

NARROW ROADS OF GENE LAND



The Collected Papers of
W. D. HAMILTON

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OF
GENE LAND

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W. D. HAMILTON

VOLUME 3

Last Words

Edited by
Mark Ridley

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Editorial Preface

The Narrow Roads of Gene Land is W. D. Hamilton's title for his collected papers. This book is Volume 3, and completes the set. In the previous two volumes, however, Bill (as I'll refer to W. D. Hamilton here) did much more than simply reprint his scientific papers. For each paper, he also wrote an autobiographical introduction, and those amazing introductions were for many readers the most immediate attraction of the books, notwithstanding the scientific fire-power of the papers themselves. Bill died in the year 2000. He had seen Volume 1 through publication (it came out in 1996). He left almost-publishable manuscripts for Volume 2, together with all the decisions about which papers were to be included. After some editorial work, and guess-work, Volume 2 was published posthumously in 2001; it included papers published up to 1990. Bill intended to produce a Volume 3, but when he died he had done no work on the introductions nor left any indication about which papers would be included.

The editor at Oxford University Press, Michael Rodgers, who had dealt with the publication of Volumes 1 and 2, spoke round and corresponded with a number of people about how to publish Volume 3. I am not sure who exactly invented the form that the book has taken; Luisa Bozzi and Marlene Zuk may have been particularly influential, along no doubt with Michael Rodgers himself. Anyhow, a plan was somehow devised in which Volume 3 would include the papers from Bill's final years, together with more-or-less personal introductions written by Bill's co-authors. The introductions would work rather like Bill's own autobiographical introductions in Volumes 1 and 2, taking the reader somewhat closer to Bill's extraordinary personality and intellect. I was subsequently (though by then Michael Rodgers had retired from the OUP) invited to edit the volume, according to that plan. I accordingly encouraged Bill's collaborators, in their chapters, to write personally about Bill (if they wished to do so) as well as introducing the science. These introductory sections now provide, I believe, another way to get to know one of the great scientist's of the twentieth century, through the eyes of his collaborators. And the papers themselves enable readers to find out about, or remind themselves of, Bill's scientific output for 1990–2000

(though papers continued to be published until 2003). In addition to the co-authored papers, Volume 3 also contains several papers of which Bill was the sole author, and these are reprinted without introduction.

Volumes 1 and 2 both had leading themes. Most of the papers in Volume 1 were about social behaviour, and most of those in Volume 2 were about the evolution of sex. The themes are identified in the subtitles that Bill gave the volumes. By the time Volume 3 begins, Bill's research was moving into a more diversified phase. Bill continued to be interested in sex, and particularly its relation with parasitic disease; several of the chapters in this book are on this topic or something close to it. But he was also thinking about a huge range of topics, and often collaborating with someone else who worked on a particular topic in more detail. Some of the co-authors who have contributed introductions here have remarked how they had little idea that Bill was also working with half a dozen other people on disparate research topics at the same time as he was collaborating with them. I initially hoped to provide a subtitle for Volume 3 that would link its diversified papers into an identifiable theme; but I failed to find one and fell back on chronology. Olivia Judson invented the particular subtitle I have used, 'Last words'.

Bill's thinking ranged from highly imaginative abstract theory, to exact mathematical and computer modeling, and he liked to relate the theory to abstruse natural history, particularly from entomology. Volume 3 shows him at work in all these ways. He began the decade doing parasitically revved up computer simulations of genetic algorithms with Brian Sumida (Chapter 1); he ended it doing simulations of 'pacemakers' in spatial models of host-parasite coevolution, with Akira Sasaki and Francisco Ubeda (Chapter 18). In-between, he helped some astonishing work on antibiologically cured parthenogenesis into print (Chapter 2); wrote about gender with Laurence Hurst (Chapter 4), the weird habits of Strepsiptera with Jeya Kathirithamby (Chapter 6), virulence with Dieter Ebert (Chapter 10), and diversity with Pete Henderson (Chapter 16). He backed the controversial hypothesis that the AIDS pandemic had accidentally originated in the polio vaccination campaign in Africa (Chapter 14). He had some wonderful flights of Bill-style theorizing about Gaia (Chapter 15) and the colours of autumn leaves (Chapter 17). Moreover, the co-authors who have contributed introductions here are by no means the only who collaborated with Bill in these years, though they are a good sample. Bill's sole authored papers look at models of sex (Chapter 7) and—again with some characteristically imaginative thinking—at inbreeding (Chapter 8).

Volume 3 contains almost all the published papers that appeared with Bill's name on after the end of Volume 2. Bill excluded a few minor publications from Volumes 1 and 2—publications such as letters to the editor, and short book reviews (though one more substantial book review made it into Volume 1); he also excluded at least one co-authored paper from the chronological period covered by Volume 2. For Volume 3, I have followed similar principles, though Bill's changing work-mode has suggested some slight modifications. I have again excluded short book reviews, letters to the editor, and minor abstract-length publications, though I encouraged co-authors to quote from and cite sources of this kind (as well as correspondence) in their introductions if they thought it appropriate. I also excluded a posthumous paper that had Bill's name on but that he knew nothing of—the posthumous papers included here are ones that Bill had worked on, contributed to, and knew were destined for submission. Finally, I excluded one or two manuscripts, of conference lectures, that Bill had worked on before he died, and probably would have been published; they seemed to me to be too incomplete for most readers to be able to follow.

On the other hand, I have included some papers that Bill might just not have included—either because he made only small contributions to them, or because he might have judged them too minor. Bill made little contribution to the *Wolbachia* paper (Chapter 2) or the second *Gaia* paper (Chapter 15), but they provide interesting sidelights on the way Bill was working now that he was famous. I also included a couple of lecture-addresses (Chapters 11 and 12), given when Bill received major prizes. They only just make it past the 'published' criterion—technically, they were published, but privately by the foundations concerned. Part of the reason to include them, along with Bill's bravura personal eschatology (Chapter 3), a bibliographical piece (Chapter 9), and a preface to a book on paper wasps (Chapter 13), is their autobiographical interest. Volumes 1 and 2 were rich in Bill's autobiography, and I inclined to stretch the net to admit some autobiography here too. In the end, about 90% of the decisions about inclusion and exclusion were straightforward, but there was a residue that was inevitably arbitrary. The book also includes a chapter by Jeremy Leighton John on the Hamilton archive—'Bill's last great work'—complete with irresistible pictures (Chapter 19), and Alan Grafen's biographical memoir (Chapter 20) by way of overview of Bill's life and work.

Finally, the book is necessarily missing the largest part of Bill's writings from his final decade: the autobiographical introductions to Volumes 1 and 2

of *Narrow Roads of Gene Land*. They amount to more than the length of the papers included in this volume. As Alan Grafen says (Chapter 20), Bill had invented an original way of writing autobiography, and one that is peculiarly appropriate for a scientist. Any one who wants a full picture of Bill's activities in the 1990s will need to add them to the publications reprinted here. If, by some paradox, those autobiographies had been included in this volume, I'd have offered as subtitular theme for Bill's final decade 'collaborations and autobiographies.'

Mark Ridley
Oxford, December 2004

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