

The Phanerozoic Time-scale

A SUPPLEMENT

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Part 1

Supplementary Papers and Items

Edited by

W. B. HARLAND & E. H. FRANCIS

Part 2

Towards a Pleistocene Time-scale

by

P. EVANS

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References to this Volume

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LAMBERT, R. ST. J. 1971. The pre-Pleistocene Phanerozoic time-scale—a review. In Part 1 of *The Phanerozoic Time-scale – a supplement.* Special Publication of the Geological Society no. 5, London, pp. 9–31.

SHACKLETON, N. J. 1971. Mediterranean and Atlantic Morocco littorals molluscs. Item 377 in *The Phanerozoic Time-scale – a supplement.* Special Publication of the Geological Society no. 5, London, pp. 94–6.

EVANS, P. 1971. Towards a Pleistocene time-scale. Part 2 of *The Phanerozoic Time-scale – a supplement.* Special Publication of the Geological Society no. 5, London, pp. 123–356.

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Towards a Pleistocene Time-scale

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Bibliographical note

The Phanerozoic Time-scale was published by the Geological Society in 1964. It was also issued as a supplementary volume (120s) of the *Quarterly Journal of the Geological Society*.

This volume is a supplement to it. It is in two parts. Part 1 contains four papers and 67 items numbered 338–404 in continuation of items 1–337 in *The Phanerozoic Time-scale*. The alphabetic index to the items refers to all the items in both volumes. Part 2 is a paper by P. Evans which, by treating the Pleistocene time-scale, supplements *The Phanerozoic Time-scale* by extending its range.

After the publication of *The Phanerozoic Time-scale* and *The Fossil Record* it was decided to reconstitute them as the first two volumes in a series of Special Publications of the Geological Society. *Time and Place in Orogeny* then appeared as Special Publication no. 3. Its related compilation *Data for Orogenic Studies* is in preparation as Special Publication no. 4. This volume is thus Special Publication no. 5.

SPECIAL PUBLICATIONS OF THE GEOLOGICAL SOCIETY OF LONDON

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| 1. <i>The Phanerozoic Time-scale</i>
(Edited by W. B. HARLAND, A. G. SMITH & B. WILCOCK) | 1964 |
| 2. <i>The Fossil Record</i>
(Edited by W. B. HARLAND and others) | 1967 |
| 3. <i>Time and Place in Orogeny</i>
(Edited by P. E. KENT, G. E. SATTERTHWAITE & A. M. SPENCER) | 1969 |
| 4. <i>Data for Orogenic Studies (Mesozoic & Cenozoic belts)</i> (in preparation) | |
| 5. <i>The Phanerozoic Time-scale – a supplement (this volume)</i> | 1971 |

FOREWORD

The Phanerozoic Time-scale published by the Geological Society in 1964 has been widely quoted. Those closely associated with its preparation, however, were very conscious of its shortcomings and a committee was set up to supplement the volume by preparing further Items and to arrange further assessments of the scale after a few years. This work is outlined in the introduction to Part 1 and the task of the Secretary of the Committee, Dr E. H. Francis, particularly in assembling and editing the items which are its *raison d'être*, is acknowledged. Professor R. St J. Lambert and Dr N. Rast were invited to contribute the articles which appear in this volume and their material was submitted as long ago as 1968. Mr Percy Evans had been undertaking a thorough re-investigation of the Pleistocene time-scale and it seemed that his contribution would be a timely one to match Professor Lambert's and so provide a more comprehensive coverage than had been achieved in the original volume. These two balancing contributions were presented at a meeting of the Geological Society of London in Southampton on 28 May 1969. But we had underestimated Mr Evans, who on retirement had set about a most painstaking re-investigation of a wide range of data relating to Quaternary geochronology. This developed beyond the limits of the plan envisaged by the Committee and his work occupies Part 2 of this volume and speaks for itself. At a late stage Dr Shackleton undertook the task of abstracting some Quaternary determinations so as to complete the stratigraphical range of the items presented.

The actual publication of this volume has been made possible by privately arranged financial support through the Geological Society. For its editing and production I was fortunate to secure the services at different times of Mrs K. N. Herod, Dr A. M. Spencer, Mrs V. Phillips and finally of Mr G. E. Satterthwaite.

W. B. HARLAND,
Sedgwick Museum,
Cambridge
May 1971