Chapter One

The need for a learned society: building a community

The location was Melbourne. The year was 1958. An ANZAAS Congress was underway. A small group of microbiologists got together and held a meeting. The topic for discussion was microbiology. But it was not the science of microbiology that was being debated. Rather, it was the need for a society dedicated to microbiology and to microbiologists – the need for an organisation that would bring those working in the discipline together and further the cause of this essential and boundary-crossing science.

From a discipline a society grows

The study and application of the science of microbiology in Australia dates back to European settlement. However, because of the way microbiology emerged as a discipline and area of scientific exploration, it is difficult to pinpoint its actual beginnings. The first microbiology laboratory in Australia was the Macleay Laboratory, named after Linnean Society stalwart William John Macleay. Located in New South Wales on Sydney Harbour and established in 1874, early microbiological experiments and water testing were carried out at the private laboratory.1 In Victoria, one of the first instances of scientific microbiology undertaken is attributed to brewer Auguste Joseph François De Bavay, who in 1888 is said to have used the first pure yeast culture in fermentation brewing.2 But, while it may not have been officially known as such at the time, the first microbiological activity stretches further back than both the Macleay Laboratory and the use of pure yeast culture for brewing in Victoria.

Microbiology in Australia can be traced back to the introduction of new species of plants, animals and people to a continent that, prior to European settlement, had been relatively isolated. With these introduced species came infectious diseases. Much of the early history of microbiology – or bacteriology as it was then known – centred around the identification, control and prevention of these diseases that affected animals, humans and plants.

Some of the first practised microbiology was a direct response to diseases such as typhoid, typhus fever, measles, scarlet fever, mumps, cholera and smallpox.
of these highly infectious diseases were rife on the boats that transported new Australians to the colonies. The first practical applications of microbiology were attempts to eradicate smallpox. Vaccinations for this highly contagious disease were administered intermittently in the then colony of New South Wales from the early 1800s and a vaccine institute was opened in 1847. In Victoria, smallpox was an equally large concern and in the 1880s a laboratory to produce a smallpox vaccine was established by a veterinarian in Royal Park.

Queensland and the Northern Territory faced similar important health issues as a result of tropical disease. There too, microbiological research found its origins in the search for answers to the management and treatment of diseases such as malaria and dengue. By 1910, the Institute for Tropical Medicine – the first institute for medical research to be set up in Australia – had been established in Townsville. Tropical disease was also a major concern in the Northern Territory; however, developments in microbiological activity were delayed as it was not until 1907 that the first microscope arrived in the Territory.

Disease in plants was also a large problem in the early history of white settlement in Australia, and the response similarly led to microbiology. In Victoria for example, a particularly severe outbreak of wheat rust in 1889 was responsible for the employment of Daniel McAlpine as vegetable pathologist by the Victorian Department of Agriculture to investigate fungal diseases of plants. With similar situations in New South Wales, South Australia and Tasmania, the necessity to understand and adapt to disease in plants helped formalise the practice of microbiology in Australia.

Livestock were introduced to Australia by early European settlers. With them came diseases and pests. Control of the rabbit population provides a pertinent example. Introduced for sporting purposes, rabbits quickly became pests, breeding in epic proportions. Desperate to control the problem, the New South Wales Government introduced the Rabbit Commission and offered prize money of £25,000 for the most effective biological method for the control of rabbits. One of the early fathers of microbiology, Louis Pasteur, sent a team to Australia to put forward one such method of control. Later, in 1890, the Pasteur Institute was established on Rodd Island to produce a vaccine for anthrax and black leg in cattle. To deal with similar problems, the Stock Institute was established in Queensland in 1893, and in 1899 became the Bacteriological Institute. In Victoria, as early as 1858, veterinary research was underway to further knowledge regarding the diagnosis and treatment of diseased animals.

Universities and government were intrinsically linked to the development of microbiology in Australia. Universities were often the centre of bacteriological and microbial research, and many university departments worked closely with hospitals, sharing and managing diagnostic and research laboratories. Once again, the majority of microbiology-based activity emerged across several disciplines, out of teaching and research in medicine, dentistry, agricultural science, veterinary science and science in general. It was not until much later in the 20th century that microbiology began to be taught as a stand-alone major study sequence.

Bacteriology was first taught at the University of Melbourne in its medical school in the early 1890s. Up until the early 1920s, diagnostic work for the Royal Melbourne Hospital was also carried out by the Bacteriological Laboratory based at the University. The existence of this laboratory, which later became the Public Health Laboratory, strengthened the teaching, research and application of microbiology in Victoria. Students of medicine, dentistry, veterinary science and agriculture at the University of Melbourne all received training in microbiology that was coordinated by a centralised Department of Microbiology. A similar arrangement occurred at the University of Queensland where a centralised department taught students of medicine, science and agricultural science; it was only veterinary science students who were taught separately. The situation at the University of Sydney, where there was no centralised school or department of microbiology, was slightly different. Although microbiology was taught to students across the same disciplines as it was at the universities of Queensland and Melbourne, the lack of a centralised department meant that there was a different attitude to the profession and to its teaching.

The universities of Adelaide and Western Australia followed later with their formalisation of teaching and research in microbiology – the former in 1920 to medical students, and the latter in 1923, first to students of agriculture and then medicine and science in 1956. The University of Tasmania was the last of Australia’s early universities to introduce microbiology when it did so in the Faculty of Agricultural Science in 1962.

Higher education in Australia began to change after World War II when the existing teaching institutions simply could not cope with the demand for university places. Several new institutions were established in the immediate post war years and further expansion followed in the 1960s and 1970s. Many of these new universities and technical colleges introduced research-based as well as applied microbiology. These newer institutions had the benefit of a more developed and established discipline and community of
Like universities, government departments, bureaux and agencies were crucial to the development of microbiology in Australia. Bacteriologists, and later microbiologists, were employed by governments in various departments to assist with specific problems and in some cases policy development. It was most commonly departments of health and agriculture that engaged the services of microbiologists. For example, Frank Tidswell was appointed to the New South Wales Department of Health in 1898 and was instrumental in the establishment of the Government Bureau of Microbiology ten years later. Another example can be found across the other side of Australia in Perth, where in 1910 Frederick Stoward was appointed to the Department of Agriculture as botanist and vegetable pathologist. Government departments and bureaux were most commonly responsible for the identification, testing and treatment of problems that related to disease in plants, animals and humans. As health and government infrastructure developed, increasing numbers of microbiologists were employed in this applied context. The practical applications of microbiology were growing.

By the 1950s, what started as ad hoc research and applications of bacteriology and microbiology had begun to become more organised and consolidated. Largely due to the activity of teaching institutions and government bodies, there was a growing number of microbiologists teaching, researching, studying and practising in Australia. This is how, at the 1958 ANZAAS Congress in Melbourne, there came to be a small but passionate group of microbiologists talking vehemently about the need for a society dedicated to microbiology. In many ways the earliest microbiology activity in Australia had been reactive – a response to disease and infection in plants, animals and humans. But, as a result of the meeting held at the ANZAAS Congress, microbiology in Australia was about to reach a turning point. It was about to take a bold and proactive step that would further consolidate and strengthen both the discipline and its application.
A new society is born

Since its foundation in 1888, the Australian and New Zealand Association for the Advancement of Science (ANZAAS) has been dedicated to the advancement of science and to communication between scientists, particularly scientists of different disciplines. It aimed for ‘cross-fertilisation among the various disciplines and for communication between the public and academic personnel’. Scientists from Australia and New Zealand would gather at ANZAAS congresses to discuss current issues relating to scientific research, inquiry and application. As well as being an important forum for scientists to share ideas and current research, ANZAAS congresses gave many of the less developed disciplines that were yet to form their own society a forum to meet with other like-minded professionals.

Australian microbiologists found a welcome home at the ANZAAS congresses. There was much to be gained from being part of the exchange of ideas that occurred within this scientific community. However, as time progressed and research in microbiology advanced, the generalised ANZAAS discussions simply could not provide a forum for the in-depth discussion required to keep microbiologists abreast of the latest advancements in their field. Australian microbiologists were continually forced to look overseas to already established microbiology societies to stay up-to-date with the latest developments and advances in research and inquiry. A local forum was desperately needed.

Against the backdrop of an ever-strengthening discipline and regular meetings of scientists from other disciplines, the lack of a consolidated body dedicated to microbiology was becoming more and more keenly felt. And so, while in Adelaide for an ANZAAS Congress, a group of microbiologists decided to congregate. They met on Wednesday 20 August 1958, while the Congress was underway. Numbering somewhere around 50, they discussed microbiology. But despite the conference going on around them, it was not the science of microbiology that was being discussed. Rather, the need for a society. Their own society. A society dedicated to microbiology and to microbiologists. The example of the Australian Biochemical Society was cited – they too had started off meeting at the congresses but, as their discipline grew and strengthened in the 1950s, they decided to form their own society. Their example was tangible and real. The development of biochemistry as a discipline had been similar. Surely the microbiologists could follow suit.

It was a highly significant meeting. Eric French chaired the discussion. Microbiology in Australia was in a solid position. Each of the states had their own strengths and areas of expertise. Drawing these complementary activities together under the umbrella of a stand-alone association could only strengthen the discipline and its application. By the meeting's end it had been ‘resolved to form an association of microbiologists in Australia’. The process was clear. A ‘Ways and Means’ subcommittee was immediately established, with representatives from all states except Tasmania. Over the coming weeks, the subcommittee would investigate how the society would be established and set some important parameters. A second meeting was scheduled for just under a week later. At this meeting the subcommittee was to present its report detailing exactly how this new society would be brought to life.

The subcommittee presented a clear and concise report on Tuesday 26 August. In one straightforward page, it outlined the most fundamental points relating to the new society, its parameters and how it would be established. The report listed the main reasons behind the creation of the proposed society – to provide a suitable forum and environment for the discussion of specialist papers in microbiology; to represent Australian interests on the influential International Association of Microbiological Societies and other similar bodies; to foster interaction and potential affiliation with other scientific societies; to facilitate the study and investigation of microbiological problems unique to Australia; and, lastly, to promote microbiology within Australia.

The Ways and Means subcommittee stated clearly that the new society would be a learned society, not a professional one. Behind this statement were hours of passionate and heated debate as to whether the society should be solely devoted to the science of microbiology or should also have the additional role of ‘protecting the interests of microbiologists’. After lengthy discussion, a decision was reached. The society was to be dedicated to the science of microbiology alone, to the fostering of knowledge, the exchange of ideas and the promotion of the discipline. Interestingly, in years to come, revisiting this recommendation would bring about one of the most significant
periods of flux and turmoil in the history of the Society.

Finally, the subcommittee detailed the process that would follow. A committee of three, comprising Nancy Atkinson, Jack Harris and Lance Walters, was appointed. These three, all of whom were based in South Australia, were charged with drafting a Constitution – the Constitution of the first society for microbiology in Australia. At the same time, each state was to appoint two convenors who were to be responsible for organising a meeting of ‘interested’ people in their home state. At these meetings Australia-wide, the draft Constitution would be presented and feedback gathered and then returned to the committee of three. A meeting, the first official meeting of the society, was proposed for August 1959. Scientific papers would be presented and the first General Meeting would be held. The Australian Society for Microbiology was rapidly coming to life.

The early years

The committee of three appointed to draft the Constitution swung into action immediately. With a meeting scheduled for 1959, there was little time to lose and much to be achieved. While Atkinson, Harris and Walters began to draft the Constitution, the five state convenors – David Howes (ACT), David Dorman (NSW), Geoffrey Simmons (QLD), Rose Mushin (VIC) and Douglas Annear (WA) – coordinated meetings of interested microbiologists in their own states.

Two drafts of the proposed Constitution were penned and circulated by the South Australian committee of three. As feedback was gathered by the state convenors through 1958 and early 1959, a meeting was scheduled in Melbourne for 29 May 1959. At this meeting three representatives from each of the six states would meet to produce the third and final draft of the Constitution and By-Laws of the proposed Australian Society for Microbiology (ASM).
A Culture of Learned Professionals

objective of the Society, which was, quite simply, ’the advancement of the science of microbiology’.22

From the earliest discussions it was agreed that it was crucial that the new society be a national body but that it be driven by the activities occurring at the state level.23 The structure that was laid out in the Constitution carefully and consciously reinforced this stance. The Australian Society for Microbiology would be a two-tiered system that established a national governing council as well as individual autonomous state-based branches. One branch could be formed in each state, but each had to comprise a minimum of ten financial members. The state branches were free to govern themselves as they saw fit, as long as they had an elected chairman, provided a representative to the National Council and submitted an annual report. It was a structure that ensured that the state-based activities which, in some states, predated the establishment of the ASM, continued. However, it also facilitated a coordinated approach to the advancement of microbiology both locally and across Australia.

The composition of the National Council was crucial. It had to be able to provide leadership and represent the interests of the ASM at a national level, provide continuity, and draw the state branches together. As a result, the governing Council was large. It comprised a President, Immediate Past President, Vice President (who was also the President Elect), Honorary Secretary, Honorary Treasurer and one delegate from each of the state branches. The President and Vice President were elected by financial members of the Society, while the Honorary Secretary and Treasurer were appointed by the Council.

As well as effective leadership, a strong and active membership base was critical for the advancement of the science of microbiology in Australia. The Constitution clearly laid out the requirements for membership. In one sense it was open to all – the only formal requirement was an interest in the science of microbiology.24 However, the finer detail suggests that it was not necessarily that straightforward. Approval of candidates for membership was left to each of the state branches. The Constitution stipulated that the ASM was ‘primarily composed of graduate workers in microbiology but shall also be open to any person whose experience or interest will, in the opinion of the Branch Committee, allow him to participate in and contribute to Branch activities’.25 States could, at their discretion, reject candidates even if they were ‘interested’ in the science of microbiology if the candidate’s experience was not perceived to be adequate to enable them to contribute.

These caveats of suitable experience and the ability to contribute made membership requirements more than just an interest in microbiology. But they were essential for the new society. Its ability to thrive and flourish depended on active contribution from members. If it was to be a learned society, then the experience of its members had to be able to support and sustain its existence as a learned scientific community. Membership was divided into three levels, differentiated by location and contribution, namely ordinary, corresponding and sustaining members. This system of classifying

Time was critical for the production of this final draft. It was to be presented three days later at the end of a residential seminar, held at University Women’s College in Melbourne from 29–31 May 1959. This seminar, which in the years that followed came to be known as the Annual Scientific Meeting, was organised by what was becoming the Victorian Branch of the ASM and chaired by Sydney Rubbo. In those three days, the document that would officially bring the ASM to life was finalised.

On 31 May 1959, at the inaugural General Meeting, the Constitution and By-Laws of the Australian Society for Microbiology was adopted and the first office bearers elected. The list of names reads like a Who’s Who of the history of microbiology in Australia – Frank Macfarlane Burnet was elected President, Sydney Rubbo Vice President, Jack Harris Honorary Secretary and Nancy Atkinson Honorary Treasurer.21 Not only were these outstanding scientific minds contributing greatly to the teaching, learning, research and application of microbiology in Australia, but they were also now taking a leading role in building the ASM and, as a result, the community of microbiologists in Australia.

The Constitution and By-Laws of the ASM was in essence a blueprint for the structure and direction of the Society. It was a document of supreme importance. It followed on from many of the themes identified in the report presented by the Ways and Means subcommittee a little under a year earlier. All of the items and points laid out in the Constitution were directed towards meeting the sole

Nine months after the idea for a national society was raised in Adelaide, a Constitution for the Australian Society for Microbiology was adopted at the inaugural meeting in Melbourne on 31 May 1959.

Nine months after the idea for a national society was raised in Adelaide, a Constitution for the Australian Society for Microbiology was adopted at the inaugural meeting in Melbourne on 31 May 1959.
members reinforced the eagerness of the founders of the ASM to encourage members to be as active in their society as possible.

All ordinary members were required to pay subscription fees, at the rate of £1 per financial year. Corresponding members, restricted from attending ASM functions by their place of residence, were only required to pay half this amount. State branches were permitted to add additional subscription fees to this amount at their discretion; however, a specified amount was required to be collected by each state and paid to the national body as a capitation fee. One of the main functions of the National Council was to redistribute this amount to the states to assist with their running expenses.20

Standing on its own two feet

The residential seminar held in Melbourne in 1959 was the first official gathering of the Australian Society for Microbiology. Over the three days, specialist papers were given and the science of microbiology was discussed in earnest. At the seminar’s end, the first ever Annual General Meeting of the Society was held. Aware that such physical gatherings were important both in terms of fostering a sense of community as well as crucial for the running of the Society, provision was made in the Constitution for Annual Meetings as well as Ordinary General Meetings. Annual General Meetings were required, where possible, to be ‘held in conjunction with the meetings of the Australian and New Zealand Association for the Advancement of Science’.27

Linking the Annual Meeting of the ASM with the ANZAAS congresses was a highly practical move. If microbiologists across Australia were gathering in the same location for the ANZAAS Congress, they could easily meet together at the conclusion of the Congress for an Annual Meeting, and eventually a stand-alone conference of the ASM. The link between ANZAAS and the ASM set out in the Constitution was also a subtle, but important strategic move. Until the ASM was able to build its membership, consolidate further and eventually run its own national conferences, it would rely on relationships with organisations like ANZAAS and other scientific bodies to help gather momentum and build solid networks in the scientific community.

There was a strong network of discipline-based scientific societies in Australia. Because of the interdisciplinary nature of microbiology as a science, many microbiologists had research and applied interests that crossed discipline boundaries. Membership of multiple societies was important for many ASM members. The Australian Society for Medical Research and the Australian Society for Immunology were required, where possible, to be ‘held in conjunction with the meetings of the Australian and New Zealand Association for the Advancement of Science’.28

In 1960 the Australian Society for Microbiology was officially recognised by ANZAAS. The recognition was significant on various levels. It formally linked the Australian Society for Microbiology with the organisation and scientific community that it grew out of. It also reflected the inter-disciplinary emergence of microbiology. But the affiliation was also significant because it formally acknowledged that the well-established ANZAAS recognised the Australian Society for Microbiology to be a stand-alone learned society. This acknowledgement was symbolic of the strong foundations that the ASM had built.

References

2. Ibid, p.11.
3. Ibid, p.3.
4. Ibid, p.11. This site was later taken over by the Victorian Government and became the site of the Commonwealth Serum Laboratories.
7. Ibid, p.11.
9. Ibid, p.7. Interestingly, almost a century later, the New South Wales Branch of the Australian Society for Microbiology would hold a meeting to discuss the history of microbiology in Australia at the Quarantine Station located on the Island (interview with Dick Groot Olibiink, 29 April 2008).
10. This general information on universities and the emergence of microbiology within them is drawn from Fenner, F. (ed.). History of Microbiology in Australia, pp.17-78.
22. Ibid, p.5.