Melbourne and the Royal Melbourne Hospital. The Institute comprises five research units. Headed by Professor G. J. V. Nossal, the present director of the Institute, the cellular immunology unit is devoted to a study of autoimmune diseases in special strains of mice. The cancer research unit, directed by the Carden Fellow of the Anti-cancer Council of Victoria, Dr. Donald Metcalf, is engaged in a continuous study of leukaemia with special reference to lymphatic leukaemia. A main aspect of the work is the investigation of various factors in the serum of human beings and animals with leukaemia which permit the growth of bone-marrow cells in vitro.

Department of Medical History, Melbourne

Unique in Australia's learned institutions is the department of medical history at the University of Melbourne.

Established through a generous gift from the Wellcome Trust, it was opened by Dr. F. N. L. Poynter, director of the Wellcome Historical Medical Museum and Library, in April 1967. Its head is Dr. K. F. Russell, an associate professor at the department of anatomy at the university and reader in medical history.

Displays in its museum include the contents of a colonial pharmacy opened in the goldfields town of Ballarat in 1854. Transfusion apparatus is on view here, together with the traditional pestle and mortar.

Kanematsu Memorial Institute, Sydney

A notable research centre in Sydney, the Kanematsu Memorial Institute derives its name from one of the city's Japanese business firms, which in 1933 provided funds for its foundation as a memorial to the firm's founder, Fusajiro Kanematsu, and to his wife, Sen Kanematsu.

The former director, Dr. J. C. Eccles, who was appointed in 1937, organized an active neurophysiology research unit. As Professor Sir John Eccles, F.R.S., of the John Curtin School of Medical Research, he shared the Nobel Prize in 1963 for his work on nerve cells. At present the deputy (and acting) director is Dr. A. A. Palmer.

Both fundamental and applied research at the Institute have been related principally to the cardiovascular–renal field. Its main function, however, has always been to supply the routine pathology services of Sydney Hospital, where the building housing the Institute is situated. The Institute's department of clinical pathology has an active role in teaching and research. Its staff, besides training specialists in their own disciplines, conducts regular postgraduate seminars.

Royal Commission on Medical Education

The Report of the Royal Commission on Medical Education was published on 4 April, and a summary of its findings is printed below (leader p. 65). The Commission was set up in 1965 "to review medical education, undergraduate and postgraduate, in Great Britain, and in the light of national needs and resources, including technical assistance overseas, to advise Her Majesty's Government on what principles future development (including its planning and co-ordination) should be based; in particular, in the light of those principles and having regard to the statutory functions of the General Medical Council and the current review by that Council of recent changes in the undergraduate curriculum, to consider what changes may be needed in the pattern, number, nature or location of the institutions providing medical education or in its general content."*

The Commission set out to forecast on the basis of past and present trends the pattern of medical care in Britain in the future, the number of doctors that will be required to provide this care, and the changes that will need to be made in medical education in the light of the forecasts.

Future Pattern of Medical Care

The Report states the first step in the normal sequence of medical care for individual patients will continue to be a consultation near their homes with a family physician. Though general practice will continue, the Report suggests that there is wide agreement that the single-handed general practitioner and the traditional street-corner consulting room will not survive beyond the present generation. The most widespread form of practice in the future will be groups of 12 or more doctors, with assistance from nurses and other non-medical staff. The Report describes health centres as "the most obvious and natural setting" for such practices, in which general practitioners and local authority staff will form a single team.

The Report suggests that the trend in the hospital service will be to larger and fewer hospitals—primary medical care will be the responsibility of general practitioners, and health centres may well have beds for short-stay cases and facilities for minor surgery. The concentration of hospital services into larger units will make it less likely that consultants will have multiple attachments, and clinical "firms" will be fused to form divisions. The Report suggests that rationalization of the staff grading structure will result in more appointments of clinical assistants, some of whom would be general practitioners.

The Report describes as "community medicine" the specialty practised by epidemiologists and administrators of medical services and by the staff of corresponding academic departments. It forecasts that many of the present functions of local authority medical officers will pass to technically qualified lay officers, and also forecasts little if any expansion of numbers of doctors in the industrial health services and in the armed Forces.

Numbers of Doctors Needed

The Commission decided early in its inquiry that "a substantial increase of output of medical graduates was required without delay" and in June 1966 recommended to the Government that steps should be taken to expand existing medical schools and to establish new ones. The Government agreed to bring forward the redevelopment of the school at Leeds and the opening of the new school at Southampton. Nevertheless, the Report suggests that a deficit of 10,000 doctors will have accumulated by 1976. The numbers of doctors per million of population has been rising in all advanced countries in the twentieth century, and the Report points out that Britain already lags behind Belgium, Western Germany, Australia, and the U.S.A. in this respect. On the basis of this and other calculations the Report estimates the number of doctors required in Britain in 1995 to be 119,800 as compared with 62,700 in 1965; and after taking into account factors such as emigration the Report suggests that 4,550 graduates will be needed each year in the 1990s. This is almost double the estimated number of graduates in 1975.

Changes in Undergraduate Training

The Report is emphatic that the undergraduate course in medicine should be educational. "Its object is to produce not a fully qualified doctor, but an educated man who will become fully qualified by postgraduate

* The members of the Commission were: Lord Todd (Chairman), Lord Platt, Sir Edward Collingwood, Sir Brian Windeyer, Sir Peter Medawar, Professor A. G. R. Lowdon (died September 1965), Dr. J. R. Ellis, Miss Josephine Barnes, Professor G. M. Carstairs, Mr. G. F. Dixon, Professor Andrew W. Kay, Mr. J. N. M. Parry, Professor J. R. Squire (died January 1966), Professor R. M. Titmuss, Dr. E. M. Wright (resigned August 1967), Professor F. G. Young, J. N. R. Barber, Esq., Mrs. E. M. Chilver, Professor C. M. Fleming, and Professor G. M. Wilson.

training." The length of the recommended course is five years, of which three years will be spent in a course in medical science which would be based on a three-year degree course in human biology with a broad syllabus. After two years in which a common course would be followed by medical students and students working for the degree in biology the two streams could separate, so that in the third year medical students would study subjects of more relevance to intended doctors than to biological scientists. The Report stresses that the undergraduate course should be flexible enough to allow students to concentrate on aspects of the syllabus of particular interest to them, and that the academic quality of the course should justify the award of a degree at the end of the third year.

The Report's proposals for postgraduate training (see below) make it possible for it to recommend that the clinical undergraduate course should be reduced in length to two years and broadened in scope. The aims of the clinical course suggested by the Commission will be: "To demonstrate the application of the medical and behavioural sciences to the practice of medicine, thus giving the student an appreciation of the biological, environmental and personal factors which underlie structural disease and disturbances of function; to review the phenomena of disease and the present state of knowledge about their prevention and management, and to indicate the direction of likely advances in the future; to provide a sound basis in clinical methodology, which should include not only the medical interview and clinical examination but also the use and interpretation of the many physical and chemical procedures which are essential parts of routine clinical investigation and which must be adequately covered to ensure future clinical competence; to introduce the student to the principle on which treatment is based; and to encourage a holistic attitude towards patients and avoid the increasing danger of considering them as cases rather than persons."

The Report goes on to suggest that a course of this kind would be incompatible with the traditional kind of examinations, and that these should be replaced by an assessment built up from periodic reports on the student's performance, based where appropriate on written, oral, and practical tests, and completed by a comprehensive review at the end of the course.

The Report suggests that "the standard of university medical degree requirements is not so high that any medical student need invest time and effort in working for an alternative qualification as a form of insurance." It recognizes that the non-university diploma is useful for doctors educated overseas and for dentists who want to obtain a medical qualification, but recommends that medical students at British universities should not be allowed to enter for such examinations until they have completed the medical degree course.

Postgraduate Training

"Postgraduate medical education should be extended and reorganized so as to provide a systematic and rational progress from basic qualification to the appropriate level of career competence, and to maintain that competence thereafter." The Report recommends that the pre-registration year should continue in the form of an intern year, in which the medical graduate would begin to take responsibility for the management of patients, would acquire a sound grasp of general clinical method and would gain confidence, judgement and understanding under proper guidance in conditions approved by a university. The proposals made for the undergraduate clinical course will, the Report points out, reduce the clinical experience of the graduate, so that the intern year will need to give training in general clinical method. The Report suggests that consultants responsible for training interns should spend at least six sessions a week at the hospital, that representatives of the university should visit the hospitals and keep in touch with the interns, and that approval of a post "should be withdrawn without hesitation" if it appears unsatisfactory.

The Report comments that, as in 1966 22% of final year students were already married, hospitals should provide married quarters for an appropriate proportion of their house officers.

General Professional Training

"In our view the years immediately following the intern year present the most urgent problems, both because of the number of trainees involved and because of the present disorganized state of training during those years. The present provision of separate and unrelated courses for specialist qualifications takes up a great deal of teachers' time, and, although important differences of interest, knowledge, and skill will no doubt remain between specialties, at least for a long time to come, we think that if adequate training is to be made available for all doctors every effort must be made to find and emphasize the common features, which are often substantial, rather than the differences. The training of the future general practitioner, the consultant physician, and the paediatric specialist, for example, need not differ greatly, particularly in the early stages."

The Report recommends that systematic three-year schemes of general professional training should be available to all doctors in Britain, including graduates from overseas. A choice from a number of 6- and 12-month appointments would be available, and for each specialty appointments of certain kinds would be essential and others optional. "All the appointments would usually be held within one geographical area, to avoid the annual job-hunting and concomitant upheaval which at present beset the trainee."

The training would be vocational rather than academic, says the Report, and would not be limited to hospitals. Strict criteria would be laid down for training posts in teaching and district hospitals and in general practice. Any hospital posts not approved for training would be filled by hospital specialists or by clinical assistants.

Assessment of Training

The Report concludes that there is no place in the assessment of general professional training for a single major "pass or fail" examination. Some form of assessment might be needed at the end of the first year to decide which trainees would be allowed to continue training for the more popular specialties. It is proposed that there should be a progressive assessment throughout the three-year period, and that when a trainee has completed a satisfactory course he should be given a certificate to that effect. Special credit could be noted on the certificate. A very high proportion of candidates are expected to obtain the certificate, but those who did not could return to further training.

The Report recommends that possession of a certificate "should be marked by the trainee's acceptance into the main grade of membership of the appropriate college or equivalent professional body." The Report goes on: "We hope that no substantive distinction will exist between the certification of general professional training and the achievement of membership in a professional body. Many of the professional bodies concerned will obviously need to recast their organizational structure to some extent if the recommended object is to be achieved. We hope the surgical colleges will adopt the same nomenclature as the others and reserve the title of "member" for those who have satisfactorily completed general professional training for surgery, with the fellowship implying a further advance in status within the specialty at a later stage. This change will raise transitional problems but will be an important step in the rationalization of British higher professional qualifications and will make them more readily comprehensible to doctors abroad and to laymen everywhere."

Possession of a certificate should be necessary for candidates for certain classes of appointment, recommends the Report. Applicants for posts as principals in general practice should have obtained the appropriate certificate, so becoming eligible for membership of the Royal College of General Practitioners, and should have had two years' further training as an assistant principal in general practice, during which time the assistant would be responsible to the principal for the treatment of patients. Doctors wishing to work in general practice who had not obtained a certificate (married women who had children shortly after qualifying, for example) could do so, but not as principals.

In the hospital service possession of the appropriate certificate would allow the doctor to continue training to the grade of hospital specialist, from which promotion to the consultant grade would be made on evidence of demonstrated ability. Similar proposals are made in the report for training in community medicine, etc.

Vocational Training

Within each field of medicine, then, the Report proposes three years' general training, leading to certification, and a further period of specialized training leading to a level of competence adequate for the doctor to exercise "a substantial measure of independent clinical training in his chosen field," after which the doctor could apply for "vocational registration." The Report recommends that the General Medical Council should be responsible for maintaining this register of doctors. This scheme of vocational registration would cover all doctors with a substantial measure of clinical responsibility in any field, and registration would be regarded as

part of the routine background for applicants for consultant and principal posts, but once registered as a hospital specialist a doctor could stay in the grade for life if he so wished. The Report recommends that the definition of specialties should be such that it could correspond with those in Common Market countries.

The General Medical Council would not concern itself with the assessment of individuals or the detailed structure of programmes of training—these would be the responsibility of a central body, to be known as the "Central Council for Postgraduate Medical Education and Training in Great Britain." The Report proposes that the council should be composed of representatives of the universities, of the main branches of the N.H.S., and of the appropriate professional bodies.

Continuing Education

The Report rejects the suggestion that continuing education should be compulsory for all doctors in the National Health Service. It recommends increased opportunities for general practitioners to have part-time hospital appointments, and suggests that postgraduate centres have a large part to play in continuing education.

Medical Education in London

Emphasis was placed by the Commission on the educational function of the preclinical course. Such an education could not, says the Report, be carried out in isolated medical schools. "There is a need for close contact between the medical, natural, and social sciences at teaching and research level." The report recommends that in future each medical school should be an integral part of a single multi-faculty institution. The Report suggests "that the number of undergraduate medical schools in London be reduced to six, by combination according to the following scheme:

(*a*) St. Bartholomew's Hospital Medical College with the London Hospital Medical College,

(*b*) University College Hospital Medical School and the Royal Free Hospital School of Medicine (the rebuilding of the latter at Hampstead is planned),

(*c*) St. Mary's Hospital Medical School with the Middlesex Hospital Medical School,

(*d*) Guy's Hospital Medical School with King's College Hospital Medical School,

(*e*) Westminster Medical School with Charing Cross Hospital Medical School (the rebuilding of the latter at Fulham is planned), and

(*f*) St. Thomas's Hospital Medical School with St. George's Hospital Medical School (the rebuilding of the latter at Tooting is planned)."

The Report suggests that the six schools so formed should then become closely associated with multi-faculty university institutions.

Turning to postgraduate medical education in London, the Report rejects the suggestion that postgraduate institutes flourish best in isolation from undergraduate ones, and suggests that they should be linked to and ultimately become part of the combined medical schools. The Royal Postgraduate Medical School, says the Report, could become the basis of a new undergraduate school at a later date.

The Report points out that clinical teaching in London "leans more heavily than elsewhere upon the part-time services of consultants who serve a relatively small number of weekly sessions at the teaching hospital." It proposes that in future all appointments in major specialties of part-time clinical staff to teaching hospitals should be for at least eight sessions a week. Further, it proposes that teaching hospitals should provide consulting rooms within the hospital precinct, so that part-time consultants would be "geographically full-time." The Report comments that "we think university medical teachers ought not to be worse off than doctors of comparable ability and responsibility in N.H.S. appointments."

The Report recommends that the present system of boards of governors for teaching hospitals in England and Wales should be discontinued, and that the hospitals should be brought within the framework of the regional hospital boards, on to which representatives of the university staff should be appointed.

New Medical Schools

The Report recommends the creation of an undergraduate clinical school at Cambridge, and new medical schools at Leicester, Swansea, and possibly at Keele, Hull, and Warwick in the future.

Expansion of existing schools should continue, says the report, but even so with the maximum expansion of existing schools and the development of all the suggested new schools the total intake of students in Britain will barely exceed its 5,000 that the Commission thinks will be necessary by that date.

REFERENCE

[1] *Report of the Royal Commission on Medical Education*, 1968. H.M.S.O. 38s. 6d.

CONFERENCES AND MEETINGS

Motivation in the Physically Disabled

On 22 and 23 March the National Fund for Research into crippling diseases in conjunction with the Nuffield Department of Orthopaedic Surgery at Oxford and the Mary Marlborough Lodge sponsored a symposium on "Motivation in the Physically Disabled." The aim of the symposium was to define physical disability and its assessment in relation to the motivation of the individual.

Rheumatoid Arthritis

The first day, devoted to rheumatoid arthritis, congenital amputees, and the assessment of physical disability was under the chairmanship of Professor A. B. FERGUSON (Pittsburgh, Pennsylvania), who said the problems of rheumatoid arthritis derived from the nature of the disease—a chronic, painful, crippling disorder with periods of activity. Professor R. B. DUTHIE (Oxford), while outlining the physical disability, emphasized the importance of translating the pathological changes into terms of the patient's functional disability with the ageing of the individual and fatigue contributing to the complete picture.

Although Dr. S. MYEROWITZ (Rochester, New York) indicated that there were possibly some personality and behavioural traits in the rheumatoid diathesis, Dr. B. BERTHOLD WOLFF (New York) could find no objective evidence for the "rheumatoid type."

Secondary mild depressive illness, however, was not infrequent, and indeed could be expected in a disease in which the patient is continually readjusting to pain, deformity, and handicap. An optimum amount of intelligence was essential for vocational training but not for motivation to do well. Both these speakers outlined comprehensive techniques of psychological and personality assessment by the team approach. The practicality of this team approach was challenged by Dr. D. A. BREWERTON (London) because of the high incidence of the disease. The main therapeutic need was to help the patient come to terms with his disability, and what the patient needed was a high quality of general clinical management. The doctor, therapist, relatives, and friends all influenced the patient's reaction and motivation.

Congenital Amputees

The birth of a child with a congenital limb deformity could be described as a catastrophe with an immeasurable impact on the family as a whole, said Dr. D. S. MCKENZIE (Roehampton). Apart from the topical problem of the severe multiple deformities associated with thalidomide, such severe lesions were relatively rare. The management of the child with a unilateral congenital amputation could not be separated from the management of the family. The family wanted immediate information, reassurance, and reliable, consistent advice about the child's future.

Miss N. GIBBS (London), although talking from experience in cerebral palsy, outlined the need and purpose of psychological assessment of the parents and the child. This assessment should be done in familiar surroundings and should expose the deficits and needs of the patient. The