

The author has produced a painstakingly thorough investigation of a neglected period in Chilean literature. The work is interesting and valuable not only for the new information on *modernismo* in Chile but also for the link which it provides to the next generation of writers.

University of Alabama

EDWARD TERRY

The Mining Industry of the Norte Chico, Chile. By LELAND R. PEDERSON. Evanston, 1966. Northwestern University. Department of Geography. Maps. Tables. Figures. Notes. Bibliography. Pp. xi, 305. Paper.

In these days of outcries concerning government interference with scholarly endeavors, it is a pleasure to report that Leland Pederson's study of the historical geography of Chile's Norte Chico, which received support from the Geography Branch of the Office of Naval Research, is a notable piece of scholarly research. It deserves greater circulation than that afforded by the photo-offset format of Northwestern University's paperbound "Studies in Geography."

Chile's Norte Chico, as distinct from the barren Norte Grande acquired in the War of the Pacific, comprises the provinces of Coquimbo and Atacama, where the evergreen woodland of Central Chile fades into *monte*, *puna*, and desert. The region's southern end supports grazing and marginal agricultural activities, but the area as a whole is famous for its gold, silver, copper, and (recently) iron mines. Originally settled to aid communication with the Altiplano and Peru, the region's mineral possibilities soon came to light. After recounting the early conditions of settlement and relations with the Indians, Pederson undertakes a thorough, detailed, and generally most readable account of mining, drawing from much archival material. He deals with the socio-economic structure of mining in the region from the first gold placers, opened in 1545, through the "mine gold" period of 1700-1810; the silver-copper boom of 1810-1910; and the "porphyry copper" and iron mining of the twentieth century. Pederson does an excellent job surveying relations among ecology, geology, technology, and mine economics. As a historical geographer, he has avoided discussing in depth Chilean politics, mining law (particularly as it affects foreign enterprises), and the role of international capital. He sticks to his last and sidesteps controversial topics. For example, in treating the economics of labor, he strongly emphasizes its cheapness in contrast with the cost of capital and never once mentions labor unions! (The Office of Naval Research will not get involved in a "Project Camelot".) Particularly noteworthy are discussions of the *encomienda*

and mine labor, the importance of copper in the colonial period, mine workings and ore beneficiation methods in the colonial period and nineteenth century, and the shifting "spatial order." Twentieth-century technology is slighted by comparison.

Pederson set out to survey the mining industry of a given geographical region through its history, style, and character; the title promises no more. His book also documents an extensive case study of a major problem in foreign investment: the integration of large foreign enterprises with existing small-scale national workings. Norte Chico's mining industry today is marked by two large operations (Potrerillos and El Tofo) and a host of small ones. Maintaining a neutral attitude, the author lays bare a basic problem of the Chilean mineral economy. The world-wide shift from selective to mass mining has made most of Chile's small-scale mining obsolescent, and it exists by virtue of incredibly cheap labor and of methods which squander the nation's resources. There actually are iron "mines" worked with pick, shovel, and wheelbarrow! Pederson notes: "Small and medium mining in the Norte Chico is, after all, essentially a scavenger operation" (p. 280). Only the government's *Empresa Nacional de Minería* (whose laudable work is detailed) keeps many in business through a program comparable to U.S. farm aid. Chile's future belongs to the large-scale enterprises; while smaller workings may do well in boom times, they are marginal and "at best a nonexpansive substratum of the Norte Chico's mining" (p. 290). In the author's view, these numerous enterprises give the region its style and character, and he spends a great deal of time and space in painstakingly tracing their past and present problems. Hence he regards the large Potrerillos operation as alien to Chilean mining traditions, even though it turned out as much copper between 1927 and 1959 as all Chile produced before the end of the nineteenth century and is in harmony with the world's most modern copper mining operations. From Pederson's standpoint, Potrerillos "remains an essentially discrete system to which the rest of Norte Chico is largely irrelevant, with little interaction between the components of the complex and other places within the region, providing little stimulus to and showing little relationship with other activities within the region" (p. 243). In general, however, the book eschews looking into the national and international problems of the *gran minería*.

This study, well supplied with maps and even a few photographs, surprisingly lacks an index. Publishers often cut the wrong corners.

State University of New York,
Fredonia

MARVIN D. BERNSTEIN