

Treatment of Industrial Effluents, Edited by A. G. CALLELY, C. F. FORSTER & D. A. STAFFORD. Hodder & Stoughton, London–Sydney–Auckland–Toronto: xii + 378 pp., figs & tables, 22.2 × 14 × 2.5 cm, £7.95, 1977.

It is a continual source of surprise that the well-worn paths of effluent treatment are so poorly documented. It is, therefore, particularly worth while to be able to recommend a comprehensive and yet low-cost publication which deals as effectively with the general principles of effluent treatment as it does with specific techniques for individual industries.

Thus, as well as concise monographs on the treatment of wastes from paper-mills, dairies, petrochemicals, textiles, leather, farms, food factories, coke ovens, pharmaceuticals, fine chemicals, detergents, oil-spills, etc., there are good background papers on a wide range of physical, chemical, and biological, treatment processes, and also detailed examinations of the management and legal aspects of pollution.

Michael G. Royston
(*Nr Geneva, Switzerland*)

Beyond the Age of Waste, by D. GABOR & U. COLOMBO with A. KIND & R. GALLI. (A Report to the Club of Rome.) Pergamon Press, Oxford–New York–Toronto–Sydney–Paris–Frankfurt: xviii + 237 pp., illustr., tables, 21 × 14.8 × 1.4 cm, paperbound, \$12.50, 1978.

This is a translation of the book published already in Italian. The Authors were members of a working party appointed by the Executive Committee of the Club of Rome in 1973 'to identify areas in which progress of science and technology can increase Man's capacity to exploit and regenerate natural resources in order to sustain a satisfactory standard of living for the people of the world'—a world stated to be 'at a new and critical stage' as a result of unprecedented population growth and the accompanying crisis of oil and raw materials. Chapters are devoted to Energy, Materials, Food, and Climate; a final chapter summarizes their main conclusions and calls for 'more systematic and rational approaches to political and managerial problems' in addition to the increased scientific and technological research advocated in the preceding chapters.

The conclusions reached in this wide-ranging study are cautiously expressed and free from the exaggerated pessimism or facile optimism that is sometimes to be found in books of this kind, e.g. (to quote from the chapter on Energy) 'fusion power cannot yet be considered a source of energy for the future'; the harnessing of solar energy poses formidable difficulties; and the development of nuclear fission energy, although it represents 'an unavoidable choice for the industrialized countries', involves 'serious safety and security problems with related environmental effects.' Nevertheless, the Authors express the belief that 'given adequate resources ... science and technology could provide adequate solutions to the long-term energy problems on a world-wide basis.' The necessary choices should not, however, 'be made in a technocratic way,' and scientists and technologists have a responsibility for educating governments and

public opinion to a proper understanding of the issues involved.

Attention is paid in the book to the social and environmental implications of technological development, and a statement by the Science Ministers of the Organization for Economic Cooperation and Development is quoted to the effect that 'in future, technology must be socially acceptable.'

No reasonable person would dispute these conclusions, but, as the Authors of the study themselves point out, 'one of the basic shortcomings of existing political systems is the inability to tackle longer-term problems,' and it remains to be seen whether human greed and short-sightedness will permit mankind to adjust itself to the consequences of the population explosion in a rational manner and without catastrophe.

The text is abundantly illustrated with diagrams etc., although some of these are scarcely comprehensible to the layman—such as Fig. 38 on page 119, in which, incidentally, gold is given a 'long-term average price' of US\$ 25 per ounce! The text suffers from numerous misprints and other errors, reflecting no doubt a shortage of qualified proof-readers.

Cecil E. King
(*London, United Kingdom*)

Environment, Planning, and the Multinational Corporation, by THOMAS N. GLADWIN, Graduate School of Business Administration, New York University, New York, and Centre d'Etudes Industrielles, Geneva, Switzerland. Jai Press, Greenwich, Connecticut 06830: xix + 295 pp., 8 figs, 49 tables, 23.5 × 15.5 × 2.5 cm, US \$23.50, 1977.

Continued pressure from groups expressing concern for the environment has prompted major changes in the management of multinational corporations. Industry has responded in innovative ways to this added pressure to 'clean up', and has attempted to mould itself to preserve the character of its surroundings. Thomas Gladwin has provided a unique insight and point-in-time description of the state of integration of environmental concerns into the planning processes of multinational corporations (MNCs).

The Author first provides a description of the current state of environmental planning of selected MNCs. He then establishes criteria which are statistically correlated to provide a measure of what he terms 'ecological incorporation'.

Thomas Gladwin concludes that MNCs engage in ecologically sound and socially desirable behaviour largely as a result of external pressures. He suggests that it is essential for ecological issues to be considered early in the planning process.

Environmentally oriented project-planning involves the integration of many activities, and commonly includes the employment of professional environmental scientists with specialized skills as well as the provision of a forum for public participation. The Author concludes that, in addition to systemization, the best planning processes should also have some formal provisions for an environmental audit.