
Book Reviews

Slessor, M.; Lewis, C.: Biological Energy Resources.

London: Wiley & Sons 1979. 192 pp., 27 figs., 34 tabs. Hard bound £ 8.50.

The authors of this book have explored the possible usefulness of a wide spectrum of biological energy resources. They have not only described the many ways in which biological energy resources could be used, of which there is no shortage of examples in the literature, they have also analysed the technical as well as economical feasibility of each potential source.

One of the values of the book, among others, is that the authors take an unbiased stand and do not proclaim biological energy resources as the ideal path to future energy supplies. In fact, the authors have shown by means of sound calculations that some propositions put forward elsewhere are hardly economical, while others, given the right circumstances, are e.g. a biogas generator will generally be economic in the warmer climates but not under cold climates where the input of energy approximates the level of the output!

They also rightly point out that a rise in the price of the conventional energy sources, oil and gas, does not necessarily make the alternative biological energy sources more attractive. Such a price increase percolates through the whole system, also raising the prices of manufacturing processes, raw materials, transport, capital investments etc. which are also required for the large-scale bioenergy processes, consequently also raising the price of bioenergy. Several of the proposed bioenergy programs are in fact related to our present waste-full way of life e.g. the utilization of heat recovery techniques from municipal refuse etc. Such schemes have become economical because the high costs of removal or cleaning of our waste have to be paid anyway.

The authors have done a very laudable job, especially in providing the solid facts which will be of great help to researchers as well as decision makers.

G.W.M. Barendse, Nijmegen

Harten, A.M. van: Mutation Breeding Techniques and Behaviour of Irradiated Shoot Apices of Potato. Agricultural Research Reports 873.

Wageningen: Pudoc, Centre for Agricultural Publishing and Documentation 1978. 132 pp., 23 figs., 16 tabs. Soft bound Dfl 30,00. Experiments on the induction and use of induced mutations in potato have been carried out in several countries for a long time but on rather a limited scale only. Thus, not much has been achieved in terms of practical breeding. The reasons, apart from occasional prejudices, are such specific limitations and technical problems as the layered structure of shoot apices leading to periclinal chimeras and the thereby resulting difficulties in isolating induced mutations.

In this booklet, based on a doctoral thesis, extensive studies carried out for more than eight years at the Agricultural University of Wageningen are reviewed. New knowledge on several basic problems was obtained and competent and realistic conclusions are drawn. The treatise begins with a critical review of the literature on mutation work in potato. One of the chapters describes personal experiments: the initial efforts to produce, by crosses, a tester clone at the dihaploid level with marker genes in a heterozygous condition and suitable for all further mutation studies. This goal had to be abandoned, however, because of high susceptibility to diseases, poor growth and other drawbacks of the clones obtained. Therefore, the experiments were started with other suitable material in 1972. Studies on the formation of adventitious roots and shoots from potato leaves, leaf parts, and stems in vivo also did not give adequate results. For instance, from more than 100,000 leaves and leaflets, only about 120 shoots of possible adventitious origin could be obtained, but hardly any of them were of L-I origin. However, recent investigations on techniques in vitro are more encouraging and will be published later. Then, after a review on organization, post-irradiation behaviour, and histogenic effects in shoot apices, diverse experiments are described on radiation-induced damage and recovery of tuber eyes. All in all it is a good publication and useful for the specialist.

F. Scholz, Gatersleben

Stahl, F.W.: Genetic Recombination.

San Francisco: Freeman 1979 333 pp., 264 figs. Hard bound \$ 12.90.

The author has attempted to deal with a basic biological phenomenon, 'Recombination', in a very general way by trying to amalgamate the widespread information which has been obtained over the years in eukaryotes as well as in prokaryotes. The main merit of this book is that the various steps of recombination are dealt with irrespective of the organism. This requires, however, a selection which certainly depends on the authors own vast experimental experience. The fungi lack a bit of attention and also publications not written in English, as in most books by English-speaking authors. From this point of view, it is interesting to compare this book with the very comprehensive book of H.L.K. Whitehouse (Towards an understanding of the mechanism of heredity, 3rd edition, Edward Arnold, London 1973).

Stahl's book is written quite fluently, figures are excellent and instructive and the 'problems' at the end of the chapter are very useful. This book is a very valuable tool for all scientists interested in the field, however, the referee has doubts whether 'undergraduates in genetics would find it suitable', as stated in the preface.

K. Esser., Bochum