

# Base Metals Industry Well Underway

## • War-risk Freights Loom as Drawback

Prospecting during recent years turned up many deposits of common base metals in the Philippines. This led, less than a year ago, to the organization of Amalgamated Minerals, Inc., under management of its vice president, W. B. Sheppard, with authorized capital of a million pesos of which nearly ₱900,000 is paid up. The company stood ready to buy base metal ores, also to take over properties and develop them. One result is that an actual market for these ores has been established, considerable shipments have been made and still larger ones are in prospect.

Attorney Thomas N. Powell of Iloilo is a director of Amalgamated. It is from that island, Panay, that copper has been shipped. To date, 8,500 tons have been shipped, Manager Sheppard says, 7,800 tons more will be shipped this month, 3,500 tons more early in October, and monthly thereafter, 5,500 tons.

Japan is the market, where Amalgamated has smelter connections both in Korea and in the archipelago. Amalgamated expects soon to be marketing the output of the Sulu Copper company from its mines in Tawi-Tawi. Among interested parties there are Paul Gulick, Colonel Harry Andreas, and B. F. Berkenkotter and associates.

On June 3 Amalgamated began loading at Iloilo 2,700 tons of copper ore from the San Remigio property in Antique, which Amalgamated operates, and early in July a cargo of this ore left Iloilo. The ore is trucked from the mine to

San Jose, then lightered across to Iloilo. At Mount Uac, Masbate, Amalgamated is developing a copper-gold project of the Berkenkotter-Iek interests. Here then is copper in the Bisayas from Antique to Masbate. Much of its assays very high, the particular rub is to find large veins bearing ore rich enough in copper to be of consistent commercial value. Apparently it may not be said categorically, at this time, that such deposits exist in the Islands.

There is confidence, in the Amalgamated company, that they do exist. Meantime, prospecting for them provides steady supplies of good ore for shipment abroad.

In October, Amalgamated is shipping 5,000 tons of manganese ore, Manager Sheppard says, and thereafter will ship 5,500 tons a month. In November the company will ship 4,000 tons of chromite, and thereafter 4,000 to 5,000 tons a month. For the Berkenkotter-Iek interests the company is developing a manganese property in Camarines Sur. A fleet of dugouts conveys the ore down a creek navigable for such light craft at high tide, to an island offshore where lighters and tugs pick it up for putting alongside the ships that freight it to the smelters. Manager Sheppard asserts that the dugouts, hired on a basis of a set price per ton of ore moved, are very satisfactory and perhaps less costly than a tramline. Manganese is also being developed at Coron, Busuanga.

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One of the most interesting developments among industries new to the Philippines came to light recently with the disclosure that a factory has been erected within 15 minutes from the center of Manila for the production of wire nails, bolts and nuts, and a large number of other items, all of which at the present time are being imported. The company, which is called the P. I. Miming Machinery and Electrical Supply Co., Inc., is managed by S. Stadler and E. Boyens, both with many years of practical experience in this field.

According to the annual report of the collector of customs for the year 1936 (the latest available report) the annual volume of imports into this country of the products to be manufactured by the new concern runs into many millions of pesos.

The new company was formed after long and careful study of the local situation, and its organizers are confident that they will be able to manufacture certain essential products in their modern factory and sell them on the market locally at prices considerably below the lowest import figures. Raw materials, such as wire, steel bars, steel sheets, and so on, can be purchased advantageously both from Europe and from the United States, and manufactured here into the finished products. Equipment used in the manufacture of the nails, bolts and nuts is all automatic machinery identical to that used in similar factories abroad.

In addition to nails, bolts and nuts, other products which will be supplied by the new company are mine dump cars, blowers, pumps, electrical motors, Diesel engines, assay equipment, and so on, the company having established agencies for a complete line of industrial equipment in addition to its own manufactures. A large stock of such equipment is already on hand.

Actual production of nails, bolts and nuts will start before the end of October, it was announced, while the company's shops are already busy with orders for mine cars and similar equipment.

Expansion of the company's plans due to the unusual opportunities existing for the sale of its products, has necessitated raising a limited amount of additional capital. Its directors have authorized the sale of not more than ₱200,000 of its capital stock for this purpose.

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paring the samples for the laboratory, having little or no consideration as to the necessary precaution and time that are so essential in preparing duplicates.

A reputable owner or promoter of a property will gain much by having a reliable engineer to investigate the deposits before trying to interest investors. This investigation should be thorough, accurate, and must cover the following important factors:

**Location.** Distance and means of transportation from the market and point of supply. Reliability of existing means of transportation should be determined.

**Local Geology** must be studied to gain information that may lead to a conclusion as to availability of minerals sought on the commercial quantity. The relation of the exposed values to the quantity of assured mineral; the probable persistence of the values laterally and in depth; and the best methods of exploitation should be ascertained.

**Original Geologizing** (including examination of surface and underground exposures, character and position of wall rocks and of the deposits themselves) should be considered, as it may throw light on the value of the property with expenditure for exploitation, etc.

**General Topography** and maps of mine property should be carefully investigated and their reliability determined. They are to be studied with the purpose of determining such facts as position of boundary lines, possible transportation, water supply, topography, outcrops, underground exposures, and developments in connection with exploration of the property.

Examination of placer-gold property should include additional information as to yardage and value per cubic yard,

amount of water available and right to use same, and working season.

If the results of preliminary field investigation are favorable, a thorough and systematic testing of the ore in the laboratory should follow immediately. Properly taken samples and of such weight (50-1000 lbs.) as is necessary, must be submitted to the following tests: (a) Determination of qualitative mineralogical composition; (b) Assay for content of valuable minerals; (c) Determination of distribution of valuable minerals; (d) Microscopic determination of aggregation of valuable minerals; (e) Investigation of the behavior of the ore in crushing and in grinding; (f) Determination of tentative flow sheet for laboratory procedure, indicating the fineness of material to be treated, machines, and corresponding results; (g) Construction of metallurgical balance sheet of results of the laboratory testing; (h) Confirmation of laboratory tests by a larger continuous run on small commercial scale.



When investigating placer gold, it is necessary to include complete data on the physical characteristics of gold in the gravel (sizing tests, etc.); shape of particles; whether the gold is free or associated with other rare metals or other minerals; whether it is bright or tarnished; screen analysis of the gravel; determination of clay and silt content, cementation, depth of the gravel, overburden, and possibility for tailing disposal. Shuicing, tabling, gold-cloth recovery, cyanidation, amalgamation, and flotation, and their various combinations for the most efficient recovery of gold, should be thoroughly investigated with their corresponding costs. If properly carried out, these investigations will leave no doubt as to the most economical method of recovery.

It is important to emphasize at this point, however, that the samples brought to the laboratory for testing, should be taken and handled in such a way as to represent the true characteristics of the deposits to be investigated. Unless these samples are properly taken and handled, the entire laboratory work will be of no value.

Having on hand a complete set of data, the owner or promoter will be able to decide whether or not the property is worthy of further investigation. In the affirmative case, the prospective operator or investor should employ his own engineer so that he may check the sampling and methods of ore treatment. If there is uncertainty, in any way along the course of investigation, it would be advisable then to have still another engineer, or group of engineers, to check up the entire work.

My advice to would-be-mine-operators is "LOOK BEFORE YOU LEAP." Little is to be gained and much may be lost by diving headlong into the turbid whirlpool of mining ventures. Regardless how well one knows the party that is offering the "best prospect in the country", an extra measure of precaution may save considerable embarrassment as well as time and money. The first and most logical thing to do in such a case; Is to inquire why the so-called "best prospect in the country" has been idle and, why, with so many people looking for a chance to get rich, no one has taken the property over and started operations earlier. Nine times out of ten the solution to this query is over-estimation of value and tonnage, or both.

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Base Metals . . .

(Continued from page 20)

If iron now being prospected in the Paracale district proves out, it will certainly find ready demand in Japan. In Zambales, field of the chromite craze, Amalgamated has contracted the output of three companies. Elsewhere it is looking up sulphur, claiming to have processes for preparing

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it for market that will permit of its shipment to distant markets abroad, or at least to Japan.

Addition of Benguet Consolidated's regular chromite shipments from its proved properties in Camarines and Zambales rounds out the Philippine base metals situation at the moment, with mention of occasional manganese and copper shipments by other companies, and the opening of Lepanto's new copper mill in the Mancayan district north of Baguio. As an assurance of regular shipments, Amalgamated reports that it chartered steamers some months ago; in its June report is mentioned the *Sagres* and the *Leeping* as having been procured by charter, vessels of about 2,700 tons each.

War has upped charter rates since, and given owners the upper hand in effecting charters. As a matter of fact, war could play havoc with Philippine base metals, or if bottoms could be kept available, it could boom them with acute-demand prices. Just now, bottoms are the great factor; the chartering of small freighters ahead of the undeclared war at Shanghai and throughout northern China was a prudent step by Amalgamated. It suffices for the time being, but what is around the corner by way of tonnage available to Philippine exporters is problematical—heavy ore shipments can't be sustained unless tonnage is regularly available and at rates leaving miners and shippers reasonable profits.

J. J. Rafferty's company shipped the first Philippine manganese ore; it produces in Ilokos Norte and is still shipping --apparently from ample deposits.

We hear from another deposit, of another company, that from which 5,000 tons of manganese ore is said to have been sold recently. This deposit is some distance from tidewater, delivery involves truck transportation, then shipment to Manila by interislander. Our general data are, and may be of value to some of our readers, that trucking ore costs about 10 centavos per ton per kilometer. This includes maintenance and depreciation costs, we are told, and is the true basis on which trucking year in and year out may be calculated. We are further told that interisland freight from Ilokos to Manila runs P4 to P4.20 per ton. In Manila, 46% manganese and not above 1/2 of 1% of phosphorus brings about P19 per ton. One expert, at least, estimates that mining and washing can be effected for not more than P2 per ton. Here then is P19 per ton for the ore in Manila, with P6.20 haulage and mining costs against it, with 10 centavos per kilometer added for the trucking charge from deposit to tidewater.

A rough estimate may here be obtained of how much hauling can go into the cost of getting out manganese ore and still leave a profit for the mining company. But it is to be borne in mind that all the factors are variable. Thus if ocean freights rise and manganese prices do not rise proportionately, lower Manila prices will be quoted. Trucking can be affected by taxes, on the trucks themselves, on the fuel and oil they consume, on the bridges they cross, and on the income of merchants selling them. It can also be affected by higher factory prices at Detroit, higher ocean freights on motor vehicles, and other factors. War news is therefore bearish in our base metals market.

If charters rise, and they will surely rise exorbitantly in event of war, ships operating under cheaper charters will eventually have to charge on the basis of the dearer ones—it is always the current charge that use of a ship is actually worth. Should world want base metals from the Philippines during war as urgently as it required coconut oil from the Islands during the World war, all will be well: the higher the charges, the higher the prices procured for the metals. Probably what will come to pass is that highgrade metals will manage to reach markets, and lower grades will not be bought or shipped except during periods of peace on the high seas. Certainly we seem to have copper rich enough not only to bear any imaginable ocean rates, but to attract buyers under any imaginable circumstances.

Manganese is not so far along, speaking in general terms, nor is chromite, save for the Florannie deposit in Camarines. It is obvious, incidentally, that dealing in base metals in this territory is not a tyro's game.

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