

# The Royal Society of New South Wales

## Report on Historical Significance

PETER TYLER

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### THE BRIEF

In November 2005 the Royal Society was awarded a Community Heritage Grant to fund a Significance and Preservation Survey. The Community Heritage Grants Program is managed by the National Library of Australia and jointly funded and supported by the Australian Government through the Department of Communications, Information Technology and the Arts, the National Library of Australia, National Archives of Australia, the Australian Film Commission and the National Museum of Australia.

The grant is seen as a first step in supporting the effort to preserve the Royal Society's collection of scientific books, journals and historical documents by engaging professional expertise to guide the ongoing management and preservation of the collection.

In addition to an appraisal of the collection, this report gives a brief overview of the Society's development and an assessment of its significance in the intellectual life of New South Wales from early colonial times.

### THE ROYAL SOCIETY

The Royal Society of New South Wales traces its origins to the 'Philosophical Society of Australasia' formed in 1821 when six men met at the home of Judge Barron Field. It soon grew to a dozen members, meeting in their homes by rotation. Nevertheless after about twelve months the society lapsed until another organisation with similar objectives was formed in 1850 as the 'Australian Philosophical Society'. By that time the educated population of the Colony was large enough to support such a ven-

ture.<sup>1</sup> The name was changed to 'Philosophical Society of New South Wales' in 1856, the year that the Colony gained responsible government. In May 1866, Queen Victoria granted permission to assume the present title 'The Royal Society of New South Wales'. The Society was incorporated under this name by Act of the NSW Parliament on 16 December 1881 'for the encouragement of studies and investigations in Science, Art, Literature and Philosophy'.

Because the Royal Society was incorporated under its own Act of Parliament, it can only be dissolved by legislation, unlike most corporate bodies where this power is vested in the members. Until 1935 women were not admitted to the Society, although scholarly papers by women such as by Fanny Cohen and Marie Bentivoglio were accepted for reading or publication. The first woman to be elected President was Dr Ida Browne, a palaeontologist who achieved that distinction in 1953.

The Royal Society of NSW (henceforth described as 'the Society') set up 'Sections' dealing with particular branches of knowledge, including agriculture, architecture, astronomy, biology, chemistry, engineering, ethnology, fine arts, geography, geology, literature, mathematics, medicine, microscopy, physics, and public health. Those Sections gradually dispersed as new societies or professional associations were formed to cater for specialised interests in those fields. For example, the Linnean Society was founded in 1874 to promote 'the cultivation and study of the science of natural history in all its branches', with considerable financial support from its first President, the politician and amateur biologist Sir William Macleay. The particular focus of the Linnean Society has always been the biological sciences. Macleay was also

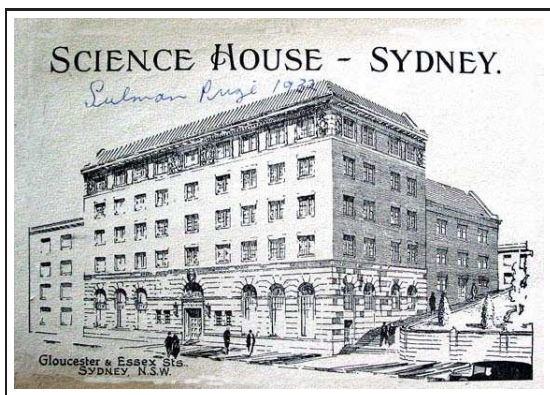
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<sup>1</sup> In the first census year of 1828, the total population of NSW was 35,960. This had grown to 178,668 by 1851.

a foundation member of the Philosophical Society of NSW, and the two societies retained close links for many years.

Despite the proliferation of specialised scientific bodies, the Royal Society retained an interest in all these fields, as perusal of the publications and activities will attest. Research was fostered through regular meetings, symposia, publications and international scientific exchange. Membership of the Society is now open to any person interested in these activities. From 1875 the Society rented premises in the Clark Assembly Rooms at 5 Elizabeth Street, Sydney, a property that it later purchased. When this was sold in 1927, the Society moved into temporary quarters in Castlereagh Street previously occupied by the University Club.

In 1931, the Society moved into the purpose-built 'Science House' at 157 Gloucester Street on land granted by the NSW Government. The building, designed by architects Peddle, Thorpe and Walker, won the first Sulman Prize for architecture in 1932.



From the Society's collection, a print from a sketch of Science House showing when it won the Sulman Prize for Architecture in 1932.

Other scientific societies and professional associations also occupied Science House, in particular the Linnean Society and the Institution of Engineers Australia, both of which were co-owners. The libraries of the Royal Society and the Linnean Society shared the same room, although they were catalogued separately.

In 1975 the building was resumed by the NSW Government with a view to its demolition as part of The Rocks redevelopment scheme. Changed community attitudes towards the value of heritage buildings prevented that grandiose redevelopment taking place; nevertheless the government retained the property, re-named Sports House while it was occupied by sporting associations that later moved to Wentworth Park. The change in nomenclature and usage perhaps reflected the priorities of the NSW Government.<sup>2</sup>

The Society held its last meeting in Science House on 4 August 1976, at which time the Institution of Engineers decided to move its national headquarters to Canberra. The Royal Society and Linnean Society then acquired Clarence House at 35 Clarence Street formerly owned by printing ink manufacturer W.T. Wimble. This was re-named as the Science Centre, where the Society remained until 1983. The new arrangement did not prove viable, so the two partners were forced to sell this building. The Royal Society moved into two cottages owned by Macquarie University, but later had to compress its activities into a single unit at 136 Herring Road, North Ryde. Because there was insufficient room for the library, the collection had to be dispersed or placed in storage. The Linnean Society moved to Milsons Point, where it still functions.

The Royal Society now operates from a small terrace house at 121 Darlington Road, Darlington, owned by the University of Sydney on the fringe of the University campus. Although held under lease, there is no security of tenure; at any time the University may require the premises for its own expansion.

The building is well-protected against intrusion by metal grilles on all doors and windows, with a connection to the University security service, but there are no smoke alarms. Fire extinguishers are plentiful, but this is meaningless when the premises are only occupied intermittently. The corrugated iron roof is rusty in patches, and may be liable to leak.

<sup>2</sup> The building has since reverted to its original name of Science House, and is occupied by commercial tenants, including the Sydney campus of Curtin University of Technology from Western Australia.

In place of the specialised interest sections that ceased to exist as other associations took their place, the Royal Society of NSW developed a decentralised structure to cater for scientific interests in regions where universities were established or industry flourished. This move was in line with political and social pressures for greater decentralisation of services. The first regional division of the Society was the New England Branch, which began on 24 March 1961 and operated very successfully for many years, although it is currently in recess. The existence of this Branch was a significant factor in the relocation of portion of the Society library to Armidale. An active Southern Highlands Branch currently provides a strong focus for the Society in that area of New South Wales, where its regular activities are accessible to people from Canberra.

## PROMINENT MEMBERS

Notable scientists who have made a significant contribution to the reputation of the Royal Society of NSW include:

**Rev. W.B. Clarke** (1798–1878) was unofficial Geological Surveyor of New South Wales 1851–3, and reported on the goldfields in NSW. He was Vice President of the Society during a period when the Colonial Governor customarily held the office of President. Clarke is often described as ‘the father of Australian geology’.

**Professor Sir T.W. Edgeworth David** (1858–1934), a former President of the Society, was Professor of Geology at the University of Sydney, and a member of the first party to explore the region of the South Magnetic Pole in 1909, as part of Shackleton’s expedition.

**Lawrence Hargrave** (1850–1915) was a pioneer in aeronautics. He demonstrated the possibility of powered flight with models in 1884, invented the rotary engine in 1889 and the radial engine in 1890. His experiments with box kites in 1893 led to the development of the first practical aeroplanes. Hargrave joined the Royal Society in 1877 and delivered thirty papers to the Society in following years. Their publication in the *Journal and Proceedings* enabled the results of this research to be distributed internationally.

**J.L. Gerard Krefft** (1830–1881) was curator and secretary of the Australian Museum. He served on the council of the Philosophical Society of NSW and became a member of the Royal Society until 1874, when he left the Museum. A number of his zoological papers were published in the *Transactions of the Philosophical Society*.

**Professor Archibald Liversidge** (1846–1927) was Professor of Geology and Mineralogy, and later Professor of Chemistry at the University of Sydney. An active President of the Society, he bequeathed his extensive library to the Society.

**J.H. Maiden** (1859–1925) was the curator of the new Technological Museum in Sydney before becoming Director of the Botanic Gardens in 1896. He founded the National Herbarium in 1901. He was twice President of the Society.

**H.C. Russell** (1836–1907) became the NSW Government Astronomer in 1870. He wrote extensively on scientific matters and established uniform meteorological data collection procedures throughout the Australian colonies. He was President of the Royal Society on four occasions, and became the foundation President of the Australasian Association for the Advancement of Science.

**Professor John Smith** (1821–1885) was the first Professor of Chemistry and Experimental Physics at the University of Sydney. He was President of the Society on four occasions.

**Sir Thomas Anderson Stuart** (1856–1920) was the first Professor of Anatomy and Physiology at the University of Sydney. He was responsible for establishing the School of Dentistry. He held many public offices, including President of the Royal Society of NSW.

In addition to the many members who have made an outstanding contribution to Australian scientific research, distinguished international figures also appear on the Society’s rolls. Charles Darwin was elected as an honorary member in 1879, and Louis Pasteur was elected in 1883. Letters from Darwin and Pasteur acknowledging this honour are treasured items in the Society archives.

Another name that is linked to the Society during the nineteenth century is the American geologist James D. Dana, who was attached to the United States Exploring Expedition led by Charles Wilkes during the years 1838–1842. Dana made a geological survey of New South Wales in 1849, and later corresponded with Rev. W.B. Clarke. A number of the publications arising from these expeditions, including atlas folios, are held in the Society's collection. Some were donated by Professor Dana, as noted elsewhere in this Report, while others have been acquired elsewhere. The volume on geology is extremely rare, as a warehouse fire destroyed much of the limited print run prior to publication. The Society's copy was obtained by Professor Liversidge from the Smithsonian Institute in Washington.

The Society's membership did not consist solely of these high achievers. Many of the people involved had made their contribution to society in other fields, but retained a serious interest in aspects of science. Thus amongst the 328 members in 1866 we find 51 politicians, 36 merchants, and 19 clergymen.<sup>3</sup> For some, the opportunity for social contacts and business networking may have been as important as the scientific discourse.

The range of scientific disciplines practised by Society Presidents between 1880–1961 is shown in Appendix C.

## PRIZES, AWARDS AND MEMORIAL LECTURES

High levels of scientific achievement are recognised by the Society through the award of prizes or medals, some of which date back to the nineteenth century. Leading researchers are invited to present public lectures in their particular field, including prestigious events commemorating past scholars. Some of these awards are presented annually; other at less regular intervals.

The *Clarke Medal* for distinguished work in the natural sciences (geology, botany, zoology) done in or around Australia was first awarded in 1878.

The Society's *Clarke Memorial Lecture* in geology dates back to 1903.

The *Walter Burfitt Prize* for scientific work done in Australia or New Zealand was first awarded in 1929. It is awarded every three years for contributions of the highest scientific merit.

The *Society's Medal* for scientific research and services to the Royal Society of New South Wales was first awarded in 1884. Since then it has been awarded 66 times.

The *James Cook Medal* for outstanding contributions to science and human welfare in and for the Southern Hemisphere was first awarded in 1947.

The *Edgeworth David Medal* is awarded to an Australian scientific research worker under the age of 35 years. It was first awarded in 1948.

The *Archibald D. Ollé Prize* may be awarded from time to time for the best paper by a member published in the *Journal and Proceedings*. It was first awarded in 1956.

The *Royal Societies of Australia Eureka Prize for Interdisciplinary Scientific Research* was introduced in 2003. It is funded by the six State Royal Societies for award to the Australian partnership or team whose outstanding research involves the active collaboration of scientists in two or more disciplines.

The *Liversidge Research Lecture* in chemistry was first delivered in 1931 and is given every second year.

The *Pollock Memorial Lecture* in mathematics or physics is presented in association with the University of Sydney, and was first held in 1949. It is held about every four years.

The *Poggendorf Memorial Lecture* in agriculture was first delivered in 1987, and is held every two or three years.

The winners of each of these honours since their inception are listed on the Society website: <http://nsw.royalsociety.org.au/awards.html>

Many of the recipients were already at the zenith of their profession. Others, however, were talented younger scientists. A worthwhile research project would be to trace the subsequent careers of these award-winners, to see

<sup>3</sup> A.A. Day & J.A.F. Day, 'A biographical register ...', *Journal and Proceedings, Royal Society of New South Wales*, Vol. 129, 1996, p. 137.

whether early promise was vindicated by their later contributions to science. (See recommendation 19)

## SUMMER SCHOOLS

Beginning in the 1970s, the Society conducted a program of Summer Schools for senior secondary school students that ran for more than twenty-five years. With corporate sponsorship, these Summer Schools during the vacation gave leaders in their fields of science the opportunity to explain and demonstrate the latest research. An important objective was to create a sense of enthusiasm for science amongst young people. The success of these initial Summer Schools became a model for similar projects that were organised later by other scientific bodies.

Research into the participants in the annual Summer Schools would provide useful information for educationists. Did their school-day aptitude lead to a successful scientific career? If not, did the Summer Schools at least serve a valuable purpose by creating a greater awareness and understanding of the scientific method? It would also be interesting to discover where the students came from. Did particular schools or teachers have a strong influence? Boxes 1 and 2 in the Mitchell Library collection of Royal Society material include much of the relevant information, including programs, attendance lists, and group photographs of participants.

## PUBLICATIONS

The flagship publication of the Society is the peer-reviewed *Journal and Proceedings of The Royal Society of New South Wales*. This has been published continuously since 1867, with slight changes in title. From Vol. I (1867) to Vol. VIII (1874) it was known as *Transactions of the Royal Society of New South Wales*. From Vol. IX (1875) it became *Transactions and Proceedings of the Royal Society of New South Wales*. From Vol. X (1876) the present title was adopted. Volume 139 (Nos. 409–410) will be published in 2006.

The Society holds one complete run of this serial in bound volumes from 1867 to 1969. Loose copies published subsequent to this date need to be bound without delay. Some of the early volumes require conservation treatment to prevent further deterioration of leather bindings. Two almost complete sets of duplicate bound copies exist, but these do not form a complete run, although it is possible that missing issues may be found amongst the unsorted boxes of stored material. Compilation of further complete sets is not a high priority, as other libraries also hold full runs of the *Journal and Proceedings*.

The Society also holds a bound volume of the *Transactions of the Philosophical Society of New South Wales*, 1862–1865. This was the forerunner to the present Royal Society. Some of the papers presented to early meetings of the Philosophical Society were published in the *Sydney Magazine of Science and Art* in 1857 and 1859. This publication is held in Mitchell Library as well as the Society's own library. Newspapers of the day were also inclined to publish the full text of Society lectures; in later years an abridged account of proceedings appeared in the press.

Several of the papers presented at meetings of the original Philosophical Society of Australasia in 1821 were collected by member Barron Field and published as *Geographical Memoirs on New South Wales* after he returned to London in 1825. A copy of this book is held by Mitchell Library.

The importance of the *Journal and Proceedings* in colonial scientific circles should not be underestimated. It provided the outlet for publication of much original material. To give an example of the quantity and diversity of information disseminated in this way, we can look at Vol. X, for the year 1876, but published by the NSW Government Printer in 1877. This consisted of 333 pages, plus three meteorological charts. The volume was edited by Professor A. Liversidge and contained 18 articles in addition to the text of four papers read before Sections of the Royal Society. Topics ranged across astronomy, geology, palaeontology, meteorology, mineralogy, oceanography, anthropology, botany,

dentistry and fine art etching (which of course was also a technique used in the illustration of scientific publications).

The index to articles in the *Journal and Proceedings* is presently on library cards, in alphabetical order by author. However, it does not appear to have been maintained post-2001. This should be brought up to date. When resources permit, it would be desirable to digitise this index and place it on a computer database. A subject index on cards appears to exist only for a couple of volumes (106–107). In 1975 A.A. Day compiled an 82-page subject index covering the first half-century, Volumes 1–50 (1867–1916) plus four years of the Philosophical Society of NSW (1862–1865). This contains approximately 2,500 alphabetic entries. It is understood that the *Journal and Proceedings* is listed on current bibliographic abstract databases (e.g. APAIS), but this coverage does not extend to earlier volumes published before the era of electronic indexing.

Because the *Journal and Proceedings* is exchanged with some 600 institutions in fifty countries throughout Europe, Asia, Africa, the Americas including every state of the USA, Australian scientific achievements are rapidly brought to the attention of international researchers. In return, Australia receives publications that are rarely available in this country. These mainly comprise journals, but sometimes books are received as well. As described elsewhere in this report, these journals and books are accessible from the Dixon Library at the University of New England.

Many early volumes contain a full list of current members of the Society, enabling researchers to track the scientific interests of prominent citizens of New South Wales.

The Society also publishes a *Bulletin* for members, giving information about future meetings, abstracts of lectures etc. This appears monthly, except in the months of December-January. The latest issue, Number 295, was published in June 2006. As the *Bulletin*, or under its previous title *Newsletter*, this publication has been in existence for some thirty

years. In its early days the Newsletter was little more than a meeting notice paper. The Society has not retained a complete consolidated file of the *Bulletin/Newsletter*, although it may be possible to reconstruct one from other sources. Although easily dismissed as ephemeral, this publication in its various forms is extremely valuable for tracing the history of the Society and its activities, containing detailed information that may not be readily available from other sources such as annual reports.

## THE LIBRARY COLLECTIONS

When the Royal Society and the Linnean Society shared the library premises in Science House, members of each Society were allowed to borrow from either collection, although they were catalogued separately. As a broad generalisation, the Royal Society concentrated on the physical sciences while the Linnean Society covered the life sciences, but there was considerable overlap. After the two societies moved to separate premises, it is believed that much of the Linnean Society library collection was dispersed amongst other institutions.

Because of the space restrictions imposed by several changes of location since vacating Science House, the Royal Society's extensive library itself has become dispersed over a number of sites. This has hindered use of the material by researchers.

By 1960 the Library had grown to some 40,000 volumes. In 1983, when the Society relinquished the Science Centre in Clarence Street, about 30,000 items, mainly serials received on exchange with other institutions, were transferred to the Dixon Library at the University of New England in Armidale. That Library prepared and published a separate catalogue of the Royal Society collection in 1989, listing about 1,700 titles.<sup>4</sup> This arrangement has been mutually beneficial, providing an accessible domicile for a large part of the Society's collection, at the same time as greatly enhancing the University's own library. The Society's New England Branch did much to facilitate this solution to a difficult problem.

<sup>4</sup> Dixon Library. *A Catalogue of The Royal Society of New South Wales Collection*, Armidale, University of New England, 1989.

After removal of a large component of the library collection to Armidale, the remainder of the collection was transferred to the premises then occupied by the Society at Macquarie University. However, when Macquarie University required this area for its own expansion, it was necessary to place much of the material into external storage, partly at Mitchell Library and partly in an industrial warehouse.

As part of this heritage survey, a small team of Society representatives has examined these scattered collections in order to provide an overall assessment of their significance and physical condition. Members of this team include Council members Mr John Hardie and Ms Robyn Stuchbury plus consultants Dr David Branagan and Dr Peter Tyler. Other Society members have provided practical assistance.

A complete listing of the library collection at Darlington has been prepared by Ms Stuchbury. This includes many of the rare and historic items, and forms the main focus of a separate appraisal prepared by Dr David Branagan, formerly Associate Professor of Geology at the University of Sydney, who has published widely on both geology and the practice of nineteenth-century science in Australia. Some of the listed works are unobtainable in any other library in New South Wales.

During the preliminary survey, the books were arranged on steel library shelving in a fairly consistent, logical manner, with the exact location listed on the collection database so that any volume can be accessed readily. However, this is in no sense a library catalogue. In his report, Dr Branagan has indicated which volumes require urgent conservation treatment.

Amongst the outstanding works on these shelves there are three books from the sixteenth century, the oldest being the Latin text by Cyrillus, *In Johannem*, dated 1508. This has been re-bound and is in excellent condition. It was part of the private library bequeathed to the Society by Professor Archibald Liversidge.

Although there is very little dated from the seventeenth century, there are thirteen volumes from the eighteenth century, such as the

Emanuel Bowen *Complete System of Geography*, published in 1747. These books have intrinsic historic interest. The majority of the Darlington collection comprises works published during the nineteenth century – 471 titles, but many more actual volumes because some of these form part of an extended series, such as *Curtis's Botanical Magazine*, dating from 1787, but published almost weekly between 1879–1897, and 24 volumes of *The Astronomical Register*, published between 1863–1886. There are 255 titles from the twentieth century plus another 21 whose publication date cannot be determined. In addition to these listed monographs, a separate listing has been prepared of large items, principally geological atlases from the late nineteenth century, particularly from the Dutch East Indies (now Indonesia) and the United States of America. There are also some rare twentieth century ethnographic and geological maps from Eastern Europe.

The nature of the collection is of particular historic interest for what it reveals about the interests of Australian scientific workers during the second half of the nineteenth century, when the Royal Society included most of these practitioners amongst its membership. Most of the books dating from an earlier period appear to have been donated or bequeathed to the Society, a fact that demonstrates the importance of the Society in their lives. However, it also means that they may duplicate works already in the collection, or may be peripheral to the Society's core interests.

A sample of items in the collection has been checked against other Australian library catalogues to assess their rarity. Many are not available in New South Wales, although they may be held in other Australian collections, but sometimes not open to the public, such as the Supreme Court of Victoria.<sup>5</sup> An example of an arcane publication is the 1930 *Report on the Reconstruction of the Tokyo Imperial University Library*; only one other copy is known to exist in Australia, at the University of Melbourne. On the other hand, works that would seem to be equally obscure such as the 1904 report of

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<sup>5</sup> For example, Baron von Mueller's *Descriptive Notes on Papuan Plants* (1875).

the Royal Society of London's Coral Reef Committee on *The Atoll of Funafuti* are held by at least ten other libraries in Australia, including three in New South Wales.

A spot check of medical books from the nineteenth century revealed that none of these are held in the comprehensive Medical History Library of the Royal Australasian College of Physicians, generally regarded as the best source for this material in New South Wales. An example is: A. Becquerel, *Traité des Applications de L'Electricité a la Thérapeutique Médicale et Chirurgicale*, Paris, 1857.

The Society collection also includes early editions of *Encyclopaedia Britannica*, *The Australian Encyclopaedia*, and *Oxford English Dictionary*, as well as the *Historical Records of Australia*. While the encyclopaedias are not unique, they provide a useful supplementary resource for scholars of nineteenth-century science, because they contain accounts of contemporary knowledge.

One advantage of a collection such as this arises from its rare books being on open access where scholars can browse along the shelves and so discover relevant material that may not be identified readily from traditional library catalogues. The value of serendipitous discoveries should not be discounted in historical research.

Although the collection of monographs and journals held at the Society's premises in Darlington appears to be in reasonable condition and adequately housed, it is not located in a climate-controlled environment that would prevent future deterioration. Being situated on the upper level of a nineteenth-century terrace house whose structural condition is uncertain, the collection is vulnerable to water penetration in the event of roof leakage. Older buildings such as this are prone to be dusty, and may harbour damaging vermin.

The entire collection needs to be professionally catalogued in accordance with a recognised system, such as Dewey Decimal. The catalogue should be made available on-line, and listed with the 'Libraries Australia' database (formerly 'Kinetic') to facilitate inter-library loans of items other than rare or unique material. Every one of the other five state Royal

Society libraries is listed on this database.

Eight pallets packed with cartons of monographs and bound serials belonging to the Society are held in storage at Prestons, on the outskirts of Sydney. A sample of about 25 per cent of this collection was examined by JH, DB, RS, and PT on 31 March 2006. This revealed that some of the rarest and most significant items of the Society's collection are located at this site, where they are totally inaccessible to researchers.

Because the cartons are housed in a warehouse alongside perishable goods, there is serious risk of damage by rodents or insect pests, despite the precautions taken by the property owner, who is President of the Southern Highlands Branch of the Society. It is a matter of considerable urgency that this material be relocated and properly catalogued.

Mitchell Library at the State Library of New South Wales holds 48 boxes of manuscript material, principally archival records of the Society. A contents list is held in the Manuscripts Section of the Mitchell Library, but is somewhat unreliable. A sample comprising about 60 per cent of this collection was examined by JH, DB, RS, and PT on 30 March 2006. Further information is given in the 'archives' section of this Report.

The material located at the University of New England was inspected several years ago by Dr Branagan. Exchanges of serials continue as previously, with active journals available on open access in the main library shelves. They are also available on inter-library loan. The older, inactive part of the collection is housed in a designated room at the Dixson Library, and identified as The Royal Society of New South Wales Collection by a bookplate and the Society crest embossed in gold on the spine of each volume.

Although the core collection presently housed at Darlington is not very accessible to researchers, the Society is able to photocopy particular articles on request, at cost. This service is not publicised, however. In any case, the lack of an accessible catalogue means that few people know of the collection's existence. The Society's material held in Mitchell Library



theoretically is available for public perusal, but because it does not form part of the Library's own collection it is not properly catalogued and is difficult to retrieve. The material housed in a suburban warehouse is completely inaccessible to the public, although it appears to include some rare and valuable items.

The purpose-built cedar bookcases that housed the Society's collection in Elizabeth Street and later at Science House had to be modified to fit into the Clarence Street property, which had lower ceilings. When the Society moved to a small unit at Macquarie University, there was no space for these handsome bookcases, which were purchased by the Historic Houses Trust, where they have been installed in the 'Royal Society Reading Room' in the Caroline Simpson Library and Research Collection at the restored Mint Building, 10 Macquarie Street, Sydney.

It is clear that the present dispersal of the Society's library collection is a major impediment to research in the areas of science that are so strongly represented. Ideally, all this material should be consolidated into a single entity located in central Sydney, as was the case during the years that the Society occupied Science House in Gloucester Street. This facility could become a centre for the study of the development of scientific activity in New South Wales, accessible both to scholars and interested members of the public. Indeed, such a Centre could become a focus for increasing community understanding of the nature of science, in a time when science and technology are viewed with suspicion or indifference by sections of society.

## PROVENANCE

Much of the early material in the collection was donated by other institutions or by individual members of the Society. Bookplates sometimes identify the original owner. Many of the early editions are personally inscribed by the authors, or the donors. In some cases the pages are uncut, indicating that the volumes have never been opened.

Amongst the rare volumes are the two parts of Professor J.D. Dana's Volume XIII report on

crustacea prepared following the United States Exploring Expedition in the early years of the nineteenth century. These were published in 1852, and are inscribed 'For the Royal Society of New South Wales from the Author, James D. Dana, New Haven, Connecticut, December 25, 1893.'

A significant amount of material was bequeathed to the Society by former President Professor Archibald Liversidge. This material usually bears Liversidge's signature and/or bookplate, adding to its interest and value.

Mitchell Library benefactor David Scott Mitchell collected items relating to the Royal Society, and these are catalogued as part of his bequest to the State Library of NSW. This includes a printed *Catalogue of the Scientific Books in the Library of the Royal Society of New South Wales, 1889*. This is a volume of 110 pages, listing the entire Royal Society collection by author. It is bound with other leaflets and pamphlets that form part of Mitchell's bequest (DSM/042/P87). Many of these carry Mitchell's signature. Other Royal Society publications in the Mitchell Library collection were donated by Alfred Lee, and carry his bookplate.

One item in the Society collection that is truly unique is a volume containing beautifully arranged but delicate specimens of marine algae. The provenance of this book, which resembles the similar treatment of pressed flowers or other botanical specimens during the nineteenth century is revealed by a bookplate inside the front cover:

<p style="text-align: center;">Marine Algae Collected and Mounted by The Reverend James Yuill, Free Kirk Minister of Peterhead, Aberdeenshire, 1854 Presented to the Royal Society of NSW by David Reid 'Holmsdale', Pymble 27.10.1920</p>
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There can be taxation advantages for the donors of private libraries to the Royal Society, which may partly account for the large number of volumes acquired in this way.



A plate from Yuill's *Marine Algae* 1854; although the contents are in good condition, the volume itself needs urgent attention. (Photograph: Robyn Stutchbury)

## PORTRAITS AND PHOTOGRAPHS

Also housed in the Society's premises at Darlington are many paintings or photographs of considerable historic interest:

§ Framed photograph of Rev. W.B. Clarke, known as 'the father of Australian geology' – 48 x 35 cm

§ Framed oil painting of Sir T.W. Edgeworth David, by Norman Carter (from a photograph) – 73 x 59 cm

§ Framed painting of Royal Society seal, designed by A. Liversidge, with handwritten description of significance of the emblems. c. 1885, artist unknown, possibly Liversidge – framed size 60 x 46 cm [See Appendix A]

§ Framed photograph of delegates to Pan-Pacific Science Congress, University of Sydney, 24 August 1923 – 19 x 115 cm (Needs re-mounting)

§ Framed photograph of 5 Elizabeth Street, Sydney, former home of Society. Donated by Museum of Applied Arts & Sciences, 1967 – image size 50 x 39 cm

§ Framed lithograph (?) of W. Spence by T.H. Maguire, 1849 – image size 29 x 24 cm

§ Framed lithograph of J.S. Henslow by T.H. Maguire – 29 x 24 cm

§ Framed photograph of 'Experimental model of a flying machine made by Lawrence Hargrave, 1890' – image size 36 x 43 cm

§ Framed commemorative poster, Australia sesquicentenary 1938, 'a nation as virile as the sunlight which animates its people'. Eleven illustrations and short text by C.H. Bertie, mounted on a reproduction painting of eucalypt trees – image size 49 x 37 cm

§ Framed lithograph (unglazed) of 'The distinguished men of science of Great Britain living in the years 1807–8'. Includes portraits and signatures of 50 individuals, in a library setting (the Royal Society of London?). Amongst these are Banks, Cavendish, Davy, Herschel, Jenner, Watt. Image size 54 x 31 cm (Needs conservation)

§ Unframed mounted photograph H.G. Smith, President 1913. Image size 54 x 39 cm

§ Unframed mounted and retouched photograph Robert Hunt CMG, Deputy Master, Royal Mint, Sydney (died 27/9/1892). Oval, image size 51 x 40 cm. (Mount stained)

§ Unframed mounted photograph by Sidney Riley of J.H. Maiden, President 1896 & 1911 – image size 36 x 29 cm

§ Framed photograph of J.A. Pollock in military uniform, 'presented to the Royal Society of New South Wales by A. Raincloud (?), September 1959'. Image size 25 x 19 cm. (Should be re-mounted)

§ Framed portrait engravings of Fellows of the Royal Society of London: T.H. Huxley, M. Faraday, C. Darwin, J.C. Maxwell, W. Harvey. Each image approx. 20.5 x 13.5 cm, framed size 39 x 29 cm. (Mounts stained, frames slightly damaged - need some conservation work)

§ Portfolio labelled 'Prints and Engravings. Eminent men in the fields of Science and the Arts'. This folder contains many mounted lithograph prints (some, perhaps all, donated or bequeathed to the Society). These comprise: portraits of Buffon, John Smeaton, Pascal, W. Harvey, Newton, Nicolas Bacon, Napoleon, Louis Napoleon (1848), Sir Robert Peel (1846), Wiclif (sic), George Edwards, Porson,

John Locke (1734), Gilbert Burnet (1724), Henry Spelmann, Thomas Martyn & Cambridge University (1799), Rene Hauy, Nelson & Trafalgar (1805), C. Rollin (1763), Mirabeau, Laurens Sterne (1780), Milton (1805), Dr Price (1776), G.G. Stokes (1892), Col. Richard Lovelace (1794), Nicolas Poussin, Diderot, Dante, Richard Arkwright, Charles Dickens, Graf von Rumford, Alfred Tennyson, Thomas Pennant, Charles Perrault (1694), Peter Lely, Jane Grey, Johannes Flamsteed (1712), Sir Martin Frobisher, Mungo Park (1820), J. de Lalande, Voltaire, Earl of Bute, Oliver Cromwell (1728), John Evelyn, William Wollaston, Aylmer Lambert & deer park, Duke of Wellington (1839), three unidentified figures. A few of these were printed 'Under the Superintendance of the Society for the Diffusion of Useful Knowledge'.

A large number of photographs, albums and lantern slides are held at Mitchell Library, on loan from the Society (Box 29). These appear to be of considerable historic interest, including portraits of many of the leading figures in scientific circles late 19<sup>th</sup>C – early 20<sup>th</sup>C, e.g. Sir Alfred Roberts, Lawrence Hargrave, Dr Anderson Stuart, J.H. Maiden, Professor John Smith. There are also lantern slides of early colonial Governors Brisbane, FitzRoy, Hunter, King, leading officials such as Sir Alexander Macleay and Sir Edward Deas-Thompson, and medicos Balmain and Bland. Lantern slides on aviation dated 1898, Cook's landing place, and Governor Brisbane's Observatory may be unique.

Some of the lithographs of famous men (and one woman) could be profitably disposed of through antiquarian bookstores. Mostly they are in fine condition, wrapped in tissue paper. The Society may wish to retain a small number of portraits of the giants of science, but many are prints of notable figures whose achievements were in other fields, e.g. Nelson, Napoleon, Lady Jane Grey. These could be valuable acquisitions for people engaged in the restoration and furnishing of heritage buildings.

A number of the photographs and lithographs held at Darlington are not appropriately stored, and are likely to suffer damage through careless handling.

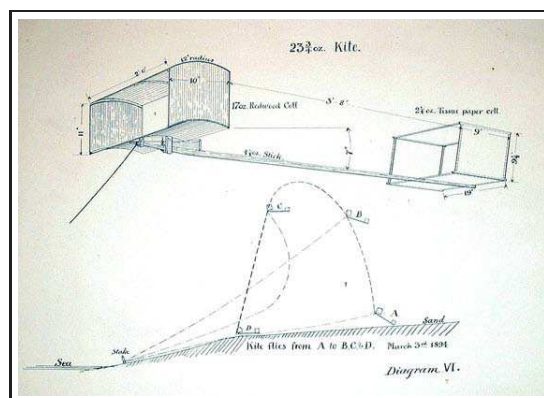
## OTHER MEMORABILIA

Other notable items held at Darlington comprise:

§ Original bronze plaque attached to Lieutenant Cook's landing place at Kurnell, commemorating 'the discovery of these shores . . . the auspices of British Science' by James Cook and Joseph Banks, 'the Columbus and Maecenas of their time'. Affixed by The Philosophical Society, 1821. - 47 x 38 cm (Restored, but showing some damage by shotgun pellets?) [See Appendix B]. There is also a framed plaster cast (damaged) of this plaque.

§ Corporate Seal press (c. 1884) with dies for embossing an early version of Royal Society of NSW emblem, based on Royal crest of Queen Victoria.

§ Of immense historical interest are fourteen original drawings by Lawrence Hargrave illustrating the results of his aeronautical research into rigid stable aeroplanes and his designs for lightweight motors to power flying machines. These were later published in the *Journal and Proceedings* of the Society in 1895 and 1909, and were used as the basis for further developments by aviation pioneers in the United States and Europe. The drawings are in good condition, separated by tissue paper in a large hardboard portfolio.



One of Hargrave's plates, numbered in the right corner by pencil, 'P154', with an annotation in what appears to be his handwriting in the lower left corner, 'Plate 6 for L. Hargrave's paper on Aeronautical work'.

§ Architectural floor plans of Science House, Gloucester Street, Sydney, by Peddle, Thorp & Walker, 1929. (3 sheets)

§ Copy of congratulatory memorial presented by the Royal Society of NSW to Queen Victoria on the occasion of her Jubilee (1887). Donated to Society by Mrs E. Wilkinson, a descendant of the Society President C.S. Wilkinson who signed the memorial.

§ The bound volume of marine algae collected and mounted by Rev. J. Yuill in 1854 has been mentioned earlier in this Report, under the 'provenance' section. It would be desirable for this volume to receive some conservation treatment.

Memorabilia at other locations comprises:

§ Royal Society material held at Mitchell Library includes a very fine collection of lantern slides relating to the development of aviation, other objects, and Society members. There are also stereoscopic pictures/slides from the Franklin Expedition to Antarctica (box 28). Although facilities to view early lantern slides are difficult to find, this material deserves to be reproduced in another format.

§ Nineteen medallions collected by Professor Liversidge from overseas conferences and exhibitions between 1867–1902 are held at Mitchell Library (box 36), on loan from the Society. There is also an unusual microscope slide scale. These items have been inspected by the research team. After minor restoration treatment, these could form the basis for a fine visual display illustrating Australia's involvement in nineteenth century international science.

§ Many photographs of Society members and functions such as annual dinners are contained in box 29 at the Mitchell Library.

§ Mitchell Library also holds a pewter inkwell that belongs to the Society (condition or value undetermined).

To provide safekeeping during a period of frequent change of premises, former Secretary and President (1975) Mr Edric Chaffer held several items belonging to the Society at his home in Chatswood. With a reasonably secure environment now available at Darlington, two boxes of these artefacts have been returned to the So-

ciety following the commencement of this heritage survey. These include a carriage clock in a leather viewing case inscribed with the Society's name, donated by Professor Smith. There are also some fairly mundane laboratory artefacts used by Faraday in his research, apparently obtained by Professor Liversidge circa 1908.

## ARCHIVES

The Society offices at Darlington have several filing cabinets containing correspondence and financial records. Based on a preliminary scan, these files include material of historic interest as well as ephemera and current business records of the Society. This material needs to be examined more closely, and archived or discarded as appropriate. It is understood that long-serving Secretary of the Society Dr Maren Krysko may also have some files relating to her period in office.

A valuable collection of historic correspondence has been carefully preserved in a bound, interleaved volume. According to the title page, this comprises 'A collection of letters and ephemera to members of the Society 1878–1974'. That description is not correct; in fact the 58 items comprise handwritten letters written between 25 February 1818 and 25 January 1896. Most are addressed to the Society, but some were sent to members such as pastoralist Henry Kater (who presumably donated or bequeathed them to the Society). This correspondence is from such prominent scientists as Sir John Herschel, Douglas Mawson, Charles Darwin, Professor James Dana, Baron von Mueller, Louis Pasteur and Professor R.W. Bunsen.

Amongst the material of undoubted archival and research significance is a leather-bound Cash Book recording all transactions between April 1911 and June 1930, together with a matching Ledger for the period 1912–1966.

Mitchell Library at the State Library of NSW is temporarily holding 48 boxes of Royal Society material in its manuscript collection. A contents list is available from the Mitchell Library, and a copy is held by the Society, which retains ownership. In 2004, Dr Anna Binnie prepared a report for the Royal Society on a

small part of the collection, including a detailed inventory of some cartons. She also partly rearranged the collection, so that the Mitchell Library contents list now may not be accurate. One carton (box no. 3), containing material dated 1932–1974, is marked ‘not to be accessed before 2025AD’. This fifty-year embargo apparently relates to unsuccessful candidates for Society awards and prizes, including the reasons for their rejection. Following her inspection, Dr Binnie recommended:

‘That we take possession of it [the material], move it into our offices at University of Sydney and take on what ever restoration work or preservation work is required. We should ... investigate the possibility of lodging this material in the University of Sydney Archives which are located on the top floor of Fisher Stack. It would be kept in a controlled library environment, it would be accessible to scholars and there is some security for the material.’

As noted earlier, some of the material at Mitchell Library has been examined cursorily as part of the present research. It appears to be a very diverse and somewhat indiscriminate collection, ranging from vital records such as the minute books of the various sections of the Society between 1876–1989 (boxes 9–11), to petty cash books, taxation returns and staff attendance registers. Financial records are comprehensive, and have been retained far beyond the statutory requirements. Some culling would be desirable. Correspondence relating to property management is significant, particularly during the Science House period. A bound correspondence register covering the period 1883 to 1911 (box 23) provides a useful guide to the activities of the Society at that time.

The material contained in some boxes appears rather haphazard. An example is box 28, marked ‘fragile’. Amongst the eighteen items listed are lantern slides, printing blocks of the Society emblem, a tape recording of the Governor-General’s speech, a medal from the 1886 Colonial and Indian Exhibition in London, letters about engagement of an office boy, and the 1935 insurance policy. Although these items can be identified from the Mitchell Library list, it would be easy for researchers to overlook them when perusing the 49-page typewritten

list because there is no coherent sequence. Some items that have been kept appear to be worthless – ‘7 feet rubber tubing’ or ‘1 piece of board’ (box 29).

At the other extreme are the minutes of the Royal Society Council from 1867 to 1914 in box 39. Minutes of the preceding Philosophical Society of Australasia 1856–1866 are in box 41. A register of members 1856–1888 is in box 45. A register of subscribers 1912–1941 is in box 33. All of these documents are vital to an understanding of the history of the Society.

Historic material relating to the Society Library also is contained within the archives. This includes notes on transfer of part of the collection to other institutions (box 20), layout of the shelving at Science House (box 28), and a register of library users 1890–1954. Folder 9 in box 17 is described as ‘Historical Background of the Royal Society of New South Wales, early Office Bearers and other items of historical interest including proposed amendments to the Act of Incorporation (1976–81)’. Some of this is duplicated in filing cabinet drawers in the Society office. Folder 10 in box 17 apparently contains the original handwritten subject index 1867–1916, and one printed copy (which is not available in the Society’s own bound set of *Journal and Proceedings*).

In its own collection, Mitchell Library holds original material relating to the Society including the minute book of the Philosophical Society of Australasia from 27 June 1821 to 14 August 1822 (FM3 99). A facsimile of this volume is held by the State Records Authority of NSW as well as by the Society. There is also an item described in the Mitchell Library card index as ‘Bronze medal of the Royal Society of New South Wales awarded to Thomas Whitelegge for a list of the marine and fresh-water invertebrate fauna of Port Jackson and the neighbourhood, 1889. Presented by Miss Whitelegge, January 1960’ (R191 EEE).

## SECONDARY SOURCES CONSULTED

In preparing this report, a number of secondary sources have been consulted, as listed in the bibliography. These have been perused for refer-

ences to the Society, or mention of its leading members and their place in the scientific history of Australia.

However, the select bibliography lists only a small fraction of the material that is available. The 'Guide to Sources' published in R. MacLeod (ed.), *The Commonwealth of Science* provides a comprehensive (but not exhaustive) bibliography up to 1988, when the book was written. *The Historical Records of Australian Science* published by the Australian Academy of Science have included regular bibliographic updates.

The most sympathetic account of scientific development in Australia can be found in the numerous works of Ann Moyal (Mozley). Yet even her overview of scientists in colonial Australia, *A Bright and Savage Land* glosses over the Royal Society of New South Wales, although the work of a number of its prominent members is discussed. On the other hand, her two-volume *The Web of Science* is based on the extensive correspondence of Rev. W.B. Clarke, and contains many references to the Royal Society.

Many general histories of Australia pay scant attention to colonial scientific endeavour. The Royal Society of Victoria is mentioned more often than its NSW counterpart – for example, in connection with Antarctic exploration and for its sponsorship of the ill-fated Burke and Wills expedition. An example is Manning Clark in his six-volume *A History of Australia*. Russel Ward displays the same bias in *Australia Since the Coming of Man*.<sup>6</sup> This Victorian orientation may reflect the Melbourne origins of many Australian historians, although Clark maintains that:<sup>7</sup>

'As they saw it, Victoria's duty as the wealthiest and the leading member of the Australian colonies was to succeed where New South Wales . . . had failed in removing the mantle of mystery which lay over the centre of the continent.'

During that period of intense colonial ri-

valry, this is a view that would not have been shared by citizens of New South Wales. The failure of Burke and Wills must have been a chastening experience for the Royal Society of Victoria. Where Manning Clark deals briefly with men of science, his interpretation can be fanciful or apocalyptic, describing W.B. Clarke as being:<sup>8</sup>

'on weekdays a geologist and on Sundays a man of God, reminded the members of his congregation that gold fed the sinful lusts of the flesh . . .'

W.B. Clarke is mentioned in Geoffrey Blainey's *The Rush That Never Ended*. A History of Australian Mining. Clarke also rates a passing reference in Blainey's later book *A Shorter History of Australia*, although the word 'science' does not appear in the index to this volume.

Something of an exception amongst historians is John Molony's *Penguin Bicentennial History of Australia* where he can find space for ANZAAS, as well as mentions of Royal Society of NSW members W.B. Clarke, Sir Edgeworth David, Lawrence Hargrave, Gerard Krefft, and H.C. Russell. There is even a photograph of one of Hargrave's experiments. Molony also observes that:<sup>9</sup>

'Scientific effort was strengthened by the foundation of societies which had their model in the Royal Society of London (founded 1662). By the 1860s Royal Societies had been formed in New South Wales, Tasmania, Victoria and South Australia . . . the peak of nineteenth century scientific organization was reached in 1888 with the holding of the inaugural conference of the Australasian Association for the Advancement of Science . . .'

Another exception to the usual pattern is Beverley Kingston in Volume 3 of the Oxford History of Australia – *Glad, Confident Morning*, which covers the last four decades of the nineteenth century. Kingston points out that a rich intellectual life was available for those

<sup>6</sup> R. Ward, *Australia Since the Coming of Man*, revised edition, Sydney, 1982, p. 128.

<sup>7</sup> C.M.H. Clark, *A History of Australia, Vol. IV, The Earth Abideth for Ever 1851–1888*, Melbourne, 1978, p. 144.

<sup>8</sup> *ibid*, p. 7.

<sup>9</sup> J. Molony, *A Penguin Bicentennial History of Australia*, Melbourne, 1987, p. 155.

so inclined, but most successful men despised ‘useless’ knowledge in their pursuit of money. Nevertheless, she notes that:<sup>10</sup>

‘Scientific research was aided by royal societies in all colonies except Western Australia. These pre-dated the universities and were mixed gatherings of gentlemen amateurs and serious scholars. Wives and daughters collected botanical specimens and made intricate drawings ...’

Limitations of space presumably restricted any detailed analysis of this theme. She mentions Lawrence Hargrave as a shipwreck survivor and only incidentally as an aeronautical pioneer. Kingston sees science as a substitute for religion in a materialist society – an alternative belief system – but she does not pursue this notion.

Kingston’s comment about the mixture of amateurs and scholars is borne out by the membership lists of the Royal Society prepared by A. & J. Day.

Science and technology receive more coverage in general histories discussing twentieth-century Australia, where we find occasional references to applied research, particularly in the medical sciences, agriculture, or through official agencies such as CSIRO. The role of professional scientific societies is overlooked. Writing of the 1920s, Heather Radi claimed that:<sup>11</sup>

‘There were no traditions in Australia to support the contemplative life against the practical. Education was still imbued with utilitarian considerations ...’

However, the experience of the Royal Society in New South Wales during the nineteenth century suggests that there was indeed an active intellectual interest in Australia from the early days of settlement.

LaTrobe University historian David Day ignores science in his *Claiming A Continent. A New History of Australia*. ANZUS is discussed, but not ANZAAS; the CIA but not CSIRO. The emphasis is probably a reflection of the preoccupa-

tion of many Australian historians with political and labour history. Given their grounding in the humanities, some of them may feel uncomfortable dealing with the foreign territory of the sciences.

Although the *Historical Records of Australian Science* is a respected journal in the field, obviously there is scope for considerably more scholarly discourse about the role and function of the scientific societies in Australia.

## HISTORICAL CONTEXT

### Vice-Regal Support

The first naval Governors of New South Wales, in the twenty years from Phillip to Bligh,<sup>12</sup> were preoccupied with survival in the remote settlement, and with the management of unruly convicts and ambitious military officers. These pressures left them little time for other pursuits.

When Major-General Lachlan Macquarie became Governor in 1810, many of the early difficulties had eased. Food supply was assured, social structures had become more stable, and a few people had become relatively prosperous. This more secure environment allowed Macquarie to create many of the landmarks of the new colony, including many fine public buildings. Essentially a practical man, he played little part in scientific or intellectual life, despite being a collector of natural history specimens, as demonstrated by the recent acquisition by Mitchell Library of a cedar display chest that belonged to him. Nevertheless, he did not share the passion for classification and naming of specimens that many of his contemporaries exhibited.

The Philosophical Society of Australasia, antecedent of the Royal Society of New South Wales, was founded in 1821, the same year that Macquarie’s successor, Sir Thomas Brisbane, became Governor (-General) of New South

<sup>10</sup> B. Kingston, *The Oxford History of Australia*, Vol. 3, 1860–1900, *Glad, Confident Morning*, Melbourne, Oxford University Press, 1988, p. 91.

<sup>11</sup> H. Radi, ‘1920–29’, in F. Crowley (ed.) *A New History of Australia*, Melbourne, 1985, p. 391.

<sup>12</sup> This statement excludes Acting Governors or Administrators such as Grose, Patterson, Johnston and Foveaux, who were junior army officers.

Wales. However, as Supreme Court judge Baron Field reported:<sup>13</sup>

‘I am sorry to add that that infant society soon expired in the baneful atmosphere of distracted politics, which unhappily clouded the short administration of its President, the present Governor of New South Wales.’

Obviously the Philosophical Society was modelled on the Royal Society of London, which through its sponsorship of the Cook and Banks expedition to the South Pacific, had been a progenitor of the European settlement of Australia. The ‘Royal’ prefix could not be applied to its antipodean imitator until Queen Victoria gave her assent in 1866. Although there is no for-

mal relationship between the two bodies, the similar intellectual aspirations became apparent after the change of name. Each of the six Australian colonies eventually established their own versions of the Royal Society, with that in Tasmania, founded in 1844 being the first.

Three of the colonial governors of New South Wales were Fellows of the Royal Society of London – Bligh, Brisbane and Denison. William Bligh had no opportunity to pursue his scientific interests, but Governors Brisbane and Denison both became active in the local counterpart of the Royal Society, as did Denison’s successor, Sir John Young (Table 1).

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*1821 Formation of the Philosophical Society of Australasia*

1821–1822 Major-General Sir Thomas Brisbane. He was an astronomer of note, whose papers were published by the Royal Society of Edinburgh and the Astronomical Society of London.

*1850 Formation of the Australian Philosophical Society*

1850–1855 Hon. Edward Deas-Thomson, Colonial Secretary.

*1856 Philosophical Society of New South Wales*

1855–1860 Sir William Denison. Papers presented:  
 09.05.1856 ‘On the development of the railway system in England, with suggestions as to its application to the Colony of New South Wales’  
 12.11.1856 ‘Irrigation’  
 08.07.1857 ‘On the Moon’s rotation’  
 12.08.1857 ‘On railways’  
 08.09.1858 ‘On the filtration of water through sand’  
 10.08.1859 ‘On the dental system of mollusca’  
 19.09.1860 ‘On bridge building’

1861–1865 Sir John Young

*1866 Royal Society of New South Wales*

1866–1867 Sir John Young (now President of The Royal Society of New South Wales)  
 Paper presented:

13.08.1862 ‘On the performance of the A.S.N. Co’s steamer *Diamantina* from Sydney to Brisbane and return to Sydney’

1868–1872 Earl of Belmore (President)

1872–1879 Sir Hercules Robinson (President)

1879–1885 Lord Loftus (President, 1879, Honorary President 1880–5)

1885–1890 Lord Carrington (Honorary President)

1891–1893 Earl of Jersey (Honorary President)

1893–1895 Sir Robert Duff (Honorary President)

1895–1899 Viscount Hampden (Honorary President)

1899–1901 Earl Beauchamp (Honorary President until 1900)

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Table 1. Presidents of the Royal Society of NSW from 1821 to 1901.

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<sup>13</sup> B. Field, *Geographical Memoirs on New South Wales*, London, 1825, p.v.



This involvement sheds new light on the interests and responsibilities of early Governors, some of whom, despite being military or naval men were active in the intellectual life of the Colony. A fruitful research topic for historical research would be a study of Governors as men of science rather than as colonial administrators.

Although later Governors held the position of President, management of the Society was effectively delegated to the elected Vice-President. The first elected President was Professor John Smith from the University of Sydney, who took office in 1880. The incumbent Governors then accepted the ceremonial position of Honorary President:

After Federation in 1901, the Governor-General of the Commonwealth became Patron of the Society, with the State Governor as Vice-Patron. From 1938 it became the practice for both Vice-Regal representatives to accept appointment as Patrons of the Society, although occasionally the Governor-General declined.

### **From Gentlemen Amateurs to Scholarly Research**

Until the middle of the nineteenth century, most scientific effort in the colonies took the form of collection and description of the unique flora and fauna or identification of geological features. This was understandable, given the preoccupation with survival by exploiting the natural resources of a strange new continent. Specimens were collected avidly, then sent to England for further analysis. The Colonial Museum, later to become the Australian Museum, began collecting in 1827 but it was not until the establishment of the University of Sydney in 1850 that it became possible to conduct laboratory-based research in New South Wales. The university also provided a cadre of trained scientific researchers. These developments formed the foundation for the revival of the Philosophical Society and its successors, and should be explored in more detail.

In the 1850s there was a common core of scientific understanding possessed by many educated men. This was the age of the gentleman

amateur, products of the Age of Enlightenment. As knowledge expanded and became more specialised it became impossible for any one person to have a sound grasp of each branch. Ultimately this reached the stage where there was hardly any common ground, and practitioners of different disciplines found it difficult to communicate. Sir Charles Snow was later to write about the 'two cultures' of the arts and the sciences, but within science the gulfs were just as wide. Despite this chasm, the Royal Society has always attempted to provide a forum for the meeting of minds.

In any case, it is not entirely clear that the fragmentation into specialist societies was only due to scientific barriers. The personalities and ambitions of leading protagonists could also be a factor – this certainly seems to be the case when Sir Alexander Macleay and his coterie of followers founded the Linnean Society in 1874. The internal politics of colonial scientific societies and the relationship with their respective colonial museums could serve as a research topic in its own right.

New South Wales was the first colony to be established in Australasia and has remained the most populous state, with over one-third of the Australian population, yet its achievements have sometimes been neglected by historians. This paucity of research into the history of New South Wales is being redressed in 2006 as a result of substantial funding for publications to commemorate the Sesqui-centenary of Responsible Government

Rivalry between the colonies was endemic during the second half of the nineteenth century, the period when the various Royal Societies were established. Customs barriers at colonial borders and differing railway gauges served to perpetuate tensions that were only partially relieved after Federation. Following the goldrushes of the 1850s, Victoria became the dominant colony due to its economic prosperity. It is interesting to speculate whether political rivalries carried over into the activities of the six Royal Societies. A comparative study of these Societies might reveal new insights into the competitive nature of some scientific research.

The cross-disciplinary nature of the Society's activities (and collections) is notable. This has persisted even after the formation of specialist bodies. The breadth of the Society's concerns is shown not only by the diversity of articles in the *Journal and Proceedings* but also by the professional disciplines of the people elected as President of the Society. These are enumerated in Appendix C.

A notable feature of early membership lists of the Society is the significant number of ministers of religion. Some of the leading Australian scientists of the mid-nineteenth century followed this profession, such as Rev. W.B. Clarke and Father J.E. Tenison-Woods. These were amongst the few men in the Colony with a tertiary education. Furthermore, the nature of their occupation allowed them to pursue scientific inquiries without the restrictions of regular working hours that other men faced. Ministers and priests contributed many scholarly papers to the Society *Transactions* or *Journal and Proceedings*. It must be remembered that this took place at a time when the gulf between science and religion appeared to be widening as new theories (e.g. Darwin) displaced Biblical certainty. A rewarding area for further study would be the contribution of clerics to the advancement of science in New South Wales. The annals of the Royal Society would yield much information for this research.

### A National Organisation

The Royal Society was influential in the establishment of the Australasian Association for the Advancement of Science in 1888, particularly through the lobbying of Professor Liveridge. This later became known as the Australian and New Zealand Association for the Advancement of Science (ANZAAS), and for a period was the gathering of choice for professional scientists. Its influence declined in recent years with the proliferation of specialist bodies, so that we have again reached the stage where scientists cannot speak with a unified voice.

As noted earlier, much of Australian histo-

riography ignores the scientific and intellectual forces within the six colonies that later became a nation. If referred to at all, innovations or individuals are dismissed in a sentence or two, with no attempt to place them in the broader context of the evolving society. These omissions suggest that there may be serious distortions in Australian history as commonly understood.

An interesting historical sidelight is that the Royal Society of NSW was an official repository for international patents until the Commonwealth Patents Office was established in the 1930s. Unfortunately, there do not appear to be any surviving records of this function within the Society; presumably the relevant files were transferred to the government agency, although the National Archives may hold some relevant material.

### SIGNIFICANCE

Joseph Dyer wrote in 1858, in his preface to the first issue of *The Sydney Magazine of Science and Art*, that New South Wales was still 'a community where politics, professional occupations or mercantile pursuits engross nearly the whole population.' He observed that the colony:<sup>14</sup>

'can yet boast few gentlemen of leisure who feel pride and interest in pursuing science for its own sake, and are ready to devote both time and money to its advancement. Such a class will doubtless arise, especially now that science is becoming fashionable under the auspices of our energetic and sagacious Governor, Sir William Denison.'

Despite the sycophantic tone, his doubts seemed justified when he announced in the second issue, twelve months later, that there were too few subscribers to justify continuing with the publication, because 'the constant attention to business, which is characteristic of colonial life, appears very unfriendly to the development of a taste for science, literature and art.'<sup>15</sup>

Cynics might suggest that nothing much has changed in the following century and a half. Another writer of the time despaired that the

<sup>14</sup> J. Dyer, *The Sydney Magazine of Science and Art*, Vol. I, 1858.

<sup>15</sup> *ibid*, Vol. II, 1859.

‘public mind is most anxiously directed to the wretched condition of the roads of the colony, and when even the streets of the metropolitan city are in a state of dangerous decay’ there was little inclination to explore abstract ideas or discuss new inventions.<sup>16</sup> Again, little has changed, the pessimists would argue.

Nevertheless, the situation was not as dire as Dyer proclaimed. From his own statement, the Royal Society had 178 members in 1858, which was probably a healthy complement of the colony’s educated men. Obviously this number was insufficient to sustain a viable commercial publication; yet only nine years later in 1867 the Society began to publish its own journal.

In the preparation of this Report it became clear that the resources of the Royal Society provide unrivalled insight into the rich scientific and intellectual life of New South Wales from early colonial times. The Royal Society and its predecessors give a new perspective on aspects of nineteenth century life that are far removed from the historical stereotypes of convicts, squatters, gold diggers and bushrangers.

The Royal Society was at the forefront of discourse on many of the most contentious issues that engaged the international world of science. Prominent members like Clarke and Krebbs corresponded with Charles Darwin about his theories of evolution, at a time when such views were deeply unpopular in Australia, and regarded by many as heresy. Later members of the Society were early proponents of the concept of continental drift and plate tectonics at a time when most of the geological establishment ridiculed such notions.

An ongoing debate that was particularly relevant to the Australian scene was the division between pure science and applied technology. There were members of the Society in both camps, yet they were able to work together. A brief perusal of the *Journal and Proceedings* will reveal papers dealing with theoretical issues alongside articles aimed at increased economic development.

Much of the material in the collections provides a valuable resource for researchers in many

fields, not least the history of science. The history and philosophy of science is taught as a separate academic discipline in both the University of Sydney and the University of New South Wales (as well as some interstate universities). Courses are offered at both undergraduate and postgraduate levels, suggesting that there is considerable interest in this field. Furthermore, the collections should provide a valuable resource for scholars in other historical areas – social, cultural, intellectual, administrative, political, mining history, for instance – in addition to academic disciplines such as sociology or economics.

At present, the majority of this important collection is inaccessible because of its dispersal around several locations, and the lack of a viable catalogue. Much of it is housed in unsatisfactory conditions that may result in rapid deterioration. Efforts must be made without delay to preserve this vital component of Australia’s intellectual heritage.

One of the great contributions of the Royal Society of New South Wales to Australian science may have been its function as sire, midwife and nursemaid for a host of other associations. As noted previously, the parallel development of Royal Societies in the other five colonies is an important question that should be explored in more depth. Did they work together in the advancement of science, or were they competitors?

## RECOMMENDATIONS

As part of the conditions of the Community Heritage Grant, the Royal Society of New South Wales has given an undertaking (Clause 8) that:

- (a) the materials to be preserved are part of the collection of the organisation . . . and that these are legally owned or held by that organisation
- (b) the materials are, or will be made, accessible to the public; and
- (c) in addition to physical access, bibliographic access will be ensured where appropriate – not only to users of the organisation, but as widely as possible to other Australian libraries and or-

<sup>16</sup> ‘Boydell’s patent endless railway – the Megaethon’, *The Sydney Magazine of Science and Art*, Vol. I, 1858, p. 15

ganisations. The National Library of Australia will also list the applicant's collection in one of the bibliographic services.

In view of the limited time available for this project, and the small budget allocated, it has not been possible to provide a comprehensive appraisal for this Report. Nevertheless there has been a judicious examination of key elements of the collection.

Detailed proposals concerning the conservation and preservation of individual items as well as the collection as a whole are of course the province of a specialised consultant, and will be the subject of a separate report.

In accordance with the objectives of this Heritage study, the historical significance of the Royal Society collections has been identified. Recommendations are made in relation to the measures that should be taken immediately to preserve a valuable collection for the benefit of the Australian community. As part of the assessment process, it has been possible to identify a number of proposals that may be investigated when resources are available. Some of these could become topics for postgraduate or undergraduate research students, after the Society collections become accessible.

### Priority A:

**Recommendation 1** – That action be instigated urgently to restore or repair items in the Darlington library that have been identified as in need of conservation treatment. This includes both books and photographs etc. See the report from Dr Branagan.

**Recommendation 2** – That the shelf list of material in the Darlington collection be converted to a full library catalogue on Dewey Decimal system as soon as resources permit, and shelved accordingly.

**Recommendation 3** – That the complete Royal Society library catalogue be included on national library databases.

**Recommendation 4** – That the Society collection temporarily housed in a warehouse at Prestons be relocated and catalogued as a matter of urgency.

**Recommendation 5** – That the Darlington library collection be relocated to the ground

floor, transferring the administrative office to the higher floor. This would also provide easier access to the collection by researchers.

**Recommendation 6** – That appropriate smoke alarms be installed.

**Recommendation 7** – That each item on the shelf list of material in the Darlington collection be checked against national library databases to determine the uniqueness or rarity of each item in Australia.

**Recommendation 8** – That the collection be pruned of material that is already widely available in Australia. This will provide additional space for library material relocated to Darlington. Surplus items may be sold to produce additional revenue, or donated to other libraries.

### Priority B:

**Recommendation 9** – That the Society take steps to house all the disparate elements of its collection under appropriate conditions in the one location in central Sydney, to form the nucleus of a Centre for the Study and Promotion of Scientific Activity in New South Wales.

**Recommendation 10** – That the Society collection temporarily held by Mitchell Library be fully described and culled of extraneous material that has no archival or historic significance.

**Recommendation 11** – That the Society collection temporarily held by Mitchell Library be relocated to the Society's own premises when this becomes possible. This action was recommended by Dr Anna Binnie. (p. 19)

**Recommendation 12** – All Society material that is presently held by individual members should be returned to the Society for appropriate conservation and storage.

**Recommendation 13** – That funding be sought to digitise the important collection of historic lantern slides and other visual material. This might then be made available to researchers and the general public through the national 'Pictures Australia' database.

**Recommendation 14** – That loose copies of the *Journal and Proceedings* between 1996–2006 be hard-bound in order to provide a complete run of this publication in a consistent, secure format.

**Recommendation 15** – That action be commenced to compile a complete index to articles in the *Journal and Proceedings* since its inception. Some work has already been undertaken for earlier years, but this needs to be integrated into a comprehensive index.

**Recommendation 16** – That a complete run of the Society Bulletin/Newsletter be compiled, and bound or otherwise stored in a satisfactory manner. It may be possible to acquire missing issues from the State Library or Parliamentary Library legal deposit, or from individual Society members' personal files.

**Recommendation 17** – That the collection of lithographs and prints be carefully examined to determine whether this material is relevant for the Royal Society collection, and that surplus items be disposed of through dealers in antiquarian prints.

**Recommendation 18** – That a comprehensive history of the Society be commissioned to trace its origins and development over a period of 185 years, placed into the broader context of Australian history. Several Society members have written articles on the history of the Society, but these need to be consolidated and updated.

### Priority C:

**Recommendation 19** – That the filing cabinets in the Darlington office of the Society be carefully examined to determine the archival value of non-current items, with redundant or insignificant material culled as appropriate.

**Recommendation 20** – That a suitable cabinet or panel be acquired in order to display the extensive collection of medallions and commemorative plaques that are in the Society's possession.

**Recommendation 21** – That a research project be commissioned to study the subsequent scientific careers and achievements of winners of the various Awards and Medals presented by the Society. Did they progress to greater achievements, or drift into obscurity?

**Recommendation 22** – That a research project investigate the long-term benefits of Summer Schools in creating greater scientific awareness amongst schoolchildren.

**Recommendation 23** – That a scholar of Australian colonial history be encouraged to study the role of colonial Governors as men of science rather than as colonial administrators.

**Recommendation 24** – That suitable scholars be encouraged to explore the relationship between science and religion in mid-nineteenth century Australia, as shown by the contributions from religious clerics.

**Recommendation 25** – That research be encouraged into the internal politics that resulted in a proliferation of colonial scientific societies.

**Recommendation 26** – That a comparative study be undertaken into the origins and development of each of the six colonial/state Royal Societies in Australia, and their contribution to Australian science.

**Recommendation 27** – That research be undertaken to trace the development of the Society's emblem. This has changed several times over the years, with different versions appearing on the same issues of bound journals, for instance.

**Recommendation 28** – That a biographical register of Society members be compiled for the hundred years from 1867–1966. Alan Day has prepared a comprehensive biographical register of the Society from 1850–1866. This would be a valuable resource for future research into the significance of the Society.

**Recommendation 29** – That historians be invited to explore the role of women 'behind the scenes' in the development of the Society, particularly during the period before 1935 when they were not eligible for membership.

### Priority D – Long-term Objectives:

**Recommendation 30** – That the complete *Journal and Proceedings* be digitised, and made available through the society's website.

**Recommendation 31** – That negotiations take place with other scientific societies in New South Wales with a view to establishing a peak body that can represent the interests of all involved.

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Linnean Society: <http://www.acay.com.au/~linnsoc/info.html>

Picture Australia:

<http://www.pictureaustralia.org/>

Royal Society of New South Wales:

<http://nsw.royalsociety.org.au>

## APPENDICES

### Appendix A – The Society Emblem

A framed painting of the emblem, with explanatory handwritten inscription, hangs in the Society's rooms in Darlington. According to the inscription the emblem was designed by 'A. Liversidge, Hon. Sec'.

'In the above Seal most of the charges have a double significance i.e. they each represent one of the sections of the Society and have a symbolic meaning as well, as follows:-'

'The retort and condenser expresses the Chemical Section, the crossed pick and hammer with fossils and crystal represent the Geological & Mineralogical Section and are symbolic of the mineral resources of the Colony; the rising sun and stars, the crest of the Colony, also represent the Astronomical and Physical Section; the Golden Fleece is symbolic of the country's Pastoral resources; the acorns and the bee stand for the Botanical & Zoological Sections, and are further respectively symbolic of the small beginnings of the Society and

of industry; the caduceus indicates the Medical & Sanitary Sections and also stands for Commerce. The Royal Crown and Lion are charges of the Royal Arms and show the connection with the Old Country; the serpent is symbolic of wisdom and of the continuity of the Society, which the encircling cable and garter represents the Unity of the Society as a whole.'

Notes: 1. Liversidge makes a common mistake by attributing the caduceus to medicine, a practice that apparently originated with the U.S. Army Medical Corps in the nineteenth century. The caduceus, a winged staff with two entwined serpents was actually the symbol of Hermes (Mercury), the messenger of the Gods in classical mythology. The symbol of medicine and health is the staff of Asklepios (Aesculapius), God of medicine, which is entwined by a single serpent and without wings.

2. The acorn and bee are curious symbols to adopt, as they are introduced species that are not native to Australia.

### Appendix B – The Kurnell Plaque

A brass plaque (47 x 38 cm) commemorating the landing of James Cook and Joseph Banks at Kurnell was affixed to the rocks on Inscription Point near the landing site on Wednesday, 20 March 1822, the year after the Philosophical Society of Australasia was founded. As President of the Society, Governor Sir Thomas Brisbane joined the party who went to Botany Bay to fix the plaque to the rocks about 25 feet (8 metres) above sea level, and to drink a toast to Cook and Banks. A notable astronomer who established an observatory at Government House, Parramatta, Thomas Brisbane was a Fellow of the Royal Societies of London and Edinburgh, and a corresponding member of the Institute of France.<sup>17</sup>

The original plaque is now held at the Royal Society premises in Darlington.<sup>18</sup> It appears to have undergone some conservation work, although it still bears small indentations that may have been caused by shotgun pellets. The Society also holds a plaster cast of the plaque made in 1895 – including the indentations – which is framed and mounted behind glass. The bottom left corner of the plaster cast is broken, but could be repaired. Several other casts were made at the same time, but it is not known whether these survive.

### Appendix C – Scientific Disciplines of Society Presidents

Many scientific disciplines are represented by the people who were elected as President of the Society between 1880 and 1961. This is indicative of the broad range of interests shared by members of the Society. Although a President customarily served only for a single year, several have served another term after a gap of some years. These are only enumerated once in this table.

Occupation	No. of Presidents 1880–1961
Chemist	14
Geologist	10
Engineer	6
Physicist	5
Agriculturalist	3
Astronomer	3
Biochemist	3
Botanist	3
Anthropologist	2
Mathematician	2
Medical practitioner	2
Palaeontologist	2
Zoologist	2
Auditor	1
Bacteriologist	1
Microbiologist	1
Palaeobotanist	1
Physiologist	1
Statistician	1
Surveyor	1
Veterinary surgeon	1

Although there appears to be a preponderance of chemists and geologists, this is a little deceptive. A number of the other occupations could be grouped under a broad discipline such as ‘life sciences’, although this field of knowledge is more the province of the Linnean Society of New South Wales, which for many years shared premises with the Royal Society of New South Wales.

By the time this survey commenced (1880), the period of the ‘gentleman-amateur’ that characterised the early years of the Society was giving place to professional scientists.

During the 1960s, the rules of the Society were altered to permit the President to hold office for two successive years. This has facilitated greater continuity in policy, as well as making reform easier to achieve.

<sup>17</sup> See *Historical Records of Australian Science*, Vol. 15, No. 2, December 2004 for three papers on Brisbane and his work.

<sup>18</sup> Other memorials to Cook and Banks were later erected at Kurnell closer to the actual landing site, and more accessible to visitors.



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Dr Peter Tyler, BA, MLitt, PhD, GradDipAdEd, HonFAIEH  
Consultant Historian, Peter J Tyler Associates  
Vice-President, Professional Historians' Association, NSW  
Life Member, National Trust of Australia (NSW)  
Member, Australian Historical Association

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