been inducted into various capacities, commissions, etc., hav-

ing noticed the induction of two new members in the National Commission (NC), and realizing that the author of the present article is closely associated with the newly inducted members, BVS sent an email (a fairly long one) addressing all the three of us on February 15, 2019. Commencing the mail with congratulatory remarks he notes:

In this connection, I thought that I should share some thoughts with you as new Members of the NC, because I was associated with the National Commission since its establishment and worked there for nearly a decade. My concerns relate to the two main objectives for the realization of which the Commission was set-up as an independent Apex body more than five decades ago ...

With this preamble, having offered a few valuable and concrete suggestions, BVS concludes the email as follows:

These are my views for your consideration as well as of the National Commission. Far be it from me to interfere in this manner with the programs and thinking of the National Commission which I hold in high esteem, when the other cultures like the Chinese, Islamic, Mesopotamian, Greek and Latin, have their enormous original sources on history of science published and studied, I feel sad that India, despite its extensive Manuscripts heritage, is woefully far behind in this respect. May I look forward to your response?

This mail from BVS, at the ripe age of almost 94, when his physical health started deteriorating (from early 2019), clearly mirrors the immense passion he had for promoting studies on the history of science in India.

Besides the academic accomplishments, BVS was also blessed with excellent personal qualities. He was extremely gentle and polite in his interaction with others. The author (KR) had a couple of occasions to visit him at his residence in Bangalore when he was past ninety years of age. Notwithstanding his age and physical disability, BVS would swiftly rise from the chair with the spirit of a teenager to welcome his guests. Setting aside the physical discomfort, he would also go up to the front gate of the apartment to see them off. This kind of courtesy and respect that BVS extended to his guests, even at his ripe age is something extraordinary and perhaps worth emulating.

His pleasant disposition not only made the other feel comfortable in his presence but also had the power to embrace people, and compel them to involve themselves in a wholehearted manner towards achieving the common goal that had been undertaken with BVS as a team. This was because he had a heart that could accommodate others as they were, and try to get the best out of them through his inimitable humble approach. His memory too was quite phenomenal even at the ripe age of ninety years.

We believe anyone who had occasion to meet BVS would feel a sense of deep personal loss at his demise even though they haven't had occasions to closely interact with him. In short, BVS lived a full life and has left a huge legacy behind in the form of his writings. With his demise, India has lost one of the great stalwarts in history of science, and perhaps the only scholar in India who had such an impetuous passion when it came to engaging himself in activities meant to promote studies pertaining to the history of science in any form—editing manuscripts, preparing research monographs, authoring popular books, creating research centres, preserving archives, organizing public awareness programs, and so on. It is really hard to fill the void that has been created by his absence!