

has it been so replaced? That is the whole question. Teilhard certainly did not show that man is in any way exempt from 'indifference'. If indeed (p. 201) "the universe is a collector and conservator... of persons" it must be added that many are produced, and few chosen.

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Efficiency in plant breeding. Edited by W. Lange, A. C. Zeven and N. G. Hogenboom. PUDOC, Wageningen, The Netherlands. 1984. Pp. 383. Price: Dfl 110.

This handsomely produced volume is a curate's egg of a book as, alas, is usually true of symposium proceedings; the occasion was the 10th Eucarpia Congress, held at Wageningen in 1983. Roughly 40 per cent of the text is relevant to the title, under the heading *Improvement of selection methods* and the rest is taken up by papers on *Breeding at the cell level*, abstracts of posters (78 wasted pages there, cost about 22 Dfl) and miscellaneous formalities, including an index (curiously entitled *Index of descriptors*).

On the main theme, no coherent view emerges, which is hardly surprising because economics does not intrude. We shall only be able to talk sensibly about "efficiency" in plant breeding when we can talk about an, in some practical sense, optimal allocation of resources. (Finney wrote about one aspect of this problem in 1958 and his paper is not even cited!). The papers in this section are very uneven; they range from a useful review by Gallais of indirect selection and a crisp survey by Snape and Simpson of early generation selection in inbreeders to the vaguely physiological and the genetically trivial. Several papers bear upon the problem of intergenotypic competition; conventional wisdom has it that competition between unguarded plots tends to bias means and inflate errors, thus impeding efficient selection. No one seems to remark on the flatly contradictory conclusion reached by Spitters on the basis of physiological modelling assuming multiplicative interaction.

The *Breeding at the cell level* bit is equally heterogeneous. It contains a weighty and well balanced review by Schilperoort of biotechnology and genetic engineering but several trivia too. Of general interest is the mounting evidence, adduced in several papers, that *in vitro* selection at the cell level can, sometimes at least, produce putatively useful mutants after regeneration. Plant breeders will watch with interest for signs of practical impact. A few years ago some of the molecular biologists were saying that genetic engineering was about to revolutionise that fuddy-duddy, old fashioned plant breeding. I found it encouraging that such views are no longer heard; a certain realism now seems to prevail. Schilperoort doesn't believe in revolutions and King disavows any "intention... to sell anybody anything".

As to the posters, some were obviously interesting and no doubt they enlivened the coffee-breaks and generated useful personal contacts. The best will no doubt be published ultimately in ordinary, refereed papers but many will be decently buried. What is the point in cluttering an already over-crowded literature with 78 pages (prodigally wasteful of space, too) with stuff that either *will* be published or should *not* be?

All in all, I enjoyed this book and am glad to have the review copy for occasional reference. But the curate's-egg-symposium is an expensive way of doing things.

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Mendel. Vitezslav Orel (translated: S. Finn). Oxford University Press, Oxford. 1984. Pp. 118. Price £7.95 (HB), £1.95 (PB).

This wee book is certainly an excellent corrective to the usual student text book hagiography with which we are so often regaled—the "Mendel got there first but then missed the boat" presentation.

Orel carefully documents the active scientific milieu into which Mendel came, and describes the international science to which he was exposed during his time at the University of Vienna. He expounds the history of involvement in horticulture and natural science at the monastery in Brno before Mendel's entry and then describes the experiment on *Pisum* in great detail, but with the use of modern technical terms which I find unhelpful. It is a pity that more space is not given to his work on the constancy of hybrid forms in the hawk-weeds, because, as his overriding interest was in the origin and generation of hybrids, it is likely that it was of as much importance to him. The book covers his period as abbot and concludes with a pious tribute to the influence of his work on science up to the present day.

There are some omissions to irritate the historian of science; for instance, nothing on the question of why Mendel did not seek to disseminate his work more widely, since he clearly had the means and the contacts.

However, a geneticist could do worse than read Orel and follow it up with Olby (*The Origins of Mendelism*, pub. Constable). The exercise should at least raise questions as to the prudence of rewriting scientific history in our text books to accommodate the latest fads and fashions.

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