RECENT CLIMATIC CHANGE

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Recent Climatic Change

A Regional Approach

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Belhaven Press
(a division of Pinter Publishers)
London and New York

First published in Great Britain in 1988 by
Belhaven Press (a division of Pinter Publishers),
25 Floral Street, London WC2E 9DS

British Library Cataloguing in Publication Data

A CIP catalogue record for this book is available from the
British Library

ISBN 1 85293 010 1

Library of Congress Cataloging in Publication Data

Recent climatic change.

Bibliography: p.
Includes index.
1. Climatic changes. I. Gregory, S. (Stanley)
PC981.8.C5R4 1988 551.6 88–10533
ISBN 1–85293–010–1

Filmset by Mayhew Typesetting, Bristol, England
Printed by Biddles of Guildford

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Introduction

Studies of recent climatic change – setting the scene

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The scientific acceptance that climates in the past were different from those of the present, and that therefore climate had been a changing phenomenon, came first in terms of the geological time-scale, as the existence of previous ice ages was acknowledged during the second half of the nineteenth century. The realisation that significant changes had occurred within the historical period itself was delayed in large measure until the first two decades of the present century. Then the writings of such as Kropotkin (1904), Bowman (1909), Huntington (1907; 1912; 1914; 1915; 1916) and Gregory (1914) explored both the evidence for such changes and their implications for societies in the past. It it true, however, that the rare enquiring spirit had raised these questions almost a century earlier (e.g., Schouw 1828).

Such considerations and discussions continued into the 1920s and 1930s (e.g., Brooks 1928; 1931; Bowman 1935), but by this time the statistical analysis of reliable instrumental data was demonstrating marked changes in climatic elements over periods of several decades or less, quite apart from the obvious fluctuations from one year to the next. The contemporary journals display this development most effectively. By mid-century it was possible to draw on a very wide research literature to establish changes both during the previous few centuries in general (e.g., Manley 1950; 1953; 1959; 1974) and also within the instrumental period itself (e.g., Ahlmann 1948; 1953; Manley 1944; 1949; 1951).

Over the past 30–40 years there has been a veritable explosion of research and publication in this field, culminating in the intensive activity of the past decade. Part of this has continued to be concerned with the potential impact of changing climate upon human history, as reflected in the volumes of Ladurie (1971), Lamb (1977; 1982) and Wigley *et al.* (1981). In turn, the concern with the possible impact of future climatic changes upon society and the economy is seen in such as Kates *et al.* (1985), which illustrates the growing role of international bodies in this field — the Scientific Committee on Problems of the Environment (SCOPE) and the International Council of Scientific Unions (ICSU) in this particular case.

It must not be assumed, however, that all is now known about the nature and causes of climatic change, and that only their impacts need to be assessed. The analysis and interpretation of actual changes in specific areas still needs considerable expansion (e.g. Flohn and Fantechi 1984), whilst the present state of knowledge (and gaps in such knowledge) of the processes involved and possible causes are reflected in a series of recent major books (e.g., Mörner and Karten 1984; Houghton 1984; Malone and Roederer 1985).

This relatively recent intensification of concern has derived from many pressures. Amongst these, three at least should be stressed. The first is that the impact of exceptional climatic conditions (droughts, floods, hurricanes, etc.) are now seen around the world as they happen, with television bringing them into the living room in all their stark drama. Thus there is a social awareness of climatic