

LINN S C NEWS

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NEW MEMBERS: We welcome

Mr Robert Conroy. Fields of interest: botany, geomorphology, natural history

Prof David Goldney. Fields of interest: wildlife ecology, ecological history

Mrs Wendy Grimm. Fields of interest: geology, pollination, native and rare plants

Dr Jennifer Herrick. Fields of interest: karst topography

Dr Harold Parnaby. Fields of interest: mammal taxonomy, 19th century historical zoology

Dr Qin Qi. Fields of interest: microbiology, molecular biology



DONATIONS TO THE RESEARCH FUNDS IN 2019

A total of \$11,670 in tax-deductible donations to the research funds has been received. Many thanks to our generous donors: Prof P Adam; Dr JME Anderson [2x]; Mr N Anderson; Anonymous; Mr DH Benson; Dr S Claxton; Ms MR Donald; Dr MJ Engelbretsen; Prof D Goldney; Prof A Hallengren; Mr I Hill; Dr DS Horning; Mrs B Jacobs; Dr S Johnson; Prof D Keith; Dr J Kellermann; Dr AO Nicholls; Offspring Film Ltd; Mr P Older; Dr RAL Osborne; Mr R Pogson; Prof L Selwood; Mr WS Semple[2x]; Dr JC Turner; Mr B Welch; Mrs K Wilson



PROCEEDINGS OF THE LINNEAN SOCIETY OF NSW

List of articles recently published in volume 141, 2019

- Benson, D.** – Two centuries of botanical exploration along the Botanists Way, northern Blue Mountains, NSW: a regional botanical history that reflects national trends.
- Holmes, W.B.K. and Anderson, H.M.** – The Middle Miocene flora of the Chalk Mountain Formation, Warrumbungle Volcano Complex, NSW, Australia.
- Hope, Geoffrey et al.** – Science through time: understanding the archives at Rennix Gap Bog, a sub-alpine peatland in Kosciuszko National Park, New South Wales, Australia.
- Mackay, K. David and Gross, C.L.** – Climate change threatens a fig-frugivore mutualism at its drier, western range margin.
- Murphy, M.J, et al.** Marooned on an extinct volcano : the conservation status of four endemic land snails (Gastropoda : Pulmonata) at Mount Kaputar, New South Wales.
- Spennemann, D.H.R and Pike, M.** – Rites of passages: germination of vertebrate dispersed, regurgitated or defecated *Phoenix canariensis* seeds.
- Sutherland, F. Lin.** – Miocene central volcanoes, Northwest New South Wales: genesis over a lithospheric cavity (?).
- Zhen, Y.Y. and Wells, T.J.** – Conodonts, corals and stromatoporoids from subsurface Lower Devonian in the Northparkes Porphyry District of central western New South Wales and their regional stratigraphic implications.

All recent papers published in the *Proceedings* are freely available from:

<http://ojs-prod.library.usyd.edu.au/index.php/LIN>

Past volumes available from: www.biodiversitylibrary.org/bibliography/6525

NOTE: A CD is no longer distributed

Please check regularly the Society's home page for recently uploaded papers by going to "LinneanSocietyNSW" then click "Journal (Proceedings)".



2019 LINNEAN SOCIETY OF NSW NATURAL HISTORY SYMPOSIUM

The Society held a three-day symposium in Springwood. November 7 was a full day field trip that focused on the geology and botany of the western Blue Mountains, followed by a scientific session on November 8 concentrating on the current research into the geology, geodiversity, flora and fauna of the Blue Mountains area. The last day, November 9, was a public session on the natural history in general of the Blue Mountains region. Both days were held at the Springwood Sports Club auditorium. As with previous Linnean Society of NSW symposia, this conference – with over 85 attendees - was very successful and enjoyed by all.

The next Natural History Symposium to be run by the Linnean Society of NSW is scheduled for 2021 and will be focussed on Ku-ring-gai NP and other national parks and conservation areas north of Sydney Harbour up to the central coast. Dates and logistics are yet to be determined but will be advised to members of the Society as soon as they are available.



Request for assistance with assessment of natural values of Ku-ring-gai National Park

Friends of Ku-ring-gai Environment Inc (FOKE) are undertaking a natural and cultural assessment of the landscape embracing the Ku-ring-gai Chase National Park (KCNP) and request assistance from specialists and researchers to help compile a list of references and documents relating to this area, concerning the KCNP's terrestrial environment (flora, fauna,

geology, aboriginal culture, development and built heritage etc.) and the adjacent marine habitat. So far FOKE has received helpful information from the Royal Botanic Gardens (advising of useful resources such as Atlas of Living Australia, and NSW Flora Online). They have also incorporated references cited in the KCNP Plan of Management. However, there are undoubtedly additional references and unpublished documents relevant to this assessment that are not known or readily accessible to FOKE, who would appreciate guidance from professional scientists familiar with these fields.

Ursula Bonzol (email: ubonzol@yahoo.com.au) is the local contact point to which any information can be sent.



APPLICATIONS FOR GRANTS FROM THE SCIENTIFIC RESEARCH FUNDS

Application forms for all Research Funds may be obtained from the Secretary or the Society's Home Page « <http://linneansocietynsw.org.au> »

Intending applicants: Please read instructions carefully and submit your signed applications by email to « secretary@linneansocietynsw.org.au »

The firm deadline for submission of applications for all funds is 1st March 2020.

WILLIAM MACLEAY MICROBIOLOGY RESEARCH FUND

Grants are available from the William Macleay Microbiology Research Fund to support original research in an Australian context within the field of Microbiology.

Applications will be accepted from postgraduate and Honours degree students at recognised Australian Universities who are undertaking full-time or part-time studies with a microbiological emphasis.

Applications are also encouraged from amateur or professional microbiologists, whether in employment as such or not, who can demonstrate a level of achievement in original research in Microbiology.

In awarding grants, the Council of the Society will assess: a) The quality of the project; b) The applicant's ability to carry it out; c) A realistic costing and timetable; d) The likelihood that successful completion of the research will lead to publication.

A grant of up to \$2,300 is available to members of the Linnean Society of New South Wales and \$1,200 is available to non-members of the Society.

The Society envisages that grants would normally be used for items such as travel within Australia, equipment, photographic and other expenses, but not for subsistence, travel to conferences, or thesis preparation.

Applications are not restricted to members, but other things being equal, members of the Society will be given preference.

As a rule, the deadline for applications will be 1st March in any year; however, in exceptional circumstances, applications for emergency support will be received at any time.

Grantees will be required to make a report at the end of the project and no later than 12 months after the receipt of the grant, and to justify their expenditure.

Any publication arising from work supported by the William Macleay Microbiology Scientific Research Fund should include an acknowledgement to that effect.

Any type material generated by studies supported by these grants should be lodged in the collections of an appropriate scientific institution.

Closing date is 1 March 2020. Submit your signed application by email to secretary@linneansocietynsw.org.au

BETTY MAYNE SCIENTIFIC RESEARCH FUND FOR EARTH SCIENCES

The Betty Mayne Scientific Research Fund for Earth Sciences provides financial assistance to support short term original research projects in all aspects of the earth sciences.

Applications will be accepted from postgraduate and honours students, amateur or professional geologists who can demonstrate a level of achievement in original research in Earth Sciences.

Projects proposed for support do not have to be restricted to Australian locations or specimens, but, given the Society's interests in the natural history of Australia, they must demonstrate a strong Australian context.

In awarding grants, the Council of the Society will assess: the quality of the project; the applicant's ability to carry it out; a realistic costing and timetable; and the likelihood that the successful completion of the research will lead to publication.

Applicants need not be members of the Society, although all other things being equal, members will be given preference.

Individual grants will not normally exceed the level of equivalent awards from the Joyce W. Vickery Scientific Research Fund, i.e. \$2,500 for Members and \$1,500 for non-members. Money awarded must be used for research purposes, and field work or travel within Australasia. Requests for subsistence, travel to conferences, or thesis preparation expenses, will not be supported.

The Council will take into account other sources of research funds currently held or applied for by the applicant. While financial support from other sources will not ordinarily exclude award of a grant from the Betty Mayne Scientific Research Fund for Earth Sciences, a grant from this Fund cannot be held concurrently with one from the Joyce W. Vickery Scientific Research Fund.

Applications must be made on the form specific to the Betty Mayne Scientific Research Fund for Earth Sciences. Intending applicants are strongly urged to seek assistance from their supervisor or an appropriate colleague with experience in writing research proposals, and further, to have their application reviewed before submission.

Successful applicants are required to make a written report to the Society no later than 12 months from receipt of their grant, detailing progress of the project, briefly outlining research results, and justifying expenditure of the award money.

Any publication arising from studies supported by the Betty Mayne Scientific Research Fund for Earth Sciences must acknowledge that support. Type material, representative sample collections, relevant analytical data, and figured or mentioned thin sections, must be lodged in a state or national museum or university collection.

The Council's decision in regard to the award or non-award of grants from the Betty Mayne Scientific Research Fund for Earth Sciences is final, and no correspondence will be entered into.

Closing date is 1 March, 2020. Submit your signed application by email to secretary@linneansocietynsw.org.au

JOYCE W VICKERY SCIENTIFIC RESEARCH FUND

Grants from the Joyce W. Vickery Scientific Research Fund are intended to support worthy research in those fields of the Biological Sciences that fall within the range of interests of the Society, especially natural history research within Australia.

Applications will be accepted from postgraduate and Honours degree students at recognised Australian Universities who are undertaking full-time or part-time studies with a biological emphasis.

Applications are also encouraged from amateur or professional biologists, whether in employment as such or not, who can demonstrate a level of achievement in original research in Biological Sciences.

In awarding grants, the Council of the Society will assess: a) Realistic costing and timetable; b) The quality of the project; c) The applicant's ability to carry it out; d) The likelihood that successful completion of the research will lead to publication.

Individual grants will not normally exceed \$2,500 for Members of the Linnean Society of New South Wales and \$1,500 for non-members.

The Society envisages that grants would normally be used for items such as travel within Australia, equipment, photographic and other expenses, but not for subsistence, travel to conferences, or thesis preparation.

Applications are not restricted to members, but other things being equal, members of the Society will be given preference.

As a rule, the deadline for applications will be 1st March in any year; however, in exceptional circumstances, applications for emergency support will be received at any time.

Grantees will be required to make a report at the end of the project, and no later than 12 months after the receipt of the grant, and to justify their expenditure.

Any publication arising from work supported by the Joyce W. Vickery Scientific Research Fund should include an acknowledgement to that effect.

Any type material generated by studies supported by these grants should be lodged in the collections of an appropriate scientific institution.

An application form may be obtained from the website linnsoc@iinet.net.au or from the Secretary of the Society.

The Council's decision in regard to the award or non-award of grants from the Joyce W Vickery Scientific Research Fund is final, and no correspondence will be entered into.

Closing date is 1 March, 2020. Submit your signed application by email to secretary@linneansocietynsw.org.au



NATIVE ANIMALS SHOULD BE ABLE TO BE HUMAN COMPANIONS, a talk given by Prof. Michael Archer to the Society, 20th November 2019.

Australia is in a widening spot of bother. Long before threats of climate change grabbed headlines, we've been flogging the living stuff out of this place, clearing forests, introducing alien horrors, cookie-cutting the land into little wire-bound boxes, sending topsoil blowing in the wind and accumulating in the process at least \$5 billion dollars in land degradation costs every year. We've done this because most of us value the introduced species more than our natives, despite the fact that our natives are nature's Olympic champions having survived millions of years of selection for skills to survive the worst that Australian climates can throw at them. Some are now exploring how to increase economic resilience by sustainably harvesting kangaroos, indigenous grasses and other natives that have been the environment-friendly foods of choice for Australians for more than 45,000 years. What about in our homes? Most of us have no choice when it comes to pets: keeping all manner of cats and dogs is legal; keeping almost all native mammals is not. Unfortunately, while we value, feed and stroke our moggies and dogs, the native mammals we haven't bonded with struggle to survive on the other side of the fence. And now, for every degree of climate change, the average animal and plant throughout the world will need to shift its range by 100 km. Most of our wildlife reserves—while absolutely vital for conservation—will be found to be too small and most in the wrong places to ensure long-term conservation.

As a PhD student researching Australian mammals, then Curator of Mammals in the Queensland Museum, Director of the Australian Museum, Dean of Science at the University of New South Wales and now a research scientist at UNSW, I have had the privilege of keeping more than 20 different species of native animals at home over the last 40 years, from marsupial quolls to possums and kangaroos. I don't now in Sydney because it's illegal.

I have been arguing passionately for formal trials to see if my own experiences and those of others who have had similar opportunities can be repeated in families all around Australia. These trials would involve strategically-managed breeding programs and placement of our selected bush creatures (e.g., quolls and sugar gliders) with interested families. If the monitored outcomes are as positive (as they have been e.g. for Sugar Gliders in the USA; Adrian Di Qual, MSc Thesis research results), we should consider relaxing laws to enable the next generation of Australian kids to bond with, treasure and commit to the well-being of endangered native species that most don't even know exist.



SNIPPETS FROM THE PAST

Presidential Address by Mr J.J. Fletcher, M.A., B.Sc., in the Chair, March 30, 1921.

IS ALL WELL WITH THE MACLEAY MUSEUM OF THE UNIVERSITY OF SYDNEY?

Sir William Macleay's scientific energy was directed into two main channels: and his efforts finally culminated in two important potentially fructifying enterprises. On the one hand, with the generous assistance of the Government, a duly constituted Macleay Museum. On the other hand, the Linnean Society of New South Wales, endowed not only for the ordinary purposes of a Scientific Society, but in an especial manner for the encouragement of research-work in Natural History. In his own characteristic way, Sir William linked up these two great enterprises in such a way, that each of the two corporate bodies to whom these enterprises were committed upon trust, in perpetuity, should have a *locus standi* for a co-ordinate, reciprocal interest in what the other was doing with the Trust.

Ever since it has been possible, the Linnean Society has given, in print, an annual report of its stewardship, and has distributed the same to all entitled to receive it. When are the University's annual reports of its stewardship in connection with the Macleay Museum ?

In 1873, Sir William offered the amalgamated collections of Alexander Macleay, W. S. Macleay, and his own, together with his scientific library, as a gift by bequest, upon trust, to the University, for the promotion of natural history, and the instruction of students, and the inhabitants of the colony in the same. The sum of £6000 was offered at the same time for the endowment of a Curatorship. At this time, the joint collections of A. and W. S. Macleay amounted to 480 drawers of insects and other Annulosa, and W. Macleay's own collection to 320 drawers of insects. At this time Sir William had not appointed a Curator. The Senate gratefully accepted the offer. The Chancellor announced the offer, and its acceptance by the Senate, at the Commemoration in March 1874. At this time too, the Linnean Society of New South Wales had not been so much as thought of, nor was its establishment anticipated.

After the offer had been made and accepted, but before the public announcement was made, Sir William decided to appoint a Curator, Mr. George Masters, and decided to convert his own entomological collection into a general collection, not only of Australian, but also of non-Australian Vertebrata, and Invertebrata; and for fifteen years, with the co-operation of Masters, he continued to carry out this intention. Why did he do this? To make the gift more worthy of acceptance by the University.

In 1885 or 1886, Sir William changed his mind about leaving his scientific library and the Macleay Collections as a bequest to the University. He withdrew his offer of the library altogether, and re-offered the now much enlarged Macleay Collections as a gift during his life-time, if and as soon as a "suitable" building — not a room in a building — was provided for them. For two reasons, because his own collection has been so enlarged, that his private museum was overcrowded, and that he naturally wished to have an opportunity of approving of the suitability of the "suitable" building offered. He also offered to transfer his experienced Curator, and an endowment-fund of £6000 to provide the Curator's salary.

The Senate, not having the money, approached the Government, and asked for its help to enable it to accept Mr. Macleay's munificent gift. The Government, knowing William Macleay, asked what he would approve of a suitable building. His reply was, that he would approve of a fire-proof hall, 212 x 70 x 58 feet, with bays and a gallery all round, the architect's estimated cost of it being £16,000. The Government said the equivalent of, Certainly, you shall have it, go ahead forthwith!

When the building was finished in about 1889 [exact date not available], and approved of by Sir William, he transferred the amalgamated Collections, now a general collection, and not merely a collection of insects and other Annulosa to the University, to be housed in the "suitable" building, presented by the Government, together with his experienced and faithful Curator, George Masters; and paid over the sum of £6000, for the endowment of the Curator's salary. When the Collections had been suitably arranged, under the direction of the Professor of Biology

with the co-operation of the Curator, as an exposition of the fauna of Australia, for which there was abundant material in the Collection, the Macleay Museum of the University of Sydney was duly constituted, in the technical sense. Thereupon, the University, ipso facto, became the Joint-Trustee of the Government and of Sir William Macleay, for the inhabitants of New South Wales, including students and others. The Joint-Trustee's duties were to administer the Trust committed to him in terms of the Trust. Among other things, therefore (1) to preserve, maintain, and safeguard the standard, agreed-upon suitability of the "suitable" building, presented by the Government solely and expressly for housing the suitably arranged Macleay Collections, and any additions that might be made to them, in perpetuity; and to abstain from tampering with it, and finally, spoiling it. (2) To preserve, maintain, and safeguard, the integrity of the Macleay Collections, in perpetuity; and under all circumstances to refrain from disrupting them, in perpetuity. (3) To keep interlopers from taking up their quarters in the Macleay Museum building, whether by the front door, or by "an over-bridge" or "a bridge-corridor", in perpetuity. (4) When the Collections had been suitably arranged, to abstain from periodically disturbing them; and finally sweeping away the exposition of the Australian fauna shown in the Jubilee photograph, with the besom of ingratitude, and thereby insulting the memories of the distinguished Macleays!

The University historian values the Macleay Collections, on a money-basis as "roughly assessed at £25,000." With the building, and the endowment fund for the Curatorship, the duly constituted Macleay Museum represented a benefaction of £47,000!

To-day, and for some time past, the Macleay Museum has been *deconstituted*, and as an exposition of the fauna of Australia spoilt, because the suitability of the "suitable" building has been so drastically interfered with, that this has involved the disruption of the Macleay Collections. One of Sir William's great enterprises, potentially so fructifying if properly managed, has become bankrupt. It has been hamstrung, paralysed, shorn of its attractiveness and inspiration.



ANNOUNCEMENTS

Fee increase from January 2020

At the November meeting, Council resolved to increase the membership fees by \$5.00 in each category with effect from January 1, 2020. This modest increase is the first since 2012. Full member rises to \$50.00 (from \$45.00 currently); Retired members and Students rises to \$25.00 (from \$20.00) and Associate Member rises to \$15.00 (from \$10.00). A discount will continue to apply for payment of renewing subscriptions prior to March 31.

OPPORTUNITY TO BECOME INVOLVED IN THE RUNNING OF THE SOCIETY

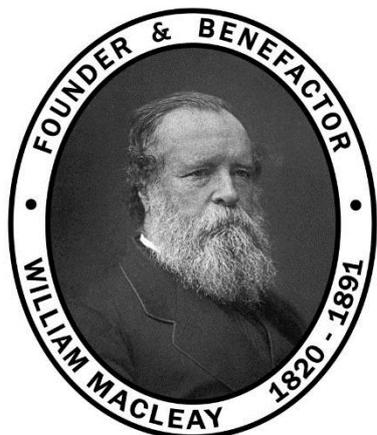
Currently several vacancies exist on Council, due to retirements and maternity leave. Commitments are not onerous and there are minimal prerequisites; you must be a financial Full or Retired member of the Society with a background in an area of natural history related to the aims of the Society, and enthusiasm – a higher degree such as a Ph.D is certainly not essential.

Council members volunteer their time in attending meetings six times per year (these are held at the State Library in Sydney and occupy about 1.5 hours). There are opportunities to serve on various committees, such as overseeing awards of grants from the Scientific Research Funds, or assisting in organizing aspects of the Symposia that are held every 1-2 years.

Anyone with a background in Zoology, Botany, Microbiology, or Geology is welcome to contact the Secretary for further details. Note that applications close on January 31 each year.



NOTICE OF ANNUAL GENERAL MEETING ON 18th MARCH 2020



THE LINNEAN SOCIETY OF NEW SOUTH WALES

2020 Annual General Meeting

The 145^h Annual General Meeting of the Society will be held at 18:00 on 18 March 2020. **Details regarding the AGM venue (in Sydney) have not yet been decided. All members will be notified in advance when this is finalized.**

Members and guests are invited to join the Council of the Society for wine and light refreshments from 17:30.

Four members of Council are due to retire at this AGM:

J.C. Herremans, D. Keith, P. Myerscough and I. Percival
and all offer themselves for re-election.

Council recommends the election of Dr Ian Percival as President of the Society for 2020.

Council recommends the reappointment of the current auditors, Phil Williams Carbonara.

Further nominations are invited for vacancies on Council (6), the office of President, and Auditor. Nominees must be financial Ordinary Members (a category which includes Life Members) of the Society. The nominations must be signed by at least two financial Ordinary Members of the Society and countersigned by the nominee in token of their willingness to accept such office.

Nominations must be received by the Secretary at PO Box 291, Manly NSW 1655 by 31 January 2020.

Following the AGM, the outgoing President (John Barkas) will give the Presidential Address for 2020.



Linnean Society of New South Wales

Minutes of the 144th Annual General Meeting, held in the Charles Moore Room, Royal Botanic Gardens, Sydney, on Wednesday, March 20, 2019, at 18:00.

CHAIRPERSON: Mr John Barkas

PRESENT: Thirty three members and friends attended (names recorded in the attendance book).

APOLOGIES: Prof. Jeremy Bruhl, Dr. Michele Cotton, Prof. Anders Hallengren, Mrs. Jane Judd, Dr. John Pickett

MINUTES:

The minutes of the one hundred and forty third Annual General Meeting, held on Wednesday, March 21, 2018, were distributed. It was moved (R. King) and seconded (I. Hill) that the minutes as circulated be accepted as a true record. CARRIED.

TREASURER'S REPORT:

The Treasurer presented the audited financial report for 2018 and distributed notes to accompany the 2018 balance sheets.

It was moved (I. Percival) and seconded (JC Herremans) that the audited accounts for 2018 and the Treasurer's report be accepted. CARRIED.

Council thanked the Treasurer, Ian Percival, for maintaining the Society's finances in a strong and healthy state of affairs.

Council also thanked the Editor, Michael Augee, assisted by Bruce Welch for managing the Society's *Proceedings* through all stages of production.

The Chairman expressed, on behalf of the Society, appreciation for the work done by all Council members.

CHAIRMAN'S REPORT:

Mr John Barkas reported on the affairs of the Society for the year 2018. It was moved (JC Herremans) and seconded (B. Welch) that the Chairman's report be accepted. CARRIED.

DECLARATION OF ELECTIONS: As the number of nominations for Council did not exceed the number of vacancies (six), no voting was necessary. Having received no other nominations for Council, the following three retiring Council members were declared by the Chairman re-elected to Council for three years: Daniel Bickel, Robert King and Bruce Welch. CARRIED.

There being no other nominations, David Keith declared the Council nominee, Mr John Barkas, be elected as President of the Society for 2019. CARRIED.

There being no other nominations for auditors, it was moved (I. Percival) and seconded (B. Welch) that the current firm, Phil Williams Carbonara, be retained for 2019. CARRIED

The Chairman thanked the Botanic Gardens Trust for providing rooms for our meetings.

As there was no further business, Mr John Barkas declared the meeting closed at 18:20.

Presidential Address by Mr John Barkas:

Depletion of global ore resources – a geological challenge or fake news?

The earth's crust contains a finite endowment of mineral resources that is continuously and inevitably depleted by mining. While the "peak oil" debate has now largely faded from public consciousness, exponential growth in world demand for metals over the last 15 years has reignited concerns, mostly dormant since the 1970s, about the quality and adequacy of available geological supplies of the mineral ores essential for modern industry and technology. In line with such concerns, the concept of "critical metals" has now developed, notably in the US and Europe. These are metals that are currently recognised as virtually irreplaceable in the construction, transport, technology, energy and electronics sectors, but where supply risk and the impact of disrupted availability are both assessed as high. The rare earth and platinum group metals are commonly cited as examples, along with indium, cobalt and (more recently) lithium. But the medium-term availabilities of such "essential" metals as copper and iron have also come under serious review. Are these and similar concerns justified? Is "sustainable growth" an oxymoron? There are deeply opposed views on such questions, but an understanding of basic geological data is essential in examining them.

Signed as true record:

Mr John Barkas, Chairperson