

BOOK REVIEW

RENAISSANCE FUN: THE MACHINES BEHIND THE SCENES

Philip Steadman

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420 pages, 196 colour and monochrome illustrations

If you are interested in how things work, this is the book for you. The focus is on mechanical effects both inside theatres and outside in gardens (although there is cross-over between the two), purely for the purpose of entertainment. The timeframe is from roughly 1400 to 1700 when most of the spectacular sights and experiences were to be found in Italy. Indeed John Evelyn's visit to Athanasius Kircher appears on page 1 (see *TML* 26, p. 9). As a contemporary tourist to Italian gardens and devotee of the theatre, John Evelyn's descriptions also appear elsewhere in the book. However the emphasis is on what went on behind the scenes rather than the audience experience in front. Wherever possible the author has gathered and interpreted the notes and descriptions of the devisers of the machines (e.g. Leonardo da Vinci) and those permitted to see the mechanisms. Often these do not give the complete picture or can be vague on essential detail and Steadman suggests how they may have worked in practice. In a few cases, the secrets were never revealed and he can only speculate, and in others he discusses modern working reproductions.

The machinery and effects described depend on engineering of many kinds (mechanical, hydraulic, pneumatic, optical, etc.) and occasionally simply illusion. The two works of Hero of Alexandria – *Pneumatics* and *On Automata-Making* – from the first century AD are often referred to and form the basis for many of the ingenious Renaissance machines, with the addition of a little gunpowder.

The first part of the book deals with theatre. Topics include the introduction of perspective in scenery to give an illusion of depth, machines to change scenery faster, lighting and from 1500 the introduction of *intermezzi* between acts. These became more and more elaborate with flying people, birds, dragons etc., moving clouds, smoke and fire and numerous other special effects requiring machinery, not to

mention costumes. The book then includes *intermezzi* in its structure to introduce more exotic interludes, including the magic lantern.

In 1558 Giovanni Battista della Porta produced a moving picture show, in colour – with a camera obscura. The replacement of the pinhole with a lens enabled viewers to see the image when 'inside' the

camera as in today's examples such as the Clifton Observatory. In the early 1600s Dutch engineer Cornelius Drebbel had a costume-changing show (à la Loie Fuller or Peter Sellers' parents), possibly a camera obscura theatre but he never revealed his secrets. Fortunately Constantijn Huygens (Christiaan's father) knew him well and recorded his activities. Then we come to the magic lantern – more successful than the camera obscura as more versatile – with motion and colour, as illustrated by Christiaan Huygens' own sketch for an animated slide of a skeleton.

The second part of the book deals with gardens. We meet artificial creatures, including the mechanical moving and singing birds of the Fountain of the Owl at the Villa d'Este in Tivoli, visited by Evelyn and Henshaw, as well as the

warrior riding the swan featured on the front cover (think pantomime ostrich), artificial music from pipe organs, flute and solar-powered harpsichord, and fountains of all types including the trick variety that soaked the admirer. Weather-protected grottoes gave even more scope for imaginative machines.

The third part of the book gives two examples that had it all (except a magic lantern) – the one and only performance of the 'opera tournament' *Mercury and Mars* on 21 December 1628 at the Farnese Theatre in Parma, with Monteverdi providing the music; and the villa and gardens at Pratolino near Florence designed by Buontalenti for the Medici Grand Duke Francesco I of Tuscany.

Although the magic lantern forms only a small part of the book it does give a wonderful feel for the extraordinary technical innovation in entertainment at exactly the time the magic lantern was invented. This is a beautifully engineered book, easy to read and full of interesting examples and detail. It is packed with illustrations although it is hard to pick out the detail in some. The paperback is good value but you can even download the book for free.

The author is an architect – as were some of the devisers of the machines in the book – and Emeritus Professor of Urban and Built Form Studies at University College London. He has demonstrated how Vermeer may have used a camera obscura.

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