

BOOK REVIEW

Excessive praise for an extraordinary chromosome

The X in Sex: How the X Chromosome Controls Our Lives

D Bainbridge

Harvard University Press, Cambridge, MA; 2003. 205 pp.
£15.50, hardback. ISBN 0-674-01028-0.

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Reviewed by G Hampikian

David Bainbridge sums up his thesis in the clever title, 'The X in Sex: How the X-chromosome controls our lives.' From there the book grows in cleverness and wit, providing student and expert alike with a painless and entertaining education in X chromosome science and lore. The chatty style, which consists of linked anecdotes and colorful metaphors, follows in the footsteps of many wonderful BBC broadcasts, and could be easily converted into a teleplay. It is also curiously similar in style to Steve Jones' new book on the Y chromosome, *Y: the descent of men*. At times, Bainbridge's prose becomes cutesy: 'Think of sex as a restaurant, with sex chromosomes for customers. This may not be the kind of restaurant you want to eat in, but bear with me.' What follows is a rather long but humorous analogy of questionable pedagogical value. If this conversational approach endears Bainbridge to his lay readers, then more power to him, but the expert may find it a bit tedious. Fortunately, these excesses are rare. I especially enjoyed the discussion on 'the bleeding disease' (hemophilia), which explains that rabbis in the Late Roman era allowed brothers of bleeders to skip circumcision. The author points out that this exception to rabbinical law was granted even if the brothers had different fathers; thus the ancient Jews may have understood the maternal role in recessive X-linked diseases.

The fact that the main thesis of the book, the pre-eminence of the X-chromosome in everything from sex-determination to social graces, is not convincingly demonstrated, did not diminish this reader's enjoyment of the text. The racy cover and provocative chapter titles (The Duke of Kent's Testicles) also got the attention of my wife (an engineering professor) and my college student son (philosophy major); and I was able to read aloud several sections to their apparent delight. For example, they were interested to learn that the Duke of

Kent's dubious honor is that he is the likely source of the original hemophilia mutation that plagued Britain's royal family. The author speculates, in this brilliantly funny discussion, that a cosmic ray struck the chapter's eponymous anatomical feature, and thus created the genetic error.

The book could be improved by more illustrations, especially when discussing complex structural concepts like the evolution of gene duplications in color vision. In fact, the whole section of the book on vision was a bit convoluted and not in keeping with the easy-reading style of the rest. But on the whole, the clarity of the language and abundant use of metaphor provide more than adequate imagery. I was glad to see that the author provided useful but not excessive examples of sex determination in non-human species. He cites some of the seminal work done by Australians on our distant mammalian relatives, the egg-laying monotremes and the pouched marsupials. The book also contains a very useful appendix that directs the reader to both the classic original papers (for example, those concerning X-inactivation by Barr, Ohno and Lyon) as well as leading-edge reviews and discussions by some of the more controversial figures in the field.

When the author delves into philosophy and history, for example in reference to Simone De Beauvoir, we are sometimes given tantalizing morsels without enough background to appreciate the context. While Bainbridge goes to great efforts to place the science in context, he skimps a bit on providing anything but anecdotal biographies of characters who may not be familiar to all readers. For this he can be forgiven, since the book is kept to a tidy 205 pages (including appendices). While *The X in Sex* is not a sufficient primer on genetics for the true novice, it makes an excellent addition to the expert's library (worth its price in lecture anecdotes alone), and should prove an enjoyable read for anyone who is scientifically literate.

G Hampikian

Department of Biology, Boise State University,
Boise, ID 83725, USA

E-mail: greg@crimescience.com

Co-author with Calvin Johnson of *Exit to Freedom*, the only first-hand account of a prisoner exonerated by DNA evidence, University of Georgia Press, 2003.