ST. MARY'S HOSPITAL, PADDINGTON ONE HUNDRED YEARS' WORK

BY

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One hundred years ago last month, in the year of the Great Exhibition of 1851, St. Mary's Hospital, Paddington, first opened its doors to receive patients. When the Great Western Railway built Paddington Station in 1838 the population of the adjacent suburbs of Paddington

Prince Albert laying the foundation-stone of St. Mary's Hospital.

and Marylebone was rapidly mounting towards the second hundred thousand, yet the nearest hospitals were St. George's south of Hyde Park and the Middlesex at the other side of Marylebone.

In 1843 a committee of local inhabitants set on foot the project for a new hospital, which was to be situated near the terminus of the railway. The Lords Beverley and Manvers were prominent members of the committee which collected funds and arranged for the formal laying of the foundation-stone. This was performed on June 28, 1845, by Prince Albert, who gave permission for one of the wards in the projected hospital to be named after him. A large company assembled under a marquee "which prevented those assembled from being incommoded and annoyed by the showers and the continual gusts of wind." Within a cavity in the foundation-stone the Prince deposited a written record of the event and a bottle containing coins and other objects. *The Times* commented: "The whole of the proceedings were conducted in the best manner, the great crowd of persons attending being all properly accommodated, and the police keeping good order on the out-

skirts of the enclosure." It was not, however, until June, 1851, that the first 50 beds were ready for the reception of patients.

The need for the hospital was soon demonstrated, for in 1864 as many as 16,366 patients were treated, 1,715 of them being in-patients. An interesting event in the early history of the hospital was the election of Florence Nightingale as a life governor in 1856; Miss Nightingale wrote a letter expressing her thanks for the honour, and later visited the hospital and took considerable interest in the nursing staff.

The initial honorary staff elected by the governing body contained the names of many well-known physicians and surgeons, prominent among whom were Francis Sibson, Sir James Alderson, Dr. Handfield-Jones, Joseph Toynbee, Alexander Ure, and Samuel Lane. The last-mentioned had previously run a private medical school in Grosvenor Place, and he took considerable interest in the founding of the medical school in connexion with the hospital.

As funds permitted, the size of the hospital was increased. In 1867 the Albert Edward Wing was opened; in 1884 Princess Louise declared the Mary Stanford Wing open, and in 1892 the Prince of Wales laid the foundation-stone of the Clarence Wing, facing Praed Street, which, however, was not completed till early in the new century.

The history of the hospital cannot be separated from that of the medical school, which was founded soon after the opening of the hospital, and in both cases the hundred years of their existence can be sharply divided into two periods

of 50 years each—one before and one after the turn of the century.

In the first 50 years there was a steady growth and a gradual establishment of reputation of both hospital and medical school. Outstanding members of the hospital staff were Sir William Broadbent, Dr. W. B. Cheadle, Sir Anderson Critchett, Mr. Edmund Owen,

The Clarence Wing.

Mr. Herbert Page, and Mr. Henry Juler. In the medical school at least one name stood out—that of Augustus Waller, who taught physiology from 1884 to 1903, to whose ingenious researches we owe the electrocardiograph, which has been of such importance in extending our knowledge of the working of the heart. It is of interest to note that the first medical registrar to the hospital was Dr. Burdon-Sanderson, who later was to become famous as the Waynflete Professor of Physiology at Oxford; incidentally in his association with St. Mary's Hospital he also served as lecturer in botany and in medical jurisprudence in the medical school.

No account of the early history of St. Mary's Hospital and Medical School would be complete without mention of Sir Henry Harben, who was chairman of the board of governors for some years, and whose repeated generous help—financial and otherwise—to both hospital and medical school was of the greatest assistance.

By the year 1900 the hospital and medical school were well established but were not widely known outside their immediate neighbourhood. Early in the new century, however, some fresh personalities came on the scene and altered the whole atmosphere of the place. In 1902 Almroth Wright came as lecturer in bacteriology, and his genius for original research and for stimulating other minds brought an entirely new spirit into both hospital and medical school. Wright's original work on protective inoculation brought to the hospital doctors and laymen interested in the new researches, and money was soon forthcoming to equip laboratories and finance further researches. A new and important development was the placing of beds at the disposal of the bacteriologist, so that patients could be directly under his care. Wright gathered around him a band of brilliant young workers who were attracted by his genius and personality. Among this group the names of Alexander Fleming, John Freeman, E. H. Kettle, and Leonard Colebrook have since become celebrated. The momentum of the impulse then started is still continuing.

In 1900 the medical school was in rather a weakly state and so continued until after the 1914-18 war, when a man of outstanding ability was appointed dean—namely, Dr. (afterwards Sir) Charles Wilson, who later became Lord Moran. The new dean guided the destinies of the medical school for 25 years and proved himself a great administrator who possessed the rare faculty of seizing the essential principle in a problem and of taking the long view and pursuing a purpose with tenacity. The formation of professorial units, the co-operation between St. Mary's and the Paddington L.C.C. Hospital for teaching purposes, the selection of scholarship students on lines similar to those used in choosing Rhodes' scholars, and, finally, the enlistment of generous donors to enable the medical school to be rebuilt were some of the far-reaching changes which added strength to hospital and school alike. When he retired from the deanship Lord Moran had re-created the medical school on a sure basis.

The names of Lord Revelstoke, Lord Beaverbrook, and Lord Iveagh should be gratefully remembered as generous donors—the first two to the medical school and the last-mentioned to the inoculation department and the hospital.

During the same period Lieutenant-Colonel Parkes as house-governor was the prime mover in the building

of a fine new nurses' home, in the erection of the Lindo Wing for patients of moderate means, and in building and equipping a new operation-theatre suite.

Throughout their whole history the hospital and medical school have received great help and encouragement from members of the Royal Family. In addition to what is mentioned above the following occasions should be recorded. In 1931 the foundation-stone of the new medical school and pathological institute was laid by the Duchess of York (now Queen Elizabeth), who consented to become and still is the President of the hospital. In December, 1933, the new medical school and pathological institute were opened by

The new medical school.

King George V, and in 1936 the new nurses' home and in 1937 the Lindo Wing and the Lewis Carroll Ward were opened by the Queen.

During the century of its existence St. Mary's Medical School has trained and sent out to all parts of the world several thousand qualified students. Many of these have been greatly distinguished and at least two have had a remarkable effect on world medicine: Sir Leonard Rogers, who among other advances introduced emetine into clinical medicine, and Sir Alexander Fleming, whose discovery of penicillin has been the most remarkable event in the medical history of this century. Mention should be made of Sir Malcolm Morris, one of the pioneers of modern dermatology, and of Sir Ernest Graham-Little, who succeeded him.

The hospital has had connected with it many distinguished medico-legal experts, among whom we should mention Augustus Pepper, Dr. Luff, Sir William Willcox, Sir Bernard Spilsbury, and Dr. Roche Lynch. Noteworthy also was Dr. Mitchell Bird, medical superintendent for more than 30 years; Dr. Bird was known to many generations of St. Mary's students, and when he died he left his all—£10,000—to the hospital.

During the 1939-45 war St. Mary's was the hospital upon which Sector 6 of the Emergency Medical Service was based, and its staff (other than those who were on active service abroad) and students worked at hospitals

as far apart as Basingstoke in Hampshire and Amersham in Bucks. The hospital was fortunate in that it was not damaged to any extent by bombing. Though many incendiary bombs were dropped upon it none did serious damage, and it was able to keep open throughout the war.

Under the new Health Service great changes are in progress. St. Mary's is the chief hospital in a group which includes the Samaritan Hospital for Women, the Western Ophthalmic Hospital, the Paddington Green and the Princess Louise Hospitals for Children, and the Hospital of St. Luke for late cases. In the attempt to weld this heterogeneous group into a homogeneous unit much planning and many changes will be required. Already friendly co-operation has enabled much to be done, and the prospects for the future are bright. There are plans in hand for a considerable extension to and partial rebuilding of the hospital and for the establishment of a students' hostel. Under the wise chairmanship of Mr. Anthony de Rothschild St. Mary's Hospital Group is gradually being welded together.

OUTSTANDING PROBLEMS IN CONNEXION WITH BURNS

LECTURE BY DR. LEONARD COLEBROOK

The fourth Alex. Simpson-Smith Memorial Lecture, under the auspices of the West London Hospital Medical School, was delivered on June 12 by Dr. LEONARD COLEBROOK, who took as his subject "Outstanding Problems in Connexion with Burns." Sir HENEAGE OGILVIE presided.

Dr. Colebrook said that every year in England and Wales upwards of 10,000 children were admitted to hospitals for burns, and about three times as many came as out-patients. Of the 10,000, about 300 died from their injuries, a number much less than it was ten years ago, but recovery was often accompanied by grievous disablement. It was estimated that nearly one million hospital bed-days were taken up with burns cases. He confined himself to two aspects of burns—namely, shock and its treatment, and the control of infection.

Shock and its Treatment

Ten years ago it was uncommon for anybody with more than one-third of the body surface burned to recover. To-day there was a 50% chance of recovery for people with even half or more of the body surface burned, provided they were treated by someone acquainted with modern advances. The chief reason for the greater success in the treatment of burns was the better understanding of the part played by fluid loss. This loss might amount to three quarters or even more of the patient's original plasma volume; and, as this loss occurred within a few hours, it meant a very serious depletion. The proportion of red corpuscles to fluid might rise to 50 or 60% above the normal, so that the blood was no longer able to carry out its functions. The loss from the burned surface might continue for weeks or months, though not on the same scale as during the first few hours.

It had now come to be regarded as a rule that an adult with more than 15% of his body surface burned would need intravenous therapy as well as fluid by mouth. A 15% body surface burn was roughly equivalent to the whole of one upper extremity, plus the head, or rather less than this in a child. Intravenous therapy must begin early, within an hour of the accident if possible; if three hours elapsed it might be impossible to overtake the concentration of the blood. It was also important that most of the fluid by vein should be got in within the first eight hours; after that things might go more slowly. No formula was of very much use in determining the amount of fluid to be given, but

with many burns casualties in war it might be necessary to work to a formula. In such circumstances perhaps the best procedure was to calculate roughly the percentage of body surface burned (illustrative charts were shown here), and give about one and a half litres of fluid by vein for each 10% of surface burned (plus a similar amount by mouth). The actual rate of flow into the vein should be regulated by frequent observation of the patient's clinical condition (restlessness, colour, pulse, respiratory rate, and blood pressure); and, if possible, by haematocrit estimations of his blood every three or four hours during the first 15 hours and after that at less frequent intervals. It had also been found helpful to measure the output of the kidneys from hour to hour. For that purpose it was necessary to use an indwelling catheter because the severely burned patient usually did not pass any urine for the first 12 to 15 hours. A flow of 50 ml. of urine an hour in an adult, and half that amount in a child, should be maintained.

The Use of Fluids

Up till now stored plasma or serum had been chiefly used for fluid replacement, and perhaps one could scarcely hope for any fluid more nearly resembling the circulating plasma of the blood. There were, however, more temperature reactions to these fluids than one liked, some of them rather severe, and the nature of these disturbances was little understood. There had been too, until recently, the danger of serum jaundice. If an atomic war should come the plasma available would almost certainly be inadequate to deal with mass casualties. For all these reasons it was important to continue the search for a plasma substitute. Probably the best at the moment was dextran, a polymerized dextrose solution obtained by bacterial fermentation, which had been given to thousands of cases in Sweden and a much smaller number in this country. It seemed to be remarkably well tolerated and, so far as was known, had no toxic effect on any important organ. Further work on it was required.

Another of the outstanding problems in connexion with burns shock was the need to replace sodium. From Rosenthal's experiments with scalded mice (1942) it seemed clear that the administration of sodium had at least as much influence as plasma or serum. And in human burns Fox had claimed very good results by the oral administration of sodium, but there was not yet any general agreement in America upon this question. In view of Rosenthal's work it would certainly be desirable to get further evidence about the distribution and immobilization of sodium in the burned patient. There was an interesting experiment going on in Peru at present which might provide that evidence. In that country, where severe burns were common and very little plasma was available for their treatment, the administration of sodium salts by mouth was being tried, and careful records were being kept to compare with earlier experience.

During the last three years or so in America a number of surgeons had come to believe that blood rather than plasma should be used for transfusion, on the ground that there was sometimes considerable destruction of red corpuscles in severely burned patients, but others were not persuaded that this made good sense. Dr. Colebrook shared that doubt—it did not seem to him right to put more corpuscles into the blood stream when the proportion of these in the circulation was already much too high.

He spoke next of the possibility that it might be possible in the future to control the leakage from the capillaries in the burned patient. Suggestions had been made that this could be done by means of cortisone or A.C.T.H. The evidence available at present seemed to show that, although such an effect could be demonstrated in normal tissues, it did not occur in burned tissues.

It might well be that fluid loss and haemoconcentration were not the only important factors in connexion with burns shock. Prinzmetal's animal experiments had suggested that in very severe burns a toxic substance was liberated which induced a condition of capillary atony. That might account for the failure of some severely burned patients to respond