

Projit Bihari Mukharji, *Doctoring Traditions: Ayurveda, Small Technologies, and Braided Sciences*

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Projit Mukharji has written an exuberant and unusual history of modern Ayurveda, or at least of an important and neglected part of it. But it's a part that renders it recognizable to modern practitioners and patients. Ayurveda has changed much more broadly, deeply, and spectacularly in the last two centuries than its doctrinaire apologists would admit or even know. The face and body of Ayurveda have changed markedly. What do we mean by this? In short, Mukharji asserts that what once defined the ayurvedic body was "cosmo-therapeutics," a paradigm that saw and analyzed the body as an entity that was coordinated through a fundamentally spiritual insight with an overarching cosmic purpose and nature. In the last two centuries, this viewpoint has shifted to a "physiogramatical therapeutics" that is much more human centered than ever before, which is to say it is more "anthropocentric." This has occurred through Ayurveda's

encounter with Western medicine and science in the nineteenth and early twentieth centuries. The *modus operandi* was the integration of “small technologies” such as the thermometer, the pocket watch, and the microscope. These small technologies had subtle but pervasive influences on the practice of Ayurveda. Thus, Western and Indian sciences were “braided” to create an entity so different from what was there in earlier eras that we might be justified in saying that modern Ayurveda is a very different entity from its earlier incarnation. Mukharji’s approach to the development of modern Ayurveda is, as suggested above, unique and original. More standard accounts focus on changes or updating of texts, from the earliest dates to the most recent, in Sanskrit (mostly) and regional languages (to a lesser extent, but notably in Malayalam, Tamil, Hindi, Bengali, and Marathi); on ayurvedic education in the late nineteenth and early twentieth centuries; on government commissions designed to standardize Ayurveda and bring it into line with the rigors of modern scientific research; with the characteristically modern reformulation of classical Ayurveda as increasingly embodying yoga and tantra; with attempts to popularize Ayurveda as a nationalist challenge; and with the variations in modern Ayurveda, including branding. Much of this requires extensive historical, textual, and social scientific theorizing. Mukharji’s approach, while employing all these tools, is radically different, as it tips the scales towards practices on the ground such as the adoption of non-indigenous “small technologies,” rather than treading the same linear paths, enumerated above, that others before him have taken.

“Pure” Ayurveda as it is constructed (and reconstructed) by normative-minded religious and political elites in India (and now the West) is limited to the system of Ayurveda described in the classical texts of Caraka, Sushruta, and Vagbhata (1 c.–5 c.). Although there was a great deal more than this at the time, much of it now lost. The problem with contemporary normativization of Ayurveda in both India and the West is that it denies, at least for the sake of formal presentation and export, that Ayurveda has undergone constant change for the last two millennia. This denial feebly and disingenuously attempts to present two-thousand-year-old Ayurveda as both “genuine” and necessary as a nationalist touchstone. What is obscured in this portrayal is that the history of Ayurveda, in both text and practice, was always more complicated, and that these complications, which in practice have proved to be irrepressible, expanded with the passing of centuries, millennia, and cultural contact with the world beyond South Asia.

A credible history of Ayurveda has yet to be written, although the raw material for much of its textuality can be found in Jan Meulenbeld’s monumental five-volume *A History of Indian Medical Literature*. Ayurveda was always influenced by medical practices beyond South Asia’s geographic boundaries, from the West (Greece and Persia) in the early periods (e.g., the introduction of the idea of humors or *dosas*), from China in pre-modern times (e.g., the introduction of pulse diagnosis in the sixteenth century), from Central Asia and the Middle East in Mughal times and beyond (e.g., the dramatic expansion of the ayurvedic pharmacopoeia), and from the British and elsewhere in the West since the seventeenth century. In this volume, Mukharji looks at some of these more recent developments, based on historical records from Bengal. By the terms “small technologies” and “braided sciences,” Mukharji is referring to technological borrowings from the West in the late Mughal and British periods that were subtly braided with local practices to alter Ayurveda in the most fundamental ways on a practical rather than theoretical level. Mukharji’s method, which is employed consistently in his substantive chapters (Chapters 2–6), is to identify a small technology, ex-

amine its appearance in a sampling of Bengali writers of the time, including scientists, historians, novelists, and others belonging to the rising Bengali intelligentsia, and address the historical and sociocultural processes that contributed to its acceptance and integration into ayurvedic practice in Bengal. The chapters are exuberantly titled, and the content is correspondingly exuberant, with each chapter consistently organized and deeply thought out.

Chapter 2, titled “The Clockwork Body: The Pocket Watch and Machinic Physiospiritualism,” describes how an increased (and borrowed) passion for numerical precision subverted the ayurvedic textual (and, indeed, practical) insistence on the validity of variance. The mechanism for this was the introduction of clocks with second hands, and soon enough pocket watches became ubiquitous in Bengali medical practice (and surely elsewhere in India). This led to the “mechanization and numeralization of the pulse” (83), which contributed to the decline of the subtle art of pulse diagnosis (which in now given no more than two weeks of attention in modern Ayurveda colleges), and set the tone for a new model of precision quite differently constructed from the older models. The other small technologies Mukharji discusses are thermometers and microscopes, but he also discusses intellectual technologies as well, such as a notion of the nervous system based on Tantric categories of *nāḍīs*, *cakras*, and *kunḍalinī* superimposed on the ayurvedic body in the late nineteenth and early twentieth centuries, and subsequent stumbling efforts to harmonize the ayurvedic body with the biomedical body.

Thus, Chapter 3 is titled, “The *Snayubik* Man: Reticulate Physiospiritualism and the Thermometer,” which refers to the Sanskrit term *snāyu*, which I will explain forthwith. Mukharji discusses the history of the thermometer in England and its appearance in India by 1870. Among the effects of the use of the thermometer is the introduction of the concept of “symptom,” of observable measurable “signs” that can be translated into “symptoms” (121–22). An example of this is that the ayurvedic notion of “heat” was translated into “fever.” The “*snayubik* man” of the chapter title engaged the reconceptualization of the Sanskrit *snāyu*, used in ayurvedic texts for ligaments, tendons, or other connective tissues, including nerves, which were seen as driven by heat or *pitta*, and, in turn, by electricity. Thus, electricity, while not exactly a small technology, was reimagined as the engine that drove the “*snayubik* man.” This never quite matched the Western notion of nerves, and, says Mukharji, amounted to “amorphous and mystic inscriptions of electricity’s tryst with nerves and the body” (152). *Snayubik* Man was, then, “an unlabeled human outline with numerous, imprecise channels drawn throughout the body, but lacking a brain” (152). Clearly, this is a medical system in transition. In the late nineteenth century, this was reflected in sections introduced into Ayurvedic instructional texts in Bengali that described the thermometer and its use; utilizing ayurvedic categories the thermometer and electricity were introduced into the ayurvedic corpus. I suspect this may also be seen in other regional ayurvedic texts, but this has yet to be investigated. One of the results of Mukharji’s book should be to spur related historical research elsewhere in India.

Chapter 4, titled “The Charioscuric Man: Visionaries, Demonic Germs, and the Microscope,” deals with the introduction of the microscope and its role in establishing germ theory as a part of Ayurveda. Mukharji discusses the figure of Surendranath Goswami, who spun out revisionist theories of ayurvedic etiology, including that categories of spirits (*bhūtaavidyā*) were identical with bacteriology (we find as recently as

the late twentieth century the equally questionable idea in the West that spirit possession was due to vitamin C deficiency), and that specific spirits or ghosts (*bhūta*) were vegetable and animal parasites. As eccentric as this might appear to us, such arguments were founded on rejections of “superstition” in favor of empiricism or rationalism, in other words on historical arguments that were at the time compelling. Mukharji does not address the point, but this is similar to rejection by the early canonical ayurvedic texts of the beginning of the first millennium C.E. of the medicine of the Atharvaveda. Similarly, one can cite the identification by Goswami’s contemporary, Dayananda Sarasvati, the founder of the Arya Samaj, of the Vedic Agni and Soma with hydrogen and oxygen; what appears ludicrous is grounded in compelling historical processes and in the excitement of new scientific models in the late nineteenth century.

Chapter 5, titled “The Endocrine-Chakric Machine: Hormonized Humors and Organotherapy,” shows, among other things, how humors were homologized with hormones and how the increasingly popular spiritualist paradigm of chakras and *kundalinī* (here written as *kundolini*), which were never mentioned in any Ayurvedic text, were introduced as an ayurvedic physiological model in the early twentieth century.

Chapter 6 is titled “Baidya-as-Technology: From Diagnosis to Pharmacy in a Bottle.” Here Mukharji argues “that the inseparability of the sociocultural and the therapeutic was engendered by the simple fact that the body of the Ayurvedic physician functioned as a technology in and of itself” (227). The concluding chapter is titled “The Pataphysics of Cosmo-Therapeutics: A Requiem.” One unique aspect of late nineteenth and early twentieth century Ayurveda that is addressed here is the rise and popularity of aural therapies. This has always been at the fringe of Ayurveda, beginning with mantra chanting for illnesses mentioned in the Atharvaveda and Kauśika Sūtra in the first millennium B.C.E., to devotional singing with alleged healing properties more recently. Mukharji cites, for example, “actual news reports of *nogor-kīrtans* [nagara-kīrtana] being organized during the plague epidemics of the late 1890s and early 1900s in Calcutta. These news reports were also backed up by a serious discussion in *daktari* circles about the possible positive effects of such *sonkirton*” (279). Such discussion, which was likely not unique to Bengal, continues to this day in both *daktari* and lay ayurvedic circles.

In sum, the material Mukharji presents reflects a shift in Ayurveda “from a cosmo-therapeutics to a physiogrammatic therapeutics” (283), from the anthropomorphic to the anthropocentric. “What I am arguing,” Mukharji says near the end, “is that the cosmo-therapeutics that was gradually overshadowed and exiled from modern Ayurveda was one that was deeply incommensurate with biopolitical regimes that formed the aspirational horizons of colonial governmentality” (284). All of this reflects a distinctly late nineteenth and early twentieth century medical and quasi-medical imaginary in which ideas that appear to us today as eccentric and scientifically superfluous served as the building blocks of medical science, in Ayurveda no less than in Western biomedicine (the former because of influence from the latter).

One facet of the book that needs to be addressed is Mukharji’s transliteration of Sanskrit and Hindi words. Usually, but unsystematically, he transliterates according to Bangla pronunciation, replacing the short *a* in Sanskrit or Hindi with *o*, and *v* with *b*. He admits in the preface that his deployment of this is inconsistent, but defends it by stating that this “will convey something of the actual historical tension that exists between pan-Indic Sanskritic heritage and its specific Bengali inflections” (x). Yet he

rarely identifies this tension; every region in India that has given rise to its own distinct vernacular ayurvedic literature and culture (e.g., Kerala, Gujarat, and Maharashtra, in addition to Bengal) reflects distinct developments and therefore tensions. But how is this tension so different in Bengal that it warrants an apparent randomness in transliteration, which is to say in the localization of classical ayurvedic textuality? For example, names are occasionally transliterated differently from the way modern authors identified themselves. The great polymath Gopinath Kaviraj, who everywhere used this spelling of his name, is identified by Mukharji only as Gopinath Kobiraj (267), but Gananath Sen is never Gononath Sen (51, *passim*). Both wrote in Bengali, Hindi, and English, but only Kaviraj's name apparently deserves respelling. Similarly, Sanskrit words are randomly respelled according to Bangla pronunciation, e.g., *prakṛti* becomes *prokṛiti* (although in Marathi we find it typically transliterated *prakṛuti*), *viśacikitsā* (toxicology) becomes *bishcikitsa* (277, Mukharji avoids identifying long and short vowels, different nasal *ns*, and so on, in his transliterations), speaks of *nirmanakaya* (not *nirmonokaya*, Skt. *nirmāṇakāya*) but resorts to *drobyo* and *shokti* (Skt. *dravya* and *śakti*, 135) and *ponchobhoutik* (Skt. *pañcabhautika*, 275). Similarly, names of Sanskrit texts should have been left in Sanskrit, e.g. *Śārṅgadharma-Sambhitā* (composed between 1210 and 1247 CE) becomes *Sarangadhar Sambhita* (239). Instances of such inconsistencies can be multiplied by at least a hundred. Essentially, what Mukharji avers here is that because he is himself Bengali and employs Bangla literature as source material, he is entitled to take himself as the exemplar and advocate for what he (inconsistently) does.

While it is clear throughout the book that he is working with material that is primarily Bengali, and that, I must say emphatically, is extremely illuminating, referencing the pan-Indian localization of ayurvedic tradition might have resulted in different and less eccentric literary practices. The book could have used a closer editorial reading, although this is clearly a quibble in what must have been a difficult task. For example (see the bibliography), *Well-Mannered Medicine* is by Dagmar Wujastyk, not Dominik Wujastyk, and Bruce Clark's *Energy Forms* is listed twice, and so on. Occasional infelicities occur (e.g., "most of his prescriptions continued to focus on the triangular focus of ..." [273]) in what is otherwise excellent and felicitous writing. This is perhaps dwelling on matters that are peripheral in a volume that is a veritable cornucopia of content (if occasionally frontloaded with jargon). In sum, Mukharji's use of medical literature, Bengali fiction, the realia of medical history (e.g., medicine bottles from the turn of the twentieth century, early thermometers, microscopes, etc.), stories recorded by doctors themselves (unique deployment of case studies) as part of a historical record, and recognition of the freedom that colonial era ayurvedic practitioners (*vaidya*, *baidya*) allowed themselves in order to improve their medical system as they saw fit, which resulted in the gains and losses that Mukharji documents so well, are what makes this volume indispensable for anyone interested in the development of Ayurveda in the nineteenth and twentieth centuries.

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