

# LINN S C NEWS

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### NEW MEMBERS: We welcome

Ms Margaret A Beal. Fields of interest: geology, botany  
Mr David Coleby. Fields of interest: botany, ecology, geology  
Dr Paul Gorjan. Field of interest: geoscience  
Ms Lyndal Sullivan. Fields of interest: ecology, vegetation, groundwater  
Dr Peter A Watterson.

**RESIGNATION:** Council accepted – with regrets - the resignation from Council of Dr Michele Cotton. Michele, a member of the Society since 2001 was twice President of the Society, in 2008-09 and in 2016-17.

### LINNEAN MACLEAY FELLOWSHIP

Applications are invited for the Linnean Macleay Fellowship for the year 2020. Applicants must be Members of the Society, reside in New South Wales, and have a degree in Science or Agricultural Science from the University of Sydney. Applicants are required to outline the proposed research and where it will be carried out. The Fellowship pays \$3,200 per annum, and the Fellow must engage in full time research on the project. The regulations governing the Fellowship are available on the Society's web site. These regulations were stipulated in Sir William Macleay's will and the Society is obliged to adhere to them.

**Applications close 15 November 2019**

### REPORT FROM THE RECIPIENT OF RESEARCH GRANT

It is a condition of an award that the recipient reports the results to the Society. Some have had their work published and others are preparing papers for publication.

Mr Alex **KENINS** (University of New England; 2018 Joyce Vickery grand recipient).

**Project title:** Desmids from *Sphagnum* bogs of the New England Tablelands, Australia.

The awarded funds were used to undertake a survey and study of desmids from numerous sites from the New England Tableland Bioregion, as well as performing scanning electron microscopic analysis of the collected material at the University of New England. Over 70 taxa were observed with ten being newly recorded for Australia and a further twelve for the state of New South Wales. The completed thesis has descriptions and figures of these species along with more in-depth discussion on remarkable finds. Some putatively novel forms, although previously depicted and described, require further study for formal taxonomic description with some anticipated to be published as new species from this study. Over four hundred scanning electron and light microscope images, as well as numerous illustrations, are being prepared for the expected publication. In addition, microphotographs taken will also be submitted to algaebase.org. Samples taken from the project remain in the researcher's private collection, however, some may be deposited at the Armidale Herbarium pending publication along with the prepared SEM stubs that are currently housed at this institution. Two of the studied sites, Basket Swamp and Ebor Common, were also compared based on their floristic composition of desmids to assess their conservation value based on a modified transformation scheme. Basket Swamp received a higher score in comparison to Ebor Common due to greater species richness with many being regionally endemic. The study also found that the desmid community associated with *Sphagnum* in Australia is highly diverse and can differ markedly between sites with its own distinctive flora.



#### PROCEEDINGS OF THE LINNEAN SOCIETY OF NSW

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](http://www.biodiversitylibrary.org/bibliography/6525)

**NOTE: A CD is no longer distributed**

#### List of articles 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.** C 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 & Gross, C.L.** – Climate change threatens a fig-frugivore mutualism at its drier, western range margin.

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



## SNIPPETS FROM THE PAST

Presidential Address by Professor T.W. Edgeworth David, in the Chair – March 28<sup>th</sup>, 1894

Death has removed during the past year one who, though not a member of our Society, deserves special recognition by us on account of his long and useful life devoted largely to the study of Natural Science. Dr. George Bennett was born at Plymouth in 1804 and lived to the advanced age of 89. His connection with Australia dates back for nearly 70 years. At the early age of 15 he made a voyage to Ceylon, and on his return to England devoted himself to the study of medicine. After taking the degree of M.R.C.S. he gratified his desire of seeing the world by becoming surgeon of a vessel sent out on an exploring expedition.

It was during this voyage that the Doctor visited Australia and began his observations on its peculiar Mammalia. In 1832 he re-visited this country in order to investigate further the habits and anatomy of the Monotremata, as well as other features of our natural history. His travels extended to Java, Singapore and China, and on his return to England he published the results of his researches in a volume entitled "Wanderings in N.S. Wales, Batavia, Pedir Coast, Singapore and China, being a Journal of a Naturalist in these Countries during 1832-4." This volume was issued in London in 1834, and during the same year "Notes on the Natural History and Habits of the Ornithorhynchus paradoxus," was also published. Amongst other works written by Dr. Bennett may be mentioned "Gatherings of a Naturalist in Australasia" (1860); "Acclimatisation: its eminent adaptation to Australia" (1862); "A trip to Queensland in search of fossils" (1871); and a pamphlet on "The Introduction, Cultivation, and Economic Use of the Orange and Others of the Citron Tribe," published in Sydney in 1871.

In 1836 Dr. Bennett finally determined to settle in N.S. Wales, and began a successful career as a medical man. Although he soon secured a large practice, the doctor still devoted much time to his scientific work, which obtained world-wide recognition; and for fifty years he kept a constant correspondence with Sir Richard Owen, who was his college companion and intimate friend. Darwin was also among the deceased doctor's friends, and Darwin's methods of investigation were closely followed by him. In 1859 Dr. Bennett became an F.R.C.S. and an M.D. of Glasgow University.

From the time of his arrival in Sydney he took the keenest interest in our Botanic Gardens, and did much to advance them towards their present state of perfection. He was one of the chief founders of the Australian Museum; he acted for some time as its secretary, and afterwards became one of the Board of management. The now defunct Acclimatisation Society owed much to his friendly aid, and he was also one of the Vice-Presidents of the Zoological Society. During the whole of his residence in the colony he kept up an active scientific correspondence with friends at home, particularly with the Linnean Society, of which he was one of the oldest member. On the 11<sup>th</sup> of December, 1889, the Council of the Royal Society of N.S.W. awarded him the Clarke Medal for 1890, in recognition of his meritorious scientific labours, and more particularly on account of his very valuable contribution to the Natural History of N.S. Wales.

## SIR WILLIAM MACLEAY MEMORIAL LECTURE

*Why would you want to spend ones' life studying seaworms? All is explained.* The 24<sup>th</sup> Sir William Macleay Memorial Lecture was delivered by Dr Patricia Hutchings, FRZS, Senior Fellow, Australian Museum Research Institute in the Dixson Room, Mitchell Wing.

Dr Pat Hutchings began her lecture by relating how she became involved with seaworms in her wild and carefree days in England and then had the opportunity to move to Sydney, taking up a position at the Australian Museum after completing her PhD at the University of Newcastle upon Tyne UK. For her PhD she studied the reproductive biology of a subtidal species and was able to document how this species was able to co-ordinate spawning over a single night using environmental cues and controlling the proliferation of gametes using a well developed endocrine system.

Polychaeta worms are very common marine animals and occur in a wide variety of marine and estuarine habitats, and a few live in freshwater. They are highly speciose and often occur in dense numbers. Many polychaetes are beautiful and are coloured red, pink, or green or a combination of colours; some are iridescent, owing to the presence of crossed layers of collagen fibers in the cuticle. She was able to demonstrate this using photographs of living animals mainly taken at Lizard Island Research Station on the Great Barrier Reef during an International workshop held there in 2013, which resulted in a major publication describing 91 new species.

Polychaetes can be free-moving or live in tubes attached to rocks or living in the sediment, and a few are parasitic. She then illustrated the amazing morphological diversity of polychaetes, their feeding diversity and reproductive strategies. Pat illustrated the great variety of feeding strategies which are found within the various polychaete families, including species which are carnivores, opportunistic, herbivores, surface deposit feeders, filter feeders and mud swallows, and some are even parasitic. Polychaetes reproduce both sexually and asexually and have great powers of regeneration which is useful if they get damaged by predatory fish. She explained how some species undergo mass spawning with gametes being released into the water column where fertilization occurs, and how this critical timing is achieved. This was illustrated with some species that spawn at the same time as the mass coral spawning which occurs on the reef. She stressed that polychaetes have a well-developed endocrine system which enables this high degree of co-ordination to occur.

She explained how one collects worms in the variety of habitats in which they live especially of the family Terebellidae which she has spent decades working on, not only describing many new species but the relationships of the various subfamilies which have now been elevated to families in their own right. Pat has spent a lot of time working on the Great Barrier Reef, initially at One Tree Island and later at Lizard Island where the Australian Museum has a research station and where she undertook detailed studies on polychaete recruitment and their role in bioerosion of coral substrates.

Pat then explained that while polychaetes were amazing animals in terms of their diversity they also played a critical role in the marine and estuarine ecosystem and occupied the bottom of the food chain and that many other animals relied upon them for food. This includes wading birds feeding on mud flats to many species of commercially important species such as fish and prawns. In addition they play a major role in the breakdown of organic matter, like the related worms found in compost bins. She highlighted her role in ensuring that polychaetes were considered in the recent rezoning of the Great Barrier Reef, where the inter-reefal areas were considered for the first time. She explained how the bioregions were identified and a 20% of each region zoned as a green zone.

Pat highlighted the importance of mentors in her early career and how she has taken this on board in supervising her many students and early career researchers. So while officially retired she is continuing to work on polychaetes and currently has 4 PhD students both from Australia but also from Spain and France.

Pat acknowledged the Linnean Society of NSW which published one of her first taxonomic papers on the polychaetes from Wallis Lake, NSW. She also explained how the Society published the proceedings from the 1st International Polychaete Conference which was held in Sydney in 1983 and which has continued ever 3 years since then, the most recent being held in Long Beach, USA in August 2019, and the next one will be held in July 2022 in South Africa.

She illustrated her talk with numerous illustrations and really tried to convey her enthusiasm for this diverse group of animals and explain why she has spent their working life studying them, and she was happy to answer questions from the audience.

## **ANNOUNCEMENTS**

**2019 LINNEAN SOCIETY OF NSW**  
**BLUE MOUNTAINS SYMPOSIUM**

**Scope** The Linnean Society of New South Wales, has had previous field symposia in the Snowy Mountains and the Warrungbungs (last September), and now we are bringing one to the Blue Mountains, right on Sydney's doorstep. The previous symposia have included a field trip and a day or two of presented scientific papers. This time we have decided to add a session on general natural history for the public, to be held on Saturday 9 November at the Springwood Sports Club. We see this as a way of promoting the study and awareness of natural history in the region.

The symposium will take place from 7-9 November, 2019, and will comprise three sections:

- 1) **a geological /botanical field trip in the western Blue Mountains on Thursday, 7 November, leaving from Katoomba. FULLY BOOKED**
- 2) a session of scientific papers held at the Springwood Sports Club on Friday, 8 November.
- 3) a series of lectures on general Blue Mountains natural history held at the Springwood Sports Club on Saturday 9 November.

### Costs and logistics

The Springwood Sports Club Auditorium holds 150 people and is located at 83 Macquarie Rd, Springwood NSW 2777; phone: (02) 4349 7796

Lunches and teas as well as program books are included in the registration fees for Springwood Sports Club sessions on Friday, 8 November and Saturday, 9 November.

Participants must provide their own lunch for the field trip on Thursday, November 7.

Participants can register for any combination of the individual day sessions, or a combined three-day session. However, due to limited numbers of seats available on the field trip, preference will be given to those registering for at least one of the presentation sessions. Costs are shown in the table on the registration form.

Members of the Linnean Society of NSW will enjoy a modest discount on registration and field trip fees. Non-members are welcome to apply for membership of the Society to access these discounts. For details of membership categories and our low subscription rates, please refer to the website.

**Cancellation policy:** 50% refund will apply to cancellations notified up to September 30.

**No refunds will be given in October or November.**

**Train connections to Springwood.** The Springwood Sports Club is about a ten-minute walk from Springwood train station. People may prefer to travel by train to the Friday and Saturday sessions.

Timetables with train and bus links to Springwood Station can be found here:

<https://transportnsw.info/stop?q=10101259#>

**Accommodation in and around Blue Mountains :** For participants requiring accommodation in the Blue Mountains, see this website <https://www.bluemts.com.au/accommodation>.

### Publication of papers presented at the symposium

Relevant papers presented at the Scientific Session are invited to be submitted (though not mandatory) for publication in the *Proceedings of the Linnean Society of New South Wales*, subject to editorial standards and peer review. This journal, first published in 1874, is available online and is open access, and has no page charges (even for colour figures). A detailed set of Author Guidelines is available on the Linnean Society of NSW website. **Deadline for submission of manuscripts will be March 31, 2020** with publication likely in late - 2020.

**Contact:** Linnean Society of NSW office: [secretary@linneansocietynsw.org.au](mailto:secretary@linneansocietynsw.org.au) or [Dan.Bickel@austmus.gov.au](mailto:Dan.Bickel@austmus.gov.au)

## REGISTRATION FORM

**Name:**

**E-Mail (and/or postal address):**

**Affiliation:**

**Fee category (please circle):**

Full member / Student member / Retired member / Associate member / Non-member

**Please send completed registration form to**

- i) **secretary@linneansocietynsw.org.au** as attachment (indicate date & method of payment) or
- ii) **Linnean Society of New South Wales, PO Box 291, Manly NSW 1655.**

<b>Fee category</b>	<b>Scientific Session 8 November</b>	<b>Public Lecture 9 November</b>	<b>TOTAL</b>
Students	\$25.00	\$25.00	
Retired and Associate members	\$25.00	\$25.00	
Full Members	\$30.00	\$30.00	
Non-members	\$40.00	\$40.00	

1) Bank transfer: St George Bank. Account name "Linnean Society of NSW"  
BSB 112879, Account # 466447867.

**Please label payment 'BlueMntsyoursurname'**

2) Cheque made out to The Linnean Society of NSW posted to the above address

Lunches and teas are included in the registration fees for Springwood Sports Club sessions on Friday 8 November and Saturday 9 November. Participants must provide their own lunch for the field trip on Thursday 7 November

**Please indicate any special dietary preferences e.g. vegetarian, gluten-free, &c...**