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Book reviews

Human Genetics: Problems and Approaches (3rd edn). F. Vogel and A. G. Motulsky. Springer–Verlag, Berlin. 1996. Pp. 851. Price £69.00, hardback. ISBN 3 540 60290 9.

This book should be essential reading for all geneticists, especially trainees, involved in the field of human genetics. It aims to 'provide a treatise on the conceptual basis for the entire field of human genetics'. This is exactly what it does, and it does it well. As such it covers an enormous breadth of information. Reading the contents alone sparked a sense of anticipation that made this book essential bedtime reading! What's more, the easy readability, good presentation and simple illustrations throughout stopped me falling asleep — there's nothing boring here. In 750 pages plus 100 pages of appendices, Vogel and Motulsky's *Human Genetics* covers the field of human genetics from all angles starting from an historical perspective with the Greeks, Mendel and Galton. A tables head on some of the issues of the Eugenics Movement and the moral and ethical lessons from the first half of this century and discusses those challenging us in the next. The bulk of this fascinating book, however, goes on to explore, explain and expand on the principal discoveries of modern genetics, including recent techniques in cytogenetics, DNA and molecular technology and particularly mutation detection, analysis and new mechanisms.

So what's new compared with the 2nd edition? *Human Genetics — Problems and Approaches* has now been divided into 14 sections compared to the previous 7. This partly reflects incorporation of entirely new sections, such as the 'Genetics of Embryonic Development' and 'Multifactorial Inheritance' whilst other fields, such as 'Somatic Mutation, Cancer, and Ageing', have now expanded sufficiently to justify their own section. Recent advances are included particularly where novel mutations have led to an increase in our understanding of the basis of genomic mechanisms, for example, genomic imprinting and triplet expansion. Tables and lists have also been jazzed up making them more readable. I didn't find too many major mistakes, although there is a real howler in the diagram explaining imprinting which has been incorrectly copied from Halls' original. That aside, I would heartily recommend this book.

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Gregor Mendel — The First Geneticist. Vitĕslav Orel. Oxford University Press, Oxford. 1996, Pp. 363. Price £29.50, hardback. ISBN 1 854774 9.

Any actions or events, human or physical, can obviously be interpreted in at least two ways: with reference either to their antecedents or to their consequences. The endeavours constituting science are no exception. An enlightening account of any scientific innovation will consider its sources, and also what it has led to, what avenues it has opened up. Tensions arise when these two lines of interpretation are contemplated in inextricable conjunction with one another. What has been called scientists' history of science insists on the conjunction. Mendel, to take the case before us, must be read, by the scientist, not only as responding to what went before but as making possible, anticipating, even groping towards what Bateson, Morgan and others were to do years later in the next century, decades after Mendel's death. Historians' history of science insists, no less strongly, that no-one could have been influenced by what was not available because it had not yet happened, so that we must never confuse how it was for Mendel in his time and circumstances and how it was for others, including ourselves, subsequently. Hindsight, anachronism, teleological fallacies implying backwards-in-time causation — all such are eschewed by the historian writing on Mendel. The tensions between these two lines of interpretation run right through Dr Orel's splendid book. But he leaves us in no doubt as to his own allegiances. He writes as a loyal Czech, anti-Stalinist and, above all, as a scientist. His very subtitle is anathema to the historian. There is, until well into the twentieth century, no such institutional and intellectual role as geneticist, the historian will protest. Mendel's influence was decisive in the emergence of that role, but he was no more the first geneticist than Machiavelli was the first spin doctor. The historians' views of Mendel are, however, comprehensively and conscientiously discussed and so made accessible by Orel's book. Some years ago, Robert Olby then at Leeds — and with a little help and encouragement from your reviewer — characterized what it was to be a Mendelian around 1902 when the word first became current. Olby then argued that, on that characterization, Mendel was himself no Mendelian. Olby went on to ask what it was Mendel was being and was attempting, given that he was not doing Mendelian genetics. Olby's (and others') answer was that Mendel's principal preoccupation was not with heredity and its laws, but with hybridisation as an alternative to creationism and to