

late ideas for new projects that will incorporate raster imagery and vector GIS. In the introduction, the editors also state that "if the book serves no other purpose than to put would-be GIS developers and users into contact with those who have contributed, at least one aim of the book will have been achieved (p. xix)." It is also highly likely that this goal will be achieved. Achieving the goal, however, is not necessarily a compliment to the book. While the book presents a large array of studies, each case study is given only approximately 3.5 pages, and there is no bibliography anywhere in the book. The brevity of the reports and the lack of references are likely to leave many readers very interested in the potential applications, but unsure as to how to proceed. Therefore, the contributors may indeed receive many calls. The intended audience may have been better served with fewer studies that would have gone into greater detail.

This book represents an interesting contribution to the fields of remote sensing and GIS, particularly the latter. It is very nicely produced and reasonably priced. The color plates are especially attractive and useful. The organization is clear and the goals of the volume are straight-forward and well defined. It seems clear that this volume is intended for people with a GIS background but little experience with raster imagery. Given the technical jargon used and the brevity of the case studies, the reader will need to have at least a beginning background in GIS. The book will probably find an audience among professional GIS developers. The book could undoubtedly be used in an advanced undergraduate course in applied GIS; however, it is doubtful that this book could be the sole text for an applied GIS course. Given its reasonable cost, it could be used to supplement such a

course. This reviewer recommends this book, given the understanding that it is written and intended for a fairly specific audience.

The Mapping of New Spain: Indigenous Cartography and the Maps of the *Relaciones Geograficas*.

Barbara E. Mundy. Chicago: University of Chicago Press, 1996. 281 pages, illustrated. Hardbound, \$39.95. (ISBN 0-226-55096-6)

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Wallace Stevens begins each of the five stanzas of his mesmeric poem "Sea Surface Full of Clouds" with the same line: "In that November off Tehuantepec..." What follows each time is a rich evocation of the Pacific Coast of Mexico. But while each stanza describes precisely the same view of the coast before the town, the same clouds, the same sea, no two stanzas are alike; each view of Tehuantepec is unique, each view defies the pretense of the others to have shown Tehuantepec itself.

The late sixteenth century *Nahua* painter from Tehuantepec who was given the task of painting a map of his native town to be sent back to crown geographers in the Alcazar of Madrid might well have understood the poet's frustration. What Tehuantepec should he depict? Using what symbolic system? Trained in the elaborate graphic tradition of his indigenous forebears, the Tehuantepec painter could paint the elaborate pictograms of Nahuatl, with their toponymic meanings and associated spiritual traditions. He likely knew enough of the pre-Hispanic mapping traditions that he could use the iconography of clan and

lineage to depict the human geography of his community in a spatial framework that was intimately linked to local topography. At the same time, the Tehuantepec artist had a mission education and was conversant, if not literate, in Spanish. He may well have helped paint devotional images for the friars, and he had certainly picked up a fair bit of Spanish pictorial conventions.

Not to mention spatial conventions. The Tehuantepec painter watched the tail end of a spatial revolution in his land; by the late 1580s, when he was at his artistic prime, more than 90% of the total surface area of his region had been ceded to the Spaniards. The rate had accelerated dramatically over the century. A livestock economy had transformed land use and tenure systems, displacing indigenous agriculture, and the booming market was real estate. All this he would have known well, because the Tehuantepec painter who was chosen to make the map that would become Tehuantepec's response to a geographical questionnaire sent out by Phillip II, hungry for knowledge of his 'New World,' was by trade a painter of cadastral plots, the 'base maps' on which colonial scribes would write in the names of the new Spanish landlords.

The Tehuantepec painter, the creator of the fabulously seductive and syncretistic depiction of Tehuantepec in the *Relaciones Geograficas*, is anonymous. But thanks to Barbara Mundy's recent Nebenzahl prize-winning book, *The Mapping of New Spain*, he (or she) is no longer a total enigma. Nor is the map he made. The cultural, political, and artistic context in which the painters of Tehuantepec, Xalapa, and more than fifty other regions in the Spanish dominion worked are the subject of this book, which takes on a set of rich and difficult texts and succeeds admirably in evok-

ing the complexities of a cross-cultural encounter in geographical depiction.

The Spanish officials in charge of the mapping of New Spain, Pedro de Esquivel and Lopez de Velasco, had assumed that the primary respondents to their questionnaire would be the Spanish colonists themselves. If it had been so, the responses might have been collated and published in an attempt to make the new empire visible. However, due in part to the disdain for pictorial representations held by the colonists (itself a self-conscious response to indigenous forms of representation) the Spanish settlers devoted their attention to the written responses and doled out, with some exceptions, the pictorial, chorographic, and cartographic responsibilities to local native map makers from the *Nahua* nobility. The resulting documents, palimpsests of representational strategies, are daunting symbolic fields, traced over with iconic animals, stylized trees, and trails of footprints. Mundy deciphers their many levels, and by doing so she provides a graphic portrait of the changing conceptions of reality and space among indigenous groups.

Mundy begins with the early modern Spanish context and the imperial ideology of mapping. Her opening chapter lays out the groundwork for understanding Philip's commissioning of the *relaciones* and puts particular emphasis on state centralization and formation, giving the reader an ideological context within which to place the *Relaciones Geograficas*. But the heart of Mundy's book is concerned more with the cultural implications of the *relaciones* cartographic project than with its political ramifications. By contrasting the changing styles and iconography on the maps, Mundy attempts to reconstruct how native cartographers

had a command of both the "artistic conventions of their world as well as the dominant conventions of Europe."

Their images suggest they were self-conscious about their liminal place, not only between Spain and New Spain, but also between *criollo* and indigenous culture. They realized they were presenting their communities to the king and at the same time creating maps for their communities, mirroring the ambiguities of post-conquest life. In fact, the mapping of the community was a crucial aspect of pre-conquest life. Native map makers, nearly always from the nobility, mapped the community rather than a city or the topography. They presented not so much how a community (*alteptli*) actually was but how they envisioned it, usually in two ways: as a history and as a social structure and settlement. As Mundy puts it, the Aztec map was an historical map; that is, not structured by geometry but by society. While European maps were geometrical and represented physical space, indigenous maps were social, representing the social and human composition of space and stressing the importance of social relationships and their endurance through time.

Spanish rule gradually undermined and transformed the social and historical basis of Aztec mapping as well as indigenous notions of space and time. Indigenous maps began to change when the understanding of space held by the indigenous peoples changed, particularly as Spanish land use programs and urbanization were imposed, forcing indigenous peoples into different relationships with their surroundings. Ultimately then, the requirements for a map forced natives to comply with Spanish cultural and ideological norms regarding property, space, and landscape. Similarly, through the replacement of logographic

styles with alphabetic writing, natives' ability to both represent community or communicate ideas, as well as to understand such representations, was severely limited. The Tehuantepec painter drew the maps, but the words inscribed on the fields, the words that alienated the land, were written by others.

Mundy's work nicely weaves into a cohesive whole, one meant to analyze not only the state project of mapping New Spain but also the cultural transformation it produced. She reveals, through her analysis of the maps produced, how a state project intent upon capturing the lay of the land was doomed to failure, yet at the same time could succeed in creating the object of its attention, enabling the very cultural transformation that furthered colonial rule. In the shifting signs and glyphs, the blend of landscapes and pictographs, the historian can discern the fading lights of pre-conquest cultural conceptions of space and time. Power struggles trouble the smooth surface of such maps, in which a subject people appropriates the language and tools of their oppressors in order to maintain some semblance of political autonomy and local control.

In the end, the fate of the *relaciones* has a Borjesian twist. So polyvocal were the texts that they were readable by no one. Discouraged by the haphazard responses to the questionnaire and the highly syncretistic, eclectic, and non-arithmetic maps, Lopez de Velasco put the maps into a forgotten corner. While they may not have been useful to Spain's cosmographers and kings, in Mundy's hands they provide a memorable, and at times moving glimpse into the transformation of indigenous society and the establishment of colonial rule. Such glimpses open a narrow aperture onto the moment between contact and control, between encountering

space and eventually controlling a place. In that November, off Tehuantepec...

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NACIS Board Meeting March 22, 1997 Chicago, IL

The following members of the Board were present: Officers Mike Peterson, Keith Rice, Pat Gilmartin, Sona Andrews and Craig Remington; Board Members Jeremy Crampton, Jim Anderson, Cynthia Brewer, Kathy Thorne, Tom Patterson, Joe Stoll, Glenn Pawelski, and Barbara Buttenfield; Executive Director Chris Baruth. The meeting began at 10:03 a.m. with the approval of the minutes from the San Antonio meeting.