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Iron Mining and Socio-Demographic Change in Eastern Cuba, 1884–1940*

by LISANDRO PEREZ

During the first four decades of this century a profound change took place in eastern Cuba, especially in the province of Oriente. Its most obvious indicators are demographic: at the turn of the century, Oriente was only the third-largest of the six provinces in population, yet by 1919 it already occupied the number one position. Between 1899 and 1943 the province grew 313·9 per cent, much faster than either the national population (203·8) or the population of the province in which the capital city is located (Havana, 190·9).[1]

The changes in Oriente's population are even more apparent in the non-white and foreign-born categories. While the island's nonwhite population increased 135·4 per cent between 1899 and 1943, the corresponding percentage for Oriente was 255·4. During that same period, Oriente's foreign-born population grew 203·4 per cent, in comparison with a national increase of 42·9 per cent in the number of foreign-born persons.[2]

These demographic trends are themselves significant, for the growth and changes in the population of eastern Cuba constitute, together with the country's fertility and mortality declines and its levels of immigration, the most significant phenomena in the development of the Cuban population

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1 Oficina Nacional de los Censos Demográfico y Electoral, *Censos de población, viviendas, y electoral, enero 28 de 1953, informe general* (La Habana, P. Fernández y Cía., 1955), p. 1.

2 Oficina Nacional, *Censos de población, viviendas, y electoral*, pp. 49–50 and 75. It is not surprising that the growth of the province's foreign-born population was especially rapid during the first three decades of this century, since it was during that period that many Haitian and Jamaican laborers were brought into the province. Starting in 1933, the Cuban government returned many of the Haitians and Jamaicans to their homelands.

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during the first half of the twentieth century. Yet the demographic changes are only the most apparent symptoms of a deep social and economic transformation with important implications for the rest of Cuban society.

The crux of the changes can be seen in the alterations in Oriente's agrarian structure. In 1899, Oriente's agriculture was fairly diversified, with a relatively high proportion of small owner-operated farms. In a relatively short span of time thereafter it was turned into a province of large landholdings devoted to a single crop and populated primarily by agricultural wage earners and renters. In other words, it was a change from a system based upon small and independent agriculturalists to a classic case of what T. Lynn Smith called 'the rural social system based upon large estates,' with all its negative consequences for societal development.[3]

There is no need to enter here into a detailed discussion of the dynamics of that process, for it has already been studied, most notably by Morejón Seijas and Hoernel.[4] Their independent analyses of the factors responsible for Oriente's growth and social changes can be summarized in one word: sugar. Morejón Seijas, in her analysis of the changes in the spatial distribution of Cuba's population during the first decades of this century, underscores the expansion of the sugar industry in the region as the primary explanation for the rapid growth of Oriente. Hoernel describes the process in which the sugar estates started squeezing out the small farmers, especially those in cocoa, bananas, potatoes, and other staples. He estimates that between 1907 and 1919 Oriente's sugar production increased 400 per cent so that 'by 1919 500,000 acres of Oriente were planted in cane, a figure which surpasses the entire Cuban area under cane cultivation in 1899.'[5]

The transformation was accomplished largely by U.S. financial interests, whose investments in the development of Oriente's sugar industry accounted for a substantial proportion of all U.S. investments in the island, especially after 1914. Pino Santos, while cautioning against exaggerations of the extent of U.S. economic penetration in Cuba prior to that date, documents the process by which U.S. capital played the leading role in the development of the sugar industry in eastern Cuba through the acquisition of existing mills and huge

[3] T. Lynn Smith, *The Sociology of Agricultural Development* (Leiden, Netherlands, E. J. Brill, 1972), pp. 87–100.

[4] Blanca Morejón Seijas, 'Distribución de la población y migraciones internas,' in *La población de Cuba* (ed. Centro de Estudios Demográficos), (La Habana, Editorial de Ciencias Sociales, Instituto Cubano del Libro, 1976), pp. 128–9 and 143–4; and Robert B. Hoernel, 'Sugar and Social Change in Oriente, Cuba, 1898–1946,' *Journal of Latin American Studies*, Vol. 8, no. 2 (November, 1976). pp. 215–49.

[5] Hoernel, 'Sugar and Social Change,' p. 233.

tracts of land and the expansion of existing mills, part of the process he labels 'the assault on Cuba' by U.S. financial interests and which reached its height between 1914 and 1925.[6] In Oriente land was cheap and fertile. In 1914 U.S. firms already owned 16 sugar mills in the province.[7] Among the largest were United Fruit's twin giants, the Boston and the Preston. The former was grinding cane grown on 200,000 acres of land United Fruit purchased in 1902 for $2.00 an acre.[8]

Demand for labor forced wages in Oriente somewhat above the average for Cuban sugar laborers, and the province drew migrants from throughout Cuba, and perhaps more importantly, from the Caribbean. Haitians and Jamaicans were imported by the sugar companies for work in the mills.[9] According to one source, approximately 300,400 Haitians and Jamaicans migrated to Cuba between 1912 and 1929.[10]

The socio-demographic change in Oriente is an excellent example of how a great deal of Cuba's social development in this century can only be understood in the context of the interrelated influences of sugar and U.S. capital, a fact not lost to Cuban social historians, past and present. There is a long tradition of examining the island's development through the twin lenses of sugar and U.S. influence, particularly sugar, which, after all, preceded by more than two centuries large-scale U.S. economic penetration of the island. Many Cuban social thinkers have tended to be economic determinists, or perhaps more accurately, sugar determinists. The best examples are the writings of Ramiro Guerra y Sánchez, especially his *Azúcar y población en las Antillas*, first published in 1927.[11] It is an insightful analysis of the negative consequences for Cuban society of the changes in sugar production that were being introduced into the island, especially in eastern Cuba. Not coincidentally, Guerra y Sánchez also wrote a major work on U.S. expansionism in Latin America.[12] Fernando Ortiz's *Contrapunteo cubano del tabaco y*

[6] Oscar Pino Santos, *El asalto a Cuba por le oligarquía financiera yanqui* (La Habana, Casa de las Américas, 1973), pp. 73–127,

[7] *Ibid.*, pp. 45–7.

[8] Hoernel, 'Sugar and Social Change,' p. 229.

[9] For a fairly comprehensive treatment of this immigration, see Juan Pérez de la Riva, 'Cuba y la migración antillana,' in *La república neocolonial* II (ed. Grupo de Estudios Cubanos de la Facultad de Humanidades de la Universidad de La Habana), (La Habana, Editorial de Ciencias Sociales, 1975), pp. 5–75.

[10] Pérez de la Riva, 'Cuba y la migración antillana,' tables 6 and 7, n.p.

[11] Ramiro Guerra y Sánchez, *Azúcar y población en las Antillas* (3rd edn., 1944; rpt. La Habana, Editorial de Ciencias Sociales, 1970).

[12] Ramiro Guerra y Sánchez, *La expansión territorial de los Estados Unidos a expensas de España y de los países hispanomericanos* (La Habana, Cultural, S.A., 1935).

el azúcar also follows the trend of looking at sugar as the prime motor of Cuban society.[13]

Needless to say, economic determinism is the exclusive perspective of historians and social scientists writing in Cuba since the 1959 revolution. Following the Marxist emphasis on the analysis of the infrastructure, the study of Cuban sugar has become the prime focus of contemporary socio-historical research in Cuba, especially in the context of colonialist and neo-colonialist control and exploitation of the island's resources, The most notable representative of these relatively recent works is Manuel Moreno Fraginals' *El ingenio: complejo económico social cubano del azúcar*.[14] His explicit premise in the work is that 'without an exhaustive study of the sugar economy, there is no possibility of interpreting Cuban history.'[15] Juan Pérez de la Riva undoubtedly shared that view, for in his pioneer works on Cuba's population, demographic events and trends are invariably placed in the context of the island's political economy, especially sugar.[16] Other examples of this tendency, and of particular relevance to our topic, are the detailed analyses recently produced by a group of historians at the University of La Habana on the operations of the United Fruit Company in eastern Cuba.[17]

Attributing Oriente's growth to the expansion of the sugar industry is, therefore, consistent with a long tradition in Cuban socio-historical studies, a tradition which, while unquestionably accurate in its interpretation, has its drawbacks. The study of socio-demographic changes in eastern Cuba provides an opportunity to illustrate one of those problems: the tendency for sugar to overshadow and preclude analyses of other economic activities that may have also played an important role in the development of Cuban society. Because of the legitimate emphasis on sugar, the following facts regarding Oriente's social and economic history and the presence of the U.S. in the region are not

[13] Fernando Ortíz, *Contrapunteo cubano del tobaco y el azúcar* (1940; rpt. Santa Clara, Universidad Central de Las Villas, 1963).

[14] Manuel Moreno Fraginals, *El ingenio: complejo económico social cubano del azúcar* (3 vols., La Habana, Editorial de Ciensias Sociales, 1978).

[15] *Ibid.*, I, p. 10.

[16] Juan Pérez de la Riva, 'Aspectos económicos del tráfico de culíes chinos a Cuba, 1853–1874,' *Universidad de La Habana* (May–June, 1965), pp. 95–115; Juan Pérez de la Riva, 'Los recursos humanos de Cuba al comenzar el siglo: inmigración, economía y nacionalidad (1899–1906),' in *La república neocolonial I* (ed. Grupo de Estudios Cubanos de la Facultad de Humanidades de la Universidad de La Habana, La Habana, Editorial de Ciencias, 1975), pp. 11–44.

[17] Oscar Zanetti and Alejandro García (eds), *United Fruit Company: un caso del domino imperialista en Cuba* (La Habana, Editorial de Ciencias Sociales, 1976); and Ariel James, *Banes: imperialismo y nación en una plantación azucarera* (La Habana, Editorial de Ciencias Sociales, 1976).

widely known, even among many specialists on Cuba: (1) for more than a decade before the start of the Spanish-Cuban-American War in 1895 and prior to any substantial U.S. investments in sugar or any other industry in Cuba, U.S.-owned mining firms had exclusive control of Oriente's (and Cuba's) principal mineral: iron; (2) while Cuba was still in Spanish hands, those firms shipped almost five million tons of the ore to Baltimore and Philadelphia; (3) the expansion of U.S. iron-mining operations in Oriente made Cuba, during the second decade of this century, the world's ninth-largest producer of iron ore; (4) for thirty years, from 1892 to 1922, Cuba was the leading foreign supplier of iron ore to the U.S., in some years accounting for more than eighty per cent of all the iron imported by that country; and (5) most importantly, iron played a critical role in eastern Cuba's socio-demographic change.

These facts are not widely known because of the absence of any comprehensive analyses of the iron industry in Cuba, especially of the industry's history and development and its significance in the transformation of eastern Cuba. The only work devoted exclusively to the topic of iron mining in Cuba is Iglesias' commendable pioneer analysis of the operations of one company in southern Oriente.[18] She provides a detailed description of the economic and technological aspects of those operations, but little on the scope and significance of the industry. Not surprisingly, the only other references to iron mining in Oriente are in brief passages of works dealing generally with dependency and imperialism in U.S.–Cuba relations.[19]

The principal purpose in this paper is to establish the role that iron mining played in the socio-demographic transformation of eastern Cuba. Since, however, so little is known about iron mining in Cuba, it is important to include at the outset a section on the history of that industry. Furthermore, precisely because of the existing lacunae on this topic, such a section has been designed to fulfill a larger function than a mere historical introduction. Indeed, the forthcoming analysis of the development of iron mining in

[18] Fé Iglesias, 'La explotación del hierro en el sur de Oriente y la Spanish-American Iron Company,' *Santiago*, No. 17 (March 1975), pp. 59–106.

[19] Carleton Beals, *The Crime of Cuba* (1933; rpt, N.Y., Arno Press, 1970) pp. 402–3; Jules Robert Benjamin, *The United States and Cuba, Hegemony and Dependent Development, 1880–1934* (Pittsburgh, University of Pittsburgh Press, 1977), pp. 18, 197; Leland Hamilton Jenks, *Our Cuban Colony* (N.Y., Vanguard Press, 1928), pp. 35–6; Julio Le Riverend, *La república: dependencia y revolución* (3rd edn., La Habana, Editorial de Ciencias Sociales, 1973) p. 71, Pino Santos, *El asalto a Cuba*, pp. 58–61 and 127–9; and Morris Hyman Morley, 'Toward a Theory of Imperial Politics: United States Policy and the Process of State Formation, Disintegration and Consolidation in Cuba, 1898–1978,' (Ph.D. Diss., State University of New York at Binghamton 1980) p. 95.

eastern Cuba is viewed as a major contribution of this paper, for it documents one of the earliest of a long series of ventures into Latin America by U.S. monopoly capitalism, ventures which shaped the character of U.S.–Latin American relations throughout this century. As Healy notes, Cuba was the testing ground for the formulation of U.S. policy and the articulation of U.S. economic interests throughout Latin America.[20] In no other Cuban economic activity, including sugar, did U.S. capital enter as early, or with such monopolistic control, as in iron mining. The story of iron in Cuba is, therefore, an early chapter in the development of two cornerstones of U.S.–Latin American relations in the twentieth century: dependency and neo-colonialism. The analysis of Cuban iron takes on even more importance in light of the recent upsurge in interest on the social, economic, and political dimensions of mining in Latin America, as exemplified by the works on Chilean copper by Girvan and Moran, on Caribbean bauxite by Girvan, on Bolivian tin by Nash and Taussig, and on Dominican nickel by Deverell *et al.*[21]

The Development of Iron Mining in Eastern Cuba

Eastern Cuba has always been the hub of the island's mining industry. With the exception of the rich copper mines at Matahambre in the western end, virtually all of the mining activities in the island, past and present, have been concentrated in Oriente. Even during the early colonial years gold was mined there, but never in sufficient amounts to keep the Spanish from seeking greater deposits of it on the mainland of the American continent. Copper was also mined in eastern Cuba in colonial times, chiefly by Spanish and British concerns, but the war that started in 1868 caused the destruction of many mines.[22] The closing years of Spanish rule witnessed the ascendency

[20] David F. Healy, *The United States in Cuba, 1898–1902* (Madison, The University of Wisconsin Press, 1963), pp. xi–xii.

[21] Norman Girvan, *Copper in Chile: a Study in Conflict between Corporate and National Economy* (Jamaica, Institute of Social and Economic Research, University of the West Indies, 1972); Theodore H. Moran, *Multinational Corporations and the Politics of Dependence: Copper in Chile* (Princeton, Princeton University Press, 1974); Norman Girvan, *Corporate Imperialism: Conflict and Expropriation* (White Plains, N.Y., M. E. Sharpe, Inc., 1976); June C. Nash, *We Eat the Mines and the Mines Eat Us: Dependency and Exploitation in Bolivian Tin Mines* (N.Y., Columbia University Press, 1979); Michael T. Taussig, *The Devil and Commodity Fetishism in South America* (Chapel Hill, University of North Carolina Press, 1980); and John Deverell *et al.*, *Anatomía de una corporacion transnacional* (México, Siglo Veintiuno Editores, 1977). See also: Markos J. Mamalakis, 'Minerals, Multinationals and Foreign Investment in Latin America,' *Journal of Latin American Studies*, Vol. 9, No. 2 (November, 1977), pp. 315–36.

[22] *The Engineering and Mining Journal*, Vol. 66, No. 9 (27 August, 1898), p. 252.

of iron in Oriente, so that between roughly 1880 and 1940 it was the premier Cuban mineral. In more recent years, nickel has assumed that primacy, a development not unrelated, as we shall see, to the earlier exploitation of iron.[23]

Throughout the heyday of iron in Cuba, the island's successive governments made mining the ore an attractive enterprise to those with sufficient capital to do so. It was relatively easy and inexpensive to acquire and maintain mineral rights. It is no coincidence that iron ore was first mined in Cuba only a few months after the promulgation in 1883 of a royal Spanish decree which exempted mining companies, for twenty years hence, from any surface taxes as well as from any taxes on the exportation of the minerals. Furthermore, the Spanish Crown suspended all import duties on coal and machinery utilized in the mining operations.[24] In addition to trade and tax exemptions, the mining firm would pay only a nominal fee for demarcating, staking, and acquiring a claim. Using Clark's figures, one can estimate that the total cost of obtaining mining rights to a claim of 60 hectares (the size of most claims) came to $150·000, including the fees for the state engineers.[25]

The low cost of obtaining mining rights led many individuals, most of them Spanish or Cuban, to acquire a large number of claims with no intention or capital to develop them.[26] Mining claims were not only inexpensive, but they could be held in perpetuity, regardless of whether or not they were made productive. The hope of the speculators was to sell or lease their mining rights to those U.S. companies that were apparently taking a growing interest in Cuban iron. Some of the most important claims eventually mined by U.S. firms were actually held by private individuals who were paid royalties by the companies.

The U.S. provisional military government, which ruled Cuba between 1899 and 1902, continued the Spanish policy of making iron mining an attractive enterprise. Leonard Wood, the Military Governor from 1900 to 1902, was well acquainted with the area's mineral resources and committed to their exploitation. In 1901, he issued Military Order No. 145 which

[23] Gail Reed, 'Moa y su historia,' *Granma Resumen Semanal*, 11 March 1979, pp. 7–10; and 'Importancia de los minerales lateríticos,' *Granma Resumen Semanal*, 16 May 1976, p. 7.

[24] Robert P. Porter, *Industrial Cuba* (N.Y., G. P. Putnam's Sons, 1899), pp. 319–20; and 'Mining Regulations in Cuba,' *The Engineering and Mining Journal*, Vol. 41, No. 22 (31 May, 1890), p. 612.

[25] William J. Clark, *Commercial Cuba* (N.Y., Scribner's Sons, 1898), p. 400.

[26] *Ibid.*, p. 401.

continued the Spanish Crown's suspension of the surface tax.[27] Later, in the same year, he issued Military Order No. 258, which established a clearer and more explicit procedure than what had existed previously for the demarcation of mining claims.[28]

But Wood's most important action with respect to mining in Cuba came in his second month as governor when he declared, in a civil order, that the Foraker resolution did not apply to the acquisition of mining titles.[29] The resolution, adopted by the U.S. Congress early in 1899 under pressure from anti-annexionist forces, sought to limit U.S. involvement in Cuba by prohibiting the granting of special concessions or franchises during the period of U.S. authority over the islands.[30] Wood was an outspoken critic of the resolution.[31] During his term as Military Governor, he constantly found opportunities to circumvent it, most notably in the case of the railroads, but also in mining.

For the iron companies, therefore, the U.S. administration brought no restrictions, financial or legal, to their mining operations. With the institution of the Cuban republic, the situation remained unchanged. Calvache notes that, despite the passage of various pieces of legislation seeking to reinstitute some form of mining tax, in practice the absence of a surface tax persisted throughout most of the Republican period.[32]

Iron mining in Cuba was carried out almost exclusively in two major areas of Oriente. One was along the southern coast directly east and west of Santiago Bay. The other was on the northern coast, near Mayarí, directly inland from Nipe Bay, not far from the area where the United Fruit Company established its huge sugar mills. Each area will be discussed in detail below, but it is important to present first some general features of the organization and technology of iron mining in Cuba, applicable to both mining districts.

First and foremost, iron mining operations in Cuba were owned and

[27] Headquarters Department of Cuba, *Civil Report of the Military Governor, vol. II: Civil Orders and Circulars, 1901* (n.p., n.d.), p. 269.

[28] *Ibid.*, p. 684.

[29] Military Government of Cuba, Department of Agriculture, Commerce and Industry, *Civil Report of the Military Governor, vol. VII: Report of the Work Accomplished by this Department During the Fiscal Year which Commenced on the 1st of July 1899, and Ended on the 30th of June 1900* (n.p., 1900), pp. 30–1.

[30] Herminio Portell-Vilá, *Historia de Cuba en sus relaciones con los Estados Unidos, vol. IV: La intervención y la república* (La Habana, Editorial Jesús Montero, 1941), p. 57.

[31] Letter from Leonard Wood to Elihu Root, Secretary of War, December 22, 1900, Leonard Wood papers, container 27, Manuscript Division, Library of Congress.

[32] Antonio Calvache, *Historia y desarrollo de la minería en Cuba* (La Habana, Editorial Neptuno, 1944), p. 65.

operated exclusively by U.S. firms. This is important for a number of reasons, not the least of which is that it presents a contrast to virtually all other Cuban economic activities.[33] Even in the sugar industry, where in the twentieth century U.S. interests controlled the lion's share, a sizable portion was owned and operated by Cubans. Furthermore, all U.S. iron firms in Cuba (with possibly one minor exception, Ponupo Manganese Company) were subsidiaries of U.S. iron and steel companies. From their inception, therefore, Cuban iron mining operations were designed to provide raw materials for manufacturing plants in the U.S., all within a vertically-integrated system that handled all aspects of the production process. During the period under study, there were no foundries or steel mills in Cuba, and only rarely was Cuban iron offered for sale on the open market.

Another important characteristic of iron mining in Cuba is that the iron ore deposits were located at or near the surface, usually on the sides of hills.[34] This facilitated their discovery and extraction. The mines were not worked underground. The ore was excavated out of open pits and from the sides of the hills with the use of steam shovels, drilling, and, in some cases, blasting with dynamite.[35] Geologists Hayes, Vaughan, and Spencer, after observing this procedure, commented in their report to Wood that 'the whole operation is one of quarrying and is not mining in the ordinary sense of the word.[36]

While the geological features of the Cuban iron-ore deposits in many ways facilitated their extraction, they also made the opening of a mine a financially risky operation. Although the surface wealth might be encouraging (and profitable), there was no sure way of knowing at the outset the size of the deposits that lay underneath. This was especially true of the southern mines. Spencer explained it this way:

> . . . the position of ore bodies can never be determined . . . each body of ore is separated by all others by masses of barren rock in such an irregular way that the distance between adjacent ore bodies may be very small or large, just as the ore may occur in small or large masses. . .[37]

[33] Iglesias, 'La explotación del hierro,' p. 61.

[34] Olin R. Kuhn, 'Iron-Ore Deposits of Cuba,' *The Engineering and Mining Journal-Press*, Vol. 121, No. 15 (10 April, 1926), p. 608; and Iglesias, 'La explotación del hierro,' p. 68.

[35] Porter, *Industrial Cuba*, pp. 321–2; Irene A. Wright, *Cuba* (N.Y., The Macmillan Company, 1910), p. 499; and *The Engineering and Mining Journal*, Vol. 84, No. 6 (10 August, 1907), p. 284.

[36] C. Willard Hayes, T. Wayland Vaughan, and Arthur C. Spencer, *Report on a Geological Reconnaissance of Cuba made under the Direction of General Leonard Wood, Military Governor* (n.p., 1901), p. 76.

[37] Arthur C. Spencer, 'The Iron Ores of Santiago, Cuba,' *The Engineering and Mining Journal*, Vol. 72, No. 20 (16 November, 1901), p. 632.

We shall see that this geological characteristic spelled the ruin of at least one company after only a couple of years in operation. It served to establish the principle that only those firms with sufficent capital to mount a sizable operation capable of exploiting a large number of claims could hope to survive in the Cuban iron fields.

The Southern Mines

The iron ore found along Oriente's southern coast was predominantly a hard brown hematite, usually with considerable magnetite.[38] It contained a relatively large proportion of iron. Analyses of samples of the ore taken around the time of the opening of most of the mines indicated a proportion of iron that ranged from 55 to 72 per cent, with an average around 62 to 65. Just as attractive as its high iron content, however, was the fact that the ore contained a minimum of 'deleterious substances,' especially phosphorous and sulphur. This made it particularly suitable for the manufacture of Bessemer steel.[39]

Iron mining in Cuba was initiated by the Juraguá Iron Company in 1884. Juraguá was jointly owned by two Pennsylvania firms: the Pennsylvania Steel Company, of Steelton, and the Bethlehem Iron Company, with home offices in South Bethlehem.[40] In the fourteen-month period between October 1882 and December 1883, the company acquired 21 claims, totaling 1,140 hectares, in the *municipio* of Caney, east of Santiago de Cuba.[41] Not all of those claims, of course, contained profitable reserves, but given the low cost of obtaining and keeping them, the company acquired them in the hope of developing a few good mines. They did just that, especially in the Firmeza claim, which for decades was to be the nucleus of Juraguá's operations in southern Oriente.

The second U.S. firm to enter the Cuban iron scene was the Spanish-

[38] Porter, *Industrial Cuba*, p. 318; and U.S. Geological Survey, *Mineral Resources of the United States, Part I: Metallic Products, 1907* (Washington, D.C., U.S. Government Printing Office, 1908), p. 80.

[39] Pulaski F. Hyatt and John T. Hyatt, *Cuba: its Resources and Opportunities* (N.Y., J. S. Ogilvie Publishing Company, 1898), pp. 78–9; 'Reseña histórica sobre la minería en Oriente, Cuba,' *Boletin de Minas*, No. 4 (January, 1918) p. 54; Kuhn, 'Iron-Ore Deposits of Cuba,' p. 608; John Birkinbine, *The Sixteenth Annual Report of the United States Geological Survey, Part III: Mineral Resources of the United States, 1894, Metallic Products* (Washington, D.C., U.S. Government Printing Office, 1895), pp. 55–9; *The Engineering and Mining Journal*, Vol. 42, No. 9 28 August, 1886), p. 152; *Ibid.*, Vol. 53, No. 15 (9 April, 1892), p. 411; *Ibid.*, Vol. 54, No. 23 (3 December, 1892), p. 545; and *Ibid.*, Vol. 61, No. 23 (8 June, 1901), p. 734.

[40] 'Reseña histórica sobre la minería en Oriente, Cuba,' p. 53.

[41] *Boletín de Minas*, No. 17 (1938), n.p.

American Iron Company. Around 1889 it acquired mining rights to a group of claims just four miles north of Daiquirí beach, 35 miles east of Santiago de Cuba, in relatively close proximity to the Juraguá mines. Most of those claims were originally granted, in 1882 and 1883, to one José Ruiz de Léon.[42] Included in the group was a blockbuster: Lola Hill, which for decades thereafter was the centerpiece of Spanish American's operation in Daiquirí. In 1895 the company started shipping iron ore from Cuba, primarily to Baltimore and Philadelphia.

Although it was definitely a U.S.-owned company, Spanish-American's specific corporate pedigree is not entirely clear. Founded expressly for the mining of Cuban iron, it was incorporated around 1889 under the laws of West Virginia by a Cleveland syndicate headed by Joseph L. Colby and associates who owned interests in iron mines in Michigan.[43] In 1898 there is reference to the company being owned by Lake Superior Consolidated Mines, a firm with offices in Minnesota.[44] Thus, unlike the Juraguá Company and most of the other firms that ever mined iron in Cuba, Spanish-American did not have pure Pennsylvanian origins.[45] It is clear, however, that by the turn of the century, if not earlier, the company was a wholly-owned subsidiary of Pennsylvania Steel.[46]

Throughout the history of iron mining in Cuba, the Juraguá and Spanish-American firms remained the two principal entities engaged in the mining of iron in southern Oriente. Three other U.S. companies, however, also mined the ore in that region and shipped varying quantities to the United States before closing down their operations after only a few years. One was the Sigua Iron Company, which was, like the Juraguá Iron Company, a jointly-owned venture by Pennsylvania Steel and Bethlehem.[47] Established in 1892, it acquired rights to several mines located due north from Sigua Bay, not far

[42] *Ibid.*

[43] *The Engineering and Mining Journal*, Vol. 50, No. 19 (8 November, 1890), p. 556; *Ibid.*, Vol. 53, No. 15 (9 April, 1892), p. 411; and Hayes, Vaughan, and Spencer, *Report on a Geological Reconnaissance of Cuba*, p. 71.

[44] *The Engineering and Mining Journal*, Vol. 66, No. 5 (30 July, 1898), pp. 139–40.

[45] For an excellent analysis of the various geographic components of the iron oligarchy in the United States see: John N. Ingham, *The Iron Barons: A Social Analysis of an American Urban Elite, 1874–1965* (Westport, Conn., Greenwood Press, 1978).

[46] Iglesias, 'La explotación del hierro,' p. 65; and *The Engineering and Mining Journal*, Vol. 72, No. 8 (24 August, 1901), p. 226. Iglesias implies, and she may be correct, that from its inception Spanish-American was a subsidiary of Pennsylvania Steel.

[47] *The Engineering and Mining Journal*, Vol. 50, No. 19 (8 November, 1890), p. 556.

to the east of Spanish American's Daiquirí mines. It mined the ore during only a couple of years, after which their facilities were reportedly destroyed during the Spanish-Cuban-American War.[48]

Just as fleeting was the experience of the Cuban Steel Ore Company, a Philadelphia firm established in 1899 and affiliated with Tidewater Steel Company, but also with connections to Pennsylvania Steel.[49] Its mines, located west of Santiago near Guamá, showed, on the surface, great potential. It contracted with Pennsylvania Steel for the construction of mining and shipping facilities valued at 1·7 million dollars. After only two years of mining surface ore, the company discovered that the mines' wealth did not go deeper and was forced to auction off its property for $50,000.[50]

Like the Cuban Steel Ore Company, another firm also established itself west of Santiago and met a similar fate, except that its productive history was somewhat longer. This was the Ponupo Manganese Company, which since 1895 had been engaged in the mining of manganese, but decided in 1907 to enter the iron ore business instead.[51] It mined the El Cuero mines until they were exhausted in 1918.[52] Ponupo's corporate origins are not clear, but it does not appear that it had a Pennsylvania connection. There is some evidence that it may have been linked to U.S. interests involved in the construction of the railroad to eastern Cuba.[53] Perhaps because of its greater independence from the steel industry, Ponupo Manganese was able, in 1911, to do what had not been done previously in the history of iron mining in Cuba: offer a sizable amount of ore for sale in the open market.[54]

As the Sigua, Cuban Steel Ore, and Ponupo companies closed down their operations, control of iron mining in Cuba was being left exclusively in the hands of the Juraguá and Spanish-American firms. In 1908, the Bethlehem Steel Company acquired Pennsylvania Steel, thereby becoming sole owner of the two subsidiaries mining in Cuba.[55] In 1920, monopoly control was made

[48] Iglesias, 'La explotación del hierro,' p. 66.
[49] *The Engineering and Mining Journal*, Vol. 68, No. 3 (15 July, 1899), p. 80; and *Ibid.*, Vol. 68, No. 5 (29 July, 1899), p. 140.
[50] *Ibid.*, Vol. 68, No. 18 (29 July, 1899), p. 140; *Ibid.*, Vol. 74, No. 11 (3 September, 1902), p. 352; and 'Reseña histórica sobre la minería en Oriente, Cuba,' p. 59.
[51] Iglesias, 'La explotación del hierro,' p. 67.
[52] U.S. Geological Survey, *Mineral Resources of the United States, 1918, Part I: Metals* (Washington, D.C., U.S. Government Printing Office, 1921), p. 554.
[53] William H. Carlson, *Report of the Special Commissioner of Railroads to Major General Leonard Wood, Military Governor of Cuba* (Baltimore, Guggenheim, Weil & Co., 1901), p. 88.
[54] *The Engineering and Mining Journal*, Vol. 93, No. 3 (20 January, 1912), p. 195.
[55] 'Reseña histórica sobre la minería en Oriente, Cuba,' p. 54.

explicit when the Spanish-American and Juraguá companies were merged to form a new firm: Bethlehem Cuba Iron Mines Company.[56]

As the claims were mined at greater depths, the ore's original quality deteriorated. Samples taken as early as 1917 showed that, in comparison with those taken in the 1880's, the content of iron started decreasing while the proportion of sulphur and phosphorous increased.[57] Towards the middle of the twentieth century the mines were virtually exhausted, at least in terms of their profitability. Iglesias reports that by 1956 the southern mines had already shut down.[58]

The Northern Mines

Although initially the southern district was mined by more than one corporation, such was not the case in northern Oriente, where the Spanish-American Iron Company was from the outset the sole firm exploiting the iron deposits. This meant, of course, that eventually Bethlehem Steel would have exclusive control of iron mining in Cuba. Spanish-American started developing the mines in 1905 and the first shipment was made in 1910.

The first indication that there might be substantial iron ore deposits in northern Oriente came from the geological report submitted in 1902 to the Military Governor by Hayes, Vaughan, and Spencer. Their reconnaissance of Oriente led them to the observation that geological formations in the general region between the bays of Nipe and Moa, especially in the hills, pointed to the possibility of iron-ore deposits in the area. The observation was mentioned briefly and almost in passing by the geologists in their report.[59] But Charles F. Rand, the president of Spanish-American, and his administrator in Cuba, Jennings S. Cox, Jr., picked up on it. The company launched exploratory research in the area under the personal direction of Rand, who travelled from New York expressly for that purpose.[60] It was apparently determined that indeed there were promising reserves near Mayarí, but company officials were probably not greatly encouraged by the composition of the ore. It was predominantly a lateritic limonite ore with a clay-like consistency due to its high water content.[61] The content of iron was not very high (40 to 50 per cent)

[56] Iglesias, 'La explotación del hierro,' p. 70.
[57] 'Reseña história sobre la minería en Oriente, Cuba,' pp. 54, 58.
[58] Iglesias, 'La explotación del hierro,' p. 71.
[59] Hayes, Vaughan, and Spencer, *Report on a Geological Reconnaissance of Cuba*, pp. 83–4.
[60] 'The Mayarí Iron Ore District of Cuba,' *The Iron Age*, Vol. 80, No. 7 (15 August, 1907), p. 422.
[61] Kuhn, 'Iron-Ore Deposits of Cuba,' p. 608.

and it contained substantial amounts of a myriad of other substances, notably alumina, silica, chromium, nickel, and cobalt.[62] Such an ore was unlike any other iron-bearing mineral that had previously been processed in the U.S., and it was anticipated that it would present special processing problems which made its value questionable.[63]

Nevertheless, the officers of the Spanish-American Iron Company decided to take the gamble, and in a big way. In what can only be regarded as an investment *blitzkrieg*, the company acquired, in a single day, March 31, 1905, mining rights to 8,521 hectares in the *municipio* of Mayarí.[64] Official Cuban statistics on mining concessions show that by 1911 Spanish-American had acquired, directly from the government, mining rights to nearly 15,000 hectares, a figure consistent with the company's own figure of 27,870 acres.[65] It should be added that this does not include the sizable acreage acquired by Spanish-American much further to the east, near Moa, a district that was to be mined for iron, but which was eventually exploited for its nickel.

Indeed, even from its beginnings, the fate of iron mining in northern Oriente would be determined by nickel. The content of nickel, together with chromium, did pose unprecedented metallurgical problems in processing the ore. In 1912, however, the company reported a breakthrough, which was apparently arrived at fortuitously.[66] It was discovered that as long as the proportion of the nickel could be kept to between one and 1·5 per cent and to roughly one-half of the proportion of the chromium (two to three per cent), the resulting product from Bethlehem's blast furnaces in Maryland was of exceptional quality and strength.[67] The company's customers reported excellent results from the pig iron and steel produced from the Mayarí ore. It seemed especially suited for tools, machinery, and rails, and its qualities were praised throughout the iron and steel industry.[68] Railroad companies

[62] *Ibid.*; Bradley Stoughton, 'The Metallurgy of Iron and Steel,' *The Engineering and Mining Journal*, Vol. 95, No. 2 (11 January, 1913), p. 99; and *The Journal of the Iron and Steel Institute*, Vol. 85, No. 1 (1912), p. 440.

[63] Quincy Bent, 'Use of Mayarí Iron in Foundry Mixtures,' *The Iron Age*, Vol. 90, No. 18 (31 October, 1912), p. 1028; 'Iron Mining in Cuba,' *The Iron Age*, Vol. 81, No. 15 (9 April, 1908), p. 1149; *The Engineering and Mining Journal*, Vol. 86, No. 8 (24 August, 1907), p. 365; *Ibid.*, Vol. 91 (13 May, 1911), p. 955; J. R. Finlay, 'Appraisal of Michigan Mines,' *The Engineering and Mining Journal*, Vol. 92, No. 13 (23 September, 1911), p. 591; 'The Mayarí Iron Ore District of Cuba,' p. 425; and *The Journal of the Iron and Steel Institute*, Vol. 87, No. 1 (1913), p. 516.

[64] *Boletín de Minas*, No. 17 (1938), n.p.

[65] *Ibid.*, and 'The Mayarí Iron Ore District of Cuba,' p. 423.

[66] Bent, 'Use of Mayarí Iron,' p. 1029.

[67] Stoughton, 'The Metallurgy of Iron and Steel,' p. 99.

[68] 'Mayarí Steel: Its Properties and Uses,' *The Iron Age*, Vol. 89, No. 1 (4 January,

would specify the use of Mayarí steel in their orders to Bethlehem for rails and for bolts and angle bars used in rail joints.[69]

But the same minerals that combined to give the Mayarí one such popularity would also be the cause of its eventual downfall. As early as 1915 two geologists speculated that just below the iron-ore deposits of Mayarí lay substantial nickel deposits.[70] They were right: as the exploitation of the mines continued, the proportions of nickel and chromium eventually increased to levels that made the ore virtually useless in the production of steel and pig iron.[71] Even before the closing of the northern iron mines in 1940, Bethlehem was already at work interesting other companies in the exploitation of nickel from their mining concessions in Cuba, especially those claims to the east, in Nicaro and Moa, where nickel is still mined today.[72] The end of the iron story in northern Oriente is the beginnig of the story of nickel in Cuba, which is presently the island's premier mineral.

Production

The most reliable and complete data on iron ore production in Cuba are available from the annual reports of the U.S. Geological Survey and the U.S. Bureau of Mines. These are not data on extraction, but on shipments, and they are presented in Table 1. Since there were no iron processing plants in Cuba during the period covered by the table and, therefore, all the ore was shipped out, the data on shipments can be expected to represent production accurately.

Although annual data are available, years have been grouped, primarily because there are substantial fluctuations from year to year, due not to the extraction process, but to problems and strategies in shipping the iron. The companies maintained substantial stockpiles at the port in Cuba and would frequently withhold or curtail the steady flow of shipments, depending on the situation in the U.S. with respect to supplies, prices, and import tariffs.[73] In some years, particularly during the world wars, there were difficulties in obtaining ships to transport the ore.

1912), pp. 69–72; and 'Mayarí Foundry Pig Iron,' *The Iron Age*, Vol. 90, No. 10 (5 September, 1912), p. 530.

[69] *The Enginering and Mining Journal*, Vol. 92, No. 26 (23 December, 1911), p. 1222.

[70] 'Do Nickel Minerals Underlie Cuban Iron Ore?' in *ibid.*, Vol. 100, No. 2 (10 July, 1915), p. 48.

[71] J. C. Porter, 'Cuba,' in *ibid.*, Vol. 123, No. 4 (22 January, 1927), p. 164.

[72] Fé Iglesias García, 'Níquel para el subdesarrollo,' *Bohemia*, Vol. 72, No. 27 (4 July, 1980), p. 86.

[73] U.S. Geological Survey, *Mineral Resources of the United States, Part I: Metals* (Washington, D.C., U.S. Government Printing Office). Each annual edition gives estimates of the amount of ore held in reserve in Cuba.

TABLE 1

Iron Ore Shipped from the Mines of Oriente, 1884–1950
(in gross tons)

Years	*Total shipments*[a] *all mines*	*southern mines*[b]	*northern mines*[c]	*Average annual shipments (all mines)*
Total	27,831,881	23,739,969	4,091,912	415,401
1884–1894	2,256,436	2,256,436	—	205,131
1895–1902	3,487,109	3,487,109	—	435,889
1903–1908	3,483,543	3,483,543	—	580,591
1909–1913	6,542,572	4,909,192	1,633,380	1,308,514
1914–1929	8,959,778	6,956,157	2,003,621	559,987
1930–1941	2,733,111	2,388,141	344,970	227,759
1942–1950	369,332	259,391	109,941	41,037

Sources: Compiled and computed from data in various annual editions of: U.S. Geological Survey, *Mineral Resources of the United States* (Washington, D.C.: U.S. Government Printing Office, 1894–1923); U,S, Bureau of Mines, *Mineral Resources of the United States* (Washington, D.C.: U.S. Government Printing Office, 1924–1931); and U.S. Bureau of Mines, *Minerals Yearbook* (Washington, D.C.: U.S. Government Printing Office, 1932–1950).

[a] With the exception of only 70,160 tons, all shipments were made to U.S. ports.

[b] Located in two *municipios*: Caney (the mines of the Juraguá Iron Co.; the Daiquirí mines, exploited by the Spanish-American Iron Co.; and the mines of the Sigua Iron Co.) and Cobre (the El Cuero mines of the Ponupo Manganese Co. and the mines of the Cuban Steel Ore Co. near Guamá).

[c] The Mayarí mines, located in the *municipio* of the same name, and exploited by the Spanish-American Iron Co.

Perhaps the best way to summarize the table is to say that it shows the rise and fall of iron in Cuba. The high point was reached directly before World War I, when production exceeded one million tons a year. This was the period shortly after the northern mines started producing, coinciding with the production peak of the southern mines. It was during this highly productive period that the volume of iron ore shipped from Cuba made the island the world's ninth largest producer of iron ore, accounting for more than 60 per cent of all U.S. imports of the mineral. After 1930 it was all

downhill, and it can be said that after 1940 production was of little consequence. By 1950, Cuba was 46th in the world in iron ore production, supplying only 0.5 per cent of all iron imported into the United States. One decade later, in 1960, Cuba's volume of production in at least six other minerals and metals exceeded its production of iron ore.[74]

Iron and Socio-Demographic Change in Eastern Cuba

Perhaps the most important role that iron played in the transformation of eastern Cuba was in awakening U.S. interest in Oriente, thereby serving as a catalyst to the process by which U.S. capital investments, chiefly in sugar, forged a reshaping of the demographic and social structure of that region of the country during the first decades of this century. As mentioned earlier, that process has already received considerable attention. What has not been analyzed, however, have been the forces that favored, if not impelled, that interest in eastern Cuba at the start of the U.S. military occupation in 1899.

The argument here is that iron was a crucial factor in focusing U.S. attention on that region of Cuba. Obviously, there were other factors as well, especially the extent to which British and Spanish capital had already substantial economic control over the area of the capital city and the more developed central provinces. Oriente was underdeveloped, with vast areas of wilderness and forests. It needed roads and railroads. It was perfect for the foreign investor, especially when, at the close of the Spanish-Cuban-American War, there was very little native capital and the Spanish had no political control over the island. But Pinar del Río, in the western end of Cuba, and Camaguey, Oriente's western neighbor, were similarly underdeveloped, and yet they did not attract anywhere near the U.S. interest and capital that was showered on Oriente after 1898. One crucial difference between Oriente and those other regions was that at the time Oriente had the only known and proven mineral deposits of any magnitude in the entire island. It is important to recall that for almost 15 years prior to the first U.S. occupation, U.S. companies had been extracting iron from Oriente's soil.

One has only to review the extensive literature on Cuba produced in the U.S. during this period to see the awareness that existed in that country about Oriente's mineral wealth, especially in iron, which was correctly viewed as the island's most important mineral. Most of those works were written primarily for prospective U.S. investors and it is interesting to see how their treatment of business opportunities in Cuba invariably emphasized Oriente,

[74] U.S. Bureau of Mines, *Minerals Yearbook 1964, vol. IV, Area Reports: International* (Washington, D.C., U.S. Government Printing Office, 1966), p. 104.

with prominent discussions of the history of iron mining and its prospects.[75] One such work, written in 1898 by the U.S. consul and vice-consul in Santiago, devoted an entire chapter to Cuba's mineral resources, with most of the discussion focused on iron. The chapter opened with the following statement: 'The mineral resources of Cuba are unequaled in richness, it is believed, by any land in the world of equal size.'[76] Frequently there were outlandish claims of the vastness of iron deposits. When the Mayarí mines opened, the Spanish-American Company estimated that the reserves in the area amounted to 600 million tons.[77] Even as late as 1913, it was claimed that Oriente's iron ore reserves might be as high as 3 billion tons.[78]

Such claims undoubtedly awakened a great deal of interest in the U.S. and a number of companies started to invest in Oriente. One of the first companies to do so, still during the U.S. occupation (and with Wood's dispensation from the Foraker resolution) was the Cuba Company, which from 1901 to 1902 built the railroad linking for the first time Oriente and the rest of Cuba, an event of singular importance in the transformation of the province. From its creation in early 1900, its directors envisaged a company with diversified investments in eastern Cuba.[79] Besides the railroad, foremost among their interests was mining. In 1904 they acquired directly from the government rights to mine iron in 400 hectares in the *municipio* of Puerto Padre, but apparently were never able to develop there a productive mine.[80] As mentioned earlier, there is some evidence that the Cuba Company may have invested in Ponupo Manganese's iron mines. At any rate, the Cuba Company, with its monopoly on railroad operations in eastern Cuba, is a good example of the links between iron and Oriente's demographic and socioeconomic transformation.

But the most decisive manner in which iron influenced Oriente's transformation was at the policy-making levels of the United States, which is where Cuba's fate lay after the Spanish-Cuban-American War. Late in 1898,

[75] See, for example, Andrew Summers Rowan and Marathon Montrose Ramsey, *The Island of Cuba* (N.Y., Henry Holt and Company, 1897), pp. 40–5; Robert T. Hill, *Cuba and Porto Rico* (N.Y., The Century Co., 1898), pp. 81–3; Clark, *Commercial Cuba*, pp. 399–424; Charles M. Pepper, *To-morrow in Cuba* (New York, Harper and Brothers, 1899), pp. 209–11; and *The Cuban Colonist*, a magazine published between 1899 and 1900 by the Cuban Land and Steamship Company.

[76] Hyatt and Hyatt, *Cuba: Its Resources and Opportunities*, p. 77.

[77] *The Enginering and Mining Journal*, Vol. 84, No. 6 (10 August, 1907), p. 284.

[78] *Ibid.*, Vol. 96, No. 18 (1 November, 1913), p. 820.

[79] *Ibid.*, Vol. 69, No. 17 (28 April, 1900), p. 514; and Walter Vaughan, *The Life and Work of Sir William Van Horne* (N.Y., The Century Co., 1920), pp. 280–1.

[80] *Boletín de Minas*, No. 17 (1938), n.p.

President McKinley asked Robert Porter to prepare a report on conditions in Cuba that would be useful in formulating policy towards the newly-acquired island. Porter's report, now a classic because of its significance and thoroughness, made clear Oriente's potential and he devoted an entire chapter to mines and mining, most of it a detailed description of the operations of the Juraguá and Spanish-American companies.[81] It was evident from Porter's report that the area had tremendous mineral potential and that the existing legislation encouraged its exploitation.

Far more influential than Porter in shaping the economic entry of the U.S. into eastern Cuba was General Leonard Wood. It is of singular importance here that the man who in 1900 would assume the post of Military Governor for the entire island was, during the previous year, the commandant of the eastern region, with headquarters in Santiago. There he had ample opportunity to learn of the iron mines nearby and there is evidence that he had a fairly close association with Jennings S. Cox, Jr., the administrator of the Spanish-American Iron Company.[82] Wood became impressed with the province's mineral potential. While he was still commandant in Santiago, he wrote the following in a letter to McKinley:

> . . . the material prosperity of the country is increasing from day to day and great opportunities in the way of mining are manifesting themselves . . . in this end of Cuba we are on the verge of a veritable boom, in the mining line at any rate.[83]

As Santiago's commandant, his report in 1899 to the War Department on conditions in Oriente and Camaguey contained a prominent section on mineral resources in which he underscored the region's successful history in iron mining.[84] Shortly after assuming the governorship of the island, Wood stated the following to a journalist who went to Havana to interview him:

> . . . Santiago's greatest riches are mineral; its vast deposits of oxide of manganese and high grade iron ore are as rich as any in the world. There are mountains almost made of iron which will run 60 per cent to the ton when smelted . . . of all the

[81] Porter, *Industrial Cuba*, pp. 318–28.

[82] In the Leonard Wood Papers, Manuscript Division, Library of Congress, container 206, there is a typed statement by Wood eulogizing Cox, written after the latter's death in 1913 and presumably intended for publication. In the statement, Wood describes Cox's voluntary efforts to improve sanitary conditions in Santiago, referring to him as 'a most helpful assistant in many lines of endeavor.' He goes on to describe Cox's familiarity with eastern Cuba and his great popularity among U.S. residents of Santiago.

[83] Letter from Leonard Wood, Brigadier General, to the President of the United States, 27 October, 1899. Leonard Wood Papers, Manuscript Division, Library of Congress, container 27.

[84] Leonard Wood, *Special Report on Insular Affairs of the Provinces of Santiago and Puerto Príncipe, Cuba* (Washington, D.C., U.S. Government Printing Office, 1899), pp. 13–14.

provinces Santiago probably holds the most of this undeveloped wealth, its greatest resource being mineral.[85]

We have previously discussed some of the actions Wood took, early in his term as governor, to facilitate the exploitation of the island's mineral wealth: the establishment of a clear procedure for the acquisition of mining rights, the geological reconnaissance of Cuba that led to the discovery of the Mayarí district, the continuation of the Spanish policy of exempting mining companies from paying a surface tax, and, perhaps most importantly, granting the mining companies dispensation from the provisions of the Foraker Resolution. Given Wood's influential role in shaping twentieth-century Cuba, and especially Oriente, his obvious interest in iron mining in that region is perhaps the best evidence of the importance of the industry in launching the process of change in which sugar would quickly become the protagonist.

But iron mining also played a somewhat more direct role in Oriente's development than that of a simple instigator of U.S. entry into the province's economy and the subsequent development of its sugar industry. At least two direct effects of iron mining on the demographic and social processes of eastern Cuba can be readily documented: (1) the importation of foreign labor, and (2) substantial infrastructural development in the areas affected by the mining enterprise.

In quantitative terms, the importation of miners took place on a small scale in comparison with the number of laborers brought in by the sugar companies. It was significant, however, in a qualitative sense: while the sugar companies were importing laborers from the Caribbean, the iron mining companies were bringing them in from Spain. In fact, the Spanish-American Iron Company used the services of an employment agency in Spain to recruit workers for the mines.[86] This was significant because Oriente, unlike most of the rest of Cuba, had a relatively low proportion of Spanish immigrants. It also constitutes an exception to the stereotype of the twentieth-century Spanish immigrant as an entrepreneur. In Oriente, they filled most of the jobs in the mines. According to the Census of 1907, 91 per cent of all miners in Cuba were born in Spain.[87]

[85] Leonard Wood, quoted by Edward Marshall in a typed statement in which Marshall reports on his interview with Wood, Leonard Wood Papers, Manuscript Division, Library of Congress, container 206, n.d. At that time, Santiago was the name of what is now Oriente province.

[86] Joseph T. Singewald, Jr. and Benjamin Le Roy Miller, 'Mining in Oriente Province, Cuba,' *The Engineering and Mining Journal*, Vol. 101, No. 14 (1 April, 1916), p. 88.

[87] Oficina del Censo de los Estados Unidos, *Censo de la República de Cuba bajo la*

Iglesias presents data from the records of the Spanish-American Company which show that 81·8 per cent of all patients treated between 1901 and 1903 at the hospital established by the company in Daiquirí were born either in Spain or in the Canary Islands. In fact, a wide range of nationalities were represented among the patients, with Puerto Ricans accounting for a sizeable proportion of all persons treated at the hospital: 15·0 per cent. Only 1·5 per cent of the patients were Cubans.[88]

Needless to say, the impact of the Spanish on Cuban mining areas must have been very noticeable. In 1899, when no iron had yet been discovered in the northern district, only 109 Spanish-born persons lived in the *municipio* of Mayarí, where late in 1905 the Spanish-American Company would establish its operations.[89] The census of 1907 found 2,027 persons born in Spain living in that same *municipio*, making Mayarí the locality with the third-largest Spanish-born population in the province, exceeded only by the two principal cities, Santiago and Guantánamo. It should be noted that in 1907 the total population of Mayarí barely exceeded 17,000 persons.[90]

According to most observers of the time, the importation of workers responded primarily to a shortage of native labor to work in Oriente's mines. In fact, the labor shortage was regarded by many as one of the most serious obstacles to Cuba's reconstruction and development in the early twentieth century.[91] The extent of the problem was frequently exaggerated, with some observers even claiming that the male working population was virtually decimated in the long struggle for independence.[92] The age distribution revealed by the 1899 Census simply does not support that allegation.[93] Besides, ever since the inception of iron mining in Oriente – a full decade before the start of the Spanish-Cuban-American War – the iron

administración provisional de los Estados Unidos, 1907 (Montpelier, Vt., The Capital City Press, 1908), p. 573. It is noteworthy that a bill introduced in the Cuban Congress in 1925, which provided that 75 per cent of all employees in any business must be Cuban-born, expressly excluded the mining industry from the requirements.

88 Iglesias, 'La explotación del hierro,' p. 101.

89 U.S. War Department, *Report on the Census of Cuba, 1899* (Washington, D.C., U.S. Government Printing Office, 1900), p. 220.

90 Oficina del Censo de los Estados Unidos, *Censo de la República de Cuba*, p. 339. There is some evidence that the number of miners in Cuba was severely underenumerated, leading to an undercount in the number of Spanish-born persons, especially in Oriente.

91 Porter, Industrial Cuba, p. 78; *The Enginering and Mining Journal*, Vol. 71, No. 8 (23 February, 1981), p. 244; Clark, *Commercial Cuba*, p. 38; and Hyatt and Hyatt, *Cuba: Its Resources and Opportunities*, p. 96.

92 Hill, *Cuba and Porto Rico*, p. 142; and Clark, *Commercial Cuba*, p. 40.

93 U.S. War Department, *Report on the Census of Cuba, 1899*, p. 251.

companies were already relying almost exclusively on foreign labor. There is even reference to the practice of contracting with the Spanish army in Cuba for labor in the mines.[94] No wonder the spokesmen for the iron industry bemoaned the fact that at the conclusion of the war all Spanish troops were forced by the U.S. to leave Cuba, rather than being allowed to remain, if they wished, as civilians.[95] Foreign labor was even used in the construction of most of the installations. The terminal facilities at Daiquirí, for example, were built around 1890 exclusively by workers from the U.S.[96]

Exaggerations aside, there is evidence that the labor shortage, at least in eastern Cuba, was real. In comparison with all other provinces, Oriente and Camaguey in 1899 had the lowest proportions of persons in working ages.[97] There were a few attempts to recruit residents of Havana to work in the mines, but such efforts apparently proved unsuccessful.[98] It was claimed that in no other industry was the shortage of native labor more acute than in mining. U.S. observers, particularly spokesmen for the iron industry, were in agreement as to the reason: Cubans would not work the mines.[99] Such an opinion was held even at the highest levels. In an address delivered in the United States, Leonard Wood stated:

> For some unknown reason it is extremely difficult to get Cuban laborers to go into the mines. They are anxious and willing to take any other kind of work, but against mining there seems to be a curious and unaccountable antipathy.[100]

While such a view may have been influenced by prejudices towards the Cuban worker – prejudices that are readily apparent in much of the U.S. literature on Cuba during this period – it may have some validity. After all, mining was not a fairly widespread economic activity in the island and many Cubans were, therefore, unfamiliar with such work. There was also the traditional bias, especially among Havana residents, against living in relatively isolated rural areas. In addition, it must be remembered that up to the end of the nineteenth century there is among Cubans no tradition of wage earning, especially in Oriente.

94 Victor S. Clark, 'Labor Conditions in Cuba,' *Bulletin of the Department of Labor*, Vol. 41 (July, 1902), p. 685.

95 William B. Phillips, 'Mining Conditions in Cuba,' *The Enginering and Mining Journal*, Vol. 68, No. 22 (5 November, 1899), p. 638; and *Ibid.*, Vol. 71, No. 8 (23 February, 1901), p. 244.

96 Letter from L.Y. Schermerhorn to Major W. M. Black, 13 February, 1900. Leonard Wood Papers, Manuscript Division, Library of Congress, container 28.

97 U.S. War Department, *Report on the Census of Cuba, 1899*, p. 90.

98 Porter, *Industrial* Cuba, p. 86.

99 Phillips, 'Mining Conditions in Cuba,' p. 638.

100 Leonard Wood, 'The Present Situation in Cuba': text of a speech, Leonard Wood Papers, Manuscript Division, Library of Congress, container 206, n.d., p. 2.

It may very well have been the case that there was a labor shortage and that, on top of that, natives did not want to work in mining. But it is probably also true that the companies preferred to import Spanish labor. For one thing, the Spaniards were likely to be experienced miners. By the late nineteenth century, Spain had a well-developed iron-mining industry, especially in the north. Experience was particularly important in some mines in Cuba where work gangs were contracted to perform tasks or paid by the output rather than through a daily wage.[101] It was probably also the case that since, for reasons of location, the iron companies were obliged to provide housing for its workers, the single immigrant was much easier to accommodate than the native worker, who was more likely to have a family. It should be kept in mind that the importation of workers from Spain did not represent a substantial additional expense for the mining companies: workers paid their own transportation to Cuba (although if the worker stayed on the job for a specified amount of time he presumably received a bonus roughly equivalent to the cost of the fare).[102]

Substantial local infrastructural development was a trademark of iron mining in Oriente. The principal reason the industry was limited to a few foreign companies was that a sizeable amount of capital was necessary to mount an iron-mining operation, investments that had to be made before the first ounce of ore could be extracted. Not only was there relatively little native capital at the time, but Cubans lacked any expertise in iron mining. Reports of the size of initial investments in the exploitation of the Cuban claims give some idea of the extent of development and construction that preceded the opening of a successful mine. Spanish-American, for example, reportedly spent 4·5 million dollars developing the Mayarí mines.[103]

The first, and probably most expensive, installations constructed in any Cuban iron field were railroad tracks, which can be viewed as highly symbolic of the export function of the entire operation. The tracks ran from the mines to the sea, usually right out to loading docks constructed on piers where the ships could pull up and load the ore. By 1901, companies mining the southern iron district had laid out approximately 42 miles of track exclusively for the purpose of transporting the ore from the mines to the docks.[104] A few years later, Spanish-American would build 13 miles of railway to

[101] Singewald and Le Roy Miller, 'Mining in Oriente Province, Cuba,' p. 588; L. B. Reifsneider, 'Underground Mining in Cuba,' *The Engineering and Mining Journal*, Vol. 102, No. 12 (16 September, 1916); 'Iron Mining in Cuba,' p. 1150,

[102] Clark, 'Labor Conditions in Cuba,' p. 685.

[103] 'Iron Mining in Cuba,' *The Iron Age*, Vol. 81, No. 15 (9 April, 1908), p. 1154.

[104] Carlson, *Report of the Special Commissioner of Railroads*, pp. 162, 166, 170, and 174.

connect the Mayarí mines with dock facilities on the northern coast.[105] While all this does not seem like much track mileage, it should be kept in mind, by way of comparison, that at the turn of the century there were only 75 miles of public railways in the entire province.[106]

Besides railroads and port facilities, other installations constructed by the companies included warehouses for stockpiling some of the ore, offices, and housing for the workers. The latter usually consisted of barracks, although there were also single-family dwellings, presumably for management.[107] At Daiquirí, the Spanish-American Company built a 'commodious hospital' which, according to the President of the Spanish-American Company, also served the population working in nearby sugar plantations.[108] In Mayarí Spanish-American created an entire town named Felton (in honor of a company official), complete with an electric power plant, a water plant providing piped water to the community, a sewerage system, and a hotel.[109] Because the Mayarí ore was found with substantial water, there were also twelve nodulizing kilns installed at Felton in order to dry the mineral before shipment.[110]

Needless to say, the impact of this substantial development was limited largely to the local areas in which the mines and shipping facilities were located, unlike the effect of sugar cane, which literally spread across thousands of acres throughout Oriente. But the mining installations were true enclaves of industrial activity in the midst of the province's agricultural activities.

Conclusions

The main purpose in this paper has been to establish the role played by iron mining in the process of socio-demographic change in eastern Cuba. The point here is not that iron was more important than sugar in shaping that process – that would be inaccurate – but simply that the full story of that change, and particularly of those factors that instigated it, cannot be fully understood without taking Oriente's iron into account. We thus have here a concrete example of how an economic activity besides sugar played a note-

105 'The Mayarí Iron Ore District of Cuba,' *The Iron Age*, Vol. 80, No. 7 (15 August, 1907), p. 425.

106 Carlson, *Report of the Special Commissioner of Railroads*, pp. 23–4.

107 'Iron Mining in Cuba', p. 1156.

108 *The Engineering and Mining Journal*, Vol. 97, No. 18 (2 May, 1914), p. 913.

109 'Iron Mining in Cuba,' p. 1156, 'The Mayarí Iron Ore District of Cuba,' p. 426 and Irene A. Wright, *Cuba* (N.Y., The Macmillan Company, 1910), pp. 493–501. Wright has a good description of the Felton community. Among other things, she notes that the mining community did not have the customs of hospitality which she found so appealing in the nearby sugar plantations.

110 *The Engineering and Mining Journal*, Vol. 91 (13 May, 1911), p. 955.

worthy role in the development of Cuban society, a point not readily apparent in so much of the socio-historical literature on Cuba.

The analysis has also given us the opportunity to look at one of the earliest ventures into Latin America by U.S. monopoly capitalism. In this connection, we have hardly exhausted the topic, since important dimensions of iron mining in Cuba, especially the possible economic and political ramifications of the industry, lay outside the scope of this paper. It would be very valuable, for example, to undertake an economic analysis, comparing the Cuban ores in terms of quantity and costs with those being mined elsewhere at the same time, particularly in the U.S. This would give a better picture of the relative importance (and profitability) of Oriente's iron. In the political area, more investigation is needed into the role of the iron and steel industry within the interlocking networks of power that influenced the entry of the U.S. into the war against Spain, and the long string of subsequent decisions taken by the U.S. government with respect to Cuba. It was probably no coincidence, for instance, that the first U.S. troops to land in Cuba in the conflict against Spain disembarked at Daiquirí, precisely where the Spanish-American Iron Company had its shipping installations.