Mineralogy:
Towards the Twenty-First Century

The mineral kingdom has long proved a treasure house of crystalline matter whose remarkable properties have inspired many fundamental advances in physics. Today mineralogy, with its sister disciplines of petrology and geochemistry, is among the most dynamic of the physical sciences. It draws its material from diverse environments ranging from the Earth’s mantle and deep oceans to the Moon and more distant parts of the solar system, supplementing its observations on natural specimens by experiments at high pressures and temperatures. Apart from its contribution to basic scientific understanding, its findings and techniques are of great practical importance in the discovery, assessment and exploitation of useful ores and non-metallic deposits, and in combating the hazards of mineral dusts.

This volume contains 21 invited papers presented at a two-day Discussion Meeting at the Royal Society to mark the centenary of the Mineralogical Society of Great Britain and Ireland. They were grouped in six sessions dealing with certain facets of the subject to the fore in 1976, namely:

- Marine mineralogy
- Geochemistry
- Mineralogical aspects of ores
- Experimental petrology
- Extraterrestrial mineralogy
- Environmental mineralogy

Authors were encouraged to treat their specialities in depth rather than to attempt to review the whole field, and to suggest likely lines of advance ‘towards the twenty-first century’. In addition to the unabridged research papers, an introductory presidential address reviewing progress over the past fifty years is presented in extended summary, as is an important lecture speculating on the mineralogy of the planets.

The book is commended to geoscientists as a record of current research and as a pointer to future progress. Moreover, as ideas in one branch of science may stimulate developments in another, it also claims the attention of workers from other disciplines concerned with the formation, properties and interactions of solid phases.

404 pages  27 plates  cloth bound  297 mm × 210 mm  ISBN 0 85403 092 1

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The Royal Society, 6 Carlton House Terrace, London SW1Y 5AG
Genetics of the Cell Surface

The surface of a cell is one of its most important components through which it can communicate with the outside environment, and with other cells. The aim of this volume is to illustrate the contributions made by genetics to the understanding of some important cell surface phenomena.

The first series of four contributions deals with a variety of examples of cell surface genetics from bacteria through to man. The genetics of the bacterial surface provides an interesting model for higher organisms, including problems of transport and cellular interaction. The red cell blood groups, which provided the first example of a clearly defined genetic difference on any cell surface, were also the first such variations whose biochemical basis was clearly established. The remarkable cell surface variants of the trypanosomes must have a genetic basis, whose nature remains a challenge to the molecular geneticist. The last of these four contributions deals with plant incompatibility systems, whose physiology has long suggested mechanisms involving some form of surface recognition, a problem which has only recently been tackled at the molecular level.

The second set of four contributions concentrates on the functions, genetics, and biochemistry of the major histocompatibility systems of mouse (H-2) and man (HLA). These systems, which have their counterparts in many other species, are now known to encompass a large number of genes controlling cell surface determinants, immune response differences and components of the complement system. No other cell surface system of any higher organism yet provides such a good example of the interplay between gen. r tic. functional and biochemical analysis.


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Agricultural Efficiency

British agriculture has achieved much and made highly significant progress during the last 30 years, particularly with regard to increased productivity and markedly greater contributions to national requirements. All this has been achieved by some radical changes in the industry, by effectively applying new scientific and technological knowledge, and by successfully utilizing new or improved basic inputs resulting from intensive research and efficient advisory services.

In this context, and considering the pace of change and development and the impact of membership of the E.E.C., a Royal Society Discussion Meeting was held on 17 and 18 November 1976 under the title of The management of inputs for yet greater agricultural yield and efficiency to assess the present and consider the future in relation to input management for further increase in yield and efficiency at farm level.

This book comprises the papers presented at the meeting, and covers such topics as decision making on crop and stock practices and enterprises, and on governmental policy, strategy and action. These are all basically determined by the fundamental input resources of climate, soil and energy, coupled with plant and animal resources. Continued improvement in input management depends greatly on scientific and technological advances applied effectively to production, utilization and processing of the primary products.

First published in Philosophical Transactions of the Royal Society, Series B. Vol. 281. No. 980

Price including packing and postage
£15.80 (U.K. addresses) £16.30 (overseas addresses)

The Royal Society, 6 Carlton House Terrace, London SW1Y 5AG

Printed in Great Britain
for the Royal Society at the University Press, Cambridge