

Querétaro Obrajes: Industry and Society in Provincial Mexico, 1600–1810

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TEXTILE manufacturing during Mexico's early history meant primarily the production of cotton, economically vital long before the arrival of Spaniards, and wool, which became important after the introduction of merino sheep in the 1540s. These two branches of manufacturing, together forming a large part of Mexico's domestic economy, showed similarities in organization, labor, and technology, but they differed in one very significant way. The production of wool became more capital intensive and specialized with the concentration of workers and equipment in one building, called an *obraje*. Spaniards established *obrajes* throughout central and southern Mexico, and the towns of Querétaro, Mexico City, Puebla, Valladolid, Texcoco, and Tlaxcala soon became recognized as manufacturing centers.¹

By the late eighteenth century, Querétaro, located 120 miles northwest of the viceregal capital, had outdistanced most of its competitors and supported one of the largest woolen industries in Mexico. From its foundation as a frontier outpost in 1531, the town grew into a major commercial, agricultural, and manufacturing center, and by 1810 had a population of over 50,000. The industrial growth that took place in the eighteenth century was based on patterns that had been

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1. Important information on textile production in New Spain can be found in: Miguel Othón de Mendizábal, *Obras completas*, 6 vols. (Mexico, 1946), VI, 259–497; Jan Bazant, "Evolution of the Textile Industry in Puebla, 1544–1845," *Comparative Studies in Society and History*, 7 (Oct. 1964), 56–69; Richard E. Greenleaf, "The Obraje in the Late Mexican Colony," *The Americas*, 22 (Jan. 1967), 227–250; William H. Dusenberry, "Woolen Manufacture in Sixteenth Century New Spain," *The Americas*, 4 (Oct. 1948), 223–234; Manuel Carrera Stampa, "El Obraje Novohispano," *Memorias de la Academia Mexicana de la Historia*, 20 (1961), 148–171.

established by 1630, when Querétaro already had the combination of prerequisites that led to its future industrial importance. Vast flocks of sheep grazed the nearby ranches, providing an early abundance of necessary raw materials. Sufficient numbers of Indians and blacks lived in the province, ensuring a labor force for ranches and textile factories. The growing province originally provided its own market; later, mining communities and southern population centers bought Querétaro cloth. Finally, the province had the necessary capital and entrepreneurship to initiate and develop the manufacturing process.²

This article explores the organization and growth of Querétaro *obrajes*. It attempts to take the *obraje* out of its institutional-legal context, and describe it as one expression of the colonial experience in the eastern Bajío. Rather than being an anomaly, a chessman among checkers pieces, the *obraje* was closely intertwined with other facets of colonial society. Part I defines the social and economic characteristics of *obraje* ownership and how they changed from the seventeenth to the eighteenth century; part II details the circumstances of production (capital, supply, distribution, labor); part III measures the magnitude of the industry in the eighteenth century.

I

Ownership of *obrajes* in Querétaro lacked clearly defined, traditional social and economic implications. Typical owners were Spaniards who had diverse economic interests and participated in various aspects of the economy—often *obraje* ownership reflected only a secondary or tertiary economic concern. In the early seventeenth century the occupation of *mercader*, loosely meaning merchant, was the most prevalent other occupation of owners. Merchant-*obraje* owners seldom entered the ranks of landowners, nor did they have the resources to acquire a local bureaucratic post. Socially, the successful ones enjoyed prestige by ownership of expensive residences and slaves, and by providing good dowries and marriages for their children. Yet their social pretensions had limits. For example, not one owner, regardless of his wealth or influence, was addressed as “don” before 1650.³

2. For an analysis of eastern Bajío society see my “Querétaro: Society and Economy in Early Provincial Mexico, 1590–1630,” (Ph.D. Diss., University of California, Los Angeles, 1973).

3. For examples of pre-1650 owners see: Baltasar Martín, Aug. 6, 1598 (1); Dec. 6, 1598 (1); Dec. 17, 1598 (1); Jan. 22, 1599 (1); Dec. 3, 1603 (4); Nicolás de Robles, Feb. 24, 1606 (5); Gaspar de Porrás, Jan. 9, 1609 (7); Miguel

By 1700 obstacles to economic diversification and social advancement had been overcome, allowing owners to compete simultaneously in diverse businesses and to mingle freely with the provincial elite. The possible extent of diversification can be gleaned from the way owners identified themselves in contractual obligations. One called himself "citizen, merchant, sheep and cattle rancher, owner of a hacienda and *obraje*,"⁴ a combination of occupations equalled by others. Moreover, owners bore military titles. Most of these were honorific, but some owners, such as Don Enrique de Sarán y Victoria, captain of the Spanish Infantry, had specific military responsibilities. The overlapping of roles did not stop here. Owners occupied influential bureaucratic positions, including those of *alcalde* (elected and appointed), *corregidor*, and the Church office of notary of the Inquisition.

Table I offers specific occupational data on *obraje* owners in Querétaro from 1706 to 1714. Of the twenty-one owners identified, only two depended solely on the *obraje* as a source of income while ninety percent had other economic interests.⁵ The most prevalent combination of interests by this time was *obrajes* and farms and ranches (forty-seven percent). Yet the old merchant-*obraje* association remained strong (thirty-eight percent). And by this time, nineteen percent of the owners served as public officials, a very significant change from a century earlier. Finally, sixty-seven percent of the owners sported a military title, a trend that began around the middle of the seventeenth century. Overlapping roles for owners (especially with the military and local officials) continued until 1810, but the sparsity of biographical data does not permit a complete statistical description.⁶

The holding of political posts by owners had implications for the entire operation of the *obraje*. In an activity as heavily regulated as cloth production, owners had ample opportunity to choose between enforcement or neglect of legislation affecting their investments. Owners not holding office relied on informal associations to influence

de Solís, Jan. 17, 1622 (8); Jan. 28, 1622 (8); Feb. 12, 1622 (8); Felipe de Santiago, Feb. 26, 1626 (11); Diego de Zerezedá, Mar. 4, 1644 (1); Museo Nacional de Antropología, Mexico City (hereafter cited as MNA). All MNA citations refer to the microfilm collection, Querétaro series, and include, where necessary, the name of the notary, the date, and the microfilm roll number.

4. Salvador de Perea, Sept. 16, 1709 (50), MNA.

5. The completeness of biographical data reveals that these interests, except for military titles, had substantive social and economic meaning for an individual's life—they were not hollow claims to an elusive occupation.

6. See note 34.

TABLE I: Additional Occupations of Querétaro *Obraje* Owners: 1706–1714.

Number of Owners Identified	21
Solely <i>obraje</i> owners	2
<i>Obraje</i> owners and land and stock owners	10
<i>Obraje</i> owners and merchants	8
<i>Obraje</i> owners and officials	4
<i>Obraje</i> owners and notaries	2
<i>Obraje</i> owners with military titles	14
Additional combinations	5

Source: Querétaro notarial records, 1706–1714.

local policy. In 1707, for example, two owners and a merchant each pledged 2,000 pesos to an aspiring *alcalde*. During the same year they acted as the bondsmen for that individual as he sought the playing card monopoly for the province.⁷ The holding of office and the informal patterns of association between owners and officials meant that most colonial legislation affecting cloth manufacturing could be selectively enforced. At no time did the *obraje* sit passively on the periphery of the provincial power system. As the town grew, the *obraje* became an active, powerful institution, effectively competing and sharing in local politics. For the eastern Bajío, the *obraje*-local power nexus has to be added to those of the haciendas and mines.

Enhanced social status and increased wealth accompanied the acquisition of formal power. Through the *obraje* and commerce, owners improved their financial state, married into established families from Querétaro and elsewhere, purchased titles and posts, and invested money in land and stock animals. By the beginning of the eighteenth century, some owners were rich and powerful men who had few social or economic equals in the province.

Ownership of an *obraje* could aid in the obtainment of personal goals, but it did not connote any intrinsic social or political worth—the *obraje* seemed to be purely a profit-oriented institution. Consequently, turnover in ownership depended principally on the interplay of market forces and on investment alternatives. From 1600 to 1810 there was a trend toward ownership instability, with the period of quickest turnover coming after 1750. Scarcity of raw materials and competition from *trapiches* (one or two loom producers), two common complaints of owners since 1700, explain the turnover.⁸

7. Salvador de Perea, May 15, 1707 (50), June 19, 1707 (50), MNA.

8. Salvador de Perea, Aug. 22, 1714 (52), MNA; note 34.

TABLE II: Length of *Obraje* Ownership: 1782–1809.

Years	Owners (I) ^a	Owners (II) ^b (length averaged)
0–1	23	7
2–4	9	7
5–7	4	8
8–10	5	2
11–13	3	1
14–16	1	0
Total	45	25

^a Continuous ownership of one *obraje*.

^b Ownership of more than one *obraje* or intermittent appearance of owners.

Source: Note 34. This table is based on the frequency of appearance of owners in *visitas*. Since data on every year from 1782–1809 were not available, I used the last year in which the owner appeared as the last year of ownership. This could mean that the length of ownership in some cases was slightly longer than the above suggests.

Figures in Table II show the length of *obraje* ownership from 1782–1809. Of the seventy owners, forty-five (I) held only one *obraje* for an uninterrupted period, and most did so for four years or less (seventy-one percent). Of the twenty-five individuals (II) who owned more than one *obraje* or appeared intermittently as owners (suggesting that they closed and then opened their *obrajes*), over half (fifty-six percent) operated them for an average of four years or less. The most common length of continuous operation for this group was less than two years, although occasionally a factory would be operated for more than ten years, and very infrequently for over fifteen years.

Ownership instability and the diverse economic interests of owners tended to prevent the development of a permanent and cohesive manufacturing class in Querétaro. With new individuals frequently entering and leaving the ranks of ownership there was a lack of lasting personal associations built on the *obraje*, and there was little chance for sustained joint action based on common interests. A specific, easily defined group of manufacturers with values distinct from those of farmers or ranchers did not emerge in Querétaro.

Owners did, however, share some specific interests. They faced similar problems of quality, price, markets, competition, and labor. The gravity of some of these problems did cause them to unite, resulting in near unanimous protestations and pleadings. One main objective in the 1780s was to form a common fund to support the price of textiles. Bad times forced many owners to sell their cloth

to traders for a low price, which in turn resulted in their producing lower quality goods. This had the detrimental effect of shrinking the market for those owners who produced according to standards.⁹ In addition owners suffered from the competition of a larger number of small, unregulated producers, the *trapiches*. The natural advantages of the *obraje*—size, capital, technology—had little meaning as long as small shops continued production without licensing or standardization.¹⁰

II

To operate an *obraje* successfully, owners had to build a business with an adequate source of capital, a continuous wool supply, an efficient distribution system, and a productive labor force. Owners relied on various types of individuals to build such a business. Attorneys secured licenses and fought suits, factors bought and sold, ecclesiastics arranged loans, and relatives and personal associates helped in every aspect of running the *obraje*. However, these individuals usually served the *obraje* only in a limited capacity, and did not form a specialized staff of full-time workers.¹¹

Capital for the construction and operation of *obrajes* came from various sources. The owner of Querétaro's first *obraje* (founded between 1582 and 1589) probably used money he had accumulated from other ventures, namely commerce and the wool trade. He had sold wool, opened a merchandise company with a Querétaro partner, and acted as an intermediary in slave sales.¹² His profits found their way into the *obraje*. While commerce supplied most of the capital during the early seventeenth century, money from the countryside in the form of credit, loans, and dowries, also helped finance *obraje* operations, as did urban land holdings and property.¹³ By 1700 *obrajes* formed parts of large estates and this facilitated the flow of

9. "Petition of Querétaro Obraje Owners," April 26, 1781 (25), MNA.

10. "Visita de Obraje de Don Antonio de la Carcoba," Nov. 17, 1808 (25), MNA.

11. See the following powers-of-attorney issue by obraje owners: Salvador de Perea, July 27, 1706 (50); Feb. 5, 1707 (50); July 17, 1708 (50); Aug. 21, 1708 (50); Sept. 17, 1708 (50); Dec. 17, 1709 (50); Jan. 29, 1712 (52); Aug. 8, 1713 (52); Antonio de la Parra, May 30, 1712; July 28, 1712 (51); Jan. 13, 1713 (52), MNA.

12. Baltasar Martín, Jan. 1, 1598 (1); Jan. 8, 1598 (1); Sept. ?, 1598 (2); Jan. 12, 1599 (2); Jan. 16, 1599 (2); MNA.

13. Baltasar Martín, April 9, 1597 (1); Sept. 13, 1598 (1); Sept. 19, 1598 (1); Oct. 1, 1598 (1); Jan. 22, 1599 (2); April 29, 1599 (2); Sept. 6, 1599 (2); MNA.

needed capital from land to urban manufacturing. Non-cash rural resources, including wool, labor, and probably many other commodities, did go directly to *obrajes* in the eighteenth century.¹⁴

The Church and personal loans and credit allowances offered other sources of financing. One of the most prestigious religious institutions in the Bajío, the Convent of Santa Clara de Jesús, supplied money for cloth manufacturing. In 1714, for example, the convent loaned Captain Don Enrique de Sarán y Victoria 2,500 pesos for six years at five percent interest. For security, the captain mortgaged his *obraje* and slaves to the convent.¹⁵ More important than Church loans were loans and credits from local and Mexico City residents. Mexico City merchants and landowners had been active in the province since the 1620s, and their influence extended through the urban and rural economy. *Obraje* owners competed effectively with other provincial institutions for this source of financing. Credit extension rather than cash served as the base for most transactions; owners bought wool and other materials on credit, they borrowed money on the value of *obrajes*, and they sold cloth on credit.¹⁶

After acquiring sufficient funds to establish an *obraje*, owners had to insure a steady supply of wool. The first *obrajes* had few problems in finding sufficient wool, since sheep raising was the major economic activity in the province in the seventeenth century. The ovine population grew sufficiently after 1580 to meet the demands of the mutton markets of Mexico City and of mining communities like Zacatecas, and to supply wool for Querétaro and southern *obrajes*. In the early 1600s the industry benefitted from plentiful raw materials which were geographically close and relatively inexpensive.¹⁷ By 1700 the days of rapid growth and abundance of wool had passed, leaving more *obrajes* to compete for scarcer materials. The limited supply drove the price up, and when the wool had to be obtained from distant locales, the owners incurred transportation charges as well. Institutions and individuals outside of the province controlled an increasingly larger share of the wool industry. Major institutional

14. Baltasar Martín, Jan. 9, 1598 (1), Miguel de Solís, April 4, 1622 (9); Felipe de Santiago, Feb. 26, 1626 (11), MNA; note 34.

15. Salvador de Perea, Nov. 5, 1711 (51); Fray Francisco de Contreras, June 30, 1714 (52); Domingo de Perea, Sept. 7, 1714, MNA.

16. Salvador de Perea, Nov. 5, 1711 (52); Oct. 24, 1712 (52); Antonio de la Parra, Nov. 9, 1713 (51); Nov. 10, 1713 (51); Domingo de Perea, Nov. 28, 1714 (52), MNA.

17. Baltasar Martín, May 29, 1598 (1); Sept. 28, 1598 (1); Miguel de Solís, Feb. 12, 1622 (8), MNA.

suppliers, like the cathedrals of Mexico City, Guadalajara, and Valladolid, owned flocks in the Bajío and farther north. Individuals, however, remained the major suppliers, and ranchers from different parts of North Central Mexico sent their wool to Querétaro. Changes in the location and quantity of wool brought new individuals and institutions into the textile industry, resulting in Querétaro's increasing dependence on outside resources.¹⁸ The city's *obrajes* emerged as suppliers of finished cloth to northern markets, a situation much resented and criticized by northern residents like Miguel Ramos de Arizpe,¹⁹ but because the *obrajes* also relied on the outlying provinces for a steady supply of wool, disruptions seriously limited local production.

Not unexpectedly, the price of wool climbed steadily during the seventeenth century, and by the beginning of the eighteenth it had tripled. Where wool once had been available for six reales per arroba (twenty-five pounds) it had jumped to between thirteen and twenty-six reales per arroba with an average price of nineteen reales.²⁰ It is unlikely that the price declined for the rest of the colonial period, and at times it was much higher.²¹ High prices and shortages continually plagued *obraje* owners, forcing some of them to close their shops and drawing protests from others. Partly offsetting increased costs was the vertical integration of a number of *obrajes*, which eased the difficulties of acquiring materials and also gave owners control of limited markets. Owners' estates now produced and consumed *obraje*-related goods.

The marketing of *obraje* products generally followed procedures that had been accepted practice for businesses since the 1580s. For interregional selling owners relied on three types of individuals: mayordomos of *obrajes*, special agents (usually persons who already had legal or commercial *obraje* experience), and merchants. In addition, some merchant-owners formed partnerships with other mer-

18. Salvador de Perea, Sept. 28, 1707 (50); April 30, 1709 (50); June 23, 1711 (50); Domingo de Perea, Nov. 28, 1714 (52), MNA.

19. Miguel Ramos de Arizpe, *Report that Dr. Miguel Ramos de Arizpe . . .*, trans. Nettie Lee Benson (Austin, 1950), pp. 19–23, 40–41.

20. For early seventeenth-century prices see Super, "Querétaro," p. 40. Eighteenth and early nineteenth-century prices can be found in: Salvador de Perea, Oct. 28, 1708 (50); Oct. 19, 1709 (50); June 10, 1711; Dec. 10, 1711 (51); Antonio de la Parra, Oct. 9, 1713 (51); Oct. 10, 1713 (51), MNA; Sir Henry George Ward, *Mexico in 1827*, 2 vols. (London, 1828), II, 184.

21. Alexander von Humboldt, *Ensayo político sobre el reino de la Nueva España*, 5 vols., trans. Vito Alessio Robles (Mexico, 1941), IV, 13; Robert Potash, *El Banco de Avío de México* (Mexico, 1959), p. 18; Ward, *Mexico*, II, 184.

chants to sell goods. The merchants received consignments of original shipments, collected on defaulted accounts, and served as intermediaries for persons seeking cloth.²²

Some distribution took the form of barter, a common way of exchanging goods in the province. Agreements for the sale of wool entailed arrangements for the marketing of cloth where, as part of the purchase price, owners agreed to deliver cloth in addition to cash. Fine cloths, *bayetas* (baize), *sayales* (sackcloth), and *jergas* (coarse frieze) were traded for wool in this manner. For example, one Mexico City official and landowner sold 1,004 arrobas of wool to a Querétaro owner for 2,259 pesos, or 18 reales per arroba. Of this amount, 1,159 pesos 4 reales had to be paid in cash, and the rest in cloth, valued at 2 pesos per yard, which had to be delivered in Zacatecas and credited to the account of the Mexico City official.²³

For purely local distribution, cloth could be sold at the *obraje's tienda de paños* (cloth store), through markets held in the city, or through merchant-*obraje* owner contacts in the city. A substantial portion of cloth went directly to local farms and ranches as well. Factory owners who owned haciendas had a captive market—their anger toward traveling clothmongers and *trapiche* owners can be easily appreciated. Another sizeable local market was the *obraje* labor force. Legally the crown regulated against payment in kind, but owners often ignored the legislation and paid their workers partly or entirely in cloth.²⁴

One other important market existed for Querétaro cloth, that of the military. The details of the relationship between the textile industry and the military are unclear, but its origin and continuation must be partly linked to the large number of military officers who doubled as owners. Whatever the extent of the agreements between military and industry in the 1780s and 1790s, by 1805 they began to receive formal attention when an attempt was made to organize military cloth industries. The industry's close association with the

22. Baltasar Martín, Dec. 17, 1598 (1); Miguel de Solís, Feb. 12, 1622 (8); Salvador de Perea, Sept. 30, 1706 (51); Mar. 1, 1709 (50); June 10, 1711 (50); Sept. 6, 1712 (52), MNA.

23. Salvador de Perea, Mar. 1, 1709 (50); June 10, 1711 (50); Antonio de la Parra, Oct. 9, 1713 (51); Oct. 10, 1713 (51), MNA.

24. "Visita de Obraje de Don Matías de Eyras y Puga," April 4, 1797 (25), MNA; Joel Poinsett, *Notes on Mexico* (Philadelphia, 1824), p. 139; Eric R. Wolf, "The Mexican Bajío in the Eighteenth Century: An Analysis of Cultural Interaction," *Middle American Research Institute*, 17 (1957), p. 184; Ward, *Mexico*, II, 183.

military survived the independence conflict, and under the administration of President Guadalupe Victoria, Querétaro textiles supplied the Mexican army.²⁵

At the most general level, the *obraje* supply and distribution system did not require a special set of relationships, personnel, or techniques. For supplying each type of market, the industry used the traditional commercial network that had satisfactorily served the province for generations. People whose sole economic interests hinged on the marketing of *obraje* goods did not figure prominently in the economy, nor did specific, lasting institutions develop for the distribution of cloth.

Maintaining an adequate skilled and unskilled labor force presented the industry with another problem. The methods employed for acquiring workers changed as the growth and demands of the industry changed. During the early seventeenth century, when the number of factories was small and the number of available workers fairly large, labor procurement techniques remained simple, consisting of free contract labor and a form of debt peonage. Black slave labor supplemented the primarily Indian staff.²⁶ After the 1630s there was a reversal of this situation, with some *obrajes* depending first on slave labor, and secondarily on the available Indians. The province by this time supported a very substantial slave population, large enough for blacks to replace Indians in *obrajes*. One Querétaro *obraje* in the 1640s employed only black, mulatto, and Asiatic slaves. Slaves probably dominated during the early eighteenth century as well, for the number of slaves available in the province was still large. When one *obraje* changed hands in 1714 the labor force consisted mainly of twenty-two black and mulatto slaves. Slaves continued to serve in *obrajes* until 1810, but it is likely that their numbers decreased as the century progressed.²⁷

Workers also entered the *obraje* through an extensive apprenticeship system that had been in operation since the 1590s. Parents or guardians placed teenagers in *obrajes* to learn a trade, generally that of weaving, for a three-year period, a time that seemed to stay con-

25. Enrique La Fuente Ferrari, *El Virrey Iturrigaray y los orígenes de la independencia de México* (Madrid, 1941), p. 55; Ward, *Mexico*, II, 184; Wolf, "The Mexican Bajío," pp. 183–184; Potash, *Banco de Avío*, p. 43.

26. For examples of early contracts see: Baltasar Martín, Oct. 1, 1598 (1); Nov. 7, 1598 (1); Andrés de Trujillo, Feb. 16, 1598 (1), MNA.

27. "Inventario de Obraje de Pedro las Casas," Diego de Zerezeda, April 1, 1644 (1); "Inventario de Obraje de Capitán Alonso Sánchez Grijaldo," Salvador de Perea, Aug. 22, 1714 (52), MNA; note 34.

stant for the entire colonial period. Most apprentices started work at a surprisingly late age, from fifteen to twenty years old; only rarely would a boy younger than fifteen be apprenticed. Families that offered their children as apprentices usually belonged to a wide group that ethnically included mestizos, blacks, and mulattoes (very few Indians served as apprentices). Those few Spanish families who apprenticed their children labored at occupations with low social and economic returns. Moreover, many of the apprentices, both Spanish and non-Spanish, came from homes kept by widowed mothers. After finishing his apprenticeship, the worker supposedly had two suits of clothes, thirty pesos in cash, and a skill sought by all *obrajes*.²⁸

Other more sporadic sources of labor contributed to the work force. The crown ordered individuals labeled as criminals to work in textile factories. These *repartimientos* could include Indians, blacks, mulattoes, and Spaniards, and they often came from distant cities. In 1734 a troop of forty-two Indians from the city and province of Monterrey was divided among Querétaro manufacturers and others, with orders that the Indians be kept well-guarded. Other individuals, sentenced and fined by the courts, spent time in *obrajes*. While the use of criminals became a highly politicized issue for owners and crown, it remained numerically inconsequential for Querétaro factories, and often caused owners more problems and expenses than anticipated.²⁹

By 1750 relationships between *obrajes* and the labor force had begun to change more quickly as more *obrajes* competed for the available urban worker in addition to competing with other labor-needy institutions that relied heavily on urban residents, namely the tobacco factory and the *trapiches*. To accommodate these changes, procurement techniques became more extensive, reaching out directly to the countryside and to other urban workers. *Obrajes* directly sought rural workers; indebted farm hands and shepherds now faced the possibility of forced labor in *obrajes*. Doubtless, some of these Indians were transients or seasonal agricultural workers, but others

28. Salvador de Perea, Sept. 6, 1709 (50); Jan. 16, 1712 (50); June 15, 1714 (52); Sept. 20, 1713 (52); Antonio de la Parra, Dec. 29, 1711 (51); Sept. 13, 1712 (51); April 12, 1713 (51); June 5, 1713 (51); Pedro Ballesteros, May 15, 1713 (51), MNA. Textile apprentices in eighteenth-century England started work at an earlier age, generally from twelve to sixteen years old, and served for a longer period, usually seven years. Herbert Heaton, *The Yorkshire Woollen and Worsted Industries* (Oxford, 1965), pp. 305–306.

29. "Remisión de los indios a los obrajes de Querétaro," Sept. 2, 1734 (25), MNA; Greenleaf, "The Obraje," p. 240.

came from families that had been employed on the same hacienda for generations. Within a few hours a rural shepherd, tending his flock like his father before him, became a carder or weaver in an urban textile plant.³⁰ Within the city, *obrajes* now seemed to compete more directly with non-textile urban employers. For instance, Indian urban residents who worked for flour mill administrators or mutton purveyors, by a series of machinations, found themselves working in cloth factories.³¹ Through its labor procurement techniques the *obraje* by the late eighteenth century had become closely interrelated with the countryside and with other urban institutions.

A critical question about labor that still needs examining is the extent of textile workers who did not work in the *obraje*. Did a type of putting-out system form a part of the textile industry? For Querétaro, the answer is at least partly in the affirmative, as some *obrajes* used this system for the initial task of spinning. Indians in outlying villages received wool, spun it, and then returned it to the *obraje* for weaving. (This method also served to secure workers, since owners accused Indian spinners of selling the wool that they had received, forcing them to work in the *obraje* to pay the debt.) On at least one occasion some 300 spinners labored outside of the capital, suggesting an extensive and organized system. Indirect evidence also supports the existence of a dependent work force outside of the factory. *Visitas* and inventories show that all *obrajes* had spinning wheels, but their number may not have been sufficient to produce enough wool for the looms. Since the ratio of spinners to weavers was probably high (in parts of England in the eighteenth century it was ten to one), *obrajes*, especially those that employed twenty to thirty weavers, needed other sources of spun wool.³² To obtain the wool, owners started a type of putting-out system based on single or multiple spinning wheels staffed primarily by Indian families. With the exception of spinning, most of the steps in cloth manufacturing took place under the roof of the *obraje*. Textile production methods in Queré-

30. "Visita de Obraje de Don Francisco Manuel de Aldama," Dec. 11, 1785 (25); "Visita de Obraje de Don Joseph Carvallido," Dec. 16, 1785 (25); "Visita de Obraje de Don Joseph Lejarse," Dec. 16, 1785 (25), MNA.

31. "Visita de Obraje de Don Juan Rincón," Dec. 14, 1785 (25), MNA.

32. "Visita de Obraje de Don Bernardo de Lejarse," Nov. 9, 1809 (25), MNA; "Notas estadísticas del departamento de Querétaro, formadas por la asamblea constitucional del mismo, en junio de 1845," *Boletín del Instituto Nacional de Geografía y Estadística*, 3 (1852), 198, note 1; Heaton, *Yorkshire Woollen and Worsted Industries*, p. 38. Jan Bazant in his study of textiles in Puebla says there is no evidence of a putting-out system in the city's woolen industry during the early period. Bazant, "Textile Industry in Puebla," p. 62.

taro before independence fell between a fully integrated factory approach and a more traditional cottage system.

Finally, it is necessary to inquire into the quality of life of *obraje* workers. The life of workers is usually described in the harshest imaginable terms, an interpretation based on colonial legislation, contemporary observations, and the records of individual *obrajes*, most notably the infamous *obraje* of Melchor Díaz de Posada of Coyoacán in 1660. While conditions in some factories were undeniably miserable, the *visitas* of others describe better conditions. Many workers expressed contentment with their positions, since, in their opinion, they received an adequate salary and had the freedom to come and go. More convincing evidence comes from records showing that Indians, even those confined to *obrajes*, recognized and took advantage of Spanish legal customs to secure their release. Indians assured their freedom by finding bondsmen, who guaranteed that they would continue working until the debt was repaid. By any standard, life in *obrajes* was harsh, but it is doubtful whether it was worse than in many mines or on haciendas and plantations.³³

III

By 1718 Querétaro was already a significant textile center, with methods of production and distribution that had matured over the previous century. Table III provides some indication of the importance of industrial production by giving the number of *obrajes* and looms operating in different years of the eighteenth century.³⁴ The

33. See note 34; Super, "Querétaro," pp. 72–73. According to an informed report on Querétaro *obrajes* in 1801, one of the worst abuses owners inflicted on workers was confining them to the *obraje*. This report is just as important, however, for showing that *obrajes* conformed to much of the legislation regulating the life of workers. Miguel Domínguez, "Memorial sobre los obrajes en Querétaro," *Boletín del Archivo General de la Nación*, (2nd series) 11: 3–4 (1970), 283–295. In Puebla during the same time period, owners seemed to follow closely laws governing working conditions, to the point that their enterprises suffered economically. Bazant, "Textile Industry in Puebla," p. 65.

34. Most of the statistical data and some of the conclusions on the social implications of *obraje* ownership come from the review of some 400 *visitas de obrajes* conducted in the eighteenth and early nineteenth century. The *visita* is one of the primary sources on the *obraje*, often providing information on labor, salary, production methods, and working conditions. Early *visitas* devoted more attention to detail than those of the eighteenth century. The *visitador* interviewed each worker, determining occupation, salary, indebtedness, and satisfaction with conditions. While these *visitas* followed a standard formula they allowed room for insight into individual lives as they paraphrased the responses of some workers. For example see: "Visita de Obraje de Esteban de Aguilar," Sept. 26, 1589 (1–2),

thirteen *obrajes* operating in 1718 remained the minimum for the rest of the century, matched again in 1791 and 1800. Available visitas show that the highest number of *obrajes* operating at one time was twenty-one in 1783. Two other sources give larger numbers: José Antonio Villa-Señor y Sánchez, a reliable authority writing in the 1740s, reported that the town contained twenty-three *obrajes*; a group of owners writing in 1781 stated that Querétaro had recently supported twenty-eight wool factories, a figure which can be accepted as the upper limit for the number of *obrajes*.³⁵ Between these two extremes the industry experienced drastic, almost unaccountably wild fluctuations, marked by the periodic opening and closing of large numbers of *obrajes*; from 1797 to 1800 the number dropped from eighteen to thirteen, a twenty-seven percent decline, while by 1803 the number had increased by fifty-four percent to twenty.

A more accurate measure of production than the number of *obrajes* is the total number of looms, or more specifically, the total number of operating looms. For Querétaro, the fluctuations in the number of looms were as volatile as the fluctuations in the number of *obrajes*. The most extreme decrease in looms occurred from 1785 to 1787, when

MNA. Later visitas followed a more regimented pattern. On entering the *obraje*, the visitador, accompanied by an attorney and an inspector of equipment, reviewed the license of the owner and checked to see if he had displayed the latest official orders. The visitador then interviewed two workers from the main operations in the *obraje*, usually carders, spinners, weavers, and nappers, asking them standard questions about working conditions. After this the attorney checked the accounts of the *obraje*, and finally the equipment inspector reviewed the machinery. Most of these visitas did not deviate from a set pattern. Rather than give a full citation on each visita, the following note gives the name of the visitador, the date on which he started his visita, and the microfilm roll number. Antonio Alvarez, April 29, 1717 (25); Don Martín Joseph de la Rocha, May 2, 1775 (25); Don Juan de Villalbas y Velásquez, Nov. 11, 1782 (25); Aug. 23, 1784 (25); Dec. 9, 1785 (25); Sept. 26, 1787 (25); Nov. 4, 1789 (25); Oct. 5, 1790 (25); Oct. 10, 1791 (25); Oct. 9, 1792 (25); Don Pedro Antonio Septián Montero, Sept. 11, 1793 (25); Sept. 11, 1794 (25); Don José Ignacio Ruiz Calado, Jan. 18, 1796 (25); April 4, 1797 (25); May 27, 1799 (25); Don Luis Gonzaga Rico, Nov. 19, 1800 (25); Don Miguel Domínguez, June 9, 1801 (25); Don Antonio de las Cavadas, Sept. 16, 1802 (25); Don Miguel Domínguez, Oct. 7, 1803 (25); Oct. 17, 1804 (25); Don Ignacio Villaseñor Cervantes, Dec. 10, 1805 (25); Dec. 15, 1806 (25); Don Miguel Domínguez, Nov. 4, 1808 (25); Nov. 9, 1809 (25); Don Ignacio García Rebollo, Dec. 7, 1816 (25), MNA. Other documents that provide useful data include: "Diligencias hechas en virtud de comisión con los dueños de obrajes y trapiches," Oct. 17, 1718 (34), "Relaciones de manufacturas de obrajes," Sept. 16, 1783 (18), MNA.

35. Joseph Antonio Villa-Señor y Sánchez, *Theatro Americano. Descripción general de los reynos y provincias de la Nueva España y sus jurisdicciones*, 2 vols. (Mexico, 1746-1748), I, 94; "Petition of Querétaro Obraje Owners," April 26, 1781 (25), MNA.

the number dropped forty-eight percent from 234 to 121. Slack periods also took place between 1805–1808 and in 1816. Fluctuations in the number of looms came naturally from the opening and closing of factories, and just as importantly, from the changes within those that remained open. For example, from 1784 to 1785 there was a decrease in the number of *obrajes*, nineteen to sixteen, but an increase in the number of looms, based mainly on the internal expansion of two *obrajes*.³⁶

Table III shows that three periods of decline interrupted production from 1775 to 1816. The first occurred from 1785 to 1792 and is attributable to changes that probably had negative effects throughout the industry in Mexico. Mexico experienced a catastrophic year in 1785; epidemics, poor harvests, and livestock decreases seriously limited production and the ability of the market to continue consumption at previous levels. Particularly severe conditions existed in parts of the Bajío, where it was estimated that one-fifth of the population died. In the sheep raising regions, wool production declined because of droughts, diseases, and Indian attacks. The population of wool-bearing sheep decreased from five million to four million from 1779–1788, causing shortages and higher prices.³⁷ Que-

36. Loom increases did not necessarily mean added capital expenditures, since many *obrajes* only had to begin using looms previously inactive. The following shows the differences between total number of looms and total number of looms working in fourteen Querétaro *obrajes* in 1798 (see note 34):

Total	Working
12	10
15	9
11	7
14	8
13	9
21	5
16	7
16	13
14	4
11	1
12	5
30	21
23	9
9	5
<hr/> 217	<hr/> 113

37. "Contestación del Consulado de México," (May 31, 1788), "Sobre todo género de agricultura en Nueva España," (April 22, 1788), in Luis Chávez Orozco, ed., *Documentos para la historia económica de México*, 12 vols. (Mexico, 1933–1938), II, 17–18, 67; D. A. Brading, *Miners and Merchants in Bourbon Mexico, 1763–1810* (Cambridge, 1971), p. 232.

TABLE III: Number of *Obrajes* and Looms in Querétaro: 1718–1816.

Year	Number of <i>Obrajes</i>	Number of Looms (working)
1718	13	—
1775	16	—
1780	18	—
1781	19	—
1782	20	228
1783	21	—
1784	19	226
1785	16	234
1787	15	121
1789	14	146
1790	14	156
1791	13	153
1792	15	163
1793	17	227
1794	17	218
1796	17	160
1797	18	218
1799	17	205
1800	13	172
1801	17	231
1802	19	228
1803	20	208
1804	17	216
1805	17	187
1806	17	184
1808	16	164
1809	17	218
1816	18	124

Source: See footnote 34. When loom information for an *obraje* was not available for one year, the average of the number of looms from the previous and following years for that *obraje* was used. For 1816, the average number of looms per *obraje* was used to supply missing data.

réтары's textile industry reacted through a contraction in the number of *obrajes* and looms in production and through a decline in the quality of cloth. Besides just making the cloth thinner and lighter, owners now mixed flock wool with the quality fleece to lower costs.³⁸

Another decline, lasting from 1805–1808, probably stemmed from a combination of changes. The consolidation law put into effect in 1805 weakened agriculture and commerce; local *obrajes*, never able to grow beyond a certain limit, now faced increasing competition from other producers; imported cloth also may have decreased Querétaro's

38. "Petition of Querétaro Obraje Owners," April 26, 1781 (25); "Visita de Obraje de Don Domingo Coder Merino," Jan. 19, 1796 (25), MNA.

share of domestic markets; and in 1806 the city was hit by a major epidemic. All of these conditions limited the production of cloth.³⁹

Of the three slumps, the last is the most readily understandable. The textile industry suffered economic and social dislocations caused by the turmoil of the independence movement. Through destruction and emigration the capital worth of the industry decreased, and the industry employed far fewer workers than in the pre-1810 period. Yet production continued through the second decade of the new century, and if the figure for 1816 is at all representative, it continued at a rate higher than the lowest point during the previous three decades. By 1844 the industry had still not reached its pre-1810 level, although over 3,500 individuals worked in *obrajes*, *trapiches*, and other fabric plants.⁴⁰

Market changes also must have forced the *trapiches*, which controlled large numbers of looms and workers, to make periodic adjustments. Perhaps the overall changes in *trapiche* production paralleled those of the *obrajes*. Informed estimates on the number of *trapiches* clearly show their importance for textile production. Humboldt observed that the city contained 1,200 *trapiche* workers in 1793, and 300 *trapiches* in 1803. In a work published in 1803 Zelaa e Hidalgo, a seasoned resident of Querétaro, said that 327 operated in the city.⁴¹ *Trapiches*, composed of only a couple of looms and owned by Spaniards, Indians, and mestizos, produced either wool or cotton for limited markets. Considering the eighteenth-century process of making woolen fabrics, *trapiches* may have relied at least partly on some *obraje* equipment. The most efficient way of shrinking and felting cloth after weaving was to use a fulling machine (*batán*), composed of heavy wooden hammers rotating on a hydraulically powered axle, equipment usually found only in *obrajes*. Perhaps the *trapiches* relied on *obrajes* for fulling cloth or for other services in a manner similar to the reliance of the Brazilian *lavradores de cana* (sugar cane farmers) on the *senhores de engenho* (sugar cane mill owners).⁴²

39. Asunción Lavrin, "The Execution of the Law of Consolidación in New Spain: Economic Aims and Results," *HAHR* 53 (Feb. 1973), 27–49. Enrique Florescano, *Estructura y problemas agrarios de México (1500–1821)* (Mexico, 1971), pp. 219–220; Hubert Howe Bancroft, *Works*, 39 vols. (San Francisco, 1882–1890), XII, 101; Brading, *Miners and Merchants*, pp. 340–341; Greenleaf, "The Obraje," pp. 237–238; Potash, *Banco de Avío*, p. 20.

40. "Notas estadísticas de Querétaro," pp. 200–202.

41. José María Zelaa e Hidalgo, *Glorias de Querétaro* (Mexico, 1803), p. 5; Humboldt, *Ensayo político*, IV, 13.

42. For the machinery in Querétaro factories see: "Inventario de Obraje de Pedro las Casas," Diego de Zerezedá, April 1, 1644 (1); "Inventario de Obraje

Sources available for determining the number of workers and the amount of production are less precise than those available on *obrajes* and looms. Figures should be treated with caution since they come from estimates of local and foreign observers and from fragmentary, often contradictory, *obraje* reports. Humboldt, the best source here, states that 1,500 workers toiled in *obrajes* in 1793. Another source specifies that 2,000 worked in *obrajes* in 1803, and 9,000 in the entire industry. Still another says that there were 6,000 in textiles in 1808. Since eighteenth-century *visitas* do not give information on the size of the labor force, Humboldt's assertion that 1,500 workers manned 215 looms in 1793 remains the best clue for determining the number of *obraje* workers from year to year.⁴³ If approximately seven workers were required per loom in each *obraje*, then the number of workers varied between 1,638 in 1785 and 847 in 1787, and the number of workers per *obraje* varied from 200 to a handful.

Regardless of the exact number of workers in any given year, Querétaro was by colonial standards a heavily industrialized city that gave employment to thousands of textile workers, both in and out of the *obraje*. But the permanency and stability of this employment is in doubt. As *obrajes* reacted to scarce resources or limited markets, they decreased the number of looms in use or completely shut down, thereby causing at least temporary unemployment for large numbers of workers. Periodic temporary unemployment may have been a conspicuous feature of late colonial Querétaro life. For a large, acculturated, employed urban population, accustomed to the material amenities of the Spanish city, the continuous threat of unemployment may have served as a motive for joining insurgency movements in the eastern Bajío in 1810. Querétaro's urban unemployment problems were duplicated in other important manufacturing centers, like Texcoco, Cholula, and Puebla, where owners were forced to fire workers because of economic difficulties.⁴⁴

The amount of cloth produced is more difficult to determine than the size of the industry or the number of workers. Average production figures for a thirty-month period between 1780–1782 show that twenty factories annually produced.⁴⁵

de Capitán Alonzo Sánchez Grijaldo," Salvador Perea, Aug. 22, 1714 (51), MNA. A good published description of equipment can be found in Fernando Silva Santisteban, *Los obrajes en el virreinato del Perú* (Lima, 1964), pp. 41–57.

43. Humboldt, *Ensayo político*, IV, 13; "Notas estadísticas de Querétaro," pp. 98–202; Brading, *Miners and Merchants*; Potash, *Banco de Avío*, p. 19.

44. Florescano, *Problemas agrarios*, pp. 105–116.

45. "Relaciones de manufacturas de obrajes," Sept. 16, 1783 (18), MNA.

<i>paños</i>	151,751 varas
<i>bayetas</i>	12,952
<i>jerguetilla</i>	23,415
<i>sayal</i>	3,824
<i>jerga</i>	1,510
<i>frezadas pastores</i>	186 dozen

These totals are particularly suspect because they come from tax records and have serious internal inconsistencies. Humboldt's figures for 1793 state that 215 looms and 1,500 operators produced:⁴⁶

<i>paños</i>	226,522 varas
<i>jerguetilla</i>	39,718
<i>bayetas</i>	15,369
<i>jerga</i>	17,690

This cloth required 42,270 arrobas of wool valued at 161,945 pesos. Taken at face value, even though Humboldt did not account for *sayales* and *frezadas*, these figures show that total production increased from the first years of the 1780s to 1793. When Humboldt visited the city ten years later, he said that wool consumption had increased to 63,900 arrobas, but he now included some 300 *trapiches* as consumers in addition to the *obrajes*. The increase in the amount of wool used is simply due to the inclusion of *trapiches*, and does not indicate growth of the industry.⁴⁷ Another estimate suggests a major increase after the turn of the century by stating that the industry consumed 83,000 arrobas in 1808, an increase of almost thirty percent over 1803. However, the astute British visitor to the city in 1826, Sir Henry George Ward, remarked that the industry only consumed 63,000 to 65,000 arrobas annually before 1810.⁴⁸

The cumulative impression from data on *obrajes*, workers, and production, is that the textile industry expanded in the late eighteenth and early nineteenth century, but not in the dramatic or spectacular way usually associated with the late Bourbon period. While other regions appeared to experience a late eighteenth-century textile boom, especially under the viceroys the second Conde de Revilla Gigedo (1789–1794) and Azanza (1798–1800),⁴⁹ Querétaro's industry grew

46. Humboldt, *Ensayo político*, IV, 12–14.

47. *Ibid.*

48. Ward, *Mexico*, I, 315; Potash, *Banco de Avío*, p. 18. Another viewpoint supporting early nineteenth century growth is mentioned in: "Notas estadísticas de Querétaro," p. 200.

49. Greenleaf, "The Obraje," pp. 237–238.

slowly, sporadically, and unevenly with years of abundant production followed by years of recession. Textile production had a low base point from which it seldom dropped even during the worst periods; on the other hand, it encountered definite limits to expansion and sustained growth. And a strong chord of instability sounded through the industry in the late colonial period, sending vibrations through the entire economy of the province. The contractions and reversals of textile production in Querétaro were not isolated phenomena. Other urban industries, mines, and agriculture in New Spain experienced a series of crises, caused mainly by periodic declines in agricultural production.⁵⁰

The *obraje* was an institution of enduring importance in the province. The prosperity of the city and the province was conditioned in part by the growth of textile manufacturing. Economically, *obrajes* produced an essential commodity and offered employment and markets. They generated a substantial amount of Querétaro's commercial activity and stimulated the circulation of goods and capital in and out of the province. Socially, *obrajes* did not define relationships as neatly as some other institutions, but they certainly must be taken into account when evaluating early Mexican society. *Obraje* ownership provided a channel of mobility for enterprising individuals, and served to link them with the other main groups in the society, and the *obraje* helped determine the social position of thousands of individuals, introducing them to the Spanish economy and culture and conditioning their social actions. For Querétaro, the *obraje* ranks as an institution of significant social and economic dimensions.

50. Florescano, *Problemas agrarios*, pp. 105–116.