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SOME DESCRIPTIONS OF LEPROSY IN THE ANCIENT MEDICAL LITERATURE OF CEYLON*

INTRODUCTION

A number of sailing ships under the command of Don Lourenco de Almeida sought sanctuary in a little bay on the west coast of Ceylon on 15 November 1505, having been blown off course while on their way to the Maldivé Islands. This little bay was destined to be the modern Colombo harbour, and the chance arrival of the Portuguese in Ceylon in 1505 was to change the course of the island's history as few events have done before, or since.

The population of Ceylon at that time consisted of the Sinhalese, a minority of Tamils who occupied the Jaffna Peninsula in the north, and a largely 'floating' population of Arabs who were there chiefly for purposes of trade. They were not unused to such visitations from foreigners. In fact, the Greeks, Romans, Persians, Chinese and Arabs had all been there at one time or another, and had traded with them or just enjoyed their hospitality. But perhaps unsuspected by the friendly Ceylonese, the Portuguese had quite different ideas. They quickly perceived that the Sinhalese kingdom at Kotte, about six miles away from Colombo, was weak, mainly as a result of dynastic conflicts. By a judicious mixture of cunning and unspeakable acts of terror they took over the control of Colombo, built a fortress there in 1519 and proceeded to extend their area of power over most of the western coastal belt of the island and the Jaffna Peninsula. They also took over, almost entirely, the island's export trade having persecuted the Arabs who were their principal rivals in this field ruthlessly and systematically.

In 1658, the Dutch overpowered and expelled the Portuguese, and replaced them as controllers of the trade and the rulers of these areas of the island. However, neither the Portuguese nor the Dutch were able to capture the Kandyan kingdom in the central province of Ceylon, in spite of several punitive expeditions to the interior, many of which ended in disastrous massacres of the invading parties.

Meanwhile, the British had been casting side-long glances at Ceylon from their outposts in India for some time, and indeed made some overtures to the King of

*After this article had been accepted for publication, Ceylon became a Republic under the name of Sri Lanka.

Kandy in the latter part of the eighteenth century. At last, in 1795, they took the superb natural harbour at Trincomalee on the eastern coast of Ceylon after an alliance with the then King of Kandy, Sri Wickrema Rājasingha. Subsequently, they expelled the Dutch from the island, and were also successful in capturing the Kandyan kingdom in 1815—a task which was made considerably easier for them by the treachery of certain Kandyan chiefs. Ceylon remained a British Crown Colony until she got her independence on 4 February 1948.

Thus the conquest of some maritime areas of the island by the Portuguese in the early part of the sixteenth century was the beginning of over 400 years of subjugation of the spirit of a people who had a recorded history, an architecture, advanced irrigation systems and a civilization dating back to over 200 B.C. To be sure, their ancient history had had its periods of turbulence. It was regularly punctuated by plundering invasions from the Chola and Pandyan Empires of South India. Dynastic disagreements had often led to serious internecine warfare, and they had had their share of famine and pestilence. But no foreign power had been able to crush them as effectively as the Portuguese did.

These brief historical notes, especially the sequence in which the European powers colonized the island, are relevant to the following discussion, which is an attempt to investigate the history of leprosy in Ceylon before 1505.

LEPROSY DURING THE DUTCH AND PORTUGUESE TIMES

This is an extension of the earlier studies made regarding the history of leprosy in Ceylon during the Dutch Period, from 1658 to 1796 (Goonaratna, 1971). The Dutch kept careful records of their administration and most of these are extant either in the Ceylon National Archives (Pakeman, 1964; Goonaratna, 1971) or at Amsterdam (Arasaratnam, 1958; Goonewardena, 1958). Besides, the British government not only ensured their safe preservation, but also had several of the records in Ceylon—notably the memoirs and diaries of the Dutch Governors of Ceylon—translated into English. For these reasons one is able to find clear evidence that leprosy had been prevalent for some time among the Portuguese and native inhabitants of Ceylon, and was causing concern to the Dutch administration from about 1685. The available evidence indicates that leprosy had been prevalent in the island before their arrival (Goonaratna, 1971).

In contrast to the Dutch period, a striking feature of the Portuguese period (1505–1658) is the remarkable paucity of records relating to their administration of Ceylon. Presumably, this is because they destroyed most of their records before surrendering to the Dutch (Pakeman, 1964). Although there are some contemporary histories of the Portuguese period, like for example, the one written by the Jesuit priest Father Queyroz, entitled *The Temporal and Spiritual Conquest of Ceylon*, they do not provide useful information about leprosy in the island during this period. But if it can be established that leprosy was prevalent in Ceylon before the advent of the Portuguese in the island, it would be reasonable to assume that the disease was prevalent during the Portuguese period too, because we know that it certainly was during the Dutch period. Therefore one is tempted, perhaps a little too readily, to look for clues about leprosy in the pre-Portuguese times.

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NOMENCLATURE

One of the several pitfalls that await the investigator into matters of the distant past, is that the meanings of words change with the passage of time. Sometimes the changes are not gross and involve only the finer nuances of meaning, which however may be crucial to the investigator. The word 'leprosy' is a good example of such a word. In an account which traces the origin of this word, Lt.-Gen. Sir William MacArthur (1953) makes this point very forcefully as follows:

No one would dream of writing seriously about Shakespeare's plays without having made a preliminary study of Elizabethan English and the changes in meaning which the words have undergone since the poet's day. He would know for example, that 'comply' meant compliment; 'curious' meant full of care; . . . and 'harlot' might mean a cheat. Yet many persons gaily take up their pens and write on the history of this disease in the mistaken assumption that the words 'leper' and 'leprosy' and their equivalents, then meant just what they do in the usage today.

For example, today the English word 'leper' means a person afflicted with the disease of leprosy. But originally, 'leper' signified the disease itself. It appears that, common to several Aryan languages, there were a number of related words which meant basically, 'something that peels off'. For this reason some of these words were used to indicate the bark of trees. But the bark of trees came to be used for writing on, and the Latin form of this word common to many Aryan languages, *liber* came to mean a book. The English word leper came to mean the disease which we refer to as leprosy today, because it is often associated with peeling off of the skin. So the words library and leprosy apparently share a common origin (MacArthur, 1953). Again, the Greek word *leprós* meant scaly and was used to describe exfoliative conditions like psoriasis. The word they used for leprosy was elephantiasis, doubtless because of the thickening and corrugation of the skin often produced by the disease.

Equally, an examination of the ancient literature of Ceylon for information about leprosy is likely to be meaningful only after nomenclature has been clarified. The Sinhala¹ word for leprosy in current use is *lāthuru*, whereas the corresponding Tamil word is *kushtha*. It might be thought that this dichotomy is merely a reflection of the different origins of these two languages,² and the cultural, social and linguistic factors which continue to separate these two communities even up to the present time, although they have lived side by side in Ceylon for over 2000 years.³

¹ Sinhala. The correct term for the language of the Sinhalese is Sinhala. Many authors use the word Sinhalese loosely to mean both the people and their language.

² Although the subject remains a controversial one, most authorities are of the view that Sinhala is an Aryan language related to the ancient Indian languages like Pali and Sanskrit, and the modern ones like Bengali and Hindi (Ariyapala, 1956). Tamil is a Dravidian language having close links with modern languages like Telugu and Malayalam, and is very different from Sinhala, although of course, certain words are now common to both languages because of the juxtaposition of the two communities over several centuries.

³ One important contributory factor to these unhappy divisions is the primeval fear that appears to lurk in the sub-conscious mind of the majority Sinhalese community, that they will be 'swallowed up' by the neighbouring sub-continent of India. Such fears are not without basis in fact. Invasions of Ceylon by the Pandya and Chola Empires of South India were regular occurrences before the arrival of the Portuguese in 1505. Even as recently as 1945 the late Pandit Nehru has gone on record as having suggested that Ceylon would be 'well advised to consider carefully becoming one of the States of India'—a suggestion he later withdrew (Pakeman, 1964).

An imaginative and masterly analysis of the historical perspectives of this problem is given by Ludowyck (1962). The interested reader is referred to this work, and the accounts given by Mendis (1943) and Farmer (1963).

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That this is not the true explanation for the difference between the current Sinhala and Tamil words for leprosy is evident at once by an inspection of the ancient medical literature of the Sinhalese. In these works, the word always used for leprosy is *kushtha*, which of course is identical with the current Tamil word for the disease. *Kushtha* or a closely similar phonetic variation meaning leprosy is common to several languages or dialects, like for example Sanskrit, Pali, Prakrit, Hindi, Marathi, Bengali, Assamese, Magadha, Tamil and Malayalam.

How then did the word *lāthuru* come to be the current Sinhala word for leprosy? It is derived from the Portuguese word *lāzaro*, meaning leper. The word *lāthuru*, and an intermediate form *lāsuru* can be seen in the Sinhalese literature from the nineteenth century, and were in colloquial use from the early eighteenth century.

The ancient medical works of Ceylon were, to a very large extent, influenced by the medical literature of ancient India which were written mostly in Sanskrit, and date from the time of Susruta and Charaka. It might be in order, therefore, to examine first some of the references to leprosy by Susruta and Charaka, and then turn to the ancient medical literature of Ceylon. The consensus is that Susruta, the famous surgeon, lived about the fifth century B.C. at Benāres, and that Charaka who lived around the first or second century A.D. was the chief physician to King Kaniska. It was Charaka who set down in writing many of the teachings of Atreya who is perhaps the earliest physician mentioned in Indian literature. Atreya is thought to have been connected with either the University of Taxilā or the University of Benāres, which were the seats of learning during the time of Lord Buddha (563–483 B.C.).

One of the numerous meanings of the Sanskrit word *carma* is skin, hide or leather. Hence we have *carma vādya*, a skin instrument like the drum; *carma vana*, a skin disease; *carma sāra*, skin essence, lymph or serum; *carma hantri*, skin destroying; *carmavakārtin*, a leather-cutter, and so on. Charaka, used the words *carma dāla* to mean a 'mild form of leprosy'. Susruta used the words *carma dhūsikā* to indicate a form of leprosy with red cutaneous patches, probably a reference to the reddish macules of lepromatous leprosy or to what is recognized today as erythema nodosum leprosum. Although at first sight the word '*carma*' appears to be a departure from the common word which gave rise to the words leper, leprosy, library, *liber*, *leprós* and so on, it is interesting to note that the words '*carma drūma*' in Sanskrit meant 'parchment-tree', the bark of which was used for writing on.

The Sanskrit word which was more frequently used to denote leprosy is *kushtha*. Susruta used this word, and recognized no less than eighteen types of the disease. *Kushtha rōga* meant the disease called leprosy; *kushtha cikisitā*, the cure of leprosy; *kushtha nāsana and nāsini*, curing leprosy; *kushthānvita*, afflicted with leprosy; *kushthānga*, having leprosy limbs; and *kushtha sudana*, subduing leprosy. The word *kushtha*, like the word *carma*, seems to bear little relationship to words like leper and *liber*. But the common thread that runs through the words used to indicate 'peeling off' and the 'bark of trees' in several Aryan languages appears to be there, though rather tenuous. For, *kushtha gandhi* was the Sanskrit term for the fragrant bark of the elephant-tree *Feronia elephantum*.⁴

⁴ *Feronia elephantum*, commonly referred to as the elephant-tree (Hooker, 1875) or the wood-apple tree, is common in many parts of India and Ceylon, and its fruit is a favourite article of the diet of elephants.

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MEDICAL WORKS OF ANCIENT CEYLON

Several medical works of ancient Ceylon are still extant. Perhaps the earliest of these is the *Sarārtha Sangrahava* compiled, according to the *Mahawamsa*,⁵ which eulogizes him as a great patron of medicine, by King Buddhādāsa in the fifth century A.D. Other important works include the *Yogārnava* and *Bhēsajja Manjusāva* dating to the twelfth and thirteenth centuries respectively—periods of abundance and prosperity, when learning, medical science and the arts flourished in the land. Less important medical works include *Prayōgaratnāvaliya* (thirteenth century), *Vidyacintāmani* (probably fifteenth century) and the *Yogaratnākara* (seventeenth century)—the last being a Sinhala version of the *Yogārnava*.

There are references to leprosy in all these works. But only those references to leprosy as are to be found in the *Bhēsajja Manjusāva* and *Yogārnava* will be discussed, because these two works are typical of the medical works of ancient Ceylon and show clearly the influence of Indian medical traditions.

The *Bhēsajja Manjusāva* is a Pali compilation made during the time of King Kālikala Sarvagna Pandita Parākrama Bāhu by an erudite Bhikku⁶ who is described as Paspiruvanmūla (principal of five pirivenas⁷). It was completed about the twelfth century A.D. and was chiefly meant for the use of the Buddhist clergy. Accordingly, there are no references in the *Bhēsajja Manjusāva* to diseases of women or children; nor are there any references in it to charms and incantations. These subjects were considered to be unsuitable for Bhikkus to learn or practise. All these subjects are dealt with however, in the *Yogārnava* (see below). Copies of the *Bhēsajja Manjusāva* are current in several predominantly Buddhist countries like Cambodia, Siam and Burma. Perhaps the oldest copy extant in Ceylon today is the Sinhala translation made by the Bhikku Velivita Saranankara. Velivita Saranankara was invited to undertake this task by the seventeenth-century King Narēndra Singha at the garden city of Kundasale, near Kandy. Of the literary works of ancient Ceylon *Bhēsajja Manjusāva* holds an important place, and among the medical works it occupies a position of pre-eminence.

The *Yogārnava* was compiled by a Bhikku named Buddhaputra around the year A.D. 1273. He compiled it at Vāgīrigala at the invitation of King Sirisangabō Buvaneka Bāhu I. Buddhaputra has to his credit another medical work, namely *Prayōgaratnāvaliya*, and the *Pōōjāvaliya*, which is a religious work. The breadth of his learning and his remarkable ability to give word-pictures of the royalty, clergy, social customs, cultural patterns, and contemporary life in general are apparent from the *Pōōjāvaliya*, which was his first creation. His subsequent works, *Yogārnava* and *Prayōgaratnāvaliya*, established beyond doubt his great scholarship and familiarity with the Indian medical literature. At the time of writing *Yogārnava* Bhikku Buddhaputra was the Principal of the Mayurapāda Pirivena which had been established by King Buddhādāsa (A.D. 362–409) at Anuradhapura, the capital of the Sinhalese Kings during this period.

⁵ *Mahawamsa* may be translated as the 'Great Chronicle' and is a record of the ancient history of Ceylon (see Geiger, 1950) originally written in verse by a Buddhist monk.

⁶ Bhikku. This word is perhaps best translated as 'a Buddhist monk'.

⁷ Pirivenas were the ancient seats of learning in Ceylon. They were run by Bhikkus who handed down their knowledge mainly by word of mouth in Pali or Sanskrit which were the learned languages of the time (Rahula, 1956).

REFERENCES TO LEPROSY IN THE YOGĀRNAVAYA AND BHĒSAJJA MANJUSĀVA

In the *Yogārnava* one chapter is devoted to *kushtha cikisitā* (the cure of leprosy). *Kushtha* is classified into eighteen types of which ten are severe and very difficult to treat, the other eight being amenable to treatment. Susruta classified *kushtha* in an identical manner. Further examination of the details of nomenclature of the eighteen varieties, the descriptions of each variety and the comments about the aetiology of *kushtha* clearly shows that the descriptions of leprosy in *Yogārnava* are almost identical with those of Susruta.

The aetiological factors mentioned include stealing from, or insulting, or perpetrating other acts of cruelty against the Gods, Brahmins, the clergy, hermits, men and women and even animals, and bringing about enmity between friends. Those who have committed such acts in their previous births, and have therefore to suffer for them in this birth are also mentioned as being predisposed to *kushtha*. The suggestion is made that these factors ultimately act by disturbing the three humours. It would be tedious to name all the types of leprosy described in *Yogārnava* and explain why each has been so named. However, some of the types of *kushtha* described which are relevant to this discussion will be examined.

For example, one type 'which is white like the conch-shell' has been termed *svēta-kushtha*, or the white *kushtha*. *Kākana kushtha* is the type characterized by reddish patches with a dark centre; *gajacarma* (elephant-skin) *kushtha* by resemblance of the skin to that of an elephant; *sathāru kushtha* by multiple ulcerations; *ēkasamātha kushthā* by deformities of the limbs, and so on. Other types too are described, but most of them are rather non-specific descriptions of cutaneous lesions. Even the features of the types mentioned above may be too readily dismissed as being non-specific if each type is considered separately. But the reader will agree that when taken together as features of one disease, a pattern emerges which resembles leprosy to a considerable extent—whitish skin discoloration, reddish macules, elephantiasis of the skin, multiple ulceration and deformities of the limbs.

The pertinent section of the *Bhēsajja Manjusāva* is one devoted to *kushtha rōga*. The aetiological factors are almost identical with those given in the *Yogārnava*. But the descriptions of the cutaneous lesions and the other features of leprosy are more detailed and accurate. The skin lesions described included hypopigmented and reddish macules, whitish lesions with a pebbly edge and elephantiasis.

What is particularly striking here is that an association appears to have been clearly established between the cutaneous lesions on the one hand and certain neurological lesions of leprosy on the other. For instance, clear and unequivocal reference is made to painless ulceration of the palms and soles of the feet, frequent infestation of these ulcers with maggots, and disorganization of the joints and weakness and deformities of the limbs, which together produce weakness of gait. The description goes further to state that some forms of *kushtha* may 'involve the bones and bone marrow and in such cases the nose may appear as if it is broken. There is reddening of the eyes. The voice becomes hoarse or faint . . . and in that form of *kushtha* which involves the seminal fluid, spread of the disease to the spouse and children of the patient may occur'.

The recognition that bone involvement could occur in leprosy, that the depressed nose is the result of lesions of the nasal bones and that ocular and laryngeal involvement

may also occur, point to a high degree of observational skill. The tendency of the disease to run in families was noted, but wrongly attributed to spread by way of seminal fluid. Anyone familiar with the views that have been held regarding leprosy in the past will recognize this as a common error. In fact, the belief that leprosy could be transmitted congenitally was held late into the nineteenth century, and debated well into the twentieth by authorities in the 'western systems' of medicine. What is more significant is that the composite picture drawn consisting of various skin lesions, ulcerations, deformities, ocular, nasal and laryngeal involvement and the familial tendency—is sufficiently characteristic to allow the conclusion that the author of this work was quite familiar with some of the diverse manifestations of leprosy.

Lest I be misunderstood, it is necessary to make one point clear. It is not suggested here that the author of *Bhēsajja Manjusāva* recognized, or even remotely suspected the neurotrophic aetiology of features like ulceration of the palms and soles which he described. Nor it is suggested, that features like muscular weakness or deformities of the limbs were recognized as being the sequelae of nerve involvement. There is no evidence whatever to justify such conclusions. That the skin manifestations of leprosy, and some of the lesions which we recognize today as being trophic changes and neurological deficits were identified by association as being part of one disease process, however, could scarcely be in doubt.

WAS LEPROSY PREVALENT IN ANCIENT CEYLON?

Now that some references to *kushtha* in the medical works of ancient Ceylon have been examined, the question whether leprosy was prevalent at all in Ceylon at that time may be considered.

A consideration of the descriptions of *kushtha* would leave little room for doubt that these authors were indeed describing leprosy. In particular, the association made between skin lesions of the disease and its neurological and trophic lesions has already been emphasized. All the same, factors other than the accuracy of the references to leprosy in these medical works need to be examined in a little more detail.

For instance, it may be argued that leprosy was notoriously liable to wrong diagnosis in the past. On the one hand, in the early stages, its skin manifestations may be so slight as to go undetected, particularly in dark-skinned people. On the other hand, various skin diseases like leucoderma, psoriasis, elephantiasis, fungal infections and scabies have been mistakenly diagnosed as leprosy time and time again. Down the ages the maculous state in a human being has evoked strong emotions in his fellows, at least partly because of the association between such states and those terrible scourges of history associated with skin lesions, such as smallpox, leprosy and syphilis. It is not surprising that under these circumstances leprosy would have been a trifle too readily diagnosed, and the hapless victims too hastily ostracized. Whilst freely conceding that leprosy must have frequently gone undiagnosed in the past, and that other skin diseases must have been wrongly diagnosed as leprosy equally often, it must be pointed out that if all, or even most of the features of *kushtha* as described in *Yogāranavaya* or *Bhēsajja Manjusāva* were seen in one patient, he would almost certainly be suffering from leprosy.

Also, it is hardly conceivable that the authors of these works would have devoted

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extensive chapters in their treatises to the description of features of a disease that was non-existent in the island. It seems reasonable to conclude then, that leprosy was prevalent in Ceylon for several centuries before the arrival of the Portuguese in the island, and probably has, in Ceylon, a history as ancient as it has in India.

The beautiful osteoarchaeological work of Møller-Christensen and his colleagues has shown, among other fascinating things, accurate ways of diagnosing leprosy from very old skeletal remains (Møller-Christensen, 1967; and Andersen, 1969). Unfortunately, it is very unlikely that such techniques could be applied in the present context, for two main reasons. Firstly, although the tradition of healing the sick and the establishment of hospitals goes back at least to the reign of King Buddhadasa (A.D. 362–409), there is no record of special leprosaria in Ceylon until the Dutch constructed one at Hendala in 1708 (Goonaratna, 1970). Secondly, disposal of the dead among Buddhists and Hindus was by cremation and not burial. Accordingly, archaeological work has not unearthed a single burial ground in Ceylon traceable to these times. Indeed, if any human remains showing signs of leprosy and dating so far back should be discovered in Ceylon in the future, it would be a remarkably fortuitous circumstance.

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