

European medicine in India from the sixteenth century

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The earliest contact between Indian and European practitioners of medicine came through the Spice Trade. There had been a demand in Europe for spices from the East since Roman times. The cargoes of spices always contained a high proportion of substances which were used medicinally. From the beginning of the sixteenth century traders from Europe set out to capture a share of this lucrative trade. The Portuguese were the first in India; by 1510 they were established on the west coast, with their capital at Goa. The Dutch followed in 1595, making the centre of their empire in the East Indies. The English East India Company set up its first trading post in India in 1608. With the success of the first English expeditions the import of drugs into England increased markedly: the proportion of drugs imported from outside Europe in 1588 was 14%, in 1621 48% and in 1669 70%, of which the majority had come from India and the East Indies.¹

From the seventh century AD Arabs trading along the west coast of India had brought about a considerable interchange of medical information. The Arab physicians of the tenth and eleventh centuries had a wide knowledge of Indian medicine, which they incorporated into their writings. These were translated into Latin in the thirteenth century and became the standard texts in Europe. In this way some Indian knowledge reached the West in the Middle Ages. But Indian medical works were written in Sanskrit, so that

¹R. S. Roberts, ‘The early history of the import of drugs into Britain’, in F. N. L. Poynter, *The evolution of pharmacy in Britain* (London: Pitman Medical, 1965), 165.

much of this remained unknown in Europe until the end of the eighteenth century, when the first translations into European language were made.²

From the ninth century there were Indian physicians at the Arab courts, and some of the features of Arab medicine began to filter back into India. This increased with the repeated Muslim invasions of India, which started in the eleventh century, and continued up to the establishment of the Moghul Empire by Babur in 1526. With the rising power of the Muslims their system of medicine, *yūnānī tibb*, began to compete with *āyurveda*, although there was little conflict between the Hindu and Muslim physicians; each would borrow from the other's pharmacopoeia when necessary. In spite of these interchanges *yūnānī* was the medicine of the ruling class, and came to be the main practice in the cities and in the palaces and courts of noblemen; *āyurveda* continued mainly in country districts and among the poor. This was the position of medicine in India when the European traders arrived at the beginning of the sixteenth century.

The Portuguese in India

In the first half of the sixteenth century little was known in Europe about tropical diseases. The first known European writer on the subject was Garcia d'Orta of Portugal, the most distinguished European physician in the East in the sixteenth century. His *Coloquios dos simples, e drogas he cousas medicinais da India . . .*, or 'Colloquies on the drugs of India,' printed in Goa in 1563, was the third book printed in India, the earliest on medicine in India, and the first European work on tropical medicine.³ There were relatively few European physicians in the country, and d'Orta's services were widely in demand. He had a large practice among the rich Indians, and here he came into consultation with the local physicians, from whom he always tried to learn as much as he could of their methods. At these consultations he encountered the same problems that European physicians and surgeons of other nations were later to record: even if an Indian might express a wish to be treated in the European way, his own physicians might oppose this. He might defer to them as the local customs were too strong, but he might also consult d'Orta in secret. Sometimes d'Orta would find it difficult to persuade his patient that his diagnosis and treatment were preferable to those of the local physicians; it was only to be expected that the local practitioners would have greater experience of local diseases.

²S. N. Sen, 'Scientific works in Sanskrit, translated into foreign languages and vice versa in the 18th and 19th century A.D.', *Indian Journal of History of Science*, vii (1972), 44.

³C. R. Boxer, *Two pioneers of tropical medicine: Garcia d'Orta and Nicolás Monardes* (London: Wellcome Historical Medical Library, 1963).

Among the prominent members of the Portuguese community there was much praise for Indian physicians, who acquired great prestige by their successful cures, and were granted special privileges. There was clearly a good deal of interchange of medical ideas: d'Orta acknowledged how much he had learned from the Indians by coming to know the Indian physicians well, and discussing clinical problems and drugs with them. He had tried out many of the Indian drugs on himself, and found great benefit from some of them. If he was uncertain about the action of any drug he took the advice of the Brahmins, and he was prepared to transfer his patients to the local practitioners if they were not recovering under his regime. The Indians were also quick to learn from the Portuguese: to be guided by the appearance of the urine, to bleed patients, and to use various European medicines.⁴ But by the beginning of the seventeenth century some of the Portuguese physicians were denouncing the Indian doctors as faith-healers, and in 1618 the municipal council of Goa made a decree that nobody could practise medicine or surgery without taking an examination by the Chief Physician and Surgeon. They also limited the number of Hindu practitioners to thirty. It seems that the licence to practise was for European medicine only.⁵

The Dutch in the East Indies

The English East India Company

For the first half of the seventeenth century the numbers of the English East India Company in India were relatively small. Their trading activities were concentrated on the coast, and they had little contact with people inland. Any contacts were superficial because of the language barrier. Their factories were often poorly manned and difficult to defend; they had to obtain the favour of the local rulers for trading facilities, and, at first, for protection. They had little experience of living and working in tropical conditions, and, at first, they brought their European habits with them: they continued to wear heavy uniforms and ceremonial dress, they insisted on eating huge meals of animal protein, and, a major problem for all time in India, they drank alcohol in even larger quantities than at home – not only from the impressive stores that they brought with them, but also various local brews, which were not only very potent but also toxic. It was soon recognised that

⁴D. V. S. Reddy, 'Medicine in India in the middle of the XVI century', *Bulletin of the History of Medicine*, viii (1940), 61.

⁵J. M. de Figueiredo, 'Ayurvedic medicine in Goa according to European sources in the sixteenth and seventeenth centuries', *Bulletin of the History of Medicine*, lviii (1984), 225.

these were all powerful factors in inducing and exacerbating tropical diseases, and comparisons were made with the lightly clad Hindu, who could carry heavy loads in the heat, who lived abstemiously on vegetables, and, in the higher castes, was forbidden alcohol. There were many exhortations to the Europeans to modify their habits, and there were frequent edicts, but with little effect. These warnings were reinforced by the chaplains who were impressed by the piety of the Hindus, and urged the men to copy their example.

The early traders faced formidable medical problems, and, at first, they were eager to learn anything they could from the local medical practitioners.⁶ The merchants' accounts recorded incidental medical details, but this was mostly at the level of folk medicine – the local remedies that were used for the local diseases – and the remedies that they had tried out on themselves and found effective. John Marshall, a factor in Bengal 1668–77, gave an accurate account of Hindu medicine which he had learned from local practitioners in Pattana. He was not a doctor, but a trader in an isolated post, and he seems to have had very little access to any European medical advice. He gave many examples of local prescriptions, often of multiple ingredients, as purges, and for the treatment of stone, snake and scorpion bites, fevers, wounds and bruises, toothache, colic, French pox, disorders of the guts, sore eyes, gout, worms, barbers, ague, dropsy and epilepsy. He had tried a number of these himself, and he noted which of them 'probate per J. M. to bee good'.⁷ Missionaries also brought about important medical contacts in the early days. They carried medicines, and they took the trouble to learn the local languages.

All the trading companies sent out surgeons with their expeditions, but they had little experience of tropical diseases, and they brought their European methods with them: heroic bleeding and purging, and the excessive use of mercury. Slowly they recognised that this treatment could only be survived by a full-blooded soldier newly arrived from home, and that it was very dangerous for the emaciated, yellowing merchant who had been any length of time in the tropics. When they began to treat Indians, they found that they also withstood this regime very poorly. The early trading posts were often short of surgeons, who died as often as their patients, and it took at least a year before a replacement could arrive from Europe. This shortage led to the employment of Indian physicians where necessary,

⁶K. K. Roy, 'Early relations between the British and Indian medical systems', in *Proceedings of the XXIII International Congress of the History of Medicine* (London: Wellcome Institute of the History of Medicine, 1974), i, 697.

⁷Shafaat Ahmad Khan (ed.), *John Marshall in India: notes and observations in Bengal, 1668–1672* (London: OUP, 1927).

and this became official policy for the English East India Company in the first half of the seventeenth century. The English authorities in India even went so far as to suggest that English surgeons might not be necessary, if local practitioners were available.

They were also short of European drugs, which were often lost or damaged on the voyage out, or decayed in the heat. They set out to learn as much as they could about local drugs from the Indian practitioners, and they studied the local plants for their medicinal properties. It became the policy of the English Company that Indian diseases were best treated by Indian methods. The budgets from the early times always included an allowance for 'country' medicines. Towards the end of the seventeenth century Company physicians and surgeons, such as John Fryer and Samuel Browne, began to make extensive collections of Indian medicinal plants, sending the plants and their seeds to James Petiver for his collection formed for the Royal Society.⁸

Faced with a continuing high mortality the Europeans noticed that Indians were relatively immune to some of the local diseases. This led to the policy of 'indianisation': the attempt to make the blood of the European more like that of the Indian, and so make him more resistant to Indian disease. This had been started by the Portuguese, by bleeding their men, and then feeding them exclusively on Indian food. The English at first copied this idea, but only starved their men, without bleeding, before filling them up with local food. But there were soon objections to this practice when it was found that Europeans were more resistant to injury than Indians, and that their wounds healed more quickly.⁹

The eighteenth century

By the end of the seventeenth century the English, with their greater sea-power, had defeated both the Portuguese and the Dutch. As they became more powerful their dependence on Indians and Indian medicine began to change. They had always found it hard to distinguish between trained *āyurvedic* and *yūnānī* physicians and the much larger numbers of practitioners of folk-medicine, regarding them all as part of one system. The dramatic and extravagant behaviour of the folk-practitioners played a part in the increasingly poor opinion of Indian medicine in general that developed towards the end of the seventeenth century. They were also puzzled by the Indian concern for the health of animals compared to their carelessness of

⁸J. Petiver, 'An account of some Indian plants', *Philosophical Transactions of the Royal Society of London*, xx (1698), 313.

⁹N. Chevers, 'Surgeons in India – past and present', *Calcutta Review*, xxiii (1854), 217.

human life, with the provision of hospitals for animals of all sorts, but none for humans. The travellers who reached India by sea landed in the area of Surat and Cambay, where the Jain religion was predominant, and they assumed that this pattern extended over the whole of India. With increasing experience of tropical diseases the English became increasingly scornful of Indian medicine. John Fryer, the most distinguished physician in the East India Company in the seventeenth century, was in India for nine years from 1673. In his account, published in 1698, he gave a description of Indian medicine, which he had learned from local practitioners, but he was very critical of what he regarded as their 'ignorance and malpractice'.¹⁰

In the eighteenth century the English (now the British) East India Company steadily increased its military and political power, defeating the French on land by 1762, and becoming the largest and most powerful trading company in the East. For the greater part of the eighteenth century most Europeans were contemptuous of Indian medicine and science. Indian medicine continued on traditional lines, and there was no longer any enthusiasm to learn from it. Contact with Indian physicians was now mainly at Courts of rulers and the houses of noblemen, who requested consultation with European practitioners, particularly when some surgical operation was required, for the Indians had no general surgeons at this time. The head of a princely house would have several physicians on his staff, *āyurvedic* and *yūnānī*, and often a number of European physicians and surgeons.

The wars with the French in India from 1740 led the Company to develop a regular army with a regular medical service. In 1764 the medical officers in Bengal were organised into the Bengal Medical Service, followed by similar arrangements in Madras and Bombay. This was the start of the Indian Medical Service, which continued until Independence in 1947. For its armies the Company began to recruit Indians, and Company surgeons became responsible for their health – the first time that Europeans had had direct medical care of Indians in any number. The first hospital, opened in Madras in 1664, was for Europeans only. The first hospital for Indians (for soldiers in the Company's service only) was not opened until 1760, and the first for Indian civilians in 1792. These civilian hospitals were often founded by individual Company surgeons.

There had always been unofficial training schemes for Indians employed with the Company's medical services. At first this was the work of individual surgeons, who would teach Indians the rudiments of nursing and

¹⁰John Fryer, *A new account of East India and Persia, being nine years' travels, 1672–1681*, edited . . . by William Crooke (London: Haklyut Society, 1909–15).

pharmaceutical techniques. They were mostly employed as nurses and dressers, and, later, as compounders of drugs. When trained, they were given responsibility for much of the day-to-day care of patients. There were many tributes to their skill and good service, particularly as nurses. After a period in a hospital, a competent dresser or compounder would be given a certificate of proficiency by the surgeon-in-charge, and his name would then be added to the payroll, and he became eligible for a pension on the same terms as other Company employees. With recruitment of increasing numbers of Indian troops it became necessary to employ Indian dressers for attachment to each native regiment. Most of the sepoys were high-caste Hindus, whose rules forbade them to accept food or drugs that had been handled by a European. Each native battalion, therefore, had one or more 'Black Doctors' (as they were officially called) to prepare and administer the drugs prescribed by the European medical officer.

The Enlightenment

Inoculation (with human material) against smallpox had long been practised in India. Holwell, in his account to the College of Physicians in 1767, said 'since time out of mind', and he commended the Indian technique and its success.¹¹ Lymph for vaccination (cow-pox) reached India in 1802. But there was considerable resistance. The people felt that if they were exempt from smallpox their cattle would get it. The higher castes and their families objected to any treatment from another caste, or, worse, from a European. Vigorous programmes were set up to train high-caste Indian vaccinators, and to start by convincing the chiefs and respected elders in the villages.

There was very little surgery practised by Indians at this time. Indian surgery, which had been so highly developed under Suśruta (c. 100 BC), had steadily declined since then, persisting in scattered families, handing down a particular craft from father to son, often in conditions of great secrecy. There were three of these operations in particular: cutting for stone, couching for cataract and grafting skin for deformities of the face. The technique of cutting for stone was the 'low lithotomy', also well known in Europe from the earliest times. The cataract operation was the one that had been described by Suśruta. In the early part of the nineteenth century Company surgeons regarded it as worth studying, with a view to training simple practitioners to carry out the procedure in areas where no European skills were available. The results could be very satisfactory, but there was a

¹¹J. Z. Holwell, *An account of the manner of Inoculating for the Small Pox in the East Indies* ... (London: Becket and De Hondt, 1767). Reproduced in *Indian science and technology in the eighteenth century: some contemporary European accounts*, edited by Dharampal, (Delhi: Impex India, 1971), 143–163.

high rate of complications, and the method was superseded by techniques introduced from Europe. In the third operation, skin grafting, the Indians showed great skill, and reports of their success, which reached Europe towards the end of the eighteenth century, were the starting point for the modern speciality of plastic surgery.

This renewed interest in Indian medicine was part of a general feeling that such an advanced state of Indian civilisation should not be interfered with. Europeans should leave it alone, but learn all they could from it. As part of this policy the East India Company set up, towards the end of the eighteenth century, colleges and medical schools for Indians to study the sciences, including medicine, in the vernaculars. Most of the teachers were from the Company's medical service. The course was for three years, with teaching in Sanskrit and Urdu, and clinical training at the general hospitals.

Westernisation

During the first half of the nineteenth century, however, the drive for 'westernisation,' both secular and religious, had been growing. The only course for India was thought to lie in abandoning Indian ways, and arranging for all education to be on western lines. This resulted in a complete reversal of the earlier liberal attitude of Europeans to Indian culture, including medicine. In 1833 the Grant Committee reported that the Indian medical colleges should be abolished, and all support for Indian medicine withdrawn. Only western medicine should be taught, and all teaching should be in English. This was reinforced by the adoption of English as the official language of India in 1835. Increasing numbers of medical schools were then set up on western lines, and in 1839 the first Indian students graduated from the new Calcutta medical school. These medical schools were designed primarily to turn out medical officers of subordinate grade for the army. The first Indian universities were founded in 1857, but there was relative neglect of the teaching of science, and Indians complained that there were very limited facilities for independent research.

After 1835 there was no official support for Indian medicine. There was some support by individuals, and small local schemes were set up to make use of Indian practitioners, when it was realised that theirs was the only medicine that could reach many of the villages. But these schemes carried no general or official support, and most Europeans became increasingly opposed to Indian medicine. Teaching of Indian medicine was now confined entirely within the family. The middle and richer classes of Indians came to make increasing demands for modern medicine.¹² The practitioners of

¹²William Campbell Maclean, *Diseases in tropical climates: lectures delivered at the Army*

Indian medicine were following the same lines as the classical authors of a thousand years before, but were responsible for the treatment of the greater part of the population, particularly in the rural areas. This treatment could be expensive, and although the poor might prefer Indian medicine they often had to accept free treatment and attendance from Europeans. Between 1912 and 1917 a number of Medical Acts set up Medical Councils in the various provinces, and laid down qualifications for registration of medical practitioners which excluded traditional physicians, and made it illegal for a registered practitioner to be associated with Indian medicine.¹³

The establishment of Indian medicine

But from 1920 increasing Indian nationalism began to carry Indian medicine with it. The Government of Madras set up the first Committee on Indigenous Systems of Medicine in 1923. In 1944 the Bhore Committee – the Health Survey and Development Committee – was set up to look at the future of the health services. Its recommendations, in 1946, only dealt with modern medicine. But support for Indian medicine had been steadily increasing, and the Bhore report was widely criticised. As a result of this, the Committee on Indigenous Systems of Medicine (under Col. Sir R. N. Chopra) was set up, reporting in 1948. It urged support for Indian medicine and its integration with western medicine, particularly to teach the student those aspects of western medicine that were not part of Indian medicine. The committee was asked to go further and consider the synthesis of all the medical systems of India. They concluded that such a synthesis would not be easy, and would be time-consuming, but that it was not only possible, but practicable and essential. In 1969 the Central Council for Research in Indian Medicine and Homeopathy was established with particular responsibility for the evaluation and standardisation of traditional drugs. In 1971 the Central Council of Indian Medicine was set up to regulate the standards of education and to control practice in the traditional systems. Since then the various systems of Indian medicine – *āyurveda* and *siddha*, *yūnānī*, homeopathy, yoga and naturopathy – have had official support, with Central Government and local State funds, in parallel with modern (European) medicine.

Medical School (London: Macmillan, 1886).

¹³Patrick Hehir, *The medical profession in India* (London: Oxford Medical Publishers, 1923).