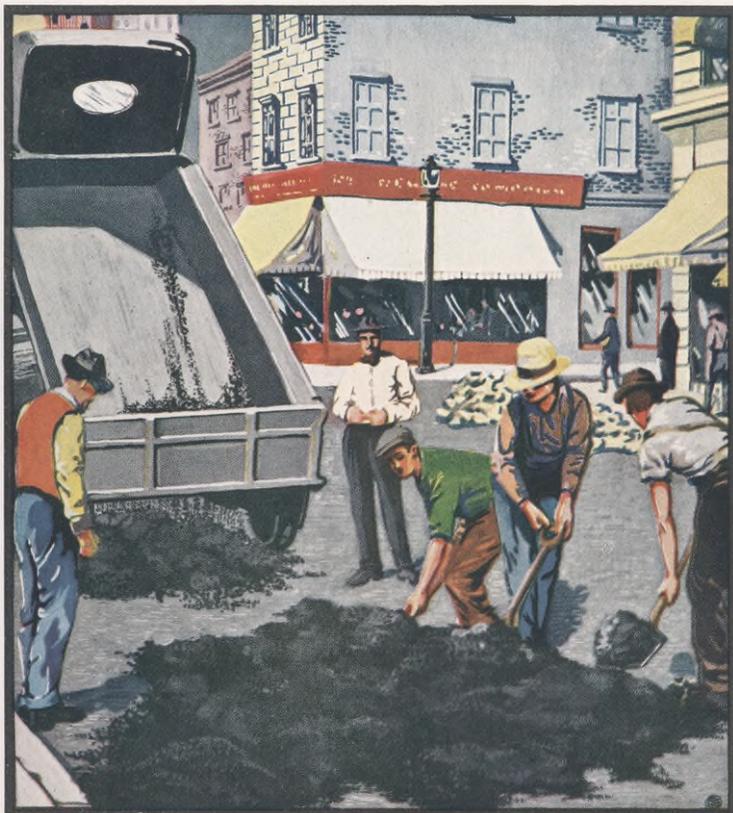


# TEXACO STAR

*Printed Monthly for Distribution to Employees*  
OF THE TEXAS COMPANY



„LAYING TEXACO ASPHALT“

# URSA



## THE OIL FOR DIESELS AND OTHER HEAVY ENGINES

The Oil which lubricates the whole Engine

Power Cylinders  
Air Compressors  
All the Bearings

### ONE OIL FOR ALL

“URSA” is the Oil Preferred by Diesel Operators Because

It cannot form hard carbon deposit  
It lubricates thoroughly  
It makes starting easier  
It can be fed with economy

“URSA” is the Oil which most Diesel  
Manufacturers are glad to recommend

There is a **TEXACO LUBRICANT** for every purpose

*If you want more information about URSA, write us*



**THE TEXAS COMPANY**

HOUSTON

CHICAGO

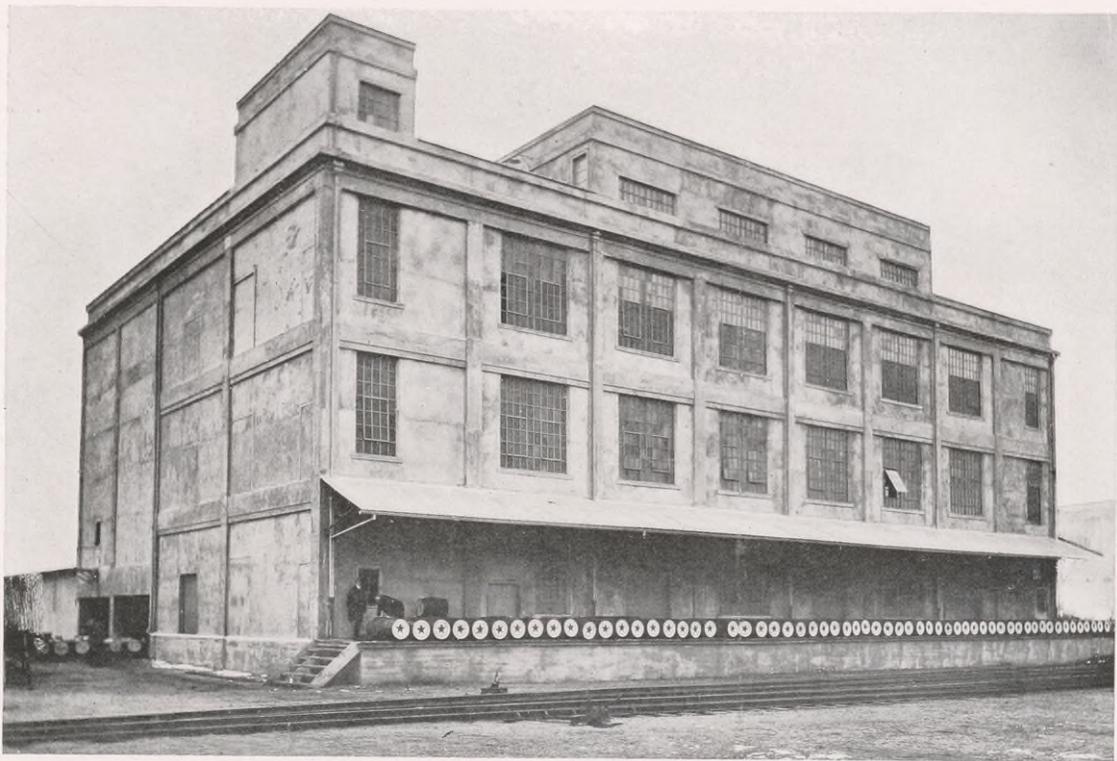
NEW YORK

Agents Everywhere



SOME YOUNG MEN TELL "PERSONAL EFFICIENCY" WHY THEY WERE  
PROMOTED, EACH STATING WHAT HE BELIEVED TO BE THE MAIN REASON—

Persevered  
Read widely  
Didn't grumble  
Was never idle  
Studied his work  
Studied accountancy  
Didn't watch the clock  
Improved office system  
Did extra work cheerfully  
Prepared for the job ahead  
Discontinued restless shifting  
Didn't quit after one failure  
Did his bit and a little bit more  
Won the confidence of his employer  
Did more than just enough to get by  
Was always on the job—rain or shine  
Stood up for his employer—was loyal  
Stuck to his job through thick and thin  
Gave personal attention to every detail  
Wanted a better job and worked for it  
Made himself worth more than his salary  
Always cleared his desk of unfinished work  
Took an interest in the interests of the boss  
Made his services pay the Company dividends  
Was always on hand before time to go to work  
Never failed to keep an appointment or promise  
Turned some of his pleasure time into study time  
Studied and applied principles of business English  
Never consumed the other fellow's time needlessly  
Studied freight rates and saved the Company money  
Was willing to do more work than was assigned to him  
Made himself a power—not a wheel—in the organization  
Wasn't afraid to make suggestions concerning the Company's work  
Assisted the man in next higher position after completing his own work  
Did more than was expected of him and better than was expected of him  
Made it his business to be ready with needed information when called for  
Acknowledged and corrected his mistakes instead of trying to conceal them



Compounding and Cooperage Plant recently completed at our Bayonne Terminal. This building is of fire-proof construction throughout, 84 feet wide by 128 feet 6 inches long, three stories high, with a one-story pump room, 32x48 feet, adjoining the rear side. The equipment includes 50 stock tanks of from 160 to 200 barrels capacity each, a number of compounding plants, pumps, electric freight elevators, package and barrel elevators, barrel fillers, cooperage machinery, etc. The third floor is devoted exclusively to cooperage of wood barrels, the second to painting of barrels and storage. All filling and handling incident to shipping is done on the first floor.

# TEXACO STAR

VOL. IV

MARCH 1917

No. 5

PRINTED MONTHLY FOR DISTRIBUTION TO EMPLOYEES OF  
THE TEXAS COMPANY

*"ALL FOR EACH—EACH FOR ALL"*

Copyright, 1917, by The Texas Company

While the contents of this journal are copyrighted, other publications are welcome to reprint any article or illustration, provided due credit is given to The Texas Company.

ADDRESS: TEXACO STAR, 311 THE TEXAS COMPANY BUILDING, HOUSTON, TEXAS

**A**FTER several years of persistent effort The Texas Company at last has succeeded in obtaining the enactment by the Texas Legislature of a statute under which the company may engage in the producing business, this power being in addition to the other powers which it now possesses. The bill passed the Senate January 30 by a vote of 19 yeas, no yeas, 4 nays; and it passed the House February 8, the vote there being 99 to 28. It was signed by the Governor February 20. Owing to the fact that on the final passage it did not receive the vote of two-thirds of the entire membership of the Senate, the act will not go into effect until 90 days after adjournment. In the meantime the plans of the company will be matured in detail. Announcement of these plans may be expected in due course.

The material provisions of the act, which is in the nature of an amendment to Article 1307, Revised Civil Statutes, are quoted below. Our comments following the language of the act are in parentheses:

It (any corporation organized under this chapter) may also engage in the oil and gas producing business, prospecting for and producing oil and gas and owning and holding lands, leases and other property for said purposes and subject to the provisions of Chapter 4 of this title.

(This defines the additional power that the company desired.)

Provided that no corporation shall exercise these powers while owning or operating oil pipe lines in this state.

(This is a limitation that was inserted because of opposition by the oil producers association, which insisted that before The Texas Company or any other corporation similarly situated acquires this power it should dispose of or separately incorporate its oil pipe lines so as to make them more readily susceptible of regulation and control.)

Any corporation heretofore or hereafter organized under this chapter, and owning or operating oil pipe lines in this state, shall separately incorporate such oil pipe lines with the consent of a majority in amount of its stockholders and subject to the restrictions hereinafter imposed, whereupon, in addition to other powers which it may possess, it shall then acquire the right and power to engage in said oil and gas producing business.

(Thus the bill points out the way in which such corporations, if they own or operate oil pipe lines, may get into the oil producing business. They must first dispose of such pipe lines or turn them over to a separate corporation which will be limited to the pipe line business and subject to regulation as a common carrier without hindrance or complication by reason of being engaged in other and additional lines of business. As the bill was originally written the twentieth word in this clause was "may," which was changed to "shall" through an amendment offered by Senator McNealus.)

Such separate incorporation shall be accomplished by the organization of another pipe line corporation under this chapter and the sale and conveyance to it of such oil pipe lines of the organizing company.

(This merely makes more definite the preceding thought.)

In case of the ownership also of oil pipe lines beyond the borders of this state additional pipe line corporations may be organized outside of the state and such oil pipe lines located outside of the state may be sold and conveyed to them.

(The Texas Company and perhaps other similar corporations own not only pipe lines in Texas but also lines in adjoining states. The system of The Texas Company extends through Oklahoma and into Louisiana. Hence this provision for the organization of pipe line companies in such states, and a sale and conveyance to them of the foreign lines.)

In every case herein provided for the organizing corporation may subscribe for and own the capital stock of the organized pipe line corporation without being precluded from engaging in said oil and gas producing business.

(This serves to make clear the right of the parent company, which built and paid for the line in the first instance, to own the stock of the new pipe line company or companies, without being barred from

## TEXACO STAR

the right to engage in the producing business. Having placed the pipe lines in separate corporate entities, so that they may be separately officered, managed and controlled, and so that they may be subject to positive and distinct regulation as common carriers, the parent company may then engage in the producing business.)

In lieu of engaging directly in the oil and gas producing business in any state or country a corporation organized under this chapter and authorized to engage in said producing business may own the stock of other corporations engaged therein, provided that it shall not own the stock of more than one producing corporation or one pipe line corporation organized under the laws of this or any other single state.

(The act here returns to the manner of engaging in the producing business, and allows the company to engage directly or to own producing companies. The Producers Oil Company is engaged in the oil producing business. It is now owned, not by The Texas Company, but by a syndicate of stockholders who are largely interested in The Texas Company. These stockholders up to date have given The Texas Company the benefit of the organization and its surplus profits. This provision will enable The Texas Company to take over the stock of Producers Oil Company or its physical properties.)

Nor shall any corporation organized in any other state or country be permitted to own or operate oil pipe lines or engage in the oil producing business in this state when the stock of such corporation is owned in whole or in part by a corporation organized under this chapter.

(Counsel for the producers association expressed the fear that The Texas Company might go into some other state and organize a producing company which would obtain a permit in Texas and operate here. This provision was inserted to meet that objection.)

But the provisions hereof shall not preclude the ownership or operation by any corporation of private pipe lines in and about its refineries, fields or stations, even though such corporation may be engaged in the producing business.

(Every large refining and marketing company and every producing company must have certain pipe lines which are private in their nature in and about its refineries, fields or stations. Otherwise oil could not be brought from the wells to the settling tanks or pass from one still or tank to another. Hence this provision.)

And none of these provisions shall be construed as limiting, modifying or repealing any part of the law regulating oil pipe lines.

(A bill to regulate pipe lines was passed and is now law.)

Or as authorizing any ownership or transaction the effect of which would be to substantially lessen competition or to violate any law or laws of this state prohibiting trusts and monopolies and conspiracies in restraint of trade or to violate any provision of the anti-trust laws of this state.

(This clause was added to the original bill by an amendment which Senator Dean offered.)

\* \* \*

The Regulation of Oil Pipe Lines.—The

Legislature has enacted and the Governor has approved the McNealus bill which makes oil pipe lines in Texas common carriers and places them under the jurisdiction of the Railroad Commission. Discrimination is prohibited, and the Commission is empowered to pass on the tariffs, rules, and regulations of such carriers. The act applies to limited partnerships and joint stock associations, as well as to corporations, but exempts lines that are private in their nature, that is, lines of producers in the field and lines in and around refineries. It of course does not apply to gas lines.

\* \* \*

After a long period of living under a cloud of adverse popular sentiment, business men are waking up to the fact that they have the people with them. Public opinion has so changed that it is no longer impossible for a great industry, when attacked by trust busters and demagogues, to get a fair hearing. This is because of the legitimate publicity work which the big industries have initiated. While they remained silent under aspersion and misrepresentation the people accepted the lies as truth. As soon as they began to make an adequate defense the whole fabric of calumny and falsehood went down. This proves that business men will always secure considerate treatment if they will but make a spirited and united demand for their rights.

—Leslie's Weekly.

\* \* \*

Manufacturers and farmers have much in common. Both are employers. Both have to hustle to make a profitable living. Both have trouble securing employes who are willing to do honest, productive labor. Both are subjected to the whims of legislators who rush in where angels fear to tread. Manufacturers and farmers should co-operate.—*Manufacturers' News*.

\* \* \*

The men whom I have seen succeed best in life have always been cheerful and hopeful men, who went about their business with a smile on their faces, and took the changes and chances of this mortal life like men, facing rough and smooth alike as it came.—*Charles Kingsley*.

\* \* \*

If you were the employer, what would you want from the man on your job?

## TEXACO STAR

The National Petroleum News tells of a sales manager's belief that the success which has put him at the head of a large force of salesmen, covering the entire country, was largely due to the policies outlined in the following statements:

I don't think it is generally recognized how much the clerks working in a store can hurt a salesman they do not like. I know otherwise good salesmen who spoiled their prospects by being contemptuous of the clerks they brushed by in getting to the boss. All the salesman has to do to keep the clerks on his side is to treat them courteously, which takes but little time and is no trouble.

Dealers that could not be reached any other way were won over by doing them a favor:

I had been unable to make much headway with one of the finest grocery stores in Pennsylvania. One day I was up in the office waiting for an interview with the buyer. I noticed that four or five girls were employed to receive telephone orders. These girls seemed to be well posted on the prices of everything except a few articles, such as butter and eggs, on which the prices are frequently changing. When these things were ordered the girls had to call over the railing to the clerks down stairs for price quotations. This caused much delay and confusion. It occurred to me that the prices of green goods, dairy products, and other commodities that are constantly shifting should be put on a blackboard in front of the desks of the order-takers. I looked up the head of the business and made the suggestion to him. "That's a capital idea", he said, "I wonder why none of us ever thought of it." With that, he called over his buyer and said: "This man gives us money-making ideas. His proposition must be worth listening to. Hereafter give him all the time he wants."

\* \*

The bitterness of poor quality lingers long after the sweetness of cheapness has been forgotten.—*"The Crown of Baltimore."*

\* \*

Old people and children are natural and frank. The rest of us are what the other fellow wants us to be.—*Nettie Hall Austin.*

\* \*

I love the man that can smile in trouble, that can gather strength from distress, and grow brave by reflection. 'Tis the business of little minds to shrink, but whose heart is firm, and whose conscience approves his conduct, will pursue his principles unto death.—*Thomas Paine.*

\* \*

Death stands above me, whispering low  
I know not what into my ear:  
Of his strange language all I know  
Is, there is not a word of fear.

—*Walter Savage Landor.*

### GRANDMOTHER'S COUNCIL

Grandmother says in her quaint old way:  
"World wasn't made in a day—a day;  
And the blue sky where the white clouds flit—  
Why the Lord took His time a-painting it!

"The way isn't sunny;  
But don't you fret!  
Cheer up, honey—  
You'll get there yet!"

Grandmother says in her quaint old way:  
"World wasn't made in a day—a day;  
The meadow there, where you love to sit—  
Why, the Lord took His time to carpet it!"

And still to me in the fields and dells  
Her sweet voice rings like a chime of bells,  
And I dream brave dreams as I hear her say:  
"The world wasn't made in a day—a day.

"The way isn't sunny;  
But don't you fret!  
Cheer up, honey—  
You'll get there yet!"

—*Atlanta Constitution.*

### LIFE WISDOM

The wisdom of the wise and the experience of ages may be preserved by quotation.

—*Benjamin Disraeli.*

Give us the strength to encounter that which is to come, that we may be brave in peril, constant in tribulations, temperate in wrath, and in all changes of fortune and down to the gates of death loyal and loving one to another.—*Stevenson.*

To be angry, is to revenge the faults of others upon ourselves.—*Pope.*

To be angry about trifles is mean and childish; to rage and be furious is brutish; and to maintain perpetual wrath is akin to the practice and temper of devils; but to prevent and suppress rising resentment is wise and glorious, is manly and divine.

—*Isaac Watts.*

Keep cool, and you command everybody.—*Saint Iust.*

Everyone is the son of his own works.

—*Cervantes.*

The vices of sloth are only to be shaken off by occupation.—*Seneca.*

If you intend to go to work, there is no better place than right where you are; if you do not intend to go to work, you cannot get along anywhere. Squirming and crawling about from place to place can do no good.—*Lincoln.*

Do good work whether you live or die; it is the entrance to all kingdoms.—*Ruskin.*

## TEXACO STAR

### THE SEED AND THE FRUIT

O. Henry, the "Master of the Short Story", frequently began his tale in the middle. The writer is not attempting to emulate O. Henry but his procedure seems to be the most effective way of beginning this story, which is by no means fiction.

To begin at the middle, therefore, some time ago one of our engineers was instructed to visit an ore reduction plant in Buffalo for the purpose of demonstrating Texaco Crater Compound. His demonstration, showing unusual saving and great mechanical improvement, was only a fore-runner to the adoption of Texaco Crater Compound throughout this plant, not only for the gears, but also for the wire ropes and on the steam shovels.

A little while later a large motor truck manufacturer in the Middle West inquired whether Crater Compound would be of value on the worm drive of his trucks. He was told that Crater was a little too strong for the job but that Crater's younger brother, Thuban, would be just right.

In a short time this company came to realize that Thuban was the one lubricant for its purpose and were so convinced of the quality of Texaco Products that large orders were placed.

Now, to work towards the beginning. A few days ago Mr. Johnston of the Purchasing Department in New York came into the Advertising Department and said that he would like to have us meet a gentleman who would unfold a tale which was so unusual that he wanted us to get it at first hand. Accordingly, we were introduced to the gentleman and he spoke nearly as follows:

I might introduce myself by telling you that I am Vice-President of an ore reduction plant in Buffalo and I am also connected with a Motor Truck Company. About six months or more ago I was seated in the reception room of your Purchasing Department waiting for an interview with Mr. Colling. In order to fill up the few moments, I turned to a table which had a display of various advertising booklets on it, and, attracted by the cover, I selected a book called "About Texaco Crater Compound". This appeared rather interesting and I had read a few pages when I was told that Mr. Colling was ready to see me, and having noticed a sign over the table which said "Take One", I put the book in my pocket and carried it out with me. In the train I opened the book again and read of the difficult conditions which your Crater was overcoming. I had lately been to Buffalo and knew that they were having considerable trouble with a large girth gear and pinion. Solid matter sifted down on

these gears and they were cutting out rapidly. Those gears cost us a good bit of money, and it took up a lot of time to make replacements. According to your Crater Book, it appeared that these conditions could be remedied. I showed the book to our people. The President agreed with me that Crater was well worth a trial, and so we got in touch with your New York Office. Your engineer was detailed and his demonstration proved that everything that the book said about Crater was true, and then some. We have thrown out the other lubricants and now we use nothing but Crater around the plant and on the steam shovels. It is just what we had been looking for in vain for years.

A little later it occurred to me that perhaps this Crater would be good for the worm gear drives of the Motor Truck Company I represent, but I was told that Crater's younger brother, Thuban, would do the trick and it did. And we've found out that your other lubs are as good as Crater and Thuban.

This about ends our little story but no story is complete without a moral. We are going to give this story two morals:

If the Purchasing Department can help to sell Texaco Products by displaying advertising matter on a table in their reception room, there is no telling what results can be accomplished by following the same plan in all offices wherever you have a reception room. The Advertising Department on its part will be glad to send you a sign calling attention to the booklets to any office desiring one.

An old darkey used to say that he was always luckiest with the potatoes he hoed the most. So it is. The man you endeavor to convince and follow-up is the man most likely to buy. If you would be lucky, sow the seed and then hoe.

—Bowler Boomer.

### CRUDE OIL PRICES AT WELLS

March 1, 1917

Pennsylvania.....	\$3.05	De Soto Light.....	\$1.60
Mercer Black.....	2.43	Crichton Light.....	1.40
Corning, O.....	2.38	Caddo Light.....	1.70
Cabell, W. Va.....	2.35	Caddo Heavy.....	.85
Newcastle.....	2.23	Vivian Heavy.....	.85
North Lima.....	1.83	Vinton.....	1.00
South Lima.....	1.83	Jennings.....	1.00
Indiana.....	1.68	Spindletop.....	1.05
Princeton, Ill.....	1.87	Sour Lake.....	1.00
Illinois.....	1.87	Batson.....	1.00
Canada.....	2.23	Saratoga.....	1.00
Somerset, Ky.....	2.18	Humble.....	1.00
Ragland, Ky.....	1.00	Goose Creek.....	1.00
California Light.....	90	Corsicana Light.....	1.70
California Heavy.....	.73	Corsicana Heavy.....	.85
Mexico.....	20 to .40	Petrolia.....	1.70
Kansas and Okla.....	1.70	Petrolia.....	1.70
Cushing.....	1.95	Markham.....	1.00
Healdton.....	.90	Thrall.....	1.70

## TEXACO STAR

# TEXACO ASPHALTS, ROAD OILS, AND ROAD BINDERS

KENNETH G. MACKENZIE, M. S.

Consulting Chemist of The Texas Company.

From a Lecture before a Class in Highway Engineering in New York University

What is asphalt? Perhaps we can give no better general definition than that proposed by the American Society for Testing Materials:

Asphalts.—Solid or semi-solid native bitumens, semi-solid or solid bitumens obtained by refining petroleum, or solid or semi-solid bitumens which are combinations of the bitumens mentioned with petroleum or derivatives thereof, which melt upon the application of heat and which consist of a mixture of hydrocarbons and their derivatives of complex structure, largely cyclic and bridge compounds.

Thus, an asphalt is a solid or semi-solid material which either occurs as such in nature, or may be obtained from petroleum by removal of its accompanying oils by distillation. . . . The so-called "oil asphalt" is asphalt which occurs in the crude petroleum admixed with petroleum oils. To obtain this asphalt it is necessary to remove these oils, and this is done by distillation. You would not wish me to go into the various products, such as gasoline, illuminating oils, and lubricating oils, which are obtained during this distillation. After all these are removed our asphalt remains.

For the so-called "natural" asphalt brief mention should be made of the various materials included in this classification. The oldest is the Egyptian asphaltum, which is still in demand and highly prized by the varnish makers. It was a material of somewhat this nature that was used in building the Tower of Babel. Its scarcity and its price precludes use as a paving material. The next to come to the notice of man were probably the rock asphalts of Europe. These deposits, ordinary rock impregnated with asphalt, contained by chance in some cases just the proper amount of asphalt to give satisfactory pavements, and for local construction good results have been obtained. Because of the relatively small percentage of asphalt and large percentage of mineral matter, however, they have never become a factor in the paving industry in this country. The two asphalts which comprise nearly all of the so-called natural asphalt used in this country are the Trinidad and the

Bermudez from Venezuela, and it is these two products that we will consider in an attempt to differentiate between the so-called natural asphalts and those occurring in nature in asphaltic base crude oils. Professor Peckham (*Solid Bitumens*, p. 31) tells us that whatever theories are held with reference to the origin of bitumens all the varieties from natural gas through naphtha, petroleum, and maltha to solid asphaltum, must be included in one common source. Dr. Hofer shows clearly in his treatise, *Das Erdöl und Seine Verwandten*, that native asphalt is a residual product of petroleum. Professor Mabery, of Cleveland, who has probably done more work on the subject of petroleum and asphalt than any other man in this country, states (Englор-Hofer, *Das Erdöl*, Vol. I, p. 673): "There is no doubt that everywhere in nature a conversion of petroleum into asphalt is taking place." Mr. Clifford Richardson (*The Modern Asphalt Pavement*, 2nd ed., p. 171) defines asphalt as "bitumen found in nature, originating in petroleum." Sir Boverton Redwood (*Treatise on Petroleum*, 3rd ed., p. 283) states that it is quite certain that the principal asphalt deposits are the result of evaporation of petroleum. Finally, one of the marketing companies of natural asphalt in this country, in an interesting circular on the crude oil found in the Island of Trinidad, states that this crude has been pronounced by experts to be the source of the primary stage of the more solid asphalt of the neighboring lake.

Thus not only have the different asphalts the same source, but native asphalt is formed from petroleum by the volatilization of the liquid constituents. Deposits of petroleum were undoubtedly brought into an area of geologic activity and were exposed to heat and probably pressure, resulting in the removal of the liquid constituents. How long this process of distillation required we do not know, nor the temperature. From what we do know, however, of geologic activity, it is probable that the temperatures were high.

What then is the distinction between so-

## TEXACO STAR

called "natural asphalts" and asphalts obtained from asphaltic base crudes? In the first case, nature has taken a crude petroleum, has distilled off its liquid constituents, and has left asphalt. In the second case, man has attempted to duplicate the work of nature. We have heard so much about the inability to improve upon nature that we are prejudiced in favor of anything of her handiwork; but the last hundred years with its wonderful developments has convinced us that, wonderful as nature may be, improvements can be made by man. . . . We are not the first to have the superiority of nature's work over that of man thrown against us. In 1824 one Joseph Aspdin had the temerity to claim that by a proper combination of limestone and clay, calcined, he could produce a material far superior to the cements made by calcining rocks found in nature, still known today as natural cement. You can imagine the horrified cries, and the pride with which they pointed to the Tower of Babel and the palaces of ancient Babylon as examples of the qualities of natural cement, yet I hardly think I need question the preference of anyone of you when deciding between natural cement and artificial cement, sometimes known as Portland. It is claimed, although we have no idea how nature controlled her process of distillation, that man cannot control his process to yield a product that will be uniform and satisfactory for paving, it being assumed that nature used low temperatures at all periods of time and obtained a product without decomposition, and that man will never be able to duplicate it.

The careful control of temperature and other conditions in the production of asphalt from asphaltic base petroleum is probably not better illustrated anywhere than in the refinery of The Texas Company at Port Neches, Texas. This refinery is devoted entirely to the production of asphalt from asphaltic base crude. The crude oils are brought to this refinery, where the oils are removed and immediately pumped to the refineries at Port Arthur. With the best equipment that man can devise, and with every precaution taken for the accurate control of the operations, The Texas Company is able to produce absolutely uniform products having the properties that they desire. The fact that The Texas Company is able to give an entire refinery for the production of this one product en-

ables its employes at this refinery to devote all their time to the control of conditions that will give the product sought. I need not add that very careful laboratory inspection supplements the regulation of conditions of production, and all combine to give a product which strongly refutes the claim of the advocates of so-called natural asphalt.

Much emphasis is laid upon the uniformity of native asphalt deposits. In view of this claim, it is interesting to consider the Bermudez deposit in Venezuela, as described by Clifford Richardson:

The so-called lake is situated between the edges of the swamp and the foot hills in what might be termed a savannah. Its area is little more than 900 acres, and it is covered with vegetation, high rank grass and shrubs, one to eight feet high, with groves of large moriche palms called moricals. It seems to be in fact merely an overflow of soft pitch from several springs over this large expanse of savannah. At different points there is at most a depth of 7 feet of material, while the deepest part of the soft maltha is only 9 feet, and the average of pitch below the soil and coke only 4 feet. At points there is not more than 2 feet of pitch, and in the moricals or palm groves it is often 5 feet below the surface. At several points scattered over the surface are areas of soft pitch, or pitch that is just exuding from the springs. The largest area is about 7 acres in extent and of irregular shape. This has little or no vegetation upon it, and from the constant evolution of fresh pitch is raised several feet above the level of the rest of the deposit. This soft asphalt has become hardened at the edges, but when exposed to the sun is too soft to walk upon. The material is of the nature of maltha, and it is evidently the source of all the asphalt in the lake, from these exudations the pitch having spread in every direction, so that no great depth of pitch is found even at this point.

The soft pitch after it exudes from the center of the Bermudez lake undoubtedly hardens slowly on exposure; but the condition of the surface of the main mass, which is very hard and rough, and of the harder borders of the soft spots is due to other causes also. The edges of the area of soft asphalt are covered here and there with masses of glance pitch and with black and brittle cinders or coke, which seems to have been produced from the maltha by fire. This is evidently the case since the rank growth of grass, which is very dry in the dry season, is particularly adapted for a rapid and intense combustion. Such fires have been recently started intentionally and accidentally, and to them are due the condition of the present surface of the deposit and the character of much of the pitch.

At the foot of the growth of grass and shrubs are ridges of pitch mingled with soil and decayed vegetation which have been plainly coked and hardened by fires of the nature which have been mentioned. When this hardened material, which forms only a crust, is removed, asphalt of a kind suitable for paving is found. The crust is from a foot and a half to two feet in depth, and very firm.

There is no evidence of a general movement and

## TEXACO STAR

mingling of the mass of this deposit in any way that would produce a uniformity of composition.

The Trinidad deposit has been carefully described by Mr. Richardson and others. Situated in what appears to be the crater of an old volcano, it has the properties of the famous barrel of meal of the poor widow of biblical times, which never failed; in other words, as asphalt is taken from the top more asphalt is made by nature far below. This newly produced asphalt appears even at the surface in places, and there is no question that the continuously evolved gas which permeates the mass and is given off at the surface causes a more or less intimate mixture of the newly produced asphalt with the older asphalt on the surface. Assuming that nature produces the same amount of asphalt each year, we would have uniformity in this deposit were it not for the commercial conditions which require large amounts of asphalt to be withdrawn from the surface in certain years and small amounts in other years. This destroys the equilibrium and tends to a lack of uniformity.

We must not forget that neither the Bermudez nor Trinidad asphalt can be used directly for paving. The Trinidad particularly is in no condition for such use. It is a dark brown, porous, cheese-like substance, having the composition (*The Modern Asphalt Pavement*, 2nd ed., p. 163):

Water and gas .....	29 %
Asphalt by carbon bisulphide .....	39 %
Asphalt retained by mineral matter .....	0.3%
Mineral matter .....	27.2%
Water and hydrogenation .....	3.3%

The Trinidad asphalt is thus composed of less than 40% asphalt, the remainder being water, gas, and mineral matter. This crude material must be refined by melting it and heating it to a temperature sufficient to drive off the water and free it from as much organic and inorganic matter as possible. Even then it is not ready for use for pavement, but must be softened or fluxed with a petroleum oil until the right consistency is obtained. This oil may be any petroleum oil conveniently and cheaply obtained, and has been mostly a residual oil from what is known as paraffine base crude which has no cementitious value.

Another advantage claimed for so-called natural asphalt is stability when exposed to high temperatures. I shall show you presently the effect of heat on the "natural

asphalts" and on different grades of asphalt obtained from petroleum. If you recall the description of the Bermudez deposit and the manner in which it is hardened by exposure to the sun, you will question the ability of the Bermudez to resist such changes, and Mr. Richardson tells us that Bermudez asphalt is susceptible to volatilization at high temperatures with resulting hardening of the material. It does not form an asphalt cement which can be maintained at high temperatures, or be mixed with sand at high temperatures satisfactorily, and for this reason cannot be used in cold weather.

There is another difference between the so-called natural asphalt and the asphalt obtained from petroleum which is not so often dwelt upon. This difference is due to foreign mineral matter admixed with the natural asphalt. Asphalt obtained from petroleum does not hold in suspension any appreciable amount of mineral matter. Texaco asphalt is 99% pure. The refined Bermudez at the present time contains about 92%, and the Trinidad about 56% asphalt. By reason of these facts it would seem that the appropriate names, instead of "natural" and "oil" asphalts, should be impure and pure asphalts. The mineral matter would not be objectionable from the standpoint of paving if it were of the right grading and not soluble in water, but, especially in the case of Trinidad, this is not the case. I well remember one of the first commercial problems given to me to solve. It was the making of Trinidad asphalt water proof. I was shown that certain soluble salts were present, which leached out when the asphalt was exposed to water and caused disintegration. I worked for some time trying to make these soluble salts insoluble but failed, and, although this is no proof that it cannot be done, I have not yet heard that it can be done. There is plenty proof of the deleterious action of water upon Trinidad. In the case of Grainger vs. George (Lincoln, Nebraska, April 24-26, 1905) Mr. Richardson testified that Trinidad asphalt could be placed in water until it practically rotted, and explained this by the solution of certain mineral constituents. It may be granted that the laboratory experiments which show this action of water are not exactly representative of conditions on the

## TEXACO STAR

street, and there have been instances where Trinidad has given satisfaction, but we may rightfully question whether Trinidad will be as resistant to water as other asphalts. . . . Mr. Dow, who has had much experience with Trinidad, states (Public hearing, Office of Mayor of Baltimore, Dec. 20, 1911):

Through the recommendation of the authorities (in Washington) Trinidad asphalt was excluded from there, because of the soil conditions. It has a property of being ruined by water quicker than any other asphalt.

On the other hand, properly refined asphalt produced by the removal of oil from asphaltic base crude, being free from soluble mineral matter, is very resistant to the action of water.

What then is the difference between asphalt obtained from oil and so-called natural asphalt? We have in the native asphalt a product produced by nature from petroleum under unknown conditions which cannot be controlled. We have our asphalts obtained by distillation of petroleum under very carefully controlled conditions. We have seen that for sheet asphalt pavements the native asphalt cannot be used directly. It must be softened—and softened with what? It must be softened with oil, and the oil used is that which can be obtained most conveniently and cheaply. The true "oil asphalt" is not the material refined by man from petroleum, but is that material found in nature, in a semi-brittle condition, to which petroleum oil is added. The so-called oil asphalt cement for sheet asphalt pavement is a pure asphalt produced by removing oil from petroleum. The so-called natural asphalt cement is an impure asphalt made by nature from petroleum diluted by man with oil to get the proper consistency.

It should be stated at this point that every crude petroleum does not contain asphalt. The crude oils of this country are roughly divided into two classes known as paraffine base and asphaltic base crude. The paraffine base crude leaves in the still after removal of part at least of the lubricating oil a residue which is liquid and allied in some of its chemical properties to paraffine wax. The asphaltic base crude leaves us pure asphalt. Although any pure asphalt, free from soluble constituents, may be superior to the asphalt occurring in nature admixed with such constituents, it

does not follow that all materials of an asphaltic nature produced from various crude oils are ideally suited in every way for paving purposes. There are differences in the asphalts of various grades from widely different localities. There are also differences in method of removal of the liquid constituents from the crude oil.

A crude petroleum cannot be put into a still by anyone and the process of distillation be carried on until a residue of the desired consistency is obtained, and *presto!* we have the required paving material. A great deal of care and supervision must be exercised to control the conditions in order that the resulting material may have the properties sought. It has been contended by some advocates of asphalts occurring in a solid state in nature that these conditions cannot be controlled. It is my purpose to show that with Texaco products these conditions have been controlled, and that as a result asphalts have been obtained which meet better than any similar materials the conditions of highway construction.

It is the object of every municipality to obtain the best material by the use of specifications which prescribe certain tests that the material must meet. Such specifications vary widely, and I need not enumerate all the tests that are prescribed. There are, however, certain properties in paving materials which cannot be ignored, and of these none is more important than cementitious value and change in consistency on change in temperature. The paving materials must have binding power to hold together particles of mineral matter, but at the same time they must not be too easily affected by temperature changes. We can imagine a material which at 77°F has great binding strength, but which at 32°F becomes brittle and at 115°F is very nearly liquid. Such a material would give satisfactory results at temperatures which did not vary greatly from 77°, but this would be more than counterbalanced by the tendency to crack and rupture in cold weather and to become soft in warm weather. Another requirement which is most important is that an asphaltic pavement material shall be permanent, shall retain its original properties over long periods of time. This property has not yet been fully standardized in the laboratory, and we must rely upon actual service. The perfect asphalt

## TEXACO STAR

for sheet pavement may be said to have the properties:

1—It shall not change in consistency on changes in temperature.

2—It shall be a perfect binder of mineral aggregate, and be sufficiently ductile and elastic to stand all the strains of pavements.

3—It must be entirely stable under all working conditions and long service.

These requirements are ideal. We know of no asphalt which will not change in consistency on changes in temperature. But we can get a product which changes as little as possible commensurate with its ductility and stability, and it is to such ends that we are working in producing the Texaco asphalts.

(The lecturer here described and explained the purposes of various laboratory tests, and exhibited blue-print diagrams of the tabulated results showing the ductility, the consistency or penetration, etc. at different temperatures of different products for sheet asphalt pavement.)

We have thus proof that Texaco 54 Paving Cement is a material pre-eminently suited for paving work. It is over 99% pure. It is absolutely free from decomposition products resulting from improper manufacture, as shown by the carbon tetrachloride test. It is resistant to high atmospheric changes, as shown by the short range in penetration at different temperatures. It is high in cementitious strength, as shown by its ductility, and, moreover, it remains ductile and adhesive and cementitious at low temperatures, in contrast to some of the other paving cements having very high ductility at 77°F and none at all at very low temperatures. It is homogeneous, free from any flux or oil cut-back. It is black, lustrous, ductile, rubbery, and composed of the true asphaltic constituents. It is remarkably stable, as shown both by its very slight loss in penetration on evaporation and by its record in service. Removed from the oils with which it is found in nature by a process of manufacture most carefully controlled, it is constant in composition.

We have up to this point confined ourselves to an asphalt paving cement suitable for sheet asphalt pavement. The sheet asphalt pavement is the most highly developed form of bituminous highway construction, and is the form in which the best grades of asphalt show best and the poorest grades most poorly. With the rapid development of our highways, however, types

of construction have been called for, especially in rural districts, which, while not as expensive as the sheet asphalt pavement, give satisfactory results under certain conditions. These pavements range all the way from bituminous concrete, or so-called Topeka Mix, to light road oils which serve more the purpose of laying the dust than actively binding together the mineral particles. In supplying asphaltic materials for most of these forms of highway construction an entirely different situation is met from that for the sheet asphalt pavement. The material in some of the cases must not only be applied cold but be applied directly to the surface of the road, and must penetrate. In other words, it must be of the consistency of oil, but after it has penetrated into the road it must be changed by weathering so that it loses its oil-like properties and approaches as near as possible to an asphalt. There are many different conditions to be met. It is necessary for the producer to study carefully these different conditions and to prepare products particularly suited for different conditions. The Texas Company has spent much time in the study of various types of highway construction. Two points have been kept in mind, the necessity that the material should have certain properties which will make its application easy, and the necessity that it should after application assume a binding form that will give a durable road surface. I will briefly mention some of these Texaco products, pointing out particular properties which make them especially suited for various kinds of construction:

Texaco 30 Road Oil is used principally as a dust layer and has given satisfactory results when applied with horse or motor-drawn gravity distributors. It is used where no surface binder is desired; and in order that a tendency to form a surface pad may be avoided a certain amount of stable oils is present which keeps the road oil, after it has been placed on the road, in a semi-liquid condition. It does not need covering as it does not form a sticky or disagreeable surface.

Texaco 45 Road Oil is a material of very different composition and having a higher percentage of asphalt. Its asphaltic content is 45%, the remainder being made up of a light carrier which will be removed to a certain extent by weathering. It gives satisfactory results where a dust layer is required which will protect the surface in a measure without forming a surface pad.

Texaco 55 Road Oil and Texaco Liquid Asphalt 1, which contain approximately 55% and 65% asphalt, are made up of asphalt with a light carrier.

## TEXACO STAR

They are used where a surface pad is desired. The light carrier reduces the asphalt to a consistency at which it can be applied cold and yet give proper penetration, and after application upon the road the light material is driven off by weathering and the asphaltic binding material is thoroughly incorporated to form a durable light pad.

Texaco Surfacing Compound is a more expensive product, required for special conditions. It gives especially satisfactory results on macadam roads which are in good condition, where by the use of about one-half gallon per square yard (covered with trap rock screenings or hard coarse sand) a light surface pad can be built up resembling a sheet asphalt pavement.

Texaco Special Macadam Binder is a material differing in nature from road oils. Not only is its percentage of asphalt higher, but its consistency is such that it is best applied at a temperature of 150° to 160°F. When applied at about one-half gallon per square yard and covered with sand chips or pea gravel, a heavy surface pad will be produced. This Special Macadam Binder contains approximately 85% asphalt, and is so prepared that it will give a surface pad of maximum durability.

Texaco Macadam Binder is a material having a very high asphalt content (95%) combined with a small percentage of carrier. This gives especially good results with cold mix surface treatment of bituminous macadam pavements originally made with asphalt or tar by penetration or mixing method. The carrier is very carefully selected, so that the material will volatilize on the road after thorough incorporation but not before.

Let us now notice several special products which may be termed strictly asphalt. They are to be used by hot mixing and are very similar in properties to Texaco 54 Paving Cement:

Texaco 96 Paving Cement is a material having a penetration of about 96. It is a pure asphalt, prepared from asphaltic base crude oil by removal of the liquid oils. It is not made by thinning out a hard brittle asphalt with a liquid oil, nor does it contain volatile materials in any appreciable amount. It gives most satisfactory results in the preparation of bituminous concrete by the hot mixing method. The freedom of the stone from dust in this form of highway construction requires a product of softer consistency than can be used in sheet asphalt pavement, and for that reason its penetration is higher. Although viscous at the temperatures usually employed, it gives perfect penetration and its stability and freedom from the bleeding which occurs where semi-brittle so-called natural asphalt is used gives a product unequalled for stability and resistance to temperature changes.

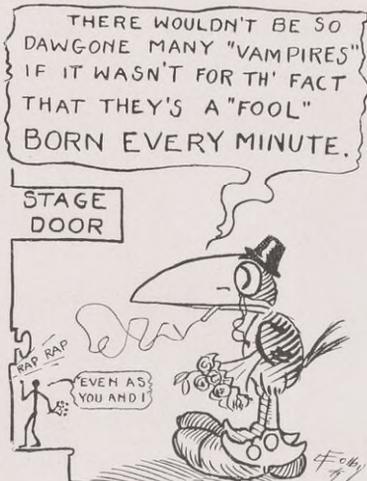
Texaco 65 Paving Cement is very similar to Texaco 54, but has a slightly higher penetration. It is particularly suited for Topeka Mix and for sheet asphalt pavement where traffic will be light.

Texaco 32 Paving Filler is prepared especially as a paving filler, and its preparation is carried out in such a manner that really wonderful results have been obtained from it as a filler for creosoted blocks. I need not speak of the undesirable solvent action of creosote oil on all asphalts. In Texaco 32 Paving Filler we have a product that is most resistant to the solvent action of creosote oils. It gives equally desirable results as a filler for either brick or blocks.

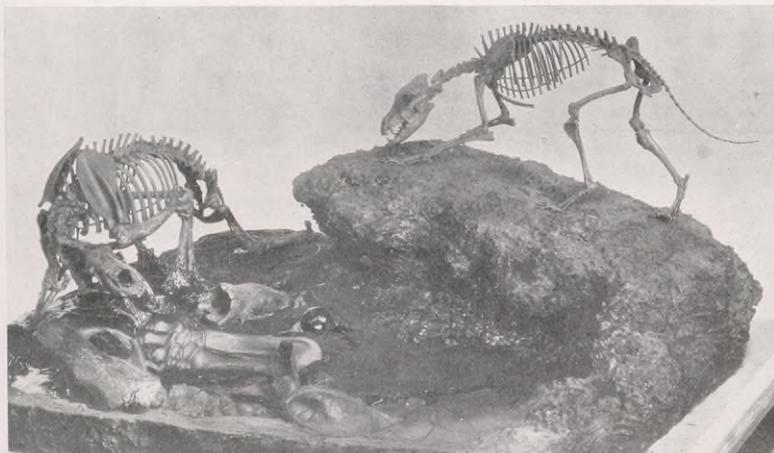
In this short talk I have tried to describe briefly the various Texaco products for the construction of paved streets and highways. I have pointed out the special properties possessed by the asphalt products of The Texas Company, and have compared our chief product for sheet asphalt pavement with the materials made for the same purpose from the mixtures of asphalt and mineral matter and other impurities which are found in natural deposits. I have shown that our product for the highest form of pavement, Texaco 54 Paving Cement, has all the ideal properties for its purpose in more nearly perfect degree than any competing material. It excels in resistance to change of consistency on temperature change, in cementatiousness not only at 77°F but at low temperatures as well, and in durability.

In describing the various liquid products and other special products for road purposes made by The Texas Company to meet special conditions, I have shown with what great care each is adapted to the particular conditions of its special use. In short, the thought I wish to leave with you is that in these Texaco products we claim to have produced materials superior to all others for meeting the requirements of highway engineering.

### APHORISMS OF THE TEXACROW



## TEXACO STAR



The Asphalt Group in the American Museum of Natural History, New York—Photograph kindly furnished by the Museum

### THE ASPHALT GROUP OF FOSSIL SKELETONS

From an article by W. D. Matthew, in *The American Museum Journal*—By Permission.

The petroleum of southern California, as in most of the West, has an "asphalt base"—that is, when it evaporates the heavy oils left behind are asphaltum instead of paraffine. Wherever the petroleum oozes up from the earth this residuum of asphalt accumulates. The oil wells up continually from below and keeps it soft close around the spring, but elsewhere it is hardened into a solid mass mixed with earth or wind-blown dust. At the Rancho-la-Brea (near Los Angeles, California) is an extensive formation of this sort made by oil springs which were probably much more active in former times than now. Here and there are little pools of semi-liquid asphalt, covered with a film of dust in dry weather, with water after rain, yielding slowly beneath the weight and clutching with unbelievable tenacity whatever sinks beneath the surface. The dust-covered surface looks like firm ground; except at the softer pools one can walk across it without considerable yielding. But woe to the unfortunate animal that steps into one of the softer pools, or lingers too long on its way across a firmer surface. His feet sink below the surface, the treacherous tar clutches them fast, and his most desperate

struggles result only in sinking him deeper and deeper. He succumbs finally to exhaustion, and little by little is sucked down and disappears.

Such has been the fate of many small animals in the last few years. Larger animals, too, have been caught in the asphalt, some dragged out with ropes, while others, not seen in time for rescue, have perished miserably. But the tar pits are not now large or numerous enough to constitute a serious danger.

At the time when these springs were active the asphalt pools formed a death trap of terrible efficiency. This was in the Pleistocene Period, during the Glacial Epoch, when much of the northern part of the continent was buried under fields of ice. Southern California, far below the limits of glaciation, had probably a less arid climate than now, and a large and varied animal population mostly of extinct species.

Excavations for road asphalt in this formation were commenced in 1874. . . . The material was melted down to free it from impurities, and shipped in barrels. . . . The work was not continued, as the cost of purifying was too high to find a profitable market at that time. It served to call at-

## TEXACO STAR

attention to the fact that the asphalt contained numerous bones, and when examined by scientists it appeared that these bones belonged to extinct animals. Prospecting for fossils soon showed that around the little oil springs, or where springs had formerly come up, there were pipes or chimneys of soft asphalt which were packed full of bones of extinct animals, mostly in marvellous preservation. The excavations of local scientific societies and the more extensive work by the University of California have yielded many hundreds of skulls and tens of thousands of skeleton bones of a great variety of animals large and small. The bones are impregnated with asphalt, otherwise little altered; but flesh and hide, horns and hoofs have completely disappeared, dissolved out by the petroleum and long since converted into bitumen, water, and gases. The skeletons are never articulated; the bones are jumbled together by the slow movements of the half-liquid asphalt in which they were entombed thousands of years ago.

It is safe to say that the La Brea asphalt is the richest repository of fossils ever discovered. . . . How many kinds of animals are in the collection is not yet known. Over 50 species of birds have been identified, and probably as many kinds of mammals. The most remarkable fact is the great abundance of carnivorous quadrupeds and birds of prey. Wolves, lions, and saber-tooth tigers, eagles and vultures, are the most common; next stand the larger herbivorae—bison, horses, ground sloths, and larger ruminants and wading birds. This is a fact of grim significance, for it indicates that the larger quadrupeds, venturing out upon the seemingly solid surface and caught in the asphalt, served as a bait for animals and birds of prey. These in their turn, falling victims, served to attract others of their kind. And so the "death-trap of the ages", self-baiting, automatically disposing of its prey, has collected and preserved to our time a wonderful series of predacious animals and birds. The smaller animals, light and active and seldom venturing beyond the brink of the pool, were not often caught. . . .

The group [shown in the picture] is based chiefly upon the studies of Professor Merriam, of the University of California. It is meant to convey a picture of the operation

of this Pleistocene death-trap. No attempt was made to cover the skeletons with flesh and hide—this the visitor may imagine for himself.

Two ground sloths (*Myiodon*), great, heavy, thick-haired, clumsy, clawed beasts distantly related to the living tree sloths, but as big as a grizzly bear, have been caught in the asphalt. In spite of their struggles, they have sunk down until only the head and fore limb of one and head of the other appear above the black asphalt. A saber-tooth tiger (*Smilodon*), one of the most powerful and dangerous of extinct beasts of prey, attracted by the struggles of the ground sloths, hastened to the spot to devour them. But he, too, has been trapped and is now vainly trying to extricate his feet, already beginning to sink below the surface. Meanwhile, a fourth animal, the great extinct wolf (*Canis dirus*) has come up. More wary, or as yet more fortunate, he has come over the hardened asphalt. He sees his dreaded enemy, the saber-tooth, and the powerful and bulky ground sloths in difficulties where neither teeth nor claws will avail against his attack. He dare not yet spring in to attack them, but leaps about on the margin of the pool in high excitement, barking out his opinions in regard to saber-tooth tigers, which under ordinary circumstances he would reserve for a safer distance. The *Smilodon*, distracted for a moment from his desperate attempts to free his feet from the entangling mass, answers with a savage snarl, which we may interpret as a wish, soon to be fulfilled, that the wolf would bear him company in his troubles.

Such is the drama that our group sets forth. A realistic story it is—a characteristic incident which must have happened, pretty much as we have told it, again and again during the time, many thousands of years ago, when these tar springs were active. . . .

It does not appear that the trap was seen by human eyes in the days of its vigor. No remains of man—tools, weapons, or other indications of his presence—have been found with the extinct animals. There are various reasons for the belief that man is rather a recent arrival in the New World, and had not reached the Pacific Coast when these animals were perishing in such numbers in the tar pits.

## TEXACO STAR

### SAFETY AND SANITATION

V. R. CURRIE

Chairman Central Committee of Safety

#### USE OF SAFETY BULLETIN BOARDS

John S. Gallagher, Port Arthur Works.

This Company is fortunate in that few of its processes are inherently hazardous. The chief dangers with which its safety committees have to contend are those caused by ordinary carelessness and lack of thought. In our experience the most common causes of accidents are "Stepping on nails", "Handling miscellaneous material", "Struck by falling objects." Under such conditions the use of safety bulletin boards should reach its highest development. Other companies which have hazardous work for their men are forced to spend large sums explaining the dangers of the work and the best methods of avoiding them. Since the causes of the accidents suffered by the employes of this Company are simpler and are easily taught by posters and bulletins, and since the number is small, only a moderate expense in money and energy is justifiable.

The maintenance of bulletin boards at important places in the plant is not expensive, and they can be used to serve the requirements both of education for the workers in safety methods and devices and also to show continued official interest in the safety campaign. But to serve these purposes, the bulletin board must be kept alive. It will not do to subscribe to some safety bulletin service and post the bulletins, and consider the matter ended. The boards must be kept painted, neatly arranged, and, above all, interesting. Changes of matter should be made once a week at least, and oftener if possible. Only those bulletins applicable to the man who reads them should be used. It is foolish to warn a man who works in a one-story pump house, and never rides in an elevator in the course of his employment, against the dangers of elevators, or to post notices in regard to automatic non-return valves in the barrelhouse. Statistics of accidents and details of accidents should be examined with care to make sure that they are applicable before being used. Our men have small interest in the details of accidents in

the logging industry in Washington. The bulletin board should carry descriptions and every day dangers that confront the worker and should drill unceasingly in the idea of taking care. If we could get our men simply to watch their step and look beneath them when working in the air, our accidents would decrease thirty per cent.

In order to gain respect for its never ending admonitions, the bulletin board should carry on the face of it continual advertisement of official interest in safety work. The bulletin board in plants of the size of those of The Texas Company serves as a medium of official communication between the executives and the workers. It should be used to give all information of general interest, and, in a way, should serve as a plant newspaper. Notices of changes of duty of foremen and others, exceptional records of any department, the landing of contracts, the distinctive uses of our products, a synopsis in common language of laws and regulations that affect the worker,—all these provide material that may be used. The use of such material not only makes the bulletin board interesting (and without interest it fails of its purpose), but it also lends by association an authority to the bulletins not prepared in the plant, which they would not have if they were posted alone. It shows that such bulletins, which are usually the real safety bulletins prepared by experts, have official sanction for their statements.

If the bulletin board is made live, interesting, and readable it will be read, safety bulletins and all, and will teach its lessons to the employes almost without their knowledge and thus serve to reduce the yearly toll levied on wages by accidents.

\* \*

Would you rather be a "good fellow" with the gang or be considered a valuable man by your employer? You cannot be both. It is up to you to make the choice. Sure, you are hanging on to your job, and so far you may be able to turn out as much work and as good work as the other men in your department; but such a record will not distinguish you from the rest. When you get a little older you will need to have a particularly good standing with the firm if you expect anything better.

You may stand the pace for a while, but soon you will begin to lag, and when you do you will find that you are not in any condition to make a good fight coming down the homestretch. You will be a "has-been" long before you should. You can't expect to make a "come-back" with your vitality sapped and constitution broken down. Get to thinking. It is vital to you.—*The Houston (Texas) Chronicle.*

# TEXACO STAR

## DEPARTMENTAL NEWS

The Managers of the respective Departments have assigned to the gentlemen whose names and addresses are here given the duty of sending to the *Texaco Star*, on or before the twenty-fifth day of each month, reports of new appointments, transfers, removals, resignations, promotions, and other items of departmental news of general interest. Suggestions and information for this purpose should be sent to them before the twentieth day of the month. All are invited to co-operate.

Pipe Line Dept.	A. M. Donoghue, Houston
Natural Gas Dept.	D. P. Harrington, Port Worth
Fuel Oil Dept.	E. B. Joyner, Houston
Refining Dept.	C. K. Longaker, Houston
Marine Dept.	E. C. Macmillan, Port Arthur
Legal Dept.	A. R. Weber, New York
Treasury Dept.	J. S. Ballard, Houston
Comptroller's Dept.	Lee Dawson, Houston
Sales Dept., S. Territory	B. E. Emerson, Houston
Sales Dept., N. Territory	P. A. Masterson, New York
Export Dept.	M. G. Jones, Houston
Purchasing Dept.	S. Slattery, New York
Railway Traffic Dept.	J. B. Nielsen, New York
Producers	J. E. Byrne, New York
	J. W. Painter, Houston
	Delbert Leggett, Houston

**PIPE LINE DEPT.** Superintendent J. L. Dowling was taken suddenly ill in

February and a surgical operation was found to be necessary. The operation was very successful and he is now able to be up and around, but it will be some little time before he can take up his business duties again. During Mr. Dowling's illness G. H. Speary is temporarily in Houston assisting in pipe line matters.

Superintendent E. Auxter, of Shreveport, whose health has not been of the best recently, is taking a rest which we hope will bring a speedy recovery. J. C. McMahon is temporarily performing the duties of Mr. Auxter.



W. A. Rankin, Jr., 8 months old, son of Mr. and Mrs. W. A. Rankin, Pipe Line Dept., Houston Off.

Superintendent J. G. Quinn, who has been at Marlin for some time, has returned to Wichita Falls, and taken up his duties much improved in health.

R. C. Maddox, our Representative at Thrall, Texas, has, on account of our withdrawing

from the Thrall field, been transferred to the Humble field, succeeding T. W. Madgett, who has accepted a position with the Producers Oil Co.

*Mr. and Mrs. William H. Dick announce the marriage of their daughter Jennie May*

*to*  
*Mr. George Pierce Martin, Jr.*  
*Wednesday, February the twenty-first*  
*Nineteen hundred and seventeen*  
*Austin, Texas*  
*At home after March tenth*  
*2706 Baldwin St., Houston, Texas*

**REFINING DEPT.** The boys in military service are elated over the news that they will be sent home soon.

Military routine, together with the reduction of their liberties by the discipline enforced, is beginning to get stale and they are anxious to return home and to their work.

Water shipments by The Texas Company from Port Arthur, Texas, month of February 1917:

DATE	VESSEL	BARRELS Refined.	DESTINATION
1st	S.S. Illinois	62,192	London, Eng.
2nd	S.S. New York	63,099	Charleston & Jacksonville
3rd	S.S. Nettuno	47,977	Messina, Italy
4th	S.S. Alabama	28,520	Bayonne, N. J.
5th	S.S. Shabonee	48,202	Dartm'th, Eng.
6th	Brg. Tulsa	7,710	Amesville, La.
6th	S.S. F.Luckenbach	32,575	Australia
7th	S.S. Fort Morgan	4,177	West Indies
8th	S.S. San Eduardo	59,688	Dartm'th, Eng.
10th	S.V. Blanche H. King	7,278	Tampa, Florida
10th	S.V. Barbara	6,461	Spezia, Italy
10th	Brg. Sixty One	4,785	Morgan City, La.
10th	Brg. Sixty Three	4,855	Morgan City, La.
11th	S.S. Northwestern	21,918	Amesville, La.
14th	S.S. Texas	67,293	Bayonne, N. J.
16th	Brg. Tulsa	8,178	Amesville, La.
16th	S.S. Australpeak	32,376	South Africa
17th	S.S. Giove	2,511	Messina, Italy
18th	S.S. New York	73,907	Norfolk, Va.
19th	S.S. Mount Vernon	3,863	West Indies
20th	S.S. Bloomfield	42,715	Liverpool, Eng.
20th	S.V. Lord Templ't'n	20,467	Australia
20th	S.S. Florida	10,888	Delaware River
21st	Brg. Dallas	17,089	Delaware River
22nd	S.S. Georgia	51,451	Providence, R. I.
23rd	S.S. Fernleaf	56,667	Dartm'th, Eng.
23rd	Sch. Elisha Atkins	9,848	Italy
25th	S.S. Northwestern	21,244	Amesville, La.
25th	S.S. Alabama	28,420	Bayonne, N. J.
26th	S.S. Cardium	67,186	Gibraltar
26th	S.S. Cowrie	44,360	Newcastle, Eng.
27th	S.S. Vitruvia	42,272	Avonmouth, Eng.
28th	Brg. Tulsa	7,886	Amesville, La.
	Miscellaneous	10,152	
		1,018,210	

G. R. Moon, foreman of the Port Arthur Shook Mill, is the proud father of a fine baby boy, G. R., Jr., who arrived Feb. 20.

## TEXACO STAR

K. R. White, clerk in the cost department of the Case and Package Division at Port Arthur, has resigned.

A. V. Hallett, on the cap line of the Case and Package Division, was taken suddenly ill with pneumonia and died Jan. 27. He was buried in Port Arthur.

Sam J. Fox, in the box factory, died Feb. 17. His remains were sent to New Orleans for burial.

Speaking of Names—Have you ever heard the STORY of Texacoland? It is a large PARISH covering considerably more than a LONGAKER. It is reached by crossing a WOODBRIDGE. The favorite pastime of many of the people is SCULLIN(g). For this they use a small boat with a light HULL. In this land there are a number of HOLMES. Most of these are roofed with SCHLAET, because it will not BYRNE. On top of a HILL there lives a SAINT with his BUTLER; he also has a WAGENER who can CURRIE his horse without PAYNE. He lives in a large BROWN castle with a TOWER, around which is a GREEN WALL with numerous GATES. The MAYER of this land is very NOBLE and MANLEY; he has a LONG GRAY BEARD. The weather is never RAINEY. This land has lots of birds, among which are two DRAKES, a CRAIN, and a HERRON. These birds, of course, do not CARROLL at KNIGHT, but they DODGE very aptly when shot at. There is also a FOWLE. There are a number of different people in this land, among them being the BLACKMAN and the REDMAN. The SMITH and the FARRIER live on one of the main RHODES just across from the town MARSHALL.



Robert William Nelson, at 7 months, son of Fred M. Nelson, Converter Foreman, Port Neches Works

LEGAL  
DEPT.

Owing to the pressure of other duties, the correspondent for the Legal Department failed to announce in the February issue the pro-

motion of three of the most deserving members of this Department: Effective January 1, General Counsel Amos L. Beaty announced the appointment of Robt. A. John as General Attorney, the appointment of J. H. Hill as Chief Attorney in Oklahoma, and the appointment of Hampden Story as Chief Attorney in Louisiana.

After spending some time in Texas, Mr. Beaty has returned to New York.

We regret that we are unable to announce the name of the young lady who arrived at the home of Mr. and Mrs. W. O. Crain on Jan. 27.

SALES DEPT. Houston District.—The accompanying photographs are interesting, as they represent a class of machine and work not everywhere to be found. Salesman H. D. Gohlman, Jr., reports:

I suggested the use of Crater Compound on this machine, as it is made up of large gears, sprockets, and chains, just the place for our Crater Compound. Before I left Crater was being used on all gears and chains. Also, I tried out Crater on the steel tracks of the caterpillars and found it just the lubricant for the work, as this Caterpillar runs through slush and water and Crater Compound was the only thing that would stay on. Mr. Pike was much pleased and said it was the thing for his caterpillars.



Caterpillar Dredge of Miller and Pike Co., Raywood, Texas—Crater Compound on all chains and on caterpillars



Ditch-Digging Machine of Miller and Pike Co., Raywood, Texas—Lubricated with Texaco Crater Compound

## TEXACO STAR



Texhoma, Okla. Station (Dallas District). While Agent B. B. Elkins was on a vacation his clerk, Miss Zola Powelson, took care of the Station, even taking herself the tank measurements and temperatures

Dallas District.—Agent S. C. Melton, Longview, Texas Station, recently received this order, which is in rather unique form, to say the least of it:

I hope you'll not pass  
With your car-load of gas  
And leave none for me, on some trivial excuse;  
I can't go very far  
In my little Ford car,  
Unless I have plenty of "Sid Melton juice."  
Fifty gallons will do:  
You can bring it right through  
And put it right where you always have done;  
And if I'm away,  
I shall see you some day,  
For you're always right on me before I can run.

Allison.

El Paso District.—On Sunday morning, March 4, Mrs. W. H. Wagner died at El Paso, after a sudden attack of pneumonia. The funeral took place on the afternoon of March 6, at Marshall, Texas. Few men have been longer in the service of The Texas Company than Supt. Wagner, and heartfelt sympathy went out to him from friends in all departments of the Company. A numerous party of Company Officials and friends from Houston attended the funeral at Marshall.

(The following items should have been in last month's issue, but were omitted through an accident.—Ed.)

The El Paso District Office on Jan. 17 occupied new quarters in the Martin Building, El Paso's newest and most modern office building.

The Annual Meeting of agents and salesmen was held Dec. 18-20. Supt. W. H. Wagner, Western Representative F. W. Freeman, and Gen'l Lub. Ass't R. C. Galbraith presided, and the meeting was judged by all present to have been the best ever held in this District.

Born, Jan. 3, to Mr. and Mrs. J. W. Mitchell, Roswell, N. M., a 5-pound girl. Born, Jan. 5, to Mr. and Mrs. M. L. Griffith, El Paso, a 9-pound boy. Mr. Mitchell



Carthage, Texas Station—Agent W. B. Sims

## TEXACO STAR



New El Paso Filling Station, No. 1

is salesman in Roswell territory, and Mr. Griffith is creditman in District Office. Congratulations are extended.

Salesman H. B. Roeder's father died, Dec. 23 in New York City. Mr. Roeder has the sympathy of our entire District.

Oklahoma District.—The District Office was favored Feb. 4 by a much enjoyed visit from Ass't Manager M. G. Jones.

Agent P. J. Smith, of Altus, Okla. Station, who underwent an operation at St. Anthony's Hospital in Oklahoma City on Feb. 9, is progressing on the way to recovery. Meanwhile, Ass't Supt E. H. Browder is traveling Mr. Smith's territory.

R. B. Satterlee, of the New Orleans District, has succeeded Troy Adams as Agent at Fort Smith, Ark., Mr. Adams having resigned.

George R. Tabor is Warehouseman at Tulsa, Okla. Station, *vice* W. G. Smith resigned.

E. L. Dryden, Clerk at Guthrie, Okla. Station, *vice* C. H. Beavers resigned.



Tucson, Ariz. Station—Warehouse

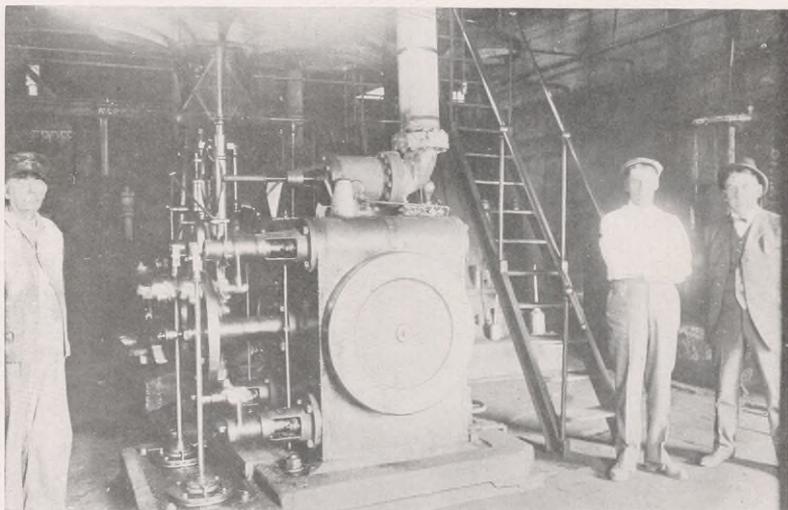


Tucson, Ariz. Station—Tank Wagon Driver Robert Gestian and Warehouseman W. E. Sparrow, "on the job" as well as on the load



Choctaw Cotton Oil Mill Co., Ada, Okla.—Lubricated with Texaco lubricants exclusively for the last five years

## TEXACO STAR



The Chickasha Ice and Cold Storage Company's Plant at Chickasha, Okla., is lubricated with Texaco lubricants. Left to right: I. A. Milne, Engineer; O. L. Bingham, Manager; O. J. Brown, Agt. The Texas Co.

Atlanta District—Lub. Ass't Wm. Reynolds recently had an experience while



Agent M. O. Dovell, Orlando, Fla. Station—For three consecutive months he has collected all accounts except current accounts

riding in an Atlanta street car which may be interesting as an illustration of *Texaco's* ever-growing reputation for Quality:

A large touring car painted a perfect Texaco red was passing, when I heard a gentleman in an adjoining seat say to another: "That man has copied Texaco colors." The other answered: "I bet he is burning Texaco gas." The first speaker returned: "I am sure he is using Texaco Motor Oil M."

I could not resist the temptation, and handed him my card. He shook hands very pleasantly and said the reason he had suggested that the owner of the red car was using Motor Oil M was that it was a high class car, which in his mind made it probable that the best oil would be used, and it followed in his opinion that it must be Texaco Motor Oil M which he had found by many working tests to be the best. This little experience sets forth, I think, the value of Quality for creating friendly acquaintance between employes and customers and the establishment of future permanent business in minimum time.

### Appointments and transfers:

- C. H. Baguley, Agent at new De Land, Fla. Sta.
- T. F. McCall, Agent at new St. Petersburg, Fla. Station.
- J. J. Andrews, Agent at new McCormick, S. C. Station.
- A. M. Ingram, Agent at new Newman, Ga. Sta.
- J. E. Luffer, Agent at Kissimmee, Fla. *vice* S. B. Perkins resigned.
- W. C. Crenshaw, from salesman out of Live Oak, Fla. to Agent at Fitzgerald, Ga. *vice* J. F. Hager.

## TEXACO STAR



Operated at Herkimer, N. Y. Station—Agent B. A. Sheridan in Light Delivery Car, Driver H. E. King in Auto Tank Truck  
This Auto Tank-Truck, L-139, has made an exceptional record for volume of deliveries

B. E. Robertson, from Statistician in Dist. Off. to Clerk at Savannah, Ga. Station.

S. A. Redwine from Sales Sheet writer to Statistician in District Office.

W. C. Crumley, from Equipment Clerk to stenographer in Credit and Collection, Dist. Off., *vice* L. H. White resigned.

T. J. Beddingfield, Equipment Clerk.

Tank Wagon drivers:

H. Reisen, Savannah, Ga., *vice* Herman Grotheer, resigned.

J. H. Higgenbotham, Jacksonville, Fla., *vice* L. Spells, resigned.

E. Bolton, Jacksonville, Fla., *vice* A. Sheill, resigned.

E. A. Dawson, A. Linares, B. B. Martin, A. Lazarro, H. Williams, all at Tampa, Fla.

**SALES DEPT.** New York District.—The  
**N. TERRITORY** two new Filling Stations  
under construction at Pelham Manor, N. Y. will soon be completed. They are splendid stations for a high class community, and big business should result from their operation.

The Third Annual Meeting of Salesmen and Agents of New York District was held Jan. 24-25. The District has just doubled over 1915, and this fact was attested by the large number of men present.

With the assistance of a newly arrived agent in his home, Agent W. W. Bauer of Port Jervis increased his business 106%.

One of the largest concerns in New Jersey which has used our oils for three years, being pressed for the business on a reciprocity basis, allowed a competitor to submit samples for test. After a test conducted for a period of five weeks the following state-

ment was rendered by the Master Mechanic to the Purchasing Department:

I have given the oils submitted to me for test a thorough trial and if you say so we will have to use them, but taking into consideration the valuable machinery that we have and the results obtained with the oils we have been using for the past three years, I would suggest, even in view of the conditions of reciprocity, that we renew the contract with The Texas Company for all our requirements.

**Boston District.**—The wonderful new electric sign which has been erected at our Commonwealth Avenue, Boston, Filling Station certainly speaks volumes for the ability of our Advertising Department.

G. R. Rowland, Supervising Engineer of the Northern Territory, gave an extremely interesting talk on Steam Cylinder Oil, on Feb. 17, at the United States Hotel in Boston, before representatives and general salesmen of this District. Many questions were asked and answered by Mr. Rowland, who was able to clear up the points to the satisfaction of all present.

We are sorry to report that Mrs. Kerrigan and Miss Murray, of the District Office, are suffering from fractured arms, due to a fall while skating. Both are doing well and will soon be with us again.

**Appointments and transfers:**

F. B. Freeman, of New York, appointed Supervisor of Equipment, in charge of all portable equipment in Boston District.

Gen'l Ass't E. H. Oakley, transferred to Norfolk.

Gen'l Ass't G. L. Clifton transferred from Norfolk to Boston.

H. E. Shaw, formerly Salesman in Western Massachusetts, Agent at Springfield, Mass. *vice* C. H.

## TEXACO STAR

Bridel resigned. A. D. Hall, formerly of Boston sales force, succeeds Mr. Shaw.

H. C. Weeks, appointed Sales Agent in metropolitan Boston, with office at Boston Station. F. A. Planche will continue to supervise the operation of Boston Station.

A. C. Gorton, Agent New London, Conn. Station vice H. W. Patch resigned.

Geo. H. Davis, Acting Agent at Hyde Park, Mass. during the illness of Agent B. W. Piper.

### TEXACO BOWLING LEAGUE—STANDING FEB. 16

TEAM	CAPTAIN	WON	LOST	PINFALL	AVERAGE
No. 3—Anderson.....		27	9	11,569	429
No. 1—Moberg.....		20	16	11,479	425
No. 4—Peterson.....		17	19	11,295	418
No. 2—Morgan.....		8	28	11,127	412
High Three Strings, Team No. 1.....				1,341	Jan. 5
High Single String, Team No. 1.....				595	Jan. 5
High Three Strings, Individual, Kelly.....				320	Jan. 26
High Single String, Individual, Moberg.....				128	Jan. 5

Norfolk District.—“Doc” Haden is visiting his people at Shreveport, La. He expects to visit the Mardi Gras in New Orleans and The Texas Company headquarters at Houston. This is the first vacation Doc has taken in four years, and we know his friends in the South will be glad to see him.

P. R. Jones, salesman in Northern Virginia, is in the Johns Hopkins Hospital. We are wishing for him a speedy recovery.

F. L. Shively has been appointed Supervisor of Motive Equipment in Norfolk District. We are glad to welcome Mr. Shively to the Texaco Family.

Edward Woodward is acting as our Agent at the new Staunton, Va. Station. Mr. Woodward has long been a friend of The Texas Company and we are glad to have him as one of us.

H. Muir, tankwagon solicitor at Richmond, Va., has resigned.



Tank at Bellhaven, N. C.—Agent H. R. Keaton and Operating Inspector R. B. Allen

Chicago District.—The Annual Sales Meeting of Chicago District was held in Chicago Feb. 22-23. Stimulating talks were made by F. D. Gatchell, W. F. Parish, C. H. Parker, J. T. Groves, and H. T. Snell. A number of interesting papers were read.

Salesman J. C. Richardson's sales for the month of January 1917 show an increase of

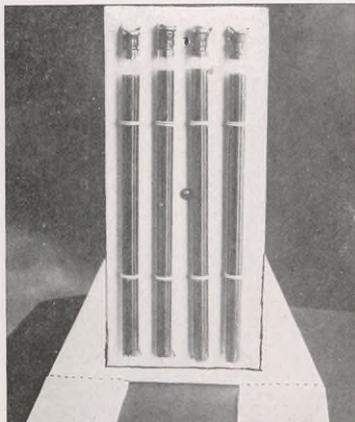


Annual Sales Meeting of Chicago District, Feb. 22-23. The meeting closed with a banquet and entertainment program in the Red Room of La Salle Hotel, Chicago, tendered by the Crater Compound Club. After the entertainment Salesmen F. H. Miller, Joplin; Geo. A. Olson, Chicago; H. B. Longshore, St. Paul, were initiated in the club. The degree team did a good job.

## TEXACO STAR



Texaco display at Combs Garage, 5519-23 Cottage Grove Avenue, Chicago. Salesman L. P. Shaffer discussing the "drop test" with Mr. P. S. Combs. Note the lettering on the window—"Experts on Lubrication", and the excellent Texaco window display



Device for explaining different densities or "body" of Texaco oils. The metal sheet to which the tubes of oil are attached revolves vertically about its central pivot. When the tubes are thus reversed the different speeds at which the bubbles rise in the several tubes give a vivid conception of the difference in "body" of the oils. The use of this device by Salesman Shaffer at the opening of the Combs Garage induced a great deal of interest.

1700% over the January 1916 sales for the same territory. Mr. Richardson covers that territory of Chicago known as the North Side.

### Appointments and changes:

Chief Accountant R. G. Hill, transferred to Philadelphia. General Clerk James Smythe succeeds Mr. Hill, and Creditman D. R. Morton succeeds Mr. Smythe as General Clerk.

Robert B. Petrie, Jr. appointed District Engineer. J. L. Force, appointed Lub. Salesman, St. Louis. J. J. Rafferty, Salesman, Chicago, has resigned. Wm. Black, Clerk, Dist. Off., has resigned.



Big motor truck loaded with iron drums, part of the delivery equipment of S. L. Rocafort & Co., of Humacao, Porto Rico, a progressive firm responsible for large sales of Texaco products through their quick and efficient service to their customers

## TEXACO STAR

EXPORT  
DEPT.

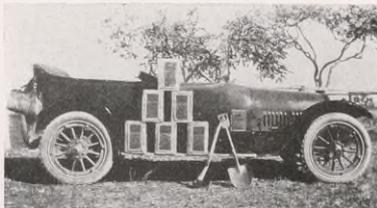
C. E. Bishop arrived from  
Manila, P. I. on Jan. 27.

M. L. Thompson and E. G.  
Freyer have joined the staff of the Export  
Department.



First Semi-Annual Meeting held in Sydney, Jan. 4-5, of the Texaco Selling Organization (R. W. Cameron & Co.) for New South Wales. E. Nielsen, special representative of The Texas Company, presided. Problems relating to marketing Texaco products were discussed thoroughly, and constructive plans were formulated for more efficient organization. The meeting was inspiring, and all were unanimous that much benefit was secured. Similar meetings are to be held in Melbourne and other Australian centers.

Front row, left to right: S. H. Smith, City Salesman; J. Sinclair, Lub. Salesman; J. Fenwick, City Salesman; E. Ellison, Chief Accountant. Middle row, left to right: S. Blackwell, Lub. Representative T. T. Co.; E. Nielsen, Special Representative of T. T. Co.; A. F. Street, President R. W. Cameron & Co.; J. Ferguson, Manager Kerosene Dept. Back row, left to right: G. D. Ross, County Salesman; P. A. Howard, County Salesman; J. E. Gray, County Salesman; F. H. Clarke, City Salesman; C. S. Royle, County Salesman.



A strenuous motor trip was recently made by W. A. Gordon, of the firm of Gordon & Coldham, stock and station agents in Sydney, Australia. Mr. Gordon left Cloncurry, in northwestern Queensland, in his Buick car. After traveling 226 miles through that remote and desolate section, his car became bogged in the sands of the Leichhardt River. Owing to the character of the country it was necessary to travel much of the way up river beds, which in that part of Australia are dry for the greater part of the year. While being pulled out of the sand by horses the radiator of the car was smashed, but with soap

and ashes they patched up the damaged parts and were able to travel 8 miles in three hours. As Mr. Gordon's schedule provided for a trip into the extreme northwestern part of Queensland, far away from all help, he was forced to abandon the car and wire back to Cloncurry for another. In due time the substitute car arrived, and he proceeded on his journey through a hazardous country, almost devoid of population, to Normanton, which is practically the most southern point of the Gulf of Carpentaria. He then returned to Cloncurry. The entire trip was made on Texaco Motor Spirit, the name by which Texaco Gasoline is known in many of the British colonies.



Six Months Old and Looking for a Prospect

This bright youngster is the son of C. S. Royle, the banner Texaco order taker of New South Wales. From all reports this miniature Royle is a chip off the old block and may some day duplicate his daddy's feat of standing A-1 among Texaco salesmen.

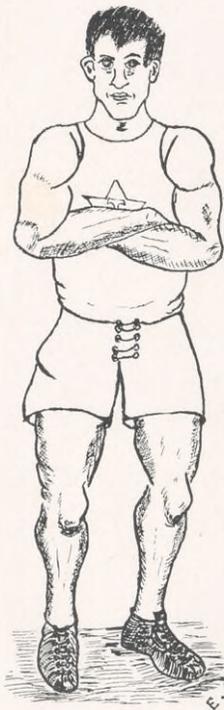


"Light of the Age," a handsome barred Plymouth Rock rooster, posed on a case of his namesake, our Light of the Age Kerosene, which is marketed in Australia. It is owned by George Ross, a salesman for The Texas Company in Sydney, and has been a successful contender for honors at Australian poultry shows. He won first and champion prizes at the Royal Agricultural show in Sydney. The credit for rearing this handsome bird is due to Mrs. Ross. He is of American origin, having broken the shell at Valley View Farm, Amenia, N. Y. He was imported into Australia by Mr. Ross in 1916, and seems to have been fully acclimatized to his adopted country.

## SUGGESTIVE INDEX OF CURRENT ARTICLES

THE MAIN INTEREST IS INDICATED BY CLASSIFICATION OR BRIEF COMMENT

Journals cited are gladly loaned, if in our library, to persons connected with the Company. The journal or journals called for will be sent by return mail, unless in the hands of some one who has made a previous request—and in the latter case, as promptly as possible. Please give full and exact mailing address.



**INTRODUCING THE LATEST PRODUCT  
OF THE PORT ARTHUR WORKS—THE  
TEXACO ATHLETIC ASSOCIATION**

The Athletic Association is to have charge of all athletics at the Port Arthur Works and we expect to put baseball, basketball, football, tennis, track, and other teams in the field. We expect to increase our membership to probably five hundred.

- TREASURER'S** Collecting from Bankrupt Customers, by Henry S. Blum—*System*, Feb. 1917.
- COMPTROLLER'S** American Society's Valuation Committee Presents 230-Page Report—*Engineering Record*, Jan. 13, 1917.  
The Committee's own abstract of the Report of the Valuation Committee of American Society of Civil Engineers.
- The Appraisal of Manufacturing Plants, by Charles W. McKay—*Industrial Management*, Feb. 1917.
- REFINING** Baume Hydrometer, by R. T. Strohm—*National Engineer*, Sept. 1916.  
How to use it.
- FUEL OIL** Heavy Oil Engines, by S. B. Daugherty—*Journal of American Society of Mechanical Engineers*, Oct. 1916.  
Discussion of availability of fuel—Observations on oil engines in general and the Diesel type in particular.
- SALES** Applying the Scientific Method to Sales Management. V—Records—Operation, Statistical and Other Data, by E. St. E. Lewis—*Industrial Management*, Feb. 1917.
- PAVING AND ROADS** Reinforced Concrete Storage for Road Oil—*National Petroleum News*, Feb. 1917.  
Used with success in Tennessee.
- EXPORT** International Commercial Arbitration, by Owen D. Young—*The Nation's Business*, Feb. 1917.  
"Arrangements between the Chamber of Commerce of the United States and the Bolsa de Comercio de Buenos Aires for arbitrating disputes affecting trade with Argentina are now complete."
- GENERAL** Gasoline Specifications Believed Not Practical—*Oildom*, Feb. 1917.  
The hearing by U. S. Bureau of Mines, Jan. 25, 1917.
- Trade Opposes Gasoline Specifications—*National Petroleum News*, Feb. 1917.
- Some Cold Truths About That Shipping Boom, by William Harris Douglas—*The Nation's Business*, Feb. 1917.  
"What becomes of the ships? . . . The truth is not always pleasant, but that doesn't alter the fact that it is the truth."
- Monthly Survey of the Nation's Business, by Archer Wall Douglas—*The Nation's Business*, Feb. 1917.
- Reading Maketh the Full Man, by Richard H. Waldo—*The Nation's Business*, Feb. 1917.  
"Abraham Lincoln found in carefully selected reading no more certain road to success than may the business man of today."
- What 71 Years in Business Have Taught Us, by Cyrus Hall McCormick—*System*, Feb. 1917.
- How We Hold Our Men, by Frank Disston, President of Henry Disston and Sons, Incorporated—*System*, Feb. 1917.

*INTERESTED*  
*TAKE ONE*

*That's what They're here for.*



***“And Some Seeds Fell  
Upon Good Ground”***

**W**E are fortunate in being able to tell the story which appears on page six of this issue.

Rarely, indeed, can one trace the wanderings and the results of a piece of printed matter.

But we do know that many of these “seeds” of ours fall on good ground, even if we cannot trace the process through to its fruition. This particular incident is so tangible and so clean-cut that we are glad to seize upon it to use it as a text and to further an idea which we have held for some time, namely this,—the many reception rooms in the various offices of the Company offer fitting and a worth-while means for allowing

people to learn more about Texaco Products.

The Purchasing Department in New York has done splendid work in this regard. Beyond doubt several other offices have done pretty much the same.

Your office can also help and we wish to assist you.

Therefore, we have had printed a number of signs like the one pictured above, which we shall be pleased to send to any office in any department of the Company.

You can also call upon us or upon your district office to keep you supplied with the printed matter to go with it.

**ADVERTISING DIVISION**