

## Book Review

### Environmental History

H. GAY. *The Silwood Circle: A History of Ecology and the Making of Scientific Careers in Late Twentieth-Century Britain*. London: Imperial College Press, 2013. ix + 430 pp. \$39.00; £26.00. ISBN 9781783262922

As readers of *Annals of Science* have surely noticed, the eco-prefix can be found everywhere from the mundane to the exotic. You can study ecophilosophy, pray to an eco-religion, vote in favour of eco-politics, have an eco-dinner, and go to bed with eco-pyjamas. For the professional ecologist this ‘use and abuse of vegetational concepts and terms’ (to borrow the title of the ecologist Arthur Tansley’s famous article from 1935) can be bewildering, amusing, exciting, and irritating. After all, such cultural fluff is constantly intruding into what they vigorously defend as a serious science. Ecology is to them hardcore.

To these professional ecologists Hannah Gay’s book will surely be like fresh air, as she has aired out all that cultural and political eco-baggage that may make the ecologist blush. She provides us with a four-hundred-page-long tour de force on how ecology came to life as rock-hard science based on a mathematical footing. Before the Silwood circle and the coming of mathematical ecological modelling, she argues, the field was not even a science. ‘In the first half of the twentieth century ecology was situated in the scientific periphery,’ Gay begins her book, ‘It was widely seen as a domain for amateurs.’ (p. 1). This is a bold claim and surely an unseemly description of prominent movers of ecological science such as Julian Huxley, Charles Elton and Tansley. Indeed, I can’t think of any historians of ecology arguing that ecology in the first half of the twentieth century was amateurish or in the scientific periphery. Yet what that opening does is to allow Gay to claim that ecology as a science really began with the Silwood Circle.

The story that unfolds is that of a loose fraternal group of scientists with overlapping interests that after the Second World War began to coalesce at the Silwood Park campus of Imperial College, London. The key movers in the story were Richard Southwood, Robert May, Gordon Conway, Michael Hassell, Roy Anderson, Michael Crawley, John Lawton, John Beddington, John Krebs and David Rogers. About half of the book discusses how they came to establish their circle through their common interest in putting life sciences on a mathematical footing. The rest of the book consists mostly of biographic entries and homage to members of the circle by laying out their academic profile. Their scientific achievements were impressive and their academic careers were successful, Gay argues.

Gay notes that ‘no woman was part of the inner [Silwood] circle’ (p. 2), which raises the question of why that was the case. It was not because ecology as a field was unwelcome to women, as the circle of botanists that surround Tansley included female scientists. Among animal ecologists the historical tradition was less inclusive, though there are also examples of female animal ecologists in Britain in the period. While the

Silwood circle was active there was also a significant feminist movement, and many women would enter academia. The exclusion of women therefore seems to be one of the circle's chief social characteristics. One is left to wonder why a scholar who was caught up in the feminist movement of the 1960s and 70s like Gay is not discussing head on why these ecologists failed to include women. This is particularly interesting in the case of ecology, as prominent feminist intellectuals have gone out of their way in embracing the field.<sup>1</sup>

The importance of theory and of mathematical modelling within the Silwood circle serves as the key ingredient in Gay's explanation for the academic success of these ecologists. Inspired by Ludwick Fleck's 'thought-collective', Gay explains that mathematical tools became the common language that glued the Silwood collective together. Fleck's thinking and terminology does not dominate Gay's discussion as she uses 'theory only lightly' (p. 318). Though science is clearly situated in the book, she has chosen to do so within the culture of academia rather than within society at large.

One of the more surprising findings of the book is that the Silwood circle hardly cared about environmental issues. For Southwood, for example, the emerging environmental movement represented only fortunate 'opportunities' to make 'strategic' interventions in the environmental debate in order to draw attention and funds to his circle of scientists (p. 74). The contrast could not be starker to other British ecologists such as Huxley and Tansley, and the American counterparts such as Eugene and Tom Odum, who cared deeply about the state of the Earth.

It would have been helpful if Gay would have included other British ecologists who were not part of the Silwood circle in her discussion, at least as a point of contrast. The chief architect of the International Biological Program Edgar Worthington is not mentioned in the book, nor is his charming personal flashback *The Ecological Century* (1983). The co-founder of the Gaia hypothesis James Lovelock is another case in point. They were both prominent movers in the British scene, though not in the direction of the Silwood circle.

In preparing for the book Gay somehow managed to also miss a stunning historical interpretation of the role of mathematically informed ecology in this period. That came in Adam Curtis' second episode of the three hour documentary *All Watched Over by Machines of Loving Grace* which aired on BBC TV in 2011. Curtis, it is worth noting, is one of the world's most prominent documentary filmmakers, having risen to fame with radical productions like *The Century of the Self* (2002) and *The Power of Nightmares* (2004). In *All Watched Over by Machines of Loving Grace* Curtis investigates the historical process of applying mathematical systems theory and cybernetics to ecology, how that created a fantasy of a nature in balance, and, even more problematic to Curtis, a mirror image of society as a self-organizing network without central political control (such as in 'Twitter' informed social movements like the Arab Spring). In other words, Curtis draws direct connections between the story of how mathematically informed ecology came to be and the ways in which political activists began to think about social mobilization. Whether or not Curtis is right is beside the point; the problem is that Gay seems to be unaware of a competing narrative to her book, shown on TV to millions of viewers, that discusses the politics of pure science and the emergence of mathematical ecological modeling.

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<sup>1</sup> For example Vandana Shiva, *Staying Alive: Women, Ecology and Development* (London, 1989).

This criticism should not overshadow the fact that Gay has provided us with the deciding book about the Silwood circle. Its members and acolytes will surely enjoy every page.

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