

THE ERADICATION OF YAWS – and its unsung hero

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Yaws or 'puru' is a skin ulcer that occurs mainly in the hot wet regions of the earth. The bacteria that causes it is indistinguishable in shape and size from the syphilis bacteria, but it is transmitted by skin contact. It was said that of the many diseases prevalent in the Malay states early in the twentieth century, none was of more concern and importance to the Malays than 'puru'. Although not fatal it caused much discomfort and distress.

While stationed in Kuala Kangsar in 1919, Dr A Viswalingam visited Upper Perak and observed several cases of yaws. His opportunity came when he met the District Officer, Raja Abdul Aziz who was himself affected, in his hand. Realising the causative organism of yaws was almost identical with syphilis, Dr Viswalingam 'ventured to use Neosalvarsan to treat it'. He offered to treat the Raja with the injection but he was reluctant. Dato Yahaya, the Penghulu of Lenggong who was accompanying the Raja, remembered a female relative staying with him who had extensive lesions of yaws. She was anxious to be cured and availed herself for the injection.

On his subsequent visit a month later, Dr Viswanathan said, he found almost the whole village crowded at the Penghulu's house. 'It appeared' he said 'that within the first day or two after the injection, the lesions' (of his patient) 'dried up and within the next three to four days the scabs dropped off'. Almost the whole crowd had some manifestation of yaws and desired to undergo treatment. Dr Viswalingam then 'undertook an investigation of all the aspects of yaws, ascertaining its incidence by means of a census, and launched a systemic campaign to eradicate the disease'. In about 3 months he treated over 5,000 patients. His report received little notice by the Medical Department, but George Maxwell the Perak Resident took notice and succeeded in helping him mount a systematic campaign for the eradication of yaws in the Federated Malay States. On account of his sterling work in Kuala Kangsar the District Officer recommended that Dr Viswalingam should be made the deputy chairman of the Sanitary Board. However, Dr Dowden, the acting Senior Medical Officer of Perak vehemently opposed this, and as a result Dr Viswalingam was transferred to Kuala Pilah in 1920 notwithstanding protests from the Sultan of Perak.

However, over 9 years from 1921, about 13,000 to 31,000 cases of yaws were treated with Novarsenobillon each year¹. Although it reduced the prevalence greatly it was limited to

the four Federated Malay States and hence did not manage to eradicate the disease, as there was a reservoir of the disease in the Unfederated States. As a result, the Post-War period saw a marked recrudescence of the disease.

With the lapse of the yaws campaign and the setback of the Second World War, yaws emerged again as a prevalent disease among rural Malays after the war. Dr MacGregor, the Director of Medical Services, remarked that in some parts of the country, particularly in the East Coast, almost every child was affected. Dr Viswanathan was briefly involved. He was then an ophthalmologist and was called upon to attend to the Chief Minister of Terengganu who had an eye problem. When flown there for the visit he observed to his horror that yaws was still almost universally prevalent among the rural population. On his return to Kuala Lumpur he brought the matter up with the British Military Authorities.



Fig. 1: Arumugam Viswalingam.

The introduction of procaine penicillin dramatically changed the prospects of yaws eradication. It made only one injection necessary. Built upon this discovery, between 1954 and 1963 the Malayan Government with the assistance of the WHO and UNICEF carried out the Yaws Elimination Campaign². It started in Kelantan and Terengganu where the prevalence was greatest and was subsequently extended to other endemic states including Pahang, Kedah and Perak.

The campaign consisted of (i) mass treatment of open cases, latent cases and contacts and (ii) a consolidation stage of repeat surveys and treatment. Initial studies showed that the districts of Besut in Terengganu and Pasir Putih in Kelantan were the most affected areas, about 20% of the population had yaws. At the peak, a total of 104,202 cases were treated in 1948. That number declined to 43,822 cases in 1953. Repeat surveys in 1962 and 1963 showed incidence rates had dropped to less than 0.5% in all areas.

Yaws was also prevalent in Sarawak. In 1947, 15,136 cases were diagnosed and treated with arsenical drugs. When penicillin was introduced, a mass campaign to eradicate the disease completely was launched in 1954. The incidence was high especially along the Tinjar River. By 1959, it could be reported that yaws was no longer a problem. Yaws was also common in the interior of Sabah and measures were carried out to eradicate it following the success of similar campaigns in Malaya and Sarawak.

Dr Arumugam Viswalingam³ (1890-1985)

A Viswalingam was born into a family that had resided for generations in the village of Urelu in Northern Sri Lanka. He was the oldest of seven children. At the age of 5 he was admitted to the village Christian Mission school and completed his schooling at the Canderodia English Institute in Jafna, passing the Cambridge school certificate in 1906. With a spirit of adventure he got his parents' consent to visit Singapore in 1907. There he decided to take up the study of medicine and was successful in the competitive examination to select applicants in 1909. He obtained a scholarship of \$15 per month and applied for a supplementary \$15 which was increased by \$5 annually but bound him to serve the government for 10 years.

Dr Viswalingam won several prizes as an undergraduate and was the only one out of his batch of 23 who passed all the examinations in the first instance, and one of 6 to graduate within the prescribed period of 5 years. In 1913 he was posted to Perak and for 4 months was Assistant Surgeon at the Tapah District Hospital. There he caught malaria, despite active treatment. After that he was transferred to Taiping the state capital to help maintain discipline in the school for hospital assistants and nurses. The First World War broke out the next year and the Medical Officer left for England and Viswalingam was left to 'cover his duties'.

In 1917 he recognized the first case of pallegra in Malaya and wrote a report that was published in the *Journal of Tropical Medicine and Hygiene*, London. He had more similar cases, all Chinese, and he treated them successfully with vitamin B complex on the advice of Dr AT Stanton of the IMR. The

cause of pallegra had not yet been determined but these events were hot on the heels of discoveries about beri-beri.

Dr Viswalingam was on furlough in Sri Lanka in 1918 when the influenza pandemic of 1918 struck and Dr Kanagaratnam who was at his post in Taiping succumbed to the disease. On his return he was posted to Ipoh briefly then to Kuala Kangsar. There he records he had a record number of 'rare surgical cases' performing gastro-jejunoscopy, splenectomy, nephrectomy, operations for liver abscess, inguinal hernia, amputations and wiring for comminuted fractures. Medical Officers were actually also technically in charge of sanitation but most were more concerned with the curative aspect and 'could ill afford to give much time and energy, even if he had the inclination, to attend to sanitary work'. However, during one inspection visit to the town by the Sultan and State Resident where, in the course of conversation, they remarked that there were a lot of flies, Viswalingam was set on the task of public sanitation. He organized the refuse collection and the disposal of 'night-soil'. He lectured and licensed the food handlers and insisted plans for all new buildings be submitted to the Health Officer. These measures were effective. It was also during his stint in Kuala Kangsar that he did his landmark work on yaws, but he was transferred to Kuala Pilah after only 2 eventful years.

In 1922 after two years in Kuala Pilah he applied for Sabbatical leave hoping to pursue studies in Europe. That was denied, but instead he was able to enroll to specialize in ophthalmology at the Eliot School in Madras. He also took a three month course in Obstetrics and Gynaecology. On his return the next year he was ordered to organize ophthalmic work in Kuala Lumpur at the Tanglin Hospital. In 1930 he applied and obtained approval for Sabbatical studies in Vienna, Austria. On his return the next year, he was asked to include ear, nose and throat work to his curriculum. A few years later, another European surgeon who was keen on ear, nose and throat surgery came, and Dr Viswalingam was told albeit 'unofficially', that he should 'confine himself solely to ophthalmic work, even though he had been sent to Vienna to acquire otolaryngology proficiency. In 1932, when Dr Hennessey the designated Ophthalmic Surgeon of the Federated Malay States retired and when Dr Viswalingam should have been made the specialist, the Principal Medical Officer had the post abolished!

Dr Viswalingam was faithfully at his post in Kuala Lumpur when the Japanese invaded and he stayed there till at last the order to evacuate was given on Jan 8 1942. However, he got only as far as Serdang and after a short time there returned to Kuala Lumpur to find his house occupied by Japanese troops. Destitute, the Christian Brothers at St. John's Institution offer his family shelter, remembering his previous services to them. He refused to work for the Japanese, except to offer free service. Slowly his financial situation deteriorated and at the encouragement of the Brothers he set up a clinic and saw patients for a nominal fee.

When the British returned Viswalingam immediately rejoined the medical services and set about reconstructing the Eye Department in Kuala Lumpur. Again officialdom dealt

him a raw deal. He had reached the prescribed age for retirement. A new and better scheme of service was introduced but he was not allowed to extend his service to benefit from it, even though after the war he was the first set to work immediately, while the British expatriates were given full paid leave to recuperate for six months. He described this as having ashes in the mouth.

In retirement he did some private practice but his wife was anxious to take his younger six children back to Sri Lanka. Accordingly, he left in 1951. He practiced in Colombo and became president of the Ceylon Ophthalmological Society, founder president of the National Association for the Prevention of Blindness and was Honorary Member of the International Agency for the Prevention of Blindness.

Malaysia cannot quite claim full ownership of Viswalingam. He lived in an era of a borderless world, one which we shall one day again hopefully see. Should he have remained here in retirement, surely his legacy would not have been so easily forgotten and he would have hopefully received the accolades and honours he greatly deserved.

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