

winist as the result of the accumulation of adaptively-favoured variants of individually small effect. Now *that's* what I call evolutionary biology.

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Human Genome Evolution. M. Jackson, T. Stachan and G. Dover (eds). BIOS Scientific Publishers Ltd, Oxford. 1996. Pp. 320. Price £60.00, hardback. ISBN 1 859960 95 2.

I remember Peter Goodfellow introducing a lecture on sex-determination by saying that as molecular biologists get older they began to think more and more about evolution. Rather as if, having spent your early years working out what a system was, you then reflect on how it got to be like that. The 'Why are we here?' reflection of middle age angst perhaps. You can see this motive coming out to various degrees in the twelve contributions to this book — *Human Genome Evolution*. To some this means describing the human genome, or rather their own particular patch, in sometimes excruciating detail with a few token words about evolution thrown in for good measure. To others, most notably the Marks Stoneking and Jobling, the accent was on human evolution and what variation in the uniparental systems of mitochondria and the Y-chromosome had to say about it.

In the first essay David Cooper peers at tea leaves emanating from his human mutation database to advance the, entirely plausible, hypothesis that the distribution of mutational events seen in the vast numbers of pathological mutations discovered over the last decade or so mirror those to be found in genome evolution in general. There follows, on the other hand, a nice explanation of

exon-shuffling by L. Patthy who explains the importance of this device, virtually unknown in molecular pathology, in the diversification of extracellular proteins — in particular those in the matrix and blood-clotting cascades — allowing them to carry a vast range of different binding domains.

Since half the fun in evolution is the licence to float daring speculation in the certain knowledge that you will never be proved wrong, I like the suggestion that the Metazoan radiation in the Cambrian, when the fossil record shows a spectacular increase in the number of multicellular organisms, was only possible because exon-shuffling had allowed the construction of new proteins as communication networks between cells. Also in the daring category is the suggestion in John Hancock's essay on microsatellite evolution and cryptic simplicity (*sic*) that the instability of triplet repeats and their associated disorders (Huntington's, myotonic dystrophy etc.) is causally connected to the rapid increase in brain complexity in recent human evolution; to paraphrase the words of the author, 'slipped strand mispairing made us what we are today'. I hadn't thought of it quite like that before. Other chapters — sadly none of which were written by the book's editors — delve into the intricacies of HLA (*de rigueur* I know but aaaargh!), mini- and microsatellites, *Alu* repeats and sex chromosome evolution.

Altogether a fine and comprehensive book whether to use as a source — and most chapters are extravagantly referenced — or to find out what is going on in human genome evolution. Most chapters are well written and some are models of clarity, for instance Nicola Royle's on telomeres, but in others the danger signals in the prose like 'towards a greater understanding of' or 'gain fresh insights into' were sure signs that you were going to have to work jolly hard to do so.

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Books received

Search for the Tourette Syndrome and Human Behavior Genes. David E. Comings. Hope Press, Duarte, CA. 1996. Pp. 309. Price \$29.95, paperback. ISBN 1 878267 41 8.

The Gene Bomb. David E. Comings. Hope Press, Duarte, CA. 1996. Pp. 304. Price \$25.00, paperback. ISBN 1 878267 39 6.

Nucleic Acids in Chemistry and Biology (2nd edn). G. Michael Blackburn and Michael J. Gait. Oxford University Press, Oxford. 1996. Pp. 544. Price £29.94, paperback. ISBN 0 19 963533 1.

Evolution of Social Insect Colonies: Sex Allocation and Kin Selection. Ross H. Crozier and Pekka Pamilo. Oxford University Press, Oxford. 1996. Pp. 306. Price £19.95, paperback. ISBN 0 19 854942 3.