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Mestizajes Tecnológicos y Cambios Culturales en México

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Mestizajes tecnológicos y cambios culturales en México. Edited by Enrique Florescano and Virginia García Acosta. México City: Centro de Investigaciones y Estudios Superiores en Antropología Social, 2004. Photographs. Illustrations. Tables. Notes. Bibliographies. 346 pp. Paper.

This book resulted from a seminar on technological mestizaje that took place in 1998 and 1999 in Mexico City at the Centro de Investigaciones y Estudios Superiores en Antropología Social (CIESAS). Scholars from a variety of disciplines (history, anthropology, archaeology and sociology) were invited to reflect on the theme of mestizaje in colonial Mexico as it especially relates to changes in technology.

The strength of this book is that many of the authors have rethought earlier work in this field by scholars such as George Foster, Charles Gibson, Woodrow Borah and others. A weakness is that the last two articles relate only marginally to the theme of technological mestizaje.

The final chapter by Margarita Menegus Bornemann skilfully relates how the power of the native elite in central Mexico was diminished through the efforts of the Crown and religious orders, but adds little that is new to this discussion. Guy Rozat's chapter on western views of native American technology presents a well argued thesis that the traditional view of the inadequacy of native technology, credited mainly to the lack of iron and the wheel, is based on a misunderstanding of the technology of both cultures. In Europe iron was used primarily in military applications, not agricultural, where wood took precedence. The late introduction of the horse collar limited the use of the wheel in transportation. This calls into question the superiority of European technology. In

America, stone and obsidian were adequate to the demands of industrial production and the coa was superior to the wood plow in the cultivation of the principle crops of corn, beans and squash. This argument implies that natives Americans might resist adopting new technologies, a conclusion presented by other authors in this work.

The articles by Magdalena A. Garcia Sánchez and Diane Birrichaga Gardida on water resources approach more aptly the theme of technological mestizaje. These authors use as a point of departure the observation that water meant different things for the Spanish and the American natives. The lakes of central Mexico provided natives with food (fish, fowl and plants) , agricultural resources (irrigation, chinampa agriculture) and transportation. Spanish methods of agriculture and food acquisition made little use of lakes. Garcia Sánchez argues that it was for this reason that native techniques, tools and language regarding the exploitation of lake resources survived into the twenty-first century even as these resources diminished due to desagüe. The Spanish used water in agriculture and industry. The lakes of central Mexico, however, were considered an impediment to urbanisation and groundwater inhibited mining operations. To solve these problems, the Spanish used European technology in the form of pumps, dams and water wheels. Some of this technology was adopted by native communities for their own purposes.

One of these purposes was not the production of tortillas, a fundamental element in the native diet. Arnold Bauer considers this case of the failure of technological mestizaje. Bauer compares the cultivation and processing of European cereals with maize and observes that while corn requires less time and energy to cultivate than wheat, oats or barley, it is much more time consuming to process. Tortilla production fell to women

and required five to six hours per day. Bauer concludes that the slow acceptance of mechanical grinding wheels in tortilla production is related to the low social status of native women and the desire of men to limit women's independence.

In her study of sugar production, Beátriz Schasser also notes the persistence of native tools and methods while showing that sugar production exemplifies technological mestizaje. Natives cultivated sugar using the coa, modified only by an iron tip. The Spanish controlled irrigation using methods borrowed from the Arabs. African slaves processed the sugar and some became expert in this area. The author concludes that it is impossible to know if African processing techniques were applied.

In contrast to sugar production, native American influence on textile production was profound. José Ignacio Urquiola Permisan demonstrates how the textile industry represents technological mestizaje in three areas: the introduction of new fibers (flax and wool) from Europe, new dyes, notably cochineal and indigo, from America, and the development of an original method of organizing textile production, the obraje. The obrajes undermined traditional methods of textile production in Mexico and introduced new technology, such as the spinning wheel and the European loom.

While somewhat uneven in the treatment of the theme of technological mestizaje, these thoughtful articles will interest scholars the history of technology and cultural change. Each chapter contains informative and engaging illustrations, and a useful bibliography in Spanish.

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