

## Book Reviews

*Dictionary of Biotechnology: in English–Japanese–German.* By ROLF SCHMID and SABURO FUKUI. Berlin, Heidelberg, New York, Tokyo: Springer-Verlag, 1986. 1350 pages. DM 298. ISBN 3 540 15566 X (Berlin), 0 387 15566 X (New York).

Most of us are so used to assuming that all good science in our field is published in English that we become dismayed, if not indignant, on being faced with a paper in another language. *Genetical Research*, like most other ‘Western’ journals in the broad field of genetics and molecular biology, only accepts manuscripts in English, and our standard offer to include a summary in the language of the author(s) has only once been taken up. This is fine for the scientist trained in English as long as we can force others who want our attention to write in English, which editors and referees must do their best to correct where necessary. But perhaps there is a trace of chauvinism in this easy insistence on the dominance of scientific English.

The authors of the book under review do not consider it satisfactory to ignore other languages in the rapidly developing field of biotechnology, since many industrial scientists publish in their own language in journals of their own country – particularly in Japanese and in German, and surely in French and Spanish. Several years of collaboration between German and Japanese scientists, with the support of their governments, have produced this trilingual dictionary, whose general structure is best summarized by the following quotation from the publisher’s advertising leaflet: ‘It contains nearly 6000 terms and is divided into three main parts. (1) Alphabetically listed technical terms in English accompanied by translations into German and Japanese. (2) Alphabetically listed technical terms in Japanese accompanied by translations into English and German. (3) Alphabetically listed technical terms in German accompanied by translations into English. Each of the main parts is followed by a list of synonyms in the word-entry language. An appendix defines over 300 abbreviations using all three languages... For the sake of easier legibility, the Hepburn method has been

selected for transcribing the Japanese terms into the Roman alphabet (“roma-ji”). The division of lengthy transcribed terms into roots conforms with a didactic approach.

First it must be said that the book is very well produced, strongly bound with very clear large lettering and plenty of space between successive terms, making it particularly easy to read – and this surely also applies to the Japanese script, always given above or below the corresponding term in roma-ji, which can be read and (no doubt) mispronounced.

The next question is how complete the list of terms is. This is perhaps a matter of opinion, but it is not easy to find a term omitted which one thinks ought to be there. I did not find the terms selfish DNA, hybrid dysgenesis, P element, neutral genes (which are not very biotechnical), but transposon, plasmid and numerous other genetical terms are present, including chromosome, chromatid, chromatin but not synaptonemal complex nor chromomere, metaphase, anaphase, etc.; but again I am not suggesting that these should be included in the next edition, nor Mendelism and Darwinism. For we find linkage, linkage-group, -map and -value, natural selection and population genetics. There are also the names of many human diseases with a genetic component, many chemicals including antibiotics, amino acids, enzymes, etc.; bacteria such as *E. coli* and *Klebsiella* but not *Erwinia*, *Salmonella* but not *Shigella* (surprising in view of the pioneering role of *S. dysenteriae* in evolving R-factor-mediated antibiotic resistance in Japan). Another surprising omission is terms relating to silk moth culture and technology, on which, I understand, most research is published in Japanese. I found silk worm but not *Bombyx mori*, nor sericulture, mosaic, gynandromorph or pupa. We find, however, puff (referring to chromosomes), pseudogene and *Pseudomonas aeruginosa* but not *Ps. putida*.

When we look at the Japanese terms in comparison with the English ones, the book becomes quite absorbing to dip into. Sperm, spermatid, spermatocyte and spermatogonium are, respectively, seishi, seishi-saibu, seibo-saibou and seishiki in Japanese; Southern blot and Hill reaction have the names transposed into

sazan and hiru (will our own Professor Sazan be connected with the Southern blot invention when he travels in Japan?, and will Hill be recognized as hiru?) Cake is translated as Kuchen in German and keeku in Japanese, and this will interest those who either have a sweet tooth or are interested in Belebtschlamm alias yojou-kasseiodei, in other words activated sewage sludge. Or, a last example, the English word Tea is cha in Japanese, which clearly explains both the colloquial English phrase 'a cuppa cha' and also the equally English word charlady for the original tea-maker to Gentlemen in the British East India days, now a visiting house-cleaner who likes to have the tea made for her by the lady of the house.

Nothing I have written above should be taken as a criticism of this dictionary. It contains a very broad and comprehensive selection of terms relevant and possibly relevant to biotechnology, and should be of considerable value to Japanese, German and British speakers who want to understand each other's scientific literature. A non-technical translator from one to another of these languages should certainly find it invaluable in producing a meaningful translation. The interest in comparing words or phrases in the three languages will be an added bonus to the curious. The price, about £100 sterling, is high by our standards, but not perhaps excessive for a unique volume of 1350 pages. It should find its way into the libraries of the better-off biotechnology firms with the right international research interests, and into major scientific libraries. I should add that, if Japanese texts were written in roma-ji, it would make the task of non-speakers of Japanese very much easier, since this book does not help one to read Japanese print in its normal script.

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*Differentiation of Protoplasts and of Transformed Plant Cells.* Edited by J. REINERT and H. BINDING. Vol. 12 in the series: Results and Problems in Cell Differentiation (Editors W. Hennig, Nijmegen and J. Reinert). Berlin: Springer-Verlag. 1986. 157 pages. DM 98. ISBN 3 540 16539 8.

The editors of this volume made a commendable attempt to provide a title which draws together its disjointed contents. Three of the four chapters are concerned with protoplast isolation, fusion and differentiation. The final chapter is only very loosely related to the others, and deals with molecular aspects of genetic transformation by *Agrobacterium* and by cauliflower mosaic virus. It is true that both parts of the book describe different ways of creating new plant genotypes, but there are other approaches to plant genetic manipulation which are not reviewed, and so its contents are not easily justified in those terms.

The first chapter is a review of the Isolation and Regeneration of Protoplasts from Higher Plants, and was contributed by Drs Maheshwari, Gill, Maheshwari and Gharyal of the University of Delhi, India. It summarizes much research on isolation and culture methods, and factors affecting cell division and differentiation. In excess of 200 references are cited and many are tabulated, so that those relating to specific plant species are easily found. This comprehensive survey of the literature is potentially very useful to newcomers to the field. The second and third chapters were written by Drs Binding, Krumbiegel-Schroeren and Nehls, the topics being Protoplast Fusion and the Development of Fusants. The subdivision of this material into two chapters is justified by the depth to which this subject is treated. As with the first chapter, many references and summaries of the literature make these chapters valuable sources of information. The single bibliography which serves chapters 2 and 3 contains more than 300 references. These first three chapters are more than literature surveys, however. Any scientist contemplating embarking on a research programme which aims to exploit protoplast isolation and fusion would learn much from reading these chapters. One doubts that there will be many such scientists, though, given the limited applications to which protoplast fusion can be put. It is unfortunate that at the time that this book was conceived and assembled, DNA-mediated transformation of protoplasts was in its infancy, and so was not included as a distinct section of the book. Such an inclusion would have made the volume much more attractive, since this is one area where protoplast technology is of growing importance.

The final chapter on the Molecular Biology of Plant Cell Transformation was contributed by N. S. Yadav of E. I. du Pont de Nemours and Company. The bulk of this chapter is given over to a detailed account of the molecular biology of crown gall disease. A smaller proportion is concerned with the use of T<sub>1</sub> plasmid and cauliflower mosaic virus as gene vectors. As with the earlier chapters, this one is well served with references, but none is later than 1985. The problem of publishing reviews in rapidly developing areas is that they are out of date almost as soon as they are published, and this one is no exception. To its credit, the review of crown gall disease is very good, although one could find similar reviews in other books and journals.

Those people who buy this book are likely to do so for the content of the first three chapters, which provide a detailed source of information. At just over one hundred pages, though, this information comes expensive.

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