



CHAPTER OF

Pathologists



*A Brief History of Pathology
and the Chapter of Pathologists*

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ABSTRACT

Pathology was the first specialty practiced in Singapore, and celebrated its centenary 2 years ago. A brief history of the discipline and the Chapter of Pathologists are presented here. Significant milestones especially inaugural events are recounted.

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INTRODUCTION

A history of the Chapter of Pathologists would be incomplete without a history of the specialty of Pathology in Singapore.

Pathology is in fact the first specialty practiced in Singapore. This was due to the seriousness of the public health situation and infections like water borne diseases in Singapore at the turn of the last century. This led to the Municipal Commissioners to develop the laboratory service, and the creation of a new post of Bacteriologist in 1902. Dr George Alexander Finlayson arrived on 12 May 1903 to become the Municipal Bacteriologist. Besides being involved in a wide range of activities in combating infectious diseases, Dr Finlayson also carried out histopathological examinations on tissue specimens, and performed post-mortem autopsies on patients who had died at the Tan Tock Seng Hospital. With the high death rates at the time, the Government decided in 1905 to establish a pathology department with a full time pathologist. This was the first specialist appointment in the Government Medical Service, and Dr Finlayson became the first Government Pathologist on 12 May 1905.

The practice of Pathology has since expanded to include various sub-disciplines, with each spawning further sub-disciplines. Currently in Singapore, where specialist training is concerned, the specialty of Pathology is divided into Histopathology (Anatomical Pathology or Surgical Pathology), Forensic Pathology, Microbiology, and Biochemistry (Chemical Pathology).

A full and fascinating account of the history and development of Pathology can be found in the book, "*The Science of Medical Detection: 100 Years of Pathology 1903 - 2003*"¹ a tremendous effort undertaken by Dr Jimmy Sng Ewe Hui, as part of the activities to celebrate the centenary of Pathology in Singapore. Dr Sng was one of the few microbiologists to head the Department of Pathology. The others included Drs LS da Silva (who was the first local bacteriologist appointed as Senior Pathologist)² and Moses Yu. Spearheaded by A/Prof Gilbert Chiang, a gathering for the Pathology fraternity was organised to celebrate the centenary at the Ritz Carlton Hotel on 22 February 2004. The Health Minister, Mr Khaw Boon Wan graced the occasion as the guest of honour, and Prof K Shanmugaratnam, the most eminent and respected "Father of Pathology in Singapore" and



Fig. 1. Centenary celebration of Pathology. Guests Dr Tan Ser Kiat, Mrs Khaw Boon Wan, Mr Khaw Boon Wan (Guest of Honour) and Emeritus Professor in Pathology, Dr K. Shanmugaratnam (2004).



Fig. 2. Centenary celebration of Pathology. Histopathologists and guests – Dr Jacqueline Hwang, Dr Tan Ser Kiat (guest), Dr Tan Puay Hoon, Dr Gilbert Chiang, Dr Tay Boon Keng (guest), Dr Yap Wai Ming, Dr Lim Tan Soo Kim and Dr Lian Siew Chin (2004).



Fig. 3. Centenary celebration of Pathology. Microbiologists in-charge of Serology and Immunology at Singapore General Hospital through the years – Dr Maheswari Nadarajah, Dr Ling Ai Ee, Dr Jimmy Sng and Dr Cecilia Ngan (2004).

Emeritus Professor of Pathology, delivered a lecture (Figs. 1 to 3). Prof Shanmugaratnam was Master of the Academy of Medicine from 1966 to 1968, and instrumental in the formation of the School of Postgraduate Medical Studies with the National University of Singapore and the Academy of Medicine, Singapore as equal partners in the governance of the School and in training programmes and examinations. Non-pathologists were amongst the guests at the celebration. The events associated with SARS in 2003 had prevented preparations for an earlier centenary celebration in 2003.

FORMATION OF THE CHAPTER OF PATHOLOGISTS

The Academy of Medicine was formed in 1957. The aim was to assure a high standard of professional and ethical practice. However, it was not until the separation of Singapore from Malaysia in 1965, that an autonomous Academy of Medicine of Malaysia was formed in 1966. The Academy of Medicine of Singapore then formed the Chapter of Physicians and the Chapter of Surgeons, followed by the Chapter of Obstetricians and Gynaecologists in 1968, the Chapter of Radiologists and the Chapter of Anaesthetists in 1974, the Chapter of Dental Surgeons in 1979, and the Chapter of Community and Occupational Medicine Physicians in 1981. At that time, all the other specialties, including Pathology were classified as "Unclassified".

The Ministry of Health had formed a Standing Committee on Specialist Training and Certification in 1974, and the Academy began maintaining a Roll of Specialists in 1979. However, it was not until some years later, that the need for a specialist training programme and specialist certification prompted the formation of the Chapter of Pathologists during the term of Dr Lawrence Chan as Master of the Academy of Medicine. Thus, on 8 September 1986, 10 Pathology members of the Academy wrote to the Master to formally apply for the formation of the Chapter of Pathologists. They were Dr Moses Yu, Dr Sng Ewe Hui, Dr Mavis Yeo, Dr Gilbert Chiang, A/Prof Lee Yoke Sun, Prof Edward Tock, Dr Tay Leng, Dr Aw Swee Eng, Dr S Doraisingham, and Prof Chao Tzee Cheng. The Chapter of Psychiatrists was also formed under the same circumstances, and at the same time. A special resolution that a Chapter of Pathologists and a Chapter of Psychiatrists shall be added to the Academy of Medicine was passed at the 9th Annual General Meeting of the Academy of Medicine on Saturday 22 November 1986 held at the Pathology Lecture Theatre. This brought the number of Chapters in the Academy to 9.

The Inaugural Meeting of the two Chapters was held on Friday, 5th December 1986, at 5pm at the Marquis Room, King's Hotel, at Havelock Road. At the Inaugural Meeting, the first office bearers of the Chapter of Pathologists were elected. They were Dr Gilbert Chiang (Chairman), Dr Sng Ewe Hui (Vice Chairman), Dr Mavis Yeo (Honorary Secretary), Dr Chao Tzee Cheng (committee member), Dr Lee Swee Kok (committee member), and Dr Lee Yoke Sun (committee member, who was elected in absentia). The other business for discussion during the meetings included the expected re-opening of the College of Medicine Building in May 1987 and the organisation of scientific programmes by all Chapters, and a request from the Ministry of Health for the Chapters to nominate Convenors and members to the Specialist Subcommittees.

The Chapter of Pathologists held its first committee meeting on 30 December 1986, to discuss the setting up of specialist sub-committees. The objectives of the subcommittees were 1) to set up a specialist training programme and 2) to set up criteria for certifying a specialist. These sub-committees and their members were: (a) Anatomical Pathology (Dr Gilbert Chiang, Dr Lee Yoke Sun, Dr Lee Swee Kok), (b) Chemical Pathology (Dr Aw Swee Eng, Dr Tan It Koon, Dr Lee Swee Kok), (c) Forensic Pathology (Dr Chao Tzee Cheng, Dr Seah Han Cheow, Dr Gilbert Chiang), (d) Microbiology (Dr Jimmy Sng Ewe Hui, Dr S Doraisingham, Dr Mavis Yeo), (e) Haematology (which was later to come under the Chapter of Physicians). The initial agreed qualifications for certification as a specialist in Pathology were the Membership or Fellowship of the Royal College of Pathologists of UK, the Fellowship of the Royal College of Pathologists of Australasia, the Fellowship of the Royal College of Physicians and Surgeons of Canada (Pathology section), the American Boards in Disciplines of Pathology, and the diplomas of the Conjoint Board of the Royal Colleges and Universities in the UK obtained prior to 1974 (which included the Diploma in Clinical Pathology, the Diploma in Pathology, the Diploma in Medical Jurisprudence, and the Diploma in Bacteriology). In the minutes of the Chapter's Annual General Meeting on 1st February 1989, it was stated that the Specialist Training Programme criteria (including that of the Chapter) had been submitted to the Singapore Medical Council, which had accepted the recommendations in toto.

EDUCATIONAL ACTIVITIES

In August 1987, the Chapter held two seminars to commemorate the opening of the College of Medicine Building. The seminars were: (a) Poisoning by Dr Chao Tzee Cheng, and (b) The Role of the Laboratory in Health Care. The speakers for the latter seminar were Dr Ling Ai Ee (Serological Tests for the Diagnosis of Viral Hepatitis), Dr Aw Swee Eng (Nuclear Medicine Procedures), Dr Edward Jacob (Potential Source of Error in Patient Specimen Analysis), and Dr Ivy Sng (The Uses and Implications of Cervical Cytology). At the end of 1987, the membership of the Chapter of Pathologists stood at 19 (the membership at the time of writing of this article is 58).

The Singapore Society of Pathology was formed in 1976, and hence had a longer history. Because of the small number of Pathology Fellows, it made sense to organise joint meetings with the Singapore Society of Pathology. Many of the Fellows were also members of the Society. The membership of the Singapore Society of Pathology include scientists and trainee Pathologists, besides medically qualified Pathologists. The Chapter began and still continues to hold meetings with the Singapore Society of Pathology. The earliest record of a joint meeting between the Chapter and the Society of Pathology was on 31 August 1989. The lecture topic was "Candidiasis – Prevalence and Pathogenesis", given by Dr Yvonne Clayton, Senior Lecturer, Department of Clinical Science and London School of Hygiene and Tropical Medicine, London. Dr Clayton was at that time a MOH HMDP Visitor. This joint meeting was sponsored by Abbott Laboratories.

The Chapter held its first of its Annual Scientific Meetings together with Singapore Society of Pathology on the afternoon of 4 November 1989 at the College of Medicine Building, from 2.30-6.30 pm. The scientific programme, planned by Dr Lee Yoke Sun, consisted of 7 free papers and a slide seminar by Prof Shanmugaratnam. The free papers were: (a) Perak Mass Poisoning by Dr Chao Tzee Cheng, (b) Serotypes of Pneumococci in Singapore, 1977-1986, by Dr Ling Moi Lin, (c) Foetal Epiphyseal Cartilage Allografts in Rabbits, by Drs SM Chong, YS Lee, RWH Pho, SQ Li, TS Liang, (d) Radiologically Guided Fine Needle Biopsy of Deep-seated Lesions – A Review of 90 Cases, by Drs WT Poh, Lenny Tan, Ivy Sng, (e) Melioidosis, by Dr Tan Ai Ling, (f) Alcoholic Liver Disease – A Clinico-pathologic Study, by Drs J Ho, R Chong, CS Sim, HS Ng, KY Ng, LB Teh, (g) Histogenesis of Skin-limited Amyloidosis, by Drs YS Lee, PH Fong. The number of participants was 34. This scientific meeting was followed by a dinner at the Mandarin Hotel, with Dr and Mrs Tan Ngoh Chuan as the guests of honour. Dr Tan Ngoh Chuan was Master of the Academy of Medicine, Singapore. The social programme was planned by Dr Mavis Yeo.

The Chapter first participated in the Singapore-Malaysia Congress (the 24th) in September 1990, with Dr Gilbert Chiang representing the Chapter in the organising committee.

To date, the Chapter continues to hold joint meetings with various professional societies, besides the Singapore Society of Pathology. These include the Singapore Society of Haematology, Singapore Association of Clinical Biochemists, the Medico-legal Society and the Society of Infectious Disease (Singapore). These societies represent the various disciplines of Pathology.

SPECIALIST TRAINING

As in other fields, the early Pathologists were foreign graduates. It was only after the World War II that local graduates were given positions in Pathology. It was known as the Malayanisation of the Civil Service. Dr Subramanyam was appointed Senior Pathologist in 1948 and also the Acting Head of the Medical College's (later the University of Malaya's) Department of Pathology (Fig. 4).³ Although the deaths due to infectious disease and malnutrition had declined in the mid-fifties, the demand for Pathology services increased rapidly, and there was a grave shortage of senior staff, especially in the 1960's.⁴ In the 1960's and 1970's, local graduates took over from foreign graduates to take up the speciality. At that time, it was the norm that after a year of local training, the "trainee" Pathologist will go overseas for further training or attachment and to take an overseas examination like the Diploma in Medical Jurisprudence, Diploma in Bacteriology or Diploma in Clinical Pathology. This may take between 1 to 2 years. They will then return and be recognised as specialists. With the slow but increasing number of doctors joining the speciality, there was a recognition of the importance of a more stringent qualification, which in later years was required for



Fig. 4. Former Senior Pathologists, Dr C. Subramanyam (seated, 1st from left), Dr L. S. Da Silva (seated, 1st from right) and Dr K. Shanmugaratnam (middle row, 9th from right) with staff of the Pathology Department (1948).*



Fig. 5. Forensic Pathologists, Dr Chao Tzee Cheng (2nd from right) and Dr Wee Keng Poh (1st from right) together with staff from Forensic Pathology section in front of the Mortuary Building (1983).*

promotion to consultant grade. Pathologists therefore started to sit for the MCRPath examination conducted by the Royal College of Pathologists in the UK, and the FRCPA examination conducted by the Royal College of Pathologists of Australasia.

At the time of formation of the Chapter of Pathologists, there were senior, experienced and even renowned Pathologists in all the sub-disciplines of Pathology (Fig. 5 and 6). They were most suitable to train young doctors to be specialists in their field. However, the lack of young doctors willing to make Pathology a career remained, and hence the numbers entering traineeship were far and few in between. Because of the small number of trainees, it was not practical to go the way of some other larger specialities, whereby MMed examinations were introduced. Hence the trainees gained their skills under the supervision of the local Pathologists, but took overseas examinations – the MRCPath and FRCPA examinations – just as their predecessors did. Part of the FRCPA examinations could be taken locally, following discussion in the early 1970s between the



Fig. 6. Staff of University Department of Pathology with Dr K. Shanmugaratnam who is seated in the middle of front row (1970s).*



Fig. 7. HMDP Expert Dr Torsten Lowhagen of the Karolinska Hospital, Stockholm, conducting a Fine Needle Aspiration Cytology Workshop organised by the Chapter of Pathologists and the Chapter of Surgeons (1990).*

Royal College of Pathologists of Australia and Prof Shanmugaratnam. Singapore was made an overseas College examination centre for written papers. From then on, an increasing number of trainees sat for the College's examinations. However, in the late 1970s, basic medical registration in Australia was closed to overseas graduates. This meant that Singapore Pathologists who passed the College examinations could not be admitted as Fellows of the College, and this led to a straining of relationship between the Pathology community in Singapore and the College. Trainees in Singapore began to look towards the Royal College of Pathologists of the UK for examinations and membership. In 1983, the Australian College allowed overseas Pathologists to obtain Fellowship if they passed the final College examinations, and were entitled to practise medicine in Singapore.⁵ This led to an improvement in relationship, and the College held its first offshore Annual Scientific Meeting in Singapore in October 1986.

To date, positions for traineeship continue to be available. Recognising the dire shortage of Pathologists, various parties including the Ministry of Health embarked on promoting the specialty to young doctors, including monetary incentives, and roadshows. The take-up has improved, but the shortfall is still great.

As in the past, specialist training currently resides very much with the hospital institutions, the University and the Health Sciences Authority. The Chapter facilitates by drawing up recommendations for specialist training programme, and specialist certification, as well as organising continuing medical education (Fig. 7). Fellows are also appointed into the Specialist Training Committee, which oversees postgraduate training. Because of the diverse nature of each Pathology discipline, it was felt that the Pathology Specialist Training Committee should have 4 sub-committees, each dedicated to the disciplines of Pathology, i.e. Histopathology, Forensic Pathology, Microbiology and Biochemistry. These were formed in 2004, with their Chairpersons sitting in the main Pathology Specialist Training Committee.

THE FUTURE

As the other Chapters evolve to form Colleges in recent years, the Chapter of Pathologists remains a Chapter. This is largely due to the small numbers of Fellows to qualify forming a College. There are to date only 58 Fellows. In addition, with the various disciplines in Pathology, if a College of Pathologists is formed, the number of members in each Chapter (from each discipline) will even be further reduced.

Nevertheless, the Chapter will stay focussed on the objectives of facilitating specialist training and providing continuing medical education and professional development of Pathologists.

Acknowledgement:

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References

1. Sng EH. The Science of Medical Detection: 100 years of Pathology 1903 - 2003.
2. Chew CH, Chee YC. Postgraduate medical education and specialist training in Singapore. *Ann Acad Med Singapore* 2005;34:182C-189C.
3. Colony of Singapore Medical Department Annual Report, 1951
4. Ministry of Health Annual Report. 1960
5. Conyers RAJ, MacLeod C, Muller HK, Raik E. Pathology, Professional Practice and Politics. A History of the Royal College of Pathologists of Australasia 1981-2006. Royal College of Pathologists of Australasia.