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Irresistible forces: reflections on the history of women in Australian science

1 September 2015

In the early 1990s Claire Hooker began investigating the history of Australian women's participation in science. In this guest post, she reflects on her research, twenty years on.

Claire is now, as she puts it, 'not writing about women and science at all anymore!' She's a [Senior Lecturer](#) in Health & Medical Humanities at the Centre for Values, Ethics & the Law in Medicine (VELiM), at the Sydney School of Public Health. She is also the Leader, Ethics and Politics of Infection Node, at the Marie Bashir Institute for Infectious Disease and Biosecurity (MBI).

We invited Claire to look back on her earlier research as the third post in a series about women scientists connected with the Museum's participation in the [League of Remarkable Women in Science exhibition](#), which closed yesterday. The other posts, by [Kirsten Wehner](#) and [Martha Sear](#), as well as an earlier post about geologist [Germaine Joplin](#), can also be found on this blog. They feature many of the women Claire had studied as part of her work, and we are pleased to be able to share her insights into their lives and careers in the context of contemporary debates about women's contributions to science.

Here is Claire's post:

The women scientists from the pre-World War II era, whose implements, publications and images were displayed as part of the League of Remarkable Women in Science exhibition, arouse in me an honouring of their quiet, dedicated sort of nationalism, in which deep connections with land and environment were intermingled with an ethic of humility and service.

I went looking in Australia's history for women scientists whose lives and careers would refute claims that women's capacity for spatial and abstract reasoning is less than men's, due to differences in the development and structure of the brain. If you're interested in these questions, you may enjoy debates such as [this](#) from Harvard University.

But the strange intimacy that arises from peering and prying into the lives of others – reading their letters, looking over their to-do lists, their jottings of household expenses, the neat, beautifully crafted wooden specimen boxes in which Germaine Joplin’s friend and colleague Ida Brown placed carefully hewn rock samples – instead forced on me the realization that these were, in many ways, the wrong questions to be asking. Instead I began to wonder: what counts as, and what makes for, success in science? In Australia, until after World War II there was very little infrastructure for formal scientific research at all – just a handful of people at the handful of universities and museums, many of them engaged desperately in the monumental task of coming to terms with the disorientingly unfamiliar natural landscape in which they lived. Just cataloguing Australia’s unique plants, animals and geology, in order to have enough data to work with to trial and test theories about evolutionary change or ecological shifts, was a tough enough job on its own; and one often carried out by patient and persistent women. Other Australian scientists, then and now, scrambled to apply the newest research from Europe and the USA – which arrived by ship a minimum of six months late, with each expensive journal then passed around social networks of local scientists – to the unique and pressing problems of the developing nation: how best to treat snakebite? Could rain be induced? How can the quality and yield of wheat and wool be improved?

What does it mean to be ‘good’ at science in such circumstances? To the women scientists of the interwar era, it meant simply getting on with the job. These women were direct, honest and practical, and they got a lot done. I still pause, amazed, to consider women’s contribution to mosquito related research. Dr Josephine McKerras and her team dissected around 38,000 of them in search of a better understanding of malaria during World War II – discovering, in the process, what no one had figured out before, which was why mosquitoes breed so poorly in captivity: because they need over a metre of free fall for successful mating. Her colleague Dr Pat Marks described 38 new species in the few decades thereafter. This tediously repetitive fiddly work is, in my view, an outstanding, if unsung, contribution to Australian science.

These women make good role models. They not only coped with, but enjoyed with gusto, the unladylike discomforts of fieldwork – wading out in the flowing tides in the middle of the night to collect specimens, or standing for hours in cold rivers driving core samplers into their beds. The most common description given me – I was told this about every single one of them – by their friends and colleagues was, ‘she didn’t suffer fools gladly’.

To a woman they worked with tireless dedication in the faith that their small contribution to scrupulously considered factual knowledge – say, mapping stratigraphy (the age and layering of the rocks) in NSW or identifying the lifecycle of a nematode (parasite) or cataloguing the distribution of starfish species up and down the eastern seaboard – was a form of service for the common good. It was distressing when this ethic was betrayed in the much less scrupulous ‘real’ world. For example, 40 years later Valerie May was still expressing distress at how her discovery of the cause of mysterious stock deaths – cyanotic algal blooms provoked by fertiliser run-off – was ignored for decades, when instead, preventive measures might have been taken.

Of course not all women scientists were content with the intrinsic rewards of discovery alone. Germaine Joplin’s contemporaries in geology Dorothy Hill, Irene Crespin, Beryl Nasher and Isobel Cookson, wished for, sometimes fought for, and to impressive degree achieved, success as measured by position, pay and promotion, as perhaps more famously, did Ruby Payne-Scott, the physicist who provided the mathematical foundation for the brand new

science of radio astronomy in 1945. But whether they worked within an institutional setting or along or outside it, predominantly these women focused on the joy of their work, and on its value, expressed sometimes in the quiet approval of their small band of colleagues. As they slowly gathered their multiple collections of lichens or algae or worms or bivalve shellfish or types of rock, these women were cultivating an intimate feeling for the qualities and processes of the Australian natural environment, and a sense of connection through this to their fellow intellectual travellers around the world

After World War II, Australian governments invested more in scientific research, and as opportunities for research expanded amid a swiftly-changing society, women – who had made up about half of all enrolments in science degrees for some time – began to name and critique some of the subtler forms of sexism that had been there all along. Women scientists today continue to appreciate both the intrinsic rewards of science and the relative autonomy and flexibility that working in research institutions affords – and they continue to need to demand that research institutions do more to shift the structures that produce unequal careers; as you can read in this recent [systematic review](#), there is a long way to go.

In the meantime I hold on to the aspirations of rational judgment and intellectual integrity of which their lives speak so eloquently.

If you'd like to find out more about Claire's research, you can read her book [Irresistible forces: Australian Women in Science](#), published by Melbourne University Press in 2005.

Claire's other scholarly publications are available open access via the [Sydney eScholarship Repository](#).