The promise of Perth

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The medical school of the University of Western Australia in Perth is the product of its time and place, reflecting the merits and defects of each.

Foundation of the school

The school was launched in 1956 with appointments to foundation chairs in the major disciplines of the faculty, and the first students enrolled in 1957. This represented the culmination of many years of work by members of the University, the medical profession and others within the state.

In 1946, Sir Peter MacCallum, Professor of Pathology in the University of Melbourne, was commissioned to enquire into the possibility of establishing a faculty of medicine within the University of Western Australia. Read in retrospect, his report foreshadows many of the later developments, but at the time his realistic estimates of cost led to a postponement of the school. Such expense was not practical in the post-war years. Money and materials were scarce, and the state was occupied in completing the Royal Perth Hospital, and expanding medical services to a small and scattered population in a vast, undeveloped area.

The situation changed in the next decade, with increasing population and economic recovery from the war. In 1949, the Senate of the University established a Medical Advisory Committee, and in 1954 sent Dr Neil Crosby (Reader in Physiology) to attend the first World Congress in Medical Education and investigate medical schools within the United Kingdom. His report to the Senate was submitted to the government later that year. The situation was made acute by increasing enrolments in the schools of Adelaide and Melbourne which had previously trained most Western Australian students. The large influx of ex-servicemen strained their facilities and led to imposition of a quota in their medical faculties. The implication was clear that Western Australia had either to establish a medical school, or be reconciled to an absence of opportunity for local scholars to study medicine, with a consequent shortage of practitioners within the state.

In January 1955, therefore, the Premier of Western Australia, Mr A. R. G. Hawke, set up a formal Committee of Enquiry on the Proposed Medical School for Western Australia. The commissioners reported with almost unacademic haste in April of the same year, strongly recommending establishment of the school as an urgent measure. They provided estimates of cost and student numbers which were acceptable to the government, but whose conservatism greatly increased the problems of the early years of the school. The report was accepted. The government agreed to provide a sum of £A150,000 for capital expenses if community interest was shown by a matching gift from the public. An appeal was launched in 1955 and its overwhelming success was convincing. A state with a population of 640,000 contributed £A570,000, and establishment of the school was assured. The Medical School Act passed both houses in 1956, the foundation chairs were appointed, and the first students admitted in 1957. The final accolade of recognition by the General Medical Council followed a visitation in 1959.

This year, 1956, was of peculiar significance. University finance was then a state, not a commonwealth responsibility, and the states were unable to meet their commitments adequately. The universities of Australia were in a parlous state attempting to cope with expanding student numbers due to the post-war influx, with inadequate staff, finance, and facilities. It was in December 1956 that the Prime Minister, Mr Robert Menzies, recognized their need and the need of the country for scholars and technicians, and invited Sir Keith Murray to head an investigation of the requirements and future of the Australian universities.

His report late in 1957 led to the establishment of the Australian Universities Commission, and hence to federal intervention into the field of university education. Although financial stringency still exists, the position in Australian universities to-day is immeasurably better than in 1956.

For the new school in Perth these developments

came too late. The first years of the faculty were marked by desperate improvisation. Preclinical departments were housed in converted army huts on the University site at Crawley, and the para-clinical and clinical departments in adapted areas of the newly proclaimed teaching hospitals. These early arrangements have been described by King (1958).

It is only 10 years later that it is becoming possible to remedy these deficiencies. It might have been better in some ways had the school been delayed until formation of the A.U.C. could have let it be more adequately equipped from the start. But the need was urgent, and prediction impossible.

There were some compensations. In 1957 the General Medical Council of Great Britain relaxed its rigid recommendations to schools of medicine, allowing greater freedom of curricula and a more flexible, experimental approach to medical education. The school in Perth was the first new school in Australia since establishment of a Faculty in Brisbane in 1936, while no new schools had developed in the United Kingdom since 1914 (Walker, 1965). Perth was unencumbered by the curricular dust of generations, and able to make use of this new freedom, and of developments in medical education during the preceding years.

The early curriculum has been described by Sinclair (1958). It attempted to meet these challenges within a traditional 6-year course. The principles accepted were co-ordination between courses and faculty members, and restricting of formal teaching as far as possible to allow students adequate time for reflection and private study. These principles were implemented in several ways, including integrated teaching and examination in human structure and function in the second and third years, and in keeping 1 day each week free from all formal commitments.

However, staff was simply not available to carry the initial desirable proposals into a practical course, and the attempt at a revised curriculum was only partially successful. More and more 'special tutorials' and minor subjects obtruded into the curriculum, and more and more the initial concept of integration has been strained by staff changes and departmental needs, until now the course has reverted towards the traditional stereotype. However, a curriculum committee has been appointed by Faculty to re-examine the position, and suggest early revision and simplification.

The place as well as the time influenced the new school.

The state of Western Australia occupies the western third of the continent, facing the Indian and not the Pacific Ocean, with an area of 975,920 square miles. There was a population of 836,673 in the

1966 census (compared with 639,771 in the 1954 census), of whom 42% were aged under 21 years, indicative of the rapid growth of the state. These people live largely in the south-west, and much of the remaining area is arid or semi-arid with an annual rainfall below 12 inches.

Perth is the capital of the state. It is a growing city set about the Swan river, and had a population in 1966 of 558,821 persons. It is a city of considerable beauty with a Mediterranean climate and a long hot summer. This siting is important. Perth is a city isolated by desert and distance, and until recently, by time. This isolation has marked the thinking and development of the city and its people, just as distance and isolation have determined the development of Australia (Blainey, 1966). It is only a generation since the people of Western Australia gave a majority vote to secession from the Commonwealth of Australia.

These geographical realities have been reflected in the early years of the school. Isolation was a major factor in the initial decision to establish a school of medicine in Perth, but at the same time contributed to the high initial and maintenance costs. These affect especially the academic staff. National medical and scientific meetings are still rare in Perth, and international meetings virtually non-existent. Staff members must therefore make annual or biannual trips to centres on the eastern coast for medical and scientific debate. These trips are the equivalent of journeys from London to Moscow or Cairo, and correspondingly costly. Similarly, the costs of graduate diplomas such as M.R.A.C.P. are inflated by distance.

In the first years the school at Perth was necessarily staffed largely by expatriates from the eastern seaboard and overseas, and there developed a sense of isolation and intellectual loneliness, so that common-room gossip centred nostalgically upon London and Melbourne rather than Perth.

The problem carried its own solution. The small size and relative seclusion of the school, aided by shortages of staff and money, led to concentration upon the business in hand and a determination to build successfully despite these obstacles, so that sound foundations were laid which are evident in the school to-day.

The school today

The school is now well established along conventional lines, and has grown to include 401 students, a full-time academic staff of forty-nine, and clinical lecturers in the teaching hospitals and from among general practitioners and the state departments of public health and mental health.

The students are largely Western Australian, with a few who have done part of their course elsewhere.

Overseas students are from south-east Asia, and the University maintains a quota of six places in the first year for these countries. Occasional graduates from other countries take the final year of the course to obtain a degree registrable in the Commonwealth of Australia. The students are active in general university affairs and have contributed to student politics and sporting teams with conspicuous success, as well as faculty matters where the curriculum committee has one student member.

Entry to the first year is unrestricted, but there is a quota for the second year based mainly upon first year examination results. The first year entry includes about 100 students, of whom about seventy pass at the first attempt. This may appear a high failure rate, but is the price paid for open entry and late selection, rather than selection based upon school or matriculation results. The arguments for this policy have been well stated by Mitchell & Cohen (1968):

'... Some find support for this policy of relatively generous admission in the view that standards of teaching and provision of facilities may vary significantly from one high school to another, and that for various reasons some secondary school students may not have had full opportunity to do themselves justice. Others argue that performance in the first year of university studies is a better predictor of later success than is a final secondary school examination, and that to obtain this better predictor the community should be prepared to pay the price of providing liberal opportunities for at least a first year of university study.'

Certainly the tradition of open entry to universities is valued in the egalitarian Australian society.

At present (1969) the second year quota is sixty students, and of these places forty-eight are reserved for first year students, the other places going to students repeating second year, transferring from other faculties or universities, or first year students lower on the list or with supplementary passes. The quota, however, may be increased to ninety places in 1970, and probably to 120 within the next decade.

The course, as mentioned, is conventional. The first year contains science units, orientated slightly towards medicine. Second year begins the medical course proper with anatomy, biochemistry, physiology and introductory psychology, and this traditional amalgam continues into third year with the addition of general pathology which is examined in the final paper in physiology. The initial attempt at integrated teaching survives in a co-ordinated course and examination in human structure and function during the second year.

In the fourth year students leave the university campus at Crawley for the teaching hospitals, and begin clinical studies with an introductory course

in clinical methods. The year is, however, dominated by the paraclinical disciplines which are examined at the end of this year. Clinical clerkships and formal teaching in medicine, child health, psychiatry, surgery, and obstetrics and gynaecology continue at the teaching hospitals in the final two years. Fifth year includes lectures and project work in social and preventive medicine as well as the minor clinical specialties, and examinations in these subjects. All students are attached to selected general practitioners for 2 weeks in the sixth year.

The final examination admitting to the degrees of M.B. B.S. completes the sixth year. It includes written and clinical examination in each, as well as consideration of tutors' reports during the clinical clerkships. Maintenance of standards and comparability of performance with schools elsewhere is ensured by including in all examination boards external examiners from other Australian faculties as well as from New Zealand and south-east Asia. Graduation is followed by a year as hospital resident before full registration.

The effectiveness of this course is impossible to measure, and in any case it is due for early revision. But it is noteworthy that final year students are regularly sitting for the E.C.F.M.G. examination of the United States of America, and have achieved a pass rate of over 95% in the past 3 years, while to date sixty-one local graduates have obtained higher degrees or diplomas such as M.D. or M.R.A.C.P.

Besides passing examinations, the graduates travel widely, again possibly a reaction to the isolation of Perth, and Western Australian graduates are now working in at least eighteen countries, including Great Britain, U.S.A., Sweden and Germany, as well as Singapore, Malaysia, Vietnam, Thailand and other places in south-east Asia.

They have, too, enabled the school to meet its obligation to the people of Western Australia, first made evident by their support of the medical school appeal of 1956, and since by donations of time and money. The school is now providing an increasing proportion of graduates entering general practice in the state. Of graduates prior to 1967, almost a third are in general practice, most in Western Australia. Local graduates are now also entering the faculty, and the consultant staffs of the teaching hospitals.

The staff has changed since foundation of the school. The initial nine chairs have increased to thirteen, an increase reflected at all levels of the faculty. Four foundation professors, including medicine and surgery, have gone elsewhere, one to a Regius chair in Scotland and three to deanships in other schools. The increased numbers have led to a more formal administration, and a full time dean has been appointed. There has been a loss of the personal

approach of the early years, reflected by changes in the curriculum, but gains in other directions—a wider range of capabilities and a larger proportion of the faculty with experience of medicine in Australia.

Despite the problems of establishing undergraduate and graduate teaching in a city with no tradition of medical education, the new school has been active in research. About £A400,000 from the medical school appeal was set aside for research and endowment funds, and this has increased, notably by a benefaction of over \$A1,000,000 from the Raine family to establish a foundation for medical research within the University. It is neither possible nor desirable in a short essay to list all contributions made by the school, but merely to indicate their scope, and how they reflect the directions of work within the school, and ways in which the special conditions of Perth modify and create scholastic opportunity.

Of the preclinical departments, the major contribution from the department of anatomy has been in the neglected field of investigation of the efficacy of teaching methods (Sinclair, 1965), but there has also been collaboration with the department of biochemistry in the study of enzymic development in the embryo and neonate (for representative papers see Oliver & Blumer (1964) and Wise & Oliver (1967)), among other work. The physiology department has worked mainly on iron metabolism and gastrointestinal physiology (Kaldor & Ezekiel, 1962; Morgan, 1963, 1966; Redgrave & Simmonds, 1967).

All paraclinical departments have developed active research interests. The main work in microbiology has been in virology, especially in the relations between virus and neoplastic and autoimmune disease. This work has also involved the departments of pathology and medicine (Joske *et al.*, 1966; Stanley & Leak, 1963; Stanley & Walters, 1966).

Research in pharmacology has centred upon hormonal control of renal function, and more recently upon the unexpected finding that the heart may have an endocrine function, a result with obvious implications in the physiology of cardiac failure.

The pathology department has been extremely active in research. This includes contributions to morbid anatomy, especially in the fields of cancer and tropical disease (Barter, 1962; ten Seldam *et al.*, 1964), as well as collaboration in more clinically orientated studies (Joske & Walters, 1962). There has also developed an active group in experimental pathology, working largely in the fields of pancreatic disease, inflammation and electron microscopy (Papadimitriou, 1967; Walters, 1966; Walters, Papadimitriou & Shilkin, 1967).

This department has also developed a large neuropathology unit in conjunction with the Royal Perth Hospital, which has initiated an extensive teaching programme, in addition to a large research output, chiefly in the field of muscle disease (Kakulas, 1965, 1966).

The clinical departments were initially more occupied in establishing undergraduate and graduate teaching, and their research output has not matched that of the laboratory departments. The department of obstetrics and gynaecology has, however, contributed to the study of oestrogen and folate metabolism, especially in relation to sterility and abortion (Martin & Hahnel, 1964; Martin, Davis & Hahnel, 1964).

The department of medicine developed from the former Clinical Research Unit of the Royal Perth Hospital, and hence had a continuing research programme from its inception. Clinical gastroenterology has been the main research field, and this work has involved collaboration with the hospital and university departments of biochemistry, microbiology and pathology (King & Joske, 1960; Joske & Vaughan, 1962; Joske, Onesti & Thompson, 1968).

More recently a group interested in population studies has developed within the department. In conjunction with local practitioners, the Raine Biostatistical Unit, the Royal Perth Hospital, and the State Department of Public Health, a survey has been made of Busselton and its environs which is unique in its scope and thoroughness.

Busselton is a port about 150 miles south of Perth, and with the surrounding areas has an adult population of slightly more than 4000. A 91% survey of adults in the district was made in 1966, and a further survey will take place late in 1969. Adequate description of these surveys, and of the results obtained, is not possible in a short paper, but in general they are providing precise data of the incidence and prevalence of major chronic diseases in a total community, as well as quantitative estimates of risk factors in diseases such as chronic bronchitis and coronary heart disease (Cullen *et al.*, 1969; Curnow *et al.*, 1968; Welborn *et al.*, 1969; and other papers).

Other examples of the advantages of Perth for this type of work include studies in multiple sclerosis (McCall, Sutherland & Acheson, 1969) and the differential mortality between local born and migrant populations (Stenhouse & McCall, 1969) as well as a growing interest in health and medical problems of aboriginals (Riseborough, Joske & Vaughn, 1961), and of the effects of urbanization upon people with a highly developed nomadic tribal life.

These various illustrations of the research work of the Perth school have been chosen to illustrate both its variety and some consequences of its special

situation. The first is collaboration between departments and with the teaching hospitals, in research as well as teaching. Maintenance of this co-operation as the size increases presents a problem of great importance to the future of the school. The second is the use of local material to produce results of general importance. This is seen in the use of marsupials as experimental animals in the science and laboratory departments, and particularly in the development of population studies such as the Busselton project and migrant mortality studies.

The promise of Perth

Why 'the promise of Perth'? Again the answer depends on time and place. The character of the school has grown from these factors, and their effect on its future may well be even greater.

Perth, in 1969, is an exciting place, capital of a state in a major phase of development. There is an economic boom based on massive development of minerals in the north and western parts of the state.

Capital development in Australia in these fields has risen from \$67.6 million in 1963-64 to \$440.3 million in 1968-69, much of it in Western Australia. There have also been great, if less spectacular, increases in other fields such as fishing, agriculture and manufactures. This financial expansion is reflected in an equally dramatic population growth, with a present increase of about 6% per annum.

The flow of men and money into the state means an increase in medical needs, both of physicians and hospitals. Capital expenditure on hospitals in the last 5 years has approximated \$6,000,000 yearly, and a greater expenditure is anticipated in the next 5 years.

When the school of medicine in Perth was founded in 1956 the need of the state for doctors was estimated at fifty yearly. It is now estimated at 140 by 1975 if the recommendations of the Todd report may be applied to Western Australia, which seems a reasonable assumption. Until now this demand has been met by schools in other states and overseas, but these sources are running dry and the school in Perth has no option but to expand if medical services to the state are to be maintained. The increase in undergraduates also requires that the increased bed-needs of the expanding population include a large number of teaching hospital beds.

These facts force upon the school a challenge and an opportunity which it is preparing to meet.

The second year quota will be increased from sixty to ninety places in 1970 if finance is available, and a further increase to 120 is planned for the next triennium, so that the number of graduates will rise to about 105 yearly from 1980. After this a new

school is proposed; already planning of a second university for Perth has begun.

The projected expansion in numbers has drawn attention to the need for a more flexible and modern curriculum. Proposals before faculty would base the first years upon human biology, possibly leading to a degree after the third year, although to date the University administration has refused funds for such developments. It might also be possible to bring the paraclinical subjects forward to precede clinical studies, which would occupy the last years of the course without interruption. The ultimate aim would be a 5-year course with a more effective preregistration hospital period. Because of this, the University is now formally entering the fields of graduate and continuing education, and may assume supervision of and responsibility for graduate work in teaching hospitals.

The need for more teaching beds is also being faced. The Sir Charles Gairdner Hospital adjacent to the University is being raised from a small chest hospital to a full teaching hospital of 1000 beds including more adequate teaching and laboratory space for the clinical departments. The project has been approved by the Australian Universities Commission, and negotiations are proceeding with the state government.

There is, inevitably, the problem of money. Most industrial and other development in Western Australia is financed by interstate and overseas capital, and many of these companies feel little obligation to the state. Benefactions to the school of medicine has been meagre. Indeed, to most Western Australians at present the results of economic development are destruction of nature reserves and rising prices, especially housing, which affects especially those on fixed incomes such as the academic staff.

There is a final consequence of the site of Perth—its relation to south-east Asia. Perth is closer to Singapore than to Sydney, and the school has from the beginning developed links with other south-east Asian schools. The first Dean of the school came to Perth from Hong Kong, and the Professor of Child Health is a regional consultant to the World Health Organization in paediatric education. There has also been an exchange of scholars and examiners between Singapore and Perth, and other schools in the area. These bonds are of increasing value in a region of rapid political and economic change.

The medical school of the University of Western Australia in Perth is the product of its time and place. It may well be that the promise of Perth, 200 years after Cook's voyage, lies in its maturation from a small provincial school in the European pattern, to a centre of medicine in south-east Asia of which it is a part.

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