

# AUSTRALIA'S ROLE IN TRAINING AND RESEARCH IN TROPICAL MEDICINE

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## WHAT IS TROPICAL MEDICINE IN AUSTRALIA?

Nicholas White has given an overview recently of the specialty of tropical medicine elsewhere (White, 1997). Here, he states that it reminded him of "an old house in a new and rapidly growing city" (White, 1997). The practice of tropical medicine varies from country to country and with time. In Australia, tropical medicine has been variously described as medicine practised in the tropics, international health, primary health care, and tropical health (McGregor, 1995). Specialized courses have also grown up under the umbrella of tropical medicine, such as refugee health and travel medicine (McGregor, 1995).

Many of the severe tropical diseases do not occur on mainland Australia, *eg* malaria, schistosomiasis. Many of the other parasitic and viral tropical diseases also do not occur, although there are some (re) emerging infectious diseases, such as dengue in tropical north Queensland, Japanese encephalitis in the Torres Strait. Often it was thought that such diseases are a problem only for indigenous communities, however recent outbreaks of dengue in Cairns and Townsville are renewing interest in tropical medicine. Bart Currie gives an excellent insight into tropical diseases and their control in Australia elsewhere (Leggat, 1993).

Tropical diseases have been endemic to Australia and many countries in the western Pacific region, *eg* malaria and filariasis. Many are still endemic in the region. Therefore it follows that Australia has played a major role and continues to play a major role in the development of tropical medicine. Some of the famous individuals and institutions associated with tropical medicine in Australia have been discussed elsewhere (Currie, 1993). They include Joseph Bancroft, who described the adult form of the worm causing filariasis, still a major scourge around the tropical world; Neil Hamilton Fairley and malaria, especially

pathogenesis and drug treatment; Thomas Bancroft and the identification of *Aedes aegypti* as the vector of dengue; Derrick and colleagues who described Q fever, and many others (Currie, 1993).

## INSTITUTIONAL MILESTONES

There have been several institutional milestones in tropical medicine in Australia, following the foundation of some of the great tropical medicine institutes around the world (Doherty, 1993). The first came with the foundation of Australia's first medical research institute, the Australian Institute of Tropical Medicine (AITM), in 1909 in Townsville with Dr Anton Breinl, Director of the Runcorn Research Laboratory at the Liverpool School of Tropical Medicine, appointed as its first Director. The AITM offered training for the Diploma in Tropical Medicine and Hygiene (DTM&H) and its first students graduated in 1925. The students of this first course gained a unique insight in tropical medicine, when most of the class came down with dengue fever (Baldwin, 1926). The history of the AITM and its first Director has been described elsewhere (Douglas, 1977).

The AITM was subsequently incorporated into the School of Public Health and Tropical Medicine at the University of Sydney in 1930 (Currie, 1993). The Sydney School became the center for teaching and research in Australia for the next 60 years (Currie, 1993). During this time, the Army Malaria Research Unit was established at Ingleburn, New South Wales, Australia, in 1966 and, like many similar units in other countries, contributed to international field trials of antimalarial drugs (Currie, 1993). Walter and Eliza Hall Institute and the Queensland Institute of Medical Research also contribute to malaria research (Currie, 1993). In 1985, Menzies School of Health Research established in Darwin well placed to study diseases in the tropics (Allen *et al*, 1996).

In 1986 following the release of the Kerr White Report into public health training in Australia (Allen *et al*, 1996), training in public health was decentralized to various state universities. In this process, two centers in tropical medicine were established in Queensland, the Tropical Health Program of the University of Queensland founded in 1987 in association with the Queensland Institute of Medical Research (White, 1986), and the Anton Breinl Center for Tropical Health and Medicine at the James Cook University of North Queensland founded in 1987, reoccupying the original building of the AITM (Gardiner, 1997). The Anton Breinl Center was incorporated into the Department of Public Health and Tropical Medicine, James Cook University of North Queensland in 1992.

The Tropical Health Program was incorporated with the Nutrition and Indigenous health programs into an Australian Center for International and Tropical Health and Nutrition (ACITHN) in 1995 (Leggat, 1992). In 1996, the ACITHN had 153 students enrolled across 6 courses, with the Master Degrees in Tropical Health (MTH) having enrolments of 25 students in 1996 (Leggat, 1992). It also has Postgraduate Certificate and Postgraduate Diploma level courses in Tropical Health, Postgraduate Certificate, Postgraduate Diploma and Master's courses in Community Nutrition (MCN), a Bachelor of Applied Health Science (Indigenous Primary Health Care) and Honours, and research degrees of Master's of Medical Science and Doctor of Philosophy (Leggat, 1992).

The Menzies School has more than 50 research and coursework students undertaking courses leading to the Master of Public Health (coursework or research), the Master of Medicine and Master of Science in Medicine, and the Doctor of Philosophy (Allen *et al*, 1996). Degrees are awarded from Sydney University, however links are being established with Flinders University of South Australia, and Northern Territory University.

The School of Public Health and Tropical Medicine was established at James Cook University in 1997, incorporating the Anton Breinl Centre, Department of Public Health and Tropical Medicine, Australian Institute of Tropical Architecture, and part of the Rural Health Training Unit. It has around 345 students enrolled across 6 courses, with the Diploma and Masters degree in Public Health and Tropical Medicine (DPH&TM and MPH&DTM) currently having enrolments of 181

students and Australia's only Postgraduate Diploma in Tropical Medicine and Hygiene (DTM&H) having enrolments of about 35 students (Anonymous, 1997). Other courses offered include a Postgraduate Certificate in Travel Medicine, research degrees of Masters of Science and Doctor of Philosophy, and new programs, such as a short course in tropical pediatrics and Postgraduate Diplomas in Neonatology and Travel Medicine (Anonymous, 1997). It has also become a seeding ground for other health-related programs with an emphasis on rural and remote health and tropical health.

The linkage between public health and tropical medicine is quite evident amongst these institutes, which promote preventive medicine, community-based primary health care, knowledge of range of conditions not often seen in temperate climates, and diversification into related areas of tropical medicine, *eg* travel medicine, primary health care, international health, as well as public health programs with a focus on the tropics (McGregor, 1995).

## TRAINING IN TROPICAL MEDICINE

The International Directory of Training in Tropical Medicine, first published by The Australasian College of Tropical Medicine in 1994, now in its Third Edition (1997-1998), lists more than 120 courses offered by more than 50 institutes internationally in tropical medicine and related areas, of which just over 20 are available in Australia (Leggat, 1997). Details concerning the three major training institutes for tropical medicine in Australia, namely the ACITHN, the Menzies School for Health Research, and the School of Public Health and Tropical Medicine (SPH&TM) are listed here, as are programs from Sydney University and Flinders University.

## OVERSEAS CAREERS

The yearning of many Australians wishing to work abroad in tropical medicine is probably best summed up by McAdam (McAdam, 1994).

Tropical medicine encompasses a wide range of options. Those trained in temperate regions need to define their longer term goals before plunging into the demanding and rewarding challenges of medi-

cine in the tropics. The experience will certainly change their perceptions about career directions, but it is obviously better if the overseas post fits into a career plan rather than frustrating, long term goals (McAdam, 1994).

Typical examples of developing this type of career structure in Australia are those physicians and other health professionals who undertake training in other areas, such as public health or infectious diseases and develop a parallel or subsidiary interest in tropical medicine.

In addition to training preparation in tropical medicine, overseas posts may need training in areas such as cultural safety or flexibility in sensitive transcultural situations, ability to work in a team, management skills, teaching/health promotion skills, and a language ability.

#### RESEARCH IN TROPICAL MEDICINE

Tropical medicine is a broad field for undertaking research. The contributions of Australians previously in this field had already been mentioned. Evidence of current research endeavours in tropical medicine can be seen from several sources. For example, Table 1 lists WHO Collaborating Centres in Australia. A number of these relate directly to tropical medicine as well as related areas. In addition, a WHO Collaborating Centre for the Control of Lymphatic Filariasis was established earlier this year at the School of Public Health and Tropical

Medicine, James Cook University, Australia.

In addition to the Institutes of tropical health referred to earlier, there are a number of other research institutes and bodies including the National Health and Medical Research Council, Australian Institute of Health and Welfare, John Curtin School of Medical Research, National Centre for Epidemiology and Population Health all in Canberra, as well as the Walter and Eliza Hall Institute of Medical Research in Melbourne, Queensland Institute of Medical Research in Brisbane, plus a range of research centres in specialized areas, *eg* HIV Medicine (Arnold, 1996). Research reports of these agencies give details of various research projects conducted or supported.

#### DIRECTORY OF RESEARCH AND DEVELOPMENT IN TROPICAL MEDICINE

Another source of information concerning research and development in tropical medicine in Australia was recently established by The Australasian College of Tropical Medicine as a database, with sponsorship from the Australia-New Zealand Foundation. The Directory of Research and Development in Tropical Medicine, first published in 1996 (Leggat, 1996) had more than 70 contributors from 13 countries, including many from Australia and New Zealand. The top 3 areas of research and development in tropical medicine were requested from contributors. The top 6 areas overall are listed in Table 2.

Table 1

WHO Collaborating Centers (and number) in Australia (WHO, 1996).

AIDS (1)	Maternal and child health (1)
Blindness and Deafness (1)	Oral health (1)
Cardiovascular diseases (4)	Organization of health systems based on primary health care (1)
Clinical, laboratory and radiological technology (5)	Other communicable diseases prevention (3)
Control of environmental hazards (2)	Prevention and control of alcohol and drug abuse (1)
Diarrheal diseases (1)	Public information and education for health (1)
Disease vector control (1)	Rehabilitation (1)
Drug and vaccine quality (1)	Research promotion and development (1)
Environmental health in rural and urban development (1)	Sexually transmitted diseases (1)
Food safety (1)	Workers' health (1)
Health of the elderly (1)	Zoonoses (2)
Health situation and trend assessment (1)	
Human reproduction research (3)	
Malaria (1)	

Table 2

Top listings in directory of research and development in tropical medicine (Leggat, 1996).

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Clinical Tropical Medicine (23)  
 Infectious Disease/Microbiology (21)  
 Travel Medicine (13)  
 Malaria (11)  
 Primary Health Care (10)  
 Tropical Pediatrics (8)

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#### PROFESSIONAL ORGANIZATIONS IN TROPICAL MEDICINE

Several professional organizations contribute to the development of tropical medicine in Australia through their membership. These include the Royal Society of Tropical Medicine and Hygiene, the Royal Australasian College of Physicians, especially through the Australasian Faculty of Public Health Medicine, the Australasian College of Tropical Medicine, the Australian Society for Infectious Diseases, the Australian College of Rural and

Table 3

Various activities of the college.

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Regular Conferences, Scientific Meetings  
 Entering publishing arena: annals, yearbook, training  
 Research and development, ACTM bulletin, other texts  
 Electronic networking on internet  
 Scholarships, awards and honors program  
 Joint CME : RACGP, AFPHM

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Remote Medicine, the American Society of Tropical Medicine and Hygiene, and others such as the Australian Society for Microbiology and the Australian Society for Parasitology.

#### THE AUSTRALASIAN COLLEGE OF TROPICAL MEDICINE

The Australasian College of Tropical Medicine, established in 1991, has played an important role in filling a professional void for research and field workers in tropical medicine (Leggat, 1992). Its membership is approaching 550 coming from more than 30 countries around the world (Leggat *et al*, 1997). It has several international affiliations with four relevant groups, and has established or is establishing Standing Committees in several important areas, including travel medicine, training, zoonotic diseases, and envenomation. Other activities of the College are listed in Table 3. The Aims of the College are given in Table 4 (Leggat *et al*, 1996).

#### FUTURE OF TROPICAL MEDICINE TRAINING AND RESEARCH IN AUSTRALIA

In training, Australia must be responsive to needs of governments, employers and individuals and flexible, both in the content and mode of delivery of courses to meet new opportunities. Training should become networked internationally and from linkages with other disciplines. Research in tropical medicine in Australia will continue to be dependent of government funding and private sponsorship. Survival of both research and training institutions may be dependent of the formation of national consortiums and international linkages between institutions. As always, research will flourish where there is good research training, however the move in recent years towards more high tech research will necessitate development of new skills such as those in molecular biology.

Table 4

Aims of the college (Leggat *et al*, 1996).

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- Encourage continuing education and the exchange of knowledge in tropical medicine
  - Collaborate with other organizations in conducting activities in tropical medicine
  - Promote research in tropical medicine
  - Strive for professionalism and competence among its members and those specializing and entering into the field of tropical medicine
  - Maintain a historical collection of items relevant to the development of tropical medicine in Australasia
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