

Editorial: Where did the virus come from?

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The pandemic continues, with the science behind the COVID-19 vaccines taking a bow. There are ongoing enquiries about how the virus emerged, but Edward Holmes, FRSN and NSW Scientist of the Year 2020, tells me that there is absolutely no evidence of an engineered virus. Indeed, he says, the genotype shows all the evidence of a zoonotic origin, although whence and exactly when it first infected people remain unclear.

This issue of the *Journal* contains three refereed papers: one in reference to the late Douglas Adams' (2002) thoughts (the 'puddle theory') on the likelihood of human life — indeed, *any* life — in the universe; one on the Ellesmere meteorite, found in August 1900 in northern NSW, not southern Queensland as erroneously believed; and a paper on self-sensing concrete, by Wengui Li et al.

Indeed, 2020 was the year in which the Society awarded the Warren Prize for the first time, to Dr Simon Devitt, a quantum computer scientist at UTS. The aim of the Prize is to recognize research of national or international significance by Australian engineers and technologists in their early to mid careers. In each case, the research must have originated or have been carried out principally in New South Wales. I look forward to publishing a promised paper from Dr Devitt soon.

A second award in 2020 — the Archibald Ollé Award for Best Paper published in the

Journal — went to the late Dr Ann Moyal FRSN, for her 2017 paper (Moyal, 2017), written to discuss war-time correspondence between Dr Moyal's late husband, Professor José Moyal, erstwhile professor at Macquarie, and P. A. M. Dirac, the preeminent Nobel laureate physicist of his time at Cambridge. Although Dirac was skeptical of Moyal's statistics approach to quantum mechanics, history has vindicated Moyal: the most recent count from Google Scholar for Moyal (1949), a paper that summarised an earlier unpublished paper (that Dirac had persuaded Moyal¹ to delay), is 3798 cites, at a rate of over 13 cites per month, amazing for a quite abstruse paper published over seventy years ago. The Archibald Ollé Award was last presented in 1997.

As well as the three reviewed papers mentioned above, this issue includes a new section, 'Great N.S.W. Inventions,' recording in this issue a presentation made at the November 2020 O.G.M. on the role of two of our Fellows in the amazing development of the virtual elimination of peptic ulcers. Was it an example of synchronicity that Adrian Lee FRSN had found that, far from being germ-free, mammalian stomachs are alive with bacteria that appear to relish the inhospitable environs of the stomach and gut at the same time that Barry Marshall and Robin Warren isolated the bacterium now

¹ Moyal had recently escaped from occupied France, and had been directed to work at de Havilland's by C. P. Snow, then in charge of Scientific Manpower.

known as *Helicobacter pylori* from human stomachs, and suspected that it was implicated in peptic ulcers? Previously, peptic ulcers were believed to be caused by excess stomach acid, or spicy food.²

Adrian Lee and Thomas Borody FRSN provided the means for establishing that Marshall and Warren were right, using the methodology of the Koch postulates. Borody and Lee developed a therapy to kill the bacteria *in vivo*, a necessary step in the proof. Marshall and Warren shared the Nobel Prize in Physiology in 2005 for their discovery. I agree with Peter Baume FRSN and others that both Adrian Lee and Thomas Borody deserved to share in the Nobel glory.

The issue also includes the seven presentations by the participants in last November's Four Academies Forum on "After COVID-19: Creating the Best of Times from the Worst of Times," as well as a discussion, the Governor's opening address, and the rapporteur's summing-up. Will the government take their advice after the pandemic? This remains to be seen.

The issue also includes three PhD abstracts.

Since 2013 the *Journal* has been fortunate to have had 118 reviewers and helpers in the process of processing papers. Such people have not been publicly thanked for some years, but we acknowledge them explicitly in this issue, with their names and affiliations listed below.³ This is my eleventh issue;

² See Graham and Dore (2016) for a comprehensive discussion of this.

³ We could not determine the affiliations of three people: Peter Ackland, Xanthe Lam, and Alan Palmer. If you have information on any of these, or any other person on the list, please let us know: we can amend the on-line documents. Sadly, Brian Spies FRSN (1949–2020) has died since his seminal contribution to the 2016 Forum (Spies, 2017).

Michael Burton (2013–2015) and Donald Hector (earlier) were the editors immediately before me.

This year marks the two-hundredth anniversary of the Philosophical Society of Australasia, which is the direct ancestor of today's Royal Society of New South Wales. Given this timely anniversary, I am sad to note that the Federal Government is refusing to fund the National Archives of Australia adequately; the Archives, under the Attorney-General's Department, have been reduced to appealing for donations from Australian citizens, an unwelcome version of crowdfunding. Meanwhile, other national institutions, such as the Australian War Memorial, are being more than adequately funded by the Federal Government. To celebrate our two-hundredth anniversary, the Royal Society will present the exhibition, 'The Royal Society of New South Wales. Nexus: Origins, Ideas, Advances, Impacts, 1821–2021' at the State Library of NSW from late June 2021. A personal note: one of my oldest friends, John C. H. Spence ForMemRS, died aged 75 in June 2021; he published a paper here in 2019.

Housekeeping

I wish to thank Jason Antony for his excellent work at formatting this issue of the *Journal*, while at the same time editing the Society's *Bulletin*. The Editorial Board has provided excellent editorial support, as always. See the inside front cover for the Board's membership.

References

- Adams, D. (2002). *The Salmon of Doubt*. William Heinemann.
- Graham, D. Y., & Dore M. P. (2016). *Helicobacter pylori* therapy: A paradigm shift. *Expert Rev. Anti Infect, Ther*, 14(6), 577–585.
- Moyal, A. (2017). P. A. M. Dirac and the maverick mathematician. *Journal & Proceedings of the Royal Society of New South Wales*, 150(2), 188–194.

- Moyal, J. E. (1949). Quantum mechanics as a statistical theory. *Proceedings of the Cambridge Philosophical Society*, 45, 99–124.
- Spence, J. C. H. (2019). Speed limit: How the search for an absolute frame of reference in the universe led to Einstein's equation $E=mc^2$ — a history of measurements of the speed of light. *Journal & Proceedings of the Royal Society of New South Wales*, 152, 216–241.
- Spies, B. (2017). The science and politics of climate change. *Journal & Proceedings of the Royal Society of New South Wales*, 150, 48–60.

Thank you

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