Mineralogy:
Towards the Twenty-First Century

A Discussion held on 7 and 8 April 1976
Organized by J. E. T. Horne and Sir Kingsley Dunham, For.Sec. R.S.

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.

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(£20 to members of the Mineralogical Society)

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The Royal Society, 6 Carlton House Terrace, London SW1Y 5AG
Scientific research in Antarctica

A Discussion held on 19 and 20 May 1976

Organized by Sir Vivian Fuchs, F.R.S. and R. M. Laws

The Antarctic region south of latitude 60° S forms roughly one fifteenth of the Earth's surface. The environments of the atmosphere, the land and the ocean are special to the area, and provide exceptional, and often extreme, conditions for studies in the life, Earth and atmospheric sciences. Since the International Geophysical Year, 1957-58, a concerted and continuous international scientific attack has been made on this least known region of the world. During the last 20 years the studies of twelve countries have become increasingly sophisticated, and it is now evident that the region has much to contribute to many disciplines.

In 1976 the Royal Society arranged a two-day Discussion Meeting, which it was hoped would bring to the notice of scientists and universities the present state of Antarctic research, and the opportunities for new work in the various sciences. The papers presented at that meeting, now published in this book, contain much to interest the biologist, glaciologist, geologist or geophysicist, for the coverage is very wide.

Most of the papers are original and, together with one or two review papers, they provide an up-to-date view of what is now being achieved. Although the majority are concerned with British work, the whole may be regarded as representative of what is being done by many nations now working in Antarctica. Since, under the terms of the Antarctic Treaty, international cooperation is the keynote, the studies are guided by the Scientific Committee for Antarctic Research. This coordination ensures that the value of each country's contribution is enhanced, and together they contribute in a great many ways to a better global understanding of each scientific discipline. The contents include an introduction, various discussions and the following:

**LIFE SCIENCES**
- Terrestrial ecosystems in the Antarctic
- Aquatic primary production in the Antarctic
- A limnological survey of the Ablation Point area, Alexander Island, Antarctica
- Antarctic marine secondary production and the phenomenon of cold adaptation
- Growth of a fur seal population
- Seals and whales of the Southern Ocean
- Conservation in the Antarctic
- The place of the Antarctic in biological sciences

**ATMOSPHERIC SCIENCES**
- Active very low frequency experiments on the magnetosphere from Siple Station, Antarctica
- Very low frequency electromagnetic phenomena: 'whistlers' and micropulsations
- Radio wave Doppler studies of the Antarctic ionosphere
- The Antarctic atmosphere as seen by satellites
- Ozone measurements at British Antarctic survey stations
- Comparison of magnetic observations in the Northern and Southern Hemispheres (summary only)
- The importance of the Antarctic in atmospheric sciences

**EARTH SCIENCES**
- The geology of Antarctica: a review
- Cenozoic volcanism in the Antarctic
- Towards a more certain reconstruction of Gondwanaland
- Glaciological research in the Antarctic Peninsula
- International studies of ice sheet and bedrock
- Antarctica, a key to the understanding of the evolution of Gondwanaland

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