OIL IN WILLAMETTE VALLEY

R. M. BRERETON FINDS TRACES OF PETROLEUM.

Geological Formations Similar to Those of Oil-Bearing Districts of California.

(From The Oregonian December 28, 1908.)

WOODSTOCK, Or., Dec. 27.—(To the Editor.)—The enclosed data form the basis of my belief in the probability of petroleum being found in the Willamette Valley.

In 1871-72 I saw the seacoast of California, from Santa Barbara to San Diego, iridescent with petroleum, and reported to W. C. Ralston and others that California would be found a great oil region. Their eyes and minds were then so full of the gold placers and the Comstock mines that they paid no attention.

It was much the same with my great irrigation project in the San Joaquin Valley, when the whole of it was a semi-arid region. In both of these I was about 20 years too early in advocating exploitation, but the present outcome shows I was entirely correct.

The data follows:

First—The geological formations of Western Oregon are in the same relative sequence as those existing in the oil regions of California, viz: (a) cretaceous, (b) eocene, (c) miocene.

Second—The most productive of petroleum in these in California today lie within the upper miocene tertiary formation.

Third—The whole of the Tualatin and Yamhill valleys within the counties of Washington, Yamhill and Polk lying west of the Willamette River are in the miocene formation. The same formation exists east of the river along the western slope of the Cascade range, north from Eugene to the Clackamas River.

Fourth—The shales and sandstones throughout this miocene region are fully as fossiliferous and diatomaceous as are those in California. This fact is revealed in the drainage area of Dairy Creek, north of Hillsboro and Forest Grove; also in Gales Creek and in Bocns' Quarry, west and southwest of Forest Grove; also at North Yamhill, at the south end of Wapato Lake, and at Carlton, in Yamhill County; also in the hill range east of Amity in the same county, and in the same hills east of McCoy and Holmes' Gap in Polk County. I sank three wells for water on the farm I had between Forest Grove and Cornelius, from these, within 25 feet of the surface I obtained miocene shales and fossils. During the past 20 years that I have been resident in Oregon, I have collected specimens of miocene fossiliferous sandstones and shales from all the above-mentioned points. Among these are bituminous shales. In the Tualatin Valley I found shales which contained a strong scent of petroleum.

Fifth—Petroleum differs from coal in that it is the product of marine vegetation and organism; coal is the product of fresh water vegetation, and generally is only found in Western Oregon in the eocene formation. In Polk and Yamhill Counties like Salt Creek, a tributary of the Yamhill River; in this are found strong salt springs. An old settler at Amity showed me a well he had sunk for water; he could not use it because it was oily.

Sixth—All geologists admit that the Pacific Ocean extended far eastward before the uplift of the Rocky Mountain Range. Then it was thrown back to the westward by the latter uplift of the Cascade and Sierra Nevada Ranges, and further by the uplift of the Coast Range. Recently, the oil-bearing strata of the miocene formation have been found in Mono County, California, on the summit of the Sierras, thus illustrating how the ancient ocean bed has been uplifted.

Seventh—Hitherto nearly all the boring exploitation work for petroleum in Western Oregon has been done in the eocene formation; I do not know of a single case in the miocene. If this, miocene formation in the Tualatin and Yamhill valleys has anything like the thickness found in California, I should look for oil and gas to be found therein. The United States geologists have not yet explored it, and it seems time to me full time for Oregonians to urge the Government to undertake this most important investigation.

Eighth—The miocene strata are far more extensive in area and depth in Eastern Oregon than they are in Western Oregon; but there they are covered with a great depth of basaltic lava flows and fresh-water deposits, which would make any exploration work far more expensive than in the Willamette Valley.

Ninth—The California oil-bearing strata have been traced and exploited in Humboldt County. I have found the miocene strata in Curry County, the so-called "pitch-coal" found in Coos County is an asphalt (petroleum analyzed), not a true lignite coal. The Nehalem and the Cowlitz coal are in the eocene formation.

R. M. BRERETON, C. E.

A GREAT THING FOR PORTLAND

ROSE CITY WILL BE ONE OF WORLD'S GREAT OIL MARTS.

Mr. Brereton Believes This City Is Soon to Be One of the World's Greatest Oil Centers.

From the Evening Telegram, April 23, 1908.

That Portland will be, at a date not far distant, one of the world's greatest oil centers, is the prediction of R. M. Brereton, perhaps the best-known civil engineer on the Pacific Coast. He has been a resident of this city for many years, during which time his work has led him all over the Northwest. He has studied every foot of soil and rock that he has gone over, and he now declares that Oregon will soon be producing oil in far greater quantities than California.

In Mr. Brereton's autobiography—"Reminiscences of an Old English Civil Engineer"—which has just been published in handsome book form, one chapter is devoted to the future of Portland as a commercial city and of Oregon as an oil-producing state. On both subjects he speaks as one having authority. He says:

"I believe it possible, and even probable, for Portland's more rapid growth in population and wealth in the near future, through the development of the new occult and wholly unexplored natural resources of what should be Oregon's own oil fields. My faith in the existence of these is based upon the fact that the oil fields of California are mainly found in the geological strata known as the miocene or neocene sandstone and shales, and, more especially, in the geological horizon of the middle miocene rocks.

"Oregon possesses, from my own personal observation and study, a far greater area of these oil and gas miocene formations than California. In Eastern Oregon and in the Willamette Valley these miocene formations abound. These are marvelously rich in fossiliferous and diatomaceous and forsiminiferous organic materials of marine origin. These form the accepted sources of petroleum, bitumen and asphalt on the Pacific Coast."

It was Mr. Brereton who some 40 years ago showed the people of California what great wealth lay at their feet if they would but irrigate their lands. He laid out the first of the great irrigation enterprises that now make the Golden State flourish, and it was through the effort of Mr. Brereton than Congress was induced to allow the Federal Government to aid in watering the dry lands of the Nation.

Andrew Sherwood, a Distinguished Geologist from the Oil Region of Pennsylvania, Will Have Charge of the Company's Work in the Field, and Will Direct the Location and Sinking of the Test Wells

WHO'S ANDREW SHERWOOD?

(Who's Who in America, Portland Public Library.)

ANDREW SHERWOOD—Geologist; born Mansfield, Pa., July 16, 1848; educated State Normal School and old Chicago University; connected six years with geological surveys of Ohio and New York, under J. S. Newberry and James Hall; Assistant State Geologist second geological survey of Pennsylvania; in charge Pennsylvania mineral exhibit World's Columbia Exhibition, Chicago, 1893; leader of expedition to Yukon, 1898; delegate from Pennsylvania to National Prohibition Convention, Indianapolis, Indiana, 1888; Prohibition candidate for Congress 1894; member American Philosophical Society; member American Forestry Association; member American Association for the Advancement of Science; corresponding member New York Academy of Sciences; author of geological works published by the state; author numerous newspaper and magazine articles; United States Deputy Mineral Surveyor, and

HE'S VICE-PRESIDENT AND FIELD MANAGER OF THE PORTLAND OIL AND GAS COMPANY.

Only the names of GREAT men are in that book—"Who's Who in America"—and if it were not a great book it would not be in the library. By references to its pages any one can readily find out who IS who in this country. Mr. Sherwood came to Oregon some time ago on a visit to his son, principal of the Terwilliger School, and upon ascertaining his great ability as a geologist he was engaged to make a critical geological examination of a large tract of country in the Willamette Valley, with a view of ascertaining the probability of the existence of petroleum, gas or coal deposits beneath the surface of the earth in that section. For years it had been rumored that the formation here was identical with that of California's oil-producing section, and this investigation was to be made with the sole object in view of ascertaining the facts in the case, and sinking for oil if the reports were favorable. We therefore have pleasure in appending hereto

MR. SHERWOOD'S REPORT IN FULL.

I have the honor to submit to you the following brief report of observations on the geological structure of a portion of Yamhill County, in the State of Oregon, with reference to the possible existence therein of petroleum. The region in question embraces that portion of said County of Yamhill lying in and around the villages of McMinnville and North Yamhill and the intervening country between there two places.

This beautiful valley, lying between the Newberg hills on the east and the foothills of the Coast Range on the west, is a typical example of what is known among geologists as an anticlinal valley. In other words, it is in the line of a grat arch in the underlying strata, and belongs in and is one of the series of great axes of upheaval and depression constituting the Coast Range mountain system. This is an axis of upheaval, or an anticlinal axis, while on either side, under the Newberg hills to the east, and under the foothills to the west, there is an axis of depression, or a synclinal axis, beyond which, but more especially to the westward, there exists a succession or series of these folds of the same general character, only that in the mountains they are much steeper and more complex. All these arches of upheaval and depression run north and south, or with the mountains, and in conformity with the coast line, and, as I have said, they are known as anticlinals and synclinals. An anticlinal is an arch in the rocky formations lying between and parallel with two synclinals, and from it the strata dips down and away to the bottom of the synclinals. A synclinal is an inverted arch, lying between and parallel with two synclinals and from it the rocks rise over the anticlinals.

I have been thus explicit in the matter of the geological structure of the region for the reason that the existence of oil depends so largely upon structure. Of the three fluids found in rocks—namely, water, oil and gas—water is the heaviest, and because of its greater specific gravity will naturally be found at the bottom of a synclinal trough. A well located there would very likely go into water, and might even develop an artesian or flowing well, because of hydrostatic pressure. Next in density, being lighter than water, is oil, which will be found collected in the slopes and at a higher level than the water where the strata are gently dipping. But the greatest flow of gas, the lightest of the fluids, may be looked for higher up the slope, even to the top of the anticlinal arches, it being in just such locations that the great "gassers" of Western Pennsylvania occur.

It will be seen, therefore, that the contour of the surface, that is to say, the topography, may have little or nothing to do with the existence of oil. An experienced oil man will be governed entirely by the underlying structure, and will select an anticlinal axis, or the sloping sides of it, as a spot for locating its well, no matter whether the surface there is represented by a range of hills or a pleasant valley. Anticlinal arches are generally preferred to synclinal basins by oil locators, for the reason that the latter structure is generally encumbered with water. The geologist knows that in the synclinal basin, after a few hundred feet of drilling, on striking a thick porous sandstone, water will be encountered.

So to be able to recognize rock structure, or the position into which rocks have been thrown by upheaval or compression, such as that of anticlinal and synclinal folds, is important. So, too, the rocks themselves, and the geological periods to which they belong, are important, since the rocks of certain geological periods have been found by experience to be more likely for oil than others. For example, the oil of Pennsylvania is found in devonian rocks, while that of Texas and California is found in tertiary and cretaceous rocks, but no oil has ever been, and it is safe to say ever will be, found in granite, basalt, or any of the igneous rocks; yet cases are on record where parties have actually bored down on granite in search of oil.

The first question, then, to be determined, is, have we the right structure for oil in the McMinnville-Carlton-North Yamhill Valley? As I have already intimated, this beautiful valley is in the line and marks the location of an anticlinal axis or fold, from which the rocks dip gently away to the east and to the west, and I have seldom, if ever, seen a more ideal structure. The coast of this great arch or fold can be seen at the shale quarries near the Village of North Yamhill; the beds in the new quarry dipping to the east, while in the old quarry they dip to the west. So structure is all that could be desired. Especially is this the case in the neighborhood of Carlton, and farther on toward McMinnville, where the arch is broader and the dips more gentle, all of which is favorable. But at North Yamhill, and to the north of that village, the fold is sharper and the dips steeper, and I should not be inclined to regard the conditions as being quite as good as around Carlton. Neither do I give any weight to the so-called "oil-scum" in the locality, as in the Perkins well. I saw no such scums there, or oil of any kind, although the well was uncovered for me, and I should very much doubt its existence. In my opinion, all that has ever been seen there or in any of the neighboring wells or springs, is a little of irridescent oxide of iron so common in some springs and marshes.

Moreover, to the northward from North Yamhill, I found fissure eruptions of bassalt, where cracks have opened and molten lava has poured out as water pours from a crack in the ice, and these I should regard with disfavor, for the reason that such disturbances of the earth's crust would very likely have released any pool or subterranean reservoir of oil which may have existed prior to the date of these lava flows, which was during the miocene tertiary. Good judgment would seem to dictate that we should keep away from these places, and this we would do by going further south.

The next question is the kind of rocks. Have we the right formations here for oil? To which we should have to answer, Yes; for the reason that the underlying rocks belong to the tertiary and cretaceous periods, which are the oil-bearing rocks of Texas, Colorado and California. The first rock to be penetrated by the drill would be a mass of clay shales of unknown thickness, in which there would be no hope of finding oil. The drill would most certainly have to penetrate this deposit into a stratum of porous sand rock before it would be possible to find any oil in commercial quantities. At some depth, unknown to me (it may be of several hundred feet), other strata of a different character should and would be encountered, but whether oil-bearing or not the drill alone can determine. No man can tell with any degree of certainty what lies there, in the way of oil or gas, twelve or fifteen hundred feet below the surface; but I have a good deal of confidence upon the fact that the geological structure would appear to be ideal—that the underlying rocks are of tertiary and cretaceous age—which would mean that they might be oil bearing; and that there are numerous mineral springs along and near the line of the anticlinal axis, where saline waters, accompanied with much gas, are constantly escaping. These waters and gases are indirectly a favorable sign. The gas may occur without oil, but oil rarely occurs unaccompanied by gas.

There is something wonderfully interesting about these springs, and which I must say is very suggestive of both oil and gas, and I am very glad to have seen them.

I ought, perhaps, to say in passing, that in drilling a well in this valley for oil there is a possibility of finding not only oil, but coal and gas; and although the coal would be lignite, it might still prove to be of great importance; while a good supply of natural gas would be of untold value to the City of Portland, as well as to the surrounding towns.

In conclusion, I would say that I am firmly of the opinion that oil will yet be found in large and paying quantities in Oregon, and one of the most promising places I have seen in which to look for it is in this valley between McMinnville and North Yamhill. Having carefully gone over the ground I should most certainly advise a test-well, to be judiciously located, of course, at some point in the valley between the above-named villages, though preferably, perhaps, on the east slope of the anticline. I consider the indications of oil, coal and gas such as to amply justify the expense of putting down one or more test-wells to a depth, if necessary, of 2000 feet, although I should be hopeful that a less distance would suffice. In other words, since no test has ever been made, and after weighing all the facts, and seeing that it would mean so much in case of success, I feel that I would be warranted in advising that farther researches be made.

I have the honor to remain,

Your obedient servant,

ANDREW SHERWOOD,

Assistant State Geologist in the Second Geological Survey of Pennsylvania.

The foregoing, from so well-informed a source, ought to be an inspiration to every reader of this newspaper, and a well-spring of buoyancy to every citizen of Portland and the Willamette Valley. But the company has fortified itself with the report of another eminent engineer—a man who has represented the greatest financial interests of citizens of this city in another direction.

MR. BRERETON, AN OIL-GROUND EXPERT.

Mr. R. M. Brereton, of Woodstock, a suburb of Portland, is a man of international reputation in the line of minerals and extensive irrigation projects. He was for years employed by the government of Great Britain in its work in India, and is given the credit of being the father of irrigation in California. Twenty years ago he urged upon California capitalists the wisdom of searching the earth for oil, in the identical territory now so prolific in that important product. But men's minds were turned entirely to gold, all other thoughts of profitable enterprise being subservient to this one effort. So the oil agitation became comatose and for more than two decades was permitted to enjoy the quietude of profoundest slumber. But Mr. Brereton's words were not forgotten. The spark he had kindled was at last fanned into flame, money was subscribed, a test-well put down, and

OIL BURST FORTH AS GEYSERS FROM THE EARTH.

and one of the monster industries of the Pacific Coast was born! Other wells followed "in million-dollar succession," and fabulous fortunes have been grown from the seeds of poverty of less than two decades ago. More than $20,000,000 was received for California oils last year.

ANOTHER IMPORTANT REPORT.

Mr. Sherwood's report was made, and subsequently Mr. William McIntosh, a gentleman connected with a local bank, employed Mr. Brereton to make observations and report on the probability of oil and gas being found in practically the same territory covered by Mr. Sherwood, except that Mr. Brereton's observations extended to parts of Polk County. In this district this gentleman found strong evidences of oil deposits, set forth by himself, in his own language, as follows:

Mr. William McIntosh, care Bank of California, Portland, Oregon—Dear Sir:

WILLAMETTE VALLEY OIL FIELD

In accordance with your request I have examined alleged indications of petroleum, in the forms of oil, gas, bitumen and asphaltum in Yamhill and Polk Counties, this state (Willamette Valley), between Whitson on the North and Crawley on the South.

I found the statements regarding the existence of fossils, bitumen and asphaltum in the exposed surface shales and sandstone rocks to be correct. I examined the country surrounding for many miles, and thus obtained a very fair idea of the general outlook for the production of petroleum from this region in the near future.

PRACTICAL OBSERVATIONS AND DEDUCTIONS.

The main and most convincing evidence afforded at the present time, from the view of surface indications, which is all that is visible to the eye and touch of the geologist, is the richly fossiliferous and diatomaceous character of the exposed shales and sandstones of the district, and the anticlinal folds of the earth-crust. The fossils tell the geological age of these formations, and the anticlines show the movements which have arisen since these sedimentary strata were deposited in horizontal layers, and formed the successive beds of the Pacific Ocean.

During geological tertiary periods, and before the Cascade and Coast Ranges were upheaved, the fossils show very distinctly that the formations belong to the miocene geological horizon, and so they directly correspond with the same formations in which the oil fields of California are found and established today.

So far as I know, from personal observation, the most promising portion of this miocene area for present prospecting operations lies in the southeast corner of Yamhill County and in the east and northeast sides of Polk County.

At Amity there is an east-west spur from the main range, and another to the south at Holmes' Gap. This latter trends southwesterly some 4 or 5 miles north of Dallas. The main range south trends toward Eola, on the Willamette river. The above described main range, together with Amity and Holmes' Gap spurs, form a horseshoe shape to the western slope of the range of the miocene upheaved formation. It is in these hills, and in their east, more especially, slope, that petroleum deposits will be found if they exist.

GEOLOGICAL OBSERVATIONS.

The general formation of this special district shows very clearly the anticlinal features which are considered so important and favorable in the various oil fields of California. The folds appear, from surface observation, along the eastern and western slopes, to be fairly uniform and gentle, and the summits, which average about a mile and a half in width, do not appear, so far as what I saw of them, in the three places, to be folded steeply and in a fan shape.

Before the Cascade and Coast Ranges were upheaved, the shores of the Pacific Ocean extended eastward to the western slope of the Blue Mountain Range in Eastern Oregon. The marine fossils I found in this Yamhill and Polk miocene district appear to belong to the middle miocene horizon; the same as that which has furnished California its most productive oil fields. Some of these fossils are shown in the accompanying photograph. Another good feature observed in this district, as favorably associated with petroleum deposits, exists in the known salt springs, along Salt Creek, which the map shows drains this specialized district. These indicate a marine origin of the formation. There is a well-known strong salt spring in the southeast quarter of section 34, in Township 5, South of Range 4 West. I went to this but could not reach the spring because of flood waters around it. Geologists today recognize the association or affinity of petroleum origin with saline or marine organisms of animal and vegetable nature. Another favorable indication of the miocene formation I observed in the presence of silica filling of some of the fossils. Some of these contained perfect casts of chalcedony and agate. This silica infiltration was strongly in evidence during the miocene period. It has not been observed in the upper and later pliocene tertiary formation. The coating of the one-celled marine plant life, called diatomas, was pure silica. The miocene period contained a marvelous and inconceivable wealth of fossiliferous and diatomaceous animal and vegetable marine life. The subsequent silica infiltration in these fossils was probably due to the pressure and heat produced under the vast weight of later sedimentary deposits, which in this district have since been removed by action of erosion.

COAL AND PETROLEUM IN CALIFORNIA AND OREGON.

It is a pertinent question why so little coal and so much oil-bearing rocks and deposits are found in California. Both are supposed to be derived from organic matter of different nature and formed under different conditions. Coal is the residuum of **terrestial** vascular (cellular) plants and trees formed under pressure and heat in **fresh** water.

Petroleum, in the forms of oil, bitumen and asphaltam, is derived from more perishable microscopic cellular plants and animals called diatoms, infusoria and foraminia, which mainly form the constituents of ooze or mud; subsequently hardened into shales and sandstones through pressure and heat, in **salt** water.

The coal formations include the fat or cannel, the bituminous, the semi-anthracite, the anthracite and finally the graphite. Petroleum formations furnish the gas, the light oils, the tarry or heavy oils, the bitumen, the asphaltum and finally the diamond by the ultimate crystallization of the carbon.

California and Oregon produce coal only in limited quantity and in the lignite form. I believe the reason for this to be that coal in this character exists only in these states in the tertiary formation known as the eocene (the lowest) and pliocene (the highest). The former for long geologic periods was above the sea level, and so under fresh water and favorable to climatic conditions for forestal and plant growth. Petroleum deposits in these States exist probably mainly in the miocene shales and sandstones, which were the original beds of the Pacific ocean, and in which forestal and fresh water plants could not have had a birth-place; but which would be peculiarly favorable to the marine fossils and other organisms which are found so marvelously abundant therein both in California and in Oregon. Petroleum products have been disclosed in this formation in Humboldt county, California. Professor J. S. Diller, of the U. S. Geological Survey, states that the so-called "pitch-coal" in Coos county, Oregon, is asphaltum. This occurs in the upper eocene, which directly underlies the miocene. This is linking the California oil fields very closely with what may, in the near future, be one of Oregon's oil fields.

If the upper eocene and the overlying miocene formation in California are now furnishing the main supply of gas and oils, the same vast formations in Oregon, equally if not more so, endowed with organisms which form the sources of petroleum, can reasonably be expected to yield similar outcome. Hence the prominence I would give to Oregon for the petroleum-fuel supply in the near future. The geological strata, with their abundant petroleum-forming ingredients, are herein. The same earth movements which have upheaved the Sierra Nevada and coast ranges in California, have upheaved the Cascade and coast ranges in Oregon. The compressed, folded and metamorphic conditions of these formations through pressure and heat, which have distilled the petroleum products therefrom and stored these therein in California, have been existant in Oregon. All these features and processes of nature are, in my judgment, very significant and encouraging facts for Oregonians to consider and to speculate upon. All mining of nature's underground resources is more or less of a speculative enterprise. The accompanying illustrative sections serve to represent the anticlinal folds of the California oil fields and the location of the testing wells sunk thereon to the oil-sand strata.

These are equally characteristic of the topographical features of the same formations in Oregon. The more these miocene shales and sandstones are found closely folded, the more the pressure and consequent heat have arisen and concreted the oil into bitumen and finally into asphaltum.

I trust the foregoing information and observations will furnish you and your friends all the preliminary information you need.

Yours faithfully,

(Signed) R. M. BRERETON, M. I. C. E.

This report of Mr. Brereton was purchased from Mr. McIntosh by the Portland Oil & Gas Company, the latter acquiring all the interests of the former in the explorations of Mr. Brereton.

OTHER STRONG OPINIONS.

In the book, "Elements of Geology," by Joseph LeConte, page 377, the following may be read:

"It is a curious fact that petroleum is often associated with salt. It is so in Pennsylvania, in Virginia and in many other localities. I have said that petroleum and bitumen are found in all fossiliferous formations, but in each country there are certain formations where it especially abounds. In Europe it is found principally in the tertiary; in eastern United States it is found almost wholly in the paleozoic below the coal measures; in California it is found in the tertiary. In Pennsylvania and Kentucky oil is found in the upper devonian; in Canada and Michigan in the lower devonian; in West Virginia in the sub-carboniferous; in Ohio in lower coal measures, though it probably originated below; in California it is found in miocene tertiary of the coast range, all the way from Los Angeles to Cape Mendocino. These have been called "oil horizons."

Professor Thomas Condon, Ph. D., professor of geology in the University of Oregon, in his book, "Two Islands," writes that "Southwest of Forest Grove, where coast mountain streams cut through the miocene foothills, the fossils (indicative of petroleum) are again very abundant and very fine—all miocene."

Here are the opinions of FOUR men whose judgments are worthy of consideration. They are so worthy that the originators of the Portland Oil & Gas Company have expended several thousand dollars of their own coin in the formation of the corporation and in carrying it along to its present position, and we are confident that we are pioneers in an undertaking that will soon gladden the heart of every citizen of this active metropolis and all its neighboring towns and villages.

The original map of the district, likewise photographs of the fossils referred to, as well as some of the fossils themselves, may be seen at the company's office, 601 Worcester building.

CAN THESE MEN BE MISTAKEN?

Here are the observations of two learned gentlemen, one fresh from the oil fields of Pennsylvania, where he has had a part in the development of the oil industry, and perfectly familiar with the contour of the country and indications of the existence of oil, and the other from the pen of one of the most scholarly men in this country, who for more than fifty years has been engaged in mineral and geological avocations that have qualified him to speak intelligently on all subjects of this nature. And it is agreed by each man's report, neither knowing the other had inspected the ground, and neither having so much as the acquaintanceship of the other, that there is the best of indications of the existence of oil and gas and very likely coal in the territory covered by their careful explorations. Is there a likelihood, then, that both are mistaken? Reason teaches otherwise, and

THE PORTLAND OIL & GAS COMPANY BELIEVES THAT OIL AND GAS DO EXIST IN YAMHILL AND POLK COUNTIES, AND WILL GO AFTER IT WITH AN EARNEST HEARTINESS THAT MUST SPELL SUCCESS.

Its discovery means fortunes to the stockholders of the company. It means that the production of oil will keep at home the thousands of dollars paid each month for California fuel oil, and that this vast sum will go into the hands of the people and business men of Portland and the Willamette Valley. It means added prosperity for every individual in any wise engaged in business pursuits of any character, from the smallest to the greatest, from the top to the bottom of them, from rooming-houses, restaurants and hotels to the wholesale merchant, manufacturer, banker and the state.

IT IS A MONEY-GROWING PROPOSITION, AND WE WANT A FEW PARTNERS IN THE ENTERPRISE.

We want those who will be satisfied with a "Square Deal" all the way through, the principles upon which this company has been founded, to get into the bandwagon with us now, and when the profits come share with us in its distribution. In 1907, in round numbers, California produced $16,000,000 worth of oil, Ohio and Illinois a like amount, and Oklahoma and Kansas $18,000,000 worth. California increased its output $4,000,000 in 1908, and producing oil shares in that state are stable as wheat. Who knows but Oregon will be one of the great oil producers within a year or two, and as J. C. Bayer once said, "The chances are so good I cannot afford to be out of it!"

TWO HOURS' RIDE FROM PORTLAND.

North Yamhill is but an hour and fifty-three minutes' ride from Portland, and another 31 minutes carries the passenger to McMinnville. It is therefore "but a step" from the state's metropolis to the territory covered by the reports published herewith, with a down grade for a pipe line all the way to this city. Then our first well, it is expected, will be located not more than six or eight hundred feet from the Yamhill river, so that its product may be loaded upon barges and brought to this railroad center and steamboat distributing point at scarcely computable expense per gallon. The Southern Pacific and electric railway lines afford the very best facilities for reaching the district, so that it is but a pleasure jaunt by those modes of travel.

WHAT THIS MEANS TO PORTLAND.

We come before the people, therefore, with the opinions of at least TWO scholarly and thoroughly experienced gentlemen, worthy of the most serious consideration, that there is more than ordinary indications of both petroleum and gas in Yamhill and Polk counties, with a strong probability of coal deposits. That there is gas is well known. It bubbles from the salt springs of the neighborhood so copiously that in some places it may be lighted with a match, and the several excellent authorities, apart from Messrs. Brereton and Sherwood, we have quoted, so encourage us to believe we shall discover oil that we will go after that product with an earnestness and zeal that cannot fail of oil discovery, if such exists in the region we have named. And if we do find oil every citizen of Portland may well toss up his hat and shout in gladness. If gas be added the acclaim can not be too boisterous, and if coal shall be in the discovery the town might well engage in a jubilee. Who can comprehend the importance to not only Portland, but the entire Willamette Valley of such discovery? Every industry in the city and valley would feel its beneficent influence. In fact, it might truthfully be said that its prosperous touch would be felt all the way along, from the bootblack's stand to the treasury of the state. Think what this cheap fuel would mean to the mills and factories of the entire valley! What it would mean to the water craft and railroads! What it would mean to the immense deposits of iron in our hills. What it would mean to our public buildings. What it would mean to hotels and restaurants! How it would light and heat our homes! What it would mean to labor! And if found the natural gas would quickly solve the lighting problem.

IT WOULD DOUBLE THE POPULATION OF PORTLAND WITHIN THE NEXT FIVE YEARS.

Property values would soar and millions be added to the realty of this city. Men and families would flock in here from all parts of the country. There would be a hum in all industrial lines and the flag of progress would be unfurled wherever the eye might turn. There would be a pell-mell rush in this direction, and who would not profit thereby would most certainly be entitled to his peaceful rest. As the raindrops fall upon all the earth, so would the beneficent effects of this enterprise fall upon every individual of this great region. In fact, the immensity of our proposition cannot be grasped by any one who has not sat quietly down and pondered the question in his own mind.

WE SHALL EMPLOY ONLY OIL EXPERTS.

Only oil experts will be employed by this company. We shall provide a standard West Virginia oil drilling outfit. We shall have a machine capable of boring to a depth of 4000 to 5000 feet, with a 13¾-inch casing at the top, and Mr. Sherwood will superintend the operations on the ground. With a force of expert drillers, therefore, we have every confidence that we shall be abundantly and speedily successful in our aims. The same eruption that created the mountains of California created those of the entire coast range all the way around to British Columbia and Alaska. Oil is already flowing from the wells of all these localities—California on the south to British Columbia and Alaska northward. It does not seem possible, therefore, that this territory can be barren, and we never will believe it until we have been actually convinced by faithful exploration. And this is the only way the question can be settled. No officer of the company will receive any pay at all, save those working in the field.

AS THE SUCCESS OF THIS PROJECT MEANS SO MUCH FOR PORTLAND WE SHALL EXPECT THE GOOD WILL AND CO-OPERATION OF EVERY MAN AND WOMAN IN THIS CITY.

If a stockholder, and we find oil, gas or coal, or all three, you will have an investment bound to pay surprising profits; but if you own no stock at all, and we are successful, you cannot help but profit immensely in consequence of the new activities and enterprises that will be created and the influx of money that will come to Portland and the Willamette Valley. No one can afford not to give us at least their moral support, and we do not see how any one can afford not to be an owner of our snares. There are more than a million stockholders in Standard Oil and allied companies. These are all receiving enormous dividends. Many, like Rockefeller himself, were at first, are now in most affluent circumstances and immeasurably poor at first, are now in most affluent circumstances and immeasurably glad that they took a chance. At 13 Mr. Rockefeller was digging potatoes at 75 cents per day, and saved a little money. He was a thinker and worker too, and it occurred to him that his savings could be made to help him earn his bread. Seven per cent was then the legal rate, but it struck Mr. Rockefeller that that was not enough—that his hard-earned savings should be worth ten times that sum—and he invested in what now is Standard Oil, and is the richest man on earth. Had he been contented with a "safe" 7 per cent he might now have owned the potato patch—but nothing more. He was not afraid to run a little risk.

The company owns leases on 6500 acres of land in the district, all covered by the reports of Mr. Brereton and Mr. Sherwood. The directors of the company are alive as to what is required of them, and have already engaged Mr. Sherwood by wire to superintend the field work. Only the best talent in oil land development will be secured, and no expense will be spared in that direction to **secure the best.**