

obtained and research began. In 1987, *Volume I: From the Beginning to 1800* appeared to critical acclaim; now in 1990 we have *Volume III*; in 1993/4 we expect *Volume II: The Nineteenth Century*. The overall project is monumental — involving hundreds of people, decades of time, and millions of dollars in effort. While the SSHRCC provided the basic funding, significant amounts were obtained from other sources, notably from the Bank of Montreal for this volume.

The acknowledgments page contains four long columns of names of people who worked on this atlas from 1979 to the present. Gold leaf on the spine singles out the primary persons — editors Donald Kerr and Deryck W. Holdsworth plus cartographer/designer Geoffrey J. Matthews. The first name listed in the acknowledgments is the director of the executive committee, William G. Dean. The last Acknowledgments section, "Translator for the French Edition," reminds us that bilingual Canada has produced a French language edition simultaneously to the English language version. Yet another monumental task!

The contents are organized into two parts. Part One, *The Great Transformation, 1891-1929*, depicts the change in Canada from a rural, mostly British or French society to a more urban and multi-cultural land. Part Two, *Crisis and Response, 1929-1961*, chronicles the Great Depression, the Second World War, and the post-war boom years. The stage is set before these major parts by a short overview section covering territorial evolution, economic growth, and the composition of the population from 1891 to 1961.

The basic organization of each section or part is an introductory essay of three to five pages telling the story and referencing the appropriate maps. This essay is

followed by the full-color double-page plates; there are four plates in the overview, thirty-five plates in Part One, and twenty-seven plates in Part Two. Supporting the plates is an extensive Notes section from pages 163 to 197. The Notes include comments, bibliography, and suggested further readings.

The sixty-six plates are the cartographic heart of this endeavor. Chief cartographer Geoffrey J. Matthews of the University of Toronto is credited with seventeen previous atlases. His experience shows in the variety and excellence of the design of the plates. Each plate is a unique and complex assemblage of diverse graphics masterfully juxtaposed into a visual feast of informational graphics. Color choices are uniformly excellent. Open the volume to any plate — you will see maps of diverse scale and positioning deftly separated visually from one another by devices such as feathered edges. There are many numerical and graphical scale notations but, no references to map projections. Blocks of text relate to the graphics naturally without boxes. An endless variety of symbols abound — proportional divided circles, flow lines, bar charts, graphs of all sorts, drawings and innovative diagrams.

All are produced to technical perfection.

For sheer volume of information presented it is difficult to excel plate 47, Military Activity in the Second World War. On one double-page spread information is presented on mobilization, military fatalities, war graves, and military actions down to where and when which ship sunk which U-boat! Incredible!

Can any cartographic flaws be discerned? This reviewer feels that the plates suffer a little from being over-full, and too many map scales are employed. Any project involving so many people over

such a long time is likely to include too much in every topic. A little more space between elements even at the expense of some data would be welcome. A few other criticisms, in order of the plates, will be offered. On plate 5, I find the use of multiple-colored dots confusing. Also, red dots on the upper map equal black, red and green dots on the lower map. On plate 12, the legend of Industrial Generating Capacity, the word 'hydraulic' seems misused. Either 'water' or 'hydro-electric' seems better. On plate 14 and elsewhere the photographs are printed too dark. On plate 21 the drainage does not fit the shaded relief plate, especially in the upper Peace River drainage. Finally, slight misregistry may be seen occasionally where the linework does not trap the colors. Inattention by the printer is assumed to be the cause. In sum, however, the flaws are slight.

Canada has a right to be proud of this atlas. Every library and as many citizens as possible should own a copy. It will answer many questions and afford many hours of enjoyable and enlightening perusing. We look forward to the final volume of the trilogy.

#### BOOK REVIEW/COMMENTARY Rimbert, Sylvie (1990)

*Carto-graphies*, Hermes, 175 pp.  
260F. ISBN 2-86601-233-X  
reviewed by Peter Gould,  
Penn State University

The hyphen in the title of this book should warn us that this is not a text on cartography in any of the usual senses. Rather, it is a series of reflections, couched in both written text and graphic illustration, by a geo-cartographer who directs one of France's major centers of cartographic research. Her subject is what I would like to call the 'missing potentialities' of the graphic revolution brought



about by the personal computer. This theme comes as a bit of a surprise to someone living on the high plateau of geographic illiteracy on the west bank of the Atlantic River, because in many ways the French seem to be much better than we are at getting powerful graphic images into the intellectual bloodstream. It is no accident that the book appears in a series edited by the geographer Roger Brunet, with a strong supporting Preface by Abraham Moles, a psychologist who helped so many of us to think towards the power of the graphic image. But recent developments, though encouraging, are not good enough for Sylvie Rimbert, and I agree with her. It is going to take prolonged and patient effort to mend the intellectual rent of the 19th century that tore the spatial domain from thinking in the human realm.

The book is structured in five parts (an Introduction, three chapters, and a short Conclusion), raising the question of the graphic imagination, and how this might be enhanced by transformations, generalizations and simulations, each 'genre' pointing to still-unrealized potentialities of graphic presentation. Some of these have been with us (in a sense of being technically available) for some time, but simple availability does not mean that these imaginative approaches are actually used. In a very deep-seated sense, this 'paradox of reluctance' is embedded in the larger educational and political sphere. Educationally, we have failed to put into place those conditions of possibility that would allow a person to take for granted the power of visualization. And I am not referring simply to the common, but never ordinary, 'person-in-the-street,' but to highly specialized professionals in many of the sciences. Too many seem to have been thrown into a world with their spatial thinking loboto-

mized from the material and historical dimensions of human existence. Epidemiologists grind out numbers with their differential equations, never asking *where* the epidemic might be; people in medicine collect what are in essence spatio-temporal data cubes, but then sit on them because they cannot think of anything better to do. Somehow we have to enhance peoples knowledge of the potentiality of visualization, and help them to become more familiar with the ready-at-hand tools that help them to see. As human beings, we have the capacity to create written, graphic and algebraic 'texts,' and then impress them with meaning. Our schools emphasize the first and last, language and symbolization. What has happened to that third leg of the tripos, the graphic? The democratization of information depends upon it.

One of the things we can do is transform one space into another, often with startling and thought-provoking results. Which, presumably, is the whole point. We want people to say "Hm, I never thought about it in that way before!" Pixels arrayed in a list are useless: mapped (literally 'mapped,' in both a mathematical and geographical sense) onto a 3D  $\rightarrow$ 2D 'projection,' and SEASAT's 'surface of wind velocity' appears. Sheer numbers arrayed in their x,y coordinates are pointless: but smoothed, interpolated (you had better know *what* you are doing!), and displayed as a 3D perspective, and the valley of a meandering stream appears. Want to show the geographical research power of Paris? Transform France in proportion to the scientific resources given, and we see how the 'Sun King' still lives in Versailles, surrounded by his satellites, more than two hundred years after the Revolution — the **second** Revolution, please. Where are the young people? Transform France again,

and see the splendid expanse of northern France's maternal bosom, and the withered womb of the south. Thought you could picture Switzerland? Which Switzerland? The one on the schoolroom wall? Or the one of the bloated Zürich spider, a center with its peripheries if there ever was one? An 'imbalance' north and south? How can people visualize trillions of dollars? But show them how a contracted Latin America fits 8-10 times into an expanded Anglo America, and people say "Hm. . . That's what GNP means!" Nor are we confined to static images. Tobler's flows and 'winds of influence' might be animated, and many processes of spatial transformations might be visualized in moving images, so people can see how we get from 'here' to 'there.'

What about generalizations? Starting with Borgès' delightful story (or was it true?) of the map as big as the country it represented, we are led through a careful discussion of 'information loss' that paradoxically allows us to see more. Well, not 'more,' but more clearly, at least the forest now that the trees have been cleared away a bit. It involves us, of course, in the matter of hierarchical organizations; what shall we clump together and aggregate to see the major outlines; what general trends illuminate the particular residuals?

What about simulations, presented either in static or animated form? Here Sylvie Rimbert points to a future, a future of research, and a future of potentialities to come. Her purpose is to encourage thinking in this direction, and her approach is deliberately touched with the pedagogic brush. She creates Yonabourg, a small, quite imaginary village, named after the architect Yona Friedman, who created Machinebourg in 1975, a town taken over by the technocrats because the people, the unwashed 'they,' were not compe-



tent to handle their own affairs. Yonabourg is transformed into simple structures, numerical tables, surfaces of accessibility, transversed for its gradients, constrained by one-way systems, called to the center by day, pushed to the periphery by night, gridded, weighed, measured, and otherwise massaged in something close to a prurient manner — is that 'attractivité nocturne' really just the Maison de la Culture? Finally, the poor little village is subject to an invasion of mice during one especially warm winter favoring their reproduction, an invasion fought desperately by the inhabitants of Yonabourg with barriers of cats! Along the way, we learn a lot about planar graphs, potential models, spatial constraints, gravity calculations, least-cost paths, diffusion simulation, predator-prey models, Markov chains, and even what happens to a central place under fractal disintegration. In animated, perhaps interactive form, we could actually change a barrier (stay there Minou!), or a one-way street, and see what happens to the invisible landscapes of probability and accessibility overlying the town. If this does not open the eyes of readers to new ways of seeing and thinking, I do not know what will. Unless, of course, we could put *Carto-graphies* into the VCR and play it.

Hm?

#### LIST OF MAPPING VIDEOS

Mark MacLennan of the Department of Geography at SUNY-Buffalo has compiled a list of video tapes about GIS, LIS, map-making, surveying and visualization. The list of twenty-seven tapes provides information on the title, format, length, date, sources, and subject description. The list is published in the *Newsletter* (16:2) of the Canadian Cartographic Association.

#### GESTURES FOR JARGON

*Hand Signs for Technical Terms Used in Thematic and Topographic Mapping* evolved from needs of hearing impaired employees at the Rocky Mountain Mapping Center, USGS. Co-authors Richard Will and William E. Krohn recognized the need for more accurate communication than possible in standard sign language and developed a book to show workable signs for the mapping industry. Single copies are free from the USGS, Books and Open-File Section, Box 25425, Denver, CO 80225.

*Geotimes*, November 1990

**Rockwell, Ken (1990)**  
**Privatization of U.S. Geological Survey Topographic Maps: A Survey.** Government Publications Review, May/June 1990, pp. 199-211.

Abstract: Topographic mapping is a long-established government activity. Libraries have been receiving maps from the United States Geological Survey for over 90 years; recently this and other map depository arrangements with federal mapping agencies have been consolidated into the Government Printing Office's library depository program. This long relationship could be jeopardized by an Interior Department proposal to privatize the mapmaking activities of the U.S. Geological Survey. This proposal is consistent with the philosophy prevailing during the Reagan administration that government should not compete with the private sector in the provision of products and services, including the publication of government information. Just as the cutback in government publications has negatively affected depository libraries in general, so the transfer of topographic mapping to private concerns could lead to the end of

the depository arrangement, higher prices, copyright restrictions on users, with spotty coverage of areas and uncertain revision of maps due to variable demand.

#### EOSAT PUBLISHES TM BAND COMBINATION POSTER

A new poster created by EOSAT describes in words and images the technical capabilities and practical applications of Landsat Thematic Mapper data. On one side, the TM poster features color images of Charleston, SC, to illustrate the differences in applications of various TM band combinations. The reverse side uses graphs and charts to describe some fundamental aspects of multispectral remote sensing and how the Thematic Mapper sensor acquires imagery. EOSAT is distributing the TM Band Combination Poster at no charge. Contact your regional sales representative or call EOSAT Customer Services at (301) 552-0537 or (800) 344-9933.  
*Landsat World Update 3:8*  
August 1990

#### new maps

**WORLD.** Earth by night. Salt Lake City: Hansen Planetarium, 1990. \$7.50. Hansen Planetarium, 1098 South 200 West, Salt Lake City, UT 84101.

**WORLD.** Economy of the World. Chicago: George F. Cram Co., 1990. \$270. For more information, call 800-227-4199.

**WORLD.** Ecoregions of the continents. Washington: U.S. Forest Service, 1989. Scale 1:30,000,000. Supplement to *Environmental Conservation*, vol. 16, no. 4, Winter 1989. For copies, write to Robert Bailey, U.S. Forest