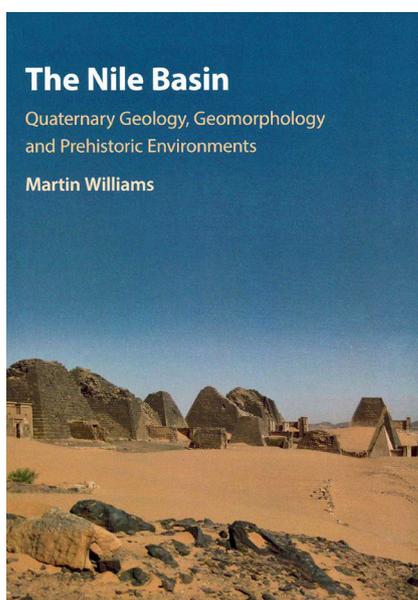


## Book reviews

**The Nile Basin: Quaternary geology, geomorphology and prehistoric environments**, by Martin Williams, University of Adelaide, 2019. Cambridge University Press, Cambridge, UK. Hardback: price £105.00, ISBN: 9781107179196.



The publication of this comprehensive volume, totaling 529 pages and about 1,159 references, on the Nile Basin was timely in providing answers to two contemporary questions. The first involves the building of dams at upstream countries and potential impact of such on arid downstream countries, while the second has to do with climate change and migrations that impacted the great civilisations along the Nile Basin and with how other parts of the world get prepared. The present tome explains how prehistoric environments can be reconstructed, with examples drawn from every part of the Nile Basin. It enables us to embark on a journey back in time and space to reconstruct the pattern and tempo of past hydroclimatic changes. It provides a detailed record of past environmental changes throughout the basin. Moreover, it introduces important data on climatic adaptation and resilience in different parts of the world. This volume will be useful for professionals in hydrology, geomorphology, climatology, archaeology and policy makers worldwide.

The Nile Basin has unique physical and anthropogenic attributes. It embraces a very wide range of climates (equatorial, monsoonal, seasonally wet tropical, semi-arid, arid, hyper-arid and Mediterranean). Roughly one third of the Nile Basin (1,070,000 square km) is at present devoid of perennial rivers and receives less than 50 mm of rainfall annually. The White Nile provides much of the low season flow to the Nile but very little sediment, while the Blue Nile and Atbara together provide most of the flood flow and much of the sediment. The Nile Basin contains a record of human activities spanning the last million years, in documenting how prehistoric human societies adapted to regional climate events and to changes in the river's regime, from the time of hunter-gatherers to the food-producing economies that were based on plant cultivation and animal domestication. Egypt was one of the cradles of urban civilisation, totally dependent on floods from the upper Nile River. The inhabitants of the arid lands of northern Sudan and Egypt owe their very existence to that river. By the year 2020 more than 300 million people will depend on its waters for their livelihood, so that a clear understanding of present land use and the impact of climate change on Nile flooding is essential for any rational and long-term future planning in the Nile Basin.

The present volume comprises both physical and anthropogenic themes, arranged in 23 chapters. The physical issues including the introduction and evolution of the Nile Basin (chapters 1 and 2), the climate and hydrology of the Nile Basin, inclusive of historic floods and droughts (Chapter 3), its geology and soils (Chapter 4) and its vegetation and current land use (Chapter 5). The physical regions within the Nile Basin are considered in some detail in chapters 6 to 20, proceeding from the headwaters of the Blue and White Nile (chapters 6 and 7), along the White Nile (Chapter 8) and its tributaries (chapters 9 and 10) to the lower Blue Nile (Chapter 11) and the Atbara River (Chapter 12). Subsequently, it

discuss both the physical and human history along the western borders of the Nile Basin, visiting the Jebel Marra volcano and its environs (Chapter 13) as well as the now defunct river systems of Wadi Howar, Wad el Melik and Wadi Muqadam. Given their very great importance in prehistory, four presently arid regions are reviewed in some detail: Nubia, the Butana Desert and the Desert Nile in Egypt (Chapter 14) and the Western Desert of Egypt (chapters 15 and 16), as well as the Fayum (Chapter 17). Equally significant in prehistory are the Red Sea Hills (Chapter 18) and the Sinai Desert (Chapter 19). A recurrent theme in all of these chapters so far is the persistent and complex set of interactions between river and desert in prehistory. Chapters 20 and 21 discuss the Nile Delta and the Nile Cone, respectively. Sediment cores from both the Delta and the submarine Nile Cone provides a wealth of information on past changes in Nile sediment flux, river discharge and changes in Nile sediment sources. Chapter 22 discusses the complex question of plant cultivation and animal domestication in the Nile Basin and reviews some of the models that have been proposed to account for the origin and spread of these processes across the Nile Basin. The final chapter (Chapter 23) concludes with an attempt to unravel the nature and timing of prehistoric migrations to and from the Nile Basin and the various 'Out of Africa' scenarios that have been proposed.

The present volume provides the basic information that assures the natural unity of the River Basin, and the civilisations that arose on its banks. Thus, despite the "futility of the negotiations" currently taking place on the Ethiopian Renaissance Dam between Egypt, Sudan and Ethiopia (the countries of the eastern Nile Basin), we trust in the long history of friendly and good-neighbourly relations that link all the peoples of the basin countries and a common destiny give us hope for a "breakthrough" at the edge of the abyss, and for all parties to sign the agreement, more than 90% of which has already been completed. This agreement will be of great value for the beneficial sharing of public goods provided by the Nile Basin, stability and development

for all the countries of the Nile Basin. This volume proves that the river water has not increased by a single drop since Moses was found in the papyrus thickets along the banks of the river. Moreover, water quantities in the basin may decrease due to climatic changes; meanwhile, the demand for water is steadily increasing in all basin countries as a result of overpopulation, as well as for food and other developmental needs. There is no other way for the basin countries but co-operate and increase direct and indirect economic returns of the presence of the river basin in their countries, not just the water.

The present tome provides significant evidence regarding the prosperity and collapse of great civilisations along the River Nile. Strontium isotope analyses of delta sediments, together with archival evidence, also indicate that the collapse of the Old Kingdom some 4,200 years ago was associated with several phases of intense drought in the Nile headwaters and greatly reduced Nile floods in Egypt. A moist episode during the early to mid-Holocene saw the movement of Neolithic groups into the Nile Valley, bringing their herds of domestic animals and their cereal grains from the Near East into the Nile Basin and eventually into the Sahara and East Africa. It also emphasises another theme that appears significant to our world, namely environmental change as a cause of demographic pressure. When ancient human societies confronted with extreme environmental catastrophes (occasionally, but not invariably, associated with abrupt climatic changes), they could either migrate, seek to adapt, or become extinct. The progressive move from the Mesolithic to the Neolithic in the Nile basin doubtlessly encompassed elements of all three responses. This volume on the Nile Basin provides additional key issues that may prove useful for our adaptation to and resilience against current climatic changes worldwide.

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