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When Copper Supplanted Gold

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Gold has attracted men and nations for thousands of years, and nations have frequently fought for the right to control the yellow metal. When Japan invaded the Philippines in 1941, the Philippines was the second leading gold producer in the world. For the remainder of the war, Japanese civilian and military officials in the Philippines remained oblivious to the lure of gold, and within a few years had dismantled, destroyed, and looted gold facilities from northern Luzon down to and including Mindanao.

The Japanese attitudes and actions toward gold operations were no Oriental aberration, nor the result of some Japanese failure to understand the needs of industrial society. The Japanese master plan for the metal resources of the Philippines, Malaya, and other Southeast Asian regions was based on sound research related to her own civilian and military needs in light of the scarce resources of Japan proper.

Copper was Japan's chief hope from the Philippines, though iron ore, chromite, and manganese were also sought. An examination of the Japanese efforts at the Lepanto copper mine in Mountain Province will demonstrate what the Japanese forces did to develop Philippine natural resources during their brief occupation.

The mining of copper was an ancient Japanese industry, and the fabrication of Japanese brass was also an ancient art. Of all the metals in Japan, copper has been the most important historically.¹ The oldest and most famous mine is the Ashio, about 100 miles northwest of Tokyo, first worked in the early 1600s. A major

1. H. Foster Bain, "Japan's Power of Resistance," *Foreign Affairs* 22 (April 1944): 424-32.

modernization program in the 1870s, based on American engineering principles, was headed by the family of Baron I. Furikawa.²

Another well-known mine was the Besshi, near Kobe, which had first been worked in 1681. The mine remained in the hands of the Sumitomo family over the centuries. Prior to 1900, a huge modernization program was carried out, mostly in keeping with German metallurgical practices. At this time more than eight thousand workers were in the Besshi mining, milling, and smelting network.³ There were other Japanese copper regions, but those of Ashio and Besshi led production.

The Japanese deposits were mostly sulphides, especially chalcopyrite and calcocite, and much of the mining was at considerable depth. So much money, effort, and attention were focused on the copper industry that by the early 1920s Japan was third in the world in production, behind the United States and Chile. But there were interesting differences in the consumption pattern of these three producers. The United States consumed much, but also exported huge quantities; Chile was primarily an exporter; Japan needed all of her copper for her own industrial requirements.⁴

By the late 1930s, Japan, though still a leading producer of copper, needed vast imports for her commercial and military programs. And, as the Japanese "incidents" in China evolved into commitments of large land, sea, and air contingents throughout the Pacific, a new copper source had to be found. The solution was to be at Lepanto, a newly opened copper mine on Luzon that was becoming a factor in the world's metal markets.

PHILIPPINE MINING HISTORY

Philippine mining history does not go back very far, though it should. Some gold, copper, iron, and other metals were found and worked over the centuries, but this never amounted to much during the Spanish regime. During the early decades of the American regime, gold was found and worked around Baguio, and later

2. Masayuki Otagawa, "Mining Methods at the Ashio Copper Mine," *Transactions, American Institute of Mining and Metallurgical Engineers* 68 (1923): 241-50; the author had been general manager of Ashio.

3. Basil H. Chamberland and W. B. Mason, *A Handbook for Travellers in Japan* (London, 1903), pp. 212-13, 445.

4. *World Atlas of Commercial Geology, Part I, Distribution of Mineral Production* (Washington, 1921), pp. 39-41, Plate 38 (Japanese deposits shown).

in the Camarines. Yet, in general, the Philippines was not considered good mining country.

In the late 1930s, Maximo Kalaw, a dean at the University of the Philippines, and an associate of many mining entrepreneurs, pointed out that as recently as the 1920s, most geologists and mining engineers were convinced that the Philippines was "not a mineral country." When Kalaw wrote of these historic ironies, in 1937, the Philippines was a world leader in precious and base metal production.⁵

The 1930s was a "rush" decade for Philippine mining. Gold from the Baguio-Benguet fields became world famous, and hundreds of companies were formed to find the yellow metal. Jan H. Marsman, Judge John W. Haussermann, and Andres Soriano were the leading personalities in this mining explosion, which was primarily local Philippine capital, some American investment, and many American administrative personnel as well as engineers and foremen.⁶

Base metal mining received a major impetus from the new interest in exploration and investment. Chromite mining, born in the 1930s, was encouraged by United States industry; chromite was a major ingredient in rust-proof steel. The leading mine was the Acoje at Masinloc, Zambales, with important production also in Camarines Sur and on Dinagat Island. In 1935 the Philippines was the twelfth leading world chromite producer; by 1940 she was in sixth place.⁷ The United States was almost the sole market for Philippine chromite: of 150,000 tons produced by 1940, 130,000 tons had gone to that country.⁸

The manganese industry was born in the same decade, with first workings in 1934 and first shipment to the United States the following year.⁹ The leading areas were Siquijor (a small island

5. Maximo Kalaw, "Fallacies in Mining," *Philippine Forum* 2 (January 1937): 34-35.

6. *Philippine Mining Yearbook*, 1939; this work, published by the Chamber of Mines, has more than 250 pages, and is a major publication in the world's mining literature. On page 2 is an article entitled "The 'Big Three' in the Philippines," which has photos and biographies of Marsman, Haussermann, and Soriano. "Gold in the Philippines," *Fortune* 12 (August 1935): 58-61, 102-8, is a lengthy article on the new boom. See also Robert A. Smith, "A Stock Pile Under the Flag," *ASIA* 39 (September 1939): 497-99.

7. Alden Cutshall, "Mineral Resources of the Philippine Islands," *Scientific Monthly* 54 (April 1942): 295-302.

8. *Ibid.*, see also *Philippine Journal of Commerce* 16 (February 1940): 41-42.

9. Cutshall, "Mineral Resources," pp. 295-302.

near Cebu), Busuanga (in the Palawan group), and at locations in Ilocos Norte, Panay, Bohol, and Masbate.¹⁰ The Japanese were very interested in manganese, and began to invest in several firms, the largest being the Philippine-Nippon Mining Company on Busuanga.¹¹

By 1940, the Philippines had become the world's tenth largest manganese producer, and to that time the bulk of the production had gone to Japan. Although the United States did not lack in manganese, the growing defense needs led the government, especially the United States Navy, to begin a stockpiling program.¹² By late 1940, most Philippine manganese was being sent to the United States.¹³

Next to gold, iron ore mining was the most important Philippine mining activity, and it, too, had been born in the early 1930s. The huge deposits at Surigao had been known since 1912, but distance and transportation difficulties had delayed their development. Iron ore mining began in 1934 in the Philippines, and most early production came from Bulacan, Camarines Norte, Surigao, and Samar.¹⁴ The Larap Mine (Philippine Iron Mining Company) was a large open pit operation in Camarines Norte; a new major producer by 1939 was the Samar Mining Company, working a few miles inland from southeast Samar.¹⁵

There was no steel industry in the Philippines, so the iron ore was strictly for export. The United States was too distant to ship such a bulky, unrefined cargo; furthermore, the United States had a surplus of iron ore and was a leading exporter of the mineral.¹⁶ Japan, though already an industrial giant, lacked iron ore. Practically every pound of Philippine iron ore was sent to Japan: in September of 1940, this amounted to 128,000 tons.¹⁷

The copper deposits in Mountain Province had been known and used for centuries, but only on a small scale. Local Igorots had crude smelters and made a variety of pots, knives, tools, and

10. *Philippine Journal of Commerce* 16 (September 1940): 25-26.

11. Smith, "A Stock Pile Under the Flag," pp. 497-99.

12. Eliot Janeway, "Trade Currents," *ASIA* 38 (July 1938): 443.

13. *Philippine Journal of Commerce* 16 (September 1940): 25-26.

14. See notes 7 and 11 above.

15. Donald Chaput, "Samar's Iron Mining Beginnings," *Leyte-Samar Studies* 15, No. 1 (1980): 185-92.

16. *Ibid.*

17. *Philippine Journal of Commerce* 16 (October 1940): 23; (December 1940): 48.

decorative objects. In the nineteenth century, Chinese and Spanish efforts just skimmed some of the better near-surface ore; this was smelted locally, and a crude blister copper was sent to Manila, China, and Europe for further processing. This effort was in decline at the time of the Revolution, and the area was destroyed by Revolutionary forces in 1898-99. Subsequent efforts to open the area were not successful until after 1930, when a new government road was opened in the region because of the interest in gold.¹⁸

In 1936 the Lepanto Consolidated Mining Company was formed, under the management of Nielson & Co. The consulting engineer for Nielson & Co. was George T. Scholey, who became the leading figure in the rapid success of the Lepanto. An ore-dressing plant opened in 1937, based on the flotation system. The principal ore was enargite which is a hard but brittle sulphide. After crushing and milling, the ore went through flotation tables, which separated the copper from other minerals by specific gravity action. The end result was not copper, but a fairly rich copper concentrate, often averaging 25 percent copper.¹⁹

The concentrates were placed in half-ton steel drums, which were trucked from Lepanto through Baguio down to Poro, San Fernando, La Union. Here they were placed in storage bins until shipment. No finished copper was processed in the Philippines, so all of the concentrate was intended for foreign processing into finished copper.²⁰

The United States was interested in, and had a need for copper, but not for Philippine copper. The United States was the world leader in copper production, with huge operations in Michigan, Montana, and Arizona. No matter how rich or extensive were the Lepanto deposits, the United States would not show any interest.

By 1939-40, Lepanto had become the largest copper producer

18. For Lepanto Copper Culture finds in Bontoc, Lepanto, and Benguet, see H. Otle Beyer, "Outline Review of Philippine Archaeology by Islands and Provinces," *Philippine Journal of Science* 77 (July-August 1947): 217-19. *Philippine Mining Yearbook*, 1939 has a good summary of the brief history of the Lepanto Company on p. 47.

19. *Philippine Mining Yearbook*, 1939, p. 47.

20. H. Foster Bain, advisor to President Quezon on mining, later wrote that Lepanto, shortly before the war, had actually started a small blister copper smelter; the product was shipped for refining to the American Smelting & Refining Co. at Tacoma, Washington; see his article entitled "Philippine Mineral Industry in the Post-War Period," *Mining Magazine* (London) 72 (January 1945): 9-14. Blister is an advanced stage in the copper smelting process, often 98 percent copper, but still in need of further refining.

in the Far East, surpassing even the Ashio, Besshi, and other Japanese mines. From the beginning, the Japanese encouraged the growth of the Philippine copper ventures. The *Philippine Journal of Commerce* in 1940 explained some whys and hows:

To assure the local supply for copper, a number of Japanese mining concerns have established branches or sent representatives here to take care of the shipment of the metal to their country.²¹

The *Journal*, and Filipinos, knew what was happening: "It is interesting to note that all copper produced in this country is absorbed by Japan."²² In 1939 there were nine copper mines in production in the Philippines, with Lepanto by far the largest concern.²³

Before the war began, then, the United States received the overwhelming bulk of Philippine chromite and gold, and a varying supply of manganese. Practically all of the iron ore and copper was sent to Japan. There were several factors which influenced these markets, but probably the most important was that the United States had no interest in Philippine copper or iron ore. Both minerals were crucial to Japanese industry. The iron ore less so, because Japan had been tapping vast reserves in Manchuria. Copper, though, was essential to Japanese interests, as nothing else in the Far East could match the production and known reserves of Lepanto.

Philippine officials and industrialists were aware of the Japanese markets, but one must wonder what kind of information the United States was getting from the Philippines. For example, in his *Reminiscences*, General Douglas MacArthur seems completely unaware of Japanese interest in Philippine metals: "There was nothing in the Philippines they coveted except its strategic position."²⁴

Before the war, the Japanese had used normal business practices to obtain a share of the metals market from Southeast Asia. In British Malaya, for example, almost the entire iron ore production was in Japanese corporate hands, as were leading manganese properties.²⁵ In the Philippines, the Japanese had tried to buy in but were mostly left behind by Philippine and American business in-

21. *Philippine Journal of Commerce* 16 (February, 1940): 41-42.

22. *Ibid.*

23. See note 7 above.

24. Douglas MacArthur, *Reminiscences* (New York: McGraw-Hill, 1964), p. 106.

25. *Philippine Journal of Commerce* 16 (October 1940): 23.

terests. They did, though, manage to have an impact on the manganese market with the creation of the Philippine-Nippon Mining Company.

Eliot Janeway, in an article in *ASIA* in 1939, pointed out that Japanese businessmen were all over the islands, trying to buy up available iron ore, copper, manganese, chromite, and other resources. To Janeway, this was "inimical to American interests." He mentioned that the Philippine government, on the advice of the United States, had refused to grant mining concessions to the Japanese for the rich iron ore fields at Surigao.²⁶

That "United States" advice was probably from President Quezon's mining advisor, H. Foster Bain, former head of the United States Bureau of Mines, a Far East expert, and one of the world's leading consultants. Bain stayed too long dispensing advice: he was caught in Manila and spent the first two years of the war in the Santo Tomas Internment Camp. Despite such imprisonment, Bain would later write of the Japanese success with the metals markets: "by virtue of their will, energy, and willingness to work, and to work together, they have built up a considerable steel industry, which was later enlarged by the conquest of Korea and Manchuria."²⁷

LEPANTO MINING UNDER THE JAPANESE

After the attacks on Pearl Harbor and Clark Field, the war quickly arrived in northern Luzon. Landings at Aparri, Vigan, and in the Lingayen Gulf led to the encirclement of Fil-American troops on the Bataan Peninsula. The Japanese would need months of intensive fighting before pressing the beleaguered forces to surrender at Bataan and on Corregidor.

Meanwhile, in the north, especially around Baguio, the organization of resistance forces was taking place. Probably the key individual in this guerilla effort was Colonel John Horan, who had

26. Janeway, "Trade Currents," p. 443.

27. Bain, "Philippine Mineral Industry," pp. 9-14. Bain had considerable influence with the Philippine government. In early 1939, he and Quirico Abadilla, head of the Mining Bureau, went to Japan to arrange shipping of Surigao iron ore; see *Engineering & Mining Journal* 140 (February 1939): 63. Bain's first Asian experience had been shortly after World War I. He later worked in Australia, Java, the Philippines, and made other geological studies in the Far East. He was even made an honorary member of the Japanese Mining Institute. See *Pan-Pacific Who's Who, 1940-1941* (Honolulu, 1940), p. 33.

been at Camp John Hay, Baguio, at the time of the invasion. The bombing at Baguio, and the scattering of the small Fil-American forces there, left Colonel Horan the senior officer. He wasted no time, gathered what remnants he could, established contact with other groups of disbanded soldiers and loyal Filipinos, and received recognition from General Wainwright's headquarters.²⁸

One of Horan's surprises, shortly after the Japanese bombing, came when his men gathered together all the Japanese civilians around Baguio for internment. Horan, although he had been stationed in this region, was unaware of the large number of Japanese civilians there.

This "mystery" was later explained by Nestorio N. Lim, a mining engineer who since the late 1930s had been with the Bureau of Mines in Manila. Lim explained that many large mining companies in the Philippines had hired Japanese carpenters, the most expensive labor in the mines; these carpenters received almost four times as much as similar Filipino craftsmen:

They were the most efficient workers. No wonder! They proved to be officers and intelligence men, and they worked fast when the Japanese Army came. They knew the high-grade mines, some having worked in them for more than 20 years.²⁹

Although Colonel Horan had a few regular and reserve officers in his command, the basis for the guerrilla officer corps was the large number of mining engineers and administrators in the vicinity. Walter Cushing, George Barnett, John O'Day; these and other mining personnel would spread the revolt through the northern and western provinces. All owed their positions to Colonel Horan, who before his own imprisonment saw that these men were commissioned and in positions of authority. Horan, in his ideal table of organization, wanted to make each mine superintendent a major; each engineer a captain; each foreman a lieutenant, and so forth. The mine crews would be the soldiers. And, all units would

28. Sometime in the 1950s, Col. Horan wrote in longhand, an account of the first six months of the war. Col. Horan has permitted the authors to photocopy this manuscript which is now in the Western History Collection, Natural History Museum, Los Angeles. This account, referred to here as the Horan Manuscript, has been checked against many contemporary and historical accounts and is usually accurate and complete.

29. Nestorio N. Lim, "The Jap at Philippine Mines," *Engineering and Mining Journal* 147 (November 1946): 70. Lim, a graduate of the University of Minnesota, in 1941 had written a pamphlet, "Stopping Methods and Costs in the Gold Mines of the Baguio District."

share the talented Igorot crews, so adept with dynamite.

Horan had a problem, though, with George Scholey, whom he had appointed as battalion commander in Lepanto. Scholey, a key figure in Philippine mining circles, was in charge of the Lepanto copper works. Colonel Horan visited Lepanto on 28 January 1942, and was distressed to see huge piles of copper concentrate, hundreds of tons, ready for shipment. Horan ordered all of the concentrate washed down the mountain streams with hydraulic hoses, to prevent it from falling into Japanese hands. Furious with Horan, Scholey resisted, but was overruled. Horan's report on Scholey's conduct: "He expected the American forces to retake the Philippines in three months and he would be held responsible."³⁰ Scholey deserted, tried to get to China, was captured and taken to Japan. According to Captain Cushing, Scholey tried unsuccessfully to unseat Horan as guerrilla chief, but found no local sympathy.³¹

Horan reported that he also ordered the destruction of the Lepanto smelter and machine shops, even the mine itself; he was satisfied that his orders were carried out "100 percent." His men saved the excess dynamite. In the following months, Horan's men blasted many bridges and roads "to keep the Japs from coming north and opening up the Lepanto Copper Mine. We were determined that the Japs would get no copper from this mine." His officers, Lieutenants Klugge and Sika, became adept at working with Igorot dynamite crews, and they were able to cause severe avalanches near key road sites. The dynamiting crew was eventually betrayed and executed.

On May 14, Horan passed into Japanese custody, confident, though, that with Cushing, Barnett, and others in the hills, a growing band of guerrillas would resist the invaders.³² He was also

30. Horan Manuscript, pp. 33-34. Horan also wrote: "He deserted my forces and took Lt. Nicholson, one of his mine assistants, and a very able man, with him, and went across the mountains to join Major Warner at Jones, Isabella. He never commanded any unit, never entered any engagement, went to the east coast, hired a banca to get to China, was captured and taken to Japan."

31. Although Horan detested Scholey, the mining engineer's brilliant reputation was in no way tarnished by the war. For example, in 1963 George Scholey, father and son, headed the Copper Belt Mining Corp. at Lobo, Batangas, as well as the Frontino Exploration and Mining Corporation. In a flattering news story he was called a "fighter who loves fresh challenges from the untried and unknown." See *Mining Newsletter* (Manila), July-August 1963, p. 39.

32. Horan surrendered to the Japanese (Col. Watanabe at Labuagan) because he was ordered to do so by General Wainwright. However, Horan knew what would happen, and a week or so before he surrendered, he divested himself of most of his troops and

proud of his destruction job at Lepanto. He wrote later: "Not one ounce of copper ever got to Japan." Horan was correct, but only so far as his own role at Lepanto is concerned. Not one ounce of copper may have reached Japan, before May 14. But soon thereafter, the Japanese were to put into high gear the plans they had for the badly needed copper concentrate at Lepanto.

By June 1942, according to Nestorio Lim, the Japanese were shipping copper concentrate from Lepanto to Japan.³³ This, only a month after the breakup of Horan's forces, when Lepanto had been gutted and the remaining concentrate washed down the rivers. Lim was not mistaken. The Japanese had moved in with such speed and efficiency that within a few weeks Lepanto was back in production.

The gutted buildings, destroyed mill, and caved-in mine shafts were only temporary problems. The answer was at hand, at least nearby. Scattered throughout the region in and around Lepanto were some of the world's most productive gold mines. And, what had puzzled Horan now began to make sense to bewildered Filipinos: those hundreds of Japanese "civilians" who had been in the area before the war went into action, as many of them were engineers and administrators.

A. V. H. Hartendorp, who spent the war in Santo Tomas, learned that in addition to the machinery "transfer," the Japanese were also able to obtain large stocks of mining supplies, as many companies had anticipated a shortage and had at least two years supply on hand.³⁴ Commander Charles "Chick" Parsons, who made an espionage trip through the islands in the summer of 1943, later reported on Japanese indifference to gold mining, and their intense efforts to work for base metals: "The gold mines were stripped of power plants, small machinery, pumps, spare parts, fuel, lubricating oil, which resulted in the practical abandonment of the mines. As a result of no power, the underground pumping units stopped and the mines in most cases flooded."³⁵

officers, and made it clear to Cushing and others that from the moment he (Horan) was in Japanese hands, the guerillas should ignore any orders the Japanese would force him to give. See Horan Manuscript.

33. Lim, "The Jap at Philippine Mines," p. 70.

34. A. V. H. Hartendorp, *History of Industry and Trade of the Philippines* (Manila: American Chamber of Commerce of the Philippines, Inc., 1958) pp. 80-81.

35. The Parsons account is published in full in Charles A. Willoughby, *The Guerrilla Resistance Movement in the Philippines, 1941-1945* (New York: Vantage Press, 1972). See pages 345-46 for machinery looting.

This was a major activity, which meant the Japanese allocated convoys of trucks to shift the mining machinery. At the Baguio mines, huge diesel plants were removed and taken to Lepanto. Later, when production was steady, the Japanese returned and removed much of the galvanized iron roofing on the mills, power plants, houses, and other structures. The unroofed buildings, of course, quickly deteriorated.³⁶ This heavy blow to the gold mining camps, therefore, was not part of any "burn and destroy" campaign, but was part of the Japanese plan to put the copper facilities back in production.

What happened at Lepanto was repeated throughout the Philippines, but on a lesser scale. The reason was that Lepanto's copper had high priority; iron ore was useful, but not essential. The Japanese did operate the small manganese mine on Busuanga, despite frequent guerrilla harassment. They also worked the chromite mine at Acoje; in fact, they were able to capture and ship much ore that had been destined for the United States. They also operated the iron mine at Larap, but not the one on Samar.³⁷ Two gold mines were worked, the San Mauricio in the Paracale District, and the Mindanao Mother Lode. However, these mines were operated because they had ready ore and tailings on hand; the Japanese would not have operated them if machinery or major repairs had been needed.³⁸

Some measure of the Japanese use of materials and facilities appeared in a brief mining journal inventory in late 1945. From the Antamok gold fields, the Japanese had removed the entire mill and power plant; the large mill at the Itogon Mining Company was removed; from Baguio, "nothing remains of the power plant and the surface buildings"; at the Big Wedge, the Japanese took good care of the facilities, as they used the haulage tunnel for a hospital. At Consolidated Mines (a Benguet operation) the inferior chromite deposits were not worked, so all machinery was removed. Even the bolts from the bridge trusses were taken.³⁹

36. Nestorio N. Lim, "The Damage of the War on the Mining Industry," *Philippine Geologist* 1 (June 1947): 26-28.

37. Lim, "The Jap at Philippine Mines," p. 70.

38. James S. Baker, "Philippine Mining is Expected to Resume," *Engineering and Mining Journal* 146 (May 1945): 77-79, and W. F. Boericke, "Before Gold Mining can Resume in the Philippines," *Engineering and Mining Journal* 146 (August 1945): 92-94.

39. "Bombing, Fire, Looting, and Decay Contribute to Damage Suffered by Philippine Properties," *Engineering and Mining Journal* 146 (December 1945): 112-13.

In some cases, machinery was sent to Japan, but in most cases the mining machinery and other equipment removed from the gold mines were earmarked for Lepanto and other base metal producers. Because Lepanto produced copper, and because Lepanto was a large operation, most of the machinery was sent there. And, fortunately for the Japanese, the Lepanto ore fields were in and next to rich gold fields, which meant that gold mining camps could be plundered for mining, crushing, and milling machinery.

Gold is a useful commodity in many ways, but at this point in their thrust for empire, the Japanese had no interest in that metal. The Japanese probably felt that once the war was over, and the role of Japan in Southeast Asia secured, the gold deposits could be exploited. H. Foster Bain, who had time to reflect on these matters while imprisoned in Santo Tomas, later wrote that the Japanese regarded gold mines only as sources of machinery and scrap. "One may infer that they could in no event spend the gold until after the war."⁴⁰

THE END OF THE JAPANESE PERIOD

The guerrilla resistance in northern Luzon was well-organized, thanks to the early efforts of Colonel Horan, Major Cushing, Manuel Enriquez, Governor Roque Ablan in Ilocos Norte, and others. By late 1943, most of the units came under the command of Colonel Russell Volckmann, who had survived the Bataan campaign and had hidden in the north for some time. These guerrillas kept pressure on the Japanese, but their forces, prior to the American reinvasion, were not substantial enough to crack the Lepanto protection.

Colonel Volckmann felt that without better weapons, the guerrillas could not attack Lepanto. He described the place as consisting of "elaborate reinforced-concrete pillboxes and extensive underground caves and tunnels."⁴¹ The Japanese probably had a garrison of two thousand or more troops at Lepanto. In addition to making Lepanto secure, the Japanese also had to guard the more than two thousand Filipinos who were responsible for taking the

40. Bain, "Philippine Mineral Industry," pp. 9-14.

41. Russell Volckmann, *We Remained: Three Years Behind the Enemy Lines in the Philippines* (New York: W. W. Norton and Co., Inc., 1954), pp. 212-14.

copper concentrate from Lepanto down to the sea at Tagudin, in southern Ilocos Sur. Thousands of troops were necessary for protection at the mine, mill, and on the convoy route.

At the manganese mine on Busuanga, Palawan, there had been a revolt in September 1942, when Carlos Amores, a policeman at the mine, led the men against the dozen or so Japanese on hand. They killed the Japanese, wrecked the facility, then vanished.⁴² However, while an attack on a small manganese mine could be a reality, the guerrillas in northern Luzon could not contemplate attacking the large garrison at Lepanto. They were to wait, watch, and plan.

Complete details on the Japanese operations of Lepanto are not yet available, but in general the effort was a success. Although Chick Parsons did not get to northern Luzon during his 1943 trip, he did gather information on the gold and copper mines. He reported that the Lepanto was being worked at full capacity by the Japanese, with 2,500 Filipino laborers. They had also built a new pier at Tagudin, Ilocos Sur, from which to ship the copper concentrate to Japan.⁴³ In the prewar days, Lepanto copper had been shipped out of Poro, San Fernando, La Union; however, Tagudin was closer to Lepanto, even though the haul was through difficult mountain roads.

H. Foster Bain believed that the Japanese effort at Lepanto was a complete success. After they had taken control of the mine, they also found more than a million dollars of ore and concentrate, near the mine and at the port, which had not been destroyed. This was immediately shipped to Japan. The Lepanto had been producing 11,000 tons of copper annually before the war, and the Japanese "spared neither work nor expense to increase the output and have been very successful."⁴⁴

In 1943, Japanese production at Lepanto was about thirty-six thousand tons, not only far surpassing Lepanto's prewar output, but was half of the output of the mines in Japan proper. This, despite the sinking of at least two cargoes of copper concentrates by American submarines. Bain's conclusion: "In this instance Japan can nevertheless be said to have succeeded in deriving not-

42. Willoughby, *Guerrilla Resistance*, p. 506; this event was noted in Chick Parsons' report.

43. *Ibid.*, pp. 345-46, 364, Parsons report.

44. Bain, "Japan's Power of Resistance," pp. 430-32.

able profit from an occupied territory."⁴⁵

Lim, who was forced to continue to work at the Bureau of Mines, kept track of all Japanese mining activity. As early as October 1942 they had formed a Japanese Mining Association of the Philippines, headed by Dr. Miki, a mining engineer. Over twenty-five Japanese mining firms were listed with offices in Manila, and they sent teams of engineers and prospectors to the provinces to search for copper, nickel, molybdenum, manganese, and chromite. On one day in January 1943, Lim counted more than fifty samples received, which were to be tested for manganese.⁴⁶

All of this interest and activity, though, was still not going to lead to a mineral bonanza for Japan, even though substantial quantities were shipped to Japan. Lim gives the following as Philippine Products shipped to Japan during the war:

		<u>tons</u>
Lepanto	copper ore	12,115
Lepanto	concentrate	44,362
San Remigio	copper ore	20,000
Acoje	chromite	50,000 ^b
		80,000
Phil. Iron	hematite	300,000
	pig iron	10,000
Busuanga	manganese	6,000 ^b
		1,900

^b stockpiled before the war.

San Remigio was a minor operation at Antique. The Acoje chromite operation was substantial, but much of the tonnage had been stockpiled before the war. As is evident from Lim's account, iron ore, chromite, and copper were the most important base metals of interest to the Japanese in the Philippines.⁴⁷ Although the 300,000

45. Ibid. Bain reaffirmed his belief in the Japanese Lepanto success in his 1945 article in *Mining Magazine*. He pointed out that in addition to standard mining, they had also done prospecting and had located significant extensions of the ore body.

46. Lim, "The Jap at Philippine Mines," p. 70.

47. Ibid. Lim also includes a breakdown of the richness of the ores and concentrates. For example, the copper ore from Lepanto averaged 8.6 percent copper, whereas the concentrate averaged 24.3 percent copper.

tons of iron ore was impressive, they considered this less important than Lepanto copper. They could get iron ore from other Asian centers, but only Lepanto could provide copper.

In April 1944, *Fortune* magazine published the results of Japan's search for resources in China and Southeast Asia, in an article entitled "Japan is now a great 'have' nation." Japan now had coal (Manchuria), oil (Netherlands East Indies), bauxite (Malaya) hemp, quinine, rice, cotton, and wool and hides. For iron ore, Japan was skimming the cream of high-grade ore in Malaya and the Philippines. The comments on copper were accurate: "Japan has copper mines in her home islands and is running the Lepanto copper mine and smelter in the Philippines at full capacity, using machinery taken from flooded Philippine gold mines."⁴⁸

The end of the Japanese-Lepanto era began on 21 June 1945. Colonel Volckmann's USAFIPNL had been given the task of crushing the Japanese at Bontoc, the capital of Mountain Province, and at Lepanto. The key units in the attack were the Sixty-sixth Infantry under Major Dennis Molintas; former mining engineer Captain John O'Day led portions of several other units in support.⁴⁹ According to a participant, Staff Sergeant Leonardo Q. Nuval, the actual battle for Lepanto began on June 17 and lasted until July 20, on a sector of forty square air miles, in the rainy-typhoon season. Nuval lists the number and units of the Japanese defenders, which probably was the permanent garrison of 2,000 troops: a battalion of mountain artillery, various infantry companies, and scattered portions of the Fourteenth Imperial Japanese Army. The fighting was long and bloody, as Japanese orders were to hold Lepanto at all costs. When the battle ended, and Volckmann visited the mine-mill area, most of the Japanese bodies were strewn among smashed facilities. The Sixty-sixth Infantry under Volckmann's command had lost six officers and ninety-seven enlisted men in the battle.⁵⁰ Volckmann, too, knew the value of the location: "I stressed the importance of an early capture of Lepanto."⁵¹

The war completely destroyed the Philippine mining industry. The gold mines, in particular, suffered heavily. Before the war

48. "Japan is now a Great 'Have' Nation," *Fortune* 29 (April 1944): 176.

49. Volckmann, *We Remained*, pp. 212-14.

50. Nuval's account, "The Battle for Lepanto," appears in *25th Anniversary of Bessang Pass*, 14 June '70 (Manila, 1970), p. 39.

51. Volckmann, *We Remained*, p. 214.

there were forty-three gold-producing mines, four iron ore, four copper, five chromite, and five manganese.⁵² Yet, in 1946, only two or three mines were at work. The Japanese impact on the mining industry differed according to the type of mineral mined. The gold mines interested them least, and they looted what they could for use elsewhere. At mines that they needed such as Lepanto copper or Acoje chromite, they nursed what equipment they could secure, but made only essential repairs. They literally ran the machinery into the ground.

This situation prevailed wherever Japanese forces had been in Asia. They plundered the mineral for use in the homeland, without any care or regard for equipment or ore reserves. For example, there had been hundreds of tin mines in Malaya before the war. Japanese forces took over, and they ran the mines "to a standstill." At liberation, tin mining in Malaya was "in a deplorable condition."⁵³ Malayan tin, Philippine copper, Manchurian iron ore—all were in the service of Japanese imperial designs.

Not only the Japanese were involved in the destruction of the Philippine mines. In 1941-42, the retreating Fil-American forces destroyed by blasting and burning many mining and milling operations, such as the Lepanto demolition by Colonel Horan. During the war, guerrilla forces throughout the islands caused considerable damage. When the American forces returned, a new wave of destruction set in. For example, at the Demonstration Gold Mines, the Japanese, when retreating, took the railroad track with them. The Americans moved in and promptly removed flooring, roofing, and other structural materials to build a camp of their own. Benguet Consolidated was smashed in the last weeks of the war by bombing, burning, and looting.⁵⁴

The rehabilitation of the Philippine mining industry was slow. The destruction had been severe and widespread, and furthermore bank accounts in America were frozen for months after the war. The gold market was uncertain, and merchants wondered if the United States would order the copper, iron ore, manganese, and other metals that had gone to Japan prior to the war.⁵⁵ Only in

52. Lim, "The Damage of the War," pp. 26-28.

53. "Recovery in Malaya," *Mining Magazine* (London) 75 (December 1946): 343-44.

54. "Bombing, Fire, Looting, and Decay," pp. 112-13.

55. Charles Mitke, "Philippine Mining Revival Possible," *Engineering and Mining*

1948-49 did the Philippine mining industry begin to stir and make a modest comeback.⁵⁶

Symbolic of all this destruction was what happened in Manila in the Bureau of Mines building. In the Japanese defense of the city, the building, a solid concrete structure, was used as a fort. The building was smashed and burned, and "since many of the cabinets were fireproof, the Japanese poured gasoline over them so that the burning was complete."⁵⁷ Bain, who had worked in the building prior to the war, reported that the entire facility was "all but destroyed." The Director of Mines, Quirico A. Abadilla, was killed in the last days of the fighting in Manila.⁵⁸

CONCLUSION

Historians are not in agreement on Japan's war aims, or whether or not she was pushed into aggressive behavior by the United States and European nations, who intended to restrict Japan's entry into the rich natural resource markets of Southeast Asia.⁵⁹ Yet, we do know that in a more limited sphere, Japan planned to acquire the Philippines, and aid Japanese home industry by importing copper, iron ore, chromite, and manganese, in somewhat that order. In this sense, Japan succeeded. The Lepanto operations were successful, though it might be questioned if such a large garrison there could have been utilized elsewhere to better advantage. In any case, the occupying power needed and wanted copper, and Japan proved at Lepanto that large-scale mining and milling is possible, even inland, in a hostile environment, so long as they were willing to expend the experts and the troops to assure the operations.

Journal 146 (December 1945): 120-21. Mitke, a mining consultant, spent the war in the Santo Tomas Internment Camp.

56. Information provided to the authors by Benguet Consolidated, Inc. According to the firm, loans from Judge Hausserman helped to rehabilitate the mines; Benguet was back in production in January 1948.

57. Lim, "The Damage of the War," pp. 26-28.

58. H. Foster Bain, "Mines Bureau at Manila Suffered Heavily in War," *Engineering and Mining Journal* 147 (December 1946): 66-67. Bain returned to Manila in 1948 to resume his post as government mining advisor, but died shortly after his arrival. See also "First Annual Report," *Philippine Geologist* 1 (March 1947): iii-iv, which contains a resolution honoring Abadilla and naming the reconstituted library after him.

59. See, for example, B. H. Liddell Hart, *History of the Second World War* (New York, 1970), pp. 199-200, where he places the blame for Japan's actions on the stubbornness of the United States and Great Britain.