

Book Review

Sri Lanka : Past and Present -Archaeology, Geography, Economics.

Edited by Manfred Domroes and Helmut Roth

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Sri Lanka known to the ancient world as Taprobane and later Serendip was also known as Lanka, Sinhala Deepa and Sealana at different times. The country became independent on 4th February 1948 and this primer comes as a token of felicitation on Sri Lanka's completion of 50 years of independence. The book is conglomerated with selected papers given an emphasis to some substantial aspects of Archeology, Geography and Economics at past and present, which are prepared by some eminent German scholars and thoughtfully accomplished by equally competent editors making it highly palatable to its readers. The editors of the book, Manfred Domroes and Helmut Roth who are also contributed some articles to this book, had started their scholastic work on Sri Lanka way back in the 1960 s.

Out of the total of 11 papers, the first five devote on archaeology and historical aspects. In the first paper the excavations on the ancient port of Godavaya are shown giving evidence of some interesting findings such as coins and clay sealings. In the second paper, the author makes a simple dedicated approach in documenting the procedure adopted for excavation as well as the method adopted for selection of site which would serve as an useful information for archeologists. The third paper deals with characterizing the historical outlook of the Ancient Mahagama, which is yet another important place of Sri Lanka from archeological point of view. The author writes on the findings of Roman and Byzantine coins, Sasanian pottery from Persia, red polished dishes and Karneol from India and porcelain from China. The fourth paper finds the author explicating a few surprising findings of ancient Roman coins in Sri Lanka and poses several questions on ancient numismatics. In the fifth

paper the author extensively investigates the religious and economic development of the medieval kingdom of ancient Anuradhapura which flourished between 250 BC and 1000 AD. In the first five topics, the island's identity, to a great extent, is based on its past history and archeological studies helps in discovering, identifying and thereby establishing its own glorious past.

Important aspects of the physical geography of Sri Lanka are presented in the subsequent three papers. Fundamental climatic information more importantly needed for present days towards global change such as rainfall variability and changes, and variability of atmospheric circulation is examined to a greater extend both spatially as well as temporally in two papers. Various tables and maps are exhaustive, indicative and informative. The paper on mountain forest provides surprising geographical information on flora and nature of the rare beauty and nature of the tropical mountain environments.

Other two papers illustrate major economic aspects of Sri Lanka since independence. It also succinctly explicates the economic structure, Government expenditure and relationship between Germany and Sri Lanka. The important role of Ceylon tea in the economy, both locally and on the world market, is sufficiently described. Finally, Sri Lanka's unique wealth of its human and physical environment is attractively developed under the ecological viewpoint of "geodiversity", underlining Sri Lanka's profound tourism resources.

This book is timely as it comes as a recollection of the past even as we move to the next millenium. This work can serve as a reference book for students in social and environmental sciences as well as valuable collector's item in general.

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Book Review

A. J. McMichael, A. Hains, R. Slooff and S. Kovats (eds.) : *Climate Change and Human Health*, World Health Organization Publishers, 1996

This book provides an expert scientific assessment of the impact that climate change might have on the health of the world's population. Addressed to policy-makers as well as researchers, the report adopts a cautious approach, using the best scientific studies to provide reasonable predictions and realistic recommendations for action. Throughout the report, the complexities of climate change, the limitations of current research methodologies, and the consequent uncertainty of future predictions are repeatedly emphasized.

The debate about global climate change is as unusual as it is controversial. Scientific arguments usually concern interpretation of evidence gathered from the present or from the past, rather than the forecasting of complex future changes. For example, when epidemiologists argue about the effect of air pollution on asthma, they do so with reference to existing empirical research results. However, forecasting the health impacts of climate change requires us to undertake scenario-based risk assessment—that is, to apply our knowledge of environment-health relationships gained from limited past experience to future environmental changes of which we are uncertain and that will probably far exceed the range of past variation. For example, the rate of global temperature increase that the Intergovernmental Panel on Climate Change (IPCC) has forecast for the next century is much faster than any that has occurred in the past 10,000 years. The resultant uncertainties in forecasting health impacts are compounded by uncertainties concerning social, demographic, economic and technological changes that may influence human vulnerability or adaptive capacity.

This, then, is clearly not an "exact science". But the range and seriousness of the potential health impacts of climate change means the risk assessments discussed in this volume constitute a very important scien-

tific undertaking. A large part of the task entails considering the various indirect effects upon human health arising from climatic stresses upon the stability and productivity of ecological systems. With few exceptions, the causal relationships involved are complex and multifactorial. A premise underlying this volume, therefore, is that we must now think carefully, and within an ecological framework, about the longer-time implications for human health of disturbing or damaging components of the biosphere.

The book which has ten chapters, first summarizes the state of knowledge and the prevailing expert views about anthropogenically-induced climate change and then takes these as the basis for assessing potential health consequences. The health consequences of three major components of climate change are examined in detail: changes in temperature and precipitation, changes in the frequency of heatwaves and other extreme weather events, and a rise in sea level. The potential human health consequences of increased ultraviolet radiation resulting from stratospheric ozone depletion—although not a component of climate change—are also discussed. To assist researchers in this controversial field, additional chapters discuss the challenge that investigations of climate change pose to orthodox science, and trace progress, over the past five years, in the science of climate modelling and prediction of the consequences for human health. The book concludes with a discussion of the many immediate and long-term strategies that policy-makers can select, supported by a clear call for action: if adverse health consequences are likely to result from climate change, we cannot wait until definitive empirical evidence becomes available; such a wait-and-see approach would be imprudent at best and nonsensical at worst.

Major parts of this notices are cited from the pamphlet of recommendation of the book by WHO and also from the executive summary of the book.

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Book Review

Issar, Arie and Neville Brown (eds.) : Water, environment and society in times of climatic change. Water Sciences and Technology Library, Volume 31, Kluwer Academic Publishers, Dordrecht, the Netherlands, 355 pages, 1998. ISBN 0-7923-5282-33.

This book consists of contributions from an International Workshop within the framework of the International Hydrological Program (IHP) of UNESCO, held at Ben-Gurion University, Sede Boker, Israel from 7 to 12 July, 1996. Contents are : 1. Application of a global volcanic time-series on high resolution paleoclimatic modeling of the eastern Mediterranean by R. U. Bryson and R. A. Bryson, 2. Abrupt climatic change around 2,650 B.P. in Northwest Europe : Evidence for climatic teleconnections and a tentative explanation by B. van Geel and H. Renssen, 3. Medieval climatic anomaly in the Americas by S. Stine, 4. Approaching the Medieval Optimum, 212 to 1000 A. D. by N. Brown, 5. Paleohydrology of the northern Negev : Comparative evaluation of two catchments by A. Frumkin *et al.*, 6. Climate change and history during the Holocene in the eastern Mediterranean region by A. S. Issar, 7. Population growth and decline in the northern part of Eretz-Israel during the historical period as related to climatic changes by M. Netser, 8. Settlement, agriculture and paleoclimate in Uvda Valley, southern Negev Desert, 6th-3rd millennia B.C. by U. Avner, 9. Middle to late Holocene (6,500 yr. period) paleoclimate in the eastern mediterranean region from stable isotopic composition of speleothems from Soreq cave, Israel by M. Bar-Matthews *et al.*, 10. Early to mid-Holocene environmental changes and their impact on human communities in southern Anatolia by A. M. Rosen, 11. Some considerations on climatic changes, water resources and water needs in the Italian region south of 43°N by W. Dragoni, 12. Frequency of extreme hydroclimatically-induced events as a key to understanding environmental changes in the Holocene by L. Starkel, 13. The impact of climate changes on groundwater regimes and resources in Russia by V. S. Kovalevsky, 14. Pollen records of past climate changes in West Africa since the Last Glacial Maximum by Anne-Marie Lezine, 15. Sahara environmental changes during the Quaternary and their possible effect on carbon storage by H. Faure *et al.*, 16. Climatic change during the Pleistocene/Holocene transition in upland western Maharashtra, western India, and 17. Aspects of climate variability and the UNESCO International Hydrological Programme.

Through these titles, readers may immediately get the following impression about these monographs : (1) The main regions treated are Mediterranean

regions with Special emphasis on Near and Middle Eastern countries and African as well as European regions, (2) Contributions on climate change are from the hydrological viewpoint, and (3) those on the climate and environmental change are during the Holocene. Since these points have been particularly weakly explored in paleoclimatology and Quaternary sciences, we can find a lot of new results in the papers contained in these monographs. Several highlights are as follows :

Robert and Reid Bryson discussed in the first paper that the main cause of climate changes during the Holocene was volcanic eruptions, which loaded the atmosphere with aerosols. They calculated the rate of loading and its impact on insolation and optical depth. On the other hand, Bas van Geel *et al.* suggested that the cold period between ca. 850 and 766 yrs. B.C. was due to reduced solar activity, which resulted in a decline of ozone production in the lower stratosphere. This may lead to weakening of Hadley cell circulation and further of monsoons as well as to an expansion of Polar cells and to displacement towards the south of cyclone tracks.

The history of the Roman Empire and of the Frankish Empire was also discussed in relation to environmental change. In a study based on reinterpretation of proxy data, A. Issar proposed a series of cold-wet and warm-dry periods affecting the eastern Mediterranean region since the Pre-Pottery Neolithic period (8,000-6,200 B.P.).

Cores in the Gulf of Guinea and off the west coast of Africa showed two well defined pollen maxima at ca. 15,000 and ca. 10,300 (Younger Dryas) and a minor peak at 7,000 yrs B.P. The first two peaks are characterized by Saharan type pollen, and high amounts of dust derived deposits. According to this evidence, it was concluded that Africa was dry dominated by north-east trades during the cold periods of the Las Interglacial.

During the wet episodes, the Sahara was widely covered by vegetation, fauna and soils with much human activity, too. At least five to ten times more carbon than at present was stored in the total mass. On the other hand, eolian conditions of sand and dust movement prevailed during the dry phases.

We can find interesting conclusions in many papers presented in this volume. The editors should be congratulated for success in organizing the workshop and publishing these fruitful proceedings. It is strongly recommended to keep this on library shelves and in laboratories in institutions involved in archeological and prehistorical studies as well as climatic change and paleoclimate research.

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