I.N.S.E.R.M. and C.N.R.S. in France. If this description of British universities attracts, as I hope it will, French doctors to the United Kingdom, and they do not know how to make scientific contacts I would suggest that they attend the meetings of British scientific societies—whose quality reflects that of the universities. These societies are well organized, and among the most brilliant meetings one must mention those of the Royal Society, whose membership includes the most distinguished British scientists engaged in research. The Royal Society has no equivalent in France.

At the end of this article, I seem mainly to have praised what I have seen. The charm of university campuses, the insular exoticism may explain my attitude. The search for bad points in the running of British medical faculties would show how far I am an anglophile. Research into some sub-

jects, such as cellular physiology, cellular endocrinology, seem to be more active in France than in Great Britain. Others, like immunology, seem to have the same impetus. As a whole, nevertheless, the balance is by far favourable to the United Kingdom, where I should have liked to be a student. It would be interesting to have the opinion of the true fundamentalist—the mathematicians and physicists. If they agree with me it might be appropriate to suggest to the British Council that it arranges a U.K. visit for the leaders of French universities and perhaps also for the representatives of associations of French students.

Reference

¹ Dollery, C. T., and Burn, J. I., *British Medical Journal*, 1973, 1, 601.

Medical History

Makerere Medical School: 50th Anniversary

W. D. FOSTER

British Medical Journal 1974, 3, 675-678

In the mid-1960s Makerere University Medical School and Mulago teaching hospital was among the best medical schools in the world. The facilities, the patients, and the opportunities for research were almost unrivalled. Occupying the lower western slope of Mulago Hill on the outskirts of Kampala was a fine, modern teaching hospital and medical school, while above it lay the old, hutted hospital where it had all begun less than 40 years before. An enthusiastic body of students, whose annual intake had risen from 20 in 1958 to 90 in 1965 was led by an academic staff of over 100. Most of the senior posts, and about half the total academic posts, were held by British expatriates but over one-fifth came from other parts of the world, particularly the U.S.A. and South Africa. The fact that instruction was given in English limited the range of countries able to contribute to the academic staff. But most significant in 1964-5 over one-third of the academic staff were native Ugandans—some Makerere graduates—but some who had qualified abroad.

Though 1974 celebrates the 50th anniversary of the founding of the medical school Makerere has evolved gradually, its aims and objectives changing over the years. Furthermore, Western medical education had begun in Uganda long before 1924 and to appreciate the significance of this 50th anniversary we must trace the story back another quarter of a century.

The earliest European doctors to practise in Uganda were members of the staff of the Imperial British East Africa Company and its successor, the Protectorate government in the 1890s. They were employed to look after the health of the government staff and, initially, made no attempt to involve themselves with the native inhabitants. The first doctors to practise among the Ugandans

were Church Missionary Society missionaries and even they made little headway until the arrival of Dr. Albert Cook and a Guy's trained nurse, Miss Katherine Timpson (later Albert Cook's wife) at the beginning of 1897. He immediately erected a grass hut hospital and began to practise medicine at a very high standard. By the outbreak of the first world war Mengo Hospital had become a modern hospital with a trained European staff of three doctors and seven nurses with over 170 beds, an x-ray department postmortem room, and pathological laboratory which would have, done credit to most English provincial towns at that time. But an establishment of this kind could not possibly have been run by the European staff alone; trained Ugandans were needed from the beginning.

At first Ugandans willing to work in the hospital were hard to come by. They regarded the work as dirty and dangerous, which indeed it was, and lacked the Christian ethic of charity towards a neighbour in distress. Cook's first recruits to the hospital staff were grateful patients who stayed on to help for no more than their board and lodging, and clothes. By 1899 Cook was employing six of these "dispensary boys," but of these only one or two were fairly smart and appeared to take real interest in their work. Nevertheless, towards the end of 1902 one of them, Yusufu, was the first Ugandan to perform a surgical operation after the European style. It was to Cook a "red letter day" as Yusufu successfully performed a circumcision "tying off six arteries and sewing up the wound quite satisfactorily."

Despite the encouraging beginning progress in medical training was slow so that even in 1908 a conference of C.M.S. doctors noted that no Ugandan had been trained to the level of a competent medical assistant. Nevertheless, Albert Cook, writing to Henry Wellcome, said that he hoped "the time is not too far distant when we can begin to train in earnest the more promising Baganda students for a medical certificate or diploma" and he was sure that "a medical faculty will be established in the future Mengo University." In the years immediately preceding the first world war pressure to establish a formal medical course for the training of medical assistants, not doctors, steadily built up. The native government wanted it as did the educationalists among the missionaries, and there was even interest in the project on the part of the Protectorate government. But the C.M.S. doctors, who had had many years' experience of the difficulties of training Africans, were lukewarm.

Microbiology Department, Macclesfield Hospital
W. D. FOSTER, M.D., F.R.C.PATH., Consultant Microbiologist

FIG. 1—Aerial View of New Mulago Hospital, Kampala.

Early Health Problems

The Protectorate government first became seriously interested in the health problems of Uganda in 1906 because of the alarmingly high incidence of syphilis in the native population. It was thought that syphilis was causing miscarriages, sterility, and congenital disease and the Baganda were a dying race. A R.A.M.C. venereologist, Colonel Lambkin, was summoned to Uganda and his report confirmed the government's worst fears. The modern view is that the dangers of syphilis in Uganda were much exaggerated but Lambkin's report was crucial in the development of medical education and in the foundation of the Makerere Medical School.

A group of R.A.M.C. officers was seconded to Uganda to set up three venereal disease treatment centres. One of these, a mud and wattle, grass roofed building was set up on Mulago Hill a couple of miles to the north-east of Mengo. This was the nucleus of the present medical school. One of the R.A.M.C. officers was a Captain G. J. Keane. He immediately grasped the importance of training native Ugandans in medical work and wrote to Albert Cook urging the formation of a Mengo medical school and enclosing a suggested syllabus of instruction. Like Mengo Hospital itself the venereal disease treatment centres could not be run entirely by European staff; at least some elementary instruction of Ugandans had to be given.

In 1916, largely owing to the enthusiasm of Ernest Cook, Albert's nephew, it was agreed that a proper medical school should be founded at Mengo Hospital. Despite the fact that it was war time and Mengo a busy base hospital the school was opened in January 1917 with an intake of 17 students. Though the aim was to train medical assistants rather than doctors during a two-year course, the standard of work was high: students were given a basic understanding of science, anatomy, physiology, and pathology and considerable proficiency in practical matters such as passing catheters, administering anaesthetics, extracting teeth, and performing minor surgical operations. The venture was smiled on by the Protectorate government, which provided a small grant towards the expenses of the school.

During the war Captain Keane served with the African Native Medical Corps and became more than ever convinced of the value of medical training for Ugandans. At the end of

hostilities he joined the Uganda medical service, of which he eventually became the director. The Mulago venereal disease centre became a general hospital where a wider range of training could be given. The Protectorate government decided to found its own school for training of medical assistants and, at the end of 1922, withdrew its grant from the Mengo school. Yet the new school was greatly indebted to the Mengo school for, when it did open, the native medical tutor, the head dispenser, and the man in charge of the operating theatre were all Mengo graduates.

Start of Teaching

In 1923 the Government Medical School on Mulago Hill was started with an intake of four students and in 1924 teaching had begun in earnest. With but a low standard of general school education available in Uganda at that time only an elementary level of instruction could be aimed at—a level "approaching that of the Indian sub-assistant surgeon." After a four years' course three of the four original students qualified and entered the Government Medical Service as medical assistants.

But meanwhile, across the valley on the neighbouring Makerere hill, a development of great significance for medical education in Uganda had taken place. In January 1922 the Uganda Technical College was founded. Though at first purely technical this college rapidly developed a more academic side and indeed, in 1928, the technical students moved to the Kampala Technical School on a different site. The establishment of Makerere College enabled the beginnings of sound secondary education and thus a supply of students, for whom more advanced medical training would be meaningful. Even so, by 1929, as the Governor remarked on speech day, the standard of education at Makerere was only that equivalent to "somewhere halfway up an English public school."

The importance of Makerere contributing towards medical training had been appreciated from its foundation and, in 1922, Dr. H. B. Owen, who had retired from the medical service, was recalled to become first medical tutor at the college. Patiently going forward step by step, in the first instance compiling simple notes and working towards a stage at which his students could assimilate simple textbooks, grounding them in physics, biology and chemistry, he moved them on to the pre-clinical subjects and got them in two years to the stage when they could move over to

FIG. 2—Outpatient Clinic Block.

Mulago for clinical work." In 1927 Dr. Owen moved over to Mulago combining the work of hospital superintendent and principal of the medical school. The total course for medical assistants now ran for five years and the Governor, again at speech day, foresaw the day when Mulago Medical School courses would compare with those of a European medical school.

At first the graduates of the Mulago Medical School were immediately given employment in the Government Medical Service and, indeed, were not allowed to practise except as government employees. Nevertheless, in 1931 an amendment to the Medical Registration Ordinance was passed by the Legislative Council enabling Senior African Medical Assistants to be licensed as medical practitioners. The standard of medical qualification provided at Mulago was hardly equivalent to those of schools in the developed part of the world—only in 1932 were some of the easier questions from the British Conjoint Examination included in the final examination, and it was 1951 before the qualification was recognized by the British General Medical Council. Nevertheless, in effect the school was producing "doctors." The succession of names by which the graduates were known gives an interesting view of their gradually improving status. From being Senior Native Medical Assistants they became Senior African Medical Assistants, then African Assistant Medical Officers followed by Assistant Medical Officers until finally, with full recognition, the word "assistant" was dropped.

The growth of the medical school and the rapidity with which its standards reached those of Europe are all the more remarkable when considered in the light of the available resources. As late as 1946 there were only 41 doctors registered with the G.M.C. in the whole of Uganda and the total teaching staff of the medical school was seven. Though the association between Makerere and Mulago had been close during these formative years they had, essentially, been under different management and the medical school was not considered an integral part of Makerere College until it came under the College Council in 1939.

Qualifications

In 1951 the qualifying diploma was superseded by the licentiate in medicine and surgery—the L.M.S. (E.A.) and this qualification became registrable with the General Medical Council in 1957. But, with recognition backdated to 1951, it was acknowledged that the Makerere Medical School had been training doctors up to British standards at that time. Only 28 years earlier those four, almost uneducated students had begun training as medical assistants. The progress in this time was a notable achievement.

Yet there was another side to the coin. The educational and technical progress of the Africans had outstripped the change in racial attitudes of the British leaders of Uganda, and in

FIG. 3—Hospital Entrance Hall.

the 1950s tension built up. To regard the African as the intellectual, moral, and cultural equal of the European is a novelty borne of the "winds of change" that swept the continent from the mid 1950s onwards. But it should be realized that the apparent "reactionary," "colonialist" attitudes of many of the Europeans had arisen from the sincere belief that Africans were not the equal of Europeans. Some Europeans may indeed have felt that jobs, careers, and way of life were threatened by the rising professional classes of Uganda (as indeed they were) and over-reacted. Yet even Sir Albert Cook, the pioneer missionary doctor of Uganda, whose love of the country and respect for its people cannot, for an instant, be doubted to his dying day, in 1951, would never have regarded Africans as equal to Europeans (except in the sight of God). Nevertheless, the Ugandan doctors did have justifiable complaints—from minor humiliations to solid grievances over status, pay, and promotion prospects. One such Ugandan doctor recalls how a European doctor rebuked an English sister, newly arrived in Uganda, for referring to an Assistant Medical Officer as "doctor." In the medical service there was a definite "order of precedence," with European doctors first followed by European sisters, the Asian sub-assistant surgeons, and lastly the African Assistant Medical Officers. Some sisters would not hesitate even to alter the prescriptions of an A.M.O. In 1947 the starting salary for a European doctor was £865 per annum, for a European sister £460, and for an A.M.O. £230. There were similar differences in the quality of government quarters allotted to the three groups. Irksome as these conditions must have been for Ugandan graduates it must, in fairness, be noted that the European doctors and nurses were recruited in a more expensive market to supply services needed by Uganda and that their necessary expenses would exceed those of native Ugandans.

Over the years the simple grass-roofed hut that had been

FIG. 4—Standard Ward Unit.

the original Mulago Hospital gradually extended by the building of more huts until a hospital of 700 beds sprawled over the upper slope of Mulago Hill. In 1955, seeing the need for more modern, better facilities the Protectorate government sent the medical superintendent and an architect on a tour of hospitals in Africa and Europe to get ideas for the building of a new teaching hospital. The actual construction of the present beautiful 900-bedded hospital was carried through with remarkable expedition—from the first architect's sketch to completion took less than five years. It was opened by H.R.H. the Duchess of Kent in October 1962. The cost of the hospital amounted to £2,300,000, of which three-quarters was provided by the British government.

Degrees and Research

In 1963 the University of East Africa was founded, Makerere College becoming Makerere University College with two sister institutions at Nairobi and Dar-es-Salaam. The next year, at a colourful ceremony presided over by the Chancellor of the University, degrees in medicine of the University of East Africa were conferred on 30 new graduates and on 129 holders of the old L.M.S. (E.A.). The following year six graduates registered to take higher degrees in the faculty of medicine. Today almost 100 students graduate in medicine every year.

In 1965 Dr. J. S. W. Lutwama, a senior lecturer in the Department of Preventive Medicine, was promoted to be professor in that department. This appointment was of significance in that Dr. Lutwama was the first Makerere medical graduate to be appointed to a chair in his own school. A few months later, on the resignation of Professor D. Allbrook, Professor Lutwama was appointed Dean of the medical faculty.

The latter half of the 1960s were years of bustling activity and progress in many directions in the medical faculty. The undergraduate curriculum was constantly under review with the faculty anxious to experiment and make modifications in the light of experience. The planning of a new higher qualification, the Mastership in Medicine, which it was hoped would provide a training more relevant to the conditions in East Africa and make less necessary prolonged visits to

the U.K. to take the M.R.C.P., F.R.C.S., and other British higher qualifications, went ahead.

Research work expanded in many directions, grants to the medical school from foundations outside East Africa amounting to nearly half a million pounds in 1964-5. Particular efforts were made to encourage research work by Makerere students. An appeal to various commercial organizations in East Africa raised £2,000 as a fund for medical student research scholarships. In 1957 the first Makerere Medical students journal was launched with its primary aim "to act as a medium for the students to publish their first papers and through this to learn the discipline of devotion to the progress of medicine." Ten years later the journal had a circulation of over 1,000 and many interesting papers had been published in it.

The energy of some of the early postwar faculty members, particularly Professor J. N. P. Davies, had built up, with amazing rapidity, a really fine medical library—which was named after that pioneer of medical education in Uganda, Sir Albert Cook, many of whose own books have found a resting place there. In 1965 a gift of £27,000 from the Nuffield Foundation allowed the building of a substantial extension to the library.

As the decade wore on the turn-over of expatriate staff in the medical school steadily increased. After 1963 no expatriates were appointed to chairs on permanent terms, contracts of up to six years being offered instead. Despite political pressure to "Africanize" as rapidly as possible, the senior Ugandan members of the college were as unwilling as anyone to see unsuitable men appointed to chairs merely because they were Ugandans. Suitable Ugandans, however, were undergoing training and enlarging their experience either abroad or in East Africa and soon three more native Ugandans had joined Professor Lutwama in professorial rank.

This year is perhaps not the happiest time for Makerere Medical School's fiftieth anniversary to fall; the recent political upheavals in Uganda have greatly affected the institution and have led to the closure of units and the dispersal of staff, both native and expatriate. All who know Makerere, however, must be confident that this time of troubles will pass and the university and its medical school will take its rightful place as one of the premier institutions of medical science in the tropical world.

Hospital Topics

In Vivo Tests of Thyroid Function

C. W. H. HAVARD, MARGOT BOSS

British Medical Journal, 1974, 3, 678-681

Despite the increasing emphasis on in vitro tests of thyroid function, in vivo tests are still widely used. The major applications of in vivo techniques are in the diagnosis of thyrotoxicosis and in the assessment of the functional activity of thyroid nodules by scanning the gland. The application of in vivo tests to the

diagnosis of hypothyroidism is limited. Technetium-99m is now being used to determine thyroid uptake because of its low energy and short half-life and because the isotope is not organically bound to tyrosine—though it is concentrated in the thyroid gland in the same way as iodine. In vivo tests may be subdivided into: (1) thyroid uptakes, (2) suppression tests, (3) stimulation tests, and (4) scans.

Thyroid Uptake

For nearly 20 years the uptake of ^{131}I by the thyroid gland has been used as a routine test of thyroid function. In general the

Department of Endocrinology, The Royal Free Hospital, London
C. W. H. HAVARD, D.M., F.R.C.P., Physician
MARGOT BOSS, B.Sc., Physicist