

Thermohaline Circulation over the Continental Shelves". Part IV contains four papers on the theme "Studies of Substrate Response". These present observations on the erosion, transportation and deposition of sand in selected coastal areas. The book concludes with author and topic indexes.

From the preceding account it is clear that the titles of this volume should perhaps not have been so catholic as *Coastal Sedimentation* but rather 'North American Sandy Coasts'. No two scientists would produce the same top-twenty list of significant papers on coastal sedimentation. Nevertheless, the concentration on sandy coasts

of the USA is surprising. Only two papers deal with non-US coasts, one in Mexico, the other in the North Sea. There are no papers on carbonate coasts, either of such classic areas as the Bahamas or the Persian Gulf. Neither are there any papers on deltas, or on muddy coasts, such as the tidal flats of the North Sea made famous by Dutch and German workers.

A review of previous benchmark volumes shows that coastal sedimentation has already been done in various disguises — No.3, Spits and Bars, No.9, Barrier Islands, No.30, Holocene Tidal Sedimentation, and No.39, Beach Processes and Coastal Hydrodynamics. Perhaps some of

the omissions noted in this book have appeared previously. A volume entitled 'Benchmark Papers of Benchmark Papers on Coastal Sedimentation' is perhaps now overdue.

It is hard to see this particular book appealing to many individual scientists. Perhaps only the newest and wealthiest of libraries may consider purchasing it. Since the text has been prepared by photographically copying the original papers, some in typescript, the cost of £19.15 seems rather high, perhaps even a benchmark. □

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## Glucocorticoids at work

G. S. Boyd

*Glucocorticoid Hormone Action.* Edited by J. D. Baxter and G. G. Rousseau. Pp.638. (Springer: Berlin, Heidelberg and New York, 1979.) DM 118, \$64.90.

THERE is interest in the mode of action of the steroid hormones in attempts to discover at the molecular level how these hormones work. Investigation of the way in which sex hormones act is simpler since it is possible to identify specific target tissues. However, the glucocorticoids present a difficult challenge because these steroids have such widespread effects, and the tissue response to the hormone depends upon the nature of the tissue.

The late Gordon Tomkins played a significant part in attempts to discover how the glucocorticoids work, and it is fitting that this volume should be dedicated to the memory of this brilliant researcher.

The book is a series of short essays on various phases of the possible mode of action of glucocorticoids. The editors have contributed an introductory chapter, various other chapters and a concluding generalizing chapter updating some of Tomkins' concepts and placing these views in a modern setting. The volume has over 600 pages and is divided into 34 chapters so that any one contribution is fairly short. The contributors appear to have been adequately briefed by the editors because there is a reasonable degree of continuity throughout this multi-author review. The book contains accounts of the transport and uptake of corticoids by cells. Various aspects of the association of the hormones with the cytosolic receptor molecules are expounded, the structure-activity relationships are explored, and the translocation into the nucleus and the nature of the nuclear binding of the glucocorticoids are considered. The grey areas on the activation of the genetic

apparatus in the nucleus are critically reviewed and the role of the glucocorticoids as important factors involved in the induction of tyrosine aminotransferase and tryptophan oxygenase is considered. It seems a pity that the chapter on tryptophan oxygenase is one of the shortest in the book. In separate chapters various authors deal with the mode of action of corticoids on fibroblasts, thymocytes, leukaemic cells, pituitary cells and leukocytes. There are also contributions on the role of glucocorticoids in glycogen metabolism,

lipid metabolism, insulin action and the stability of lysosomes. The editors have made a bold attempt to obtain coverage of as many aspects of corticoid action as possible in this sizeable book. Naturally this has resulted in a degree of overlap in places. Nevertheless this is a good book which will be a useful source to all who wish to have ready access to information on the action of the glucocorticoids up to about 1977-1978. □

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## Collision theory

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*Atom-Molecule Collision Theory.* Edited by R. B. Bernstein. Pp.779. (Plenum: London and New York, 1979.) \$57.50.

IN the last 20 years there has been an enormous growth of interest in the study of molecular collisions by beams techniques. In 1977 the American Chemical Society was able to arrange a symposium entitled "State-to-State Chemistry". The advances of electronic and vacuum instrumentation have produced a wealth of information on atomic and molecular cross-sections covering elastic, inelastic and reactive scattering. This volume is intended as a guide to scattering theory for experimentalists in the field of molecular collisions. It is restricted to atom-molecule collisions, for which the theory is at present tractable.

The first chapter is by Bernstein himself. It provides an interesting and informative overview of the development of the beams technique and of the current state of experiment and theory. The second chapter, by H. F. Schaefer III, reviews the *ab initio* computation of potential energy surfaces; the third, by P. J. Kuntz, is on semiempirical potential surfaces for collision theory. The analysis of elastic

scattering is discussed in great detail by H. Pauly for central forces, and by S. Stolte and J. Reuss for non-central forces. Inelastic scattering theory is covered in chapters by J. C. Light, D. J. Kouri, D. Secrest, M. D. Pattengill and W. R. Gentry. Non-adiabatic electronic transitions are described by M. S. Child, and reactive scattering by J. C. Light, R. E. Wyatt, D. G. Truhlar, J. T. Muckerman and D. A. Dixon. There are chapters on collision-induced dissociation by D. J. Diestler and P. J. Kuntz, and the final contribution is by R. D. Levine and J. L. Kinsey on the application of information theory to molecular collisions. There are 22 chapters and author and subject indexes, making up the 779 pages.

The book has some of the usual problems associated with a multi-author volume; however these are not grave, and the overlap and the changes in notation are not really a serious disadvantage. As compensation the spread of authorship, including many distinguished contributors, has provided a breadth of coverage that no single writer could have achieved. The book is highly recommended to those for whom it was intended — experimentalists in the field of molecular scattering. It will also be valuable to a wider group of physicists and chemists interested in the dynamics of molecular collisions. □

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