Lepanto Copper Mine Reopens

By M. R. Arick

Member, Board of Directors, Lepanto Consolidated Mining Company

THIS month (May) will see the postwar re-opening of one of the oldest, if not the oldest, mine in the Philippines; namely, the Mankayan Mine belonging to Lepanto Consolidated Mining Company.

The history of this mine goes back to pre-Ming times in China — that is, before 1368 — as indicated by pre-Ming pottery found in the old workings. In the days of Li Ma Hong, the famous Chinese pirate who almost controlled the coasts around the China Sea, Chinese vessels would come to Luzon, with various articles of Chinese manufacture, to trade for copper from Mankayan. Li Ma Hong would allow the southbound ships through, — and then capture the copper-laden vessels on their return, thus doing as it were a bit of Mankayan mining himself by "remote control".

When the Spaniards came to the Philippines, their attention was attracted to the copper utensils in use by the natives. Inquiring as to the source of the metal, they were told of the mines far to the north. Hostile natives, however, prevented extensive exploitation until after the region was put under control by an expedition headed by Hernandez in 1856.

After conquering the territory, the Spaniards operated the mine until the end of Spanish jurisdiction in the Philippines. All of the operations up to this period were by crude hand-methods, — hand drilling, hand tramming (or actual carrying) of ore out of the mine, crushing between two hand-operated rocks, and smelting with charcoal fuel.

After peace was established in the early 1900's, a number of American prospectors settled in the district, attracted by the excellent climate and with the hope of making a fortune. They prospected and located claims all over the district. The distance it was necessary to bring in supplies and the lack of good roads, however, held up development of the area until the mining boom broke in the Philippines after 1933.

The interest in mining incident to the mining boom, and the fact that the Mountain Trail from Baguio north had been built in the meantime, — plus the fact that there is gold as well as copper in the Lepanto ore, provided the opportunity for Lepanto's development.

The various claim owners were brought together and their holdings pooled, and a corporation called "Lepanto Consolidated Mining Company" was formed. The first modern mill, with a grinding-capacity of 400 tons per day, was built on the property in 1936. This mill operated until the Japanese invaded the Philippines in 1941.

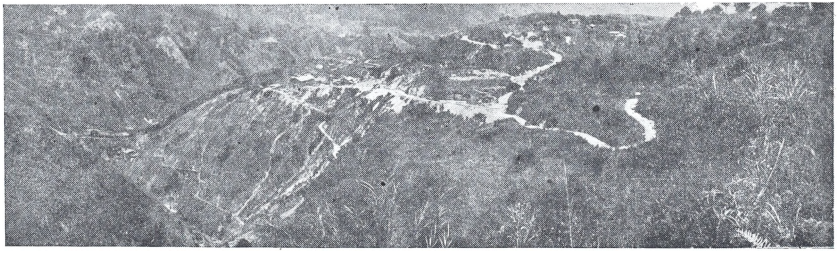
After Japan went to war with the United States, copper immediately became more precious than gold to the former, and in order to deny the enemy the facilities of Lepanto, the American high command in the Philippines ordered the plant to be destroyed. This order was complied with in December, 1941. Destruction was virtually complete.

As soon as the Japanese established control of the territory, they proceeded to build another mill at Lepanto, double the size of the former one. Milling operations were begun in 1943, but mining operations had started much earlier, and the first really extensive exploration work at Lepanto was done. Large extensions of the ore-body, both lateral and vertical, were proved. However, the milling operations at Lepanto did the Japanese little good because the guerrillas in the surrounding hills and American submarines, off San Fernando, La Union, effectually prevented much of the concentrate from reaching Japan.

Upon the return of the American troops and the evacuation of Baguio by the Japanese, Lepanto was for a time the Japanese headquarters, and the result was that American planes destroyed the plant built by the Japanese. Some 100 planes daily, for a period of about three months, bombed, strafed, dropped incendiaries, and did such a thorough job of destruction that only one semi-habitable house was left and all of the milling plant and powerhouse was destroyed. Machinery was shot up and everything that was in any way inflammable was burned.

After the Japanese surrender, other companies reclaimed all the salvageable machinery to which their ownership could be established, so that an entirely new plant was required by Lepanto to go back into production.

In making up the design for the new plant, the main adit to the mine was dropped 100 feet below the level of the pre-war (and Japanese-operated) Main Adit. The tramming track, and the Coarse Crushing Plant were

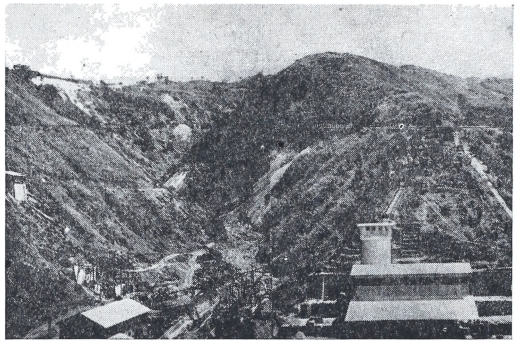


Reproduction of a photograph of the Mankayan mine site, taken in March of this year, looking a little north of west from above the mine portal. Staff cottages may be seen on the crest of the ridge, the mine and mill sites in the lower left hand corner.

placed on the opposite side of the valley. The latter was placed at approximately the same elevation as the Fine Grinding and Flotation Plant to secure ease of supervision and control. The present mill is designed for 500 tons daily grinding-capacity.

Ore from the mine will be reduced to 3/4 inch size in the Coarse Crushing Plant and will then be transferred by conveyor across the creek to the Fine Ore Bin. From this bin it will pass through a rod mill and be reduced to 20-mesh size, and then it will go to two ball mills and be reduced to "minus 250-mesh." Water is used as a carrier of the ore from the time it enters the rod mill, and classifiers keep the ore circulating through the ball mills again and again until it is reduced to the desired fineness.

Chemical reagents are added to condition the pulp for flotation and the flotation machines then accomplish the seeming miracle of making the heavier concentrate float to the surface and overflow into the desired channels to be collected, and making the lighter gangue stay down to be finally discharged from the mill, stripped of its valuable content. The remaining part of the milling process is merely one of dewatering the concentrate and preparing it for shipment.



Reproduction of a photograph of the new Lepanto Mill taken about the end of February of this year, looking in the opposite direction. The conveyer truss, the course crushing plant, and the machine shop are on the left. Note both the old and the new mill sites and both the old and the new haulage levels.

In the mine, the known ore extends for a length of about 5,000 feet and runs from 50 feet to 200 feet in width. The average grade per ton, as shown in the Annual Report for 1947, is 4.2% copper, .115 oz. gold; in addition, the ore contains about .8 oz. of silver per ton. It is planned to maintain an average mill head of around 4½% copper.

It is planned to use Philippine labor and technical help wherever possible, and also to use local supplies whenever they are suitable. The Lepanto operation will, therefore, bring prosperity to a large number of employees directly; and indirectly to another large group in the surrounding area, from the supplying of necessary commodities and services both to the employees and their families as well as to the company.

Stock-certificate holdings in Lepanto are very widely disseminated among the general public. Out of some 500 stockholders of record at the end of 1947, only 22 were owners of 100,000 or more shares. Of these 22 shareholders, the Alien Property Custodian is the largest single shareholder and it is expected that his block will eventually revert to the Government of the Philippines.

The officers of the company are: Messrs. E. A. Perkins, President, V. E. Lednicky, Vice-President, T. W. Farnell, Treasurer, and C. B. Foster, General Superintendent.

Opportunity in Philippine Fisheries

By Dr. Albert W. C. T. Herre

FISH and fisheries have an importance in the economy of rice-eating populations that is difficult for people in the United States, Canada, and most of Europe to comprehend. Rice is the most important item in the life of such countries. Though not important in bank clearings or financial statistics, fish are the second item in national economy. Although these two keep the common people going and are of primary importance, they have been neglected by politicians and officials, and ignored by western economists and writers. It is therefore no wonder that examination of the fisheries of any part of southwestern Asia or Insulinde shows unsatisfactory conditions in the quantity, quality, and market price of fish during much of the year. Prolonged field studies of the factors involved, especially in the Philippines, show that these conditions are unnecessary.

Though unfortunately separated politically, the Philippines are an integral part of the East Indies, the greatest center of fish life. More than 2100 kinds of fishes are thus far known from Philippine waters, with additions being discovered every time intensive field work is done. Most of these are edible, and several hundred kinds occur in