Dominik Wujastyk
Indian Manuscripts

1 Introduction

India as a modern nation-state covers the greater part of the South Asian peninsula, from the Himalayas in the north to the tip of Cape Comorin, about 3000 km to the south. However, as a cultural-historical sphere, other modern states such as Pakistan, Nepal, Bangladesh and Sri Lanka, and even to some extent Burma, Thailand and Indonesia, share aspects of their manuscript heritage with modern India. Countries such as Afghanistan and even western China, especially Xinjiang Province, have been important sites of "Indian" manuscript discovery, and the Tibetan manuscript tradition was strongly influenced by Indian Buddhist models. This is because these surrounding geographical areas participated in trade and cultural exchange with South Asia from a very early period, and especially because of the missionary activities of Buddhist monks. What, then, really defines an "Indian manuscript"?

For most specialists, this expression conjures up the idea of a hand-written document inscribed on paper or palm leaf, in Devanāgarī or one of the other alphabets of South or Central Asia, and typically in the Sanskrit, Tamil or Persian language. But one has to bear in mind that the boundaries of definition are fluid, and that a manuscript from China, written on birch-bark in the Kharoṣṭhī script of Gandhāra and the Middle-Iranian language called Khotanese, may also be considered, in many respects, an Indian manuscript, for example if it contains a translation of a Sanskrit treatise on Buddhism or ayurveda, or if it was produced in a Buddhist monastery that still had living links with India.

It is also important to remember that Islamic culture began to influence India over a thousand years ago, and has left a huge legacy of manuscripts and paintings, especially from the courtly centres of the Sultans and Mughals. Islamic Indian manuscripts are often written in the (Middle) Persian language and script, but there are also many surviving manuscripts in Arabic and Urdu, written in variant forms of the Perso-Arabic alphabet. The present chapter will focus mainly on Sanskrit and Prakrit manuscripts, which form by far the greatest bulk of surviving manuscript materials in South Asia, and which represent the continuous cultural heritage of India dating back to the second millennium BCE.

How many Indian manuscripts are there? The National Mission for Manuscripts in New Delhi works with a conservative figure of seven million manu-

scripts, and its database is approaching two million records.[1] The late Prof. David Pingree, basing his count on a lifetime of academic engagement with Indian manuscripts, estimated that there were thirty million manuscripts, if one counted both those in public and government libraries, and those in private collections.[2] For anyone coming to Indian studies from another field, these gargantuan figures are scarcely credible. But after some acquaintance with the subject, and visits to manuscript libraries in India, it becomes clear that these very large figures are wholly justified. The Jaina manuscript library at Koba in Gujarat, which only started publishing its catalogues in 2003, has an estimated 250,000 manuscripts. The Sarasvati Bhavan Library in Benares has in excess of 100,000 manuscripts. There are 85,000 in various repositories in Delhi. There are about 50,000 manuscripts in the Sarasvati Mahal library in Thanjavur in the far South. Such examples are easily multiplied across the whole subcontinent. And these are only the public libraries with published catalogues. A one-year pilot field-survey by the National Mission for Manuscripts in Delhi, during 2004–2005, documented 650,000 manuscripts distributed across 35,000 repositories in the states of Orissa, Bihar and Uttar Pradesh, and field participants in that project report that they only scratched the surface.[3] The former maharajas often collected huge private manuscript libraries, only some of which are publicly available today. And it is very common for a modest Brahman family today, living away from urban centres, to have a cupboard containing two or three thousand manuscripts, handed down from a learned grandfather, perhaps. A reader unfamiliar with the Indian case, and thinking such numbers inconceivable, might assume that these are fragments or single leaves, a kind of trans-continental Geniza. That is not the case. These millions of Indian manuscripts are mostly full literary works, typically consisting of scores or hundreds of closely-written folios, most often in Sanskrit, and containing works of classical learning on logic, theology, philosophy, medicine, grammar, law, mathematics, yoga, tantra, alchemy, religion, poetry, drama, epic, and a host of other themes. Throughout history, Indian society has vigorously privileged higher learning, and the record of over two and a half millennia of artistic and intellectual work has been transmitted in manuscript form to the 20th century.[4]

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1 <http://www.namami.org/manuscriptdatabase.htm>, consulted 18 August 2011.
2 David Pingree, personal communication in the 1990s.
3 <http://www.namami.org/nationalsurvey.htm>, consulted August 2011. Field-survey remark from personal communication at NAMAMI (National Mission for Manuscripts), September 2011.
4 Filliozat 2000 insightfully describes the intellectual and social world of traditional Indian learning. See also Pollock 2007, Wujastyk 2007 and Minkowski 2010 on the cultural history of early Sanskrit manuscript libraries.

In spite of the great time-depth of Indian culture, and the large numbers of surviving manuscripts, the graph of surviving manuscript numbers against time peaks in the early 19th century. There are numerically more Indian manuscripts surviving from the 1820s and 1830s than from any other period of history. There are a number of reasons for this. First, the smaller numbers before the 19th century can be explained by the environmental conditions in most of South Asia, that are hostile to birch bark, paper and palm leaf. The monsoon climate, and the work of insects, mould, and rodents, have destroyed millions of early manuscripts. This is why some of the very oldest manuscripts in Sanskrit have been discovered not in India, but in the dry, desert conditions of Central Asia, in caves, *stūpas* or buried libraries on the Silk Route.[5] These truly ancient manuscripts are of immense historical importance, especially for the study of Buddhism. But numerically they are a tiny fraction of the surviving legacy. Another reason for the 19th-century peak is the demise of the traditional profession of manuscript scribe, in the face of the rise of printing in the 19th century. First lithography, and later moveable-type technologies were applied to the reproduction of Sanskrit works on a large scale, especially by publishers in Bombay and Calcutta. Some scribes were employed to write lithographic prints, but many migrated into secretarial and administrative posts within the government, a migration that had already begun in Mughal times.[6]

An Indian manuscript written on hand-made Indian paper has a typical physical lifetime of two to three centuries, after which it becomes increasingly fragile and illegible, and a new copy must be created.[7] Of course, much depends on handling and use. If carefully preserved, and perhaps revered rather than read, paper manuscripts may survive longer, but paper manuscripts in South Asia are rare from before 1500. Palm leaf manuscripts are more robust, and can last a millennium or more if treated well. For example, the Wellcome *Aṣṭasāhasrikāprajñāpāramitā* ("The Perfection of Wisdom in 8000 verses") is datable to about 1075 CE, and is still in almost pristine condition.[8] Palm leaf manuscripts tend to wear around the edges. Scribes knew this and often left large margins, so even after hundreds of years, the text area of the manuscript remained intact. But when material costs obliged them to write close to the edges

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5 Salomon 2003 describes such a collection acquired by the British Library in 1994, and other recent finds, mostly dating from the early 2nd century CE.

6 See O'Hanlon / Minkowski 2008 for an exploration of the social history of this change.

7 Losty 1982 makes important remarks about the earliest history of paper manufacture in Nepal, that predated the importation of paper technology from China.

8 Wellcome MS Indic epsilon 1, at the Wellcome Library, London (Wujastyk 1985, 1998); Allinger 2012).

of the palm leaf, then splitting and erosion of the leaf could lead to loss of text. Thus, the Wellcome copy of the *Niśvāsatattvasaṃhitā* ("The Tantra of Sighs"), written on paper in Nepal in 1912, preserves letters from the edges of the 9th-century palm leaf exemplar in Kathmandu that have been broken and lost since 1912, thus giving the London apograph independent text-historical value.[9] Birch bark was the most fragile writing support used widely in early India, being associated especially with Kashmir. Surviving birch bark manuscripts flake and split when handled, and present almost insurmountable problems for the conservator, with encapsulation often being the only recourse.

While it may seem strange that our knowledge of ancient literature should depend on recent manuscripts, this is often the case also for Greek and Latin learning. For example, the oldest complete manuscript copy of Euclid's *Elements*, composed in ca. 300 BCE, is dated 888 CE. The *Elements*, perhaps the most important mathematical work ever written, was transmitted through copy after copy for over a thousand years before we have any physical evidence for the complete text. In a similar way, Indian literature was carefully copied and recopied for centuries, until the 19th century. The great social and technological changes that have taken place since then have meant the end of manuscript copying in India on a grand scale. Instead, the future survival of this Indian literary and intellectual heritage today depends on the discovery, conservation, preservation and reproduction by digital means of the last generation of Indian manuscripts.

A back-of-an-envelope calculation based on estimated figures and attrition rates suggest that several hundred Sanskrit manuscripts are being destroyed or becoming illegible every week. It is inevitable that some of these losses will include unique, unknown, or otherwise important works. Scholars professionally involved in Indian manuscript studies are universally afflicted with anxiety about this critical state of affairs. Only the Indian government has the resources and authority to make serious headway in preserving the Indian manuscript heritage, and the establishment of the National Mission for Manuscripts in 2003 was a ray of hope.[10]

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9 Wellcome MS Indic delta 41 (Wujastyk 1985, 1998, v.1, 151–2). Personal communication from Prof. André Padoux; cf. Sanderson 2001, 5, note 7. The 9th-century exemplar is MS NAK 1–277 in the National Archives of Nepal, Kathmandu.
10 <http://www.namami.org>, viewed August 2011.

2 Writing

The oldest physical writing in India survives as rock inscriptions. The most famous and earliest inscriptions, or epigraphs, are those of King Aśoka (crowned ca. 264 BCE), who wrote edicts to his subjects in a personal and confessional style that communicates strongly across the millennia.[11] Although writing was probably known to exist outside India before Aśoka, it has been compellingly argued that Aśoka created the first alphabetical writing specific to South Asia, in order to promulgate his edicts.[12] He was influenced by Greek and Kharoṣṭhī models, but created an entirely new script for the language of his edicts, which was Prakrit, a common speech closely related to Sanskrit.[13] This script was later called Brāhmī, and was the ancestor of most later writing systems in India, with the exception of the Perso-Arabic family.

We do not know exactly when manuscripts began to be written in India. The oral tradition of recitation and memorisation was extraordinarily strong in early Indian culture, and has continued into modern times. It is still possible to meet *paṇḍitas* (Brahman scholars) who know seemingly impossible volumes of scholarly Sanskrit literature by heart, and memorisation has always been thought of as essential to true learning in India. Yet, in spite of the strong privileging of memorisation through all periods of Indian history, it is clear that manuscripts were written and copied in increasingly large numbers, probably from the last few centuries BCE.

The earliest scripts are the Kharoṣṭhī and Brāhmī syllabaries. The former was normally written from right-to-left, and the script appears to be an Indian development from Aramaic models. It was used for the earliest surviving Indian manuscripts, the Buddhist scrolls now at the British Library. However, Kharoṣṭhī gradually died out, and the last use of the script was in writings from remote towns on the Silk Route in about the 7th century CE. Brāhmī is first known to us from the Aśokan inscriptions, and was continuously adapted and modified over two millennia, forming the basis of all the alphabets of Indian origin in South Asia today. Script divergence began early, and variants of Brāhmī that may have been mutually illegible were already in existence by at least the 4th century CE, by which time various lists of scripts, some of up to sixty-four names, had appeared in Buddhist and Jaina sources.[14]

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11 Thapar 1997 is a standard introduction to Aśokan studies.
12 Falk 1993.
13 On the early history of writing in India, see also Salomon 1995 and Salomon 1998.
14 Salomon 1998, 8–9.

Early Indian scripts and their derivatives all assume that a single character or "letter" is a consonant with a vowel. The unmarked vowel is "a." Other vowels are written as diacritical marks. These scripts are, therefore, syllabaries rather than alphabets. In this respect, the conception of the script's minimal units as syllables is in tune with the sophisticated early literature on phonetics from the vedic tradition, in which it was understood that a consonant cannot, in fact, be pronounced without a vowel.[15]

The scripts derived from Brāhmī have approximately fifty syllables that are conventionally ordered in accordance with a grid of phonetic realities, i.e., voiceless consonants before voiced, unaspirated before aspirated, in the sequence of consonantal stop position from back-to-front of the mouth cavity: velar, palatal, retroflex, dental, labial.[16] No distinction of upper- or lower-case is observed, and syllables are pronounced the same in all contexts, making correct reading aloud relatively easy once the glyphs are learned. There are two principal challenges in beginning reading and comprehension. First, two or more consonants without an intervening vowel combine graphically into a new conjunct form that is not always visually related to the original consonants. These combinations raise the number of commonly-used glyphs to above 350. Secondly, scribes do not routinely mark all word-breaks with spaces. To read out loud with comprehension, one needs to know the lexicon without the help of visual cues. For this reason, some manuscripts have small vertical tick-marks above the lines, marking word-division.

The earliest scripts known from manuscript writing are related, as one would expect, to the earlier surviving specimens of epigraphical script. By about 700 CE, the Gupta script known from north Indian inscriptions evolved into a script called Siddhamātṛkā, which continued to be in use until about 1200. While the Gupta script is almost unknown in manuscripts,[17] Siddhamātṛkā is found in early palm leaf manuscripts from Nepal and Bengal. It is a beautiful, angular calligraphic script. Apart from its inherent beauty, it is important as the ancestor of Devanāgarī, the script used for the bulk of north Indian manuscripts from the last thousand years, and also the script used for the modern Hindi and Marathi languages. Siddhamātṛkā is also the ancestor of the Tibetan script, while in north-

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15 Allen 1953, 14 for a discussion of vowel "potestas" amongst the Sanskrit phoneticians (the actual sound of a phonic blast, as opposed to the name, "nomen," or glyph, "figura," of a phonic unit).

16 Gandhāran *arapacana* syllabary, found in Buddhist documents in the Kharoṣṭhī script, is not arranged on phonetic principles. See Salomon 1990.

17 Several early Nepalese manuscripts were said to be in Gupta writing by Śāstri 1905, 1915, but his nomenclature is uncertain.

east India, it evolved into the modern scripts of that region, Bengāli, Assamese, Oriya and Maithili.

In north-west India, the Śāradā script of Kashmir, itself emerging from the Gupta script, evolved in to Lahndā of the western Panjab region by the 10th century, and then by the 16th century into the Gurmukhī script mostly associated with the Sikh communities of the Panjab.

In South India, yet different ramifications of Brāhmī developed, marked by increasingly cursive and circular strokes that contrasted with the angularity of the northern scripts. This family is today represented by the Telugu, Kannada, Tamil, Malayalam, and Sinhala scripts. A special adaptation of the Tamil script for writing Sanskrit is known as the Grantha script.

As can readily be seen from this thumbnail sketch, the story of script in India is complex. Scribes would normally be versed in their local script, and so Sanskrit was normally written down in that script too. Therefore, manuscripts of the same Sanskrit work are often to be found written in three, four, or more quite different scripts, according to their locations. The localness of writing traditions also influenced textual transmission. Many texts have recensions that are defined by the script-groups in which the manuscripts have been transmitted. For example, the famous play *Śakuntalā*, by India's greatest pre-modern playwright, Kālidāsa (fl. ca. 14th century), is known in different recensions according to the Śāradā, Devanāgarī or Bengāli script-groupings of the surviving manuscripts, the last group having extra prose and verse passages that emphasise the erotic content of the drama.[18] Manuscripts in the Śāradā script, normally from Kashmir, where Brahman *paṇḍitas* were famously learned and conservative, often preserve early textual recensions, and are important for textual reconstruction.

The student of Indian manuscripts must ideally be able to read several of the most important scripts, which would include Devanāgarī, Śāradā, Malayāḷam and Bengāli, and be prepared to learn new scripts as necessary.

 Manuscripts written by Jaina or Buddhist scribes often display beautiful calligraphy, decoration and sometimes illustration. Other scribes most often wrote in a workmanlike but unadorned fashion. The vast majority of Indian manuscripts are not works of art, for all that they may contain beautiful and important literary texts.

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18 Johnson 2001, xxx–xxxi.

3 Material support

While wood, cloth, copper and other writing supports were sometimes used, the principle writing supports in India have been birch bark, palm leaf and paper. Papyrus and parchment were unknown, the latter due to the widely-shared Brahman religious concepts of vegetarianism and harmlessness to living creatures (Skt. *ahiṃsā*).

Broadly speaking, in the north and west of the subcontinent, early manuscripts were written on scrolls made of the bark of the birchtree, flattened, glued into sheets and cut into scrolls or sheets. Kashmir was a noted source of the manufacture of this material, which was also exported to Central Asia and south to the Panjab. Birch bark was still being used for manuscript production as late as the 17th century. Writing on the smooth, flat surface of birch bark was done with ink and a stylus, and the horizontal and vertical strokes could be emphasised calligraphically. This technique carried over to palm leaf and later to paper, after its widespread introduction in the early second millennium CE. The most common script used on birch bark manuscripts is Śāradā.

The leaves of two species of palm were used as writing supports in India, *Corypha umbraculifera*, the Talipot Palm native to southern India and Sri Lanka, and *Borassus flabellifer*, the Toddy Palm, native to South and South East Asia.[19] Leaves were selected for size and quality, and then boiled in water and dried, sometimes in warm sand. The surfaces of the leaves were then polished with pumice, and cut to regular, long, narrow sizes. A hole was sometimes punched in the centre of the leaf so that a stack could be strung together to keep them in order. Some older, wider palm leaf manuscripts from Bengal and Nepal were written using ink and a calligraphic stylus, as with birch bark. But the most common scribal practice, especially on the east of India from Bengal to Tamil Nadu in the south, was to inscribe the text on the leaf using a pointed stylus. The manuscript would be delivered to its owner in this form. In order to read the text, it would have to be wiped with a cloth soaked in oil and lampblack, that would fill the incised letters with dark colour and render the manuscript legible.

Paper-making was invented in China at the end of the 1st century CE, although there are some earlier precursors. Slowly, knowledge of paper-making spread over a period of centuries along the Silk Route through Samarkand and to Baghdad, reaching Muslim Spain and Sicily by the 10th century. It is unclear whether knowledge of paper-making reached India from China through Central Asia, Tibet and Nepal, or through Islamic traders in the Indian Ocean, and later

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19 Katre 1941, 6.

the Muslim invaders who entered India from the 13th century onwards. It is notable that several of the later centres of paper-making are Islamic-founded cities such as Ahmedabad, Hyderabad, Faizabad and Aurangabad. Perhaps the knowledge arrived from more than one source. Paper began to supplant palm leaf as the most abundant writing support from about the 12th century, with some of the earliest paper manuscripts being found in Jaina libraries in Gujarat and Rajasthan.

4 Manuscript libraries

From at least the 4th century BCE, mendicant groups including Buddhists, Jains and Ājīvikas, whose vows included a peripatetic lifestyle, were permitted to stay in one place for the three months of the rainy season.[20] These monsoon sojourns evolved over the centuries into monastic institutions that included educational functions. New monastic centres of learning that became particularly famous included Nālandā (Bihar, from ca. 4th century–1200), Valabhī, Jagaddala (Bengal, ca. 1100–1200), Odantapurī (Bihar, from ca. 700), and Somapura (Rajshahi, Bangladesh, ca. 8th–12th century).[21] Many of these institutions developed libraries. From the detailed descriptive accounts of the Chinese pilgrim Xuanzang (602–664), it has been estimated that there were at least 212,130 ordained monks involved in scholarship and education in the middle of the 7th century. The figures for Jaina monks and institutions of the period are not so well known, but the Jainas too developed a large network of temple libraries for the use of peripatetic monks, and groups of Jaina monks were also present at monasteries like Nalanda that are usually thought of as Buddhist.[22] Many of the Buddhist monastic libraries were destroyed by the Islamic incursions of Muhammad Bakhtiār Khiljī (d. 1205), and others, and medieval Buddhist manuscripts from India are very rare. Jaina libraries seem to have fared slightly better, although the many libraries established by the 12th-century kings Kumārapāla and Vastupāla in Pāṭaṇ are thought to have been destroyed during the Muslim conquests. Yet there are many great Jaina library collections that have survived to the present day.[23] These include the Koba Tirth collection mentioned above, as well as the L. D. Institute in Ahmedabad, the Jñāna Bhaṇḍāra in Jaisalmere, the Hemacandra Jñāna Bhaṇḍāra in Pāṭaṇ and many others.[24] Libraries were often kept in semi-secret chambers or cellars, with

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20 Scharfe 2002, ch. 9: "From monasteries to universities."

21 Altekar 1944, ch. 5, Mookerji 1947, *passim*, Bose 1923.

22 Cort 1995, 33–44.

23 Johnson 1999.

24 Ibid. See also Kasliwal 1967.

access strictly limited to monks. The broad cultural and philosophical interests of Jaina scholars over the ages have meant that Jaina scribes also copied non-Jaina works in relative abundance. Jaina manuscript libraries today are of great importance both for the history of Jainism itself, but also for all aspects of early Indian cultural and literary history.

Today, there are hundreds of major Indian manuscript libraries in India, and scores abroad, especially in Europe and the USA. Some are the result of government collection policies, others are royal libraries created by former maharajas. Yet others are parts of religious endowments, schools, temples, and monasteries. Finally, there are many private collections.[25]

5 Access

Many manuscript libraries and librarians in India and abroad understand scholarship and are extremely helpful to the visiting scholar seeking access to a manuscript for research. The Koba Tirth manuscript library, perhaps the largest single manuscript collection in the world, has exemplary policies towards the promotion of scholarship, and advanced technical and administrative infrastructures. But there are exceptions, too. Negotiating access to manuscript collections can be tortuous and bureaucratic, and sometimes even the most strenuous efforts fail. Some libraries are just inaccessible, locked with several padlocks whose key-holders are scattered over a whole state (for example, the Jñāna Bhaṇḍāra in Jaisalmere). Others are locked pending the resolution to family disputes that have lasted decades (the Anup Library in Bikaner). Others are located in institutions that have little interest in Sanskrit scholarship (the Woolner Collection in Lahore), are paralysed by internal politics (the Sarasvati Bhavan, Varanasi), or charge prohibitive fees for non-Indian scholars (Baroda Oriental Institute). Cases could be multiplied. In moments of frustration, Kosambi's Law of Manuscripts can be a comfort: "It is a general rule (Kosambi's law!) that the actual use-value of a manuscript is inversely proportional to the fuss made in lending it".[26] Reserves of patience, good will and time are the greatest assets in accessing Indian manuscripts located in traditional settings.

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25 Minkowski 2010 provides a valuable survey of libraries, with a focus on the early modern period.
26 Kosambi 2000 (=1948), 10. D. D. Kosambi was a mathematician, historian, text-editor and manuscript hunter.

6 Catalogues and finding aids

In textual criticism, it has been said, "the hardest part to carry out with complete success is probably the business of finding out what manuscripts there are".[27] How does one find out what manuscripts there are in the Indian case?

In 1868, the government of India instituted a program of manuscript cataloguing and collection.[28] India was at that time administered in three large "presidencies." In the Bombay and Madras Presidencies, the funds sanctioned by the 1868 decision were spent on a series of regional searches by Sanskrit scholars including such renowned figures as Franz Kielhorn (1840–1908), Georg Bühler (1837–1898), Peter Peterson (1847–1899) and Ramakrishna Gopal Bhandarkar (1837–1925), who published reports on their findings, catalogued local collections, acquired manuscripts where available, and commissioned copies of others. These materials were routed to Poona and Madras respectively, where Government Oriental Manuscript Libraries (GOML) were established.[29] These two libraries still exist, and contain extraordinarily rich collections. Both GOML have issued scores of volumes of descriptive catalogues of their collections. These collections continue to grow, mainly by private donation.

In the Bengal Presidency, things were handled differently. Rajendralal Mitra (1823–1891) and Haraprasad Shastri (1853–1931), two Sanskrit scholars of immense learning, conducted searches for manuscripts throughout Bengal, visiting many small private collections. Their manuscript descriptions often included analyses of the subject content of the manuscripts, and the resulting series of volumes entitled *Notices of Sanskrit Manuscripts* offer rich, detailed materials for the history of literature, often offering the first modern descriptions of previously unknown works. However, the actual manuscripts were left in situ, and no attempt was made to create a centralized manuscript library in Calcutta. This function was to some extent fulfilled by the Asiatic Society in Calcutta, founded in the late 18th century, and housing one of the great manuscript libraries of the subcontinent. This library too has issued many descriptive catalogues, including volumes by Haraprasad Shastri, and continues to be actively managed today.

During the 19th century, Indian manuscript collections began to be identified, studied and catalogued in all parts of India, often by European scholars who lived and worked in India most of their lives. At the same time, some personal Indian manuscript collections began to find their way to European libraries, as gifts or

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27 West 1973, 64.
28 The government correspondence and background to this policy were collected and published in Gough 1878.
29 Johnson 1980.

sales by Europeans returning from India. The first major Indian manuscript catalogues in Europe were those of Theodor Aufrecht (1822–1907) at the Bodleian and Albrecht Weber (1825–1901) in Berlin.[30] Both these early catalogues provided copious extracts from the manuscripts, and presented the entries in a classified subject arrangement. It is no coincidence that both Weber and Aufrecht went on to write histories of Sanskrit literature. These were the beginnings of what would later be called "bibliographical control" of the field of Indian literature. Another important catalogue of the period was that of Arthur Coke Burnell, written in Thanjavur in South India, and published in London.[31] Burnell's catalogue was the first to present the holdings of a royal library. It called itself a "Classified Index." While Aufrecht and Weber were taking a corpus approach, and cataloguing bounded, selected collections, with few duplicate works, in depth, Burnell was solving a different problem, which was to become ever more acute up to the present day, namely to offer bibliographical control over very large numbers of manuscripts that included multiple copies of several works. His pioneering work in this respect was exemplary, and in some ways prefigures the highly condensed style of the *Census of Exact Sciences in Sanskrit* by David Pingree (1933–2005), that had similar aims.[32]

By the turn of the 20th century, the number of published catalogues of Indian manuscripts had already grown large enough to demand a general index. Aufrecht published such a bibliographical tool in three volumes between 1891 and 1903.[33] While it indexed the existing catalogues, its title declared a larger goal, to be "an alphabetical register of works and authors." Aufrecht's *Catalogus Catalogorum* is perhaps the most important finding aid ever published for Indian literature. Over a century later, scholars working on Indian manuscripts still refer to it frequently, and Aufrecht's judgements on authorship and the identity of works are rarely faulted.

However, half a century later, the *Catalogus Catalogorum* was no longer remotely adequate as a guide to the growing numbers published catalogues. Amongst the most important new items to just miss Aufrecht's *Catalogus Catalogorum* were descriptions by Haraprasad Shastri of extremely rare and ancient Indian manuscripts that he discovered in the Durbar Library in Kathmandu,[34] and many other volumes and series of catalogues continued to appear. In 1949, Venkataraman Raghavan (1908–1979), one of the leading Sanskrit scholars of

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30 Weber 1853–1891, Aufrecht 1859.
31 Burnell 1880.
32 Pingree 1970–1994.
33 Aufrecht 1891–1903.
34 Śāstri 1905, 1915.

his day, published the first volume of a *New Catalogus Catalogorum* (NCC).[35] This aimed to update Aufrecht's work, but also to add works in the Prakrit languages (vernaculars closely related to Sanskrit). The NCC project, still located at the University of Madras, has attracted the expert work of several generations of selfless workers. It has suffered many vicissitudes, and almost collapsed after volume 13 was published in 1991. One more volume appeared in 2000. However, its present director, Siniruddha Dash, has been successful in raising funds, galvanising the project staff, and introducing computing technology. With volume 15, published in 2007, the project regained its dynamism, and the NCC has now reached volume 19, that ends with titles beginning with "suhodita". The project is nearing completion.

For the titles that it covers, the NCC is the principle finding aid for Indian manuscripts, and the starting point for any serious editorial or literary-historical research in pre-modern Indian literature. For works beginning with syllables after that point, one has to resort to Aufrecht's original *Catalogus Catalogorum* coupled with a laborious search through scores of catalogues and correspondence with the helpful NCC office in Madras.

Unfortunately, even the NCC is no longer comprehensive. Raghavan froze the list of excerpted catalogues in the late 1960s. A limited number of later catalogues were added in later decades, but by no means all that had been published. Dash has revised this policy, and the NCC is now excerpting from recently-published catalogues. Amongst the greatest troves of new manuscript descriptions now included in NCC are the multiple new volumes of the Rajasthan Oriental Research Institute (Jodhpur), the Sarasvati Bhavan Library (Varanasi), the Oriental Research Institute (Mysore), the Government Oriental Manuscripts Libary (Madras), the French Institute (Pondicherry), the Brindavan Research Institute (Brindavan) and the Oriental Research Institute and Manuscripts Library (Trivandrum). In spite of these huge additions, the hope for the future must be that the NCC will eventually be transmuted into a public online resource, with facilities for cooperative international collaboration.

The most comprehensive guide to published catalogues of Indian manuscripts presently available is the *Bibliographic Survey of Indian Manuscript Catalogues* by A. K. Biswas and M. K. Prajapati.[36] This covers 1087 catalogues of Indian manuscripts, but being over a decade old, it is already in need of updating. The Biswas and Prajapati *Survey* is modelled on the earlier *Annotated Bibliography of*

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35 Raghavan et al. 1949–.
36 Biswas / Prajapati 1998.

the Catalogues of Indian Manuscripts by Klaus Janert, that remains valuable for its accuracy, introduction on manuscript cataloguing, and its notes on collections.[37]

7 Manuscript description

From the pre-modern period, there survive numerous informal lists of manuscripts. These are commonly nothing more than hastily-scribbled lists of titles, often relating to a particular bundle of manuscripts that may or may not still be identifiable.[38] A more formal and famous manuscript listing is that of the great 17th-century *paṇḍit* Kavīndrācārya Sarasvatī, who lived during the reign of Emperor Akbar. Kavīndrācārya's catalogue has been published, but unfortunately his library was scattered, and the exact relationship between the list of titles and the manuscripts in his library is not fully known.[39] Kavīndrācārya (or his librarian) signed his manuscripts with a characteristic flourish, and several are identifiable today in libraries in India and abroad.[40]

The 19th-century cataloguers, following the 1868 government initiative, followed individual styles of manuscript description, which varied from raw listings of titles to more detailed catalogues that analysed the works in manuscripts down to the level of chapters of works, and gave thumbnail sketches of their contents.

In the years following Independence, the Indian Government convened a Sanskrit Commission, led by several of the most respected Sanskrit scholars of the day. The Commission took evidence during 1956–57, and published its *Report* in 1958.[41] This was a defining document for Sanskrit in India, addressing many issues that remain topical half a century later. Among other things, the *Report* published the general results of a tour that V. Raghavan had conducted in 1954, identifying Indian manuscript collections in India and abroad.[42] As a result of his engagement with Indian codicology, Raghavan produced a blueprint for manu-

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37 Janert 1965.

38 For example, Wellcome Indic MSS alpha 746 and alpha 1099 (Wujastyk 1985, 1998, vol. 2, 143–44).

39 Kavīndrācārya's catalogue was published by Sastry 1921 and has been discussed by Gode 1945. See also Gode 1946 and Gode 1940. Kavīndrācārya's life has been the subject of several studies, from Sharma 1935 onwards.

40 E.g., Wellcome MSS Indic beta 362, beta 509, and gamma 507 (Wujastyk 1985, 1998 vol.1, 84), all manuscripts on logic.

41 Government of India 1958. Transcribed at <http://www.education.nic.in/cd50years/u/45/Book45.htm> (consulted August 2011).

42 Raghavan often prepared rapid handlists of the less well-known collections he visited, and in many cases these handlists remain the only finding aids for those collections even today.

script cataloguing in India.[43] A government scheme was introduced by which any library producing a catalogue that adhered to the Raghavan blueprint would receive funding from central sources for the publication of the resulting catalogue. This scheme has led to the publication of many hundreds of catalogues of Indian manuscripts. In essence, the blueprint provides for entering information into what today would be called a spreadsheet, with columns for manuscript number, title, author, material, extent, and notes.

Predictably, Raghavan's influential scheme had virtues and failings. Amongst its virtues was that it provided a public reference for untrained cataloguers, it encouraged the rapid listing of very large collections, and it was coupled with a funded publication scheme. Its failings are more subtle. First, and most obviously, with roughly a single line across two pages for recording information, the blueprint sanctioned the widespread publication of minimal-level cataloguing. The resulting catalogues would more properly be termed handlists or accession-level cataloguing. Less obvious, however, was the promulgation of the idea that a manuscript equalled a work. In this view, a catalogue was a list of titles, rather than a list of physical objects. This idea has taken strong hold in Indian manuscript cataloguing, and has often been adopted as an unexamined assumption by cataloguers. Cataloguers of the great European libraries have moved decisively towards describing a manuscript as a physical object that is a carrier of written texts that are treated as analytical entries, an approach demonstrated, for example, in the exemplary catalogues of Neil R. Ker and Andrew G. Watson. This means that each leaf of a manuscript is examined in sequence for what it contains, and the contents are described following this physical sequence. The introduction and indexes of the catalogue are where a unified view of the literary contents of the individual manuscripts, and the collection as a whole, are presented.

By contrast, catalogues of Indian manuscripts normally present lists of works as if they were lists of manuscripts, silently asserting a false identity between work and manuscript. This leads to the elision of written materials that are not classical works as such, for example scribal comments, marginal glosses, ownership notes, multiple works, minor works attached to famous works, and so forth. To give one example, the *Bhagavad Gītā*, "The Song of the Lord," the most famous religious text of India, is routinely identified as such in manuscript catalogues. However, almost no manuscript actually contains the *Bhagavad Gītā* alone. The work is commonly preceded by a smaller introductory work called the *Bhagavad Gītā Mālā,* "The Garland of the Song of the Lord." What this text is, how if func-

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43 Raghavan 1963.

tions in relation to the main work, what it meant for pre-modern religious prayer and religious practice, and other text-historical questions cannot be asked if no catalogue recognises its existence.

Another drawback of Raghavan's blueprint is that it does not provide obvious space for incipits and explicits. Since pre-modern Indian literature is so vast, and still so under-studied, and because many works have similar titles, or exist in multiple recensions, an extract from the work can often be the only way of being sure what work one is seeing. Some cataloguers have realized this, and perhaps been influenced by the better "columnar" catalogues such as that of Peter Peterson.[44] These columnar catalogues include large appendices giving copious, essential extracts from the manuscripts. As a result, a useful compromise has sometimes been achieved. Works can be definitively identified, but the Raghavan blueprint is adhered to. Thus the catalogue still attracts publication funding.

Only a few cataloguing projects for Indian materials have brought together adequate funding and scholarly expertise. The descriptive work of Chandrabhāl Tripāṭhī on the Jaina manuscripts in Strasbourg stands out as an exemplary work from many points of view.[45] Tripāṭhī's "Introduction" to the work offers an excellent, concise treatise on many aspects of Indian manuscript studies, and the descriptive entries are a model of what can be achieved. The catalogues of David Pingree also stand out as models of the concise but detailed description of large collections.[46] Yet Pingree's catalogues are untypical because of their ability to depend so heavily on his literary-prosopographical *Census of the Exact Sciences in Sanskrit*.[47]

8 Future cataloguing

In the longer term, it is to be hoped that international cataloguing standards for manuscripts will spread, and influence work on Indian collections as elsewhere. Unfortunately, standards promoted by important bodies such as the American Library Association make not the least gesture towards the work of Indian manuscript cataloguing.[48] The work on manuscript description done in the context of the Text Encoding Initiative (TEI) shows promise for the Indian case, and TEI-

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44 Peterson 1892.
45 Tripāṭhī 1975.
46 E.g., Pingree 1984, Pingree 2003, Pingree 2004, and Pingree 2007.
47 Pingree 1970–1994.
48 Pass 2003.

encoded records may become the standard for exchange and internet publication in the future.[49]

In the rare cases when funding becomes available for Indian manuscript cataloguing today, it is common for a database to be considered as a first step towards gaining bibliographical control over the collection. Unfortunately, because of the absence at the present time of an obvious, free standard cataloguing tool, individual projects typically implement their own local solutions, and these are often naïve from the point of view of data analysis and data normalisation. In the present author's experience, only one software tool implements an adequate data design for manuscript work, the Philobiblon database currently maintained by the Bancroft Library, University of California.[50] This tool, originally designed for work with Spanish, Portuguese and Catalan manuscripts, has been applied to Indian manuscript description with great success, due to its deep analysis of the generic data structures involved in cataloguing and prosopography.[51] Critically, Philobiblon provides separate tables for people, manuscripts, and works, and enforces normalisation and relational links between multi-value fields in these tables.[52] However, Philobiblon's software implementation and other factors mean that it remains a niche product, more useful as a model of superb data analysis than as a tool for widespread use in the cataloguing community.[53]

A future collaborative, open access, web-based cataloguing tool for manuscript description and prosopography will, it is ardently to be hoped, one day bring bibliographical control of the vast resources of Indian manuscript material within reach.

9 Textual criticism and editorial technique

Pre-modern Indian scribes and commentators often showed an awareness that the manuscript record before them contained imperfections.[54] To take but one example, from Sanskrit medical literature, the commentators Gayadāsa (ca. 1000) and Ḍalhaṇa (ca. 12th century) note many variant readings that were in circula-

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49 The TEI Consortium 2010, chapter 10 "Manuscript description."

50 <http://bancroft.berkeley.edu/philobiblon/>, consulted August 2011.

51 Faulhaber 1991 provides an early description of the data model.

52 There are, in fact, a small number of further tables, including geographical locations, institutions, and some other key data elements.

53 Philobiblon is implemented in a Windows-based software environment called Advanced Revelation/Openinsight, that is a dialect of the Pick operating system.

54 Colas 2001 (cf. Colas 1999), Colas 2011.

tion for the *Suśrutasaṃhitā* or "Compendium of Suśruta," composed in the early centuries CE.[55] In parts of the text, they note that the manuscripts available to them had alternative readings to almost every verse. The variability of Suśruta's text was so obvious even a millennium ago that it spurred the creation of a work of medieval textual criticism, Candraṭa's *Suśrutapāṭhaśuddhi*, "Correction of the readings in Suśruta," probably written at about the turn of the 11th century.[56]

The canons of textual criticism and the historical awareness of text variation and stemmatics that slowly evolved from Isaac Casaubon (1559–1614) through Richard Bentley (1662–1742), Karl Lachmann (1793–1851), Paul Maas (1880–1964), Giorgio Pasquali (1885–1952) and many others, are equally applicable to the Indian case. The most famous critical edition of a Sanskrit text is that of the 19-volume *Mahābhārata*, edited by S. V. Sukthankar, S. K. Belvalkar, and others.[57] Sukthankar's "Prolegomena" to the edition introduced an Indian readership to text-critical methodology, and raised many of the special problems of editing Indian texts.[58] Many of these issues have continued to be discussed to the present day. The size of the manuscript record, however, can be daunting. Scholars of Indian philology and the cultural history of South Asia often lament the absence of critical editions of important texts, and the small numbers of scholars interested in undertaking critical editions. By and large, these fields are based on the study of 19th- and early 20th-century vulgate editions that were published in Bombay and Calcutta on the basis of a few locally available manuscripts and a policy of selecting "good" readings, with an uncritical attitude towards what constituted such readings.

However, there has been something of a revival of interest in textual criticism, stemmatics, and the creation of critical editions of Sanskrit and Prakrit works in the last two decades. Several admirable and theoretically interesting critical editions have been published,[59] and encouraging work continues in text-critical work and the discovery, description and analysis of manuscripts. The Nepalese-German Manuscript Cataloguing Project at the University of Hamburg is an exemplary project of this type.[60] The research into Indian manuscript stemmatics has

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55 These commentators' notes are available in the edition of Ācārya 1915. On Gayadāsa, see Meulenbeld 1999–2002, IA, 380–383; on Ḍalhaṇa, see ibid. 376–378.

56 Meulenbeld 1999–2002, IIA, 123.

57 Sukthankar et al. 1933–1959.

58 Sukthankar 1933. Katre 1941 was written at Sukthankar's request, as a development of his "Prolegomena."

59 Examples of exceptional interest from different points of view include Srinivasan 1967, Goodall / Isaacson 2003–, Olivelle / Olivelle 2005, Steinkellner 2007. Examples could easily be multiplied.

60 <http://www.uni-hamburg.de/ngmcp/index_e.html>, consulted in August 2011.

recently taken an interesting theoretical turn with the application of cladistic analysis software and the methods of evolutionary biology to Indian manuscript traditions.[61] Such approaches, which have been tried before in other contexts, are new to Indian philology. These methods offer the promise of analysing very large numbers of variant readings, and perhaps at last making tractable the pervasive problem of horizontal contamination.

In spite of these advances, which have mostly taken place at scholarly centres outside India, real progress in the recovery and deep understanding of the Indian literary heritage and the ocean of Indian manuscript sources that testify to it, will only come when Indian universities awake from their fascination with English, however valuable that may be, and begin teaching classical Indian languages on a wide scale, together with modern techniques of primary and secondary textual criticism. It remains to be seen whether this will happen before the Indian manuscript heritage has physically decayed beyond recovery.

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61 Maas 2009, Maas 2010.

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