

Radiology in Malaya in the 1920s

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When one laments the shortcomings in the provision of radiological services it is revealing to look at the situation in the 1920s in Malaya, as the country was then called, which presented considerable problems and a great challenge.

From 1909-1941, the Malay Peninsula consisted of the four Federated Malay States (FMS) of Selangor, Perak, Pahang and Negeri Sembilan. Kedah, Perlis, Kelantan, Terengganu and Johore comprised the Unfederated Malay States. In the Unfederated States, the British share in the administration was less than in the FMS, where there was a largely British administration with certain Malay prerogatives. Singapore, Malacca and Penang made up the Straits Settlements which was a crown colony (Fig. 1). Kuala Lumpur became the federal capital and headquarters of the Resident General of the Federated Malay States. The Resident General was under the supervision of the Governor of the Straits Settlements who was known as High Commissioner for the Federated Malay States. A Federal Council was set up in 1909 and the title of Resident General was changed to Chief Secretary¹.

A complete set of minutes of the Federal and State Councils together with reports for the specialist departments are kept on microfilm in the Public Record Office in London. Included in these documents is the annual report of the Principal Medical Officer of the FMS².

X-rays reached Malaya soon after their discovery by Rontgen in December 1895. The X-ray apparatus was first used in Taiping in February 1897. A complete apparatus for producing X-rays was presented to the Government Hospital in Ipoh in October 1897 in commemoration of Queen Victoria's diamond jubilee. Mention is made of a skiagraph being shown at a meeting of the Malayan branch of the British Medical Association in 1905. In 1910, members visited the

General Hospital in Kuala Lumpur for a demonstration of X-rays³.

The principal diseases in the FMS in 1920 were malaria, dysentery and diarrhoea, pulmonary tuberculosis and beri beri. The Principal Medical Officer in his report laments the great shortage of staff. He mentions tersely that overcrowding and dirty habits were the primary cause of phthisis and it was rare to see any native patient in time to do any good. There was a severe epidemic of smallpox in Perak with 155 deaths with the report commenting that neglect of vaccinations in the past being the main factor, and

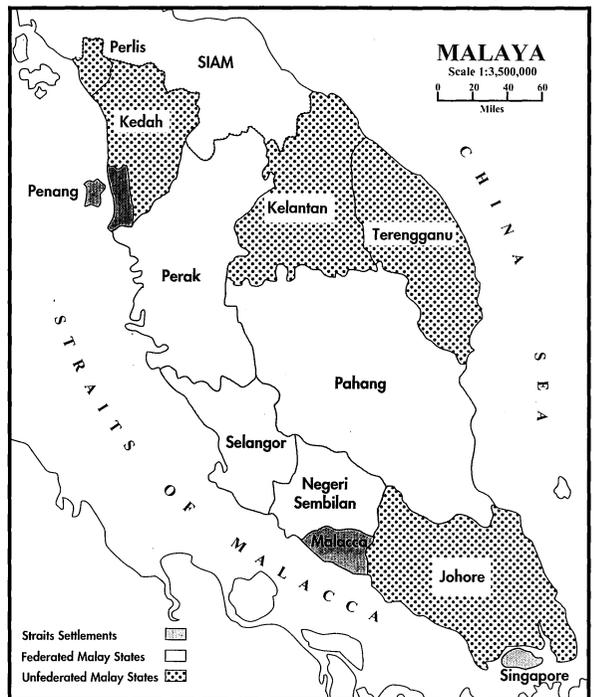


Fig. 1: Map of Malaya in the 1920's showing the Federated States, Unfederated States and the Straits Settlements.

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that the hostility of the population and their disregard of the most elementary precautions had much to do with prolonging the outbreak.

The work of the X-ray Department was handicapped by the lack of any expert but in spite of somewhat antiquated equipment, extraordinarily good work was done. Towards the end of 1920 Dr Harold Mowat was appointed as radiologist and new up-to-date apparatus was on order. In those days radiologists were responsible for electrotherapy and radiotherapy as well as diagnostic radiology. In fact, electrotherapy remained linked to radiology in England until the 1930s⁴. Cases described as having been successfully treated by electrotherapy include chronic ulcers, tropical (Singapore) ear, septic sinuses, fistula in ano, ischiorectal ulcers, acute gonorrhoea and sciatica.

The report for the X-ray and Electrical Departments for 1922 gives the number of X-rays taken as 482 with 33 patients screened. There were a total of 996 electrical treatments, 109 X-ray treatments and 254 radiant heat treatments performed. Dr Mowat died in 1923 and the following year Dr CF Constant was appointed radiologist.

Dr Harold Mowat was educated at Manchester and Edinburgh Universities and qualified in 1905. He became clinical assistant of the X-ray and Electricity Departments at Charing Cross Hospital and at the Metropolitan Hospital. He was also radiologist of the Royal Chest Hospital and North-West London Hospital. He served as a radiologist and also as a surgeon in the Royal Navy in the First World War. He was appointed radiologist to the FMS in 1920. He was found dead in his bed by his servant in August 1923, aged 40.

The report for 1924 described how it was necessary to rebuild entirely and redesign the existing X-ray apparatus. This was urgently necessary primarily on the grounds of safety as there was found to be a great danger of X-ray burns owing to large leakage of X-rays. The equipment at the Institute for Medical Research had been abandoned as it was completely unsuitable for the climate and the subsequent maltreatment it suffered had nearly destroyed it. Radiologists in those

days were versatile as the rebuilding and protection of both sets was carried out by the radiologist using a few locally purchased materials.

A complete dark room was built at the General Hospital. Previously about \$1,500 was paid annually to local photographers for developing plates and films which were then done in the department at far less cost.

A case was mentioned when a motor cycle spoke had been driven in the liver two years previously resulting in a discharging sinus. The X-ray photograph clearly showed the foreign body which was removed. The X-ray photograph and foreign body were presented to the College of Medicine in Singapore.

A touch of impatience appears in the radiologist's report for 1925 as there was delay in starting the new X-ray building. Perak and Negri Sembilan were still without X-ray equipment. The new radiology block was started in 1925 and was promised to be second to none in the East. The Principal Medical Officer stated how Dr Constant, the radiologist, had given time and trouble to building up X-ray sets and had saved the Government large sums of money. He deserved great credit for his admirable work.

The new X-ray and Electrotherapy building on the hospital site on Circular Road in Kuala Lumpur finally took in its first patients on 20 September 1926. The delay in installing the equipment was occasioned by the belated arrival of a motor generator from England. The old X-ray set at the General Hospital – the only source of X-rays in the FMS for some years finally broke down completely in August. As the still older apparatus installed at Ipoh burnt out after a few days use, there were no X-ray facilities at all in the FMS for nearly a month. Problems also occurred with the electricity supply which could not be remedied until the new power station was finished.

There were problems with the transit of equipment. With few exceptions, consignments from England were delayed and broken through faulty packing, and with the equipment faulty, badly made or incomplete, with often few or no working or assembling instructions. This was a sad contrast to the consignments from America which arrived perfectly packed, complete with the fullest possible instructions.

By 1927 five sets of new X-ray equipment had been installed at:

- New Hospital Site, Circular Road, Kuala Lumpur
- District Hospital, Ipoh
- Seremban Hospital
- General Hospital, Kuala Lumpur
- European Hospital, Kuala Lumpur

The set at the European Hospital was mounted on a trolley and could be moved to other hospitals.

A factor which reduced the efficiency of the X-ray service was the isolated position of the new X-ray building as the new hospital in Circular Road was not completed. This meant a four mile ambulance ride from the European Hospital and a three mile ride from the General Hospital over bad roads. This precluded the attendance and necessary collaboration of the medical officer or surgeon in charge of the case, and deprived the patient of several of the later methods of X-ray equipment.

The new hospital on Circular Road frequently mentioned was originally called the Pauper's Hospital and is currently the site of the Kuala Lumpur Hospital.

The General Hospital in the 1920s was located at the present day Tanglin Hospital (Fig. 2) which now functions as an outpatient clinic and an additional office for the Ministry of Health.

The European Hospital was in Bangsar and is now demolished (Fig. 3). The site is used for a Training Institute and Health Education Communication Centre.

In the 1920s insufficient funds delayed plans for building the New Hospital and instead the government improved facilities at the European Hospital and the old General Hospital which was the main hospital for Asian patients. However the General Hospital was criticised as being in a deplorable condition with facilities for first class patients markedly inferior to those at the European Hospital. As a result it was decided in 1931 that the European Hospital, to be known as the Bangsar Hospital, would be opened to both European and Asian patients, and the new

hospital would be built when financial conditions improved⁵.

In 1927 a 'serial radiographic' apparatus was installed which enabled the radiologist to take pictures during screening of barium examinations. An example from a catalogue published in London in 1927 shows fluoroscopic equipment available at that time costing £150 (Fig. 4). The new equipment resulted in a large increase in the number of X-rays taken (Fig. 5). A second radiologist, Dr FG Greenwood was appointed to Ipoh.

In those days before air conditioning was in use, the dampness of the climate caused several breakdowns which necessitated keeping a large stock of spare parts.

In the decade of the 1920s ideas about septic foci were in vogue. The radiologist's report mentions that the

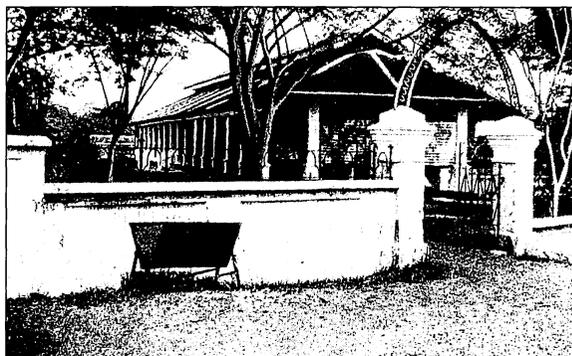


Fig. 2: The Old General Hospital, currently the Tanglin Hospital.



Fig. 3: The European Hospital.

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discovery by X-ray of the hidden foci of infections at the tooth root very greatly facilitated the diagnosis, treatment and cure of many of the cases of neuritis, myositis, rheumatism and general ill health that had previously often been attributed to other causes or to 'the climate'.

In 1928 it was mentioned that a new X-ray Department was planned for Ipoh at a cost of \$18,000 so that the building and equipment would be identical with those at Kuala Lumpur. The building of the new hospital in Kuala Lumpur had not started but plans were made to incorporate the future buildings with the X-ray Department on Circular Road.

During the year several cholecystograms were performed in patients with suspected gall bladder disease although problems arose due to the possibility of capsules disintegrating due to the climate. A bronchogram was performed by injecting Lipiodol through a cricothyroid puncture.

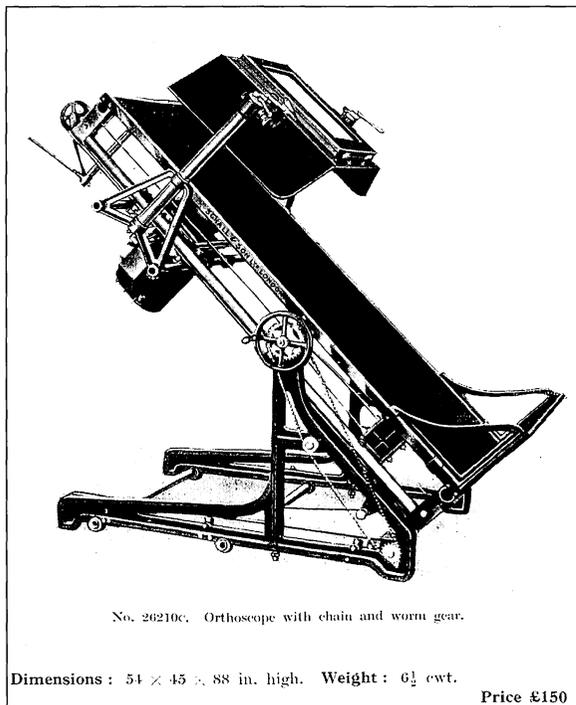


Fig. 4: A 1927 vintage fluoroscopic equipment.

A long X-ray report for 1928 from Seremban is given by the first medical officer, Dr CF Ashby, who undertook the radiological work in addition to his other duties. Dr Ashby stated that an attempt had been made to give Negri Sembilan the efficient radiological service it needed and that instead of odd cases being done by the Chief Surgeon in his spare time, the work was now carried out by the first medical officer. A pleasing feature was the co-operation that is possible between Chief Surgeon and Radiologist.

The versatility of the Radiologist is evidenced by the construction of a stereoscope from old splints and soap boxes, which was described as, although not a thing of beauty gave excellent results and was especially useful for locating foreign bodies in the tissues. Alas, the X-ray set, not being especially suitable for the tropics, was at times a danger. Short circuits were frequent and the X-ray tubes liable to puncture. Repairs to punctured tubes were an expensive item.

The need for a portable set in places where there is a European Hospital was stressed. Twenty-eight cases of accidents (mostly motor mishaps) on Europeans were examined by X-ray. These patients had to be

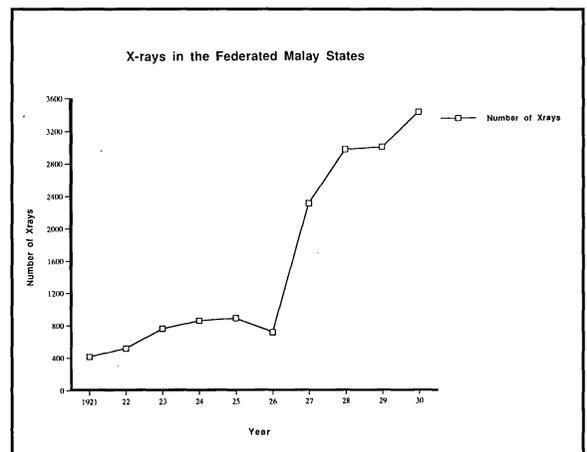


Fig. 5: The X-ray work load for the 1920s. The marked increase occurring in 1927 is due to the opening of the X-ray Department in the New Hospital on Circular Road.

transported from the European Hospital to the General Hospital and placed on a table that was too short. Moving the patients was a painful procedure and at times not without danger to life.

The report from Ipoh bemoans the fact that due to the voltage drop on the main line from the power station to the X-ray room, a low milliamperage must be used. So, exposure times were often long resulting in unsatisfactory pictures.

In 1929 a special dental outfit was installed at Kuala Lumpur. This saved much time as the main apparatus did not have to be adjusted for dental work. The semi-portable equipment was rebuilt at the General

Hospital. The radiologist's staff constructed an entirely new semi-portable apparatus out of spare parts for the European Hospital.

In 1930 the new X-ray building in Ipoh Hospital was completed and while the second radiologist was on leave, Dr Constant paid a weekly visit there. The radiological work at Seremban was restricted because of the unreliability of the apparatus.

One name that constantly appears in the radiologist's reports in the 1920s is that of Dr CF Constant (Fig. 6). Judging from the reports it is obvious he was very adept at building and repairing X-ray equipment.

Dr Charles French Constant was born in August 1888. He was educated at Dulwich College and Guy's Hospital where he qualified in 1912. He went round the world a couple of times as a ship's doctor and then joined the Chilean Navy. The British were popular there then as the Chilean fleet, largely British built, had just beaten the Argentines.

With the advent of the First World War in 1914 Dr Constant joined the Royal Army Medical Corps serving in France and later in the Balkans, where he commented bitterly that more troops died from typhus than from enemy action. After the war he joined the Indian Medical Service and then transferred to the Colonial Medical Service. Whilst on home leave he met his future wife, married her and took up his post as radiologist in Kuala Lumpur in 1924 where he remained until 1935. He then asked for a transfer as he was not granted study leave for further training in radiology. From Kuala Lumpur he was posted as radiologist to Trinidad. He returned to England in 1937 and took the Diploma in Medical Radiodiagnosis. He then obtained a consultant post at the Royal Cornwall Infirmary in Truro. The hospital had appointed a full-time radiographer in 1930 and as by 1934 the number of X-ray examinations for that year reached 622, it was decided that a specialist in radiology was required. Initially Dr Constant was unpaid but was allowed to use the hospital facilities for private patients on condition that he refunded the cost of materials used⁶. Dr Constant worked in Truro until his death in 1954.

Accounts and photographs of the period Dr Constant and his wife lived in Malaya showed that they were lives wires in Kuala Lumpur society, being renowned for their fancy dress parties.



**Fig. 6: Dr CF Constant.
Radiologist FMS 1924-35.**

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There was obviously a shortage of doctors in Malaya with only two radiologists in the FMS for a population of 1,325,000. The Straits Settlements with a population of 884,000 had one radiologist, whilst there was no radiologist in the Unfederated Malay States which had a population only a little less than the FMS⁷.

In comparison, England, Wales and Scotland at the same period with a population of 42,769,000 had 172 radiologists, though from their titles in the 1926 Medical Directory, not all were full-time practising radiologists. The ratio of radiologists to population was much higher in Britain compared with the FMS. (Table I)

The Royal College of Radiologists currently recommends a ratio of one radiologist to 30,000 population, but it must be remembered that radiology has now become considerably more complex with many more imaging modalities. The recent large

increase in the number of radiologists under training in Malaysia emphasises the importance of the specialty. The present conditions and facilities represent a vast improvement from those far off pioneering days.

Acknowledgements

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Table I
Number of radiologists in Malaya in the 1920s

	Radiologists	Population	Ratio
Federated Malay States	2	1,325,000	1:660,000
England, Wales and Scotland	172	42,769,000	1:250,000

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