that time continuous records were not available and extensive search since suggests that this syndrome does not exist. Other terms that might now be dropped include Gowers's syndrome, Nothnagel's syndrome, and Charcot's laryngeal vertigo. Those modern neurologists who continue to believe in the last must produce continuous records in support of their claim.

Diagnosis

Although the history is often decisive in differentiating syncope from vertigo, epilepsy, or minor cerebral lesions if there have been multiple attacks of unconsciousness, a single attack may present great difficulties. There is one sign which is helpful if a reliable person has witnessed an attack. If arterial pressure falls below 50 mm. Hg for more than a few seconds the posterior pituitary is stimulated, secretes its hormone, and causes pallor of the skin which persists for many minutes after syncope. There is also diminished excretion of urine for several hours, but it is uncommon to obtain a clear-cut history of this effect. The most important differential diagnosis is from epilepsy. It cannot be stressed too strongly that a full epileptiform convulsion is common in quite normal individuals if a syncopal attack is severe and prolonged. A history of injury and loss of sphincter control is therefore less useful than the textbooks would have one believe. The crucial measurement during the attack is the arterial pressure; this is increased in epilepsy and is, of course, greatly decreased in syncope. If the attack is observed from the beginning it may be possible to assess the changes in arterial pressure by ordinary clinical methods, but these changes may be very rapid and are easily missed. In difficult cases it is often necessary to attempt to reproduce the attack while continuous measurements are made. The following case illustrates this point.

A strongly built middle-aged bus driver had attacks of dizziness and occasional unconsciousness when his head or trunk were twisted into certain positions. He claimed he went red in the face during the attack and was pale afterwards. This story seemed meaningless, and no further light was thrown by observation of an attack, except that his claims appeared to be true. Continuous arterial records were obtained in a bent-forward posture with and without an attack. It became clear that he had acquired the unfortunate habit of closing his glottis in certain postures and then straining. The rise of intrathoracic pressure was 150 mm. Hg or more. This formidable Valsalva manoeuvre was sufficient to reduce arterial pressure to syncopal levels on occasion.

Treatment

Once the mechanism of a particular form of syncope is understood, treatment consists in avoiding the circumstances which cause the attack. On hot days soldiers should not stand to attention for long periods, gardeners should sit, not squat, and pregnant women should not lie supine on hard couches. Subjects susceptible to vasovagal attacks, a tendency which is often inherited, should be needed supine rather than sitting or erect.

The most difficult problem is presented by those patients whose syncopal attacks result from bad habits such as hyperventilation or violent coughing. Explanation or, better, demonstration of the nature of the attack may be successful, but too often the patient has other personality difficulties and the habit remains. Occasionally more drastic measures may be necessary, as in the following case.

A powerful man aged 55 had cough syncope of a severe nature. On occasion intrathoracic pressure reached 450 mm. Hg for many seconds. Syncopal attacks occurred 9 or 10 times a day and caused injury and danger in traffic. Ordinary methods were unsuccessful, so tracheotomy was performed. With a tube open to the atmosphere the patient still achieved 200 mm. Hg intrathoracic pressure for some seconds and eventually coughed out his firmly fixed tube. Because the patient was incapacitated prefrontal leucotomy was considered justifiable. This broke the habit and a year later he was at work.

Prognosis

The ability to faint by one of the physiological mechanisms indicates that the circulation is normal, and the patient should be told this firmly. Indeed, life assurance

companies might well regard this ability in elderly persons with some gloom, for it would mean that they have not got heart failure and might well live beyond the average time. The only risk lies in the environmental circumstances. Thus a steeplejack may fall off a building; a motor-car driver may kill himself or, worse still, other people; a competitive swimmer may hyperventilate before diving, then strain, have syncope, and so drown; while doctors who leap from hot baths to answer the telephone may injure themselves severely. Very rarely, now that crucifixion is abolished, the upright posture is forcibly maintained after syncope and may be one of the causes of death in panic-stricken wedged crowds. In general, as soon as the victim is flat on the ground recovery takes place. In those forms of syncope associated with heart disease the prognosis is more ominous. The severity of the underlying heart lesion is, of course, the decisive factor. The risk of death during an attack is often as uncertain as the risk of a second myocardial infarction, extending over periods of five minutes to twenty years.

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A MEDICAL SCHOOL FOR WESTERN AUSTRALIA

BY

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The foundation of a new medical school within the British Commonwealth of Nations is a rare event, and so will always make medical news. But where the circumstances of the foundation are as unorthodox as they are courageous, and where this courage and this heterodoxy succeed immediately beyond all optimistic anticipation, the story assumes a fascination that merits its telling beyond that local sphere where communal pride in achievement keeps the progress of the venture ever before the public eye.

Western Australia

Of all the States of the Commonwealth of Australia, Western Australia is the largest, but it is also the most thinly populated. At the end of the last war its total population did not exceed half a million. The last ten years have seen that population increase by more than a third. In part this increase has been due to a persistent high birth rate and a low infant mortality, but it derives also from a forward-looking immigration policy which has brought to the State many useful citizens, "new Australians" from Britain and from a variety of European countries. It is anticipated that the population will continue to increase and will pass the million mark in the seventies of this century. Inevitably the major area of growth will be in and immediately around Perth, the capital city, in which region more than half of the population are likely to continue to live.

Geographical and physical conditions combine to make the Western Australians, even in these days of air transport, one of the most isolated of communities. Perth is a thousand difficult miles away from Adelaide, two thousand from the Eastern seaboard. The journey from London to Rome is shorter and easier than that from Perth to Adelaide, while Sydney is farther away from Perth than London is from Istanbul. A community so situated must needs learn to be self-sufficient, and so, even while its population remained no greater than that of many an English county, Western Australia began the task of developing its own cultural and educational centres.

Rise of the University

Fifty years ago the University Endowment Act empowered the State to set apart Crown Lands as a permanent endowment for a university. Under this Act lands aggregating almost four thousand acres have been transferred to the university. By far the greatest portion of this endowed land lies three miles from the centre of Perth, beside the main highway from Perth to Fremantle and between the highway and the broad estuary of the Swan River. In 1911 "The University of Western Australia Act" received Royal Assent, and in February, 1912, Senate and Convocation of the University came into being. Since then the University has grown steadily. It owes much to the benevolence of its first chancellor, Sir John Winthrop Hackett, who not only provided for the endowment of a Chair of Agriculture and of the first residential college of the University (St. George's College) but also left in his will bequests to the University which realized £425,000. The use of about half of these bequests enabled a considerable building plan to be carried out in the thirties, and building still continues, as funds allow, in accordance with an agreed master plan. Meanwhile much valuable development of University activities and extension of its teaching potentiality had been made possible by the enlightened adaptation of temporary buildings erected on the University site for the use of Australian and American forces stationed in Perth during the war.

By its constitution the University is empowered to provide instruction and to grant degrees in any branch of knowledge in which instruction is given and degrees granted in the United Kingdom. These tasks are already being fulfilled in the Faculties of Arts, Law, Education, Science, Engineering, Agriculture, and Dental Science, but until now it has not been found feasible to develop a Faculty of Medicine to provide full medical education, to examine students, and to grant degrees in medicine.

This has meant that matriculated students of the University wishing to study medicine have had to seek admission to medical schools overseas or in other Australian States. In practice the majority have gone either to Adelaide or to Melbourne. This has, of course, had considerable disadvantages. Students have had to make long and expensive journeys to distant medical schools and repeat these journeys to keep holiday at home. Many promising students found it impossible to embark upon additional living and travelling expenses inseparable from study in another State, and abandoned their intention of a career in medicine. Others, trained in neighbouring States, found attractive openings in or near their teaching hospitals, and, settling there, were not, in the event, available to help meet the growing need for doctors in their own State. But, even more importantly, it was felt that the absence of a teaching school in Western Australia, and the concomitant absence of adequate facilities for research and postgraduate study, made it difficult to attract to the West sufficient clinicians of the high calibre needed for the State to achieve for the community the highest possible standards of public health.

Plans for a Medical School

The need, then, for a Western Australian medical school had long been recognized, and the possibility of its establishment was being explored before the last war, whose advent prevented its further consideration. Immediately

after the war the University sought the expert advice of Professor McCallum, Professor of Pathology in the University of Melbourne. He reported on the urgent need for the development of a medical school in Perth, and made suggestions for the construction of new buildings for this purpose. The overall cost, though, was such that it was beyond the resources of the State Government. The Commonwealth Government made an offer of assistance towards the capital cost involved, but the balance required both for capital expenditure and for annual maintenance was felt then to be more than could be afforded by this sparsely populated State, and no further action was immediately possible.

In the years that followed the need remained and, as the population grew, became more pressing. Another factor arose. Western Australia was not the only State where rapid increases in population were demanding an ever-increasing supply of doctors. The other Australian States had their own problems to face, and soon began to find that their resources for medical education were being fully deployed in training the students of their own universities. First Melbourne, and then Adelaide, began to experience overcrowding in their medical schools, and had severely to restrict the intake of students from other States. And then, last year, the University of Adelaide, whose medical school had always been the preferred school for the majority of Western Australian undergraduates, had to inform the University of Western Australia that it could not undertake the clinical teaching of students from other States after 1956.

This precipitated a crisis, the resolution of which might have been more formidable but for events which had meanwhile been happening in Perth. In 1938 the construction had begun of the new Royal Perth Hospital on a site immediately adjacent to the old hospital, a site high above the city and commanding the finest views over Perth and the Swan River. Building progress was delayed by the war, but resumed without delay when the war was over. The first half of the new hospital was opened in 1948, and the building of the second half continued. Now the completion of the whole building approaches, and soon all the departments of the old hospital will have been transferred to the new premises, and the old building will stand vacant and untenanted. In anticipation of this, and aware of the University's growing need for a medical school, the newly appointed Vice-Chancellor of the University, Mr. S. L. Prescott, had in 1954 been instrumental in preparing new proposals for the establishment of a school of medicine. By dint of taking the fullest advantage of existing buildings, available or becoming available, a functionally sound and feasible plan was devised, whose cost would be much more modest than that propounded to the Government in 1946.

Early in January, 1955, a deputation from the British Medical Association urged upon the Premier of Western Australia the pressing need for a medical school. The Premier, the Hon. Mr. A. G. R. Hawke, seized of the growing urgency of the problem, and attracted by the financial modesty of the University's proposals, agreed to appoint a committee to investigate and report upon these proposals. The committee included representatives of the Government, the University, the B.M.A., and the Royal Perth Hospital. It was appointed the same month, and, working with commendable celerity, reported in April. It believed that by using for the major part existing buildings, adapting and extending them where necessary, it would be possible to establish a school, with accommodation that would suffice for 15 to 20 years, at a capital expenditure not exceeding £300,000 and an annual maintenance cost of £100,000.

Public Support

The State Government accepted this report, and immediately agreed to provide half the total capital cost and the whole of the annual maintenance, provided the remainder of the capital cost was raised by public subscription. A Medical School Appeal Committee was set up, having as honorary co-directors the Vice-Chancellor, Mr. Prescott, and the Manager of the Royal Perth Hospital, Mr. Joseph

Griffith (formerly secretary to the Board of the United Sheffield Hospitals). Thanks to their outstanding efforts and to the abundance of zealous help they found available, it was possible to complete all the complicated but essential preliminary arrangements in time to launch the appeal to the public early in September. The Appeal Committee decided that if the project for a medical school was to succeed it would be necessary to raise not only the £150,000 towards the capital cost of building but also a considerable additional fund for the endowment of research and for providing against contingencies inevitably arising in the development of a series of new professorial departments. It set this latter sum at a further £250,000, and so launched an appeal for a total sum of £400,000, a formidable target in a State whose total population of men, women, and children is still only in the neighbourhood of 650,000. But the appeal had been prepared with careful thoroughness and inspiration. The public response was immediate and unbelievably generous. Within two months of the appeal being launched £380,000 was subscribed, and money is still steadily flowing in. Everyone in the community has co-operated. In town and country, mayors and town councillors, churches and banks, shops, trade unions and industrialists, doctors, nurses, and medical students, rotary clubs, masonic lodges, and women's institutes subscribed—there was no organization that did not add its quota. Concerts and plays, bazaars and fetes, sports meetings and firework displays vied with each other, and all for the medical school. Individual contributions, large and small, swelled the total, and there is now no doubt remaining that the original target will be quickly passed, and every probability that, if the organizing committee so decided, the target could be raised and a sum of half a million pounds would be finally and cheerfully given. This remarkable result is already a source of proper pride to the people of Western Australia, and assures that there will be a continuing interest in the progress of a school which so many have helped to found.

The Future School

When the school is established the preclinical teaching will be conducted at the University. Existing university departments will teach biology, chemistry, and physics. It is proposed to establish departments of Anatomy and Physiology in two large army huts already available in the grounds of the University. Adjacent to these huts (and in its proper siting in the master plan) the University will now proceed to erect a new building for the department of Biochemistry. The headquarters of the Faculty of Medicine, its administrative quarters, professorial suites, common-rooms for students, the museum, the teaching facilities for the departments of Pathology and Microbiology will be at the old Royal Perth Hospital. Here they will be immediately adjacent to the new Royal Perth Hospital, which will be the major centre for clinical teaching. It will be necessary for extensive adaptations to be made and a new story added to the old hospital (old in Australia rarely means more than 50 years old). Already an old, disused, and unpromising out-patient hall and its associated rooms have been cleverly and attractively adapted, by the combined efforts of the B.M.A., the University, and the Hospital, to form a medical library. The result is aesthetically most pleasing and functionally most satisfactory; it sets a high initial standard for further adaptations.

The clinical teaching will be given from four chief hospitals, three of them in Perth and relatively close to each other, the fourth some eleven miles away in Fremantle, the busy port of Perth. At the King Edward Hospital for Women (143 beds) obstetrics and gynaecology will be taught, at the Princess Margaret Hospital for Children (230 beds) paediatrics, and at the Royal Perth Hospital (620 beds) medicine and surgery and the remaining specialist subjects. The Fremantle Hospital (185 beds) will be used chiefly for teaching out-patient medicine and surgery and the treatment of accidents. The facilities of the State Mental Health

Department will be available for the teaching of psychological medicine, and a new 230-bed chest hospital (at present being built from Commonwealth funds on University land within half a mile of the University campus) will be used for instruction in tuberculosis and thoracic disease.

Staffing

The honorary staffs of the hospitals concerned will take their appropriate part in the teaching and examining of students. Some have already commenced to work as associate examiners with their colleagues in the University of Adelaide. But the University is of the opinion (and the doctors agree) that if the school is to build from the beginning a worthy tradition, and if it is to be ready in the shortest time to play its full part in Australian medical education, the work of these clinicians must be supplemented and co-ordinated by the immediate establishment of a range of professorial departments. It has accordingly decided to establish at once eight new chairs, in Medicine, Surgery, Obstetrics and Gynaecology, Child Health, Pathology and Microbiology, Anatomy, Physiology, and Biochemistry. These posts have been advertised in the United Kingdom and in Australia and will shortly be filled. Then by stages teaching will begin, taking over first the first and final years and then each year adding another year at each end of the scale until the whole course is covered.

The establishment of such an array of chairs in such an atmosphere of lay and academic enthusiasm, and with such favourable financial prospect, must provide the professors who will be appointed an opportunity for co-operation and constructive development of the new school, and possibly for the development also of new methods of teaching, that is unprecedented in our Commonwealth. Those from the United Kingdom who contemplate becoming candidates for one or other of these chairs can be assured of a sincere welcome in Australia.

Life in Perth

As for Perth itself, its founders chose for it one of the most attractive sites, on the winding banks of the broad Swan River, within easy reach of the ocean and its beaches, and ringed round in the near distance by a background of hills. The city, growing rapidly, still retains its beauty and attractiveness, and not least is this beauty found among the sites reserved by the University on its own land for the building of homes for its teaching staff. The climate favours outdoor sports, of which swimming, sailing, rowing, tennis, cricket, golf, football (Australian rules), and bowls are the most popular. Western Australia has schools of high standard and repute.

The reverse side of the medal is that labour is expensive, costs are high, housing—in a growing community—is at a premium, and domestic help (except for daily help—which is expensive—and the services of baby sitters) is virtually unobtainable. A small community so far away cannot command the variety of concerts and "live" theatre that we in Europe take so much for granted, but the cinema and the local repertory theatres help, and a progressive broadcasting policy by the Australian Broadcasting Commission not only provides a leavening of good programmes over the air but arranges the personal appearance in Australia of artists of international reputation. Increasingly these artists, and the theatrical companies visiting Australia, find in Perth (at one time thought to be too distant and too small) one of their most rewarding ports of call.

But these disadvantages, if such they are thought to be, are ones that thousands of young Australians and newly arrived Europeans are facing with a cheerful disregard. Australia remains a land of opportunity. Western Australia considers it has as much (if not more) to offer in the years immediately ahead as any other State of the Commonwealth, and counts the establishment of the new medical school in Perth, the opportunities this will bring for undergraduate and postgraduate training, and the enhanced standards of medical care that must follow not least among the advantages which it will have to offer.