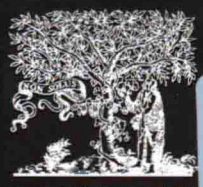

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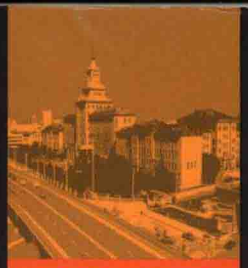

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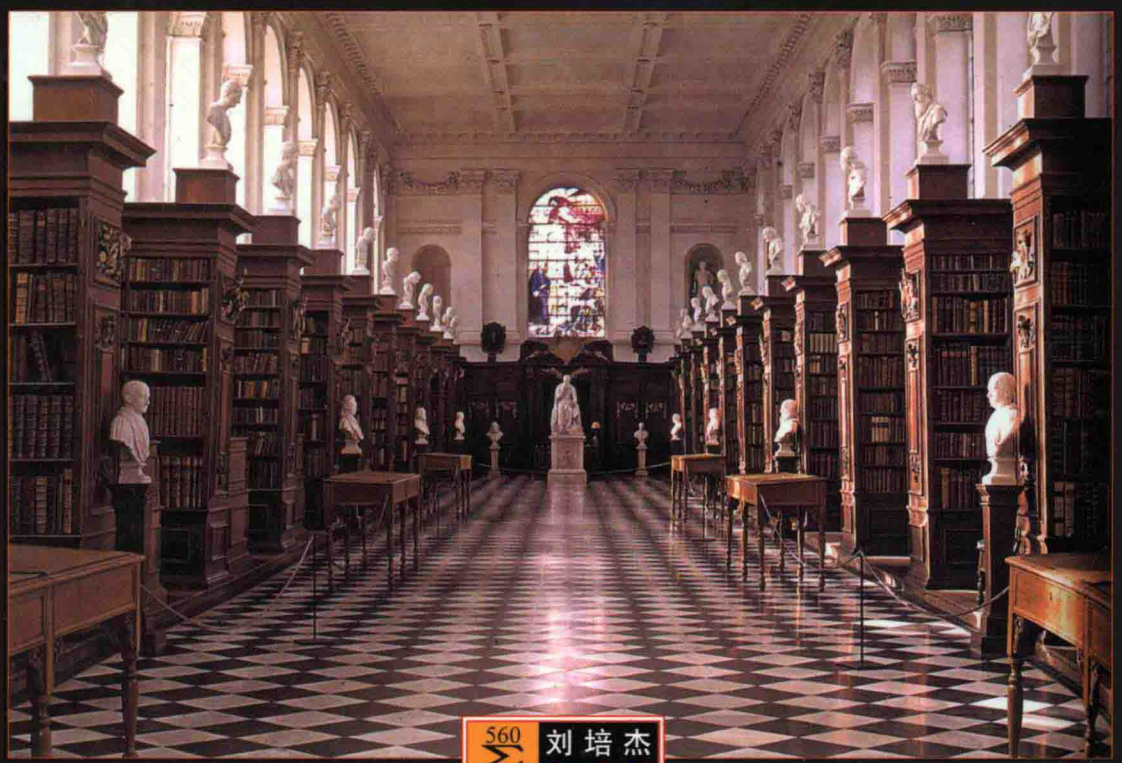

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Introduction

This is an unusual book. Its unusualness and complexity is appropriate for such an unusually inventive scientist, who was *personally* unique, as are so many creative thinkers.

Of the writings of Alan Turing selected here – which comprise most of those to be found in the Collected Works – a number have attracted a special interest, recognition and impact. And this is reflected in the number of commentaries accompanying his "computable numbers" paper, or the late great pieces on morphogenesis and the Turing test. But the collective power and energy of Turing is in the theoretical coherence of this collection of diverse writings. They are diverse in content, in style, in discipline, conveying different facets of a basic quest for understanding of 'how the world computes'.

You will find here no anonymous papers by committees of researchers. Even the occasional unpublished writing by joint authors on closer inspection, turns out to be written by one man. The rewards of a visceral engagement with these original writings are on various levels. A researcher should always have first-hand experience of any writings referred to. But with Turing the sense of the man behind the formal words is ever present. The organic involvement with the technical material, the sense of its emergence – an important concept in relation to Turing – from some more basic level of thought, is ever with us.

And just as the work and the person are unusually at one, there is a personal organic involvement with the writings from many of those paying tribute to Turing's thinking in this volume. We have tried to tap a wide spectrum of responses to Turing, people touched in many different ways by this strangely appealing man.

You will find here much to fascinate or surprise, both from Alan Turing and his commentators. The book intends to show the great value and impact Alan Turing's work continues to have.

There is a living heterogeneity to the content, formatted by a major academic publisher, with the editors aiming at something with at least a hint of the newspaper's immediacy and reporting of events in progress.

In this context, we hope our readers will excuse some rough edges. If you go to the "Afterword" first, you will see a candid description of the history of the "Collected Works of A.M. Turing", from which this book grew. That invaluable four-volume work took over 40 years to complete. The present single volume, containing most of the Turing works and much else, had to be completed in less than three years, much of it under pressure from an anxious publisher, and with doubly anxious editors watching the pages of the calendar turn towards 2012 – and past. We are very grateful to the publisher for initiating this major contribution to the Turing centenary celebrations, and to the contributors and editorial support team at Elsevier for their enthusiasm for the project and their patience with, and understanding of, the difficulties and delays.

With a few more years, we might have done much better, though the result might have been less interesting, and certainly less timely! We took a decision early on to *not* try to subsume the Collected Works. The Collected Works continues to have its own unique place in the Turing scholar's library, its value as an artefact matching the facsimile reproductions of Turing's papers. And the editorial work is by thinkers much closer to Turing and his contemporaries than us, and more often than not no longer available to update their work.

So we have not tried to reproduce the style of an archive, rather aiming at a book to be read, to be dipped into for pure pleasure, to be enjoyed and browsed in office, on train or bus, or accompanying the proposer to some distant scientific meeting or place of relaxation. The rekeying of the historical items presented special challenges, but we hope the benefits in terms of readability and sense of contemporaneity made them worth taking on.

One omission from the Collected Works, spread as it was over four volumes and a decade of publishing, was a seriously comprehensive bibliography. This has been commented on by a number of people, and was something we were anxious to rectify. Turing's biographer, Andrew Hodges, has provided a characteristically careful and insightful summary of the literature at his "The Alan Turing Bibliography" webpage: http://www.turing.org.uk/sources/biblio.html.

We did think of asking Andrew for permission to reprint this. And then came an unexpected discovery, which was the gargantuan work – "Bibliography of Publications of Alan Mathison Turing" – by Professor Nelson Beebe of the University of Utah. This is a bibliography whose scope and attention to detail, and current updated status, is beyond anything we could have provided. For details, see the Bibliography page at the end of this book.

Sadly, we never met Alan Turing, though we have talked to those who did, some of them represented in this book. What we hope the reader will share with us is the excitement of an ongoing exploration of 'how the world computes', and of a distinct sense of Turing's visionary presence accompanying us as we carry forward, in many different ways, his uncompleted work. In the much-quoted words of the great man himself, from his 1950 *Mind* paper on *Computing Machinery and Intelligence*:

We can only see a short distance ahead, but we can see plenty there that needs to be done.

S. Barry Cooper
Jan van Leeuwen

Spring 2013

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