

# David E. Pingree: An Unpublished Autobiography

*William M. Calder III and Stephan Heilen*

REMARKABLY nine members of the Harvard College Class of 1954 became professional classical scholars.<sup>1</sup> The reasons are unclear. Surely there were two factors. The class was some 80% made up of graduates from élite private boys' schools where often as much as six years of Latin were required. Hence Latin was familiar and attracted some. Further, there were a number of outstanding undergraduate teachers in Harvard College of the time.<sup>2</sup> One recalls Sterling Dow,<sup>3</sup> J. P. Elder,<sup>4</sup> and John Huston Finley.<sup>5</sup> The nine students in alphabetical order were:<sup>6</sup> William M. Calder III, Andrew Thomas Cole, Henry Steele Commager, James A. Coulter, Robert J. Goar, David E. Pingree, Michael C. J. Putnam, Ken-

<sup>1</sup> Professor Nino Luraghi, Editor of *Harvard Studies in Classical Philology*, declined publication of David Pingree's autobiography. He writes (8 June 2007) that "HSCP is not the most appropriate venue for the publication of this text." Yet arguably Pingree is the greatest classical scholar to graduate from Harvard College in the twentieth century.

<sup>2</sup> See W. M. Calder III, "Harvard Classics 1950–1956. Reminiscences of S. Dow, J. P. Elder, J. H. Finley, W. C. Greene, Werner Jaeger, A. D. Nock, Joshua Whatmough and C. H. Whitman," *Eikasmos* 4 (1993) 83–95, repr. in: Id., *Men in Their Books. Studies in the Modern History of Classical Scholarship*, ed. by John P. Harris and R. Scott Smith (Spudasmata 67 [1998, <sup>2</sup> 2002]) 281–291.

<sup>3</sup> See William M. Calder III, "Sterling Dow†," *Gnomon* 68 (1996) 572–574 = *Men in Their Books* 307–310.

<sup>4</sup> See Michael Putnam, *Biographical Dictionary of North American Classicists*, ed. Ward W. Briggs, Jr. (Westport 1994) 159–160.

<sup>5</sup> See Calder, *Men in Their Books* 283.

<sup>6</sup> For the nine see in general *Harvard College Class of 1954 Fiftieth Anniversary* (Cambridge [Mass.] 2004) *sub nominibus*.

neth J. Reckford, and Calvert W. Watkins. Two are deceased, Commager<sup>7</sup> and Pingree. While we were composing a necrology of David Pingree for *Gnomon*,<sup>8</sup> his widow, Mrs Isabelle Sanchirico Pingree, kindly provided us with a short autobiography composed by him shortly before his death and permission to publish it. One may compare the brief Latin autobiography of the octogenarian Ulrich von Wilamowitz-Moellendorff.<sup>9</sup> It consists of some three hastily typed pages. The document will be fundamental for any subsequent life of Pingree or assessment of his work. We provide an uncensored text with commentary. Obvious typing errors have been silently corrected.

<sup>7</sup> For Henry Steele Commager, Jr. (1932–1984) see E. Brian Roots, in *Biographical Dictionary* 108–109, and for his beauty see A. L. Rowse, *The Diaries of A. L. Rowse*, ed. Richard Ollard (London 2003) 194–197.

<sup>8</sup> See W. M. Calder III and S. Heilen, “David Edwin Pingree,” *Gnomon* 78 (2006) 750–751. See further Wolfgang Hübner, “David Edwin Pingree†,” *Mene* 6 (2006) 3–12; Alexander Jones, “David Pingree (1933–2005),” *Journal for the History of Astronomy* 37 (2006) 229–231; Toke L. Knudsen, “David Pingree (1933–2005),” *Bulletin of the Canadian Society for History and Philosophy of Mathematics* 38 (May 2006) 5–6; Kim Plofker and Bernard R. Goldstein, “In memoriam David Edwin Pingree (2 Jan 1933–11 Nov 2005),” *Aestimatio* 2 (2005) 71–72 [=http://www.ircps.org/publications/aestimatio/pdf/2005-06-03\_Pingree.pdf]; Anne Tihon, “David Pingree (1933–2005),” *Archives internationales d’histoire des sciences* 55 (2005) 494–496. An obituary by Charles Burnett is forthcoming in the *Transactions of the American Philosophical Society*.

<sup>9</sup> See William M. Calder III, “Ulrich von Wilamowitz-Moellendorff: An Unpublished Latin Autobiography,” *A&A* 27 (1981) 34–51 = Id., *Studies in the Modern History of Classical Scholarship* (Antiqua 27 [1984]) 147–164.

### Biography of David Pingree

Throughout my scholarly career I have enjoyed the great advantage of close association and collaboration with a number of excellent scholars—Classicists, Medievalists, Byzantinists, Arabists, Assyriologists, Egyptologists, Iranologists, and Sanskritists, as well as Historians of Science. Among all of these the most influential on my career was Otto Neugebauer,<sup>10</sup> who showed me how <to> interpret correctly ancient astronomical texts and tables in various ancient languages and to demonstrate the dependence of one culture's mathematical models and parameters on another's.

My interest in the transmission of scientific ideas from one culture to another was awakened in 1955, the year after my graduation from Harvard College where I had concentrated on Classics and Sanskrit. I spent that year in Rome on a Fulbright, studying the paleography of Greek manuscripts in the Vatican Library. In the margins of one such manuscript, Vaticanus graecus 1056, I noticed references to Indian astrological ideas. In the library I found a printed edition of Varahamihira's *Brahmajataka*,<sup>11</sup> and found therein Nagari<sup>12</sup> transliterations of Greek technical terms. Since the material in Vaticanus Graecus 1056 was clearly translated from Arabic, it was clear that Greek astrology had travelled to India, from there to Islam, and thence to Byzantium. As I soon found out, very little research had yet been carried out in this field.

In order to familiarize myself with the ancient and Byzantine Greek traditions in astrology I spent 1956–57 and 59–60 at Dumbarton Oaks as a Junior Fellow and in 1958–59 I went to India to study Sanskrit astrological manuscripts primarily at the

<sup>10</sup> See Noel M. Swerdlow, "Otto E. Neugebauer (26 May 1899–19 February 1990)," *PAPhS* 137 (1993) 137–165. See further Paul Keyser, *Biographical Dictionary* 439–444, and Pingree's own brief necrology, "Otto Neugebauer, 26 May 1899–19 February 1990," *Isis* 82 (1991) 87–88.

<sup>11</sup> We cannot identify the precise edition. For an English translation, see *The Brihat Jataka of Varaha Mihira*, transl. Usha and Shashi (New Delhi 1977).

<sup>12</sup> The Nagari script is essentially an early form of the Devanagari script, which is still used in modern Indian.

Bhandarkar Oriental Research Institute in Poona. At the latter institute I happily met the great authority on dharmasastra,<sup>13</sup> P. V. Kane,<sup>14</sup> who very kindly gave me the several folia that had been copied for him from the unique Kathmandu manuscript of Sphujidhvaja's Yavanajataka (Horoscopy of the Greeks).<sup>15</sup> The final chapter of this manuscript is on astronomy, and I recognized in it the characteristics of Babylonian science. This discovery led to my meeting with Neugebauer on my return to America.

From 1960 till 1963 I was a member of the Society of Fellows at Harvard, where I undertook to learn Arabic by working through a manuscript of 'Umar ibn al-Farrakhan's translation of the Pahlavi version of Dorotheus of Sidon's astrological poem,<sup>16</sup> and started to accumulate the lists of relevant manuscripts, books, and articles on the exact sciences in Sanskrit that form the original basis for my Census of the Exact Sciences in Sanskrit.<sup>17</sup> I also spent one day each week in Providence working with Neugebauer, E. S. Kennedy, A. Sachs, A. Aaboe,<sup>18</sup> and others to discuss problems in ancient astronomy, and began visiting the Institute for Advanced Study in Prince-

<sup>13</sup> Dr. Kim Plofker (Providence; see below nn.20 and 34) kindly elucidates: "Dharmasastra is the Sanskrit genre often described as 'law' or 'right conduct', concerning the various practices prescribed for Hindus of various hereditary categories. It is not directly involved with astronomical or astrological techniques except insofar as it uses calendrical or divinatory requirements for its prescribed rituals."

<sup>14</sup> Pandurang Vaman Kane (1880–1972), author of the fundamental *History of Dharmasastra* I–V (Poona 1962–1975); the epilogue to vol. V.2 contains an autobiography (available online at <http://www.payer.de/dharmashastra/dharmash01.htm>).

<sup>15</sup> See *The Yavanajataka of Sphujidhvaja* I–II, edited, translated, and commented on by D. Pingree (Harvard Oriental Series 48 [1978]).

<sup>16</sup> Later edited as: *Dorothei Sidonii carmen astrologicum. Interpretationem arabicam in linguam anglicam versam una cum Dorothei fragmentis et graecis et latinis*, ed. D. Pingree (Leipzig 1976).

<sup>17</sup> D. Pingree, *Census of the Exact Sciences in Sanskrit. Series A* I–V (Philadelphia 1970–1994).

<sup>18</sup> Edward S. Kennedy (born 1912), Asger Hartvig Aaboe (1922–2007), Abraham Sachs (1915–1983).

ton to work with Neugebauer on the *Pancasiddhantika* of Varahamihira<sup>19</sup> and to gather information on the astronomical and astrological manuscripts at the University of Pennsylvania, Columbia, and Harvard; I continued to spend summers at the Institute through most of the 1960s. My work on the astronomical manuscripts has led to numerous publications (about a dozen) on Sanskrit astronomical tables, another neglected field.<sup>20</sup>

In 1963 I joined the faculty of the University of Chicago in the Oriental Institute and the Departments of Near Eastern Languages, South Asian Languages, and History. There I began to familiarize myself more with the Mesopotamian traditions learning especially from B. Landsberger, Leo Oppenheim, and E. Reiner.<sup>21</sup> I have collaborated on several publications in Akkadian with Reiner<sup>22</sup> and with a frequent visitor to the Institute, H. Hunger.<sup>23</sup>

I went to the American University of Beirut in Lebanon for the academic year 1964–65 on a grant from the National Science Foundation. There I worked on Arabic astronomy and astrology with E. S. Kennedy; a half-dozen editions of Arabic texts resulted from this collaboration.<sup>24</sup> I also acquired micro-

<sup>19</sup> See D. Pingree and O. Neugebauer, *The Pañcasiddhāntikā of Varāhamihira* I–II (Copenhagen 1970–1971).

<sup>20</sup> See Pingree's bibliography at Charles Burnett, Jan P. Hogendijk, Kim Plofker, Michio Yano (eds.), *Studies in the History of the Exact Sciences in Honour of David Pingree* (Islamic Philosophy Theology and Science. Texts and Studies 54 [2004]) 863–881.

<sup>21</sup> Benno Landsberger (1890–1968, German); Adolf Leo Oppenheim (1904–1974, Austrian); Erica Reiner (1924–2005, Hungarian), three of the most distinguished Assyriologists.

<sup>22</sup> Erica Reiner and David Pingree, *Babylonian Planetary Omens* I–IV (Malibu 1975–1981, Groningen 1998, Leiden/Boston 2005).

<sup>23</sup> Hermann Hunger and David Pingree, *MUL.APIN. An Astronomical Compendium in Cuneiform* (*Archiv für Orientforschung* Beih. 24 [1989]); and *Astral Sciences in Mesopotamia* (*Handbuch der Orientalistik* I 44 [1999]).

<sup>24</sup> Books by Edward S. Kennedy and David Pingree: *The Astrological History of Māshā'allāh* (Cambridge [Mass.] 1971); *The Book of the Reasons behind Astronomical Tables* (Delmar 1981); articles: Fuad I. Haddad, David Pingree, Edward S. Kennedy, "Al-Bīrūnī's Treatise on Astrological Lots," *Zeitschrift*

films of numerous manuscripts in the Near East. In the summer of 1965 I spent several months in India on a grant from the American Philosophical Society visiting libraries throughout the subcontinent obtaining information about and copies of astronomical and astrological manuscripts.<sup>25</sup> In Madras I met with the eminent Sanskritist V. Raghavan,<sup>26</sup> from whom I learned of two large collections of manuscripts in the Wellcome Institute in London and at the Indian Institute Library in Oxford. I have published catalogues of about 600 jyotisa manuscripts at Oxford and 1000 of the Wellcome, a catalogue of about 1000 manuscripts on dharmasastra manuscripts<sup>27</sup> at Oxford is almost completed.

In 1968–69 I was a Member of the Institute for Advanced Study in Princeton, working on the edition of the *Apotelesmatica* of Hephaestio of Thebes. This is one of some seven Greek astrological texts I have edited;<sup>28</sup> an eighth, the *Treasures of Rhetorius*, is in press.<sup>29</sup> In 1971 I joined the faculty of the De-

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*für Geschichte der Arabisch-Islamischen Wissenschaften* 1 (1984) 9–54 (repr. in E. S. Kennedy, *Astronomy and Astrology in the Medieval Islamic World* [Aldershot 1998] no. XV).

<sup>25</sup> Much of that research became part of the later publication: D. Pingree, *Jyotiḥśāstra. Astral and Mathematical Literature (A History of Indian Literature VI.4* [Wiesbaden 1981]).

<sup>26</sup> Venkataram Raghavan (1909–1978).

<sup>27</sup> *Sic*: rather “topics”?

<sup>28</sup> Book-length editions: *Albumasis De revolutionibus nativitatum* (Leipzig 1968); *Hephaestionis Thebani Apotelesmaticorum libri tres I–II* (Leipzig 1973–1974); *Dorothei Sidonii carmen astrologicum* (Leipzig 1976); *Vettii Valentis Antiocheni Anthologiarum libri novem* (Leipzig 1986); smaller editions (articles): “The Horoscope of Constantine VII Porphyrogenitus,” *DOP* 27 (1973) 219–231; “Political Horoscopes from the Reign of Zeno,” *DOP* 30 (1976) 133–150; “The Horoscope of Constantinople,” in *ΠΡΟΣΜΑΤΑ. Naturwissenschaftsgeschichtl. Studien. Festschrift Willy Hartner*, ed. Y. Maeyama and W. G. Saltzer (Wiesbaden 1977) 305–315; “A Greek List of Astrolabe Stars,” in *Sic itur ad astra. Studien zur Geschichte der Mathematik und Naturwissenschaften. Festschrift für den Arabisten Paul Kunitzsch*, ed. Menso Folkerts and Richard Lorch (Wiesbaden 2000) 474–477.

<sup>29</sup> Stephan Heilen is completing the edition: D. Pingree, *Rhetorii Aegyptii compendium astrologicum [...], imprimendum curavit S. Heilen* (Teubner, forthcoming).

partments of the History of Mathematics and of Classics at Brown, where I have been ever since. I was asked in 1972 by E. Gombrich of the Warburg Institute to take over the edition of the Latin translation of the Arabic *Ghayat al-hakim*, known as the *Picatrix*, that A. Warburg had become interested in in the early twentieth century.<sup>30</sup> This text was eventually published, as were several related texts including the fragments of the Old Spanish version and an independent Latin version of one of the Ghaya's sources, the Prayers to the Planets of al-Tabari, that I found in a manuscript in Firenze.<sup>31</sup>

I received a Guggenheim Fellowship for 1975–76, a year I passed in England working on the *Picatrix* and on related Latin manuscripts in Oxford and at the British Museum. In 1975 I was elected a Member of the American Philosophical Society; I had been elected a Fellow of the American Academy of Arts and Sciences in 1971, and was entitled *Abhinavavarahamihira*<sup>32</sup> by the government of Uttar Pradesh in India in 1979.

I again became a Member of the Institute for Advanced Study in 1978–79, and devoted the year to preparing the edition of the *Picatrix*. I received a MacArthur Fellowship in 1981; about half of the next five years I was in England working on manuscripts and completing several editions of texts. From 1982–94 I served as a Senator of Phi Beta Kappa, and from its foundation till 2002 as Trustee (and for several years President) of the Association of Members of the Institute for Advanced Study. In 1992 I received the Honorary Degree of Doctor of Humane Letters from the University of Chicago. I served as A. D. White Professor-at-Large at Cornell in 1995–2001.

<sup>30</sup> *Picatrix. The Latin Version of the Ghāyat al-Ḥakīm*, ed. David Pingree (Studies of the Warburg Institute 39 [1986]).

<sup>31</sup> D. Pingree, "Al-Ṭabarī on the Prayers to the Planets," *Bulletin d'études orientales* 44 (1992) 105–117.

<sup>32</sup> Dr. Kim Plofker (Brown) elucidates: "Abhinava Varahamihira means 'the modern Varahamihira', referring to the sixth-century astronomer/astrologer of that name" (see above n.11). Dr. Plofker suggests that it is regarded as an Indian honorific for people learned in astrology.

I was invited to a conference on the Future of Indology held in Kerala in 1993. When I returned to Providence, realizing the desperate lack of accurate knowledge about the enormous corpus of Sanskrit literature (there exist an estimated thirty million Sanskrit manuscripts, almost none of which have been adequately described, and most of which are not at all recorded) I established the American Committee for South Asian Manuscripts in 1994. We hope to catalogue all the Arabic, Persian, and Indic manuscripts in North America and eventually elsewhere, making these descriptions available on the internet. Because of the lack of adequate funding, while we have described several hundred Arabic and Persian manuscripts, our main focus has been on the Sanskrit material, for which I have already done considerable work. We have produced catalogues of the collection at Columbia University, a listing of those at Princeton University, and are currently working, with the assistance of several colleagues and students, on the collection at Harvard. Also included is the catalogue of *vyotisa* (astronomical) manuscripts at the City Palace Museum in Jaipur, India.

In 2004 a volume entitled *Studies in the History of the Exact Sciences in Honour of David Pingree* edited by some of my former students and some colleagues—C. Burnett, J. Hoegendijk, K. Plofker, and M. Yano—was published by Brill.<sup>33</sup>

I am on the editorial boards of *Arabic Sciences and Philosophy*, *Journal for the History of Arabic Science*, and *Suhayl*; of the *Corpus des Astronomes Byzantins*; of the *Catalogus Translationum et Commentariorum*, and of the *International Journal of the Classical Tradition*; of the *Encyclopedia Iranica*; of *Micrologus*; and of *Historia Mathematica* and the *Journal for the History of Astronomy*. And I am co-editor of *Islamic Theology, Philosophy and Science* published by Brill. At last count some 43 books and monographs and 240 articles have appeared under my name or mine and others'. I have directed

<sup>33</sup> See n.20 above.

seven Ph.D. theses; two others are currently being written.<sup>34</sup>

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<sup>34</sup> Thanks to Dr. K. Plofker, we found that the total count of completed Ph.D. theses is eight rather than seven, counting six theses in Brown's Department of the History of Mathematics, one in Brown's Classics Department as well as one co-supervised thesis at Simon Fraser University. These eight are: Takao Hayashi, *The Bakhshārī Manuscript. An Ancient Indian Mathematical Treatise* (diss. Brown 1985, published Groningen 1995); Takatori Kusuba, *Combinatorics and Magic Squares in India. A Study of Nārāyaṇa Pandita's Ganitakaumudī ch. 13–14* (diss. Brown 1993; not available in print); Kim Plofker, *Mathematical Approximation by Transformation of Sine Functions in Medieval Sanskrit Astronomical Texts* (diss. Brown 1995; various parts have been published as articles); Pushpa Kumari Jain, *A Critical Edition, English Translation, and Commentary of the Upodghata, Sadvidhāprakarana and Kuttakadhikara of the Suryaprakasa of Suryadasa (A Commentary on Bhaskaracarya's Bijaganita)* (diss. Simon Fraser, Dept. of Mathematics and Statistics, 1995; published as *The Suryaprakasa of Suryadasa: A Commentary on Bhaskaracarya's Bijaganita: A Critical Edition, English Translation and Commentary for the Chapters Upodghata, Sadvidhāprakarana and Kuttakadhikara* [Vadodara 2001]); Robert Lopilato, *The Apotelesmatika of Manetho* (diss. Brown 1998; not available in print); Setsuro Ikeyama, *The Brāhmasphutasiddhānta Chapter 21 with the Commentary of Prthūdaka-kasvāmin* (diss. Brown 2002, published in four parts under the title *Brāhmasphutasiddhānta (ch. 21) of Brahmagupta with Commentary of Prthūdaka, critically ed. with Eng. tr. and Notes* as a supplement to the *Indian Journal of History of Science* 38 [2003]: 38.1 pp.S1–74, 38.2 S75–152; 38.3 S153–236; 38.4 S237–308); Joseph Gerard Leichter, *The Zīj as-Sanjārī of Gregory Chionades. Text, Translation and Greek to Arabic Glossary* (diss. Brown 2004; not available in print); Clemency J. Williams, *Eclipse Theory in the Ancient World* (diss. Brown 2005; not yet in print); as to the two theses that “are currently being written,” the first has been finished recently: Micah Tecumseh Ross, *Horoscopic Ostraca from Medīnet Mādī* (diss. Brown 2006), is being published sequentially in the periodical *Egitto e Vicino Oriente*. The other is Toke Lindegaard Knudsen's critical edition of parts of Jñānarāja's Siddhāntasundara with English translation and commentary (title not yet fixed, thesis to be finished in 2008). See further *The Mathematics Genealogy Project* s.n. “Pingree” at <http://genealogy.math.ndsu.nodak.edu/html/id.phtml?id=13667&fChrono=1>.

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