

with many of these images being made available to scholars for the first time. Stephen Royle, Catherine McCullough and W. H. Crawford have displayed sparkling enthusiasm for urban history throughout these volumes. This, combined with scholarly research and detailed maps and illustrations, makes these atlases worthy of widespread attention.

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CARTOGRAPHIC RELIEF PRESENTATION (reprint) by Eduard Imhof, edited by H. J. Steward, ESRI Press, Redlands, USA, 2007, 436 pp. (with 222 b/w illustrations and 14 colour plates), ISBN 978-1-58948-026-1, \$59.95 (pbk)

Eduard Imhof's *Cartographic Relief Presentation* of 1982 – a masterpiece of cartographic literature and still the only textbook to treat every important aspect of terrain mapping thoroughly – has been re-published by ESRI Press in its original form. The book first appeared in German under the title *Kartographische Geländedarstellung* during Imhof's last year at ETH (Eidgenössische Technische Hochschule) Zurich, where he was a Professor of Cartography from 1925 to 1965. It summarises his achievements in cartographic relief representation, which mainly consist of naturalistic depictions of terrain using a combination of shaded relief, rock drawings, contour lines, and spot heights. For the English edition of the book published in 1982, selected chapters were supplemented with recent developments (mainly analytical shading) and the reference section was expanded.

Cartographic Relief Presentation is not an introductory textbook and it is presumed that the reader already has some knowledge of cartography. The main body of the work covers all conceivable aspects of contouring, relief shading, hachuring, rock drawing, spot heights, and area colours. It also deals with some of the more specialised aspects of relief presentation, such as the depiction of scree, glaciers, and landslides. Imhof stresses the need for aesthetic sensitivity throughout, insisting on direct observation and drawing as a means of landscape study for the creation of clear and expressive topographic maps.

Both the German and the English versions were expensive to buy yet rapidly sold-out, forcing keen cartographers to pay exorbitant prices for second-hand copies. ESRI Press deserves credit for re-publishing this reference book at an affordable price. While the original page layout is retained (thus facilitating page referencing), it is unfortunate that the 200+ original illustrations are reproduced in varying quality. Many greyscale illustrations are too dark and the colours of the famous Walensee map painting (Plate 10) do not do justice to the original. On the positive side, minor wording and punctuation issues have been corrected and two errors relating to the figures have been rectified (in the 1982 edition, images 3 and 4 of Fig. 17 were reversed and Figs. 98 and 99 were printed upside-down).

Generally, the original editions of 1965 and 1982 were very well received by contemporary reviewers, who called *Cartographic Relief Presentation* the 'most thorough and authoritative cartography text book available in the English language',¹ 'the most detailed, exhaustive, and richly illustrated text on the problems and methods of terrain representation',² a 'landmark',³ and a 'masterpiece of cartographic writing'.⁴ But reviewers also found points to criticise, noting the complete absence of plan oblique relief maps developed by A. K. Lobeck and E. Raisz,⁵ Imhof's relative lack of references originating from non-German/French-speaking countries,⁶ an almost exclusive preference for alpine terrain representation,⁷ and 'an unfortunate tendency to denounce the technical procedures of others (about one per chapter)'.⁸ This tendency might seem harsh to today's readers, but it illustrates the raging debate over the portrayal of terrain among cartographers during the first half of the twentieth century,

especially those in German-speaking countries. One English-language reviewer also criticised the relatively high importance given to shaded relief as opposed to contour lines,⁹ it is clear that Imhof advocates the Swiss style of terrain portrayal, which uses a combination of the two.

As a textbook on cartography from 1982, *Cartographic Relief Presentation* captures the state of various techniques for representing terrain at the dawn of the digital revolution. The twenty pages on hachures – a technique used rarely today – are probably only of interest to map historians and the applied techniques described in the book have all changed with the advent of digital technology. It is important to note that Imhof was not against the use of computers in cartography and he followed digital developments with much interest until his death in 1986. Nevertheless, at the beginning of the 1980s, digital elevation models were not widely available, algorithms for contouring or relief shading were not yet sophisticated enough, and the reproduction of computer-generated greyscale images was very difficult. Despite these humble beginnings, Imhof welcomed developments in analytical relief shading, but at the same time criticised their imperfections. Were Imhof alive today, it would be very interesting to know his opinion on later developments such as natural-colour maps derived from satellite land cover data,¹⁰ which are similar in appearance to Imhof's Walensee map painting of 1938 in their combination of land cover colours with shaded relief. *Cartographic Relief Presentation* nevertheless has much to offer to the modern cartographer, not so much as a technical guide but as a reference and a source of inspiration, showing how relief can be displayed on maps optimally.

The first published review of the 1965 issue concludes by saying 'To sum it all up, the book is warmly recommended, without any reservations, to all map makers, from the apprentice or student to the heads of publishing firms and government mapping agencies'.¹¹ While this still holds true, an updated version integrating modern digital techniques would nevertheless be much appreciated by many practising cartographers.

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ANDREAS CELLARIUS, HARMONIA MACROCOSMICA OF 1660: THE FINEST ATLAS OF THE HEAVENS with an introduction and texts by Robert H. van Gent, Taschen, Köln, 2006, 240 pp., ISBN: 3-8228-5290-3, £79.99 (hbk)

The *Harmonia Macroscmica* ('The Harmony of the Macrocosm') of Andreas Cellarius is one of the most famous and elegant celestial atlases ever published. Printed in Amsterdam in 1660, and dedicated to the English King Charles II, it was intended to be the first of a two-volume publication illustrating historical knowledge of the heavens and the geocentric and heliocentric world systems (and variants thereof), as well as discoveries made since the development of the telescope. Only the first volume ever saw publication, however, and all twenty-nine of its double-folio plates are here reproduced in actual size (520 x 620 mm), along with the frontispiece (430 x 265 mm). The reproductions are based on a copy now at the Universiteitsbibliotheek in Amsterdam. For each of these plates, Robert van Gent has supplied a highly useful commentary in three languages (English, German, and French), with enlarged details from each plate decorating the pages facing the modern commentary.

Van Gent has also composed a preliminary essay on the history of celestial atlases and globes, providing important historical background to Cellarius' elaborate volume. This essay is also presented in three languages and illustrated throughout with well-chosen and carefully reproduced illustrations from manuscripts and artefacts relating to the early history of celestial cartography. Following the plates from the *Harmonia Macroscmica* and the accompanying commentaries by van Gent, which form the focus of the volume, there is a brief history of the constellations and a list of the star names occurring on the plates with derivations of the names, followed by a glossary of terms employed throughout the volume. The volume ends with a brief essay providing

¹Worth, C. (1984), *The Cartographic Journal*, 21(1), 72–73.

²Thomas, B. (1966), *The Professional Geographer*, 18(6), 407–408.

³Irwin, D. (1984), *The American Cartographer*, 11(1), 86–87.

⁴Keates, J. S. (1984), *Australian Geographer*, 16, 167–168.

⁵Thomas (1966) and Ryerson, C. C. (1984), *The Professional Geographer*, 36(3), 387–388.

⁶Coulson, M. R. C. (1984), *Cartographica*, 21(4), 119–121 and Unwin, D. J. (1984), *Bulletin of the Society of University Cartographers*, 17(1), 39–40.

⁷Unwin (1984) and Keates, J. S. (1966), *The Cartographic Journal*, 3(1), 46–47.

⁸Coulson (1984).

⁹*Ibid.*

¹⁰For example, Patterson, T. (2004), 'Hal Shelton Revisited: Designing and Producing Natural-Color Maps with Satellite Land Cover Data' *Cartographic Perspectives*, 47, 28–55.

¹¹Hölzel, F. 1966, *The Cartographer*, 3(2), 178–180 (translated from the original in *Kartographische Nachrichten*, 1966, 1).