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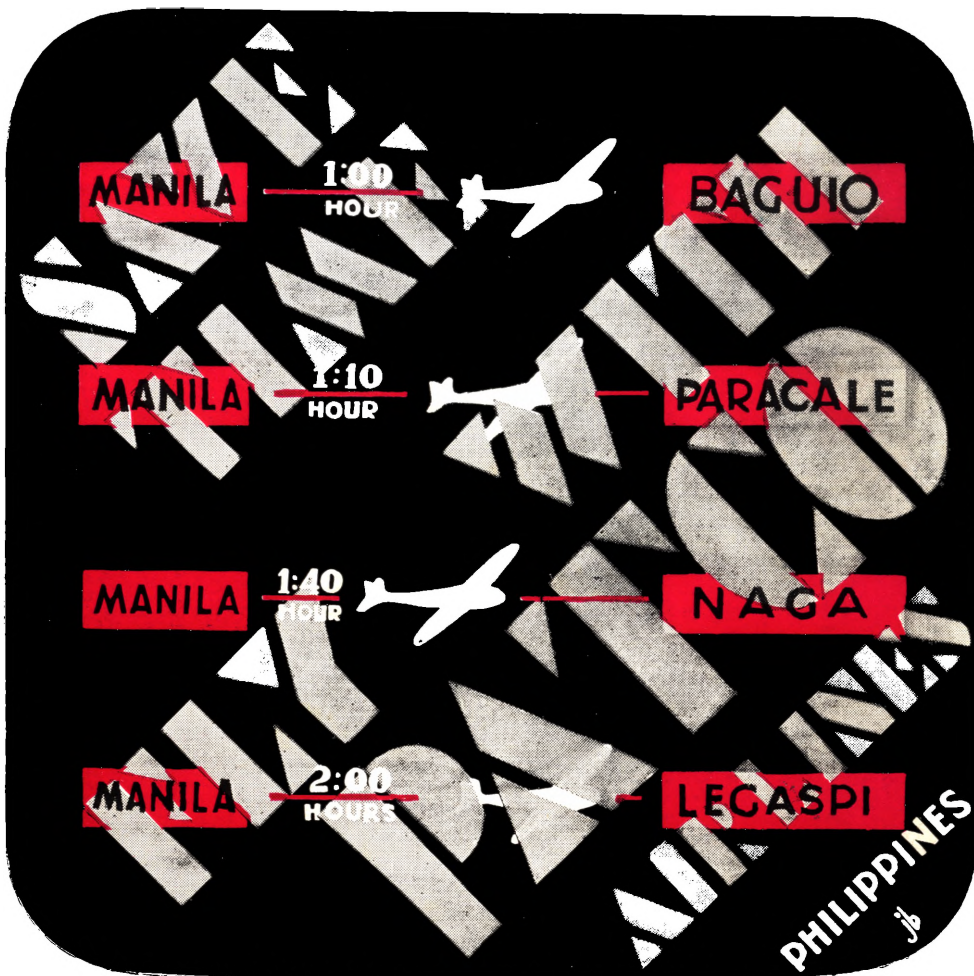
Vol. II
December
1937
No. 6

7939

MANILA, PHILIPPINES

THE MARSMAN

MAGAZINE



SEE THE PHILIPPINES FROM THE AIR

<p>Baguio daily service</p> <p>one way, P25</p>	<p>leave Manila . . 6:30 a.m. arrive Baguio . . 7:30 a.m. leave Baguio . . 7:40 a.m. arrive Manila . . 8:40 a.m.</p>	<p>Manila Tues. Paracale Thurs. Legaspi Sat.</p>	<p>leave Manila . . 6:45 a.m. arrive Paracale 8:00 a.m. leave Paracale 8:05 a.m. arrive Naga . . 8:40 a.m. leave Naga . . 8:45 a.m. arrive Legaspi. 9:10 a.m. leave Legaspi . 9:45 a.m. arrive Naga . . 10:10 a.m. leave Naga . . 10:15 a.m. arrive Paracale 10:50 a.m. leave Paracale. 10:55 a.m. arrive Manila . 12 noon</p>
<p>Paracale Mon. Wed. Fri.</p>	<p>leave Manila . . 9:00 a.m. arrive Paracale 10:15 a.m. leave Paracale 10:25 a.m. arrive Manila . 11:30 a.m.</p>		

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

RESERVATIONS

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PHILIPPINE AERIAL TAXI CO.

J. H. MARSMAN, President

December
1937

THE MARSMAN MAGAZINE

Vol. II
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GOLD PRODUCTION SETS NEW RECORDS

Gold production from the four Marsman-managed properties reached the highest total of the year in November, with an output of ₱824,597.74 from 51,237 tons treated. Both gold output and tonnage treated showed good gains over October. United Paracale set a new monthly production record for the sixth consecutive month; San Mauricio recorded a substantial gain over the preceding month, while Itogon and Suyoc were slightly under the October figures.

A new operating agreement, with Northern Mining & Development Co., was a feature of the month under review. The bringing of Acoje into regular production of chromite ore was another advance in the work of the organization in the development of the mineral resources of the Philippines.

Excellent progress was made upon the installation of equipment on the two new dredgers for Coco Grove, in spite of considerable delay caused by the typhoon of November 15 during which two lighters carrying equipment for the dredges capsized almost alongside piers 4 and 5 in Manila.

THE MARSMANS RETURN FROM EUROPE

Mr. and Mrs. Marsman, Miss Anne Petronella, and Miss Jacqueline Carpenter returned from Europe on December 7, on the Scharnhorst. The party was accompanied by Mr. Kerr, of the board of consulting engineers.

Mrs. Marsman and the two little girls had been in England for about a year, while Mr. Marsman and Mr. Kerr left Manila in September for a speedy business trip abroad.

Mr. G. B. Gifford Hull, general manager of Marsman Hongkong China, with Mrs. Hull and their daughter, met the Marsman party in Singapore and returned with them to Manila. The Hull family continued on to Hongkong on the Scharnhorst.

On his return Mr. Marsman announced the formation of a company in Holland, with a capital of 2,000,000 guilders, for the purpose of carrying on mining activities in the Dutch East Indies. An iron property in Borneo, a gold prospect in Sumatra, and copper deposits in the Celebes were optioned by the Marsman interests during the past few weeks, Mr. Marsman reported.

Many members of the Marsman organization went to Pier 7 to meet the travellers, and later attended a welcome party at the University Club, given in honor of the Marsman party and of Mr. and Mrs. Gustav Otto.

ITOGON MINING COMPANY

During November the Itogon plant treated exactly 30,000 tons of ore from which ₱339,019.97 was recovered.

Capital development totalled 2,598 feet, of which 841 feet were in ore and 1,757 feet in waste. The operating development amounted to 1,681 feet, of which 1,194 feet were in ore and 487 feet in waste.

Mining operations were normal, and despite the interruptions of Thanksgiving Day and other holidays, the daily average output of 1,000 tons was easily maintained altho the grade for the period was somewhat lower with similar outlook during the near future. The Ruston double-drum hoist formerly used on the old 1400 level aerial tramway has now been reinstalled near the main hoist, where it greatly speeds up the delivery of ore from the Frog tunnel, and the Zero and 300 Level Sesame.

Mill operations were normal, major repairs being confined to the relining of No. 6 primary ball mill. Higher mill tails than usual were caused by the liming up of filter leaves due to a shortage of commercial hydrochloric acid, and by sliming in the thickeners.

A new 2000-ampere switch and three 250 KVA transformer which were connected with Baguio Hydro No. 3 were installed by the power department.

Operating costs continue to remain satisfactorily low, while capital investment charges are still decreasing. Construction work has ceased with the re-installation of the Ruston hoist and the building of two small barrio houses which were completed during the month.

Thanksgiving Day was celebrated in the usual manner by holding a sports meeting and dinner for employees followed by a dance in the evening.

W. J. Pearson joined the staff as drain tunnel foreman.

PARACALE NATIONAL GOLD MINING COMPANY

The shaft is now 112 feet deep, at Paracale National, and one set bearing timbers was placed at 92 feet. The dynamite bodega was completed and is in use.

Conditions in general were normal, and the work is progressing as planned.

SUYOC CONSOLIDATED MINING COMPANY

Production during November was ₱119,972.91, from 6,266 tons of ore treated in the Suyoc plant. Total development work amounted to 1,530 feet, of which 785 was operating and 745 feet capital development.

Development work on the 1800 and 2000 levels appears quite promising, with the cutting of a heretofore unknown hanging wall feature on the 1800 level which has prospective value, and the cutting of a footwall feature on the 2000 level which seems to be beyond the present limits of operation. It is too early, however, to make any predictions regarding the outcome of the new findings.

Work on the upper levels continues to open up limited quantities of good quality ore.

Operations for the month were quite normal, with a slightly higher tonnage than during previous months. Milling results were quite satisfactory with average tails and average extraction.

SAN MAURICIO MINING COMPANY

November production at San Mauricio was ₱163,941.25, from 7,221 tons of ore treated. Tonnage handled was a new monthly record for the property.

Average recovery was ₱22.69 per ton, while average extraction was 94%.

Development work at the San Mauricio, Sta. Monica, and Sta. Ana mines totalled 1,533 feet, of which 437 feet were in ore and 1,096 in waste.

The shaft station and crosscut has been completed on the 500 level of the main shaft and part of the tonnage is now being hoisted through this shaft. Full production will be through this shaft early in December.

The Santa Ana shaft has reached a depth of 300 feet, and the station on this level is being cut.

Tacoma veins No. 1, No. 2, and No. 3 continue to show good results. Work is being started on these veins on the 300 level.

All footings for the steel headframe over the main shaft have been completed.

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UNITED PARACALE MINING COMPANY

United Paracale treated 7750 tons of ore during November, from which ₱201,693.61 was recovered. Head values averaged ₱30 per ton, with a recovered value of ₱28, giving an extraction of 95%. Of the total production, ₱2,785.-68 resulted from the treatment of 159 tons of ore from the Rocky Mountain Fraction of the Northern Mining and Development Company.

The output was an all-time high for the sixth consecutive month.

Total development footage was 1,470 feet, of which 1,090 feet were in capital and 380 feet in operating development.

Two new 3-inch Wilfley Sand Pumps were installed in the mill after which the No. 2 wet elevator was dismantled. Two new 56-inch Fagergren flotation machines were installed with the exception of the motors which were expected momentarily. The No. 2 P.O.C. compressor was removed from the main power house and installed at Longos, after which the two small Bolinder compressors were removed from the Longos power house and installed at Haliguang Bato.

All timber work on the landing wharf and on the new bridge across the Paracale River has been completed. How-

PALIDAN SUYOC DEEP LEVEL TUNNEL COMPANY

During November an advance of 1,265 feet was made, which brought the face 8,359 feet from the portal on December 1. This advance was normal in spite of unusual delays and loss of time resulting from maintenance of equipment and a national holiday.

Several significant faults were traversed during the month, although no marked change of ground has been encountered. A slight increase in silica content and a corresponding decrease in the gypsum content of the formation is noticeable.

Because of a lack of rainfall this year, a shortage of water is being felt at the tunnel site.

Commonwealth Day was celebrated on November 15 by the employees and staff of the company with competitive drilling, and mucking contests, boxing bouts, races and games with the Suyoc Consolidated men. The contests were followed by a dinner and public dance.

The Tunnel was visited during the month by A. G. Bellis, B. S. Ohnick, A. F. Kelly, and R. W. Crosby.

ever, the approaches, which are being built with excess mine waste, remain to be filled.

ACOJE MINING COMPANY

November marked the first large shipments of chromite ore from Acoje. On November 29, 6500 tons were shipped on the S. S. Wichita, while on October 31 a shipment of 1125 tons was made—a total of 7625 tons during the period. The dispatching of this large quantity of ore has considerably relieved the congestion of ore at the pier bins, and will thus make it possible to deliver more ore from the mine.

Mining operations during the month were conducted on the No. 1 and No. 2 lenses. A small amount of mining was performed on No. 4 lens.

Construction of loading platforms and preliminary clearing operations on the No. 4 lens progressed quite well during the month. The road from the

No. 1 lens to the No. 4 lens was likewise completed and put into operation.

Road conditions from the mine camp to the provincial road improved considerably during the month, most improvement taking place along those sections where crushed limerock has been used for top surfacing.

The installation of a Diesel lighting unit and shop machinery was completed during the month. The Diesel lighting equipment will be used for furnishing lights for the camp and also for supplying power for the assay office and shop.

Mining is now progressing at the rate of about 150 tons a day. Since work on the roads is well along, it has been possible to reduce the maintenance force.

THE past year has been one of accomplishment for the Mining Industry of the Philippines, in spite of the usual difficulties which inevitably beset a new field of endeavor.

To our loyal employees who have enabled the Marsman organization to maintain its position as a leader in the industry, and who have made possible the achievements of the past 12 months, we extend our sincere appreciation.

To those friends in the Philippines and elsewhere who have showed their interest and cooperation in our efforts, our hearty thanks.

Best Wishes for a Merry Christmas and a most Happy New Year to the Readers of the Marsman Magazine!

Mary A. Marsman

J. H. Marsman



GUMAOS GOLDFIELDS INC.

Total development footage during November was 281 feet, while an average of 110 men were employed. General conditions at the camp continued to be good.

Tunnel No. 3, main drift south, was advanced 91½ feet along the vein, over an average width of 36 inches, with good average values. The crosscut south was started 55 feet south of station No. 488 to cut the vein under the old workings on the surface, and was advanced 29 feet. A narrow (5-inch) stringer was cut which gave good assays.

In tunnel No. 4 the crosscut east was advanced 28½ feet in granite and stopped. The drift south at 487 feet from the portal was driven 13 feet on the vein. The drift north, at 487 feet from the portal was advanced 15 feet along the vein, across a width of 10 inches, with only low values showing.

In tunnel No. 6 the crosscut east was advanced 66 feet in granite, and three stringers were cut, none of them showing commercial assays.

UNION MINES INC.

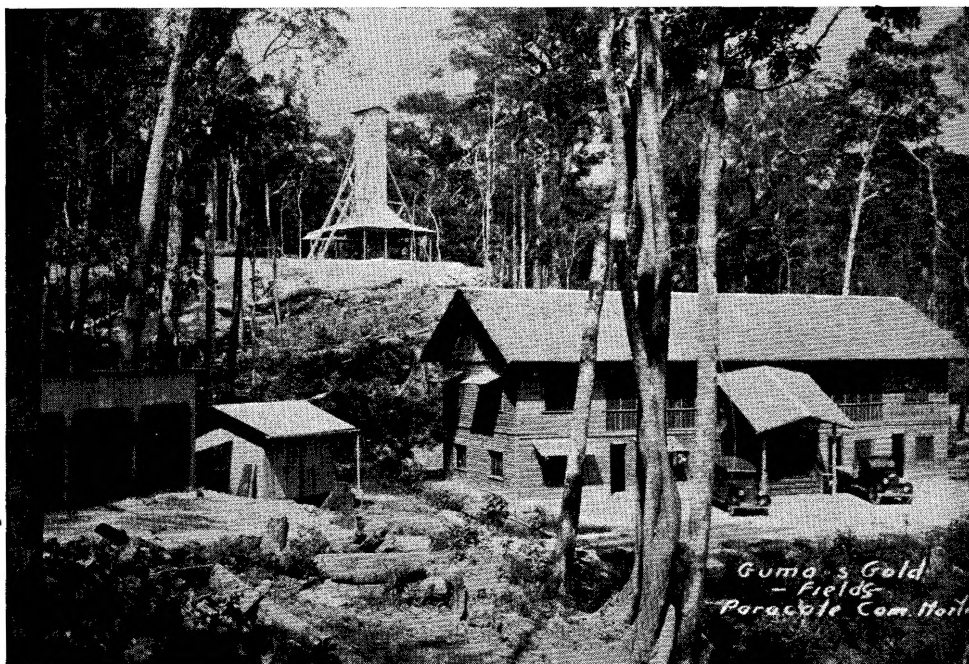
Several doghole tunnels were started early in November at Union Mines with the object of investigating some of the more promising outcrops. Work has progressed quite satisfactorily in these dogholes, and during the month about 400 feet of this type of work was completed. None of the dogholes have as yet reached their objectives.

Trail-cutting operations were curtailed during November, since almost sufficient work has been completed to open up the claims properly. In this trail-cutting work numerous vein structures have been exposed.

Work on the main horsetrail of the property has progressed quite satisfactorily during the month. The trail between barrio Guinaang and the camp has been cleaned up and repaired.

The shaft was sunk 38 feet. Due to bad ground, it was necessary to carry the timber to the bottom of the shaft. Bearers were placed 95 feet below the collar.

The concrete foundation for the 30 horsepower hoist has been poured, and the hoist is now being installed.



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VIBRO PILE SYSTEM IN THE PHILIPPINES

The Vibro system of forming concrete piles is new to the Philippines, although it has been firmly established for some years in many other parts of the world. Mr. H. D. S. Page of The Vibro Piling Company, Limited, concessionaires for Hongkong and South China, is now in Manila making surveys for the purpose of establishing the process in the Islands. Through a subsidiary company the Vibro process will be introduced to Philippine contractors; it is confidently believed that it will be found remarkably suitable for the many types of foundation work encountered in the Islands requiring the use of piles. The following description of the process was prepared for the Marsman Magazine by Mr. Page.

FIRM FOUNDATIONS

It will be generally admitted that the foundation of any building or structure is the most important section, and that which taxes the skill and ingenuity of the engineer to the utmost. No matter how fine and noble a building may be, if the foundations are unsound it very soon becomes an eyesore and possibly a danger. One of the greatest problems which a structural engineer has to handle is the designing of safe and economical foundations.

Buildings founded on rock, gravel or sand present very few difficulties but it is when we have to deal with poorer strata such as chalk and moist clay that real trouble arises, and it is a recognized fact that many sites of this nature have great value for building purposes due to their situation near harbours or rivers. They are generally alluvial deposits or reclamations.

It is almost a universal practice to carry heavy loads on bad ground by means of piled foundations, and these may be divided into three main types in general use at the present time (a) Timber piles (b) Pre-cast concrete piles and (c) Cast-in-situ concrete piles.

Timber piles have only one advantage in present day construction, they are relatively low priced in timber producing countries. This is really their only recommendation. To ensure preservation of the timber it is only safe to use timber piles in work where they will always be well below sub-soil water level. The successful driving of long timber piles requires very careful supervision as once the piles are in the ground it is impossible to inspect them. It is almost impossible to drive a long timber pile without damaging it to

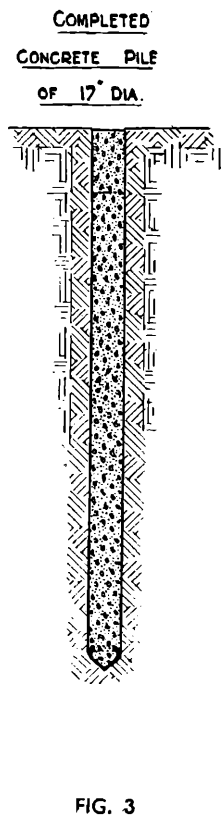
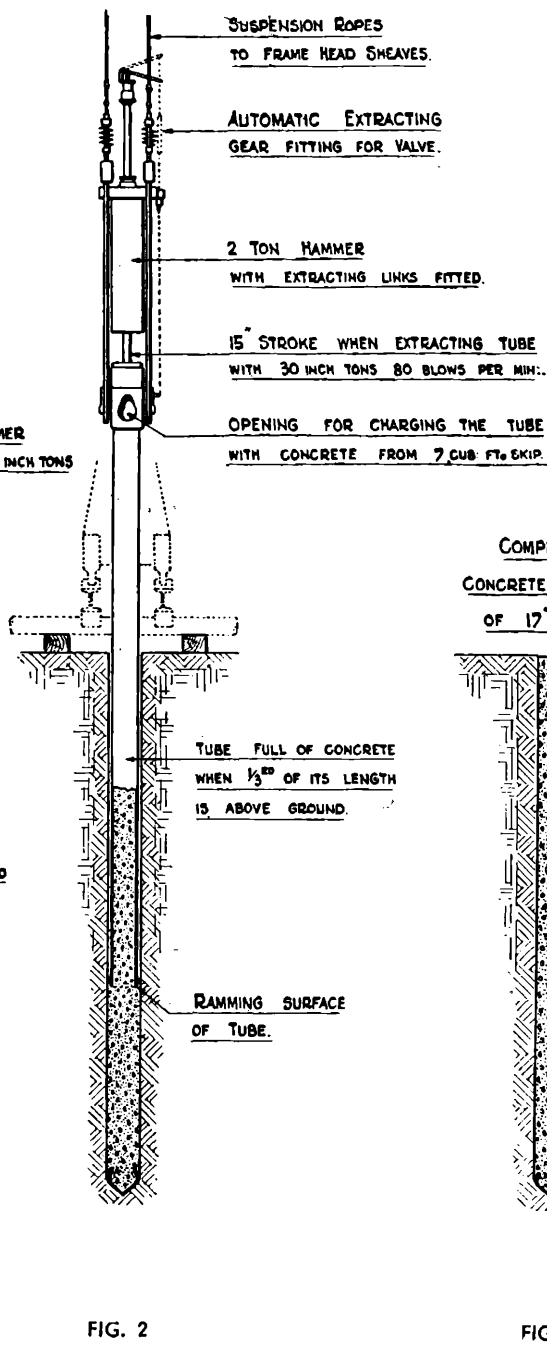
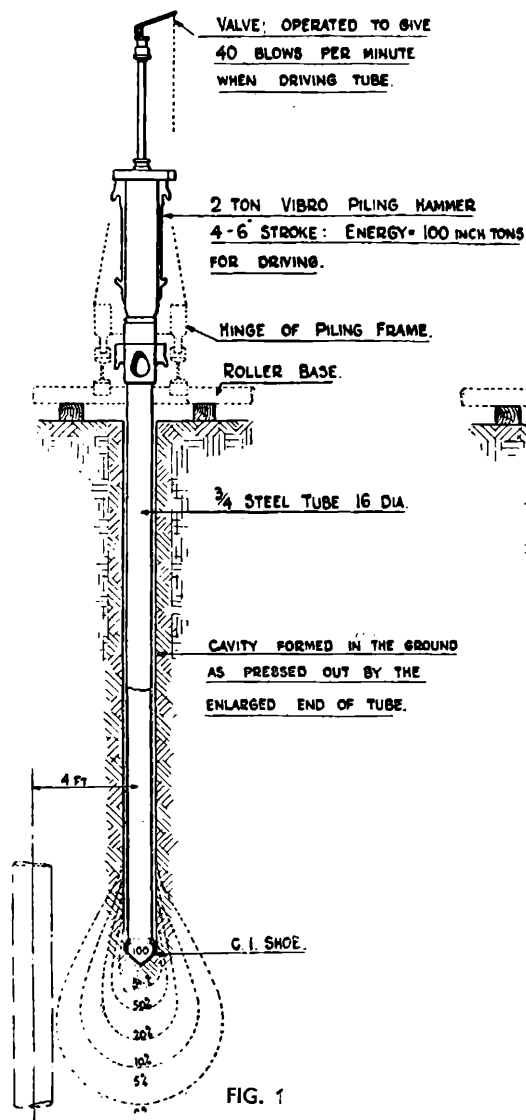
some extent; the tendency is for the timber to split under the hammer blows. If this occurs at the top or butt of the pile where it can be seen it is not so serious as the damaged portion of the pile can be sawn off with a consequent reduction in the load bearing capacity of the pile. The greatest danger is when the timber pile splits and breaks at the tip during driving operations. This is likely to occur if it strikes a boulder, three trunk or hard strata and as it is out of sight there is no practicable way of detecting or remedying the damage, with the result that there may be a number of defective piles in the foundation which are not capable of taking their designed share of the loading. This throws greater loads than they are designed to carry on the sound piles which may result in uneven settlement and cracking of the structure.

As reenforced concrete developed as a method of construction engineers realized the weakness of erecting buildings which were of imperishable materials on timber piles the life of which is an unknown quantity except under special conditions, and so pre-cast reenforced concrete piles were adopted for foundation work. As the name implies, pre-cast concrete piles are made up in moulds, and after the concrete is sufficiently seasoned they are driven in the required positions. This type of foundation is slow and expensive. Slow because the piles cannot be driven until the concrete is well seasoned. Expensive because the piles have to be designed to take the transporting and driving stresses irrespective of the loads they will ultimately have to carry when in position in the foundations of a building or structure. Pre-cast concrete piles almost invariably require

(Continued on page 10)

2nd OPERATION
EXTRACTING THE TUBE
AND SIMULTANEOUSLY
DEPOSITING CONCRETE
TO BUILD-UP THE PILE.

1st OPERATION
DRIVING THE TUBE
TO THE REQUIRED
DEPTH & RESISTANCE



VIBRO PILE... (Continued from page 8)

more steel reinforcement to withstand the transporting and driving stresses than is necessary to carry the loads which they are designed to carry. This is very apparent in the case of a friction pile which theoretically requires no reinforcement whatsoever to carry its load but must of course be heavily reinforced to withstand the lifting and driving stresses.

In pile driving work it is not always possible to estimate with very great accuracy the length of piles required and unless in very special cases the lengths vary considerably, in pre-cast work this entails shortening or lengthening of the piles, the latter is a very slow process as the piles cannot be driven on until the fresh concrete has had sufficient time to set.

As with timber piles, there is always great danger of damaging pre-cast con-

crete piles during driving operations. When this damage occurs above ground level it can always be repaired at cost but the likelihood of damage below ground level where it cannot be detected and repaired is always present. When this occurs it causes unequal loading of the piles which in time causes unequal settlement of the structure and cracking.

It has long been recognized that if concrete could be deposited in cavities formed in the ground by temporarily driven tubes and the possibility of the encroachment or admixture of the surrounding earth could be excluded, a particularly simple and effective means of forming foundations could be produced. Experience has shown that to prevent such encroachment it is necessary in depositing the concrete to employ at the

(Continued on page 15)

SECTION SHOWING TUBE IN UPWARD MOVEMENT. DEPOSITING A LAYER OF CONCRETE IN BUILDING UP THE PILE.

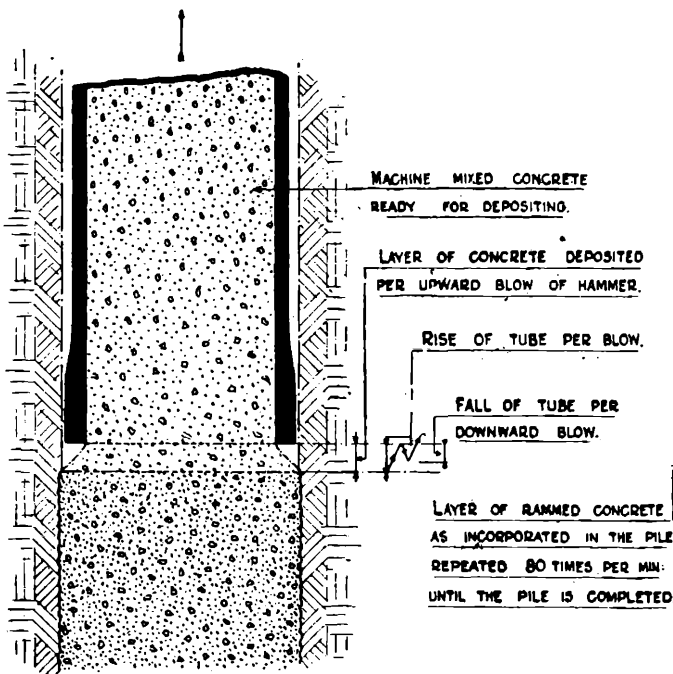


FIG. 4

SECTION SHOWING TUBE IN DOWNWARD MOVEMENT RAMMING OUT THE DEPOSITED LAYER & CONSOLIDATING THE PILE COLUMN.

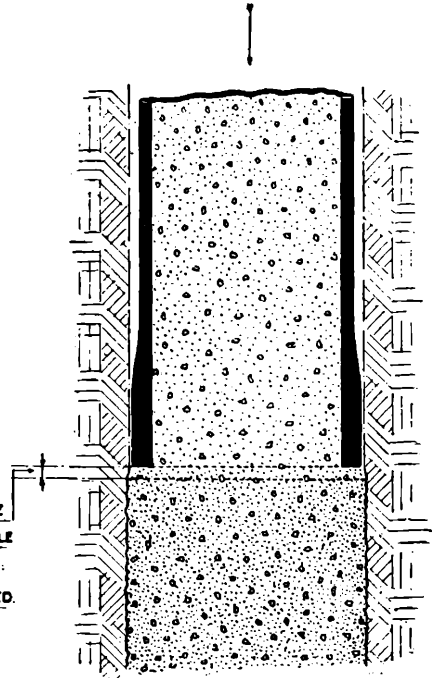


FIG. 5

GELODYN Economy

Back of every blast lies a story—a story that involves the strength of the dynamite and the velocity of detonation. It involves the ease of loading. It is concerned with water and moisture in bore holes. It climaxes in the cost per cubic yard of blasted material—and the cost per round of blasting.

It Might Well Be Entitled the "Economy of Gelodyn"

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1. More cartridges per case than higher priced gelatin types—thus permitting savings in cost
2. Gelodyns semi-gelatinous form gives better water resistance than ordinary explosives
3. Gelodyns have adequate strength for favorable action.
4. Gelodyns plastic form permits ease of loading in upward pitching bore holes.

Under all but the most severe conditions, Gelodyns give many of the advantages of gelatin types with the economy of ordinary dynamites.

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ATLAS EXPLOSIVES AND BLASTING SUPPLIES

PHILIPPINE SMELTING CO.

By

C. A. WEEKLEY

General Mill and Smelter Supt.

Marsman & Company

The smelting plant of the Philippine Smelting Company is situated on the Mambulao Bay about 2 kilometers from the thriving town of Jose Pañganiban.

The present capacity of the plant is 40 tons of concentrate daily. When equipment now on the ground has been installed, this will be augmented to 120 tons daily.

Concentrates when received at the smelter are weighed on 10-ton truck scales. The loaded truck weighed in and the empty truck weighed out. Both weights are stamped on duplicate tickets. One of these tickets is retained by the smelter and the other given the representative of the shipper.

The trucks are then unloaded into concrete bedding bins of 220 tons capacity each. Ten per cent of the total bulk is taken as a sample and cut down in the customary way for a moisture and assay sample. The final sample is split into 4



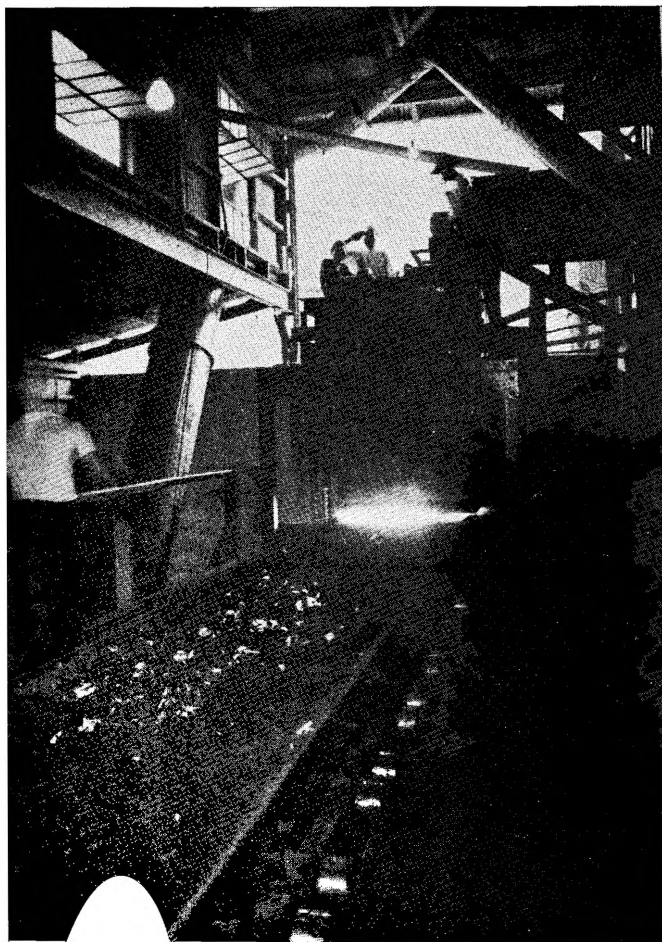
parts. The shipper and smelter receive one each, one is reserved for umpire, and one retained in case any of the other three samples are lost.

The concentrates now being treated come from the flotation plants of the San Mauricio and United Paracale mining companies and amount to about 35 tons daily. October figures showed these concentrates to contain the following analysis:

	<i>San Mauricio</i>	<i>United Paracale</i>
Au ozs. per ton	3.14	4.26
Ag " " "	9.40	10.90
Cu %	3.50	6.26
Fe %	31.10	34.30
Zn %	7.40	2.80
Pb %	5.70	2.00
S %	38.90	39.80
Insoluble %	10.30	9.70

The concrete bedding bins have a slotted opening in the bottom over a 24" conveyor belt. When a bed is complete, it is given a lot number and the dry weight and values calculated. It is then ready to be conveyed to the charging bins in the smelter building.

The concentrates are mixed with the required fluxes and conveyed to a pug



*Sintering
Plant*





lica, lime, slag, and other ingredients which might be required to make a liquid and free flowing slag.

Alternate layers of coke and charge material are added to the blast furnace as required.

Ten ounces of air furnished by a Connersville Roots blower is blown through the charge to supply the necessary oxygen for the combustion of the coke and the reduction of sulphur.

The charge melts and flows continuously from the furnace into a brick lined settler where the matte and slag separate. The matte is tapped from the bottom of the settler into matte moulds and the slag overflows the top of the settler into portable slag pots and sent to the slag dump.

The approximate analysis of the slag and matte are as follows:

	<i>Slag</i>	<i>Matte</i>
Ozs. Au per ton	0.05	30.00
Ozs. Ag " "	0.65	70.00
% Cu	0.35	35.00
% Fe	35.00	31.00
% CaO	10.50
% Insol.	32.00
% S	.40	26.70
% Other base metals	no assay	7.00

The object of smelting locally is to convert a large tonnage of concentrates into a small bulk of matte, thereby saving sacking, transportation and treatment charges on a large tonnage of valueless material.

The ratio of concentration at the smelter all depends on the grade of material received. At present the smelter is limited to shipping a matte which

(Continued on page 15)

mill where they are thoroughly mixed before being charged to the Dwight Lloyd sintering machine.

The work of the sintering machine is two-fold: First to roast out the excess sulphur and second to fuse the concentrates and fluxes together into a clinker which is called sinter. The amount of sulphur burnt off controls the ultimate grade of the matte produced. The charge goes onto the sintering machines with about 24% sulphur and the resulting sinter contains approximately 6% sulphur, or, a sulphur elimination of 75%. The sinter contains the approximate partial analysis:

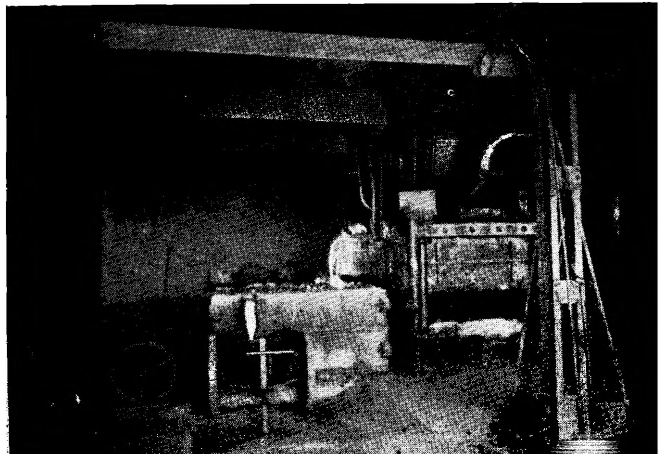
Au ozs. per ton	5.10
Ag " " "	9.50
Cu %	4.50
FeO %	41.00
CaO %	4.00
S %	6.00
Insol. %	28.00
Zn %	3.50
Pb %	3.00

The sinter cake is broken up into pieces ranging from 1 to 4 inches in diameter and fed to a Mace Company No. 4 blast furnace along with any si-



*Matte
Ready
For Shipment*

*Blast
Furnace*



HARVARD SPIRIT

By REGINALD FITZ, '06.

The following tribute to Mr. Richard Hayter, former secretary of Marsman & Company, and one of the first men to recognize the potentialities of the Mineral resources of the Philippines was sent to the Marsman Magazine by Mr. Kenneth B. Day, of the Philippine Refining Company. Mr. Hayter attended the Harvard Tercentenary as the representative of the Harvard Club of Manila, and the fine tribute which follows is from the October 22 issue of the Harvard Alumni Bulletin.

I have often wondered what is meant by "Harvard Spirit". To me it is largely indefinable, a thing never obviously apparent, for instance, at football games, the boat race, or Class Day, where one is apt to encounter either a spurious kind of organized Harvard exuberance or an equally spurious Harvard indifference. Even at Commencement Day I have never been sure, though at times, at luncheon in the Yard, with the alumni of all ages amicably picknicking together, I have felt that Harvard spirit must be present—an elusive elf just outside my grasp. Recently, however, I think I have shaken hands with it.

A little over a year ago I first encountered Richard Hayter, '96. Being in Boston he happened to come to see me quietly and unpretentiously, because he had found out that I was a Harvard man and a graduate of the Harvard Medical School. I never knew him very well; that is, I never knew anything of his past, of the school he came from, of his College life, of his clubs, of his friends, of what his life had been during all the years he had been away from Cambridge. But I came to know a great deal of what he felt about Harvard.

It appeared that he had been a wanderer since his graduation. I never knew in any detail what his profession actually was except that he had travelled extensively. It seemed that he had been almost everywhere and that he knew a good deal about many things. He was familiar with the Far East and had lived for a time in the tropics; he told me about London and how interesting it usually was to live there; he seemed to be familiar with all the places in France that I thought I had made friends with during the War; he had

read everything worthwhile that I had ever read and infinitely more; even in my own field he was knowledgeable and a stimulating companion with whom to swap ideas. But always as we talked, and we spent a number of hours together, the subject of our conversation would end with Harvard. He liked to think about Harvard; of the Yard; of his classmates and what they had accomplished; of President Eliot; of what might happen to Harvard under President Conant; of what it meant all over the world and under all sorts of conditions to be a Harvard man. Finally, one day, he admitted that he had travelled several thousand miles in order to attend the Tercentenary.

As a boy he had liked Bar Harbor and Newport. He thought it might be pleasant to revisit these places, though he said that if he did it mightn't be much fun because the scenes that he remembered would have changed and many of the people whom he knew would have disappeared. At Harvard it would be different. He would see his classmates; to be sure they might look different, but, as Dr. Holmes had once remarked of his classmates, "boys they'll be as long as three, as two, are creeping". Perhaps Cambridge might look different, too, but that wouldn't count, for there would be plenty of unchanged landmarks to see again, and the memory of these beacons had helped him more than once safely to pick up his bearings in the storms of his life—the memory of beacons like University Hall and Holden Chapel, Memorial Hall, and the Yard with its old dormitories that had been in place for years and were likely to remain anchored. Most important of all, he wanted to revisit Harvard because to

his way of thinking Harvard by necessity must remain young and changeless, always filled with young men, with young ideas and aspirations, with young brains, with young gaiety, and he wanted to saturate himself once more with the feeling of the untrammelled vigor of youth that he believed to be Harvard's essence. And so he had come.

I saw him at the Tercentenary. At the meeting of the Associated Harvard Clubs he carried the banner of the Harvard Club of Manila. He sat out all of the rainy morning of September 18. He dined with his class. It was hard work for him to do all this, yet, when later I reproached him for having done

more than was good for his health, he reminded me that the occasion was Harvard's Tercentenary and that he was a Harvard alumnus. There seemed nothing more to be said.

He left this country shortly afterwards, as quietly and unpretentiously as he came. He went to Barbados in search of a gentle climate. His death there has just been reported. I am sure that until the end he continued to think happily of Harvard, of Harvard's future, of his classmates, of the Yard, of the Tercentenary, of Harvard's vigor, of all the beacons of Harvard that on occasion had helped him to find his bearings. He was a valuable graduate. For he had Harvard Spirit.

VIBRO PILE... *(Continued from page 10)*

outlet of the tube a pressure exceeding the earth pressure acting on any part of the fresh concrete, as the tube has to be withdrawn when the concrete is deposited.

The cast-in-situ system of pile driving supplies this means most effectively and the VIBRO system has been developed to include almost all types of piled foundation work in the most efficient manner. In the VIBRO system a plain steel tube with a cast iron shoe is driven into the ground for the required depth or until the necessary set is obtained. Suitable reinforcement if required is then placed in position in the tube and the concrete poured. The tube is then extracted by means of a series of upward and downward blows of the steam hammer which while consolidating the concrete of the pile forces it into intimate contact with the surrounding strata and this close contact between the rough surface of the pile and the ground develops the skin friction of the pile to the greatest possible extent.

Cast-in-situ concrete piles have overcome almost all the difficulties and dangers of timber or pre-cast pile driving. There is no handling of the piles, such as transporting them to the site, and work can be started immediately a contract is arranged; no waiting for timber piles to arrive from the suppliers or concrete to set. Cast-in-situ piles can be driven to any length and can be cut off at ground level or at any level below ground level. They can be reenforced or be without reenforcement according to the work they are required for. There is no waste of materials and what is very important in all pile driving operations there is no danger of damaging the pile during driving as all driving stresses are taken by the steel VIBRO tube. The VIBRO cast-in-situ system of making concrete piles is the most up to date development in pile driving and can be employed efficiently in foundations of almost any type no matter how poor the ground.

PHILIPPINE SMELTING COMPANY

does not contain over 40% Copper. In which case a ratio of 8 to 1 is obtained from a concentrate carrying 5% Copper.

In the blast furnace section adequate dust settling chambers with a 60-foot steel stack 54" in diameter is provided to take care of the fumes.

The sintering machines are also

(Continued from page 13)

equipped with a dust collecting chamber, but has a steel stack 100 feet high to carry off the sulphur fumes.

At present, as a by-product, the smelter is making a small amount of lead bullion high in gold and silver. This is shipped to the lead smelter at Selby, California,



Placer operations at the property of Coco Grove, Inc. at Paracale are expected to start by the first of the year, with at least one, and possibly both, of



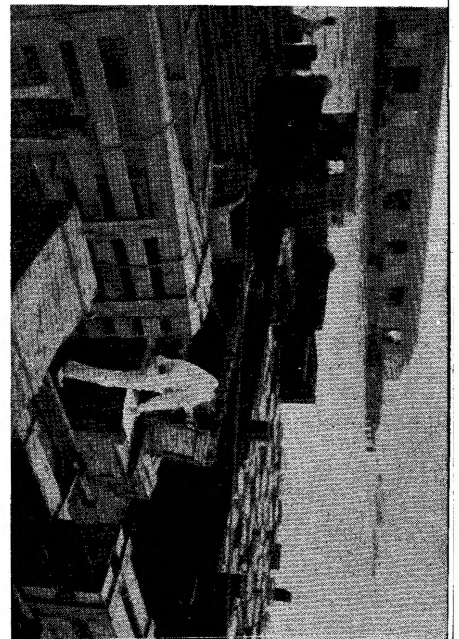
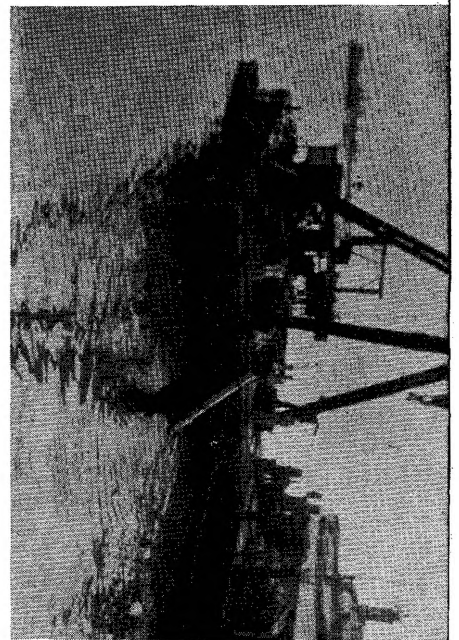
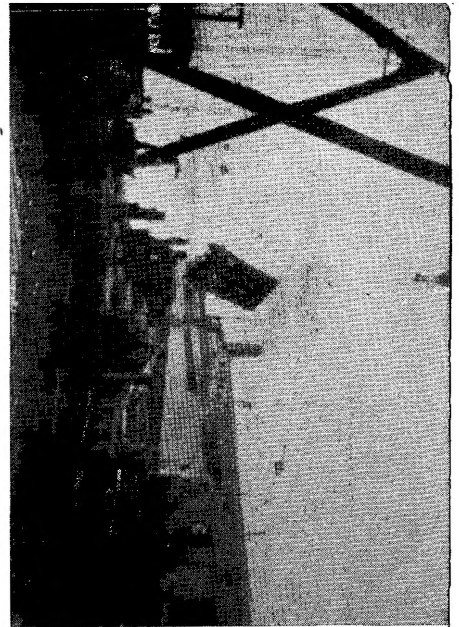
the two new 200,000-cubic-yard dredgers in operation. With 8-cubic-foot buckets capable of digging 65 feet below water level, these dredgers are completely equipped with gold-saving equipment.

The dredges are a product of Bucyrus-Erie Company, and were obtained through the Manila Machinery & Supply Co., Philippine agents. They embody the latest contrivances designed to give maximum running time, high percentage recoveries, and minimum repair bills. The dredges are entirely electric, and obtain their power from the Allen Diesel plant of the United Paracale Mining Company. Pneumatic control are used throughout to overcome the many difficulties often encountered in operating in tropical countries. Pan-American jigs are to be used on these dredges as an aid to gold recovery.

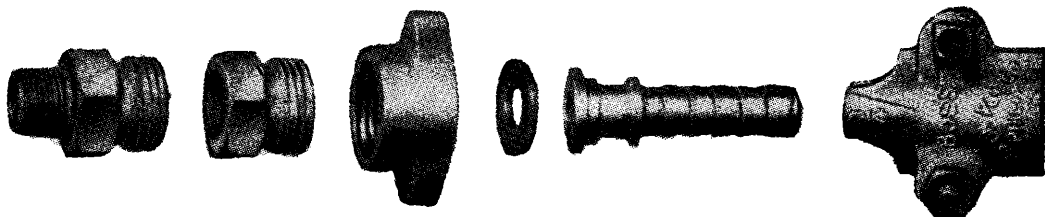
The pictures on the opposite page show the two dredges, Mary Angus and Anne Petronella, nearly ready for operation. The final pieces of equipment were on board the lighters sunk in Manila Harbor during the typhoon which struck unexpectedly on November 15.

The strip at the side of this page shows dredge equipment being recovered from Manila Bay, adjacent to piers 4 and 5, after the typhoon. Three divers, and several barges were employed by the Atlantic, Gulf & Pacific Company in this work. With the exception of a few minor pieces, all of the equipment was recovered, reconditioned, and delivered to Paracale, where it is now being installed.

The equipment was being transhipped from freighters in the Bay to the shore when the storm struck. Communications from the storm area were interrupted to such an extent that the Weather Bureau in Manila was not able to give warning of the storm until it actually arrived.



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CADMIUM PLATED

“BOSS” Couplings are for any duty, not only high pressure, but low pressure as well—for use on contract jobs, in industrial plants, oil refineries, mines and steel mills; for steam hammer, hydraulic, road building, steam hose, etc. Parts are steel or malleable iron to withstand abuse, and rustproofed by the electrolytic application of cadmium.

The extra long stem (shank) has rounded end, machined perfectly smooth—will not cut or wear the tube of hose. Clamps are heavily reinforced for extra gripping strength—the extended fingers, to engage collar on stem, absolutely prevent blowing off. The end of clamp is recessed to take up flow of hose on bolting up tight—eliminating any possibility of the hose being forced over the end of stem; thus further preventing cutting or crowding the tube of the hose. All bolts have hexagon nuts for ease in attaching.

The clean, silvery rustproof finish of the “BOSS” adds greatly to its appearance as well as to its durability.

These couplings are interchangeable.

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VALVE & COUPLING CO.

PHILADELPHIA

AND

LOS ANGELES

MARSMAN TRADING CORPORATION

Philippine Agents

NORTHERN MINING AGREEMENT

A contract was arranged during November by the Northern Mining & Development Company with Benj. S. Ohnick and associates for the operation of the Tuba and Mapulot groups of that company in Camarines Norte. The agreement, which was ratified by Northern Mining stockholders at a meeting held November 23 calls for the development of the property and the construction and installation of a milling plant, if ore found warrants such a move, to be financed by Mr. Ohnick and his as-

sociates. Marsman and Company will be technical managers of the property.

John Canson, president of Northern Mining, told the stockholders that the company was in a precarious financial condition, and that the offer of Mr. Ohnick and his associates was the best one obtainable.

The Rocky Mountain Fraction of Northern Mining is being operated by United Paracale Mining Company, and a small gold production is obtained each month.

LET'S GET ACQUAINTED *(Continued from page 21)*

shaft sinking, and the installation and successful operation of electric ore haulage to the mill.

He came to the Philippines in June, 1933 as shift boss for the Itogon Mining Company. In January, 1934, he was transferred to Suyoc Consolidated and placed in charge of underground operations. He was made general superintendent January 1, 1937, and has had much to do with the success of the Suyoc and of the Palidan Suyoc Drain Tunnel operations. Mr. Robinson is married, and has one child, Geraldine.

Warren Gilkison, Itogon's general superintendent, was born at La Porte, Colorado, and had his early education there. He was graduated from the Colorado School of Mines in 1923, and started his mining experience immediately as miner, assistant engineer, and shift boss at Utah Apex. In 1925 he was made superintendent of the Unity Gold Mines, in Warren, Idaho. The next year

he went to Mexico as division engineer for the Nocozare Copper Co., at Sonora. Later in 1926 he joined the Cia. de Real de Montey y Pachuca, and worked in various capacities at the Rosario, Camelia, and Arevelo units of that organization. On October, 1928 he was made assistant superintendent of the Arevelo unit, and superintendent in 1929.

Mr. Gilkison was transferred to the Señor San José unit of the same company in 1931 as superintendent, and served in that capacity until 1933. He then took a similar position for the Dolores-Sta. Margareta unit, in which capacity he served until the latter part of 1935.

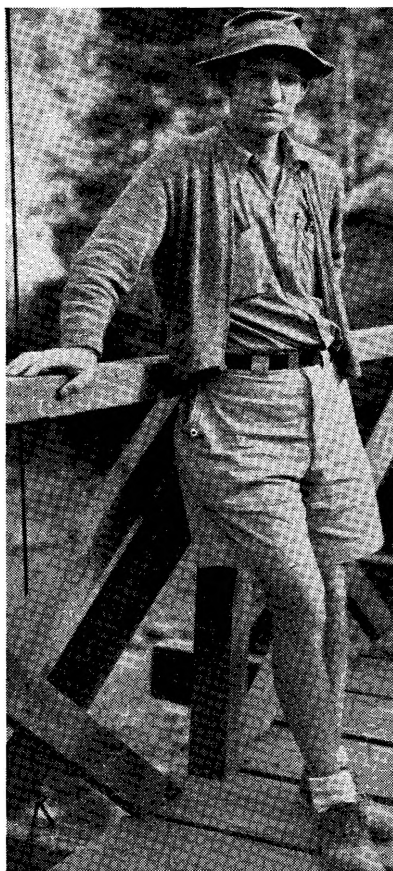
He came to the Philippines in April, 1936 as mine superintendent, and was promoted to the position of general superintendent in November, 1936. Mr. Gilkison is married, and has two children.

SUYOC CONSOLIDATED MINING COMPANY

Staff List

<i>Name</i>	<i>Position</i>	<i>Joined Company</i>
Robinson, Lewis Martin	General Supt.	Jan. 4, 1934
Heinrich, C. C.	Mine Supt.	Nov. 21, 1934
Funkhouser, Preston L.	Mill Supt.	July 9, 1934
Armstrong, Robert	Mill Shift Boss	Dec. 21, 1936
Barnes, John Wallace	Mill Shift Boss	Jan. 19, 1937
Butler, John N.	Asst. Mill Supt.	Dec. 21, 1936
Clarke, Charles Dixon	Asst. Mine Supt.	March 23, 1937
Harman, John W.	Chief Engineer	Aug. 28, 1936
Harper, Ashburton	Mine Shift Boss	Dec. 30, 1936
Heinrich, Richard John	Mine Shift Boss	Sept. 16, 1937
Hell, J. Howard	Mine Shift Boss	March 23, 1937
Keller, Harry	Electrician	May 20, 1934
Larson, Axel William	Pump Mechanic	April 7, 1936
McDonald, J. E.	Mill Shift Boss	Dec. 30, 1936
MacMahon, Arthur	Mine Shift Boss	August 26, 1937
Roeseler, William T.	Geologist	Feb. 7, 1937
Rohrer, S. Lewis	Head Assayer	Jan. 24, 1935
Venecia, German A. de	Resident Physician	April 15, 1934
Venecia, Mrs. G. A. de	Resident Head Nurse	April 15, 1934
Vierich, Georga A.	Mine Accountant	Nov. 1, 1933

LET'S GET ACQUAINTED



Mr. ROBINSON



Mr. GILKISON

The general superintendents of the two oldest properties under the management of Marsman and Company, Itogon and Suyoc Consolidated, are both exceptionally well fitted for their positions of responsibility as operating executives. Both are graduates of the same class, 1923, but of different mining school. Both learned their profession by doing it, and their experiences carried them to various mining camps of the Western United States and of Mexico.

Lewis M. Robinson, head of the Suyoc Consolidated operating staff, is a native of Jacksonville, Florida. An early interest in mining took him to Texas, where he enrolled in the Texas School of Mines in 1919. On his graduation in 1923, after having worked during his last year in college as student assistant in geology and mining, he spent two years

with the Old Dominion Company. In January, 1925 he took charge of the unwatering development of the Zarraboa Antiguas mine near Boma, Sinaloa, Mexico. This work completed, he joined the Inspiration Copper Company as sampler and assistant chief engineer.

From September, 1925, to December, 1928, Mr. Robinson was employed by the Dolores Mining Co., Chihuahua, Mexico, during which time he was advanced from mine shift boss to assistant mine superintendent. He was transferred to the Concheño Mining Co., under lease to the Dolores Co., and worked there until April, 1929. He then joined the Christmas Copper Co. For three years he was mine foreman and then assistant mine superintendent, working in underground development, stoping,

(Continued on page 19)

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	350 "	L. M. Robinson
United Paracale	Paracale, Camarines Norte, 200 km Sw of Manila	Gold Lode	350 "	R. H. Canon
San Mauricio	15 km N. of Paracale	Gold Lode	300 "	H. L. Barr
Coco Grove	Paracale	Gold Placer		F. A. Nowacki
Hongkong Wolfram Project	Kowloon, Hongkong	Wolfram Lode		J. Gifford Hull
Acoje Mining Company	14 km. E. Barrio Lucapan, Sta. Cruz, Zambales	Chromite Lode		C. G. Scott

Properties under Development

<i>Name</i>	<i>Location</i>	<i>Type Property</i>	<i>In Charge</i>
Gumaos Goldfields, Inc.	Camarines, Norte	Gold Lode	Frank Erno
Mindanao Mining Company	Zamboanga, Zamboanga	Gold Placer	
Palidan-Suyoc Deep Level Tunnel Company	Suyoc District, N. of Baguio	Drain Tunnel	Lloyd Pratt O. A. Wilson
Paracale National Gold Mining Co.	Camarines Norte	Gold Lode	
Northern Mining & Development & Co	Camarines Norte	Gold Lode	

EDITORIAL

Table Of Contents

LAW INTERPRETATION

The need for a careful and fair interpretation of the new mining law of the Philippines, and of all laws affecting the mining industry directly and indirectly, becomes more and more apparent as mining increases in importance.

Legislation in general, and the mining law of the Philippines in particular, is as effective and as impartial as those who interpret it. It is impossible to draw up any law that is so comprehensive as to make the attitudes of those who carry it out anything but all-important.

The Mining Law and the Securities Act are both comprehensive and drastic in their provisions; at the present their effect seems to be one of retarding the mining industry. The original intention was undoubtedly otherwise, but the result has arisen from too hasty consideration in the enactments. Many provisions of these laws were taken bodily from similar acts in the United States which have since proven unworkable and have been discarded.

(Please turn to page 24)

	<i>Page</i>
Gold Production Sets New Records ...	1
The Marsmans Return	1
Itogon Mining Company	2
Paracale National Gold Mining Company	2
Suyoc Consolidated Mining Company	2
San Mauricio Mining Company	2
United Paracale Mining Company ...	4
Acoje Mining Company	4
Palidan Suyoc Deep Level Tunnel Company	4
Christmas Greetings	5
Gumaos Goldfields, Inc.	6
Union Mines, Inc.	6
Vibro Pile System in the Philippines	8
Philippine Smelting Company	12
"Harvard Spirit", A Tribute to Richard Hayter	14
Coco Grove Dredgers	16-17
Northern Mining Agreement	19
Suyoc Consolidated Mining Company	
Staff List	20
Let's Get Acquainted	
L. M. Robinson	21
Warren Gilkison	21
Editorial	23

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RALPH KEELER, Editor and Business Manager

EDITORIAL (Continued from p. 23)

Much, of course, depends not only upon interpretation but also upon administration. There should always exist a friendly cooperation between the government and private enterprise of any kind, if industry is to flourish. This is particularly true in the case of an industry comparatively new to the country, as is mining to the Philippines.

Many complexities have developed, and others will inevitably be encountered from time to time. Amendments to the present laws will undoubtedly be-

come necessary. Useless but annoying restrictions should be speedily eliminated. Simplicity should be the keynote of all such legislation.

Now is the time for thoughtful study, not only on the part of governmental administrative entities and legislators, but also by the Chamber of Mines and private enterprise. Defects in the laws should be remedied, otherwise a promising industry will succumb through slow strangulation.

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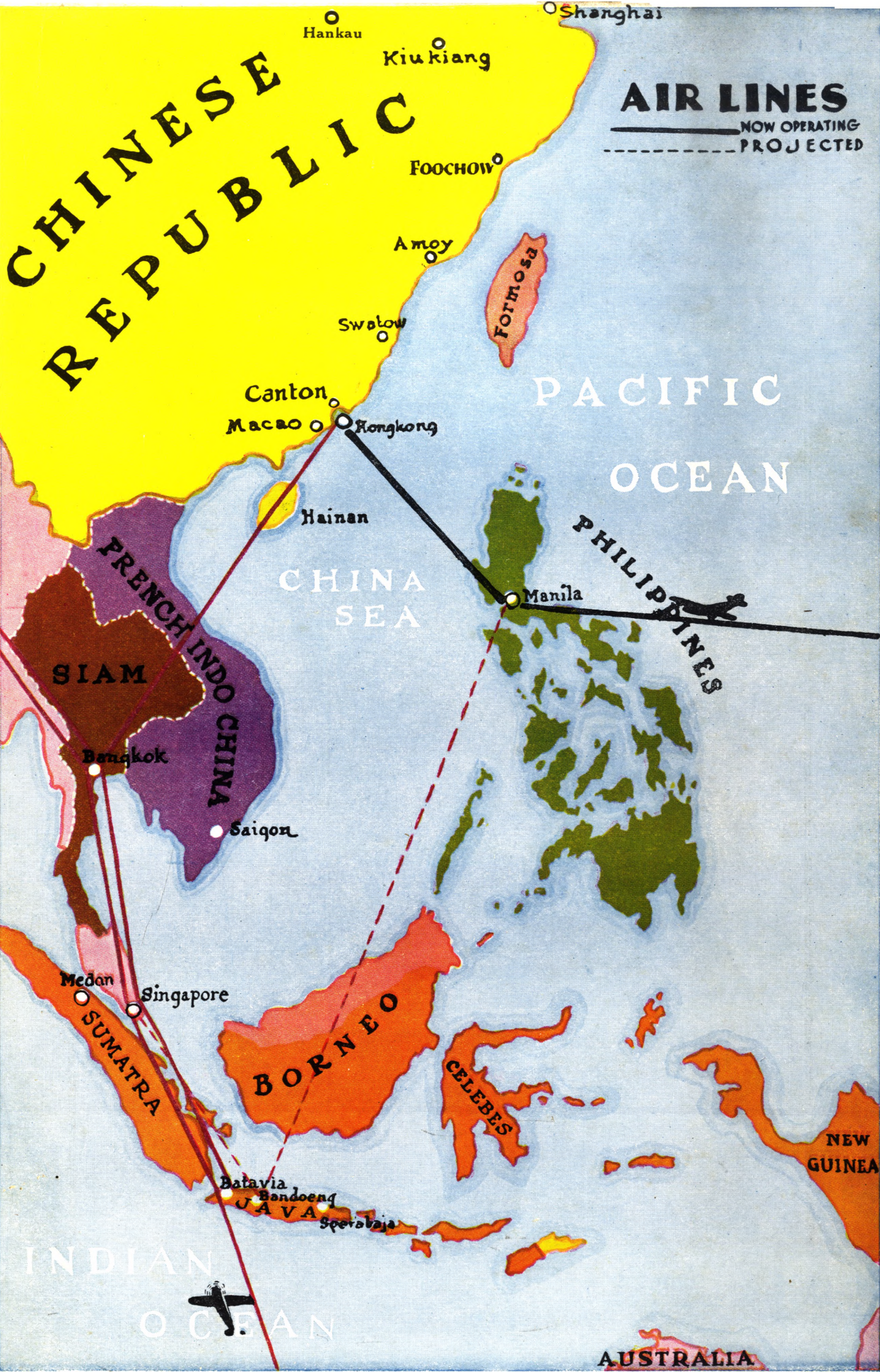
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