Preface

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The study by Massimiliano Borroni, emerging as the second volume in the book series, sponsored by the Department of Asian and North African Studies of Ca' Foscari University of Venice through the Marco Polo Research Centre for Global Europe-Asia Connections, is the culmination of a research project for which I have had the honour and pleasure of serving as the scientific supervisor. The project is dedicated to Networks of Science and Water, and – as its title would suggest – aims to shed light on hitherto little-known or entirely unknown aspects of knowledge in relation to the theme of water produced in the Muslim world from the seventh to the eleventh century AD. This has come about following conferences under the title of *Meetings of Water*.

The general framework of this project entails the gathering of information on scientific knowledge and traditional water management techniques in the Arabic sources of the considered period. This retrieval is conducted based on innovative research systems such as the Jedli software, developed at the University of Hamburg within the scope of the ERC project The Early Islamic Empire at Work, which allows for regular expression searches in the corpus of digitised Arabic texts currently available.

The analysis of the materials thus identified has enabled the author of the present study to focus their attention on a hydrological treatise by Ṯābit. To ensure the soundness of the present analysis from a scientific standpoint, it should be noted that the study of the merely technical-scientific aspects concerning the central theme of this work has been conducted by consulting the hydrological engineer Vladimiro Boselli, author of the Afterwords in this volume. Ibn Qurra's work, composed in Iraq in the ninth century AD, is among the oldest hydrological treatises in Arabic that has come down to us and is of paramount importance for the study of hydrological skills in the considered centuries. The importance of this manuscript, which has reached

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us in a single copy preserved in the library of the Topkapı Museum in Istanbul, is confirmed by a citation from the famous polymath and Arabic scholar al-Bīrūnī, who still in the eleventh century speaks of it as a foundational text in the field of hydrology. The text, which presents interesting linguistic challenges due to the technical language used, has revealed important information on water management practices and in particular on the safeguarding of stagnant waters, as well as on the scientific skills in hydrological matters that constitute its subject.

These latter aspects, in particular, are the starting point for Borroni's analysis, which focuses on the ways in which the thorny issue of the origin of sweet water was addressed in the Muslim world during the Abbasid period. This issue has constituted one of the most challenging tests for physics up until the modern era. Indeed, it was only in the eighteenth-nineteenth centuries that the exogenous origin of the water cycle was definitively established, while for the many centuries that separate this from antiquity, in the West (which here I understand as encompassing the cultural and religious phenomenon of monotheistic Islam) the endogenous physical theory of the water cycle held credence, with its earliest and most famous formulation attributed to the authority of Ptolemy.

Well, thanks to Borroni's analysis, which has led him to patiently reconstruct an unpublished and highly significant segment of the history of water physics in the Muslim world, we now know that Ibn Qurra and his hydrological treatise represent the oldest surviving testimony of a line of thought alternative to the Aristotelian view. This line of thought later unfolds in the speculations contained in the *Epistles of the Brethren of Purity* and in the thought of other subsequent authors, such as the already mentioned al-Bīrūnī, attesting to the importance of this 'alternative view' in the physical field, which received due attention in the West only following the discoveries of modern hydrology that confirmed its absolute correctness.

The present work thus presents aspects that I do not hesitate to describe as pioneering with regard to the reconstruction of a segment that we can now define as fundamental in the history of the development of scientific knowledge in relation to water. This opens up extremely interesting prospects for analysis. It is now legitimate to ask what the relationship is between the content of Ibn Qurra's text and the hydrological tradition that flowed through that famous work primarily devoted to, but not limited to, agriculture known with the title *al-Filāḥa al-Nabaṭiyya* (The Nabatean Agriculture) and attesting a more widespread and possibly more ancient diffusion of exogenous models of the water cycle in Mesopotamia. Furthermore, whether there is a relationship between the line of thought testified by Ibn Qurra and the cosmological conceptions inherited from the Zoroastrian world, in which the water cycle – albeit described in the fabulous terms typical of mythological language with its Primordial Rain Waters that feed the archetypal River flowing from the Cosmic Mountain to nourish the Great Sea and eventually end up in the Lake-Filter, where, evaporating, they resume their cycle – recalls, for many non-secondary aspects, the exogenous vision characteristic of Ibn Qurra's thought.

Given the pressing concerns of our time, it will not surprise the reader that the theme of water may serve as a revealing thread to follow in the study of the Arabic written production of the so-called Islamic world. However, the variety (almost exhaustiveness) of approaches that can be found in the Arabic sources is easily underestimated.

But that is not all. The theme of the monograph prompts inquiries into issues ranging from theology (what is the purpose of the sea's salinity in the overall economy of divine Creation?) to natural sciences (why does stagnant water tend to become corrupted?), from the water cycle (does this cycle have an endogenous or exogenous nature?) to the dignity and self-worth of non-human life. On this latter aspect, which is of quite some importance in legal reflection within both ancient and modern Islamic contexts, one can appreciate a considerable variety of nuances in identifying not only human life but also more generally animal and plant life as the culmination of the divine work of creation, and a sense that goes beyond mere human benefit in their exploitation.

In conclusion, by adopting a methodology that eschews culturalist presuppositions, this scholarly endeavour proves to be a vital addition to the progression of research, not solely within the realm of the evolution of scientific thought, but also in addressing a multitude of inquiries spanning diverse intellectual domains, including but not limited to ethics, science, and theology within the Muslim world.