

In August 1991, the British archaeologist Colin Renfrew wrote in his foreword for the book *Centuries of darkness - a challenge to the conventional chronology of Old World archaeology* written by James et al. (1991): "History needs dates. Chronology is the backbone of archaeology as well as of history. For without a time framework there can be no established sequence of events, no clear picture of what happened in the past, no knowledge of which significant development came first."

Together with the Near East and Egypt, Southern Europe is the region of the world with the "most complete" historical and archaeological records for at least 10,000 years. These records reflect the rise and fall of civilizations, wars, climatic, and—especially—catastrophic events; however, most of them are only loosely anchored to real time. The term "the most complete" in fact (and unfortunately) means very far from "complete". The history of the Old World includes many long "dark periods" characterized by a complete lack of any kind of records, e.g. the Egyptian Intermediate Periods, the Dark Ages following the decline of the great Mediterranean Bronze Age civilizations, or the Migration Period preceding the Early Middle Ages. The problem with the chronological issues in the context of European prehistory was correctly pointed out by Kurt Weller, who gave the title *Als die Jahre keine Zahlen trugen* ("When the years did not carry numbers") to his book on prehistory.

The 2<sup>nd</sup> half of the 20<sup>th</sup> c. brought revolutionary methods for the dating of prehistory and the verification of history: radiocarbon and dendrochronology (before AD 1950, the application of dendrochronology was practically limited to the SW part of the USA), supported by ice-core records and other scientific methods, but the main crucial historic questions remain unsolved. The ongoing debate on the date of the Minoan eruption of Aegean volcano Thera - the key time marker in the Eastern Mediterranean - illustrates the divergence between scientific evidence and historical chronologies of the Aegean, Egypt, and the Near East which are based on the interpretation of lists of Egyptian Kings or by documents and astronomic observations. The validity of radiocarbon dating has been called into question; the continuity of ice-core records remains uncertain. The odds are that only dendrochronology—a branch of science based on the study and interpretation of annual rings developed by the trees- can produce the unequivocal data required for a consensus agreement. Trees register environmental conditions precisely and these records are preserved in wood and wooden objects for hundreds and even thousands of years.

**The primary goal of this project is absolute dating of key events shaping the history of the East-Mediterranean cultures by means of dendrochronology to systematize the historic chronologies.**

This strategic target will be achieved by the development of an independent and objective "biological archive" – a set of continuous, absolute, tree-ring chronologies as a solid foundation for the re-interpretation of historic chronologies. This work will build on a foundation of over 40 years existing work in this region. The main focus will be a network of absolute tree-ring chronologies dating from the present back to at least the Bronze Age. They will connect two large tree-ring data sets, the Central-European and East Mediterranean, and will validate (or not) the historical chronologies of the Old World.

The Balkan-Aegean Dendrochronology Project will have a ground breaking nature, because the resulting tree-ring sequences will permit the absolute dating, to the year, of turning points of western civilization, such as climate extremes or volcanic catastrophic events, e.g. Thera. In the search for the Thera-signal in tree-rings we will use the latest developments in analytical chemistry to fingerprint traces of volcanic eruptions. The project is located exactly at the interface between different established disciplines such as archaeology, history, geography, climatology, biology, forestry, etc., all of which will profit from access to the proposed new biological archive stored in the tree-rings.

The Balkan-Aegean Dendrochronology Project is in every aspect "pioneering frontier research". It will require permanent crossing of different frontiers, viz. between science and humanities, borders of time periods, climate zones, and present political borders, not to mention different archaeological schools of thought. The project will require the application of a modified approach: development of a supra-regional structure of collaborating institutions and labs, strengthening the local partners in collaborating countries via know-how transfer and data sharing efforts. The Project is based on the solid foundations of Kuniholm's Aegean Dendrochronology Project and of the PI's leading work on Central-European dendrochronology.