British Medical Journal

SATURDAY, OCTOBER 21st, 1933

BEDSIDE AND LABORATORY

The Harveian Oration, delivered annually at the Royal College of Physicians of London, was established by Harvey's gift in 1656—the year before his death ; and as the chain of distinguished Orators has lengthened through nearly three succeeding centuries it has become more and more their custom to turn the gaze back across the intervening years and dwell on William Harvey and his times. This is in the spirit of due piety, but not quite as Harvey did and thought, for he was no historian of the past. Discovery of the secrets of Nature by experiment looks to the future, and that was the duty which he enjoined upon the College he had served so long and loved so well.

Sir John Rose Bradford, in his Oration of 1926, spoke of the importance of Harvey's work, not solely in respect of its epoch-making discoveries that led to the emergence of physiology, but further because it laid the foundation of all the subsequent work through which medicine is now attaining scientific status as a branch of natural knowledge. Turning thus to present times he discussed the position of physiology, in which, as an established science, was accepted the fundamental law that like causes produce like results. The same law must govern in the realm of disease unless the art of medicine was to be nothing but mere empiricism. But physiology had won her proof of this rigid law of cause and effect only through clear experiments that slowly disentangled the complicating causes and found which was responsible for each effect. The physician's experience of the complex variability of individual illnesses made it hard for him to keep the same truth clear, so long as he was restricted to observation of the happenings of disease. It might seem that Harvey's experimental method was less easy of application in actual medical work, but through it, whether used by the clinician or by those supporting him in the biological sciences, lay the hope for quicker progress towards the goal that all desired of certainty in knowledge. The Orator of two years ago, Dr. Robert Hutchison, also sought the forward view. In an address on the " Message of Harvey for Us To-day " he described the great body of work that still waited to be done by clinical observation of the chance happenings of disease, wherein lay prognosis and often diagnosis, and contrasted this method with the experimental approach that endeavours to determine the event upon which the observation is to be made and to repeat it until a deduction can be precise and secure. Trained himself in both methods, for he had worked in the physiological laboratory before he passed to clinical medicine, Dr. Hutchison insisted, as Sir John Rose Bradford had done, on the difficulties that even a Harvey would have found in our modern scientific times of being competent both as practising physician and as experimental physiologist. Each type must carry so much detailed knowledge in his mind, and each finds in his own subject such full occupation of all the working hours, that the union of both in one man would hardly again be possible.

Yet it is plain that medicine requires for progress the closest possible union between the two groups of workers—those in the sick room and those at the laboratory bench. The practising clinician may see his problem and yet have no leisure to attempt its solution: the laboratory worker is often blind to the question that the clinician has seen so vividly. Some other brain is needed to bridge the gap and make the union closer. Men who have been concerned for the continuous growth of the scientific spirit in medicine, as distinct from the medical sciences, have discussed the plan for a special group of research physicians, whose whole time and energy should be devoted to searching out the secrets of disease both in the laboratory and in the hospital wards, and calling the experimental method to their aid in both branches of their work. The main tasks of practical medicine could then continue to fall to men in the intellectual lineage of Sydenham rather than of Harvey, and there would be no danger of losing that direct clinical skill which in England has ever been upheld as the essential talent of the practising physician. Dr. Hutchison referred to this proposal as one that would have gained Harvey's instant approval for its creation of posts so well suited to his own abilities and taste. In the Oration of this year, which we print to-day at page 717, Sir Thomas Lewis speaks confidently of that group as now beginning to be established, and he seeks to define their work with knowledge based on almost thirty years devoted to such clinical research and with the ardour that placed him among the very first to advocate this modern need.

After a glowing tribute to Harvey's high work, Sir Thomas Lewis comes at once to our present day, and pleads that medicine, still as medicine, must never forgo her heritage from Harvey nor transfer to other hands all rights of tillage by the enriching means of science. The times are easy now for those who, using that experimental method, have securely established the settlements of physiology and pathology ; and their harvest of knowledge has grown so abundantly that even those who seek nothing beyond the practice of medicine are all sent for long periods of apprenticeship in their discipline. But these groups tend more and more to seek learning for its own sake, and the grounds that they have cleared for cultivation often seem remote from the old wilderness of sickness where Harvey was so great a pioneer. Men with their intellectual discipline but with a keener interest in clinical problems are therefore needed, and they must be given the means to develop their husbandry amid the rank growth of ill-health. In an article of high importance on this question, published in the *British Medical Journal* of March 15th, 1930, Sir Thomas Lewis analysed with close care the reasons for developing such a special band of

workers in England and assuring them of a life's career. The means have now been granted, though in no overwhelming abundance, and the opportunities lie before them. The permanent endowment in 1932 by the Rockefeller Foundation of a senior whole-time post, akin to a professorship, at University College Hospital, has been followed in July of this year by the decision of the Beit Trustees to create another and similar senior position in clinical research as soon as the occasion may arise. The Medical Research Council is naturally eager to continue the policy which it originated in 1916 by its first appointment of Sir Thomas Lewis himself to a whole-time clinical post. Younger men who choose to devote their powers to " clinical science " have not only the hope now of a certain career if their work prospers, but they have at once the intellectual sympathy and encouragement of a group which will value their researches in that intermediate field which is neither pure physiology nor practical medicine, and will await with quiet confidence the gains that in time must follow for the treatment of the sick. The work will often seem to lean more towards science for its own sake, but that is no misdirection. Eager workers in the field of practical medicine will never be lacking among physicians and surgeons of this country and elsewhere. The great advances of the last twenty years in knowledge of means for the diagnosis and treatment of diseases of the lung—by direct or lipiodol radiography, by the bronchoscope, by pneumothorax, and by other forms of surgery—have, for example, come almost entirely through the labours of the latter group of men. But side by side with them, in friendly co-operation towards the common end of mastering the riddles of ill-health, will be a small group of clinicians whose first and constant aim is to establish knowledge of disease on a clearer and more certain basis. Every step that carries Medicine on to surer foothold as a science will, directly or indirectly, increase her power to heal. Such has been the unvarying lesson of the past, and this new group of scientific workers will therefore be welcomed gladly by all who hope for progress.

POSSIBILITIES OF THE INTRADERMAL TUBERCULIN TEST

Tuberculosis in man may be due either to the human or the bovine type of bacillus. So far as prevention of the disease is concerned, we are in a better position to deal with infection of bovine than with that of human origin. The data summarized in the People's League of Health report (reviewed in our columns of April 2nd, 1932, p. 618) and the recent work of Price at Toronto, render it increasingly clear that a large proportion of infections with the bovine type are due to the consumption of raw milk or cream, and that the adequate pasteurization of the milk supply can be trusted to eliminate more or less completely infection caused by this type of bacillus. It is important, however, to remember that the bovine tubercle bacillus accounts, in this country, for only about 6 to 7 per cent. of the total tuberculosis mortality, and that even if the whole of the milk supply could be satisfactorily heat-treated we should still be left face to face with the remaining 93 to 94 per cent. of tuberculosis which is due to infection with the human type.

In the development of clinical tuberculosis two main factors are concerned—infection by the tubercle bacillus, and the resisting power of the patient. How little we know of their relative importance was evident to those who attended the recent annual conference at Cardiff of the National Association for the Prevention of Tuberculosis, when entirely diverse opinions were expressed by different speakers. That the balance is often delicately adjusted, and that environmental factors such as undernutrition and overcrowding may disturb it to the disadvantage of the human host is suggested by Dr. F. C. S. Bradbury's[1] inquiry into the undue prevalence of tuberculosis among the Tyneside workers. But whether environmental conditions are of the paramount importance that some observers are prepared to ascribe to them is doubtful, and far more survey work of the type just mentioned will have to be done before sufficient evidence will accumulate to enable sound conclusions to be drawn. With infections of the bovine type we are in a position, if we choose to translate our knowledge into practice, to eliminate infection almost entirely by insisting that all liquid milk for human consumption shall be derived from tuberculin-tested herds or shall be adequately treated by heat. With infections due to the human type, on the other hand, we are on much less certain ground, and it is here, if we wish to intervene intelligently in the combat between the invading micro-organism and the resisting host, that we require so much more information than that which we already possess.

The possibilities of the Schick reaction were quickly realized, and in combination with bacteriological examination of a throat swab, it was soon found possible to exercise a considerable measure of control over the spread of diphtheria in closed communities. By these two methods information can be obtained that enables the exposed population to be divided into four classes, each of which can be appropriately dealt with. The possibilities, however, of the intradermal tuberculin test, either alone or combined with radiological examination of the lungs, do not seem to have been generally realized. While the analogy between the two cases is not strict in detail, and while at the moment we have no such immunizing agent in tuberculosis as we have in diphtheria for dealing with the non-infected susceptible group, it is sufficiently close to enable us to predict that the extended use of the tuberculin reaction and of radiological examination would furnish us with the very type of information which might well prove to be invaluable in the future control of tuberculosis. It is therefore with real satisfaction that we have received from the Joint Tuberculosis Council a note on the graded intradermal tuberculin test, drawn up by Professor S. Lyle Cummins, and designed for routine use

[1] F. C. S. Bradbury: *Causal Factors in Tuberculosis.* National Association for the Prevention of Tuberculosis. 1933.

in an investigation of the survey type over a wide field. The admirable monograph of Dr. D'Arcy Hart[1] drew attention to the value of the tuberculin test in diagnosis. What we want even more urgently, and what presumably the aim of the Joint Tuberculosis Council is to provide us with, is knowledge of its value in prognosis—prognosis not of the clinically tuberculous patient, but of the latently infected clinically healthy subject. Only by estimating the cutaneous sensitivity of the individual for tuberculin at regular and frequent intervals, and by following up each subject from childhood to adult life, shall we learn how to interpret the results of the reaction. Just as the value of the Schick reaction is amplified by a concurrent bacteriological examination of the throat for diphtheria bacilli, so will the value of the tuberculin reaction be increased by a concurrent radiological examination of the chest. The combination of these two methods might quite possibly enable us to divide our population into groups, one of which, for example, might safely be left alone, another of which, suffering from latent infection rapidly progressing towards clinical disease, might require immediate treatment in a preventorium. We earnestly trust that, so far as economic and other factors permit, the Joint Tuberculosis Council will endeavour to combine radiological examination with intradermal tuberculin testing, and so to obtain evidence which, when carefully analysed, will enable us to take a further step forward in the prevention of human tuberculosis.

[1] P. D'Arcy Hart: Medical Research Council, Special Report Series, No. 164, 1933.

AUSTRALIAN CANCER CONFERENCE

The fourth Australian Cancer Conference, convened by the Commonwealth Director-General of Health, met at Canberra in March, and a report of its transactions has now been received. It was announced that the rise in the cancer mortality curve showed no slackening, and a plea was made for the inauguration of a definite anti-cancer organization in each State so that all available forces might be marshalled against this disease. Dr. M. J. Holmes reviewed the statistics relating to cancer mortality, and pointed out two important factors: (1) a continuous increase in the proportion of the population living into the later age groups; and (2) a very marked rise in the cancer mortality in the population in the later age groups, including that of 65 years and over. In age groups under 65, he added, the death rate for this disease was actually declining. This diminution might be attributed to the improved facilities for diagnosis, the efficacy of modern treatment, and the efforts made to induce patients to seek treatment early. Dr. T. Cherry of Melbourne gave an outline of research work which had indicated the likelihood that the tumours in the mouse originated by tubercle bacilli were in some ways more suggestive of human neoplasms than were the spontaneous tumours of mice. It had been found that these bacilli might remain in the mouse tissues for long periods, producing little apparent ill-health, but acting as a chronic irritant, whose influence might be traced in the marked multiplication of lymphocytes in the blood, lymph glands, marrow, and other tissues and organs. Ulcers surrounded by polymorphic leucocytes tended to heal, while those surrounded by lymphocytes tended to become malignant. Papers contributed by delegates emphasized the difficulties of pathological classification, and the Conference reappointed a committee to continue the study of cancer classification and to make recommendations. It was announced that the University of Sydney had instituted a diploma in radiology, and that proposals were being considered by the University of Melbourne for diplomas in radio-diagnosis and radiotherapy. The Conference was impressed by the evidence brought forward in respect of the influence of skin irritation by sunburn as a potent factor in the production of precancerous conditions and actual cancer on exposed parts of the body surface. It agreed that the public ought to be warned by health departments and other authorities to keep constantly in mind the necessity of taking reasonable steps to avoid unnecessary sunburn. This applied to exposures during recreation and out-of-door work, especially in the drier districts of the interior of Australia. A resolution was also adopted expressing the view that the admission into the country of apparatus and proprietary preparations for use in the so-called mild radium therapy was inimical to the treatment of cancer and to the health of the community. It was thought that a scheme of Federal organization might well be brought into being for educating the public about the occurrence of cancer, care being taken to avoid causing undue alarm. A strong appeal was made by different parts of the Commonwealth for the provision of a much larger supply of radium. A clinical symposium on gynaecological cancer occupied the last day of the Conference.

ARACHNIDISM

It is probable that all spiders kill and partly digest their prey by the secretion of glands connected with their mouths. The vast majority of these creatures are harmless to man, but in many parts of the world spiders exist which can inflict a painful or even fatal bite.[1] Dr. W. Wilson Ingram, a physician in Sydney, and Mr. A. Musgrave, the entomologist of the Australian Museum in the same city, have recently published a record of spider-bite in Australia.[2] It appears that in that country the majority of bites are from the spider *Latrodectus,* immediate relations of which cause trouble to man in many warm climates. These spiders generally attack people when they are sitting on earth-closets. Though the bite is very painful and the pain intractable and prolonged, the case mortality is low. Drs. G. Walsh and W. G. Morgan of the Employees Hospital, Fairfield, Alabama, have recently reported a series of twenty-nine cases[3] of poisoning from *Latrodectus mactans,* the so-called "black widow" or "shoe-button" spider. Symptoms are, they find, readily confusible with those produced by an acute intra-abdominal lesion—for example, a ruptured gastric ulcer. In addition to the intense muscular cramps and generalized pain, without any dermal eruption, there is often an associated mental confusion, rendering it difficult to obtain diagnostic assistance from

[1] Cases of severe spider bite are described in the *Epitome* of 1931, ii, para. 441, and 1932, ii, para. 400.
[2] *Med. Journ. of Australia,* July 1st, 1933, p. 10.
[3] *Amer. Journ. Med. Sci.,* September, 1933, p. 413.

the patient's account of the onset of his condition. The serum of convalescents is used in California in treating the bite of a related spider, apparently with excellent results. But in Australia, or at least in parts of New South Wales, man is occasionally bitten by spiders of the genus *Atrax*. These creatures are not closely related to *Latrodectus*, and the symptoms which follow their bites are quite different. The venom of *Atrax* is neurotoxic, and produces no local oedema and little pain at the site of the bite, but within an hour the patient may be acutely ill, with a rapid pulse, cyanosis, and pulmonary oedema. Sweating and vomiting increase the cardiac embarrassment, and death frequently follows within twelve hours of the injury. Recovery, if it occurs, is rapid and complete, though death from secondary infection and especially from malignant oedema has been known. It must be a matter of great difficulty to deal with an emergency so grave and urgent, and also so rare. The British practitioner may congratulate himself that these accidents do not occur in this country. We understand that the large and terrifying spiders which are often imported with bananas are harmless, though dock hands occasionally present themselves at hospitals in London claiming that they have been bitten by them.

STERILIZATION IN SWITZERLAND

We know that the law in Switzerland permits sterilization of the feeble-minded, but it is somewhat surprising to learn that practical experience of the procedure in that country goes back fifty years. According to Professor Hans Maier, director of the Zürich Mental Hospital at Burghölzli, who gave a lecture on the subject at the Royal College of Surgeons on September 28th, the operation of sterilization may be performed when two medical men, one a psychiatrist, declare in writing that the patient is a fit subject for the operation, or, more precisely, that sterilization is necessary in the interests either of the individual or of social and racial hygiene. The law in Switzerland argues that since its purpose is to protect society it may not act as a hindrance to "racial hygienic prophylaxis." The operation cannot, however, be performed without consent. On the other hand, an institutional authority may in some cases decree that the patient can only be discharged provided she is first sterilized. An example of this is the case of the schizophrenic who kills her child and is committed to an asylum; if the danger exists that she may kill another child the authorities decide that before she is liberated the operation of sterilization must be performed. The same procedure is carried out in the case of a feeble-minded girl who, after discharge, runs the risk of bearing further illegitimate children. Sterilization is not undertaken, however, in cases where no psychic or physical defect exists to justify it. It has been known for authorities to attempt to force girls who have had one or two illegitimate children to undergo the operation in order that they may not be the cause of further expense in subsequent pregnancies; in such cases, unless there is an accompanying psychosis, the surgeon refuses to perform the operation. Thus sterilization cannot be secured in Switzerland by the wealthy patient as "an easy way out." At the same time the married woman in miserable circumstances, who already has a family but who is not in a position, economically, to have further children and to bring them up, is considered a fit subject for sterilization. In such cases the written consent of both husband and wife is required, and it must be established that further pregnancies would cause serious injury to the woman's health and that the usual means of contraception would fail. Feeble-mindedness in the unmarried mother is required to be of such a degree that the possibility of marriage is out of the question. Moreover, since intellectual development is often only retarded, sterilization is not undertaken before the age of 20. Until that time the individual receives education in an institution for the feeble-minded. Even greater care is exercised in the case of people having psychopathic tendencies, since among them there are often those who, as they grow older, can fit into society. No hard-and-fast rule has been formulated with regard to the schizophrenic. Every case is judged on its merits, and a decision given only after consideration of its individual characteristics. Indeed, in some patients, it is stated, the operation is of no practical value, and if carried out might influence the course of the psychosis unfavourably. In reply to questions which were put to Professor Maier at the end of the address, he said it was still a theoretical point whether a vasectomy at puberty did or did not affect development. He had never encountered any case in which normal development was adversely affected. Eugenic results in the population of Switzerland could not be expected to be as yet demonstrable, for only 200 to 300 persons are sterilized each year. As Dr. Mapother said at the close of the meeting, the Swiss plan of sterilization as indicated by Professor Maier might well serve as a model for this country should the operation ever be legalized.

PATHOGENESIS OF VASCULAR HYPERTONIA

H. Marx and K. Hefke[1] present interesting results on the extraction of pressor principles from the blood of hypertonic subjects (arteriosclerosis, acute nephritis, interstitial nephritis, essential hypertonia, etc.). Dogs were used as indicators of the effectiveness of the extracts. The animals were trained to lie still for several hours, and the blood pressure could be measured by the auscultation method with a Riva-Rocci apparatus and a special armlet, before and after intravenous injection of the extract. The method of extraction is as follows. The blood (100 c.cm.) is oxalated and extracted in the ice chest for twelve to twenty-four hours with three volumes of 96 per cent. alcohol; this is filtered, and to the filtrate are added two volumes of absolute alcohol. After a second filtration the alcohol is distilled off *in vacuo* at 40° C. and the residual fluid concentrated to 10 to 15 c.cm. The precipitate which separates out in this final process seems to be inactive, and the active principle (when present) in the supernatant fluid seems to be stable for weeks at a low temperature. Sixty-two extractions were performed in this way on the blood of thirty-seven cases of hypertonia. Control experiments on the dogs showed that injections of normal saline produced no noteworthy rise in pressure other than that incident to venepuncture. The extracts from patients with essential hypertension or arteriosclerosis had practically no effect on the blood

[1] *Klin. Woch.*, August 26th, 1933.

pressure of the dogs, thus confirming the findings of Bohn. The depressor effect described by the latter author in these cases was not confirmed. The extracts from the blood of cases with acute nephritis or secondary contracted kidney, on the other hand, regularly produced a great rise in the blood pressure in these animals (maximum, 45 mm. Hg), and the pressor effect was still present after two hours. These rises in pressure are definitely greater than those observed originally by Bohn. In two cases of acute haemorrhagic nephritis it was found that the pressor principle disappeared from the blood when the clinical condition had improved. No regular quantitative relation could be demonstrated in this series of cases between the degree of hypertension of the patient and the pressor effect of the extract—for example, patients with a blood pressure of only 140 mm. Hg sometimes gave a more active extract than others with a blood pressure of 250 mm. Hg. In almost all cases in which a pressor effect was found there were positive urinary findings (casts, blood, albumin). In three cases with prostatic hypertrophy and urinary stasis a pressor effect was observed, although in two cases of these there was no hypertension. A similar pressor effect was obtained with extracts of blood from cases of true epilepsy during or immediately before an attack.

AETIOLOGY OF PELLAGRA

The aetiology of pellagra has been arousing fresh interest of late. Just over a year ago the Medical Research Council published an exhaustive survey of the then current knowledge of vitamins, and marshalled an impressive amount of evidence that pellagra was associated with deficiency of one of the water-soluble vitamins known variously as B_2, G, and P-P (pellagra-preventing). The Italian officials hold the theory, first introduced by Lombroso, that maize contains a toxin which is the direct cause of the disease. An extension of this theory is that maize contains a substance which renders the skin more sensitive to light. This view has been particularly expounded by Sabry,[1] who identifies the maize toxin with dioxyphenylalanine, the "dopa" of Bloch. The excessive pigmentation is, he holds, a defence reaction of the skin, an attempt to convert the "dopa" into harmless melanin by means of the oxidase found in the deeper layers of the skin. He points out that maize grains are often pigmented, and that the pigment is related to "dopa." On the other hand, "dopa" may be found occasionally in any food material, and, although pellagra seems to have followed maize across the world, and is endemic only in maize-eating countries, nevertheless there can be no inseparable association with this grain because there are a number of cases on record in people who have never eaten maize in their lives. Dr. Sabry cannot accept the vitamin theory because his peasant patients consume plenty of vitamins, taking abundant supplies of milk during the winter. Roberts,[2] moreover, has reported twenty-five cases in wealthy persons, whose tables contained every variety of foodstuff, but who skimped themselves of food either because they thought they had indigestion or because of the "slimming" fashion. Pellagra symptoms have been noticed in the "bread line" queues in America. They have also been recorded in patients suffering from many intestinal diseases that involve starvation.[3] When Goldberger was first appointed, in 1913, by the U.S.A. Bureau of Public Health to investigate the alarming outbreak of pellagra in the Southern States he formulated the theory that the condition was due to shortage of proteins of high biological value—that is, those containing the more important amino-acids. Zein, the main protein of maize, is known to be deficient in lysine and tryptophane. He found that complete protection from pellagra was given by yeast, milk, and meat; tomato juice, canned salmon, and wheat germ were also useful, but substances containing a high proportion of vegetable protein were of no value. On the other hand, Voegtlin, Neill, and Hunter[4] claimed good therapeutic effects from extract of ox-liver, which is almost free from amino-nitrogens. Amidst this conflicting mass of evidence it is difficult to follow any one theory. The most recent attempt to supply an aetiology is that made by Dr. Harriette Chick in her De Lamar Lecture, delivered in America, and published in the *Lancet* of August 12th. She disposes of the amino-acid deficiency theory by quoting Voegtlin, and also other experiments by Goldberger and Tanner, who found that caseinogen was not curative, while an almost protein-free yeast extract could be relied upon. She endeavours to harmonize the other evidence by formulating a theory as follows: "Pellagra is caused by a toxic substance derived from the maize diet, which can be corrected by sufficient 'good' protein, or perhaps by sufficient vitamin B_2 (which is found to accompany the 'good' proteins)." She includes in this formula yet another theory which has been put forward: that alcoholism is an aetiological factor. Klauder and Winkelman[5] described 100 cases developing after a debauch, and Sabry found cases in non-maize-eating Alexandrians who had drunk cheap beers. Dr. Chick suggests that pellagra-producing alcohol might be brewed from maize, as "corn whisky" was common during Prohibition days. Yet another theory is that of iron deficiency. Several workers have been interested in the similarity between pellagra and pernicious anaemia. Subacute combined degeneration of the cord occurs in both, and Guthrie[6] has pointed out the frequency of achlorhydria in pellagra.

MEMORIAL TO SIR ROBERT JONES

A fortnight ago we commented on the progress made in orthopaedic practice in this country to which Dr. Melvin S. Henderson had testified in a report to the Mayo Clinic, and we ascribed this progress mainly to one man—the late Sir Robert Jones. A leading article and a letter in the *Times* of October 14th bear witness that we are by no means singular in our belief. The letter is signed by the Earl of Athlone, the Earl of Derby, Lord Dawson of Penn, P.R.C.P., Lord Moynihan, Sir Holburt Waring, P.R.C.S., and Sir Harold Fawcus, D.G.A.M.S. It records the progress that has been made with the appeal for contributions to a national memorial to Sir Robert Jones, and after

[1] *Journ. Trop. Med. and Hyg.*, 1932, xxxv, 164.
[2] *Journ. Amer. Med. Assoc.*, 1920, lxxv, 21.
[3] Thaysen, Hans: *Hospitalstidende*, March 30th, 1933, p. 1325; *Acta Med. Scand.*, 1932, lxxviii, 513.
[4] *Bull. United States Hyg. Lab.*, 1920, No. 116.
[5] *Journ. Amer. Med. Assoc.*, February 4th, 1928, p. 363.
[6] *Journ. Trop. Med. and Hyg.*, 1932, xxxv, 71; *Lancet*, 1932, ii, 111.

recalling his achievements in orthopaedic surgery, both curative and preventive, the signatories announce the measures which they have in view and ask for funds to enable them to carry them into execution. These measures are (*a*) the foundation of a Robert Jones Lectureship in the Royal College of Surgeons of England and (*b*) the institution of a travelling research Fellowship in orthopaedics to be awarded alternately by the Royal College of Surgeons of England and by the University of Liverpool "in order that those who follow after him be fully equipped to carry on his work in the service of humanity." To unite the two principles of surgical scholarship and social service for which Sir Robert Jones was distinguished the executive committee now invites donations from all parts to the "Robert Jones National Trust Fund." Donations may be forwarded to the Honorary Treasurers, the Robert Jones National Memorial, Quadrant House, 55, Pall Mall, S.W.1.

BEQUESTS FOR MEDICAL CHARITIES

Several times in the past attention has been drawn in these pages to the infrequency with which medical men and women who can spare money for charitable bequests remember the urgent needs of Epsom College and of the Royal Medical Benevolent Fund. For the first time a really practical suggestion has been made towards a remedy. A correspondent, whose letter appears on page 755, offers to leave a legacy of £100 to a medical charity if nineteen other people will do the same. It should not be difficult to find this number of co-operators, more especially as they are allowed their choice of the two charities above named and also of the Charities Committee of the British Medical Association as beneficiaries of their bequests. So far as this *Journal* is concerned, we have nothing but the most cordial appreciation to express. The Association has for several years past identified itself wholeheartedly with the raising of funds for these admirable charities. It has been emphasized over and over again at the Annual Representative Meetings and at other gatherings of members of the Association that both of them are seriously hampered by want of money. Yet even still there are members of the profession who do not subscribe to either of them because they are under the comfortable impression that there are ample funds available for the work of relief. No more erroneous idea could possibly be held: but the fact that it exists is indubitable, and is certainly one of the reasons for the failure of the profession as a whole to fulfil its responsibilities. In supporting very strongly the appeal which our correspondent makes to all medical men and women, we suggest that a model form of codicil should be drawn up so that intending testators may see how simple the procedure is and how inexpensively it can be carried out; and if our correspondent, or the chairman of the Charities Committee, will forward one, we shall be happy to publish it.

The Lloyd Roberts Lecture, 1933, will be delivered at the house of the Medical Society of London, 11, Chandos Street, Cavendish Square, W., on Thursday, November 16th, by Sir Humphry Rolleston. His subject is "Association of Medical Men with Literature."

NATIONAL RADIUM

THE ANNUAL REPORTS

The publication together this week of the fourth annual reports of the National Radium Trust and of the Radium Commission[1] permits a general survey of the available national supply of radium in Great Britain and of the uses to which it is being put. The functions of the Trust relate mainly to the purchase and disposal of radium, and its fourth report covers the twelve months ending March 31st, 1933. The report of the Radium Commission is dated July 31st, 1933, and it covers the preceding twelve months, but the financial statement in it relates to the financial year which terminated on March 31st, 1933.

The Royal Charter of 1929 authorized and instructed the Radium Commission to "make arrangements for the proper custody, equitable distribution, and full use of the radium entrusted to it, with the object of promoting the treatment of the sick throughout Great Britain, and the advancement of knowledge of the best methods of rendering such treatment, and of securing due economy in the use of radium for the purposes of such treatment." It is remarked in the present report that during the last four years the initial stages of this national policy have, broadly speaking, been completed, and that the results are clearly apparent in the network of seventeen fully equipped radium centres which have been established throughout the country under the aegis of the Commission. These results are reviewed in the report. It is added that the remaining tasks which lie ahead of the Commission are mainly those of consolidating and supervising the national structure which it has created, of controlling the stock of radium which it has issued on loan, and of compiling and collating its five-year plan of clinical statistics, which are desired to evaluate the efficacy or otherwise of radium therapy in the treatment of malignant growths.

Changes in the membership of the Radium Trust during the year under review include the replacement of Lord Moynihan by Sir Holburt Waring, P.R.C.S.; of Dr. T. Watts Eden by Mr. V. Warren Low, President of the Royal Society of Medicine; and of Dr. W. G. Willoughby by Lord Dawson of Penn. Lord Dawson thus represented on the Trust both the Royal College of Physicians of London and the British Medical Association. Upon the Radium Commission Professor Gask, Mr. G. W. C. Kaye, Mr. Ernest Miles, Professor Woodburn Morison, and Mr. Carlton Oldfield have been succeeded by Mr. J. J. M. Shaw, Dr. G. F. Stebbing, Sir Cuthbert Wallace, Professor Beckwith Whitehouse, and a representative of the Department of Scientific and Industrial Research. Viscount Lee of Fareham, who presided over the Commission from its inception in 1929, has found himself compelled by pressure of other work to decline re-election, and is succeeded by the Earl of Donoughmore.

The total amount of radium purchased by the Trust to date is about 19 grams. Of this total just over 17 grams are on loan to centres, including the gram loaned to the Medical Research Council and the 186 mg. loaned to the National Physics Laboratory for research purposes, while 1.7 grams have been allocated partly to the recently organized regional centres and partly to the proposed second national centre at the Royal Infirmary, Glasgow. The Commission also, by arrangement with the King's Fund, exercises control over the three 1-gram units, the property of the Fund, which have been lent to three London hospitals (the Cancer Hospital, the Middlesex Hospital, and University College Hospital) for the experimental "1-gram unit therapy." It may be noted here

[1] Cmd. 4427. H.M. Stationery Office. (6d.)