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DEPARTMENT OF GEOLOGY & MINERAL INDUSTRIES  
PORTLAND, OREGON

# THE ORE.-BIN

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May 1942

Portland, Oregon

ROVER, MOVE OVER

by

Earl K. Nixon

They come to me frequently, daily; sometimes singly, at other times in pairs or trios. Occasionally a covey will wing in. They employ divers manners of approach, none comforting to me.

Most come personally to unburden across my office desk, or while I'm in the field; some telephone, a sprinkling telegraph, and numbers write letters the lengths of which, I suspect, is quite likely to be in inverse proportion to the suffering of the writers. This afternoon (honest) while spending an hour for general physical (and to a lesser extent, mental) investigation by my favorite physician- my pathologic symptoms having arisen perhaps from recent excesses in line of duty pertaining to the encouraging of strategic mineral production, - I received no less than three long distance calls- one from another State- all of the same tenor.

Some of the communicants merely curse while others lament; a few deride, but most of them in plain disgust merely state bluntly in accepted Western vernacular that, so far as the direction of mineral raw material production in this War Emergency goes, "SOMETHING IS ROTTEN IN WASHINGTON". (I'm giving their story, not mine.)

They say it in all variety of ways - most of them bordering on the profane, but the versions all add up to the same thing. There is little question about the conviction of the tellers. "They", by the way, are citizens- and, I suppose, voters- of California, Oregon and Washington who are addicted to the business of mining. "Business of mining!" We used to be proud of that term, but now look at the damn thing!

I'm neither father confessor nor wizard nor Merlin, - just a rough-neck mining-geologist, employed by the State to minister to mining and geological ills, and incidentally employed also by the government in a minor way. The latter consideration, it appears, is largely responsible for my being expected to preside at a sort of Court of Inhuman Relations. Anyway, I "give" whether on the doctor's table, in the bath tub or at way points; and derive certain satisfaction, and much fatigue, from affording non-paying customers the chance of venting their enlarged spleens or of asking a favor arising from a gripe.

If one were to believe the allegations or suspicions of my visitors and correspondents, he would conclude that the people in Washington who run the mineral affairs of the government in this emergency are unusual persons indeed. They are classified variously- sometimes whimsically, sometimes contemptuously- into a number of species. Almost any of these species, it seems, when serving with the government on mineral production matters, are anathema to Mr. Visitor-Miner. He would swear on a stack of Bibles as high as the cost of democracy that nobody in Washington could tell a jackhammer from a muck stick.

A WPB official in Washington, I gather, is supposed to know all, see all, believe all, and do all, - and do it right now, TODAY; "but never does:" - And, it is claimed, he tells nothing, whether he is supposed to or not, or whether or no it would help matters with the mineral producer.

My inquirer, it seems, has "written to Washington" and received a reply suggesting that he should obtain the desired information by writing Mr. Ixnay, Chief of the Promethium Section of the Heavy Liquid Branch of the Department of the Exterior. An air-letter to Mr. Ixnay brings the answer in a couple of weeks, that the inquiry should have been addressed to Mr. Buxtoop, Deputy Director of the Girdle Section, Pyro-Textile Branch, of the Federal

Chiffonier of Public Robes. My inquirer was a little uncertain about names, but never mind. A few more exchanges of letters over a period of weeks has caused my visitor to conclude that Washington is a booby-hatch or that it isn't interested in answering his question about how to make rubber out of coal and swamp water. So he comes to me and tells his story. Dear God, why couldn't I have been born a bull frog so I could dive under a lily pad?

But such cases are rare. More often, Jerry Doe, who has a babbit metal operation up near Tom Cat Lake, 'phones in that the crank shaft of his compressor has busted. He's wired to Denver for a new one to come air-express; the company has wired back asking for a priority; he wired, in effect, 'To Hell with the priority, send the crank shaft'. They say, 'No can do. Get priority from Washington.' He wires Washington, and Washington wires back that they are sending Priority blanks. (They come ordinary mail.) He hasn't received the blanks yet, and to say merely that he is 'fit to be tied', would be like averring that Hitler is 'a bit of a bounder'. Then, while Jerry is coming over the mountain to take in food for the crew, the gears go out of his truck- and no gears his side of Seattle. How Jerry would like to entertain the War Production Board, the Priorities Division, et al., up at his camp until the compressor is going again! He'd feed them cyanide biscuits, litharge pudding, and 100-W coffee until they learned what it takes to produce babbit metal out of the ground!

Or Dominic McSwithy 'phones from some hundred miles down the line that he's dumped 25 tons of chromite at the new government retail stockpile, and that it assayed .2 of a percent below grade. The engineer would like to have McSwithy take the rock out of the yard. McSwithy's bloodpressure hits a new high for the season. There is a misunderstanding, which the engineer straightens out in a day or two. But McSwithy wants to know of me if MacArthur has to write a letter to Washington whenever he wants to load his gun. (How the Hell should I know? Maybe he does.)

Or Jim Crow, who turns out bottles per day of quicklead, ran the gears out of his cat and can't keep the road to the mine clear of snow. Yes, he has a priority serial number, but there aren't any gears. Peoria may have them in a few weeks if the Army doesn't take them. In a few weeks! And it costs \$600 per day to keep the mine going. And Mr. Blickes talking about lowering the price of quicklead!

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So I demur, and temporize with my friends in some such vein as....."You know, we workers, citizens, taxpayers, and voters, have, through the last 160 years developed a most remarkable economic, industrial and political system in the United States. Right or wrong, our system has gotten results, - the country's progress, wealth, and resources demonstrate that. In this development, we have built up a tremendous and ponderous system of checks and double-checks to govern the actions of government employees and officials in Washington. Under the system, we the wide-eyed people of the wide open spaces have come to feel that a reasonable portion of our tax contributions have a chance of coming within a row of apple trees of being spent honestly and in the approximate manner we desire. It's our system; we put it in. It wasn't started over night by a dictator. So, it's our responsibility. We did it in normal, or peace times, and in such times it has worked well. Tie our system up in a package and try to characterize it, and 'red tape' would be the only word you could summon. We tolerate red tape in normal times, knowing it may serve some purpose.

"Now, suddenly we find ourselves in a war emergency; we are caught literally with our plants down; we aren't geared to producing, or acting, or even thinking rapidly. A change of pace doesn't come naturally or easy. When we do begin to get going, we find ourselves burdened down with that ponderous government machine, designed and rated for peace time operation, but with its gears plugged with red tape. Without eliminating red tape you can-

not obtain faster timing; without faster timing, the result may be disaster.

"There is no question but that the government agencies in Washington are trying desperately to reduce red tape, cut out duplication of effort, and by-pass some of the double-checks we would demand in normal times. But in many cases they are obliged by law to follow certain courses. The War Department, it appears, is still plugged with a lot of red tape to a large extent. And War Department approval is still tied in with WPB and other agency operations. The result is delays. Add the effect of the politicians, the pressure groups, and some isolationist feeling and the answer is more delays. Anyway, it's our own system and we will have to sleep with it until we can shake it off for purposes of this emergency. Jerry will have to wait for his crank shaft....."

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Western people in general and miners in particular are very human mortals. They're realists, a bit earthy at times, but genuine in feeling, literal in concept, and direct in both logic and action. They are on the whole, deeply patriotic, in a very impersonal way. They have too much pioneer blood to be otherwise. Their ancestors struggled across the plains or sailed 'round the Horn, and made this a Whitemans' country out of an Indians' wilderness. (There are still a few Indians and an occasional Republican out here, but you seldom hear much about either any more.)

Mining people seem really to appreciate the land, the soil in which things grow, and the rock underneath, more than other breeds of humans. They would. It's their domain, their source of livelihood. It and the peaceful possession of it, mean their existence. They are not so concerned with the complexion of the current administration or its personnel in Washington, so long as their land and livelihood are neither jeopardized nor interfered with too much. We, in Oregon and Washington have often thought that when they drew the map of the United States that we barely got under the wire, and we've wondered sometimes if it would have made much difference if we hadn't. We've pretty much pushed our own wheelbarrow through the years. The industrial East has been happy to keep us as customers and not otherwise. Then some hardy recent explorer reported to the Great White Father, the Columbia River with a lot of potential water power going to waste, and we have had a lot of attention ever since. We'd gamble our rubber tires against a donut that few adults east of the Alleghenies can tell you which is closer to Japan, Oregon or Pearl Harbor.

Now, we are in a war. We on the West Coast feel that we are slightly under the gun. When we used to go to the beach before tire rationing, we'd look out over the Pacific and say, "you can almost see the yellow so and so's out there." There's nothing between us and Japan but some flat water, - anybody's water. Are we afraid? Hell, no! Last week a town near the Oregon coast made a formal petition to its County Judge to get a road out from the village down to a certain broad, land-locked beach, - so they can get at and lick the pants off the Japs if they land there.

But nevertheless, we want to be prepared. We want the implements with which to defend the country, and especially our part of it. We've had too many promises and too many delays on the part of Washington so far and we're tired of it. We've been at war five months now, since Pearl Harbour. Washington is discovering that it doesn't take merely new buildings, mechanics, and machines to turn out planes and ordnance, - it takes iron and magnesium and copper and chromite and zinc and quicksilver that have to be dug out of the ground. More than was ever dug out before, and more rapidly! If the government needs chrome for armor plate and copper and zinc for shell casings, quicksilver for detonators, and iron ore for steel, we want to tie in and dig the ores out of the ground without waiting on red tape, political expediency, or completion of gentlemen's arrangements in far-away Washington.

We want facilities and machinery with which to dig our ores out; and access roads to make the deposits accessible. And we want smelters and furnaces to treat our ores - plants of the type and size, we hope, that may carry on in normal times; we want them in "our country" - not on the other side of the mountains; and we don't want to wait until it's too late for these things.

We are not asking for great profits on our operations; we know that nobody is going to make any considerable profit in the future. We'd like just enough incentive to allow us to feel that what we develop now, we can depend on for a living after the war (if we win the war). We want to develop and produce our minerals NOW as a contribution in this emergency.

One mad-hat remarked that, "If we win this war, - which we have been losing rapidly so far - it will be in spite of Washington rather than with the help of Washington."

That is the story of a lot of mining people in the three coastal States as it comes to me. It's their story, not mine. I've just tried to do a job of honest reporting on ideas of a cross-section of miners, engineers, and operators.

Now, as to my own story, well, I may write that as a sequel to this one of my visitors and communicants, if I feel the urge sometime.

Anyway, Washington, You're in the dog house with these people, the miners. Move over, Rover.

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#### GREATEST EARTH MOVER

Man's efforts in large scale mining and in excavating large quantities of rock are dwarfed by nature in erosion by streams. The enormous quantity of material moved by streams is shown by a release May 2, 1942 by the U. S. Geological Survey, part of which is quoted as follows:

#### "SUSPENDED MATTER IN THE COLORADO RIVER, 1925-1941

"The Geological Survey has made measurements of the loads of suspended matter carried by the Colorado River at Grand Canyon, Ariz., during the 16-year period from October 1, 1925, to September 30, 1941, and for shorter periods at other places in the Colorado River drainage basin. The annual loads of suspended matter at Grand Canyon ranged from 50,300,000 tons in 1933-34 to 480,000,000 in 1928-29, and the mean annual load for the 16-year period was 200,200,000 tons."

The suspended matter referred to does not include dissolved salts, which would mean an additional large quantity of mineral taken from the crust of the earth.

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#### SUSPENSION ASSESSMENT WORK

According to a telegram received by Senator Charles L. McNary, H.R. 6604 which provides for suspension of annual assessment work on mining claims has passed both houses of Congress and now awaits the President's signature.

H.R.6604 was introduced by Representative O'Connor of Montana and suspends assessment work for two years beginning July 1, 1941 and ending July 1, 1943.

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## UNUSUAL MANGANESE MINERAL FOUND IN OREGON

Neotocite, a hydrous manganese silicate, was recently discovered in Oregon by Randall E. Brown, Junior Geologist for the State Department of Geology and Mineral Industries. This mineral forms the principal part of a manganese deposit in southern Curry County, and is distinctive in that it is believed to be the first recorded occurrence of neotocite in Oregon. The mineral is not uncommon in the manganese areas of the Olympic Peninsula in Washington and in the Sierra Nevada of California.

Neotocite is a manganese mineral of indefinite composition, essentially  $x\text{MnO} \cdot y\text{SiO}_2 \cdot z\text{H}_2\text{O}$ . Iron is usually present, replacing the manganese. It is dark brown to liver brown in color, has a hardness between 3 and 4 and a specific gravity of 2.8. It is an amorphous mineral, colloidal in character with conchoidal fracture and a resinous luster. Weathering alters the mineral to black manganese oxides on seams and fractures.

The neotocite occurs in a chert lens, similar to other manganese deposits in the southwestern part of the State. Normally bright red jasper accompanies the manganese and has been replaced by the neotocite. Some of the siliceous material resembles the jasper even to the fine grained structure, yet weathers to a black manganese oxide, as does the dark brown material.

Lack of sufficient exposures prevented a detailed study of the deposit, but it appears that the neotocite was probably derived by the alteration of primary silicates of manganese, probably rhodonite.

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PALEONTOLOGY  
a  
PRACTICAL SCIENCE

What? Paleontology a practical science?

Seems doubtful, but let's look at the record.

If people think about it at all, they loosely catalogue paleontology along with archeology as "long haired" stuff dealing with very ancient lore- of no present use - a study taken up by well-meaning but slightly queer college professors who dwell in the long, long ago.

Collecting dinosaur eggs from the Gobi Desert may appear to us as news, but we never think that there may actually be a "dollars and cents" value to that information. The finding of elephant or camel or rhinoceros bones in the eastern Oregon deserts may impress us enough so that we give a fleeting, wondering thought to the scene of past days; but we never think that this knowledge may be worth something to the citizens of the State. And the multisyllabic latin names they tack on to these animals are enough to scare anyone from further interest in the subject! Even the biologists, geologists and doctors, and engineers who actually make use of paleontology in their everyday work, frequently do not realize to what a tremendous extent the advancement of their own science depended and still depends upon the science of paleontology.

Just what is paleontology? Most people have an idea that it is the study of fossils... which is correct. It is more than that, however; it is the interpretation of all the processes and habits and environments of the life of the past, as evidenced by the fossils, which themselves have been defined as "any recognizable traces of past life". A footprint of a dinosaur is a fossil. A bore-hole made by an Archean worm is a fossil. Each of these is just as much a fossil as is, for example, the complete skeleton of a saber-tooth tiger

recovered from the Rancho La Brea tar pits.

Let us make a brief survey of time intervals of life in the past. We can go back 400 years in American written history, and about 2500 years in European history. Egyptian history, since deciphering of the Rosetta stone, enables us to go back (in that one small locality on the earth) as far as 7000 years ago. Beyond that our knowledge of the past enters the realm of the archeologist, who digs up remnants of human bones and huts and castles and mounds, restores artifacts and potsherds, and can tell us something about the human race which existed as far back as the "Eolithic" maybe half a million years ago.

From then on, for the next half billion years, we must depend on the paleontologist for our story of past life. Before that time we find no record at all of life on the earth.

It is a basic fact that certain types of fossils are found only in their characteristic geologic horizons. Thus, when one finds the coiled ammonites, such as are found in the Mitchell-Suplee area of Central Oregon, it is reasonable to assume that the age of the formation yielding these forms is in the Mesozoic. Further study of the ammonitic forms will reveal the age to be of Triassic, Jurassic or Cretaceous, since each of the three periods composing the Mesozoic era are characterized by distinct forms.

At the close of the Triassic, all forms living during that time died and were replaced by forms characteristic of the Jurassic. Toward the close of the Jurassic period, the genera and families decreased in numbers, and by the close of that period, had become extinct. During the Cretaceous, other and more complex genera became dominant. Incidentally the sudden extinction of the ammonites at the end of the Cretaceous is one of the most remarkable phenomena in the history of the organic world, and one as yet without explanation.

What, then, are the applications of paleontology? Foremost of all, it is necessary in arranging the sequence of past geologic events. Paleontology furnishes us with markers which say "I came before so-and-so" and "I came after so-and-so"; it helps us build up the chronology of the past into a more or less complete history of the events which have taken place, because we can tie these events in with the life which was growing and developing and changing while the events were going on. "Stratigraphy" is the name of the science (whose father is geology and mother is paleontology) of building up this history of the earth, and stratigraphy is the basis for structural geology. This sort of study is essential in design and location of dams and reservoirs; to a lesser degree is it used in highway construction and foundation plans.

Probably the most important commercial use of paleontology is in exploration and correlation of oil structure. In such work detailed studies are made of large (macroscopic) and small (microscopic) fossils found in the drill cores. The correlation of geologic horizons and knowledge gained by these studies directly controls the drilling programs. Foraminifera (micro-fossils) are used as a criteria for determining the age of the sediments associated with productive oil horizons. Each stratum has its own characteristic foraminifera, and whenever these fossils are encountered in drilling for oil, the formation and its age are immediately ascertained, and the possibilities of finding oil are thereby fairly well known.

The relation of the paleontologist to the engineer-geologist may be compared to that of the x-ray specialist to the surgeon. To perform a successful operation the surgeon must rely not only on the x-ray picture but on the interpretation of the picture by the specialist. So does the geologist call in the specialist to tell him how old the rocks may be and "which happened when".

Speaking of the surgeon and physician leads us to the fundamental concepts of development of life. A large portion of the evidence for such concepts is based on the work of the paleontologist. The gill-slits in the human embryo are only one evidence of the "life of the individual repeating the life of the race" in its development.

Biologists tell us that a clear understanding of the functions of many of the so-called non-essential organs found in the bodies of present-day humans and animals can be interpreted only by facts revealed by the paleontologist who has shown that these degenerate organs were essential to life in past geologic ages.

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#### PRIORITIES

According to the American Mining Congress Information Service the War Production Board has asked that a form attached to the A.M.C. bulletin dated April 10, 1942 be brought to the attention of metal producers throughout the country. This form outlines information which the producer must supply the mining branch of W.P.B. in applying for a priority rating on new machinery or equipment, or in applying for an A-1-a rating in the event of actual breakdown or an A-1-c rating to avert impending breakdowns. This form supplied by the A.M.C. is reproduced below:

#### METAL MINES

#### REVISED OUTLINE OF INFORMATION

#### FOR RATINGS UNDER PREFERENCE RATING ORDER P-56 AS AMENDED TO MARCH 2, 1942.

Address all communications to: Mining Branch, War Production Board  
First Floor, Wing One, Temporary Building E  
Sixth Street and Adams Drive, Southwest  
Washington, D. C.

All the information listed below is required to support requests for Preference Ratings.

1. Name and Mail address of Company.
2. Mine name, location, and serial number.
3. Total production for last year by metals (in terms of ounces, pounds, tons).
4. Present daily production, or anticipated production if new operation.
5. Machinery or equipment needed with specifications, including manufacturer, type, size, etc.
6. Actual or estimated cost.
7. Name and address of supplier, and name of dealer, if different from supplier.
8. Your purchase order number and date placed.
9. Reasons for purchase of equipment:
  - a. If actual breakdown, state the extent and date of the breakage and the effect of the breakdown upon production.
  - b. If impending breakdown, describe circumstances indicating that a breakdown is likely and the effect of such breakdown upon production.
  - c. If expansion of production or new plant, state increase in production which will result from the new equipment.
  - d. If replacing obsolete or worn-out equipment, state length of life, proposed disposal plan, and salvage value of replaced equipment.
10. If metal alloys or steel plates are included, state type of alloy, size of plates and weight.
11. Rating requested (A-3, A-1-j, A-1-c, or A-1-a) with delivery date promised, both on this rating and on the next lower rating.

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## SPECTROGRAPHIC ANALYSES

The Department recently received a letter containing questions concerning spectrographic analysis. It is believed that these questions may be typical; therefore they, together with the reply to the letter, are reproduced below:

"Also I would like to know the difference between the two spectrographic analyses-- one \$7.00 for 66 elements- and the other \$3.00 for 2 elements and \$1.00 for each of the remaining 64. I am wondering if the latter is an enlarged portion of the spectrograph of the area occupied by the desired mineral and so more accurate. If that is so would it not be advisable to first have the complete analysis and then if anything shows up of interest another of the localized section?

"I would also like to know what percentage of an element is necessary to show accurately and if elements in chemical combination in the ore will show on the spectrograph.

"How much of a sample is required and where should it be sent for analysis? Is the regular form for analysis of ores required?"

Department's reply:

"In reply to your letter of April 21st I am glad to answer your questions regarding spectrographic analyses and their cost. The difference between the price of a spectrographic analysis for two elements and a spectrographic analysis for 66 elements is based upon the amount of time and photographic material involved in the analysis desired. The State Department of Geology and Mineral Industries has installed a large grating type spectrograph because it was felt that this type of spectrograph is the only type suitable for mineral analysis where very complex ores and minerals are frequently encountered. Our spectrograph is sufficiently large to spread out the spectrum to such an extent that there is a minimum chance for doubt in the identification of spectrum lines when the spectrum is extremely complicated. However, whenever the spectrum is spread out to a considerable extent it is not practical to design a spectrograph so that the entire spectrum may be photographed by one exposure. Smaller spectrographs photograph all of the usable spectrum in one exposure but in this case it is not possible to analyze samples containing high percentages of certain elements, among which are tungsten, iron, chromium, and many others. It is the general practice to list the elements in groups depending upon which portion of the spectrum is used for the analysis of these elements.

"In our listing, group one includes those elements whose sensitive spectrum lines appear in the ultra violet region; group two those elements whose sensitive lines appear in the middle of the usable spectrum range; and group three those elements whose sensitive lines appear in the red region of the spectrum. If the analysis calls for two elements in any one group it is only necessary to photograph and develop one spectrographic plate, while for the analysis of 66 elements it is necessary to take three separate exposures in three different regions of the spectrum and this procedure necessitates the use of two different photographic plates. In addition to the difference in the photographic procedure it is relatively easy to study the spectrographic plate for the presence or absence of a few elements, while the work involved in searching for the presence of 66 elements is much greater. Because our spectrograph is the largest commercial instrument of its type it is not necessary to enlarge any portion of the spectrogram; because it is a grating instrument we can work in a higher order of magnification and thus have a still greater spread of the spectrum if we feel that it is necessary to do so. Thus the localized section you mention would not be any more susceptible of intensive study than would be the entire spectrum.

"The percentage of an element necessary for the detection of that element varies with the different elements, and there is no general rule covering this subject. In most cases amounts in the order of 0.01 to 0.001% are easily detected. However, in general the metals are more sensitive than the non-metals although some of the metals such as uranium, thorium, cerium, and a few others, are more easily detected by chemical methods. If you wish more specific information regarding the sensitivity of certain elements I will be glad to give you that information on request. The chemical combination of the element does not appreciably affect the accuracy of the analysis although if there is much organic matter present it is generally wise to ash the sample before attempting an analysis.

"The amount of material used in the analysis is quite small, generally not more than a few hundred milligrams but we prefer to have a sample of at least a pound so that we can be surer of a representative sample. Such samples should be sent to the Portland office.

"One matter that may not be clear to you is the price of the analysis. Because we believe that we have one of the finest spectrographs obtainable we have placed the price of our analyses at a slightly higher level than that charged by the various commercial laboratories. That is, our analysis priced at \$7.00 is listed by the majority of commercial laboratories at \$6.00. However, the spectrographic laboratory is a State service and our Governing Board felt that citizens of Oregon should be allowed to use the laboratory at as reasonable a cost as possible; therefore any citizen of Oregon who submits a sample which originated in the State of Oregon is allowed a 20% discount, provided he accompanies the sample with an affidavit stating that he is a citizen of Oregon. Blank affidavit forms will be sent on request. It is not necessary to supply the information as to location required in the free assaying service. If the sender wishes to have an analysis without submitting an affidavit it is not necessary that any information regarding the source of the sample be submitted, but in such cases it is not possible to obtain the 20% discount.

"In case I have not fully answered your questions I will be glad to go into more detail. We welcome visitors at the spectrographic laboratory and I will be glad to discuss spectrographic analysis with you whenever you care to visit us."

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H.R.6604

#### SUSPENSION ANNUAL ASSESSMENT WORK

After printing the notification received from Senator McNary as given on page 43 the Department received the text of the bill which is reproduced below:

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the provision of section 2324 of the Revised Statutes of the United States, which requires on each mining claim located, and until a patent has been issued therefor, not less than \$100 worth of labor to be performed or improvements aggregating such amount to be made each year, be, and the same is hereby, suspended as to all mining claims in the United States, including the Territory of Alaska, during the year beginning at 12 o'clock meridian July 1, 1941, and ending at 12 o'clock meridian July 1, 1943: Provided, That every claimant of any such mining claim, in order to obtain the benefits of this Act, shall file, or cause to be filed, in the office where the location notice or certificate is recorded, on or before 12 o'clock meridian July 1, 1943, a notice of his desire to hold said mining claim under this Act: Provided further, That such suspension of assessment work shall not apply to more than six lode-mining

claims held by the same person, nor to more than twelve lode-mining claims held by the same partnership, association, or corporation."

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#### PAPER ON MINE SAMPLING

Modern Methods of Mine Sampling is the title of a paper just issued by the Engineering Experiment Station, Oregon State College, Corvallis. The author is Richard K. Meade, instructor in mining engineering, Oregon State College. The paper was originally published by The Compass of Sigma Gamma Epsilon, January 1942, and is now issued as Reprint No. 25 by the Engineering Experiment Station.

Several standard methods of mine sampling are clearly described in the 16 pages of the paper which also contains several illustrations. The paper contains much of value for the small mine operator, the engineer and the prospector.

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#### CLEARING HOUSE COLUMN

62-CH E. G. Kingwell, with Abrams & Ellis Incorp., 409 Masonic Bldg. Salem, Oregon, is a mine broker and is interested in all metals produced in the Northwest. He desires to get in touch with anyone having a good mine prospect requiring development or a property for sale.

63-CH Mrs. Robert Lundborn, Route 2, Box 419, Gresham, Oregon, phone, Gresham 5604, wishes to sell or lease productive coal land in Castle Rock coal district, Washington. Location is 4 miles from Castle Rock; area, 160 acres. Coal is sub-bituminous grade; heating value 9000 to 10,000 B.t.u.'s. Coal beds are close to Cowlitz River and owner reports coal could be barged to Longview or hauled to railroad at Castle Rock.

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