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President's Address

FOUR MILESTONES IN A CENTURY

BY

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From the flag behind my chair it can be seen that this great Association of doctors has now honoured this city on four occasions. The first was in 1884 and the subsequent visits came at intervals of approximately 25 years. So it would perhaps not be out of place to use these "milestones in time" as vantage-points from which to view the progress of medicine and its relationship to the science of that period.

1884

The first visit in 1884 had one important similarity with the present occasion. Britain was flourishing under the sovereignty of a Queen. Queen Victoria was still living in seclusion following the death of her husband. She found her Prime Minister, W. E. Gladstone, less congenial than her friend Disraeli. This was a year of crowded events at home and abroad. Chamberlain and Campbell-Bannerman were controlling the affairs of State and Lord Salisbury was Leader of the Opposition, as his successors have at times again been. The Labour Party was not yet in existence. The daily papers were describing what they called "the scramble for Africa" and Egypt was headline news. General Gordon had been sent to that troubled area only to be murdered shortly afterwards in Khartum. The expense involved forced income tax up from 5d. to 6d.—it has never looked back since. We still see trouble in Egypt, but to-day the papers speak of the "descrambling of Africa."

1884 was the opening of a period of vast medical research on all sides. The danger from micro-organisms was beginning to be realized. In France the chemist Pasteur was transferring his interest from the diseases of grapes, silkworms, and dogs to the ills of human beings, and in Britain we had Lister ready to convert this theoretical knowledge to practical use. We must also remember the vast improvement in the lens of the microscope, the discovery of new culture media, and the help of the incandescent electric light (perfected by Edison in 1879). All Europe was adding its quota to the general pool of knowledge. Koch had discovered the bacillus of tuberculosis and elucidated the problem of anthrax, yet although the cause of tuberculosis was

known in 1882, 60–70 years were to pass before a satisfactory combination of drugs was found to deal with it. Klebs had identified the organism of diphtheria and Löffler had isolated it. At this time cholera was rampant throughout Europe, and Koch had just discovered the comma bacillus as the causative organism. In the field of tropical medicine some years earlier Laveran and Sir Ronald Ross had related the mosquito with malaria.

It was obvious that the President of the British Medical Association in 1884 should have chosen as his subject the value of the study of these new micro-organisms and their relationship to disease and epidemics. Even then he pointed out that the clinical aspect of the disease must not be overshadowed by the laboratory.

As it happens, the doctor has always tended to be a pioneer user of any form of mechanical transport. In 1884, however, he had to be content, according to his social status, with the victoria, the phaeton, or the hansom cab. Disraeli had called this latter the "Gondola of London." The advanced set among the younger doctors, however, were experimenting with the "safety" bicycle, invented a few years before (H. J. Lawson), whereby the pedals were geared to the back wheel—a great advance, apparently, on what had gone before. The motor-bicycle did not appear in Germany until the following year, and it was two years later that Daimler produced the first automobile, though the Mercedes, named after his beautiful daughter, was not yet in production. All of this gives an index of the social life when our first meeting was held in Belfast, but I must not leave the subject of the motor-car without mentioning that Belfast added its quota to the comfort of the motorist, as it was here that John Boyd Dunlop—a veterinary surgeon—invented the pneumatic rubber tyre.

The *British Medical Journal* of that year makes exciting reading. A plea is made by the Editor to send letters, please, to the office and not to his private house. An interesting suggestion is made that ladies' stockings should be suspended from their shoulders. This is unexpected, as we are given to understand that the garment normally used for that purpose in 1884 was indeed a

formidable piece of semi-military armour. For some weeks there was reported the daily progress of an eccentric American called Weston, who covered in all some 5,000 miles on foot at 50 miles a day—it reminds us of a similar walk by a lady doctor of more recent times. The avowed aim of his project was to raise money for the "Society for the Study of Inebriety." As he finished with a deficit of £700 we wonder was his journey really necessary. There was a large number of letters to the Editor dealing with the problem of the hansom cab—how awkward it could be on a steep hill—how poor the light was inside for reading purposes—and how easily it could be blown over on a windy day. There were many articles dealing with the subject of the education of the child of 11 years; actual deaths were reported, for it was said to put a great strain on the nervous system, and it was given the special name of "board headache." This is just to remind us that when we complain of the "11+" we should realize that it is not a monopoly of this decade.

In the field of surgery great advances were taking place. The effect of the three A's—anaesthesia, anti-sepsis, and asepsis; 1840, 1860, 1880—was now producing fruitful results, and like many earlier prophets Lister was, in certain places on the Continent, finding more support than in Britain. Lister had made the operation safer than the disease. In this year, for the first time, an operating-gown was suggested (Maw and Maw, London) to replace the blood-stiffened discarded frock-coat. Men who added much to surgery were then in their full vigour. Spencer Wells with an enhanced reputation from the Crimean war had produced his artery forceps: Gamgee had invented the famous absorbent dressing. Higginson died this year—fundamentally he probably had helped more people than many of his more dramatic surgical colleagues do to-day: Hugh Owen Thomas, of Liverpool, was sowing the seeds of orthopaedics.

This and the two succeeding decades are the most stimulating in British medicine. It was indeed an expanding and exciting era. We might say, as it was said about a different revolution, "Bliss was it in that dawn to be alive, but to be young was very Heaven."

The progress of medical research and administration is closely linked with war. War offers opportunity for originality: it offers a challenge to the surgeon in the field of human endurance and resuscitation in its demand for efficient administration. Wars loosen the Chancellor's purse-strings. Thus in 1884, although the lessons of the Crimea had been forgotten, the 1870 Franco-Prussian war had produced some useful ideas. These came mostly from the well-organized Prussian administration, and learning from them we drastically reorganized our ambulance system.

The beginnings of the present R.A.M.C. can be seen in this year, when the Marquis of Hartington arranged for the amalgamation of the medical officers and army corps into one body—the Army Medical Department, but the title "Royal," although requested at that time, was not conceded, and a further war had to take place and 25 years elapse before the R.A.M.C., as we now know it, was to become a real entity.

On looking through the *British Medical Journal* for the year 1884 we see that Count Von Bismarck had introduced a national insurance service for Germany. Although it appeared an insignificant piece of news it later carried far-reaching consequences for all British doctors.

1909

When the British Medical Association met here in 1909 it was again a progressive period for Belfast. This University had just been given its Charter, it was now autonomous and free, after 60 years of modified harmony with its sister colleges in Ireland. Sir William Whitla was President of the Association, and to-night in this elegant Hall—one of his many gifts to the University—we are proud to remember a wonderful teacher, a writer, a pioneer, a politician, and a Pro-Chancellor. If in 1884 individual operations were reported as exciting isolated occurrences, and if the public was being prepared for the motor-car soon to appear as an alarming monster on the roads, then this year of 1909 should be remembered as initiating the period of mass production. Surgery in a big way had come to stay. Peter Freyer had reported 600 cases of prostatectomy with a 6% mortality rate, Waugh had performed 900 of his new operation for dissection of the tonsils, and Henry Ford was producing his Model "T" in vast numbers. The British Medical Association had doubled its membership in the past 25 years, income tax had also doubled, and super tax now appeared for the first time.

In his Presidential address Sir William Whitla stated that the teaching of the students was not so good as in his apprenticeship days—thus does history keep repeating itself. Just as a letter in the *Journal* of that year deplores "the erotic subtleties that the modern novelist seems to delight in," so 50 years later Lady Chatterley appears as headline news.

The Belfast meeting was notable in that Moynihan, Osler, Kocher, Almroth Wright, and many others of the great Masters were present. They seem in retrospect to be giants. Almroth Wright, one of our own citizens, was working on his opsonins, which the less reverent described as a "bacillary relish." It was at this meeting that he said that the "physician of the future will be an immunizer." Although his opsonins are forgotten his other remark now constitutes one of the philosophies of modern medicine. At the same time another Irishman—a personal friend of Almroth Wright—was writing *The Doctor's Dilemma*, the medical facts being inspired by his friend, although cloaked in a different language. Even as long ago as 1909 George Bernard Shaw was advocating State Medicine.

This period will always be remembered as the period of reform for the working classes. More laws and Acts came into force then than ever before or since. There was a Royal Commission on Poor Law, and Acts in connexion with the School Medical Service, Local Health Authorities, Old Age Pensions, etc. It therefore was not unnatural that Mr. Lloyd George, at that time the Chancellor of the Exchequer, should visit Germany to see how the German Insurance Act, then 25 years old, was working. Thus armed, he formulated the National Insurance Act of 1911, and paved the way for the more comprehensive Act of 1948, which another Welshman had the honour to bring forward. It will be noticed that medical affairs in 1909 were in the hands of the Chancellor of the Exchequer. It was another ten years before a Ministry of Health appeared, with a doctor as its first Minister. He was created a Viscount and a Knight of the Garter, an honour not given to any of his many successors, so far.

Britain was happy and prosperous, with no obvious war clouds darkening the sky. Edward the Peacemaker

was on the throne, and international politics seemed serene. South Africa had just become a British Dominion, and in the field of sport two British doctors, who had spent more time on the cricket fields of Gloucestershire than in their consulting-rooms, were now taking it easier—W. G. and E. M. Grace. The world was thrilled with the possibility of air travel, for it was in this year that Blériot made history by crossing the Channel in his monoplane in 37 minutes. In anticipation of the post of Poet Laureate, Robert Bridges, a renegade from medicine, was turning his talents to the realm of poetry.

1937

The events of 1937, when this Association last met here, now seem so much clearer in retrospect. We always see more from the touch-line than when taking part in the game itself. In 1937 we thought that war was a possibility; we now see that it was inevitable. In four short years Hitler had come into power and was pursuing the relentless course foreshadowed in his book. Our military experts, still thinking of Flanders in 1914–18, and of the civilian bombing of the Spanish Civil War, were warning us what shape the next war should take. They could not foresee the vast problems of the rapid mobile desert campaign, the swamps of Burma, nor did they know that the final curtain would be rung down in a flaming fire when bombs, each the size of a closed fist, were dropped one day on Hiroshima and three days later on Nagasaki. We soon found that the lessons of the 1914–18 war were valueless. The trenches of Flanders and the Maginot Line were useless against modern tanks and airborne troops. In the medical world we were enjoying the new-found sulphur drugs—sulphanilamide and its many hybrids—substances destined to save many lives until in 1942, half-way through the war, penicillin was to come further to our aid.

It was in this same year, 1937, that George VI was crowned with pomp, the ceremony being televised for the first time, yet withal there was an air of uncertainty. We felt that each scientific discovery which offered potential help to mankind also seemed to have sinister possibilities. It was in 1937 that Frank Whittle produced the jet engine, as was said "for a man in a hurry"—a vast improvement certainly on Blériot's little plane of 25 years before; but was the new form of power going to be for peace or war? Three years earlier it had been discovered that ordinary elements found in nature in the stable state could be made radioactive—and so a weapon was thus suddenly produced with unbelievable power for good or evil, according to man's ideology. New surgical operations of an experimental nature were constantly being developed. Prefrontal leucotomy and lobotomy had just been invented by Freeman and Watts to carry treatment further than either E.C.T. or insulin therapy. These latter had now had a two years' trial and had given partial success. But, whilst the knife was invading the domain of the psychiatrist and the cardiologist, we found that the antibiotics were replacing the knife in other areas. Empyema and mastoid suppuration soon were almost to disappear.

The Royal College of Surgeons in London was starting to become vital and progressive—gone were the days when it was just a Golgotha of skulls. Alas, this hoped-for resurgence had to wait until the effects of its tragic bombing had been cleared away and until with the help of generous donations a new college was to arise

from the ashes of the old. Advances in anaesthesia had given new scope to surgery. It was allowing almost too much to be done, and with the modern speed of life and crowded days there seemed little time left for the cultural side of life. Specialism in the profession in Britain was increasing, each person tending to become a specialist in a smaller fragment of human illness, while on the Continent the consultant still continued to be polyvalent. The oncoming war was still further to organize these sub-specialties, as we can see by the multiplicity of degrees and societies that are now in existence. With a better knowledge of physiology, and with more skilled radiography, foolish operations were disappearing. Orthopaedics was the first of the major specialties to develop, and it is sad that, although enormous progress was made in that line, yet the sister branch of traumatic surgery was still to remain the Cinderella of surgery.

1962

As we meet here to-day in 1962 it is difficult fully to appreciate the medical problems and the advancements of this time. It requires the perspective that only history can give. However, if surgery in 1884 was described as essentially a life-saving process, then 1909 was the pain-easing period. If a surgical operation in 1884 was a hazardous ordeal carried out by a courageous surgeon on a gallant patient with the help of a terrified anaesthetist, then surgery to-day has progressed greatly. It is the courage and knowledge of the anaesthetist which have given the surgeon the confidence to tackle what was at one time the impossible. This era will be remembered because in it we have tried to re-establish the amenities of life. Corneal grafting, correcting the detached retina, providing a new plastic lens, have given sight to many otherwise destined to live in darkness. Micro-surgery in the middle ear has allowed the deaf to enjoy again the song of the lark and the babbling of the brook. Those with the larynx removed are again able to converse through a small vibrator built into their dental plate. The plastic surgeon has given confidence back to the maimed, the bulky, the disfigured, so that they are no longer self-conscious and can avoid the cruel comments of a critical world. The newer operations for Parkinsonism have made life tolerable, and various heart operations have given afflicted children a chance to grow up to lead a normal or almost normal life. We have not given life, but we have made living more worth while.

This period will also be remembered as the era of surgical replacement. It is hard to realize that a patient can walk about with a nylon aorta or synthetic aortic valves which click all day and night: that septal defects in the heart are patched with "avalon" sponge, and that patients are walking on femoral heads of acrylic resin, or that the rate of the heart can be kept under control by a built-in electrical mechanism under the skin. It is only in the last few years that we have found what foreign materials can be married to the human tissues to live in perfect concord. The present trend in surgery is physiological, and the surgeon is getting further away from the engineering feats of his predecessors. Gradually creeping in to replace surgery we have the isotopes, and once their accuracy has been established some problems now entirely surgical will be dealt with by this new weapon. Trauma has increased because the State has not kept in touch with the advances in machinery. Man-made diseases and cross-infection in

the wards have made us reassess the so-called wonder drugs.

The disappearance of syphilis and tuberculosis, so much vaunted a few years ago, is not just so definite, and perhaps in their new form they will not be so readily dealt with as when they appeared in their virgin state. With man living twenty years longer than he did fifty years ago cancer would appear to be on the increase, yet our medical statisticians assure us that this is not so; it is only because the danger of the other killing diseases, such as pernicious anaemia, diabetes, diphtheria, measles, pneumonia, tuberculosis, smallpox, typhus, etc., has virtually disappeared. Cortisone is at the cross-roads, finding favour with some diseases and found wanting in others. A cortisone life is a dangerous one to live indefinitely. Something safer is needed, and is bound to emerge.

Automation in the laboratory has come to stay, and expendable goods, due to the price of man-power, have replaced the old laboratory equipment. The modern laboratory is better equipped than the modern kitchen with clothes- and dish-washers, etc. It will be a sad day, however, when in the home expendable cups and saucers will replace the Royal Doulton, and plastic bowls the old Queen Anne sugar-basin. It is indeed difficult to retain a satisfying and sensible balance between culture and expediency. In some ways it seems a crazy age, with waste of food, material, and time seen everywhere, and yet not enough of all these three valuable ingredients to go round.

The consultant was at one time a teacher, a clinician, and a research worker. We now find, however, that the three branches tend to fall apart, possibly owing to the inherent qualities and interests of the individual man. The popular teacher who probably was a "grinder" in his early career now tends to be a raconteur of somewhat Rabelaisian anecdotes, remembered often by the students long after the serious scientific, if sententious, pronouncements of the specialist are forgotten. The clinician, dapper in dress, cultured in conversation, and dextrous in his specialty, is often the possessor of a large practice. He may have no time for research and is often not interested in teaching. Finally we have the research worker, the back-room boy, untidy in dress—often neither cleanliness nor godliness obtrudes too ostentatiously—who has little time for the superficial approach of the teacher or the worldliness of the clinician. Yet in all seriousness they are all necessary. Rivalry is useful and valuable, whether it is in the field of sport or in matters medical. Too much agreement with authority and the development of the "Yes" man are indeed bad things, as we see too often in Continental clinics. In time, as one American writer says, it leads to the condition of "the bland leading the bland."

If the three branches can be fused it forms a strong combination, and if the three groups remain isolated the profession disintegrates further and further into splinter groups, and it is from this disintegration that the profession must be saved. That is why we felt that for the Belfast meeting an attempt to link such groups more closely together should be made, and so the symposium, which embraces all branches of the profession, has been our plan.

The feeling persists that undergraduate teaching is not what it was, and that the laboratory and the x-ray and other departments are replacing clinical examination. Research has tended to take the patient from the bed to the laboratory.

An interesting modern feature is the formation of clubs and societies for patients suffering from the same disease. The first was the Colostomy Society, started by Ernest Miles at a time when to have this operation was almost equivalent to social ostracism. Now these societies abound everywhere. We have the Alcoholics Anonymous, the Diabetic Association, the Haemophilic Association, the Multiple Sclerosis Association, and the QT, a club for the ileostomy patient, so called because it was formed on the QT. In America there is a club for those with a five-year survival from a cancer operation: they wear a small dagger in their lapel; and recently for those who had lost their larynx there is a club called the "Lost Chord." The mutual help and suggestions that the members can give each other is unbelievable, and many modifications of treatment have arisen from their own suggestions. This is a happy contrast to the dishonest hypocrisy and pseudo-modesty of the Victorian age.

We cannot, however, leave the year 1962 with a happy feeling of complacency. We must look at the debit side. A change in the mode of life that is causing great and genuine alarm is the deterioration in morals, manners, and ethics. Although this may be a national problem it has repercussions on the medical profession, and it puts obligations on its members that they find difficult to meet. This involves many branches of our profession: the psychiatrist, the obstetrician, the venereologist, and the casualty surgeon. Road accidents are mainly the result of carelessness, bad manners, selfishness, and alcohol. All these four diseases can be avoided. The 20,000 burns a year with the death of twenty children a day could be reduced by the compulsory use of non-inflammable goods. To make this obligatory we need only the necessary Government support. Changed manners and morals and the glamour of living dangerously, with the exhibitionism which it entails, have again raised the venereal diseases rate and are filling our papers with reports of gangster attacks and murders. There is a decrease in our loyalty to our religious beliefs, and with lack of home life delinquency is appearing at an earlier age.

1984

It is said that it is safer to walk a tight-rope than to prophesy; but to look forward to our next meeting in Belfast in 1984 is indeed a challenge.

Present trends in medical practice would indicate that group medicine is going to be the future method. It exists at present in two countries with widely differing ideologies—the wealthy clinics of America and the polyclinics of the U.S.S.R. It is slowly developing in Britain in our more densely populated areas. It appeals more to the doctor than to the patient. For the doctor it offers opportunity for leisure, it gives security, it promotes better medical relationships, does away with cut-throat competition, and allows immediate help in the way of further opinions on a difficult problem. The National Health Service, by dividing consultants from the practitioner service, perhaps prevented existing mixed groups from being perpetuated. These were excellent in their way, and they were a particularly happy combination when they had access to a small hospital. It is often said that the team-spirit is the answer to all problems, but it also has its disadvantages. With it there is a tendency to "pass the buck," for no one is willing to take the final decision, and there is an ever-increasing

number of satellites—in keeping with Parkinson's Law. We should not complain, however, if the patient—and he is the final aim in all our planning—is better served ; but is he ?

Group practice is analogous to what is going on in the world of Big Business—the take-over bid. Is the single practitioner—the “hand-made” doctor—finished? Is the hand-percussed chest and the hand-palpated abdomen to be displaced by the impersonal silhouettes supplied by Dr. Roentgen's rays? All this can be carried to the point of absurdity: when we shall no longer ask the patient about her headaches, her bowel, her bladder, or her uterine function. This will all be worked out on an electroencephalogram, an electropneumogram, an electroretinogram, or an electromyogram. The clinical thermometer will soon be as rare a relic as a bleeding-bowl, and a great deal less attractive to the antique-collector: in fact, already in certain hospitals the patient's temperature is automatically recorded by an electric fitting to the bed. Are we safer in the hands of a doctor who cannot know everything but who cares for his patient, or in the hands of a technician who knows everything except the patient? The value of the technician must not be underrated, but it seems to require many technicians to equal one clinician, as the technician, narrow in his specialty, seems to add increasingly smaller and smaller pieces to the jigsaw puzzle or mosaic called “diagnosis.”

There surely is a tendency for the doctor to get further and further away from his patient. Dominic Corrigan, early in the last century, actually with his own fingers felt the pulse of the patient and discovered the “water-hammer” pulse, but in 1819 a fastidious Frenchman with his stethoscope, a tube of beechwood one foot long—it would now be called a hearing-aid—separated himself from the patient, and this, with longer and longer tubes, has been going on ever since. Now with electrocardiograms and x-rays the patient's troubles can be diagnosed by long-distance control. The high-powered biochemists do not even need the body at all. They look on it merely as a bag of skin of somewhat eccentric shape—with podia and pseudopodia—sexless, ageless, which contains an intriguing mixture of fluids and salts called electrolytes, and it is their primary interest to balance these with the same accuracy as the Chancellor does each April another interesting budget. In this mad rush a balanced view of the doctor-patient relationship must be maintained. The real confidence of the patient makes medicine one of the most privileged professions in the world and is now the only real incentive for the young man to take it up as his career.

Medical Training

The training of the medical student is giving much food for thought. My grandfather and my father qualified in four years, I qualified in five, and my son could qualify in six years. The modern doctor is a relatively old man before he is trained for his life-work. In other walks of life marriage is tending to take place earlier than formerly and so the young doctor is at a disadvantage. Marriage is common among students in America: there the young wife has got to work, and if this is an accepted policy then the State must realize that, as in Russia, something must be done for the children. Women in the U.S.S.R. have always worked, hence organized crèches exist everywhere—at the university, at the factory, at the hospitals, schools, etc.—

and so accidents are much less frequent. It is unfair to place the full responsibility on the parents when the State and public bodies and the public administrators could take a more practical part in this problem than they are doing at the moment.

The medical curriculum is constantly under review, with more teaching suggested at the bedside and less at the blackboard, but still the feeling persists that post-graduate teaching and research are being fostered at the expense of the undergraduate's training. The standard expected of any young man aspiring to consultant and hospital post is so high that higher multiple qualifications are required. This all produces a super-specialist, often a man with too narrow a field of vision: blinkers to cut out the outside world must not be put on too early. It is still an eye-opener to those of us who visit Continental clinics to see the same surgeon in one list doing a hysterectomy, a prostatectomy, an open-heart operation, a resection of the rectum, and a removal of the pharynx—work that in this country to-day would be divided probably over four or five branches of surgery.

The modern nursing profession, just over 100 years old, is causing anxiety, and reorganization must take place. The scarcity of applicants is causing alarm. For the future it would appear that there will be a small number of highly trained women—probably with a university diploma: others will be technicians only. In hospitals at the moment there are 2.7 people required to look after one patient, and yet 50% of these patients who are awaiting tests or are convalescent are perhaps fitter than the nurse in charge, and fully able to look after themselves. Progressive nursing care, and segregation of the patients into very ill, ill, and fit, will save nursing personnel and hospital expense. Hostels and hotels must take the place of the expensive hospital beds occupied by these fit patients. Every available aid must be called in. Permanent goods are being replaced by the expendable. Rubber has given way to latex, polythene, plastics. Man-made fibre has relieved the silkworm of any further duties. Glass containers are being replaced by disposable or unbreakable ones. Man-power has exceeded in price the cost of the automatic or robot machine.

Wooden spatulas were the first to replace the teaspoon; now we find that dressings, rubber gloves, syringes, blood-transfusion sets, even operating-gowns, operating-towels and coats, bed sheets, nurses' caps, nurses' aprons, in certain places are expendable or disposable. Soon we may see the bedpan and the urinal used only once. This is partly linked up with the shortage of nurses. One must point out that some “disposable” goods are really “indisposable” or indestructible, and that very high temperatures are required for the final and complete destruction of some plastic materials. Apparatus to achieve this is so far available in only a few hospitals in Britain, but without it in the years to come behind each hospital there will be a “slag” heap of indestructible equipment similar to the mounds we see at the pitheads of our various collieries. One must also notice with some alarm the various plastic bags—urinary, ileostomy, colostomy, etc.—which are now with complete abandon flushed down the various water-closets throughout the country. I hope our sanitary engineers realize that this is going to increase over the years to come, so that the perennial problem of the seaside bathing resorts will be further aggravated—a hardy annual at the A.R.M.

The Machine

Are we going to lose scientifically by the multiplicity of the robot machine? It is often said that a robot is much better and more accurate than a man, that he never goes wrong: but he is not inquisitive, he cannot think, and so he cannot initiate research. Would penicillin have been discovered in a completely automatized laboratory? Serendipity—the exciting accidental discovery—would indeed be a thing of the past.

Hospitals have been slow to adapt themselves to modern function. Surely, as other things are expendable, so should the hospital itself be also. Many a tented hospital in a desert campaign, or a temporary E.M.S. hospital in a bombed London, has suggested the answer to the chromium palaces now being erected. Men like Finsterer, deprived of the privilege of working in professorial or university departments, made their international reputations in theatres of very simple structure, and some, though little better than barns, became the Mecca for surgical travellers. Something radical and original is required in hospital design, and since the war Britain has lagged behind in this respect. The time must come when patients awaiting clinical tests do not fill expensive beds to the exclusion of urgent cases.

Among diseases themselves the mind turns to cancer. Where in 25 years from now shall we stand in relationship to malignancy in general? I feel that the answer will have been found. If a drug such as penicillin was found to stop the multiplication of bacterial life without altering the normal growth of the cells vital for our existence, surely some substance will be found; and the fact that even to-day we can see this disease going into reverse for 6 to 12 months, with apparent cure over that period, gives us the hope that we are on the right lines. Mutilating surgery is certainly not the answer, nor is deep x-ray therapy in its many forms a scientific selective treatment. It will be a wonderful day for mankind when behind our hospitals we can see rusting masses of material which were once cyclotrons, cobalt bombs, and linear accelerators, and which future generations will look on as extinct as the dinosaur.

If the machine continues to take over power there will be less industrial injury in our factories, given fewer employees and more automation; but unless road construction keeps pace with motor-car production the toll of the road will continue. It is hoped that in 25 years a realistic view will have been taken of the playground problem, as it is this only which will reduce the death and mutilation of children on the open road.

Noise is going to be an increasing problem as it seems inseparably linked up with speed—it seems difficult to have one without the other; but hospital noises too must be reduced—floors, walls, utensils, lift doors, nurses' shoes, the delirious patient, the snoring patient. I am astonished that this last problem has remained untackled so far. Surely our plastic surgeons could tighten up whatever structure it is that goes slack with age. It is much more revolting than a crooked nose or projecting ears.

Leisure Time and Leisure

We will continue to travel even faster, automation will turn out goods more rapidly, and even our meals will appear with decreasing effort on our part, so with all this saving of time the world is going to be faced in the near

future with an overabundance of leisure time. In a short time in the U.S.A. man will be working a 20-hour week and in the U.S.S.R. a two-hour day. Such a state of affairs might not upset the tramp, the philosopher, the beatnik, the monk, the alcoholic, or the professor—such linking together, if unfortunate, is naturally accidental. It will probably affect least the professional, executive, and management classes, but the "compulsive worker" will probably break down. In America many groups of neurosis have been classified—the pre-retirement group, the retired group, the juvenile group—and their vandalism—the Sunday neurosis and the holiday suicides. These people are all "leisure-stricken" and all spiritually unemployed. They are unable to occupy their leisure or "to work their leisure," as the Greeks said. For them external resources are not sufficient—such as unlimited playgrounds, television, golf courses, museums, amusements, hobbies, tennis courts. These are not the answer. You can always supply the "toys" but you cannot supply "play."

We must clearly differentiate and note that there is a vast difference between "leisure time" and "leisure." Lord James of Rusholme has pointed out "the rediscovery of leisure should be the chief aim of our schools and universities." Our educational system should be geared to enable all to enjoy this rediscovered leisure. Leisure is a necessary part of one's life. Work and leisure have been shown to be complementary to each other—like systole and diastole. A change of outlook is needed just as we change from the high power to the low power on a microscope. "Man's imperishable intuitions have often come to him during his moments of leisure." Every man knows that the best after-dinner speech is the one he makes just as he falls to sleep. How much more valuable a tape recorder often would be under the pillow than on the office desk.

In any creative idea, whether it be a speech, a paper, or a project, there are four phases. The first (preparation) is conscious work and hard work; the second (incubation) arises in a leisure phase when ideas come unsought; the third phase (illumination) is the creative flash—the imperishable intuition; and, finally, stage four (verification) is the conscious hard work to improve, crystallize and rationalize and polish, what was produced in the creative flash. Work with many is a compulsion—"I must," "I should," "I ought"; we cannot produce creative work under the tyranny of the compulsive "should" or the domination of the compulsive "oughts." Ogden Nash speaks of these people as dying from "hardening of the oughteries"! This obsession leads to the exclusion of leisure, for ultimately when such workers are given leisure time they are not able to use it. Our universities all have a director of studies, but soon a professor of leisure will be more necessary.

Conclusion

Ladies and Gentlemen, the greatest-ever statesman said, "The further we can look back, the further we can look forward," and I have had this in mind as we have stepped on tiptoes through one hundred years of medical progress. The first part may be factually correct, but in the latter part, as is the privilege of an Irishman, I have trailed my coat. I have done so only in the knowledge of those words of H. W. C. Davies, that "However slight the fibres with which the present is rooted in the past—to observe this is to realize the continuity of human development."