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Introduction

E. A. Vincent

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Introduction

By E. A. Vincent
Department of Geology and Mineralogy, University of Oxford

The present publication, collated and edited by Dr J. E. Guest and Dr R. R. Skelhorn, arises out of a Discussion Meeting on Mount Etna and the 1971 eruption held at the Royal Society on 9 and 10 February 1972 and organized by Professor J. Sutton, F.R.S., Dr J. E. Guest, Dr R. R. Skelhorn and Professor R. L. Wilson, on behalf of the Royal Society and of the Volcanic Studies Group of the Geological Society of London.

The papers presented in this volume include those read and discussed at the meeting, together with others submitted separately for publication, and summarize conveniently and well the present state of knowledge of the structure, geological history and eruptive behaviour of the Etna volcano, as well as of the chemistry and physical properties of its magmatic products, both lavas and gases. Although recent research, particularly by Italian and French investigators, has led to a significant increase, both in the amount and in the depth of our knowledge of the volcano, much remains to be done; and the present summary, for example, emphasizes somewhat surprisingly that very little is in fact known in detail about the chemistry and petrology of the lavas of most of the more recent historic eruptions.

The spectacular and in some ways atypical eruption of April to June 1971, as is evident from some of the contributions to this volume, provided opportunity and stimulus for a number of pieces of detailed research of a kind not hitherto attempted on Etna and perhaps, it is to be hoped, initiating a period of longer-term investigations on Europe's most persistently active volcano: these may in time take their place beside the long-established and fruitful researches carried out in a different geological setting and with different magmatic compositions – tholeiitic as opposed to alkali basaltic – at the Hawaiian Volcano Observatory by Jaggar and his successors.

The part played in recent investigations of the volcano by the International Institute for Volcanology at Catania, under the experienced direction of Professors A. Rittmann and G. Marinelli, has, of course, been a key one, and the close collaboration between the Institute and the French team led by Professor H. Tazieff and concerned with the chemistry and physics of the eruptive gas phases provides a model for the establishment of a pattern of organized international collaboration in research on the volcano which, it is hoped, will spread into broader fields of geophysical, geochemical and petrological work. The present publication shows what has already been done and emphasizes some of the obvious gaps in our knowledge that remain. The editors of this volume, in common with the organizers of the discussion meeting upon which it is based, hope that its appearance will stimulate further interest in the Etna volcano and further research into some of the problems for which it provides superb opportunities not available anywhere else in Europe.