

Arie S. Issar
Mattanyah Zohar



Climate Change

Environment and History of the Near East
2nd Edition

 Springer

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With 34 Figures

 Springer

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*To Margalit and to Aviva
the same and even more!*

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List of Abbreviations

- ABD The Anchor Bible Dictionary, ed. D.N. Friedman, 6 vols. New York, London, Toronto, Sydney, Auckland, Doubleday, 1992
- AGU American Geophysical Union
- ANET Ancient Near Eastern Texts Relating to the Old Testament, edited by James B. Pritchard, 3rd edition with supplement, (Princeton, N.J., Princeton University Press, 1969) abridged edition The Ancient Near East, An Anthology of Texts and Pictures (Princeton, N.J., Princeton University Press, 1958)
- BAR Biblical Archaeology Review
- BASOR Bulletin of the American School of Oriental Research
- CAD The Assyrian Dictionary of the Oriental Institute of the University of Chicago, 24 volumes, (incomplete), Chicago & Glueckstadt, starting 1964
- COWA Chronologies in Old World Archaeology, ed. Robert W. Ehrich, 3rd edition, 2 volumes, Chicago-London, The University of Chicago Press, 1992
- GSA Geological Society of America
- GSI Geological Survey of Israel
- HUJI Hebrew University Jerusalem Israel
- IEJ Israel Exploration Journal
- IJES Israel Journal of Earth Sciences
- NEAEHL The New Encyclopedia of Archaeological Excavations in the Holy Land, ed. E. Stern, 4 vols., Jerusalem, The Israel Exploration Society-Carta, 1993
- OCA The Oxford Companion to Archaeology, ed. Brian M. Fagan, New York-Oxford, 1996
- Palaeo 3 Palaeogeography, Palaeoclimatology, Palaeoecology
- PEQ Palestine Exploration Quaterly

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Figures 3, 3a, & 3b. M. Bar-Matthews, A. Ayalon and A. Kaufman, "Middle to Late Holocene (6500-Year Period) – Paleoclimate in the Eastern Mediterranean Region from Stable Isotopic Composition of Speleothems from Soreq Cave, Israel," in *Water, Environment and Society in Times of Climate Change*, eds. A. Issar and N. Brown (Dordrecht, Kluwer Academic Publishers, 1998).

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Figure 12. D.C. Kypris, 1996, "Cyclic Climatic Changes in Cyprus as Evidenced from Historic Documents and One Century's Rainfall Data," In A.N. Angelakis and A. Issar, eds. *Diachronic Climatic Impacts on Water Resources*, (NATO ASI Series I, Vol. 36, Berlin, Springer-Verlag. 1996).

Introduction

When the first edition of this book was published in 2004, the following year 2005 has happened to have been the warmest year since 1880, when the first reliable worldwide instrumental records came into existence. Claiming no linkage between the publication of our book and the temperature record, yet this record demonstrates the trend of increase in the global surface temperatures during the past 20 years, reinforced by evidence of rise of atmosphere's and oceans' temperatures, and increased melting of ice and snow in the arctic and antarctic regions as well as on mountain tops. All these observations are paralleled by the increase in the quantity of heat trapping gases in the atmosphere, causing most probably, the global greenhouse effect.

In order to try and predict, what might be the impact of this effect on the on the natural and human environments of the Near East, (Figs. 1–1d) the authors adopted the saying that the past is the key for the future. The practical conclusion of this principle says that the acquiring knowledge of the impact of past climate changes on the nature and human societies, may allow conclusions with regard to future possible impact of climate changes. By correlating proxy data of all types, paleo-sea and lake levels, paleo-hydrology, pollen profiles, environmental isotopes as well as archaeological and historical documents, the authors tried to collect as much as possible of this knowledge. The region investigated spans the Fertile Crescent in the wider sense which arcs from northeastern Africa and Egypt to Syria-Palestine and Mesopotamia, skirting the Anatolian, Iranian and Caucasian highlands. Since the so-called “Holy Land” has attracted western scholarly attention for nearly two centuries, and resulted in extensive and intensive historical and archaeological research, most data mentioned in the book were derived from this area. It is, therefore, natural that the historical documentation of the book reflects the uneven distribution of western research over the last two centuries with centers of gravity in the Levant, Egypt, and Mesopotamia.

The presentation of the archaeological and historical material follows a broad timetable beginning with the origin of mankind in Africa and its spread across the rest of the world, all seen as resulting from ever-changing climates and environments. Despite the fact that the archaeological evidence includes most of the major excavation sites of the Fertile Crescent, old and new, and often goes into detail, particularly in the formative years of the ancient civilizations in these areas, the principal aim was to convey an overall picture of cultural development of the entire region and clarify the importance of climate change