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Ways of Knowing Water in Early Modern Europe

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This panel seeks to shed light on the ways in which early modern Europeans acquired, interpreted and applied knowledge about water –in particular fresh water –in a range of different contexts. In the process, we shall examine some of the tensions that played out between established authority and empirical observation, received wisdom and practical expertise. To do this we look at three very different case studies from Italy and Spain.
The first compares expertise in the measuring of water in the application of water justice in the Republic of Venice and the Kingdom of Valencia. Officials walked the length of irrigation and drainage canals, interrogating and engaging with local authorities and stakeholders; they measured water depth and speed, evaluated the state of the insfrastructure and assessed climatological circumstances –all in order to adjudicate water-related disputes. The second takes us to the Tuscan Grand Duchy and the figure of Francesco Redi –author, expertimenter and court physician –to analyse his previously unstudied notes on the 'chemical experiences on water'. These shifted from medical inquiries to a broader scientific investigation into water's fundamental nature, ultimately concluding that all water was essentially the same. The final case study takes us back to Venice, here in its urban guise, to examine evolving early modern ideas concerning water quality and purity, and how this was evaluated. This shifting knowledge is compared to actual practice, how Venice monitored and managed its fresh water supply, including its routine testing of water.

Presenter: Samuel Barney Blanco

Title of the paper: Professional Expertise and Measuring Water Justice in Early Modern Rural Communities: the Venetian Terraferma and the Kingdom of Valencia (1500-1600)

The alluvial plains of the Iberian Mediterranean coast that made up the Kingdom of Valencia, and those contained in the arc between the rivers Po and Piave in the mainland of the Republic of Venice, the Terraferma, were the theatre of quotidian irrigation and drainage activities, which involved arbitration between the different communitarian water uses. In the mid-16th century, the practice of water justice was gradually appropriated by new professionals brought in from the centres of power. Officials such as procurator fiscals sent by the Valencian vice-royal courts of justice, together with the periti and avvocati, sent by the Venetian senate' s magistracies, walked the length of irrigation and drainage canals, interrogating and engaging with local authorities and stakeholders. These expeditions are recorded in modern sources with an unprecedented degree of detail, focusing on measuring water, (depth and speed of current), as well as its infrastructural aspects (state of embankments and weirs), and assessing climatological circumstances, such as droughts or floods, that conditioned the human actions that were to be judged. This paper examines how local conceptions of water justice and their subsequent investigation were a vector of technical and juridical specialisation in 16th century courts.

Presenter: Oscar Schiavone

Title of the paper: Experimenting with Water at the Spa: Francesco Redi as a Chemist in Bagni di Lucca (1669)

This paper explores the pivotal role of water in early modern science through an analysis of Francesco Redi's previously unknown notes on 'chemical experiences on water'(Biblioteca Marucelliana, Florence: MS Redi 27, fols 1–110). Compiled during Grand Duchess of Tuscany Vittoria della Rovere's thermal treatments at Bagni di Lucca (1669) and continued over two years, these notes document Redi's evolving interest in water science. Initially focused on the medical properties of spring water, Redi's experiments aimed to assess purity through colour-based chemical reactions. Over time, they shifted from medical inquiries to a broader scientific investigation into water's fundamental nature –hether it was a principle, an element or a compound. Through

studies on the specificity and interchangeability of different waters, he ultimately concluded that all water was essentially the same. Conducted in response to the Accademia del Cimento's findings, his experiments sought to align Florentine science with European standards. By fostering a culture of sceptical inquiry and empirical research, Redi helped shape the principles of free inquiry and intellectual freedom. His work not only advanced water chemistry but also contributed to the broader transformations of the scientific revolution.

Presenter: David Gentilcore

Title of the paper: The Knowledge and Practice of Water Quality in Early Modern Europe

When it came to water intended for human consumption, what was meant by water quality in the early modern period involved a language, conceptualisation and implementation quite different from our own. In order to understand this, my paper has two aims. On the one hand, we examine evolving early modern ideas concerning water quality and purity, and how this was determined and essayed –including continued reliance on the senses and the increasing role of quantitative chemical analysis –as well as what this meant for the perceived relationship between the 'qualities of waters'and particular diseases.
On the other hand, we look at what this shifting knowledge looked like in actual practice, taking as our test case the hydraulic infrastructure of Venice. The lagoon city was uniquely dependent on rainwater capture for all of its freshwater needs, which fed several thousand 'well-cisterns'located throughout the city. But these faced the twin threats of drought and extraordinarily high tides (acqua alta). We consider how the authorities monitored and managed the city's fresh water supply, including its routine testing of water from the 1730s, long before this became common in European cities, and, closely linked to this, the programme of repair and reconstruction of its public well-cisterns.

Keywords

Water history, epistemologies of water and hydraulics, circulation of knowledge, early modern Italy and Spain

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Short Biography

Samuel Barney Blanco is a PhD candidate in Early Modern History at the Ca'Foscari University of Venice and the University of Padua. He is currently in his final year of his doctoral programme, where he will present his thesis under the supervision of David Gentilcore and Dario Canzian, in the framework of the ERC 'Water-Cultures'project. His doctoral thesis is a comparative study between two types of communitarian water boards –on the one hand, the irrigation communities of the Kingdom of Valencia, and, on the other hand, the agricultural consortia of the Terraferma of the Republic of Venice –with special emphasis on their internal justice and political practices, and their relationship with the first state bodies of territorial water government in the 16th century.

Oscar Schiavone (PhD 2009 and 2016) has taught at UC London and Durham University and has conducted research at the Medici Archive Project, Florence. He is currently a post-doctoral fellow at the ERC 'Water-Cultures'project at Ca'Foscari University of Venice. His work focuses on the cultural, environmental and medical history of Medici Tuscany. He is the author of Michelangelo Buonarroti. Forme del sapere tra letteratura e arte nel Rinascimento (Polistampa, 2013) and is currently completing a study entitled Luca Martini (1507-61): a Renaissance polymath and bureaucrat in Medici Tuscany.

David Gentilcore is Principal Investigator of the European Research Council advanced grant 'Water-Cultures: The Water Cultures of Italy, 1500-1900', and full professor of early modern history at Ca'Foscari University of Venice. He has published widely on the social and cultural history of early modern Italy, with a special

interest in the nexus between food, health and medicine. His most recent books are Pellagra and pellagrous insanity in the long nineteenth century, co-authored with clinical psychologist Egidio Priani (Springer 2023), and 'Cose rare e ammirande del nuovo mondo'. Le piante commestibili americane nell'editoria veneziana tra Cinque e Settecento (Marsilio 2024).

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