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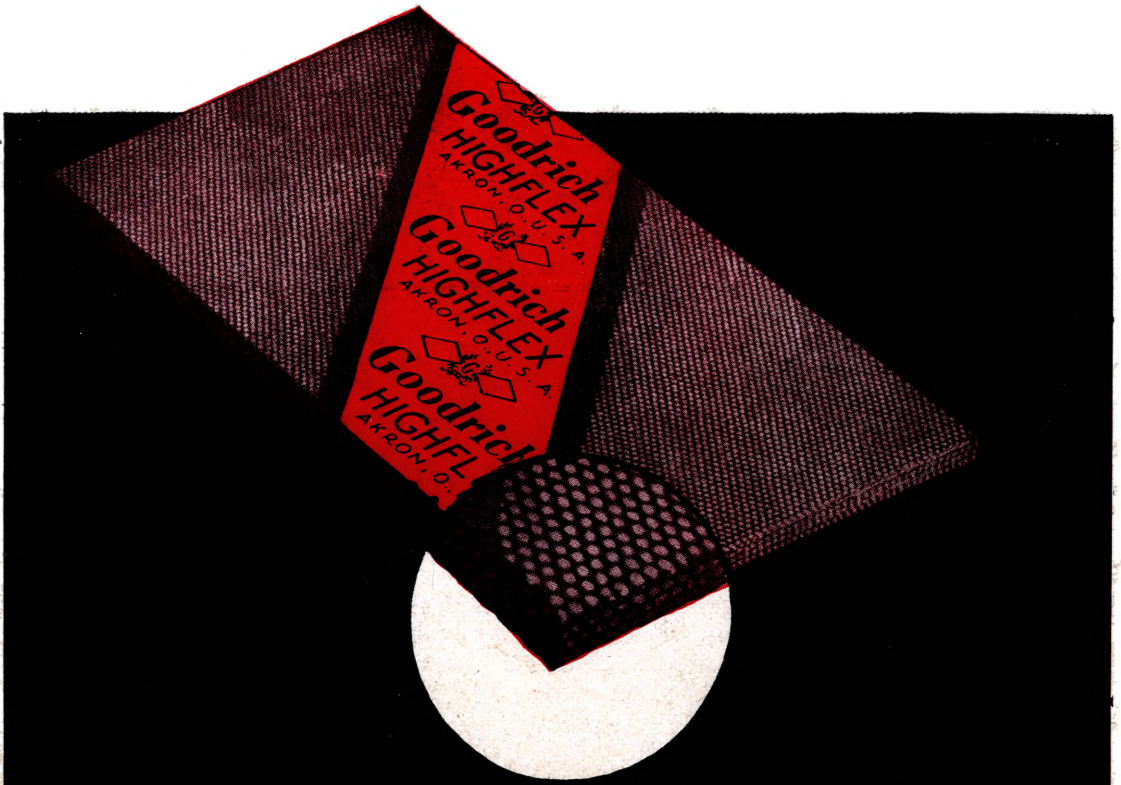
MARSMAN MAGAZINE

A MONTHLY CHRONICLE
OF THE ACTIVITIES
OF THE
ORGANIZATION

FOR THE INFORMATION OF SHAREHOLDERS
OF
MARSMAN AND COMPANY, INC.
MINE MANAGERS AND OPERATORS
AND
ASSOCIATED COMPANIES

MANILA, PHILIPPINES

VOL. II
JUNE
1938
NO. 12



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Marsman Trading Corporation — Agents in Baguio and Paracale

June
1938

THE MARSMAN MAGAZINE

Vol. II
No. 12

MAY OPERATING RESULTS EXCELLENT

Operations at the Marsman gold producers during the month of May went ahead smoothly, and once again new all-time monthly records resulted. The total output of the four lode and one placer operations was ₱1,353,232.54 from 56,958 tons of ore treated and 336,520 cubic yards of gravel dredged. This total is but slightly under the record-breaking figure of April, and represents the second largest monthly output for the group.

San Mauricio and United Paracale Mining Companies established individual records during the month. San Mauricio produced ₱348,433.44 from 9,527 tons of ore, while United Paracale's output was ₱220,023.73 from 9,394 tons.

Operating conditions were excellent throughout the month. Underground development results in general brought satisfactory results at the operating mines.

UNITED PARACALE DEAL RATIFIED

The shareholders of the United Paracale Mining Company, at a special meeting held June 6 in the Marsman Building, Manila, unanimously approved the action of their directors in arranging for the termination of the existing financing agreement with Marsman & Company by exchange of share interest in the company.

Accordingly, United Paracale directors were authorized to take the necessary steps to increase the capital stock of the company from ₱1,100,000 to ₱1,300,000, and to permit Marsman & Company nominees to subscribe to 1,941,176 shares of the increase at par value. It was explained at the meeting that immediate action would be taken to effect the increase in capitalization, and that the necessary papers would be filed at once with the securities and exchange commission for approval.

More than 77 per cent of the issued stock of the company was represented at the meeting which was called in pursuance with the resolution adopted at the annual shareholders' meeting held on March 1, 1938.

VALLEY PLACER IS DISSOLVED

Stockholders of the Valley Placer Mining Company, at a special meeting held June 15, in the Marsman Building, Port Area, unanimously voted to dissolve the company, and to return to the subscribers the unexpended cash assets.

As a result of this action, Valley Placer holders may return their certificates to the main office of the company in the Marsman Building, starting Monday, June 20, and receive ₱.0823 for every share of par value of ten centavos.

Of the authorized capital of ₱1,000,000, the sum of ₱250,000 was subscribed and paid in, of which amount ₱206,114.87 is left, the remainder having been spent in exploring the property of the company. As soon as it was learned that the property was worthless for mining purposes, all expenditures were stopped and the company is thus enabled to return 82.3 per cent of the amount subscribed. The sum of 364.87 has been set aside to cover expenses of dissolution, the remainder to be returned to holders.

George C. Dankwerth, president of
(Please turn to next page)

Valley Placer explained that while the matter of dissolution was favorably decided on at the annual meeting on March 22, 1938, it has not been possible to hold the final meeting until June 15. At a special meeting of shareholders held on December 11, 1936, the board was authorized to enter into an agreement with Gold Pocket Mines, Inc., to acquire the property of that company in exchange for stock of Valley Placer at such valuation as would be fixed thereon by the government at not to exceed P388,500, this valuation to be submitted within 18 months from that date. The 18 months term did not expire until June 11, 1938, and as the valuation had not been given to Valley Placer, the board of directors at a special meeting held on Monday, June 13, declared the contract rescinded and cancelled. The funds of Valley Placer have been on deposit in the Peoples Bank & Trust Company in the company's name, and the monthly bank statements were presented at the meeting for the inspection of shareholders.

Marsman & Company never charged Valley Placer a management fee, and at its own expense paid the salary of a placer mining engineer for some four months spent on the property. No directors' fees were paid after the property was proven non-commercial.

A vote of thanks to Marsman and Company and to the directors for the economical way in which the affair of the company have been conducted, and for the care with which the interests of the shareholders have been guarded was unanimously passed.

ITOGON MINING COMPANY

During May the Itogon plant treated 31,385 tons of ore from which P356,387.10 was recovered, only slightly under the record-breaking output of the preceding month. Recovery per ton was P11.35, and extraction was 85.48%. Development work totalled 3,036 feet; of the 1,480 feet of capital development, 151 feet were in ore; of the 1,556 feet of operating development, 705 feet were in ore.

The Taka Shaft-Drain Tunnel connection was cleared out during the month. Retimbering of the Taka Shaft from the 750 level to the 875 level will be finished early in June, and it will then be possible to make use of the shaft to the 875 level. This will result in lowering the cost of delivering materials to this level. Concreting the shaft from the 200 level up is well under way.

Results obtained on the 600 level Taka have been very encouraging to date. The vein is about 12 feet wide and the grade of ore is above the average.

Two narrow veins, one of which merits exploration, were cut in the 96 vein crosscut 500 level Sesame.

The new apartment house for staff members was completely built during the month, and is now occupied. Apart from a little work being done to roads and bridges in preparation for the wet season there is no construction work now under way.

General conditions in the camp were good. The total cost per ton milled was lower than the April figure.

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SUYOC CONSOLIDATED MINING COMPANY

Suyoc Consolidated produced P140,722.75 in May from 6,652 tons of ore treated. The average recovery was P21.15 per ton, and extraction was 84.53 %.

Development advance totalled 1,736 feet. Of the 989 feet of capital development 24 feet were in ore, as were 70 feet of the 747 feet of operating development.

The 2201 North tunnel has completed the turn from the main Palidan tunnel and is in good ground. 2201 South advance has been slow due to encountering difficult ground. This face has been turned south. Progress on the 2200 station has been slowed down due to encountering of heavy ground. It expected that the shaft raise from this heading can be started by the first of July.

2042 West crosscut was started to the west to cut the projection of the 18142 feature and to permit a service raise to the 1900 level at this point where good ground is assured.

During the first part of the month the primary concentrates were put through a 36-inch Fagergren cell as a cleaner in an effort to reduce the concentrate volume going to the cyanide circuit, but this operation did not prove feasible. Mill tests conducted during this period treating 200 tons of concentrates using sodium cyanide (98 %), resulted in an indicated saving of from 13 to 14 centavos per ton milled.

All water columns and pumps have been salvaged from the 2000, 1800, and

UNITED PARACALE MINING COMPANY

A new monthly production record was made by United Paracale during May, with an output of P220,023.73 from 9,394 tons of ore treated. Recovered value was P23.42 per ton, while extraction was 87.74 %.

Development footage totalled 1,295 feet, of which 834 feet were capital and 461 feet operating development. Of the capital development 304 feet were in ore, as was 177 feet of the operating advance. Generally good results marked the development progress.

Baluarte shaft No. 1 reached the 545-foot level during the month. The station cut on the 525 level was continued during the month.

The mill operated satisfactorily during the month.

A part of the old bunkhouse was connected to the blacksmith shop building, thus affording much needed additional working space in the latter.

All power house machinery functioned satisfactorily during the month. Weather conditions were good throughout May.

1600 pump stations, this equipment no longer being needed because of the diversion of drainage from the mine to the Palidan tunnel.

J. W. Harman has taken the place of C. G. Scott who resigned, on the mill staff.

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MINING

FOR THE INVESTOR



By Ralph Keeler

THE MINER AND THE LAW

Hardly less important than finding a mine, or what the finder hopes will turn out to be a mine, is the act of securing possession of it. It is the exception rather than the rule for the original discoverer of a mining property to wind up owner of it, or even of part of it. The history of mining throughout the ages is filled with examples of long-drawn-out legal wrangles over the ownership of mining properties.

Ever since the first discoveries of metals, way back a thousand or more years before Christ, it has been realized that "it is to the public interest that deposits of minerals should not be allowed to remain idle and undeveloped." *

With this in mind laws have been framed in all countries to encourage the discovery and exploitation of mineral deposits. Usually, throughout the ages, the ruler or the government has attempted to obtain a share in the profits of mining. In many cases monarchs actually worked mines for their individual profit, using slave labor. Egyptian mining was an outstanding example of forced mining labor: all mines belonged to the government, and thousands of slaves were sent on expeditions to the Sinao peninsula to obtain gold. The early Greek

mines belonged to the state, and were worked by citizens who paid the government a royalty in return for the privilege of mining.

¹ The conquest by the Romans of most of the ancient world did much to advance the science of mining. The Roman legions claimed for their state the mines which they acquired as they marched into France, Spain, Britain, Africa, Egypt, Greece, and Asia Minor. The Romans farmed out some of these mines to speculators, leased some of them to people of the locality on a royalty basis, and permitted some to be held and worked privately.

It has been proven, through years of bitter experience, that it is usually better policy for the state to extend all possible encouragement to those who would explore and develop its mineral resources. Today the mining laws of most civilized states permit free prospecting on the public lands to citizens, protect the rights of discoverers of mineral deposits, and provide for the permanent acquisition of mineral property on reasonable terms.

² The early miners, however, were not so fortunate; most of them worked for the ruler, and the fruits of their labors

¹ All About Mining, W. H. Witcombe, 1937

² The Economics of Mining, T. J. Hoover, 1933, pp. 226-227

* Encyclopaedia Britannica, 11th Edition

[The first of this series appeared in the April Magazine.]



for the most part, went to swell the royal coffers. Way back in 5200 B. C., the king of ancient Egypt sent out expeditions at regular intervals to obtain copper and turquoise from the rocky country around Mount Sinai. Officers of the king were in charge of these expeditions, and slaves of many castes, each with a special duty, performed the actual labor. Any metal recovered by these slaves, of course, went to the king. Whatever benefits the miners received for their labor depended entirely upon the good will of the king (and kings of that era were not conspicuous for their generosity).

The rich lead-silver mining district of Mount Laurion was worked by the ancient Greeks from 700 to 200 B. C. The land was considered the property of the state, but the people could lease the right to mine the minerals. It is reported that Xenophon urged the citizens of Athens to form mining companies in order to improve the finances of that city. Herodotus speaks of rich mines of gold and silver on the island of Siphnos in the Aegean, the yield from which was divided year by year among the citizens. The lessee was required to pay a large tribute to the state, and there were elaborate provisions governing the rights to mine, and for the regulation of the mining operations, which were performed entirely by slaves.

The Romans were avid seekers of minerals. They were the first to work out the theory of state ownership of mining land and embody it in numerous laws for the regulation of mining in various parts of the empire. As the Roman military machine marched over the land of other states, the conquerors took over the mines and worked them, either by leases from the State to public companies or to individuals. In some cases the government itself worked them. This idea of state ownership of minerals formed the basis of the contention of Regalian rights in Europe, and in the United States, later on.

The feudal lords of Europe, during the Middle Ages, attempted to enforce the Roman idea that the minerals in the earth belonged to the king. The right to mine was given to individuals or groups by charters, which gave the conditions and the payments under which the lease was granted. Much of the practical modern mining code was evolved during these years, the main concept being the old Roman doctrine of Regalian right.

Today there are two basic principles underlying the mining laws of the world, the leasing or concession system, or the claim system.

The leasing system provides that the state or the private owner has the right to grant leases or concessions to mine operators, as they see fit, subject, of course, to certain binding restrictions and usually to the payment of certain fees and royalties. This system originated in the Regalian idea that all mineral wealth belonged to the crown; it is in effect in practically every mining country in the world except the United States. More than five-sixths of the mining areas of the world, according to reports¹ are worked under this system. It has been found, throughout the years, that a leasing system, although subject to abuse occasionally because it often places the privilege of mining and of granting mining concessions in the hands of a few individuals, is more satisfactory than any other method yet devised.

The claim system was developed in the United States, in the western states following the gold rush of 1849 to California. It resulted from the desire of the prospector to work a mineral deposit discovered on the public lands, and to obtain legal ownership of the property.

The United States acquired, through cession, a considerable amount of land, extending from the Mississippi River

¹ The Economics of Mining, T. J. Hoover, 1933, pp. 361-362.



to the Pacific Coast. Most of this land was acquired from France and Mexico, both of which based their mining law on the Regalian doctrine. This principle was, of course, in direct conflict with the Anglo-Saxon common-law principles that were brought to the United States by the first settlers.

From 1807 to 1847 Congress leased mineral lands, but this system proved unsatisfactory when, therefore, the gold rush started in 1849, the first arrivals found that the mineral lands were unsurveyed, and that there was no attempt to control mining in any way.

The small groups of miners of necessity had to work out their own laws. Each camp formed its own code. The rough miners, practically all of them entirely ignorant of legal procedure, got together and passed rules based on common sense and upon the needs of the moment. The term "law of the lariat" has been applied to these early codes: "With the lariat they measured the distance assigned to each miner along the gold-bearing gulch—a double portion to the discoverer, and a single portion to his successors, in the order of their coming. With the lariat, they hung, after such due process of law as was available, the rascal who stole a horse or a bag of gold-dust, or a mining claim, or killed another man without giving him a fair chance notice and a chance to defend himself." †

There are but few countries in the world that have the policy of "open door" which characterizes that of the United States. Most nations surround their mineral resources with so many fences that it is difficult enough for nationals to acquire them, to say nothing of foreigners.

The study made by J. W. Frey in 1933, as a part of "The Mineral Inquiry" organized by the American Institute of Mining and Metallurgical Engineers to make factual studies of

the mineral resources of the United States and of the world in their political and international relations, is of considerable help in coming to a sensible understanding of the problems facing the mining industry of the Philippines, as well as those confronting the new government itself.

Mr. Frey's contribution to the mineral inquiry was entitled "The Open-Door Policy of Mineral Development". The vital part of it as applied to the present situation in the Philippines follows:

"The system of mining law operating in the United States is based upon the theory that the unappropriated public land belongs to the people of the nation individually and that anyone has a right to such land for minerals, and as a discoverer has a right to keep them. The owner of the land fee has been almost without any legal restrictions as to exploration and exploitations. Incidentally, this is one of the reasons why it has been extremely difficult to control the production of minerals in the United States. There are relatively few other countries in which the American policy of 'open door' exists. The degree to which the door is closed extends through a wide range from compliance with a few simple regulations to the absolute prohibition of mining by certain classes. The citation of the mining laws of a few countries will perhaps serve to indicate the difference in mining philosophy.

"The Canadian policy toward mining operations is generally regarded as liberal. Foreigners almost without exception are permitted to operate on the same terms as nationals, although in several provinces registration and special fees are required. Exploration and exploitation are carried on under a system of licenses and leases. This condition is largely traceable to the fact that mining rights exist or have existed in favor of the Crown. While exceptions may be noted, the fundamental characteristic of Canadian mining laws is that development once anticipated

† Comparison of Mining Conditions Today with Those of 1872, R. W. Raymond, Trans. A.I.M.E. Vol. 48 (1915), p. 299.



must be pursued. This is especially true on state lands. The commerce in minerals is not entirely free, for there are several that must be refined within the country. Without going into detail, it is perhaps sufficient to point out that, while there are few restrictions upon foreigners entering the Canadian mining industry, Canada should not be regarded as a country with a *laissez faire* policy.

"In Latin America most of the mining laws are based upon the theory of concession. While in almost all of the countries prospecting is declared to be free and open to citizens or aliens, the regulations are such as to restrict the class of individuals, who can engage in that activity. The restrictions on prospecting, however, would not ordinarily affect the activity of any well organized foreign company, although they would in a very large number of instances prohibit prospecting by impecunious persons. According to the United States Bureau of Mines *Information Circular 6308* (July, 1930), 'Mining Laws of Latin America—General Summary,' Brazil alone among countries in South and Central America imposes any very serious restrictions on aliens in the matter of mine ownership. In that country it has been declared by an amendment of the constitution that mines and mineral deposits necessary to the national safety and defense, and the lands where they exist, cannot be 'interpreted' to aliens. But there is some question as to what minerals are embraced in this distinction.

"Mexico makes a distinction between individual persons and companies. A company is not permitted to acquire mining or exploration concessions from the state, either directly or indirectly, but a person may do so by renouncing the protection of his own government.

"In Columbia there is a local restriction against aliens in the public domain in several districts. But it is understood that this condition exists in anticipation of a new mining code.

"Guatemala permits none but nationals or naturalized aliens to obtain title to mining land within a narrow zone along the frontier.

"Peru has reserved a zone fifty kilometers wide along the frontier, as regards mines and fuels, land and water, but this restriction on alien ownership may be lifted in case of national necessity.

"According to the Bureau of Mines *Circular 6308*, 'any restrictions of the other countries in this regard are merely formal and apparently not designed to prevent aliens from prospecting or mining.'

"In Portuguese possessions the alien must always relinquish his national jurisdiction. The ownership of mineral rights is vested in the state and the government may restrict any land with regard to prospecting rights.

"Exact information is not available concerning all the French African possessions, but in the nature of the French system of government it appears that the same type of restrictions obtain in French Africa as in France, where concessions may be granted to foreigners only with the consent of three ministerial departments. This procedure in practice is most restrictive to the foreigner. If the government does not see fit to grant a permit to explore and exploit, it is not obligated to give any reason. Where a majority of approximately two-thirds of a control of a company is French there appears to be little or no objection to the other third being foreign.

"Egypt claims exclusive ownership of all mineral substances and will not sell or grant term leases on them. Petroleum is subject to preemption or preferential purchase. Foreigners operate on the same terms as subjects if they have secured licenses or leases through the minister of finance upon the recommendation of the comptroller.

"The Belgian Congo is practically closed territory for the alien, unless it appears advisable to make concessions



under the 'royal umbrella.' Katanga and Kuri are covered by special committees in which mineral grants must be approved by the Ministry of Colonies. Typically such decrees as have permitted the introduction of alien capital have limited the percentage of foreign capital and have requested the purchase in Belgium of a very considerable part of any equipment and supplies.

"In British Africa, in the mandates of Cameroon, Togoland and East Africa, Americans by treaty have the same rights as British. In the Gold Coast, Ashanti, Nyasaland and Nigeria, no aliens are granted the right to explore for oil. Diamond mining, except alluvial, is a monopoly in all parts of British Africa. The most liberal policy as to the open door in British Africa is the Union of South Africa, where there are no discriminatory laws for aliens. In the Transvaal mining is not free and open and no land can be prospected until declared open by the Ministry of Mines, which must be satisfied that a real discovery has been made and that a reasonable basis exists that the mineral occurs in profitable quantities.

"In Guiana, when large-scale prospecting is indicated, the license, in the nature of a concession, is within the discretion of the governor, who is supposed to consider the public import or imperial utility of the proposed project. The government has a prior right to oil. In both Northern and Southern Rhodesia mining rights are vested in the British South African Company. This has been criticized as being a most unsatisfactory condition.

"Turning to Asia we find several countries that have definite closed-door policies. Japan is closed to all but subjects. In China free exploration is not permitted. All ordinary minerals, aside from building materials, in theory belong to the State, though in practice considerable bodies have been alienated. Free-simple ownership is not possible. Only citizens may explore or operate mines, but a mining company, which must be incorporated in China, may

join with foreigners up to 50 per cent of its capital.

"In order to secure the right to prospect in British India, one must secure a certificate of approval and a prospecting license. These can be obtained only by British subjects or British-controlled companies.

"In the Federated Malay States there is no distinction between nationals and aliens. However, the control of mining and mining properties and the conditions required for operation insure that the British government and its citizens will not be handicapped by foreigners, and regulations have been made which require the tin produced to be smelted in the British Empire.

"The text of the Netherland Indies mining laws does not expressly discriminate against aliens. As between the United States and the Netherland Indies there is a reciprocity agreement. However, before exploration and exploitation can be carried on, legislative approval must be obtained.

"In Europe there is a considerable mixture of policy. In general the closed-door policy exists unless it is expedient for the state to rule otherwise.

"In Spain foreigners apparently are on equal terms with nationals in digging small holes, but the foreigner must receive special authorization before assuming the control of mining operations. Mining is on a decree basis, which means that the granting of mining rights ultimately reposes in the ministry.

"Norway does not specifically discriminate against foreigners, and when it appears advantageous foreigners may be granted rights. The law is, however, not specific and in consequence the government may interpret the law in its discretion.

"In Belgium foreigners and citizens are subject to the same conditions. While there are many mining regulations, they are not preferential.



"Rumania has recently liberalized its mining law and has, at least by implication, removed all discrimination against foreigners. However, in granting concessions the state may determine on a basis for royalties or partnership by the State and the leaseholder. Several Salines are state monopolies. The state has set up oil reserves.

"Bulgaria, Yugoslavia and Czechoslovakia, according to their mining laws, appear to be interested in establishing mineral enterprises of value to their national economy through the assistance of foreign capital.

"Further cataloguing of the policies of nations toward aliens would add very little to the general subject. Sufficient has been given for one to make the general statement that there are few places in the world where the door is wide open for alien capital for the development of mineral lands. In very large areas of potential mineral development the door for all practical purposes is closed. There are some areas to which acceptable enterprises are welcome if the foreign State feels justified in opening the latch after it has had a fair look at the visitor through the window, and there are some countries in which the door may or may not be closed after the miner has gained entrance."

A point about which there has been endless dispute for centuries and which even today is still the subject of much controversy, concerns the boundaries of mining properties.

The earliest miners, from all evidence that can be obtained, followed the vein wherever it led, without paying much attention to the surface rights of others. Boundaries of mining properties in ancient Greek lead-silver mines are known to have been vertical, that is, the owner or leaser had the right to mine only that area which lay directly under the surface of the property. An early Roman law in force in Spain permitted the discoverer to move his

side-lines a certain number of feet for each degree of dip, so that the extension of the vein at depth could be included in the property.

These two theories govern the right to work underground mineral deposits, then: first, that the miner can work the ore within the limits formed by planes vertical to the surface boundaries and second, that the "extra-lateral right" principle gives him the right to follow his vein on its downward courses, even if it dips beneath the surface of an adjoining claim. The first system, by its very simplicity, is easy to apply. The second has led to hundreds of disputes, for geologists seldom can agree as to the exact genealogy of various veins.

The vertical side-line theory is used in practically every country except the United States, where the extra-lateral right application is generally used. A modification of this system is found in that extra-lateral right may be legally nullified by agreements among titleholders in a certain district. This practice has been adopted in some of the copper-producing areas, with general satisfaction from the adoption of vertical boundaries.

A study of the mining laws of the nations leads to the conclusion that many of them have been framed by individuals better acquainted with the business of legislation than with that of finding and developing mines, according to T. F. Van Wagenen, in his "International Mining Law". This is particularly true of the British law, but is much less the case among those of the Latin-American class.

The United States was fortunate in that its mining law were drafted by miner and explorer without the aid of either lawyer or mining engineers; the results obtained have been, on the whole, satisfactory.

A study of the mining laws of any country is of no particular help to the mining investor, except that it would be well for him to understand some of the complexities attending the acquisition



of the right to extract minerals. Most foreign laws depend upon, first, the acquisition of permission to explore mineral lands, and next, obtaining permission to work them if valuable deposits are found.

Discovery and development are fundamental requirements for the possession of mining rights in the United States. In other words, the miner has to find a mineral deposit, and has to do enough work on it (the national U.S. law provides for \$500 worth of work) to maintain a title. In addition, he must do a certain amount of labor and improvement on it each year—this is assessment work, and \$100 worth must be done annually on each claim in the United States.

Practically all of the states require a posting of a notice of the location of a claim, and the dimensions of the claim must be stated with reasonable accuracy. The recording of a notice of location is required by most states, although not by national law. These states allow from 30 days after date of discovery to 90 days after location for such recording.

Owner of a claim is conveyed by a *patent* which, in the case of a lode claim gives right to all surface land comprised in the location, and right to all veins, lodes, and ledges throughout their entire depth, whose *apexes* lie within the boundaries of the location; the right to follow the vein beyond the boundaries is subject to various restrictions in different localities. The boundaries of the patent may be invaded by a neighboring lode locator follow his own vein (presumably a different vein from that of the patent owner) on its downward course beneath the patented surface—this is the law of the apex. Patent to a *placer* claim gives the owner everything within the vertical boundaries of the claim except lodes whose apexes are within these boundaries and whose existence was previously known, and except portions of a lode underlying the placer surface which may be followed by a neighbor-

ing lode locator lawfully following his vein on its downward course.

As each step in obtaining a patent is taken without contest, the claim to a title grows in strength. A lode claim in the United States may be 1,500 feet along the vein or lode discovered, and 300 feet on each side of the middle of the vein at the surface. When improvements to the amount of \$500 have been made on a claim, and an affidavit to that effect filed in the record office, a patent may be applied for. This improvement must be for the purpose of developing the property with the idea of extracting minerals; labor must be employed for sinking a shaft, driving a tunnel, or cutting trenches. It cannot be the clearing of land, sawing timber, or building houses.

A patent is the deed or grant which the United States grants through the Land Department, conveying legal title to the location. It is obtained by applying to the United States surveyor general of the district, and by complying with certain requirements. After all papers have been filed, and the area surveyed by governmental officials, copies of a report on the application is filed in a conspicuous place on the claim, and is published in the newspaper nearest the claim. If at the end of 60 days no adverse claim has been filed with the land office, it is assumed that the applicant is entitled to a patent, upon payment of five dollars an acre.

A bitter legal battle is being waged in the Philippines now as to whether or not the new Philippine government will recognize the rights of locators of claims located prior to November 15, 1935, the date on which the new constitution went into effect. Some 110,000 mining claims were located in the Islands prior to November 15, 1935. Of these but 149 were patented, although many applications for patents had been filed.

It has been held in the United States that the location and recording of a mining claim on the public domain by a qualified person constitutes a con-



tract with the government. Mining operators in the Philippines thus declared that their location and recording of mining claims prior to November 15, 1935, constitute a contract which must be kept by the new government. They base their contention on the fact that in the Act of Congress of July 1, 1902, in the Jones Law, and in the Tydings-McDuffie Act there are provisions to the effect that no law shall be enacted in the Islands which deprive any person of life, liberty, or property without due process of law, and that no law impairing the obligation of contracts shall be enacted.

Administrative officials of the Philippine government, however, have seen fit to interpret the provisions of section 68 of Commonwealth Act 137, which governs the acquisition by qualified persons of leases of mineral lands, to apply not only to claims acquired under that act, that is, since November 15, 1935, but also to those acquired under the old law. It has been necessary for owners of "old claims"

to institute suits to establish their rights. Several such suits are now pending in the Manila courts, and have been for months—the legal department of the new government is obviously reluctant to make a definite decision.

The claim system brought about endless confusion during the Philippine mining boom of 1935 and 1936. Only a small portion of the mineral lands of the Islands have ever been surveyed carefully, and existing records were extremely vague. Claims were frequently located by individuals who were never within miles of their location. In the Paracale district claims were staked three and four deep—at one time the number of claims staked in Camarines Norte was about four times the entire area of the whole province. Most of such claims turned out to be worthless, and were not worth fighting over. In spite of that, however, there are many legal tangles in that region and elsewhere which will be a long time in the untangling.

(To be continued)

SAN MAURICIO MINING COMPANY

Another new monthly production record was made during May by San Mauricio, with an output of ₱348,433.44 from 9,527 tons of ore treated. Recovery per ton averaged ₱36.57, while extraction was 93.4%.

Development work amounted to 1,019 feet, of which 688 feet were capital and 331 feet operating advance. Of the capital development 157 feet were in ore, as were 209 feet of the operating development.

Results of development work were very encouraging. The Tacoma development on the 300 level continues in extremely high grade ore although width are narrower. The Tacoma No. 3 north drift was driven 78 feet during May, with high assays showing from a stringer opened up in the footwall. Crosscut east 1490 north on the 400 level is going ahead at good speed and should cut the Tacoma No. 3 vein about June 15.

At the Santa Ana mine all raises are in ore. Stope preparation is well under way on the 300 level.

The drainage adit was advanced 136 feet and continues in very bad ground, with 124 feet to go to connect.

Stope operations were normal during the month, with all stopes in good condition. A large amount of stope preparation is being done. The mine is in very good condition with ore plentiful.

The ore bins, pockets, and skips at the main shaft are ready for use. The ore passes and the pocket are being filled preparatory to changing over to the central hoisting plant.

The installation of Allen Diesel engine No. 5 was completed during the month. Work on the installation of the double drum Hendy hoist was starting at Santa Ana.

Reuben M. Austin, American shift boss, died at his home from heart failure on May 19.

MARSMAN BUILDING CORPORATION GETS AHC RESIDENCE CONTRACT

The contract for the construction of the United States High Commissioner's office and residence in Manila has been awarded to the Marsman Building Corporation; notice to that effect was received early in June from Washington. It is expected that construction work be started early in July.

The contract price is \$440,794. Marsman Building Corporation submitted the lowest of five bids received. The

building will be erected on reclaimed land on Dewey Boulevard adjoining the Elks and Army and Navy Clubs. It will be three stories high and will have 20 residential rooms and 27 rooms for the Commissioner, his staff and clerks. The land has an area of 17.14 acres with 442 meters frontage on Dewey Boulevard.

The project will take around 18 months to complete, it is believed.

BINDERS AVAILABLE

With this issue the Marsman Magazine completes its second year of publication. Those who have saved their copies during the year may secure binders for them by addressing the editor, at a cost of ₱2.25 each; for fifty centavos extra a name can be stamped in gold on the cover.

Those who so wish may have the volume bound in permanent form, by

sending the 12 issues (July, 1937-June, 1938) to the office of Marsman & Company in Manila, at a cost of ₱3.50 for each bound volume.

The binder is of the spring type, with hard blue covers. Each binder will hold one volume, 12 issues, and no holes are necessary. The name and volume number of the magazine is stamped in gold on the cover.

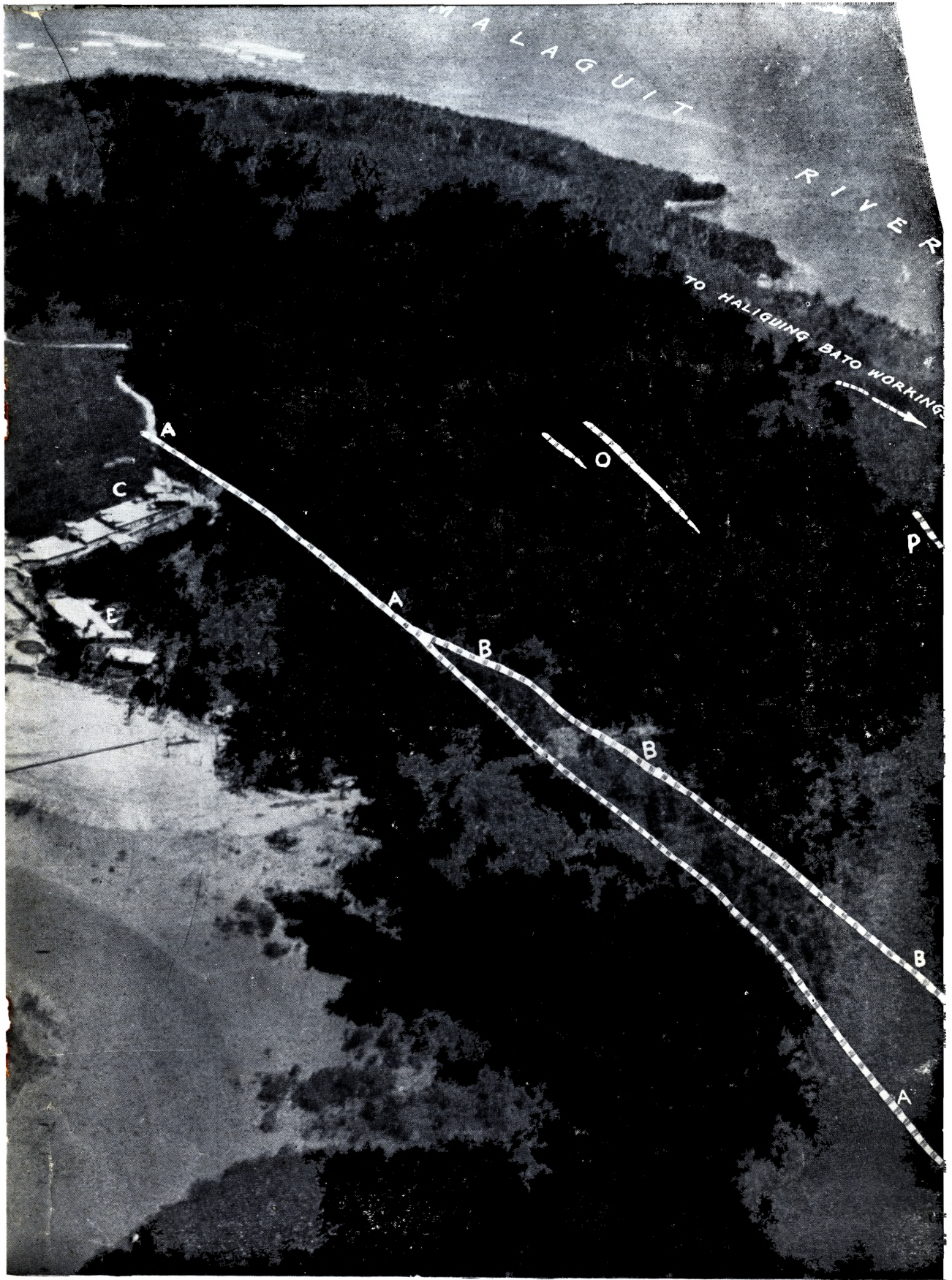
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MANILA



NY VEIN SYSTEMS AND BUILDINGS

shows. The Baluarte Vein is labelled HH. Next to it the San Antonio vein, AAA, may be seen; the
 At O are the Donald workings, with the Kalaw workings shown at P. The Haliguing Bato or Jeff
 scale mill building is at C. D is the main office; E, the Marsman hospital; F, the machine shop; G,
 ling Corporation offices; M, Marsman & Company administration building. N is the road to the United

MISSING

PAGE/PAGES

WELHAVEN-ATKINSON

At a lovely wedding held in the home of her parents, Mr. and Mrs. Alf Welhaven, Miss Lillebess Welhaven became the bride of James E. Atkinson on May 24. Only a few close friends of the Welhaven family attended the wedding and the informal reception which followed.

Both Mr. and Mrs. Atkinson are well known to the Marsman organization. The bride, the daughter of a vice-president of Marsman and Company, has made her home in the Islands since 1926. A graduate of Brent School, Baguio, she finished her education at Mills College

and Stanford University, California.

Mr. Atkinson, who is from Berkeley, California, came to the Philippines in 1930. He was general superintendent of the United Paracale Mining Company during the early development of the property, and under his supervision the plant was constructed. He has been engaged recently in exploration and development work in the Netherland East Indies.

Mr. and Mrs. Atkinson left Manila immediately following the ceremony for a six-months' honeymoon trip around the world.

Close Human Relationships

—exist between this bank and the people of this Community.

THERE are no dividing lines between the interests and welfare of this bank and the interests and welfare of its neighbors, whether or not they are customers.

Our depositors who entrust their funds to our keeping represent a broad average of the men and women of the Community. Our borrowers are men and women engaged in active business enterprises which, we feel, entitle them to the use of the bank's credit resources created with the aid of our depositors' money.

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THE SPECTROGRAPH AND ITS APPLICATION TO INDUSTRY AND MINING

BY

T. A. DeVore⁽¹⁾ and D. L. Gardner⁽²⁾

The subject of the spectrograph is divisible into three parts which are: (1) what is it?, (2) what does it do?, and (3) what is its commercial value and how can it be used.

(1) *What is it?*

The spectrograph is a measuring and recording machine which will resolve and break up light into its component parts. It measures the light emitted in the volatilization of any substance. Two types are in common use (1) quartz prism and (2) grating spectrograph, both of which resolve light. The latter is most satisfactory. Substances may be volatilized by a gas flame, a spark or a carbon arc. The flame is used for solutions and the alkali metals, the spark for gases and easily volatile elements, while the arc is best suited for general work.

The quartz prism instruments do not resolve the light uniformly, e.g. the waves are not evenly spaced from one end of the spectrum to the other, thus making it necessary to resort to higher algebra in measuring every critical line. This mechanical difficulty has inhibited the commercial development of

spectrograph and while the instrument is useful to scientists and astronomers who measure time in light years and deal in the abstract, the prism spectrograph is not in general use. Those of us who must find the answers quickly demand a rapid method. Consequently, it was not until the development of a grating spectrograph by Drs. Lindhurst and Hasler at California Institute of Technology, that the instrument began to receive general application. Dr. John Herman (*) installed one in his laboratory in Los Angeles in 1935 and has published a short description of its application. Other instruments are in use throughout the world by assayers, chemists, metallurgists, industrialists and criminologists. Such a grating spectrograph has been installed by Marsman & Company at San Mauricio Mining Company.

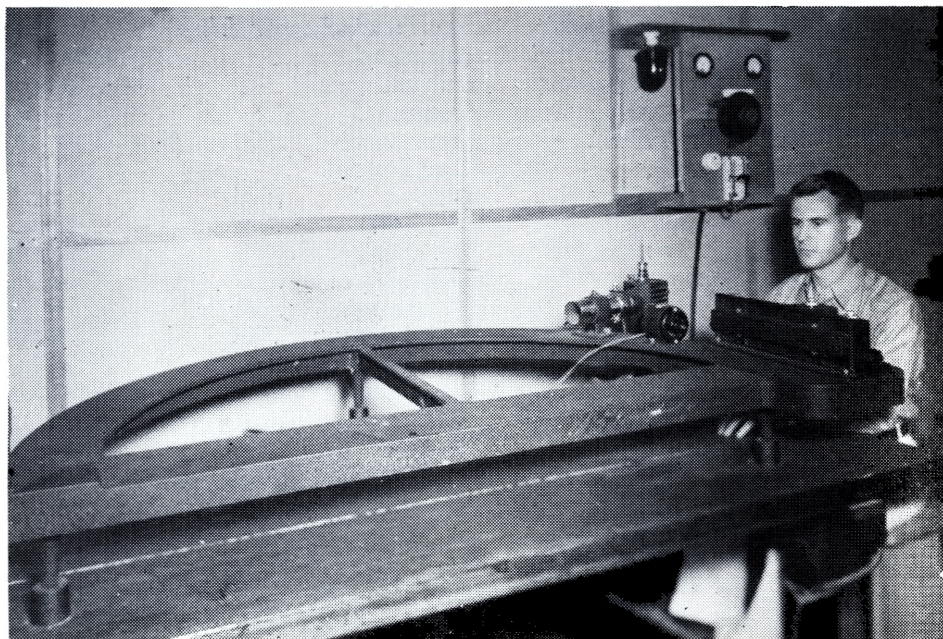
The grating is a metal disk three inches in diameter made of a special alloy. One face has a slight inward curvature and upon this face 48,000 lines are ruled one inch long. In a two inch space these lines are cut automatically in a continuous run of six days and nights. If the machine stops before covering the two inches, the work is ruined.

(1) T. A. DeVore—Metallurgist, San Mauricio Mining Company, Mambulao, Camarines Norte, Philippine Islands.

(2) D. L. Gardner—Geologist, Marsman & Company, Southern Division, Paracale, Camarines Norte, Philippine Islands.

(*) Herman, John—Arc Spectrograph for Mineral Analysis, F. & M. J., Vol. 136, page 632, 1935.

The tube and slit (from left to right) which control the amount of light from the arc house at the far end of the tube. The film is exposed by opening a hinged cover across the front. In the background is a switchboard which controls the direct current supply for the arc. Mr. DeVore is seated at the spectrograph.



The great number of lines gives the grating a higher resolving power than the prism instrument and permits the separation of two spectrum lines 0.1 Angstrom unit apart. Photographic speed is obtained by evaporating aluminum on the surface of the disk giving a high reflecting power.

The camera uses film in place of plates used in prism instruments and which adds greatly to the speed of operation, and unlike most cameras has no lens but simply a long slot which exposes 12-1/2 inches of film at one time. The camera is moved up and down so that four spectrograms can be photographed on one length of film.

Only one lens is used and is placed in front of the arc to keep out harmful fumes and to illuminate the slit evenly. The slit confines the received light to a narrow beam from 0.01 to 0.03 centimeters in width and it can be opened or closed at will.

The samples are volatilized by carbon arcs 1/4 inch in diameter. An one-eighth inch hole is drilled in the lower rod 1/8 inch deep to hold the powdered sample. In the case of metallic samples rods of the metal may be used for arcing or when only a few milligrams are available they can be placed in the drilled carbon just as any other sample. Direct current of five amperes at 200 volts is passed through the electrodes for one minute which completely melts the sample and volatilizes a large part. These volatile fumes give off the light

which is reflected and photographed, thereby making a permanent record. The technique is being improved constantly and it is expected that eventually a great deal of chemical work will be done by the spectrograph, for it has only been within the last few years the spectrograph has become a practical instrument. A further improvement has been made in reading and interpolating the results by projecting the film on a screen. Before this innovation it was necessary to use a microscope but it is now possible to read the results as they appear on the screen with none of the eye strain which always results from microscopic work.

(2) *What does it do?*

Nearly all of the known elements which are of economic value are determinable qualitatively and quantitative results are obtainable to the nearest factor of ten. In special cases for a complete study of one or more elements quantitative work, 90 per cent accurate, can be obtained in the determination of minute percentages of many elements. Most of the elements even if present as one part in one hundred thousand are recorded and many of the elements present as one part in a million can be distinguished and the quantity estimated.

The following elements can be determined. The approximate lower limit is given for those elements when this limit is known.

ELEMENTS DETERMINABLE BY THE ARC SPECTROGRAPH

<i>Elements-Lower Limit</i>			<i>Elements-Lower Limit</i>			<i>Elements-Lower Limit</i>		
Aluminum	.001	%	Holmium			Rubidium		
Antimony	.01	"	Indium			Ruthenium		
Arsenic	.01	"	Iridium			Samarium		
Barium	.001	"	Iron	.001	%	Scandium		
Beryllium			Lanthanum			Silicon	.005	%
Bismuth	.01	%	Lead	.001	%	Silver	.0003	"
Boron	.001	"	Lithium	.005	"	Sodium	.005	"
Cadmium	.005	"	Lutecium			Strontium	.005	"
Cesium			Magnesium	.001	%	Tantalum		
Calcium	.001	%	Manganese	.001	"	Tellurium		
Carbon			Molybdenum	.001	"	Terbium		
Cerium			Mercury	.01	"	Thallium		
Chromium	.001	%	Neodymium			Thorium		
Cobalt	.001	"	Nickel	.001	%	Thulium		
Columbium			Osmium			Tin	.005	%

Copper	.0001	%	Pelladium			Titanium	.004	%
Dysprosium			Phosphorus	.1	%	Tungsten	.004	%
Erbium			Platinum			Uranium		
Europium			Potassium			Vanadium	.004	%
Gadolinium			Praseodymium			Yttrium		
Gallium			Radium			Ytterbium		
Germanium			Rhenium			Zinc	.006	%
Gold	.005	%	Rhodium			Zirconium		
Hafnium								

(3) *What is its commercial value and how can it be used?*

Economically the spectrograph has been applied to practical use by industry, chiefly chemical manufacturing and metallurgical engineering. It is used in a minor way by criminologists, assayers and geologists. Only within the last few years has the method been available to the geologist and mine operator as a practical way to solve their problems.

It opens up new possibilities for profit to the miner. Most samples are assayed for gold and silver and any base metal which the eye shows to be present. This visual method of assaying was one of necessity since few prospectors have the financial backing to have even one sample completely analyzed at a cost of nearly ₱400.00. The well organized mining company has not gone to this expense, not that this amount is too high, but that it is customary to take so many samples in evaluating a prospect that such a procedure would make prospecting prohibitive. The spectrograph meets the challenge by completely determining an hour's time all elements found in prospecting and mining.

A consideration of its possibilities leads to the conclusion that spectrographic analysis are especially applicable to such Arts and Sciences as:

- (1) Chemical Industry
- (2) Metallurgy
- (3) Mining and Geology
- (4) Chemical research
- (5) Criminology

All chemical process must be controlled by the laboratory and any method of saving time in analyzing samples will be reflected in greater profits and closer control of supplies and manufactured products.

Some of the many industrial uses are as follows: Determinations of undesir-

able elements in industrial water or the causes of corrosion to pipes and boilers. In the manufacture of Sulfuric Acid any element harmful to the catalyst can be determined in the source of sulfur even before the latter has been completely volatilized. The causes of poor hydraulic properties in cement when due to elements present in minute quantities can only be determined by the spectrograph. The composition of clays suitable for brick and pottery can be determined at small cost. In the mixing of paints any adulterant not suspected or the cause of off color pigments is quickly shown. Sugar factories using considerable bone black, lime, and sulfur for bleaching, must be certain that no impurities are present which cause a low yield or off color product. These impurities are most efficiently determined by spectrographic analysis. The textile industry finds a ready use for the spectrograph in the analysis of dyes, mordants, and metallic fixing agents in order to prevent impurities which may cause fading or poor colors. In the manufacture of explosives rigid control of all supplies must be maintained in order that no unknown may creep in and lower the efficiency or cause premature detonation. Glass production requires close control of traces of certain oxides which cause undesirable colors. The determination of these traces is a long drawn out procedure, however, the spectrograph quickly shows all traces present with a considerable saving of time and money. These are only a few of the many uses but serve to show the wide application and diversity of this method of analysis.

Metallurgically the spectrograph is particularly useful to the metal industries. Small amounts of impurities in metals greatly affects their working qualities and are difficult to determine chemically. Elements requiring a day's

time to analyze by the usual means are determined by the spectrograph in a few minutes, and furthermore, many elements entirely unsuspected will be revealed. The latter are often the cause of faulty brass and iron castings or the explanation of poor machinability of wrought metal and alloys.

In mining the principal uses are:

- (1) Study of ore body zoning
- (2) Mineral and rock determinations
- (3) Prospecting
- (4) Ore testing

1. *Ore Body Zoning*

Ore body zoning is of vital importance to the operator and the geologist and quantitative spectrographic analysis offers a means of easily determining the variables. It serves as an aid to finding ore and prevents much unprofitable exploration. The saving in unprofitable exploration will more than cover the cost of all spectrographic variables.

Ore body zoning is defined as special variation of minerals and elements about and within ore.

Manifestly any change around an ore body which shows consistent variation may serve as a guide to ore and thus it is of vital economic importance to mine operators to determine these variations.

2. *Mineral and Rock Determinations*

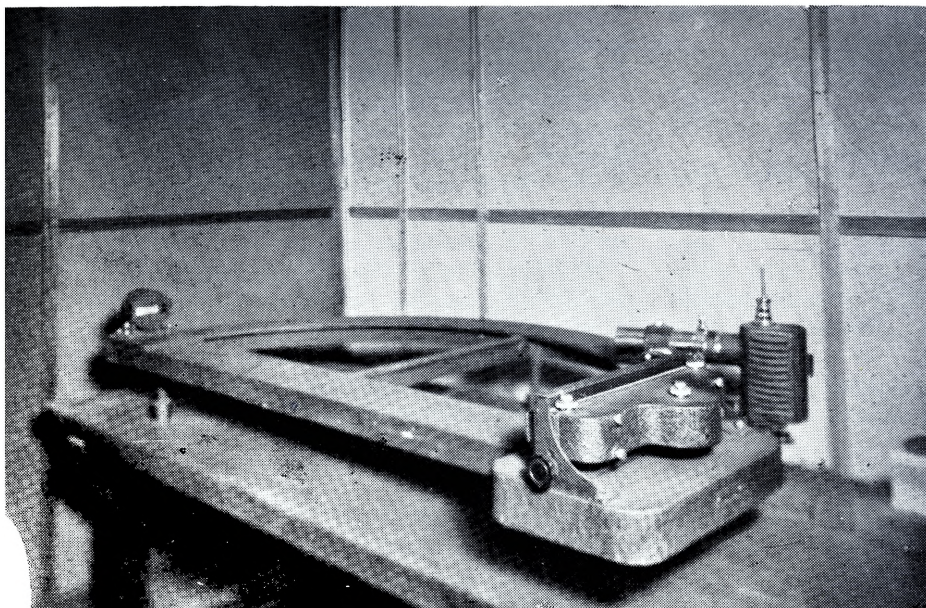
Recent work is confirming the known fact that minerals which appear to be homogeneous and of uniform composition carry varying proportions of minor elements, forming imorphous groups

which change their physical and optical properties in direct relation to the percentage composition. This is especially true of ore minerals and the spectrograph offers a means to determine these variations quickly on a small amount of material. Impurities and inclusions in ore minerals are commonly of minute size and it is difficult to collect a quantity of known pure mineral sufficient for both a chemical assay and fire assay. Small amounts of pure sample can be collected readily, and by using a microdrill under low magnification pure powder samples can be collected from small patches of pure material on a polished surface. The exact minimum quantity required for a spectrographic analysis depends upon the nature of the mineral, usually 10 milligrams is the minimum for a complete analysis but it is possible to decrease this quantity occasionally.

3. *Prospecting*

In prospecting, river beds and creeks concentrate minerals from hillside and these concentrates are a good indication of what may be found in the surrounding area. Large areas may be covered quickly by interval samples along the strike or at discovery, end and side monuments.

In many area which are thickly covered with bush, road cuts often indicate the presence of hidden ore bodies. Wide samples may be taken because of extreme delicacy of spectrographic work enabling large area to be covered at less expense in addition to revealing the presence of many minerals overlooked in the usual gold and silver assay. Only



This picture shows the grating, at the left, which breaks up the light given off by the arc and reflects on the camera. A side view of the arc house is shown. A door at the right of the house opens in order to place the samples in position for arcing.

one sample would be necessary to analyze an entire diamond drill core and in case of favorable results the core is divided into sections which will then give the location of important minerals. Even formations favorable to oil and their depth are quickly shown.

The spectrograph is particularly valuable in ore testing by saving considerable time in useless experimenting. In cyanide tests the presence of harmful elements can quickly be determined, while in flotation all the metals which will or can be floated are indicated. In both cases no intelligent approach to ore testing can be made without knowing the composition of the ore to be tested, and these can be determined by the spectrograph in a few minutes and at less cost than determining the principle gangue minerals in an ordinary pulp.

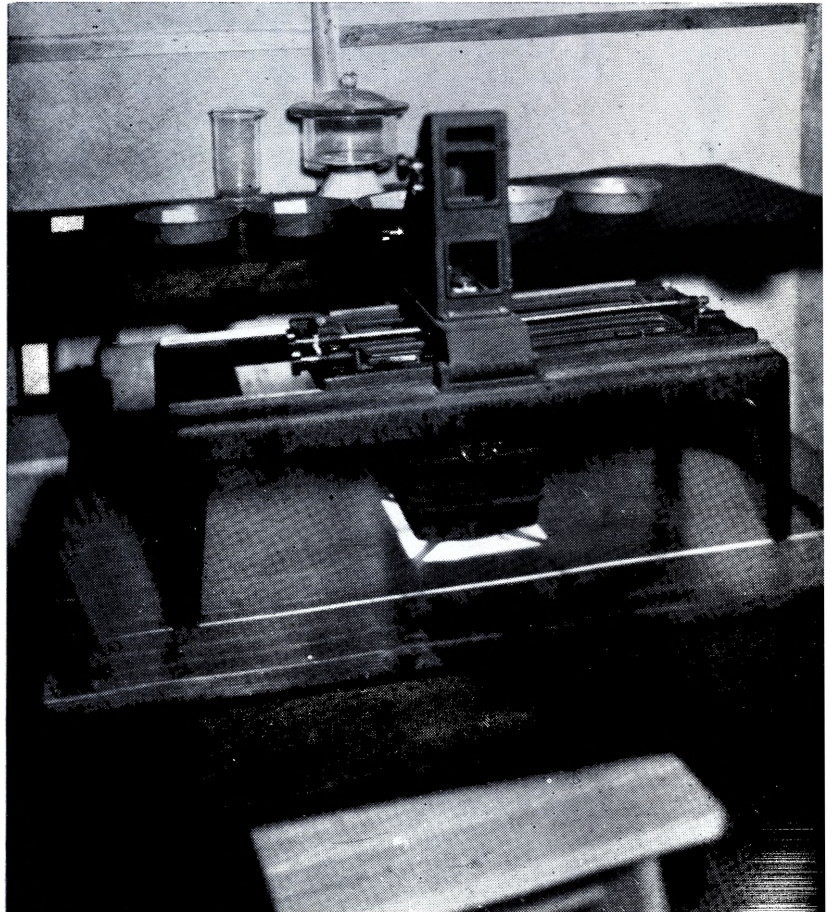
The spectrograph offers a new tool to the research worker. One with which he may cut corners, drive direct and straight to the conclusion of his problem without spending useless time in checking over more possibilities, and days proving or disproving the absence of some minor element. In the ordinary course of laboratory work the spectrograph not only identifies the ele-

ments but also detects one thousandth percent in many complex mixtures, even if only a few milligrams of material are present, an impossibility to chemical analysis. Many physicists have attempted to establish certain physical constants, such as melting points, latent heats, expansion co-efficients, electrical resistances, with extreme precision and yet were ignorant of the amount of impurities present which are so quickly determined by the spectrograph.

The spectrograph offers the criminologist a new means of combating crime. He may now positively identify small bits of evidence and in many cases, definitely establish their origin, and not only be prepared to offer photographic evidence free from the personal equation, but to present it in such a way that even a jury will understand.

In conclusion the spectrograph brings to industry and mining a direct, efficient and inexpensive method to determine the causes of defects, poor quality, and failure of materials to react properly. The services of this modern and up to date equipment are offered to all those who wish to avail themselves of its wonderful and marvelous possibilities.

This is the projector. The film, after developing and drying, is placed in the carriage which moves back and forth over the lamp by means of a knob in the rear, and is projected on a screen six feet in front.



COCO GROVE, INC.

During May Coco Grove produced ₱287,665.52 from 336,520 cubic yards dredged.

The dredger Mary Angus handled 134,055 cubic yards from which ₱92,-934.87 was recovered. It dredged an area of 68,735 square feet, the average depth of layer being 52.6 feet.

The Anne Petronella recovered ₱194,-730.65 from 202,465 cubic yards dredged. It dredged an area of 140,630 square feet to an average depth of 38.8 feet. In making a channel toward pay ground 27,520 cubic yards of overburden were stripped, this yardage being excluded in computing the value per cubic yard dredged.

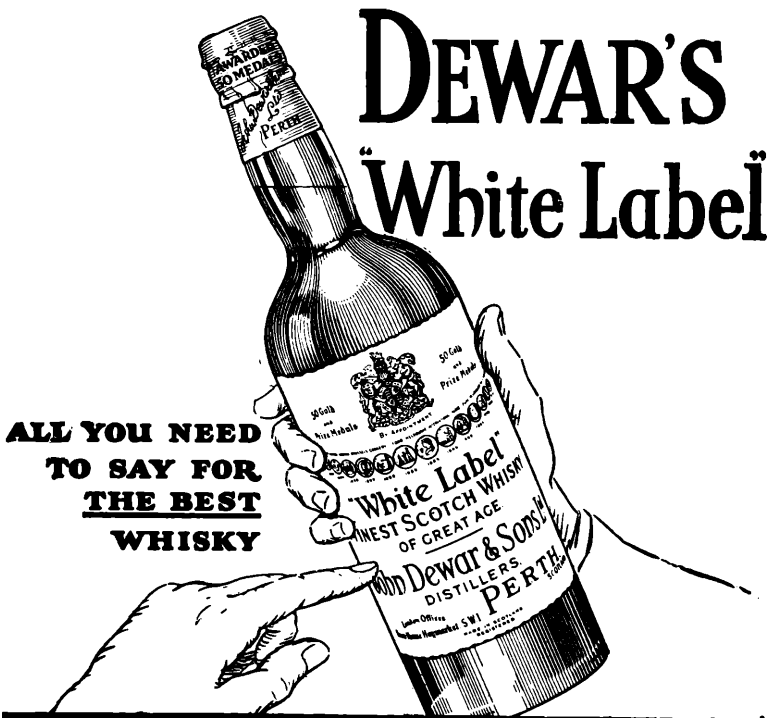
A. R. Taylor, chief designer for the

PHILIPPINE SMELTING COMPANY

The plant produced 117,5545 tons of smelter concentrates during May. Total tons of concentrate smeltered as sinter were 1,319.670 tons. Tonnage of concentrate received, sintered and smelted during May were highest on record.

The Traylor reduction crusher was installed and put into operation during the month. Operating conditions at the smelter were satisfactory throughout the month.

Bucyrus-Erie Company of Milwaukee has continued his adjustments of the dredging machinery, and has concentrated his efforts on the adjustment of the tumblers.



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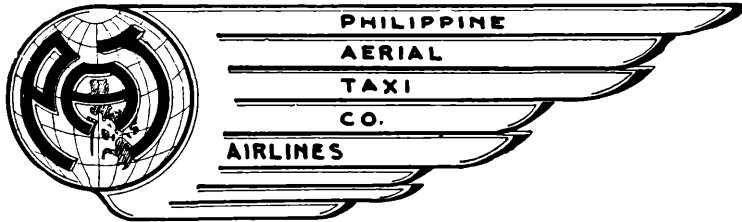
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Arrive Baguio.....	7:30	"
Leave Baguio.....	7:40	"
Arrive Manila.....	8:40	"

ONE WAY P25
ROUND TRIP ... P45

PARACALE -

Tues.	{	leave Manila	6:45	a.m.
Thurs.		arrive Paracale	8:00	a.m.
Sat.	{	leave Paracale	8:05	a.m.
		arrive Naga	8:40	a.m.
Mon.	{	leave Manila.....	9:00	a.m.
Wed.		arrive Paracale.....	10:15	"
Fri.	{	leave Paracale.....	10:25	"
		arrive Manila.....	11:30	"

Manila-Paracale, one way P35, round trip P70
 Manila-Naga, one way P50, round trip P100
 Manila-Legaspi, one way P65, round trip P130
 Paracale-Legaspi, one way P30, round trip P60
 Paracale-Naga, one way P15, round trip P30
 Naga-Legaspi, one way P15, round trip P30

PHILIPPINE AERIAL TAXI CO.

J. H. MARSMAN, President

RESERVATIONS

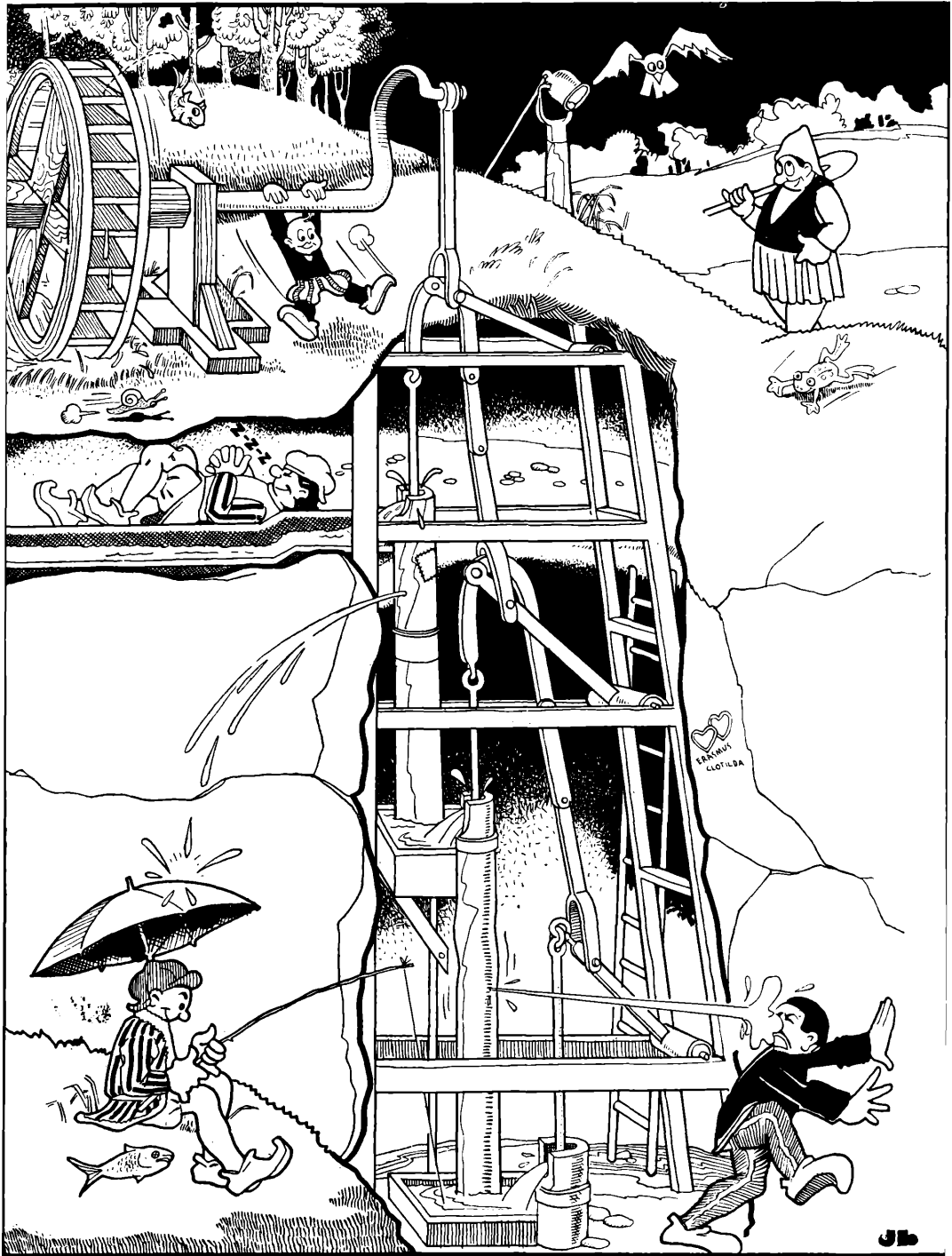
Mackay Radio	Tel. 2-43-45
Manila Hotel	" 2-20-22
Bay View Hotel	" 2-43-84
Grace Park Airport	" 2-43-30
Baguio	Royal Garage
Paracale	Marsman & Co.
	(H. Maclean)

SPEED

SERVICE

MYSTERIES OF MINING

This is the sixth in a series of features describing various interesting phases of mining and the mining industry.



An early mine pumping scene (as reconstructed by the artist from a drawing in De Re Metallica, by Agricola, with variations).

PUMPS

Pumps—big pumps and little pumps, simple hand pumps and complex high speed motor pumps—play an important part in modern mining. As the miner goes underground, the disposal of water becomes more and more of a problem. Occasionally a mine is so situated that natural drainage can be effected, but it is seldom indeed that a large mine does not depend to a great extent upon an efficient pumping system.

The pump—a machine to raise or move fluids—is so old that it is very difficult to say exactly when the first one was used. Primitive pumps consisted simply of a series of earthenware pots attached to a rope, by which water could be hoisted to the surface from wells. The Egyptians used such a chain of pots to secure water from the Nile for irrigation purposes.

In England, in the 16th century, the Saxons used hand pumps, the cylinders of which consisted of hollow tree trunks. When the use of iron for industrial purposes was started, in the 18th century, one of the first applications of the new material was for the manufacture of pumps.

The past century has brought about a tremendous improvement in pumps and pumping machinery, so much so that today much of our civilization depends on pumps. Steamships, automobiles, train, airplanes—every form of mechanical conveyance depends on a pump to supply it with liquid fuel, lubricant, and cooling medium. Large cities could not exist without intricate pumping systems to provide water and to dispose of sewage. The electric power which makes our mechanical age possible is based on pumps, in hydro-electric plants, in Diesel engines.

The pump has many uses in the mining industry. In the mine it disposes of excess underground water, and carries

water to the drills. Air pumps motivate drills and ventilate remote workings. In the milling plant the ground-up ore, mixed with water and chemicals, is moved from place to place by pumps. In the smelter, elaborate pumping systems force cooling water and lubricants to various important points.

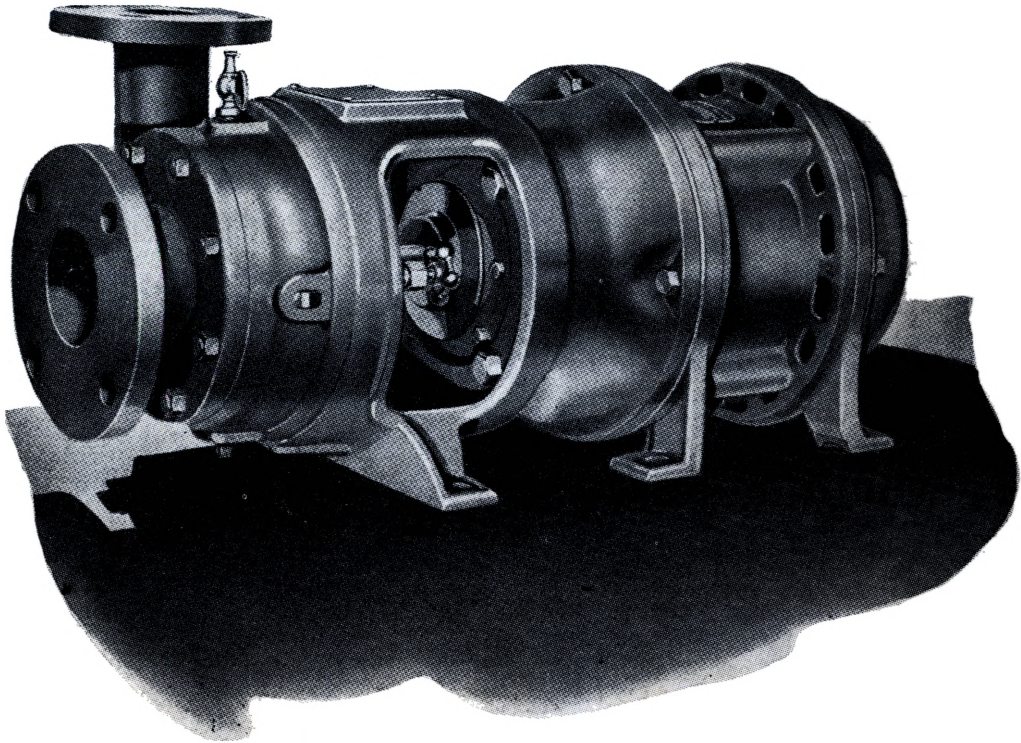
There are several types and thousands of varieties of pumps. The centrifugal pump is most used in the mining industry. This pump consists of an impeller fitted with vanes and rotating in a closed casing. Water is supplied to the center of the impeller, and due to its rotation in the impeller its pressure is increased by centrifugal force and it is delivered at the edge of the casing with increased pressure and high velocity.

The reciprocating pump (technical name for the old-fashioned hand pump which stood at the back door) may be either single or double-acting—that is, water may be discharged either on alternate strokes or on every stroke.

The air lift pump uses air pressure to raise water or other fluid. The hydraulic ram was devised to use the energy of a water supply at a low head to pump part of this water to a height greater than that of the source of supply.

Modern pumps vary in size from one which you could put in your pocket, and costing but a few dollars, to an enormous pump forcing a stream of water 12 feet in diameter over mountains for the water supply of metropolitan districts, costing many thousands.

High-speed pumps can force a sizeable stream of water as high as 4,000 feet, while the larger pumps can handle many thousands of gallons of water per minute.



A modern mine pump, which can pump against heads up to 500 feet.

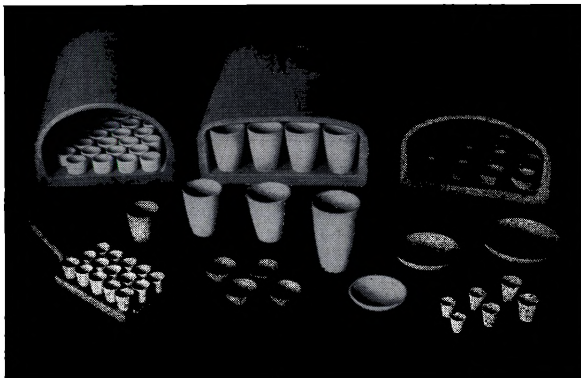
GUMAOS GOLDFIELDS, INC.

During May the shaft was sunk 70 feet and is now down 420 feet. Thirteen sets of timber were placed and work has been started on the 400 sta-

tion. The average number of men employed during the month was 70. Conditions throughout the camp continue to be good.

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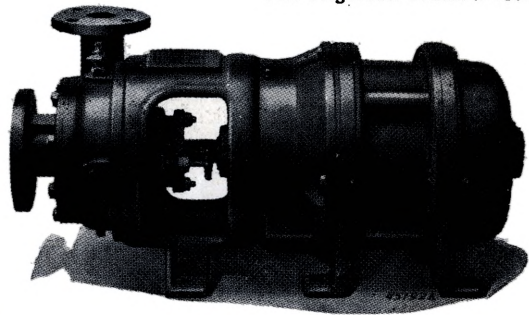


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Handling waste water and slops in a refinery.

Unit slung from chains in emergency pumping.

Self-priming Motorpump in a mine.

Portable unit used for cleaning floors

Handling sewage effluent in a sewage disposal plant.



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MARSMAN AND COMPANY, INC.

Producing Mines

<i>Name</i>	<i>Location</i>	<i>Type Property</i>	<i>Plant Capacity Daily</i>	<i>General Superintendent</i>
Itogon Mining Company	27 km S. of Baguio	Gold Lode	1,000 tons	Warren Gilkison
Suyoc Consolidated	98 km N. of Baguio	Gold Lode	200 "	L. M. Robinson
United Paracale	Paracale, Camarines Norte, 200 km Sw of Manila	Gold Lode	300 "	R. H. Canon
San Mauricio	15 km N. of Paracale	Gold Lode	300 "	H. L. Barr
Coco Grove	Paracale	Gold Placer	13,000 cubic yards	F. A. Nowacki
Mindanao Mining Company	Zamboanga, Zamboanga	Gold Placer		Frank Dale

Properties under Development

<i>Name</i>	<i>Location</i>	<i>Type Property</i>	<i>In Charge</i>
Gumaos Goldfields, Inc.	Camarines Norte	Gold Lode	A. W. Dixon
Tuba Project	Tayabas	Gold Lode	L. H. Hinckley

A CONSTRUCTIVE ACT

The action of President Quezon in approving the bill which became Act 309 has done more to build up confidence in the future of the mining industry than anything that has been done or said by governmental officials since the inauguration of the Commonwealth.

The new act provides for the issuance of a temporary permit before a lease is granted, if the application for the lease appears well founded, to mine or extract minerals subject to payment of royalties. It authorizes the holders of mining claims located under the Act of Congress of July 1, 1902, to extract minerals without such temporary permit until their application for lease is acted upon. It also empowers the secretary of agriculture and commerce to cancel temporary permits and stop extraction of mineral without responsibility on the part of the government as to expenditures for development work and exploration purposes and extends the period from two to four years within which application for lease on a mining claim may be filed from the date of its registration.

In effect the new measure permits the continuance of mining by those companies now in operation, and permits new projects, until the exact status of mining claims in relation to the old and the new laws can be established. Had such

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THE MARSMAN MAGAZINE

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RALPH KEELER, *Editor and Business Manager*

a measure not been passed, the leasing provision of the new mining law would have gone into effect in November of this year, and the government would have been empowered unless restrained by the Courts to stop operation at a majority of the Philippine mines.

In signing this bill President Quezon has put into practice the policy of fostering the development of all Philippine industries, including the mining industry, which he expressed again in a letter published in a Manila newspaper on May 28, 1938.

Mr. Marsman, as president of the Chamber of Mines of the Philippines and as the head of one of the largest mining organizations in the Islands, has expressed his gratification at the passage of the bill.

"The mining operators have always been firmly convinced that the new government would support the mining industry in every way possible," he said, "but from time to time we have had oc-

casions to fear that through misunderstanding of our problems harmful legislation would be passed. President Quezon's recent statement to the press, and his action in ratifying the amendment to the mining bill, gives us confidence that in the future a similar thoughtfulness will mark the actions of the government concerning mining. We realize the difficulties arising continually because of the complexity of mining and its relation to the Commonwealth; we appreciate the fact that modern mining is comparatively new to the Islands and that consequently with all its complexities the members of the Assembly are not as familiar with it as they otherwise would be. Every effort will be made by the mining operators to work out with the government plans for the administration of the industry on a basis fair and just to both, and we are sure that with the cooperation of both the industry has a bright future indeed."

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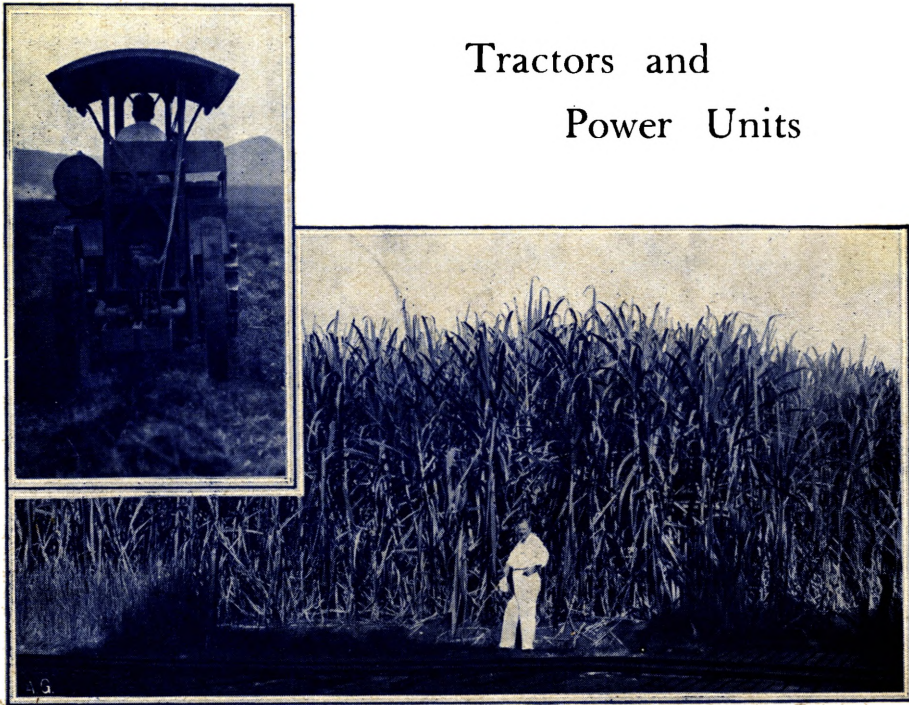
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