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Book Reviews

Medieval Science

M.-T. Zenner, editor, *Villard's Legacy: Studies in Medieval Technology, Science and Art in Memory of Jean Gimpel*. AVISTA Studies in the History of Medieval Technology, Science and Art, volume 2. Aldershot, UK: Ashgate. lxiv+300 pp. 154 illustrations. $99.95/£57.50. ISBN 0-7546-0929-4.

This is a very personal book, probably even more so than most Festschriften. Two essays commemorate Jean Gimpel the man (1918–1996), in his roles as a historian of medieval technology, as a founder of AVISTA and as a philanthropist who tried to promote the simpler technology of medieval times (through the use of models rather than technical handbooks) in third-world countries. The idea for AVISTA took root at a meeting in Honnecourt at which a replica of a machine designed by its famous citizen, Villard, was inaugurated. Villard was always a favourite of Gimpel's, as is manifest in the first of his two best-known books, *The Cathedral Builders* (first published in French in 1958; in English in 1961). It is appropriate, then, that the first and larger part of the present book should be devoted to themes centred on Villard de Honnecourt's sketches of Gothic architecture, a portfolio of which is included in the prefatory material to the volume. These articles include consideration of the use of different geometrical figures in cathedral design (Nigel Hiscock), the problem of the discrepancy between Villard's sketches of Reims Cathedral and the real thing (William Clark), the kind of masons' marks that appear in Villard's portfolio (Janet Snyder), the challenge of designing and building exceedingly tall spires (Robert Bork), and the use of tufa webbing and wattle centring in English vaults (Malcolm Thurlby). Two article burst out from the academic straight-jacket in ways that might have appealed to Gimpel's rather iconoclastic style: a recreation of a dialogue between a master and apprentice inspired by the pictures in Villard's portfolio (Renaud Beffeyte) and an attempt at detecting Masonic symbols and rituals in the 'Saracen's Sepulchre' on fol. 6r of the portfolio.

The second part of the book is a miscellany on 'Science and Technology', whose topics echo, rather, those of the other book written by Gimpel that was to prove very popular: his *The Medieval Machine: The Industrial Revolution of the Middle Ages* (first published in French in 1975; in English in 1976). These articles include a fascinating account of the relationship of the development of the horse harness to the replacement of oxen by horses in ploughing and other utilitarian tasks. Paul Gans, the author, challenges Gimpel's idea that the harness was the cause of a revolution in agriculture in the medieval period. Also, by using a range of material that extends from Ancient Rome to China, and by going into technical and anatomical details, he explains how several different factors determined the replacement of the oxen by horses (he is clearly developing ideas already dealt with in detail by John Langdon: *Horses, Oxen and Technological Innovation: The Use of Draught Animals in English*

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Natural History

Miguel De Asúa and Roger French, *A New World of New Animals: Early Modern Europeans on the Creatures of Iberian America*. Aldershot, UK and Burlington, VT: Ashgate, 2005. xviii+257 pp. $89.95/£50.00. ISBN 0-7546-0779-8.

When Charles Darwin approached the South American shores in 1832 to study the natural history of the continent, he expected the fauna to be quite different from the animals he was used to in Europe. Through reading readily available literature, he knew he could find jaguars, tapirs, manatee, and capybaras. In contrast, when Christopher Columbus first set foot on the continent in 1494, there was no body of knowledge that could have prepared him for the wealth of animals, plants, minerals, and landscapes never previously encountered. This book is about Europeans who studied the natural world of Iberian America and challenged the existing moulds of thought based on the classics. They had to come to grips with a wide variety of creatures which had no names and which appeared to differ from everything they knew from either personal knowledge or ancient authority.

The book gives an overview of the natural history in the travel accounts resulting from the early voyages of discovery, followed by examples of how the observations entered the reviews published in Europe in the sixteenth and seventeenth centuries. As such, it explores an almost virgin territory. It is quite an eye-opener to read how many people contributed to the exploration of the natural history of the Americas in that age. The authors of the present volume guide the reader confidently and carefully through these uncharted waters. They give a context to understand Francisco de Oviedo, who was commissioned by the Spanish court to write a *General and Natural History of the Indies*. Published in 1535, the work devotes four parts to the beasts, fish, birds, and insects, with descriptions said to be based on personal experience. The authors of the present volume also tell of Francisco Hernandez, who, later in the sixteenth century, explored the area of Mexico for seven years, collecting masses of material on the fauna and flora. Hernandez was among those who attempted to describe all known species and to illustrate those which were yet unknown in Europe. The animals of the New World were largely different from the European animals, for which reason they needed new names, often based on local usage. In the course of the seventeenth century, the American animals were integrated in the early taxonomic systems of encyclopedic works such as those of Ulisse Aldrovandi, Konrad Gesner, and Johann Jonston.

This book contains considerable amount of detail about the travellers and authors who contributed to the knowledge of the animals in the New World. They are introduced through short biographies, their books are analysed, and their work is placed in historical context. The book will not tell you where to find information about the tapir or the sloth, but it will tell you how the various authors of the sixteenth and seventeenth centuries obtained the information and how they tackled the tricky business of describing animals which were unknown to Pliny and his contemporaries. The authors limit themselves largely to published written sources. There is only passing information about the impact of specimens of natural history which entered into the cabinets in Europe, or about the spread of knowledge through

drawings or other artwork, or about the exhibition of live animals in the European towns. It is to be hoped that this may be a topic of future research.

The sources explored in this book were written in Latin, Spanish, French, Dutch, and a host of other European languages, and this obviously added to the complexity of the investigations of the present authors. Although they do not expect an equal linguistic command from their readers, the text tends to be spiced with occasional colloquial terms for purely literary purposes. Why do we need to read about 'Calvinist *predikants* [sic]' in the chapter on the Dutch contribution to the zoology of Brazil, when vicar or preacher could have conveyed the same meaning? I did occasionally get confused by the titles of the books mentioned in the text and footnotes, because sometimes they are quoted in the original language, while in other cases they are translated into English. I was also surprised by the frequent reference to reprints of facsimiles, often only quoted with the date of the new edition both in footnotes and in the bibliography. Sometimes, this gives rise to ambiguities, as in the case of Thevet's *Les singularités de la France antarctique*, quoted from a 1982 reprint of 'the' 1558 edition—but one was published in Paris, another (not exactly similar) in Antwerp. As the authors probably consulted most of the original editions as well, this use of reprints seems unnecessary.

The book is provided with an adequate list of contents and illustrations. There is a good index, which also includes names of individual animal species. One should buy this book for the fascinating details contained in the text, in which the authors achieve what they set out to do, to explain how the American animals were discovered and helped to change the European worldview.

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The Nineteenth Century

Sharon Ruston, *Shelley and Vitality*. Basingstoke, UK and New York: Palgrave Macmillan, 2005. xiii+229 pp. £45.00/$79.95. ISBN 1-4039-1824-4.

Percy Bysshe Shelley's interest in science has long been a subject of at least comment if not sustained interest among biographers and critics. With the notable exception of Marilyn Butler, however, few authors have systematically placed Shelley's scientific interests within the intellectual climate that nurtured them; nor have they followed the often fascinating links between his poetry and what turns out to have been a thoroughgoing familiarity with *au courant* science of the first third of the nineteenth century. Sharon Ruston's *Shelley and Vitality* narrows these gaps and makes at least a modest contribution to the history of science, in part despite and in part because of the author's clear disciplinary affiliation with the study of English Literature.

The book opens with an overview of vitalism, recounting the early nineteenth-century conflict between, on one hand, the conservative belief in a uniquely human vital principle tantamount to the soul and, on the other hand, the radical 'materialist'