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Volume 22, issue 4, December 2020

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This book deals with the general concepts in stereotomy and its connection with descriptive geometry, the social background of its practitioners and theoreticians, the general methods and tools of this technology, and the specific procedures for the members built in hewn stone, including arches, squinches, stairs and vaults, ending with a chapter discussing the open problems in this field. Thus, it can be used as a reference book in the subject, but it can also read as a compelling narrative on this subject, one of the main branches of pre-industrial technology. Construction in hewn stone requires the use of geometrical methods and tools to assure that individual stones, either blocks or voussoirs, fit with one another and conform to the general shape of walls, arches or vaults. During the Late Middle Ages and the Renaissance, such techniques and instruments were developed empirically by masons and architects. Later on, learned mathematicians and engineers introduced refinements in these procedures and this branch of knowledge, known as stereotomy, furnished much material to descriptive geometry, a science born with the French Revolution which provided the foundation for projective geometry.

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Brian Wichman David Wade

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**Daniele Barbaro's** 

1st ed. 2019, CV, 849 p. 185 illus. in color.

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Vitruvius

Translated and Annotated

of 1567

by Kim Williams

Printed book

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eBook

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Kim Williams (Ed.)

# Daniele Barbaro's Vitruvius of 1567

- Makes this important treatise available for the first time to an Englishspeaking readership
- Provides proper citations for all sources consulted by Barbaro
- Contains cross-references to both the original Italian publication and to modern editions of Vitruvius allow the reader to navigate the two intertwined texts

This is the first-ever English translation of Daniele Barbaro's 1567 Italian translation of and commentary on Vitruvius's Ten Books of Architecture, an encyclopaedic treatment of science and technology whose influence extended far beyond its day. Intended to both interpret and expand upon the Vitruvian text, Barbaro's erudite commentary reflects his Aristotelian approach, particularly his fascination with the relationship between science and the arts. This treatise offers a window onto the architectural ideals of the 1500s, as well as then-current notions of philosophy, mathematics, music, astronomy, mechanics, and more. The text is accompanied by illustrations by the Renaissance architect Andrea Palladio and his contemporaries. Palladio's own Four Books on Architecture, published in 1570, was just one of many treatises on architecture that was inspired by the ideas contained here. An overview of Daniele Barbaro's thinking is presented in a foreword by Branko Mitrovic´. The collocation of Barbaro's treatise between those of Alberti and Palladio is addressed in a foreword by Robert Tavernor. Kim Williams provides a translator's note to orient the reader. The text of the translation is cross-referenced to both Barbaro's 1567 publicationand standard divisions of Vitruvius. The volume includes a detailed index of subjects and an index of proper names.







XXIV, 386 p. 250 illus.

#### **Printed book**

Hardcover Ca. 99,99 € | Ca. £89.99 | Ca. \$119.99 <sup>[1]</sup>Ca. 106,99 € (D) | Ca. 109,99 € (A) | Ca. CHF 118,00

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Kim Williams, Cosimo Monteleone

# Daniele Barbaro's Perspective of 1568

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- Reveals the truly innovative nature of Barbaro's experiments and results

A year after the second edition of his famous translation and commentary on Vitruvius, Daniele Barbaro published The Practice of Perspective, a text he had begun working on many years before. Barbaro was the first to publish a formal treatise entirely dedicated to the science of geometric perspective. In an informal style especially addressed to practicing artists and architects, Barbaro begins by drawing on and expanding the manuscript treatise of Piero della Francesca with regards to basics of perspective constructions for representing threedimensional solids on two-dimensional media, and then goes on to show that perspective is a particularly suitable instrument for other scientific and artistic applications as well, including cartography, cosmology, stage set design, and anamorphosis.

Here for the first time Barbaro's The Practice of Perspective is made available to contemporary scholars in an English translation, augmented by annotations relating the printed treatise to the three unpublished manuscripts in Italian and Latin of the work now conserved in Venice's Biblio teca Nazionale Marciana.

A foreword by Philip Steadman sets the stage for this book. In-depth essays by authors Kim Williams and Cosimo Monteleone situate the treatise within the editorial panorama of the Cinquecento, outline the innovations that Barbaro brought to the study of perspective, and focus particularly on his creative explorations of geometric solids and the construction of clocks.

Sometimes dismissed in recent studies as a compilation of known principles, the aim of this pr esent book is to reveal the truly innovative nature of Barbaro's experiments and results and res tore him to his rightful place as an original scholar of Renaissance perspective theory.







SPRINGER REFERENCE

Bharath Sriraman *Editor* 

### Handbook of the Mathematics of the Arts and Sciences

#### Deringer

1st ed. 2021, XXIX, 2793 p. 1489 illus., 1063 illus. in color. In 3 volumes, not available separately.

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Explores the most important questions on interdisciplinarity Edited and written by leading scientists

•The goal of this Handbook is to become an authoritative source with chapters that show the •origins, unification, and points of similarity between different disciplines and mathematics. Some chapters will also show bifurcations and the development of disciplines which grow to take on a life of their own. Science and Art are used as umbrella terms to encompass the physical, natural and geological sciences, as well as the visual and performing arts. As arts imagine possibilities, science attempts to generate models to test possibilities, mathematics serves as the tool. This handbook is an indispensable collection to understand todays effort to build bridges between disciplines. It answers questions such as: What are the origins of interdisciplinarity in mathematics? What are cross-cultural components of interdisciplinarity linked to mathematics? What are contemporary interdisciplinary trends?

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What do figure skating, invasive species, medieval cathedrals, ropes, poems, wines, metaphors, rhythms, climate change, and origami have in common? Mathematics! The Handbook of the Mathematics of the Arts and Sci ences ... is a breathtaking work, for its ambitious scope and for its endless stimulation of the reader's curiosity. - Harry R. Lewis, Gordon McKay Research Professor of Computer Science at Harvard University, editor of Ideas That Created the Future: Classic Papers of Computer Science

Mathematics has always enjoyed deep connections with the arts, science, the humanities, philosophy, history, and society in general. ... This Handbook makes a massive statement about the extent and importance of the interdisciplinary nature of mathematics, and its relevance to all aspects of human culture. Its articles are scholarly a nd authoritative, but also highly readable and accessible to non-specialists. A triumph! **-Ian Stewart FRS**, Emeritus Professor - University of Warwick

This handbook will delight anyone who loves the richness of mathematics and its interplay with the arts and human ities. Bharath Sriraman has given us a great gift, a treasure chest of connections to art and architecture, language a nd literature, philosophy, history, society, you name it. The book is authoritative and charming and instantly establi shes itself as a landmark reference for interdisciplinary mathematics.

-Steven Strogatz. Jacob Gould Schurman Professor of Applied Mathematics at Cornell University.

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Trends in the History of Science

Ana Duarte Rodrigues Carmen Toribio Marín Editors

### The History of Water Management in the Iberian Peninsula

🕲 Birkhäuser

1st ed. 2020, XIV, 384 p. 94 illus., 80 illus. in color.

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### Philosophie der Mathematik in der Antike und in der Neuzeit

#### 🕲 Birkhäuser

1. Aufl. 2020, XIX, 296 S. 8 Abb., 4 Abb. in Farbe.

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About Felix Klein, the famous Greek mathematician Constantin Carathéodory once said: "It is only by illuminating him from all angles that one can come to understand his significance." The author of this biography has done just this. A detailed study of original sources has made it possible to uncover new connections; to create a more precise representation of this important mathematician, scientific organizer, and educational reformer; and to identify misconceptions. Because of his edition of Julius Plücker's work on line geometry and due to his own contributions to non-Euclidean geometry, Klein was already well known abroad before he received his first full professorship at the age of 23. By exchanging ideas with his most important cooperation partner, the Norwegian Sophus Lie, Klein formulated his Erlangen Program. Various other visionary programs followed, in which Klein involved mathematicians from Germany and abroad. Klein was the most active promoter of Riemann's geometricphysical approach to function theory, but he also integrated the analytical approaches of the Weierstrass school into his arsenal of methods. Klein was a citizen of the world who repeatedly travelled to France, Great Britain, Italy, the United States, and elsewhere. Despite what has often been claimed, it must be emphasized that Klein expressly opposed national chauvinism. He promoted mathematically gifted individuals regardless of their nationality, religion, or gender.

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