

## Book Reviews

*The Human Genome*. By TOM STRACHAN. BIOS Scientific Publishers. 1992. Pp. 160. £13.95/US \$28.00. ISBN 1 872748 80 5.

The idea of obtaining the complete DNA sequence of all  $3 \times 10^9$  base pairs of the human genome first surfaced at a meeting in Santa Cruz in 1985. It was and still is an audacious concept, and it is not surprising that it has fuelled much controversy. Proponents of the Human Genome Project, such as James Watson, view the genetic messages encoded within DNA as providing the ultimate answers to the chemical underpinnings of human existence. Opponents see it as mega-science, and likely to divert scarce resources away from more immediate problems in cell biology. They ask why we should sequence the entire genome when more than 95% of it has no apparent function. Ethicists are concerned at the possible abuse of detailed knowledge of human genetic structure. Recently national and commercial rivalries have emerged over the question of the ownership and patentability of specific DNA sequences.

Despite these problems it has become clear that the Human Genome Project is already proceeding at a formidable pace, and that the issue is no longer whether it will happen but rather how and when. Should genetic mapping precede physical mapping, or should the two go hand in hand? Should there be tight regulation of genome projects or loose coordination? Can anyone play, or is mega-science only for mega-scientists? Who is going to coordinate the biggest project ever attempted in the biological sciences?

The answers to these questions must involve discussions amongst groups other than molecular geneticists. Ideally they should include the lay public whose taxes will pay for the project. However, it is a depressing fact that the average well-educated but non-scientific person has only the faintest idea of what a genome is, and would be baffled by the techniques of mapping and sequencing. He or she has probably mastered the concept of a gene and the basic principles of simple inheritance. But the astonishing varieties of gene structure and the technical complexities of DNA analysis would be too much. This is especially true in Britain, where membership of the chattering and opinion-forming classes usually requires profound ignorance of and indifference to all things scientific.

Tom Strachan's book aims 'to provide non-

specialist and specialist alike with a concise description of our current knowledge of the human genome'. By non-specialist he means (or should mean) someone who is not a molecular biologist, but who still has an honours degree in chemistry or the biological sciences. This is emphatically not a book for the lay person and should be kept well away from any paid-up member of the chattering classes. It would simply confirm their latent opinion that most scientists are overpaid technicians whose ability to communicate with 'normal' people has largely disappeared.

*The Human Genome* is written in a style close to shorthand. It is probably as dense and tightly packed a piece of writing as will be found outside a dictionary. Although line drawings, tables and the odd photograph break up the text, there is no interrupting the relentless flow of fact that must be absorbed, digested and made sense of before the next section is tackled. If this sounds critical, it is not meant to be. The command of the factual material is excellent; the descriptions of techniques and the types of data they generate cannot be faulted; there are arrays of helpful tables and a well-constructed index. It is a book that can be browsed in with pleasure.

But for whom is it intended? One of the few services that a reviewer can perform for his limited group of readers is to spare them the trouble of acquiring and assessing irrelevant books. I have already suggested that the non-scientist might let this one pass. But any other biologist with a few pounds to spare could do worse than buy *The Human Genome*. It is not something to read in one go, but it is a book to keep on a handy shelf for occasional perusal. In the hope that today's medical undergraduates will be tomorrow's opinion makers, I intend to recommend it to my students.

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### In search of the holy engrailed

*The Making of a Fly*. By P. A. LAWRENCE. Blackwell Scientific Publications Ltd. 1992. Pp. 228. £16.95. ISBN 0 632 030 488.

I received my review copy of Peter Lawrence's book as I was about to set off to a meeting in Japan and facing the prospect of having to give six lectures on