Regions in History: Kosaka Mining Town in Modern Japan

Patricia Sippel

1. Introduction

In 1998 the American historian Richard O. Davies opened his study of the decline of small-town America with the following poignant description:

> They still dot the map of America, some 11, 897 of them according to the Census of 1990. Often quaint reminders of an earlier and more ebullient time, with populations ranging from several hundreds to a few thousand, they are the incorporated small towns of America. Now shunted to the margins of national life, located in rural areas that lie beyond the borders of metropolitan America, they live a present that is less and less appealing while confronting futures that are bleak at best. A century or more ago, they occupied a central place in the overall scheme of things, but modern America, with its dominant urban culture, has now passed them by, relegating them to the cruel obscurity that comes from being abandoned by a railroad or left off the federal interstate highway map. Their economic base has been eroded, and their slowly shrinking populations have become increasingly older and poorer as the best of their younger generations have departed. These communities now contain less than 10 percent of the American people.[1]

Although Davies was writing about the United States, his comment might be applied to many countries of the economically developed world, including Japan. Japanese government figures for the year 2000 indicated some 1,526 towns or villages having a population of fewer than 10,000 people; their inhabitants numbered just over 8 million, barely 6 percent of the total population.[2]

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[1] *Main Street Blues: The Decline of Small-Town America* (Columbus, Ohio: Ohio State University Press, 1967) p.1.

[2] Sōmuchō Tōkeikyoku (ed.), *Nihon tōkei nenkan* (Tokyo: Nihon Tōkei Kyōkai, 2005).

In Japan, the United States and elsewhere, such accounts of rural depopulation have become familiar in recent years. Familiar, too, are the accompanying explanations of an increasingly global economy in which goods and services are produced where costs are low, resources are managed by market principles, and the incentives of work, convenience and pleasure continue to draw people out of the countryside and into urban agglomerations. Yet the very familiarity of these explanations may obscure the fact that the decline of regions is a relatively recent trend and one that accelerated sharply in the second half of the twentieth century. In 1960, 10.5% of Japan's population lived in towns or villages inhabited by fewer than 10,000 people; forty years earlier, in 1920, the comparable figure was almost 68%. In overlooking the speed of change in recent decades, we also may lose sight of the important role played by regions in the economic, cultural and political development of the modern world.

Studies of Japan's history since the early modern era have placed importance on the role of regions as sources of food and local industry, tax revenues, labor, and even investment capital and leadership for Japan's transformation into a modern industrial economy.[3] Less often noticed is their role as sources of mineral wealth. One reason is that Japan no longer has a significant mining industry: by the end of the twentieth century even the largest and most productive mines had closed, leaving Japan to meet its mineral requirements primarily through imports. A second reason is the association of mining, in Japan as elsewhere, with problems of environmental degradation that in many cases have been solved only by the termination of the mining activity itself. However, at least twice in Japanese history, a domestic mining industry played a crucial transformational role in the Japanese economy at least twice: the first for a hundred years or so beginning in the mid-sixteenth century and the second for about 80 years beginning in the mid-nineteenth century.

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[3] See, for example, Saitō Osamu and Tanimoto Masayuki, "Zairai sangyō no saihensei" in Umemura Mataji and Yamamoto Yūzō (eds), *Kaikoku to ishin* (Tokyo: Iwanami Shoten 1989) pp. 223-83.

The sixteenth-century expansion was set in motion by competing daimyo, who opened more than a dozen major mines in places such as Sado, Ikuno and Iwami.[4] Japanese silver supported international trade, especially after the arrival of European traders in East Asia; by 1600 Japan was the biggest exporter of silver in Asia.[5] Aggressive mining continued into the seventeenth century, tapering off after the Tokugawa bakufu restricted foreign trade in the 1630s but continuing to provide fiscal support to the shogun's government. It has been estimated that 80 percent of the silver and 13 percent of the gold minted in the seventeenth century was spent in foreign trade, predominantly in the first part of the century.[6]

Mine output slowed in the eighteenth century – at the very time that precious metals were increasingly in demand for use as currency in a growing domestic economy. Forced to import silver and gold, the bakufu turned its attention to the promotion of domestic copper extraction. Copper was mined at Besshi in what is now Ehime prefecture and, even more successfully, at Ani and Osarizawa, in what is now Akita prefecture. But problems persisted. Technologies for extracting ore were crude, and well behind those available in Western Europe; Japanese mine operators made little use of mechanical devices such as pumps, even in cases where the technology was available.[7] Moreover, the contractors who operated the mines on limited-term licenses tended to give up in the face of flooding or other difficulties. In some cases, complaints by farmers about water contamination halted operations. Despite strong political and economic incentives to increase production, therefore, technological,

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[4] Sasaki Junnosuke, "Kōgyō ni okeru gijutsu no hatten" in Sasaki (ed.), *Gijutsu no shakaishi 2* (Tokyo:Yuhikaku, 1983), pp 178-224; Kobata Atsushi, *Nihon kōzan shi no kenkyū*, pp. 3-44, and Robert LeRoy Innes, 'The Door Ajar: Japan's Foreign Trade in the Seventeenth Century', Ph. D. dissertation, University of Michigan (Ann Arbor, Michigan: University Microfilms International, 1980) pp. 532-72. See also Tessa Morris-Suzuki, *The Technological Transformation of Japan from the Seventeenth to the Twenty-first Century* (Cambridge: Cambridge University Press, 1994) pp. 43-49.

[5] Tashiro Kazui, "Tokugawa jidai no bōeki" in Hayami and Miyamoto (eds), *Keizai shakai no seiritsu 17-18 seiki, Nihon keizaishi 1* (Tokyo: Iwanami Shoten, 1988), pp. 129-70.

[6] Hayami Akira and Miyamoto Matao, "Gaisetsu 17-18 seiki" in Hayami and Miyamoto, pp. 66-67.

[7] Morris-Suzuki, p. 44.

management and environmental problems slowed development in the second half of the Edo era. Major mines reduced output; many smaller ones halted activities altogether.

The opening of Japan to the Western world in the mid-nineteenth century triggered a second, and even more vigorous, expansion in mining. Particularly after the fall of the Tokugawa bakufu in 1868, the Meiji government adopted rapid industrialization as a national priority to ensure survival in a ruthlessly competitive international environment. Mine output was important for minting currency, generating export income, and producing the raw materials necessary for industrial and military expansion. Modern mining differed from its early modern counterpart in its massive scale, in its aggressive management, and in its adoption of advanced Western technology for the extraction, treatment and transportation of the mined materials. Moreover, it was led, not by gold and silver, but by coal (a new industry) and a revived and modernized copper industry. Coal was mined especially in Kyushu and Hokkaido. Copper was extracted from established mines at Besshi, Ani and Osarizawa, and at some recently developed locations: Ashio in Tochigi prefecture, Hitachi in Ibaraki prefecture, and Kosaka in Akita prefecture. Coal and copper were important earners of export income in Japan's early stage of industrialization. Together, they accounted for 9 percent of all exports in 1871-75, and 11 percent in 1886-90. Coal was ranked third in export value in 1898, fourth in 1908, and sixth in 1913; in the same years, copper was ranked sixth, third, and fifth respectively.

But mining in the modern era did more than support the national economy; it also encouraged the growth of vibrant towns and cities across the regions of Japan. Mining communities were characterized by relatively high-paying jobs, a core of highly skilled employees, the diffusion of modern technology, a strong service economy, and a high level of cultural achievement.[8] The impact of these characteristics was all the more notable because

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[8] Saitō Sanenori, *Kōzan to kōzanshuraku – Akita-ken no kōzan to shuraku no eiko seisui* (Tokyo: Taimeidō, 1980) and Iwama Hideo, *Sangyō chiiki shakai no keisei saihensei – Hitachi kōkōgyō chiiki shakai o chūshin to shite* (Tokyo: Kokin Shoin, 1993).

mines were typically located in remote and inaccessible areas, far from urban centers such as Tokyo and Osaka. There were, of course, costs. Labor conditions in the coal mines of Kyushu were notoriously bad in the opening decades of the twentieth century; forced immigrants from colonial Korea and occupied China worked in Japanese mines during the 1930s and early 1940s. Moreover, mining depleted timber supplies and polluted the air and water. Beginning in the late 1880s, for instance, Japan suffered its first major case of industrial pollution when minerals from the Ashio copper mine washed into the Watarase River, killing fish and ruining the surrounding rice crops.[9] Finally, the rapid pace of change in mining communities was also a cause of later problems: when copper prices declined or mine resources were depleted, mine owners were quick to scale back or shut down operations, leaving workers without jobs and local businesses without clients. After the deregulation of international copper markets in the 1960s, domestic mining was unable to compete with cheaper imports. Some former mine towns turned into ghost towns; others battled to keep auxiliary businesses going, or attempted to re-invent themselves by developing new industries such as tourism.

This paper aims to explore the processes of growth and decline in Japanese regional communities by focusing on the mining town of Kosaka, located in the northern part of the Kazuno basin in northeastern Akita prefecture (see Map 1). The first half focuses on the development of silver and copper mining at Kosaka; the second analyzes Kosaka as a mining community. Currently home to just under 7,000 people, Kosaka developed as a mining community from the 1860s, when a local farmer discovered silver just outside the village and reported the finding to the Nanbu domain government.[10] During the next hundred years, some 31 sites in the area were excavated as part of the exploitation of Kosaka's mineral

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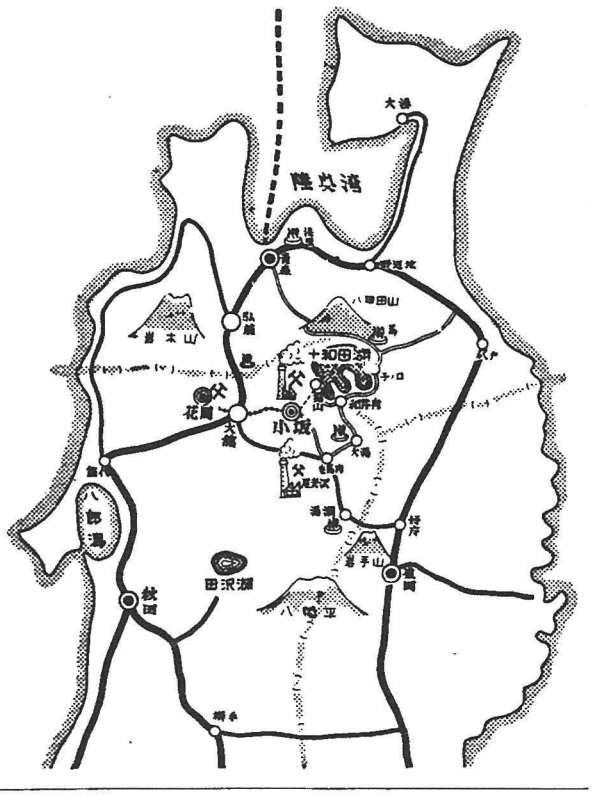
[9] F. G. Notehelfer, "Japan's First Pollution Incident" in *Journal of Japanese Studies* 1:2 (Spring 1975), pp. 351-83; Niimura Kazuo (Andrew Gordon (ed.), *The Ashio Riot of 1907: A Social History of Mining in Japan*, Durham and London: Duke University Press, 1997); Julian Gresser, Koichiro Fujikura, and Akio Morishima (eds) *Environmental Law in Japan* (Cambridge, MA: MIT Press, 1981); Kichiro Shoji and Masuro Sugai, "The Ashio Copper Mine Pollution Case: The Origins of Environmental Destruction" in Jun Ui (ed.), *Industrial Pollution in Japan* (Tokyo: United Nations University Press, 1992), pp. 18-63.

[10] Details of mining at Kosaka can be found in: Kosaka-chō Shi Hensan Iinkai (ed.),

Map 1: Kosaka and the Tohoku Region in 1953



Source: Dōwa Kōgyōsho (ed.), *Kosaka Kōgyōsho gaikyō* (Kosaka: Kosaka Kogyosho, 1953), p. 2.

resources. Brought under Meiji government control in 1870, the mine was rebuilt and modernized before being sold in 1884 to Fujita-gumi, a newly established mining company. Under aggressive Fujita-gumi management, Kosaka became Japan's most productive silver mine in 1888. A decade later, as silver supplies dwindled, it switched to copper, becoming Japan's top copper producer in 1907 and, in the words of a 1909 government publication, "the largest mine, not only in Japan, but also in the Far East."[11] In these opening years of the

Kosaka-chō shi (Kosaka-chō, 1975), pp. 389-549; (from the viewpoint of the mine owner) Dōwa Kōgyō Kabushiki-gaisha (ed.), *Shichijūnen no kaiko* (Tokyo: Dōwa Kōgyō Kabushiki-gaisha, 1955); and Wada Tsunashiro, *The Mining Industry of Japan During the Last Twenty Five Years 1867-1892* (Tokyo: Tokyo Tsukiji Type Foundry, 1893).

[11] The Bureau of Mines, Department of Agriculture and Commerce in Japan, *Mining in*

twentieth century, Kosaka residents were served by electric, water and telegraph systems; they surpassed their neighbors in health, transportation and education facilities. By 1917, when the population reached its peak of 21,696, Kosaka was the leading mining center and the second-largest town in the Tohoku region.

But Kosaka faced difficulties as well. Mine construction and the smelting of ore consume d hundreds of thousands of trees, especially in the first decades of the modern era. Moreover, by the turn of the twentieth century, residents of Kosaka and surrounding villages were protesting the pollution of the atmosphere by poisonous gases produced in the smelting process. Finally, the extreme swings of the copper market had a direct impact on jobs and livelihoods. After the deregulation of the copper industry in the 1960s, Japanese copper producers could not compete with cheap foreign imports. Dōwa Kōgyō (the postwar name of Fujita-gumi) reduced its extraction activities in Kosaka and shifted its focus to smelting and refining. While smelting and related industries have ensured Kosaka's survival as a mid-sized town, the challenge of surviving as a post-mining regional town is considerable.

2. The Mining Industry in the Modern Era: the Example of Kosaka

Government-Owned Model Enterprise 1870-1884

When the Meiji government adopted its policy of economic and military expansion, mining was already recognized as an important component of national defense.[12] Even before 1868, the Tokugawa and some daimyo governments had ordered the construction of Western-style furnaces capable of casting iron for making cannon.[13] In 1855 a group of

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Japan Past and Present (Tokyo: Bureau of Mines, Dept. of Agriculture and Commerce of Japan 1909), p. 172.

[12] This section on the development of mining in the Meiji era uses material included in my "Technology and Change in Japan's Modern Copper Mining Industry" in Janet Hunter and Cornelia Storz (eds), *Institutional and technical Change in Japan, Past and Present* (RoutledgeCurzon, 2005 (forthcoming)).

[13] Uchida Hoshimi, "Gijutsu iten" in Nishikawa Shunsaku and Abe Takeshi (eds), *Sangyōka no jidai* vol. 1, *Nihon keizaishi 4* (Tokyo: Iwanami Shoten, 1990), pp. 255-302; Morris-Suzuki, pp. 55-67; Ken'ichi Iida, "Yoshiki koro no ishoku to Kamaishi tetsuzan," in Chihō Kenkyū Kyōgikai (ed.), *Nihon sangyōshi taikei 3 -Tōhoku chihō hen* (Tokyo: Tōkyō

samurai used a Dutch text to build a Western-style reverberatory furnace in Saga domain; two years later, one of the group, Ōshima Takatō (1826-1901), constructed a blast furnace at Kamaishi in his native Nanbu domain. After the formation of the Meiji government, concerns about the economic importance of mining, including the need to mint currency, accelerated the pace of change.[14] A Mining Law issued in 1873 stipulated that the government had the right to exploit all new mine discoveries.

Already the Meiji government had assumed direct control of several mines, and from 1870 until the early 1880s managed them as model enterprises through the Bureau of Mines in the Ministry of Industry (Kōbushō). Government-owned properties included well-established facilities at Sado, Ikuno, Innai, Ani and Kamaishi as well as the newer Miike coal mine and Kosaka silver mine. In terms of output, the focus was on gold and silver: between 1877 and 1881, more than half of Japan's gold and silver (but less than 10 percent of its copper) came from government mines. The aim was to introduce Western technology, improve mine management, and expand mineral output during the precarious early stages of industrialization.

Government ownership did not result in immediate output increases.[15] Neither gold nor silver made major gains in the 1870s, and the strong gains in copper came mostly from privately-held mines. Only coal production, which grew about four times in the same five-year period, was impressive. Nevertheless, government outlay was considerable. Figures published in 1879 showed that running costs and equipment purchases for government mines through 1877 far exceeded the value of mine output, except for coal.[16] Between 1870 and 1885, some 31.5 percent of ordinary expenditures in the Ministry of Industry went to mining,

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Shuppankai, 1960), pp. 333-61.

[14] See Suzuki Jun, ed., *Kōbushu to sono jidai* (Tokyo:Yamakawa Shuppansha, 2000), especially Suzuki Jun, "Kōbushō no jūgonen," pp. 3-22., and Takamura Naosuke, "Kan'ei kōzan to kahei genryō," pp. 177-86. See also Takamura Naosuke, "Kōzan kan'ei seisaku to oyatoi gaikokujin – Gottofurei-ra no yakuwari" in Takamura, ed., *Meiji zenki no Nihon keizai – Shihonshugi e no michi* (Tokyo: Nihon Keizai Hyōronsha, 2004), pp. 105-19.

[15] *Mining in Japan Past and Present*, p. 54.

[16] Curt Netto, *On Mining and Mines in Japan* (Tokio: The University, 1879), pp. 31-37.

the second-largest target for government funds after railroads.[17] Government funds were used to raise the technological level of Japanese mining by hiring as many as 78 foreign engineers from abroad to help with the adoption of Western methods and the installation of imported machinery.[18] Under the foreigners' advice, mine passages were widened to accommodate dynamite and the new equipment; vertical shafts were installed, using steam-powered machines for drainage; ventilation and illumination were improved; and power-driven machines were used in the refining process. The foreigners also introduced new processes for treating the ores, applied advanced geological knowledge for prospecting, and encouraged the construction of transportation systems for handling ores and timber.

Among the mines of Akita prefectures, Kosaka was incorporated into the policy of direct government management. Unlike nearby Ani and Osarisawa, which had produced most of Japan's copper in the Edo period, Kosaka was a new and barely exploited silver resource in the opening years of the Meiji era. Following sporadic discoveries by local peasants, the mine had been taken over by Nanbu domain in 1866 and managed by Ōshima Takatō, who drew on his experience in furnace construction to install Western-style smelting and cupelling furnaces. The civil war that followed the Meiji Restoration interrupted operations, but modernization resumed in 1870 when the Meiji government took direct control of the mine (with Ōshima installed briefly as manager). It gathered pace after 1873, when Curt Netto (1847-1909), a 26-year-old university-trained engineer from Freiburg, was appointed to oversee the reforms.[19] Netto focused on metallurgy and overall plant modernization. Building on the reforms begun by Ōshima, he redesigned the furnaces in order to introduce the latest European treatments, including the Ziervogel process (to extract silver from silver sulphate) and the Hunt and Douglas process (to extract copper from slag). When the redesigned

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[17] Takamura, "Kōzan kan'ei seisaku," pp. 119-29.
[18] Uchida, pp. 265-72, pp. 292-93; Wada, pp. 4-7.
[19] *Kosaka-chō shi*, pp.421-22; Wada, pp. 95-99.

facilities began operating in 1877, it became possible to extract as much as 75% of silver and 45% of the copper from the ore – some three times higher than the levels reached previously.

Despite the promise of the new methods, operating a modern mine at Kosaka proved difficult. In 1879, Netto published a small book entitled *On Mining and Mines in Japan*, in which he argued that Japanese mines needed more capital, more modern technology, better transportation, and better management, especially in the private sector; he also pointed to the need for cheaper and more accessible fuel. Netto did not mention the specific difficulties at Kosaka but Wada Tsunashiro, director of the government Bureau of Mines, later wrote that Netto had encountered problems. While the Ziervogel process that he had introduced did indeed raise output, the costs of fuel and wages were so high that the government discharged Netto in 1877.[20]

In fact, by the late 1870s, most foreign experts had been discharged from their positions at Japanese mines, primarily because of cost. Their places were taken by Japanese engineers, some of whom like Ōshima Takatō had the opportunity to study or visit facilities abroad. Most received their education in newly established engineering schools, such as the Imperial College of Engineering (Kōbu Daigakkō), which was set up in 1873 with British participation and was later incorporated into Tokyo University. The level of education explains the relative ease with which Japanese technicians were able to adopt and adapt mining technology.[21] After his release from Kosaka mine, Netto became professor of mining and metallurgy at the University of Tokyo where he taught until 1886. Operation of the Kosaka mine was temporarily transferred back to its original Nanbu owners, and Ōshima Takatō returned as manager. By 1881 Oshima had addressed the problem of fuel costs by switching to the Augustin process, a chlorination method that used salt at lower temperatures, thereby

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[20] Wada, p. 96.
[21] Uchida, pp. 272-82; Takamura, "Kōzan kan'ei seisaku,"pp. 119-21.

reducing the amount of fuel necessary for precipitating silver. Monthly silver output from Kosaka roughly doubled.[22]

Under Fujita-gumi Management: From Silver to Copper

Driven by fiscal pressures, the phasing out of direct foreign consultants was followed by the sale of government mines to private companies and the 1885 disbandment of the Ministry of Industry.[23] In 1884, Kosaka mine (which the Nanbu daimyo had returned to the government in 1880) was sold to Fujita-gumi. Furukawa Ichibei (1832-1903), owner of Ashio mine since 1877, bought Ani and Innai mines in 1885; Ikuno and Sado were sold to Mitsubishi in 1896. The new mining companies worked hard to attract the best available technical staff, spent aggressively on technology, and expanded into related businesses. The result was the emergence of a vigorous domestic mining industry that continued to grow through the late nineteenth century and into the first two decades of the twentieth. Coal production increased steadily from the early 1880s; gold, silver, and copper production accelerated from about 1885.[24] Between 1886 and 1890, coal accounted for 6 percent of all exports, and copper 5 percent. While both coal and copper declined in prominence relative to raw and woven silk and cotton in the years leading up to World War I, mining continued to support the balance of Japan's international trade until the emergence of heavy industry and chemicals in the 1920s.

The contribution of Kosaka under Fujita-gumi ownership was crucial in these golden years of Japanese mining. Founded as a family business in 1881 by three natives of Yamaguchi prefecture, Fujita-gumi had connections with influential government officials. In 1884, the young company negotiated the purchase of Kosaka and Towada mines for just 200,000 yen, payable over 25 years.[25] President Fujita Denzaburō (1841-1912) offered jobs

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[22] *Kosaka-chō shi*, pp. 422-23.

[23] Nishikawa Makoto, "Sasaki Takayuki to Kōbushō" in *Kōbushō to sono jidai*, pp. 229-60.

[24] Sugiyama, p. 196-99; Yamamoto and Oku, pp. 102-03.

[25] *Shichijūnen no kaiko*, pp. 2129..

Table 1: Silver and Copper Output of Kosaka Mine 1884-1920

Year	Silver (kg)	Copper (kg)
1884	1,707	10,639
1885	5,481	32,169
1886	6,870	26,926
1887	7,310	45,589
1888	7,554	47,455
1889	7,376	50,976
1890	6,775	69,909
1891	6,372	79,132
1892	6,662	77,099
1893	7,880	91,848
1894	7,543	103,778
1895	7,173	147,771
1896	6,178	84,568
1897	5,946	123,425
1898	7,432	326,000
1899	5,322	833,000
1900	3,974	993,000
1901	3,747	1,791,000
1902	2,989	3,051,000
1903	8,319	4,800,000
1904	11,629	3,657,000
1905	27,464	6,675,000
1906	29,611	6,864,000
1907	34,896	7,558,000
1908	34,709	7,200,000
1909	30,624	6,580,000
1910	32,868	6,337,000
1911	33,746	5,961,000
1912	41,026	7,965,000
1913	38,865	6,760,000
1914	30,096	7,625,000
1915	29,289	7,214,000
1916	29,695	12,652,000
1917	25,811	13,554,000
1918	23,434	11,250,000
1919	17,417	9,022,000
1920	15,877	7,100,000

Sources: Adapted from Dōwa Kōgyō Kabushiki-gaisha (ed.), *Shichijūnen no kaiko* (Tokyo: Dōwa Kōgyō Kabushiki-gaisha, 1955), p. 32, p. 59, and Saitō Sanenori, *Kōzan to kōzanshuraku – Akita-ken no kōzan to shuraku no eiko seisui* (Tokyo: Taimeidō, 1980) p. 46.

to the 66 staff members and 710 miners already employed at the mine and retained Ōshima as manager. Building on the advances made by Netto and Oshima, he attracted skilled

technicians from other Japanese mines and encouraged research in metallurgy and geology. Moreover, after purchasing Kosaka, Fujita-gumi raised its capitalization from 60,000 to 200,000 yen, and within five years had extended its mine purchases to sites in Shimane, Iwate, Ehime, Okayama, and Yamanashi prefectures. At Kosaka, the impact on output was immediate. Between 1884 and 1885 annual silver output rose from 1,707 to 5,481 kilograms; rising above 7,000 kilograms by the end of the decade. Already in 1888 Kosaka had overtaken the government-owned Ikuno to become Japan's top producer of silver; it remained in the top three positions through 1897.[26]

Underpinning Kosaka's success was a series of energetic responses to technological and business challenges.[27] The chlorination process introduced by Oshima in 1881 remained the basic method for precipitating silver. Successive improvements to this method reduced costs and raised efficiency; by 1891, Kosaka technicians had reached an extraction percentage for silver and copper that surpassed Netto's achievement while using considerably less fuel. In the 1890s, however, silver supplies appeared to be depleted at Kosaka. Output leveled off, and then declined; Fujita-gumi ran short of capital. The company faced collapse, and the mine faced closure. The solution, discovered in 1900, revolutionized operations and saved both mine and company. Working at Kosaka, Takeda Kyōsaku (1867-1945), an engineer who had studied German mines, succeeded – for the first time in Japan – in using the pyritic ore surrounding the deeper layers of *kuroko* ("black ore") to smelt the copper contained deep inside. With this success, a new series of open-cut mines was built to access the *kuroko*, and Kosaka was transformed from a silver mine to one that concentrated on copper. Production figures underscored the transition.[28] While silver output recovered from 1903, copper output surged from the 1890s, rising from 69,909 kilograms in 1890 to 103,778 in 1894, and 993,000

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[26] *Shichijūnen no kaiko*, pp. 29-32.

[27] *Mining in Japan Past and Present*, pp. 172-78; *Shichijūnen no kaiko*, pp. 32-35; *Kosaka-chō shi*, pp. 424-45.

[28] *Shichijūnen no kaiko*, p. 32. *Mining in Japan Past and Present*, p. 173. See also Table 1.

in 1900. In 1907, with output at more than 7.5 million kilograms, it surpassed Ashio and other competitors to become Japan's most productive copper mine and its most valuable in total output. The figures reported by Akita representatives to a delegation of journalists in 1909, showed that by value of output Kosaka produced 12.6% of Japan's copper, 37.8% of its silver, and 24.5% of its copper (see Table 2). One journalist reported that although Ashio led in worker numbers and in electrical power capacity, the yen value of Kosaka's total output was more than double that of Ashio.[29] The reason, he concluded, was the level of Kosaka's technology, "which has no peer in Japan."

Table 2: Value of Kosaka Mine Output, 1907

	Kosaka Output in Yen (A)	Japan Total Output in yen (B)	A/B (%)
Gold	398,280	3,155,504	12.6
Silver	1,452,182	3,846,426	37.8
Copper	6,925,449	28,242,997	24.5
Total	8,775,911	35,244,927	24.9

Source: Asada Kōson, "Nihon ichi no Akita," in Takizawa Takeshi (ed.), *Shiraretaru Akita* (Akita: Mumyōsha Shuppan, 1985), pp. 42-43.

The challenges experienced at Kosaka were paralleled at Hitachi and at Ashio, both of which went on to surpass Kosaka in copper production by the end of the Meiji era. Located in the northern Kanto region, both were old mines, but neither had seen significant exploitation until the Meiji era. Under Furukawa Ichibei's management, Ashio was the first Japanese mine to use hydro-electricity, and its advanced smelting processes allowed the highest levels of extraction.[30] Hitachi, too, had developed fast, especially after 1905, when Kuhara Fusanosuke (1869-1965), who had worked at Kosaka since 1991 and headed the mine since 1997, left Kosaka and Fujita-gumi to form his own mining company at Hitachi; there he built on his experience at Kosaka to introduce radical reform, including the pyritic smelting of copper.[31]

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[29] Asada Kōson, "Nihon ichi no Akita," in Takizawa Takeshi (ed.), *Shiraretaru Akita* (Akita: Mumyosha Shuppan, 1985), pp. 43-44; *Kosaka-chō shi*, pp. 355-56.

[30] See note 9 above.

[31] *Mining in Japan Past and Present*, pp. 76-80.

In 1915, Japan's Imperial Bureau of Mines issued another of its periodic reports on the mining industry. The data (for 1913) confirmed Kosaka's prominence in the national economy. Silver output had recovered since the 1890s, and Kosaka was listed as "by far" Japan's biggest producer.[32] It was ranked ninth in the list of gold producers for the empire (including Taiwan and Korea); among mines in Japan it was ranked fourth.[33] The report stated that the Japanese empire boasted 66 copper mines, of which Ashio was the most productive, followed by Hitachi and Besshi and Kosaka. In a little more than a decade, Kosaka had established itself as Japan's fourth most productive copper mine and a leader in technological innovation.

3. Mining and Regional Change: Kosaka as a Modern Mining Town

Modern Progress

Mining at Kosaka not only supported the development of Japan's modern economy; it also helped to transform the local and community and the region. At the end of the Edo era, Kosaka was a tiny agricultural village, lying some 1600 meters above sea level in a remote area of one of Japan's least economically developed regions.[34] However, the discovery of silver in the late Edo period changed the trajectory of its economic and cultural development. By the opening decades of the twentieth century, the expansion of mining had produced a modern mining town that offered not only jobs but a range of services to its rapidly growing population.

Demographic change underscored Kosaka's transformation. In the 1860s and 1870s, as government and private initiative focused on mining development, Kosaka the village remained administratively separate from the mine. However, when local administrative units throughout Japan were reorganized in 1888, village and mine were amalgamated to form an

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[32] *Mining Industry in Japan*, pp. 21-24.
[33] *Mining Industry in Japan*, pp. 16-20.
[34] *Kosaka-chō shi*, pp. 110-12.

Table 3: Kosaka Mining Town in the Modern Era

Year	Population	Mine Employees	Related Events
1888	2,726		Kosaka village reorganized
1897		1,193	Hydroelectric plant completed
1900		1,965	First successful pyritic smelting of kuroko
1901		2,427	Complaints about pollution incident; Supply Shop renamed
1903	7,860	5,126	Kosaka Society for the Encouragement of Mining established
1904	9,434	5,395	First custom ore purchases; mine workshop built
1907	12,845	3,838	Mine output highest by value in nation; Kosaka branch of Akita Bank established
1908	14,975	4,176	Mine hospital; rail link opened between Kosaka and Ōdate
1909	16,403	5,122	Open-cut mining begun
1910	18,013	3,633	Kōrakukan built; police depot established
1912	17,584	3,888	Zinc refinery established
1914	19,563	3,853	Kosaka town established
1917	21,696	5,907	Thermoelectric power station built
1918	20,217	5,826	Mine Employee Training School built
1919			Employee layoffs; strike
1920	14,681	4,197	8-hour workday fixed; employee layoffs

Sources: Adapted from Saitō Sanenori, *Kōzan to kōzanshuraku – Akita-ken no kōzan to shuraku no eiko seisui* (Tokyo: Taimeidō, 1980) p. 46, and Kosaka-chō Shi Hensan Iinkai (ed.), *Kosaka-chō shi* (Kosaka-chō, 1975), pp.631-33.

enlarged Kosaka village, having a population of 2,726. Already Fujita-gumi, mine owner since 1884, was expanding operations, and the town grew accordingly. The next available data show that in 1903, the population of Kosaka had risen to 7,860, of whom some 65 percent were mine employees (see Table 3). By this time, access to kuroko deposits had led Kosaka mining into its boom era. Mine workers stayed and established households, setting off an explosive growth in population. In the five years after 1903, the number of residents almost doubled, to reach 14,975 in 1908. In 1917 Kosaka reached its all-time high of 21,696 people, of whom 5,907 were mine employees.

Although Kosaka had entered the modern era as an agricultural community, subsequent growth in population came directly out of the need for mine personnel. A few of the new arrivals formed the managerial and technological elite of the mine, including managers such as Ōshima Takatō, Kuhara Fusanosuke and Takeda Kyōsaku, their immediate staff, and the engineers. Most of the new recruits were, however, laborers. In 1893, some 2,000 men and women were employed in mine-related jobs in and around Kosaka.[35] According to Saito Sanenori, bosses brought several or several tens of male laborers into the town and accommodated them in workmen's quarters close to the mine.[36] The laborers were usually natives of the Tohoku region, and they were usually experienced at working inside the mines. In the peak years of the early twentieth century, the number of workmen's quarters at times exceeded 40. Male and female laborers also arrived from nearby farm villages. They were not usually quipped to work inside the mines, but they did odd jobs above ground. When the demands for labor were extreme, the proportion of women would increase: in 1908 as many as 1,005 women were employed in Kosaka's mining industry, either at the smelting works or doing miscellaneous support jobs. While many of these outside laborers left the town when their jobs finished or work was scarce, others married, settled in the town, and produced a second or third generation of mine employees.

Accompanying the growth in population was the emergence of mine-related infrastructure and services. At the outset of the modern era, mine operators were at a double disadvantage. Not only was basic infrastructure at the national level in its infancy, but mines were especially constrained by their locations: they were difficult to access, and far from the industrial networks that were being developed closer to Tokyo and Osaka. Kosaka was no exception. After his stay at Kosaka in the 1870s, Curt Netto complained about the shortage of fuel, the lack of transportation networks, and the weak structural basis for industry. As late as

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[35] Wada, p. 95.

[36] Saitō Sanenori, *Kōzan to kōzanshuraku – Akita-ken no kōzan to shuraku no eiko seisui*, p. 25.

1893, Wada Tsunashiro wrote that there was no steam or water power used inside the mine; simple water-wheels assisted in the refining process at the mill.[37] Wood and charcoal for fuel were brought into Kosaka by water, carriage or sled. Silver was carried out by horse to Morioka and then by rail to Osaka; copper was sent along the Yoneshiro river and then by sea to Osaka.

From the 1890s, however, Fujta-gumi efforts at mine modernization turned to power, transportation, and other services. Improvements in infrastructure brought to Kosaka residents a level of convenience and comfort that distinguished them from other communities in the Tohoku region and belied their distance from Japan's major cities.[38] In 1897, the company was able to harness water from a branch of the Yoneshiro River to a US-made General Electric alternating-current generator and send hydroelectric power to the mine located some 18 kilometers away. Although the installation came seven years after Furukawa had introduced hydroelectricity at Ashio mine, it was among the earliest in Japan. Moreover, the generator also supplied electric light to parts of Kosaka at a time when much of Tokyo was still lit by gas lamps. Other services followed. A water system was established in 1905 and a telephone exchange in 1911.[39] In 1907 a branch of Akita Ginkō opened. Transportation was improved with the completion of the Aomori-Odate section of the Ou-honsen rail line in 1905; in 1909 the Kosaka Rail, a private company, opened general freight services. In 1917 a thermoelectric power station was completed.

The growth of mining encouraged the establishment of businesses in Kosaka. As early as 1893, Wada Tsunashiro wrote that there were some 260 buildings – residences, shops, and workshops – in the mine vicinity.[40] Some of the businesses offered goods or services necessary for mining, or used mine products to manufacture items such as tiles and wire. In 1900 Kosaka had its own construction, lumber, charcoal, and tiling businesses; a mine

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[37] Wada, pp. 101-02.
[38] *Kosaka-chō shi*, pp. 449-62.
[39] *Kosaka-chō shi*, pp. 499-51; Saitō, pp. 23-25. See also Table 1.
[40] Page 94.

workshop was built in 1904 and a zinc refinery in 1912.[41] Not all of these enterprises survived: a list of businesses operating in 1925 indicated that the town had added metalworking, boiler-making, casting, and freight-wagons to its industries; the tile, lumber and charcoal businesses had gone. (Problems included the long distance from large cities, shortage of capital, the harsh winter climate, and in some cases the loss of technical expertise.)[42] Shops selling everyday items also increased. For example, in Kosaka, as in other mining towns, the mine management established a supply shop (*kyōkyūsho*) to make sure that mine employees and families had access to daily necessities and dry goods.[43] The Kosaka shop was well stocked with miso, rice, charcoal, baby goods and most everyday goods other than fresh fish and vegetables; costs were generally up to 20 percent cheaper than in normal shops. Established in the Meiji era, the supply shop survived into the postwar era as the biggest retailer of the area, attracting shoppers from throughout the region. Other businesses appeared in Kosaka's bustling shopping streets; in addition, residents could buy vegetables, fruit, fish and pickles as well as clothing at the regular open-air markets. A guide to the mine published in 1909 was supported by advertisements for some tens of Kosaka enterprises; it listed more than 100 local shops dealing in clothing, food and dry goods, beauty, books, pottery, tobacco, confectionery and tea.[44] The guide also includes a detailed description of the town's pleasure quarters, in which no less than eight restaurants served fine food, the sound of the samisen could be heard in all four seasons, and more than 30 geisha from Hirosaki, Morioka and Hachinohe entertained.

Finally, Kosaka's booming commercial economy encouraged the development of cultural facilities. Its first elementary school was opened for compulsory education in 1879; by the early twentieth century Kosaka had several public and private schools that offered

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[41] Saitō, p. 46.
[42] Saitō, p. 25
[43] Saitō, pp. 25-27.
[44] Iwama Atsushi, *Kosaka kōzan annaiki* (Saiundō, 1909). See also *Kosaka-chō shi*, pp. 552-61; Saitō, pp. 28-32.

general and mine-oriented programs of study.[45] The town's first library was set up in 1898; a girls' school for practical learning was founded in 1915. The research that allowed Kosaka mine to access the kuroko in 1900 was conducted at a local mining research institute. Schools in Kosaka tended to be better than those in surrounding farm towns. Similarly, the level of healthcare was considered to be high: the general mine hospital established in 1908 was the first general hospital in Akita prefecture. Perhaps the most striking symbol of Kosaka' cultural pre-eminence was the Kōrakukan, built in 1910 with a Western-style façade and the internal design of a Japanese kabuki theatre. The Kōrakukan housed performances of kabuki, opera and plays. At the time of its construction, Kosaka had a population of some 20,000 and was the leading mining culture centre of Tohoku. In 1914, Kosaka village became Kosaka town. Given the size of its population, the number and variety of local businesses and the scale of services and cultural activities offered, Kosaka could be termed a fully developed "mining town," ranking along with Ashio and Hitachi, rather than with the smaller mining communities such as Osarizawa, Hanaoka, and Furokawa in its region.

Environmental Pollution

If the number and condition of Kosaka's shops and houses reflected the prosperity and progress of a modern mining town, the number and condition of the trees on the surrounding mountains pointed to the environmental costs. From the beginning of its modern transformation, mining at Kosaka drew heavily on timber resources, both for the construction of tunnels suitable for large-scale extraction and as a source of fuel for the dressing and smelting processes.[46] Curt Netto wrote in 1879 that the old-fashioned equipment and smelting methods were inefficient in their use of heat and therefore required massive amounts of charcoal.[47] Other documents confirmed that in a one-year period in 1879-80 Kosaka mine

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[45] *Kosaka-chō shi*, pp. 568-99.

[46] Saitō Sanenori, "Kōzan kaihatsu to ringyō to no kankei: Meiji-Taishōki no Ani-Kosaka kōzan o chūshin to shite," *Tōhoku chiri* 24:1 (Feb. 1978), pp. 27-28.

[47] Netto, p. 19.

used firewood, charcoal and timber from some 80,000 trees (primarily cypress).[48] Not surprisingly, forests in the immediate vicinity were soon depleted. The scarcity and cost of fuel was one reason that Kosaka mine passed from government to private (Nanbu family) managers and back to the government in the years 1877-80.

When Fujita-gumi bought Kosaka mine to in 1884, the government offered it access to forested land surrounding the mine. [49] (Furukawa at Ani and Mitsubishi at Osarizawa were offered similar deals.) As a result, Fujita-gumi and other Akita mine owners could engage in lumbering and charcoal-making on a large scale. Wada Tsunashiro wrote in 1893 that, since coal was too expensive to transport, Kosaka mine depended on charcoal and lumber brought in from distances of between five and 15 miles.[50] Although successive improvements in smelting methods and the introduction of hydroelectricity in 1897 radically reduced the per-unit wood-based energy requirement, the overall total for timber and charcoal continued to increase. A 1898 study reported that Kosaka was drawing on forest resources within a 40-kilometer radius of the mine.[51] Between 1912 and 1919, annual consumption of wood for mine timbering and charcoal increased by more than 40 percent; the amount of firewood used annually increased by some 57 percent. House construction and home heat in Kosaka added to the burden on forest resources.

Excessive felling of trees was, however, only one aspect of the environmental problems caused by mining. The new methods of smelting released high concentrations of sulphur into the atmosphere, stripping trees of their foliage, destroying crops, and compromising human health. The Bureau of Mines surveys paid scant attention to the negative environmental consequences of technological change. Not only did its 1909 report state that the newly established Kosaka Railway was transporting good timber from an "inexhaustible forest" but it also proudly noted that one of its ore-smelting furnaces was the "longest furnace in the

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[48] Saitō Sanenori, "Kōzan kaihatsu," p. 28.
[49] Saitō Sanenori, "Kōzan kaihatsu," pp. 29-33.
[50] *The Mining Industry of Japan,* p. 101.
[51] Saitō Sanenori, "Kōzan kaihatsu," p. 29.

world when it was built," that the chimney for furnaces was 200 feet high, and that the discharge of smoke could be seen from eight miles away.[52]

The Ministry did not report that in the previous year residents of Kosaka and five neighboring communities had written to the governor of Akita prefecture to protest the pollution of their air by the mine.[53] That petition was neither the first nor the last in a series of public protests that continued into the 1920s. In fact, the Akita prefectural assembly had voted in 1905 – without effect – to reduce the pollution. The 1908 petition claimed that the poisoning of the atmosphere had increased in intensity and geographical scope in recent years, particularly since the expansion into pyritic smelting of the kuroko. Moreover, it revealed that Fujita-gumi had begun compensation payments to Kosaka residents some years earlier, but that villagers were dissatisfied with the level and speed of the payments. Kosaka, modern town and home of Japan's most productive mine, was thus experiencing the negative effects of its own technological successes.

In 1909 a series of articles published in major Tokyo newspapers and magazines pointed to the ambiguous reality of life in Kosaka. As part of a major effort to promote Akita nationally, three regional newspapers invited more than 20 Tokyo journalists on a tour of the prefecture. The group left Tokyo by train on July 22, and spent some 10 days visiting major cities and regions of Akita before returning to Tokyo on August 4; the itinerary included an overnight stay at Kosaka. At least 16 members of the group published accounts of the tour.[54] Many wrote of their satisfaction in viewing the achievements of a distant and hitherto unfamiliar prefecture; most marveled at the beauty of Lake Towada. Several described their stay at Kosaka, which included a tour of the mine and an elaborate western-style dinner at the company club. Their impressions varied. Asada Kōsan of the magazine *Taiheiyō* introduced

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[52] *Mining in Japan Past and Present*, pp. 172-76.

[53] *Kosaka-chō shi*, pp. 198.-203.

[54] The articles were published as a book in December 1909 under the title *Shiraretaru Akita* and reprinted in 1985 inTakizawa Takeshi (ed.), *Shiraretaru Akita*. See also *Kosaka-chō shi*, pp. 355-58.

Akita's mining industry, placed Kosaka ahead of Ashio and Besshi in output and productivity, and concluded that Kosaka incorporated the best technology that the world's mining civilization could offer.[55] Arriving in Kosaka by horse from Lake Towada, Abe Michi'ie of *Kokumin Shinbun* was startled by the sights and sounds of a modern mining town: the towering chimney, the train carrying ore, the dynamite blasts, and the chorus of shouts from teams of mine laborers. He had, he felt, moved into another world.[56] The visitors toured the mine facilities before assembling for a celebratory dinner that was the final group event of the tour. For Abe, the dinner underscored his experience of modernity at Kosaka.The food, brought in from Akita, was served with champagne; and there were speeches and toasts to one another's health. It was, wrote the Tokyo visitor, "in all respects, the twentieth century."

But not all of the journalists described the modernity of Kosaka in such glowing terms. Okano Hibari of *Tōkyō Asahi Shinbun* was especially unsparing in his account of the contradictions inherent in the Akita's industrial development. Mocking claims expressed by Akita residents that their mine output, mining equipment, and forests were all "the best in the Far East," he criticized their willingness to let one valuable resource destroy another: "While taking pride in having the most beautiful forests in the Far East, Akita people consider it unavoidable that the [Kosaka] mine spews out the most poisonous gases in the Far East, causing those beautiful forests to wither and damaging the fertile paddy." On the morning after the overnight stay at Kosaka, Okano woke to an Eastern wind that blew the poisonous smoke until it enveloped the town, shutting out the sunlight and locking in an acrid, sulfurous smell. This was the reality of everyday living in Kosaka, a "twentieth-century" mining town that led the Far East in so many of its attributes. Okano noted that Fujita-gumi had paid little of the compensation demanded by Kosaka residents for the damage to crops and health, but he also observed that even Akita people themselves seemed strangely unconcerned about the

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[55] *Shiraretaru Akita*, pp. 38-45.
[56] *Shiraretaru Akita*, p. 245.

destruction that surrounded them: "Of course, [modern] civilization is destruction! " was the response of one of Okano's hosts.

The conditions at Kosaka described in 1909 were not easily changed. In 1914, after increases in mine output produced a worsening of the pollution, the Akita prefectural assembly sought help from the national government. A letter addressed to the Home Minister explained that emissions from Kosaka's furnace – "the biggest in the Far East" –were causing enormous damage to residents and to crops, trees, and flowers in Akita and Kazuno districts and indirect harm over an even larger area. The complaints were similar to those made on behalf of Ashio residents some two decades earlier, but the Tokyo government showed no more willingness to intervene. Its response to the Akita petition is unknown. These years marked the peak of mining output at Kosaka, the peak of its population growth, and the height of its fame as a modern mining town and there was little concern at the national or local level to compromise industrial advance. In these opening decades of the twentieth century, the main checks on pollution in Kosaka came, ironically, from the slowdown in mining operations that accompanied the decline in copper prices in the early 1920s.[57]

4. Conclusion

The town of Kosaka occupies a distinctive and important position in modern Japanese history. Its prominence lay, first, in the copper and silver that formed the basis of one of Japan's most profitable mines and a key industry in Japan's early industrialization. Moreover, the development of Kosaka mine paralleled developments in modern Japan itself. Set up in the closing years of the Tokugawa era, its potential was recognized and exploited in the modern era – as a model government mine between 1870 and 1884 and subsequently as the major enterprise of Fujita-gumi Company. Both the Meiji government and Fujita-gumi invested heavily in modern technology at Kosaka, installing the equipment, hiring the engineers, and promoting the research necessary to thrust it into the top ranks of Japan's

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[57] Saitō Sanenori, *Kōzan to kōzanshuraku – Akita-ken no kōzan to shuraku no eiko seisui,* pp. 57-59

mining industry. By the turn of the twentieth century, Kosaka had expanded its operations from silver and gold to take advantage of hitherto inaccessible copper. In 1907, its prominence was secured when it became Japan's largest producer of copper. In yen terms, Kosaka produced almost 13% of Japan's gold, 38% of its silver, and 25% of its copper. Taken as a whole, this meant that Kosaka accounted for just under one-quarter of the total mineral wealth in gold, silver and copper produced in Japan at the very time mining was most important to Japan as an export industry.

Accompanying the expansion of its mine output, Kosaka also gained prominence as a bustling modern town. The demands of the mining industry meant that modern technology reached Kosaka early, ahead of agricultural villages but also ahead of rival mining centers such as Osarizawa and Ani. Facilities such as electric street lighting, a town water system, rail transportation, and a telephone exchange secured Kosaka's modern character in the opening years of the twentieth century; shops, restaurants, and other businesses as well as a general hospital, schools and the Kōrakukan theater marked it as a commercial and cultural center. The impact was greater because of Kosaka's geographical position, far from the political center, and in a region considered to be economically backward. Some of the journalists who traveled to Akita prefecture in 1908 described their anticipation at visiting remote and barely known places; some wrote of their surprise at discovering both the beauty and the mineral and agricultural riches of the Tohoku region. Others were struck by the conflicting images of modernity presented by Kosaka. The mine exhibited modern industrial technology at the highest levels available in Japan, and the evening banquet followed the conventions of elite, Western-style hospitality. On the other hand, the noise of machinery, the destruction of the natural environment, and above all the poisonous, foul-smelling air – offered shocking evidence of the ill-effects borne by ordinary town residents in a rural and otherwise traditional region. In this sense, Kosaka, like mining communities in North America and across the

Western world in the late nineteenth and early-twentieth century, demonstrated both the promise and the costs of modernization.

If the opening years of the twentieth century marked a high point in Japan's mining industry, the years after World War I saw the emergence of problems that were to mar its subsequent development. Most important were world market conditions. For instance, copper prices dropped dramatically after World War I, forcing Japan's copper mines to close or scale back operations. Even at Kosaka, production declined dramatically, from a peak of 13.6 million kilograms in 1917 to 7.1 million kilograms in 1920 and just over 4 million kilograms in 1921.[58] In 1919, close to 1,000 mine workers were laid off at Kosaka, prompting a general strike. Market uncertainty, labor unrest, and difficult negotiations regarding pollution compensation continued in the first half of the 1920s. Conditions improved in the second half of the 1920s, after Japan's main mining companies persuaded the Japanese government to impose tariffs on copper imports. Output recovered as Japan headed into wartime conditions; by the end of the war at least 200 Chinese nationals had been brought to Kosaka mine to meet the labor shortage.

Japan's copper industry recovered in the immediate postwar era. In 1955 there were as many as 185 copper mines in Japan, employing a total of 39,304 people; in Kosaka, the Dowa Mining Company, the postwar successor of Fujita-gumi, revived and expanded operations. However, with the adoption of a free trade regime in 1963, domestic mining was unable to compete with cheaper imports.[59] By 1980, Japan had only eight copper mines, and copper extraction had virtually ceased. Some former mine towns battled to keep auxiliary businesses going, or attempted to re-invent themselves by developing new industries such as tourists; others turned into ghost towns. In Kosaka, the Dowa Mining Company, was able to continue operations by importing copper and non-ferrous metals for smelting and refining; it has subsequently moved into related businesses elsewhere in Japan and overseas. The town of

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[58] *Kosaka-chō shi*, p. 219; *Shichijūnen no kaiko*, p. 59, p. 124.
[59] Iwama, pp.

Kosaka, with a population of just under 7,000, has made efforts to create jobs through mining-relating businesses and by recreating for Japanese tourists its history as a modern mining town.

The challenges facing Kosaka are not particular to the Tohoku region; nor are they particular to Japan. In Australia, the United States and across the economically developed world, regional communities are experiencing depopulation and the collapse of local industries such as mining. Moreover, as economic, cultural and political power appears to be shifting irreversibly to urban centers, inhabitants of regional towns and villages are experiencing doubts about their importance to the wider nation, and even their capacity for survival." For some, this shift of regions to the "margins of national life", as described by Richard O. Davies in *Main Street Blues: The Decline of Small-Town America*, signifies the loss of core values and, as such, it threatens the future of human civilization. Others, such as Jared Diamond in *Collapse: How Societies Choose to Fail or Succeed*, see the closure of mines as the beginning of a solution to some of the worst environmental problems of the modern and contemporary era.[60] Looking historically, we can say that regions have moved from the dynamism that characterized them through the first half of the twentieth century to one in which their role in the economic, social and cultural life of the nation is less clear. This is the transition that is termed the "decline of the regions.[61] Ironically, as the regions appear to play a reduced role in national economic life, the problem of their transformation and future role links them not just to their own nations but to regions across the world. The transformation of the regions has already become an important part of global history.

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[60] New York: Viking, 2005, pp. 452-63.

[61] See Joseph A. Amato, *Rethinking Home: A Case for Writing Local History* (University of California Press, 2002) and Richard Davies, *Main Street Blues: The Decline of Small- Town America* (Ohio State University Press, 1998).