

# *The* **TEXACO STAR**



**F E B R U A R Y 1 9 3 1**



**T**HE bark *Foonhng Suey*, whose career began in the presence of the Queen of England and ended when a torpedo pierced her steel hull, was for several years a carrier of package products for The Texas Company. The painting on our front cover this month represents this noted vessel discharging a cargo of Texaco products in the West Indies.

Built in 1888 at Glasgow, Scotland, with Queen Victoria attending the launching, the *Foonhng Suey* was placed under Hawaiian registry and for many years plied between New York and Honolulu by way of Cape Horn. On her last voyage for her original owners she made this trip in 139 days.

In 1912 she was purchased by The Texas Company for the transportation of package products from Port Arthur, Texas, to Atlantic Coast and West Indies ports, generally taking return cargoes of coal. On February 4, 1914, she sailed from Philadelphia bound for Galveston, but a succession of heavy storms dismasted her and 18 days later she limped into New York. Her hull was sold for use as a coal barge but two years later she was purchased by another oil company and re-rigged. On June 25, 1917, she was torpedoed by a German submarine and sank 70 miles west by south of Ushant, a small island off the western coast of France.



# The TEXACO STAR

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*Cover by Louis Fleming*

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## BRIEF and to the POINT

★ Agitation for increased gasoline taxes has begun in 19 states and the District of Columbia. Representatives of the petroleum and automotive industries, meeting in New York not long ago, went on record as opposing the diversion of gasoline tax revenues to other than highway purposes and the imposition of unreasonably high rates. Gross gasoline taxes paid in 1930 by motorists in all the states and the District of Columbia are estimated by the American Petroleum Institute at \$525,000,000, a new high record.

★ The fact that wooden ships often sprang a leak at sea when a seam known as the "devil" opened above the water line and a sailor was lowered on a scaffold to repair it is said to have given rise to the saying "between the devil and the deep sea."

★ Of the 28,000,000 automobiles registered in the United States, 8,000,000 are rated by the American Automobile Association as worth only \$25 apiece, and are called a menace to safety by the association's president.

★ There was only one fatal accident on scheduled air transport systems in 1929 to every 2,085,048 miles flown, according to Government figures. In all air services there was one fatal accident to every 873,897 miles. The total flight mileage for all services in 1929 was 135,141,499 miles, more than twice that of the previous year, and 13,000 pilots held licenses.

★ Because coal has remained where it was formed, geologists have been able accurately to determine how much of it there is available in the depths of the earth, but petroleum, because it is not a solid, has "migrated," and experts can only roughly estimate the quantity unretrieved.

★ Recent subway excavations in New York brought to light a tree trunk, judged to be between 20,000 and 50,000 years old.

★ The first steam rail line in the United States has outgrown its usefulness; the Delaware and Hudson Railroad has petitioned for the right to discontinue the route, which runs between Carbondale and Racket Brook, Pennsylvania. The "Stourbridge Lion" went over part of the route August 8, 1829.

## CRUDE OIL CONSERVATION

By R. C. HOLMES

**I**F the efforts to bring about proper and satisfactory conservation of petroleum which have been recommended by the Federal Oil Conservation Board and attempted one way and another by the various oil producing states for many years back, fail to accomplish all that is desired, it will be the fault of the industry itself, or certain units of the industry, and not of those having to do with these matters for the states.

When the American Petroleum Institute finally undertook a definite and constructive conservation activity, it set up five regional Committees, as follows: The Atlantic Coast Region, comprising all of the United States East of the Mississippi River; the Gulf Coast Region, including Texas, New Mexico, Arkansas and Louisiana; the Pacific Coast Region, including California; the Interior Region, including Oklahoma, Kansas, and the producing states of the Rocky Mountains; and the Mexico and Northern South America Region.

Each committee was charged with the duty of considering the problems within its own region and in all of the other regions, and with making recommendations as to what should be done to better conserve and more economically develop, produce and use our crude petroleum resources and products.

The total membership of these district committees consisted of 30 men, all presidents or other high officials of the different oil companies interested in production.

When the General Committee, composed of representatives of each of the Regional Committees, met in Houston on March 15, 1929, on invitation a representative of the Federal Oil Conservation Board, members of the Railroad Commission of Texas, the Corporation Commission of Oklahoma, and the Conservation Commission of California, sat with the Committee.

With the Regional Committees' recommendations before it, this General Committee agreed unanimously in its final conclusions and recommendations, including a declaration that any satisfactory or creditable conservation activity would lead the

Committee to believe that the amount of crude oil produced in the year 1928 would be a sufficient quantity for the years 1929, 1930 and 1931.

There was no voice in the Board of Directors of the American Petroleum Institute, nor in the industry, dissenting from this recognized and desirable activity. Nevertheless, because of varying difficulties, including the inadequacy of the laws, the varying individual interests, and the lack of fullest coöperation, production in all districts increased very materially in 1929, notwithstanding substantial restriction in many of the fields. The average daily 1928 production in the United States was 2,463,027 barrels, and in Mexico and Northern South America 536,458 barrels. In August 1929 it reached the high figure of 2,973,032 barrels in the United States, and of 640,714 barrels in Mexico and Northern South America in August.

During the latter part of 1929 and through 1930, however, marked progress was made and in December 1930 the daily average of all districts in the United States was 274,726 barrels under the average of 1928; Mexico and Northern South America in December 1930 was 32,753 barrels above the 1928 average, or a net reduction in all districts of 241,973 barrels under the 1928 figure.

As very often happens, worthy ventures or efforts fail on the eve of success because of the lack of the fullest possible coöperation and intelligent consideration. A great many have made substantial sacrifices in this effort and it would be most deplorable and unfortunate if one or more who seek some special individual advantages, temporary or otherwise, or the few who are seeking relief from some of the inevitable inequities of the situation, should succeed in attempts to break down the structure.

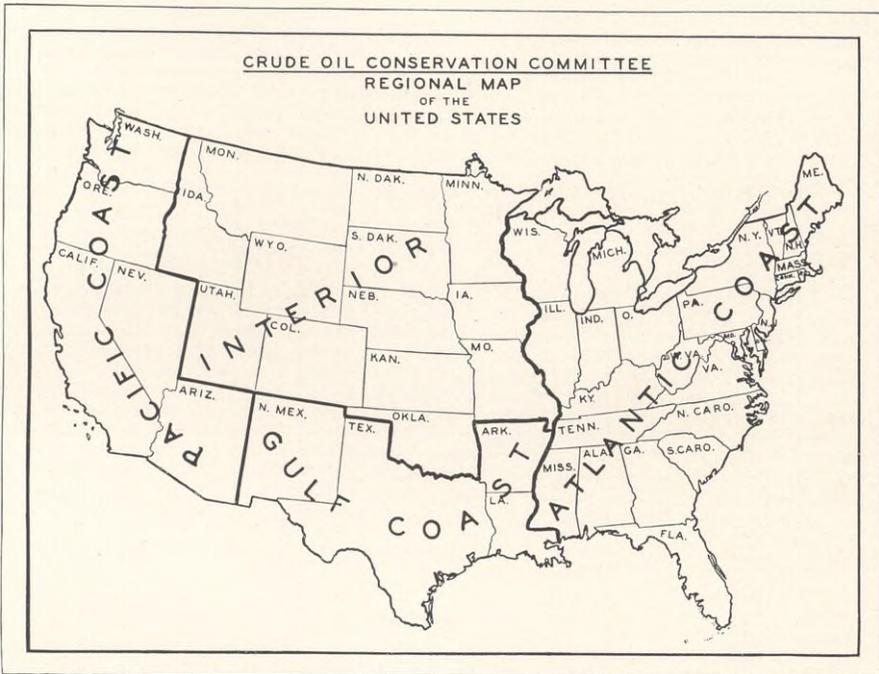
This effort was and is in the interest of the industry as a whole, and not one from which the industry or the country can back away without serious consequences. Those who are fully informed know that the large buyers are also large producers, and if any producer, or group of producers, should open up his wells, adjoining wells would be opened

## The TEXACO STAR

up and other fields would be opened up in a similar manner. Hence those who are buyers today would of necessity be caring for their own increased forced production and as a consequence would be buyers of lesser quantities, so that the result would unquestionably be materially lower crude prices and materially diminished purchases.

No one will be justified in adding to storage or

above ground stocks which are already excessive and a source of unnecessary and unwarranted waste. The economies that are possible in the situation can only come through proper and orderly restriction and control of production. The time when crude oil supplies could be brought into balance with consumption by a short period of low prices has passed.



The TEXACO STAR

DAILY AVERAGE CRUDE OIL PRODUCTION  
in the UNITED STATES

(Shown in Barrels of 42 U. S. Gallons)

1928	ATLAN- TIC COAST REGION	INTERIOR REGION				GULF COAST REGION					PACIFIC COAST REGION	GRAND TOTAL
		Kansas	Okla- homa	Rocky Mtn. Ex. New Mexico	Total	Ark- ansas	Louis- iana	Texas	New Mexico	Total		
Jan.	101,194	108,452	678,710	75,226	862,387	87,613	58,323	624,226	2,516	772,677	611,903	2,348,161
Feb.	109,172	112,000	660,897	73,138	846,034	88,586	58,483	636,828	2,241	786,138	622,966	2,364,310
Mar.	113,774	114,871	644,516	80,484	839,871	87,065	57,387	688,065	2,419	834,935	615,548	2,404,129
Apr.	107,633	114,067	630,700	75,567	820,333	79,867	58,200	734,933	2,367	875,367	609,733	2,413,067
May	117,000	111,097	636,935	79,839	827,871	91,161	59,032	708,032	2,323	860,548	622,839	2,428,258
Jun.	113,433	109,133	633,633	79,033	821,800	102,333	66,500	676,500	2,100	847,433	639,833	2,422,500
Jul.	113,355	105,903	618,548	76,839	801,290	90,032	65,032	728,935	2,839	886,839	636,677	2,438,161
Aug.	115,226	103,935	689,129	80,548	873,613	86,516	65,096	737,742	2,677	892,032	629,000	2,509,871
Sep.	107,533	97,067	759,867	78,533	935,467	85,200	59,300	729,600	2,167	876,267	630,167	2,549,433
Oct.	117,290	99,129	763,935	80,581	949,452	85,387	56,355	736,097	2,839	880,677	625,194	2,572,613
Nov.	111,700	94,267	734,667	75,433	904,367	86,700	57,233	712,600	2,967	859,500	661,867	2,537,433
Dec.	108,387	95,710	734,194	70,742	900,645	82,032	55,355	720,226	3,419	861,032	694,226	2,564,290
<i>Average</i>	111,333	105,451	682,669	77,186	865,309	87,694	59,691	703,060	2,577	853,022	633,363	2,463,027
1929												
Jan.	111,161	94,806	737,290	67,130	899,226	75,935	58,323	743,258	2,452	879,968	756,548	2,646,903
Feb.	111,179	97,036	722,678	67,143	886,857	75,500	54,892	765,071	2,393	897,856	798,964	2,694,856
Mar.	116,161	99,774	684,290	68,290	852,354	75,194	54,548	772,000	2,968	904,710	786,871	2,660,096
Apr.	117,767	112,833	689,633	68,567	871,033	74,366	55,333	780,333	2,633	912,667	778,900	2,680,367
May	125,839	122,967	703,323	69,839	896,129	71,129	52,968	798,451	3,097	925,645	778,129	2,725,742
Jun.	129,700	126,500	693,400	72,800	892,700	67,766	54,300	809,767	2,900	823,067	823,067	2,780,200
Jul.	145,710	139,452	737,870	73,323	905,645	67,032	54,806	857,355	4,904	984,097	864,968	2,945,420
Aug.	140,000	135,291	735,645	75,419	916,355	66,065	53,935	882,355	5,290	1,007,645	879,032	2,973,032
Sep.	135,967	132,100	716,833	73,667	922,600	64,867	59,233	853,767	7,833	985,700	870,800	2,915,067
Oct.	145,129	118,742	669,000	70,871	858,613	62,258	61,161	849,129	8,387	980,935	867,871	2,852,548
Nov.	136,500	114,233	641,633	68,567	824,433	59,800	58,400	826,433	8,567	953,200	711,133	2,625,266
Dec.	132,935	112,387	652,710	67,516	832,613	59,774	57,774	818,258	8,549	944,355	700,322	2,610,225
<i>Average</i>	129,140	117,296	698,641	70,279	886,216	68,266	56,312	813,359	5,014	942,951	801,463	2,759,770
1930												
Jan.	132,581	101,903	654,226	59,419	815,548	53,452	54,903	795,032	11,000	914,387	709,129	2,571,645
Feb.	141,000	110,250	627,500	63,071	800,822	58,536	62,143	832,000	11,107	963,786	745,929	2,651,536
Mar.	134,839	111,581	609,871	63,355	784,806	56,806	59,871	821,452	9,968	948,097	635,484	2,503,226
Apr.	143,534	116,800	652,166	65,267	834,233	56,633	62,233	837,467	13,300	969,633	625,633	2,573,033
May	142,322	128,194	681,645	63,355	873,194	52,258	58,806	831,677	19,097	961,838	614,323	2,591,677
Jun.	131,833	135,666	650,833	60,900	847,400	56,100	63,367	840,000	21,900	984,367	600,700	2,564,300
Jul.	123,290	115,581	573,548	60,581	749,708	54,677	64,839	827,097	43,355	989,969	606,517	2,469,484
Aug.	110,226	111,226	547,161	63,097	721,484	52,839	64,581	818,839	41,161	977,419	605,484	2,414,613
Sep.	113,200	116,133	549,133	63,567	728,833	52,433	64,133	766,100	41,733	924,400	599,467	2,365,900
Oct.	117,000	111,419	543,677	61,710	716,806	51,677	68,613	761,774	40,645	922,710	588,516	2,345,032
Nov.	107,400	108,167	503,133	60,933	672,233	50,867	67,900	732,833	37,600	889,200	603,633	2,272,466
Dec.*	111,380	105,466	459,617	59,532	624,615	51,135	67,119	704,333	39,005	861,592	590,714	2,188,301
<i>Average</i>	125,610	114,346	587,371	62,051	763,768	53,913	63,205	797,135	27,858	942,111	626,367	2,457,856

\*Estimated

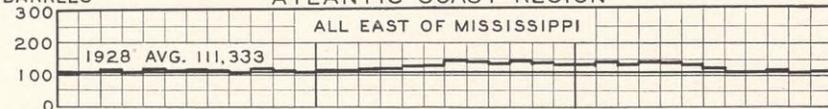
# CRUDE OIL

## DAILY AVERAGE PRODUCTION

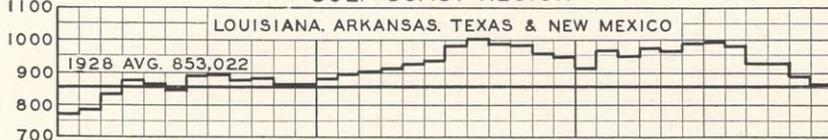
### UNITED STATES

THOUSANDS OF BARRELS

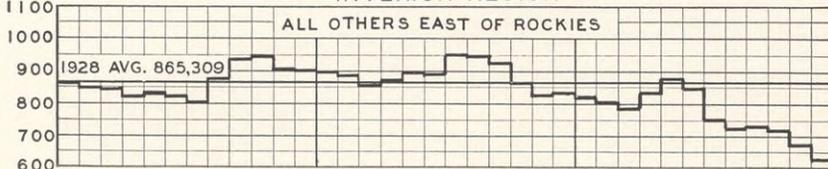
#### ATLANTIC COAST REGION



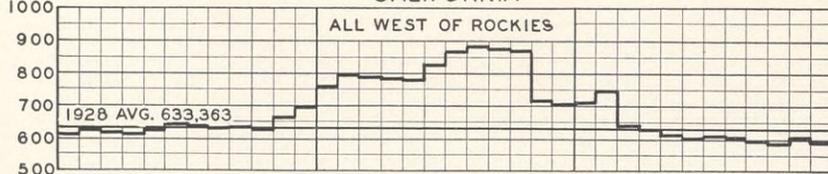
#### GULF COAST REGION



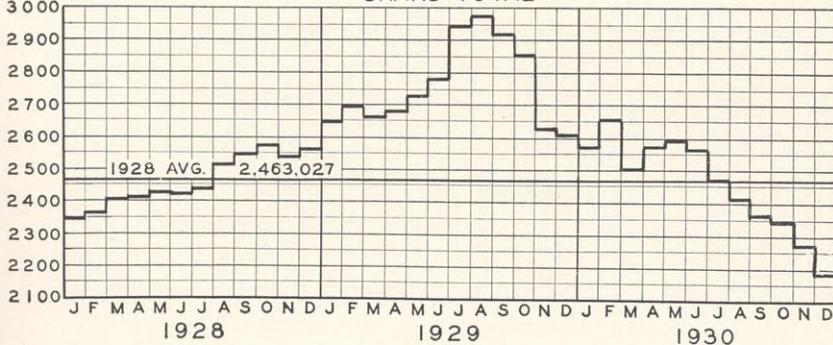
#### INTERIOR REGION



#### CALIFORNIA



#### GRAND TOTAL



The **TEXACO STAR**

**DAILY AVERAGE CRUDE OIL PRODUCTION**  
**in MEXICO AND NORTHERN SOUTH AMERICA**

(Shown in Barrels of 42 U. S. Gallons)

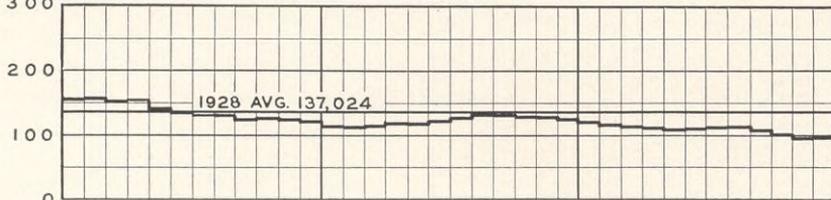
1928	Mexico	Venezuela	OTHER—NORTHERN SOUTH AMERICA					Total	GRAND TOTAL
			Colombia	Peru	Trinidad	Ecuador			
Jan.	153,865	227,109	51,924	29,953	14,952	2,636	99,465	480,439	
Feb.	154,288	227,821	53,885	30,044	17,126	2,473	105,528	487,637	
Mar.	152,547	249,880	55,000	29,419	17,916	2,379	104,714	507,141	
Apr.	153,205	251,549	55,000	24,481	20,371	2,346	102,198	506,952	
May	140,234	267,308	54,835	29,954	19,004	2,491	106,284	513,826	
Jun.	134,970	271,727	54,856	35,293	20,302	2,684	113,135	519,832	
Jul.	130,479	282,650	54,675	33,534	24,893	3,061	116,163	529,292	
Aug.	130,553	279,651	54,497	31,118	24,840	3,253	113,708	523,912	
Sep.	123,895	315,568	52,428	36,599	22,868	3,719	115,614	555,077	
Oct.	125,934	343,685	53,602	37,219	22,270	3,372	116,463	586,082	
Nov.	124,144	366,220	55,057	39,459	24,107	3,569	122,192	612,556	
Dec.	120,906	374,363	54,679	36,537	23,154	3,532	117,902	613,171	
<i>Average</i>	137,024	288,314	54,362	32,803	20,995	2,960	111,120	536,458	
1929									
Jan.	113,384	366,771	54,008	33,849	22,728	4,069	114,654	594,809	
Feb.	111,795	369,834	53,547	34,145	24,110	4,429	116,231	597,860	
Mar.	113,747	352,299	54,097	36,750	25,073	4,336	120,256	586,302	
Apr.	116,846	388,667	54,115	36,490	23,998	4,538	119,141	624,654	
May	116,916	394,523	57,415	37,108	23,885	4,552	122,960	634,399	
Jun.	121,614	378,338	58,037	36,865	23,960	5,374	124,236	624,188	
Jul.	126,043	364,656	55,583	37,325	24,267	5,338	122,513	613,212	
Aug.	131,930	386,730	56,711	37,347	22,646	5,350	122,054	640,714	
Sep.	131,438	382,607	56,304	39,271	22,888	5,143	123,606	637,651	
Oct.	129,517	374,610	58,520	38,923	23,431	4,993	125,867	629,994	
Nov.	128,580	370,970	56,813	35,526	22,815	4,959	120,113	619,663	
Dec.	126,633	389,419	54,865	37,452	26,716	4,769	123,802	639,854	
<i>Average</i>	122,433	376,636	55,848	36,773	23,879	4,822	121,322	620,391	
1930									
Jan.	119,957	377,677	55,540	30,968	23,697	3,728	113,933	611,567	
Feb.	116,810	373,847	54,376	46,446	23,524	4,100	128,446	619,103	
Mar.	112,595	386,191	57,362	35,440	26,301	4,607	123,710	622,496	
Apr.	110,643	359,897	54,868	36,692	26,352	4,650	122,562	593,102	
May	108,094	374,778	55,456	36,281	25,138	4,449	121,324	604,196	
Jun.	109,569	388,295	56,528	35,179	25,536	4,325	121,568	619,432	
Jul.	110,855	376,062	56,833	33,693	24,914	4,068	119,508	606,425	
Aug.	111,243	372,580	56,361	31,954	25,602	4,441	118,358	602,181	
Sep.	108,098	377,025	54,630	31,667	27,912	4,240	118,449	603,572	
Oct.	101,527	391,649	55,671	31,796	28,540	4,293	120,300	613,476	
Nov.	96,493	363,683	56,667	31,962	26,496	4,392	119,517	579,693	
Dec.*	96,773	354,839	56,260	31,500	25,645	4,194	117,599	569,211	
<i>Average</i>	108,512	374,745	55,894	34,373	25,815	4,291	120,373	603,630	

\*Estimated

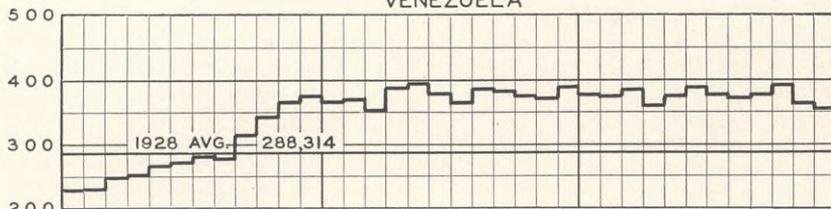
# CRUDE OIL DAILY AVERAGE PRODUCTION MEXICO & NORTHERN SOUTH AMERICA

THOUSANDS  
OF BARRELS  
3 0 0

MEXICO

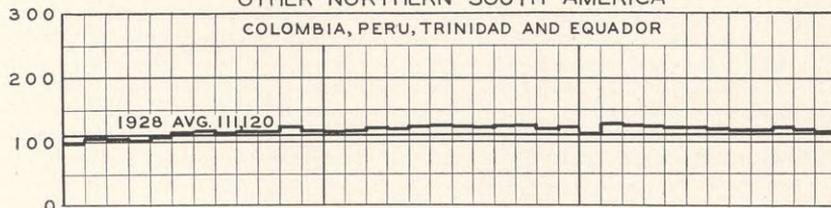


VENEZUELA

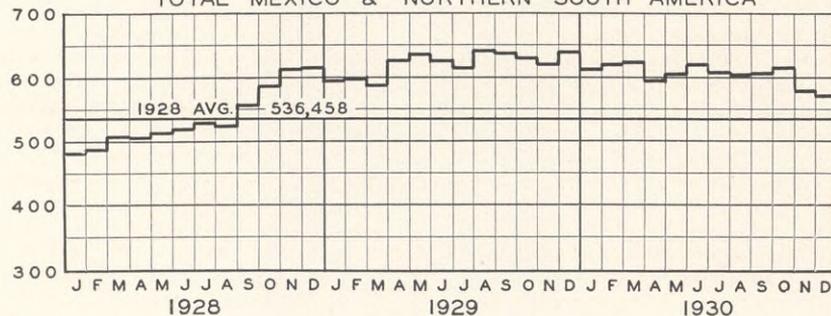


OTHER NORTHERN SOUTH AMERICA

COLOMBIA, PERU, TRINIDAD AND EQUADOR



TOTAL MEXICO & NORTHERN SOUTH AMERICA



# PRICES AND PROFITS

By R. C. HOLMES

President, The Texas Company

THE outgoing Governor in a message of January 15 to the Texas State Legislature under the item of "Natural Resources" is quoted as follows:

"In this connection it is proper to direct your attention to the fact that at present Texas oil is being produced in large quantities and sold on a distressed market in competition with crude oil produced at a low cost in foreign countries.

"The spread between the price of crude oil and the sale price of gasoline is so great as to suggest that the consumer of the gasoline is paying an excessive price or that the oil resources of the state are being hammered down and sold on a market that deprives Texas of wealth that rightly belongs to it, or that both are happening. This is a proper subject for legislative consideration and it is nothing short of legislative duty to see that neither the vice of monopoly nor waste results in depriving Texas of the value of its natural resources."

Everyone is today probably more than usually aware of the wisdom and necessity of confining legislative activities so far as possible to those which will correct obvious inequities and objectionable trends or tendencies, and on the whole be helpful and encouraging, rather than burdensome and destructive to industry. The accomplishment of this, naturally, requires most thorough and painstaking study of the causes of the generally unsatisfactory conditions and the problems that confront us in the solution of the difficulties. Broadly speaking, whatever brings about a reasonably stable, prosperous and healthy condition and security of the nation can be considered in the interest of all industrial and other activities.

Being more directly interested and better informed of the petroleum than of other activities, I take this opportunity to set out a few facts that may be useful in any consideration of legislation, or other activities affecting this particular industry.

Much has been done in the last few years, and particularly in the last few months, in Texas and other oil producing states that is commendable and to the credit of those states in gradually bringing production into better control, tending to minimize the waste of oil and gas, and diminishing the economic losses previously attending these operations. It will be most unfortunate if, through any lack of proper understanding and consideration of this problem, we should fail to accomplish those things that are possible under proper and desirable con-

servations activities in bringing about some definite stability to the whole petroleum situation.

The average posted prices of crude oil today are lower than the average cost of production, which is a condition that admittedly is not in the interest of Texas, any of the other oil producing states, or of the nation, and certainly not in the interest of the producers of petroleum, of which there are many thousands. Any consistent, constructive, conservation activities will be so conducted as to avoid the loss of oil that would result in the condition which would close down the great areas of settled production and stripper wells, constituting almost the entire production of the States of Pennsylvania, New York, West Virginia, Kentucky, Ohio, Indiana, Illinois, Wyoming and Montana, and much of the production in Kansas, Oklahoma, Texas, Louisiana, Arkansas and California. There would be a much better situation if crude production could be so restricted or controlled by state law that only the market requirements would be drawn from the wells, in which case the producer and royalty owner would have a much better chance of securing a fair price for their crude, and the state a better revenue from its gross production tax.

On the matter of gasoline prices; they cannot be considered excessive unless the increasing state taxes and the cost of distribution make them so, as it is a well known fact that most United States refiners are netting back at their refineries today less than cost.

The average service station price for gasoline, exclusive of state taxes, in 50 representative cities of the United States for the period 1918-1923, inclusive, was 22.63 cents per gallon, and for 1921-1923, inclusive, 21.09 cents. Today that price is 14.50 cents.

It is too often and too generally assumed that because of fairly satisfactory earnings on the part of some units of the industry, the industry as a whole is a tremendously profitable activity, whereas in fact it is not.

The compilations made from United States Government figures indicate that average annual net earnings of the industry on the capital invested have amounted to 2.16 percent for the years 1921-1923, inclusive, (1929 not being available). This represents about 90 percent of the industry, the returns including all companies reporting a net income of more than \$100,000 or a deficit of more

than \$500,000 in any one year during the period.

The Federal income tax and other taxes, exclusive of state gasoline taxes, for this period of eight years amount to 56 percent of the net earnings of the industry, and it is estimated that for the years 1929 and 1930 the state gasoline taxes will exceed the net earnings of the industry.

It seems absurd to raise the question of monopoly. There are nearly 5,000 strictly producing companies making returns for Federal taxes, and more than 300 refining companies, many of which are also producing companies, making returns for

Federal taxes. Further, the absence of monopoly is evident in the great duplication of facilities and activities from the producing fields through to the markets. Filling stations, many of which are unnecessary, are visible evidence to everyone, and are the result of uncontrolled, unrestricted, encouraged competition, much of which is destructive, making profitable, stable conditions impossible. One way within the law to bring about a near monopoly is to further tax and burden the industry to a point where only a few who have unlimited resources and credit can carry on.

## The World on Wheels

### *Comparative Facts and Figures on the Automotive Industry*

THE production of motor vehicles in the United States not only amounts to seven-eighths of the world's output, but if the production of this country is combined with that of Canada, North America builds nearly nine-tenths of all motor vehicles constructed. These are the figures of the National Industrial Conference Board, Incorporated, which has prepared charts showing the world output and use of motor vehicles. The term "motor vehicles" is taken to include passenger automobiles, taxicabs and motor trucks, but not motorcycles.

For every one thousand of its population, the United States has 217 automobiles, while Canada, closest competitor, has 119. Among the other important countries of the world, Germany has the smallest number of automobiles. Her motor vehicles number ten for every one thousand persons in the country. The United Kingdom and France each have 32 per thousand persons, and Australia has 91.

The United States alone is responsible for 85.1 per cent of all automobiles manufactured; Canada makes four and two-

tenths per cent; France, four and one-tenth per cent; England, three and eight-tenths per cent, and all other countries combined produce only two and eight-tenths per cent of the world output of motor vehicles.

Since 1910, the production of motor vehicles has advanced to a greater extent than manufactured products generally, the charts of the National Industrial Conference Board show. The promotion of this rapid growth is thought to be owing to the fact that motor vehicle prices have remained below the price level of 1913, with the exception of the years 1919 to 1921, inclusive. The prices of other finished manufactured articles have increased generally, in many cases ranging considerably above the 1913 level.

Motor vehicle production is shown by the charts to vary largely with the seasons. Many more automobiles were turned out during the late Spring and early Summer of the years 1926 to 1930 than during the Fall and Winter, when the production curve dropped sharply. With the beginning of each year, however, production increases.

*Forty-second Street, New York*





EWING GALLOWAY

**TWILIGHT:  
PITTSBURGH**

Jones & Laughlin Steel Corporation's Plant on the Monongahela: Representative of the Many Giant Mills Which Are Lubricated with Texaco Products



Left to Right: J. D. (Duke) Jernigin, Tow Pilot; F. Trubee Davison, Assistant Secretary of War for Aeronautics; Captain Hawks

## The Eaglet Finds a Nest

*Famous Texaco Glider Presented to Smithsonian Institution*

THE Texaco transcontinental air train has made its last flight and the *Texaco Eaglet* has found a nest among other famous aircraft in the Smithsonian Institution in Washington, D. C. On December 6 the glider in which Captain Frank M. Hawks, Aeronautical Advisor to The Texas Company, flew from San Diego to New York last Spring, was presented to the National Museum as a permanent record of the first cross-country glider flight.

Formal ceremonies, preceded by a final flight of the *Texaco Eaglet* over Bolling Field, marked the presentation, and a radio network of nine stations broadcast remarks made by Captain Hawks; Dr. C. G. Abbot, Secretary of the Smithsonian Institution; Frank Tichenor, publisher of *Aero Digest*; F. Trubee Davison, Assistant Secretary of War for Aeronautics, and J. D. (Duke) Jernigin, the glider tow pilot.

A few minutes before 11 a.m. Jernigin took off in the *Texaco No. 7* towing Captain Hawks in the *Eaglet*. Promptly at 11 Hawks cut loose and began his last descent with the glider. Meanwhile Jernigin flew over the Potomac River and dropped the 500 feet of wire tow cable into the stream, his gesture of farewell to the motorless craft he had pulled for more than 4,000 miles.

Jernigin and Hawks landed simultaneously, the *Eaglet* coming to rest directly in front of distinguished guests awaiting the ceremony.

Mr. Tichenor, in making the presentation speech, said that he felt a real addition was being made to the treasures resting within the Smithsonian Institution, "the repository of so many evidences of the mechanical enterprise, scientific patience and sheer

genius of the nation of which it forms one of the most noteworthy halls of records.

"From the art of gliding have come and will come many more details of knowledge which will accelerate the speed with which aviation will be developed," said Mr. Tichenor. "Perhaps even more important to aviation is the glider because it furnishes a means cheap enough, simple enough and safe enough to enable the American youth, filled as he always is with constructive curiosity, to investigate, learn to understand and in a sense make a sport of a process, comprehension of which will be likely to induce him to support and understand powered aviation. Inasmuch as it now is fully recognized by every country in the world that powered aviation will be the deciding factor not only in all future wars but in future national commercial rivalries, the importance of this service, which will supply for American aviation an understanding and partially trained personnel, scarcely can be overestimated.

"This glider and the work which Captain Hawks has done with it and in it, sponsored and financed by The Texas Company, producers of fuel for the motored plane, are symptomatic of the inevitably victorious idea of capping the brilliant achievements of our superlative American inventive genius with the intelligence and patience of competent, ceaseless, untiring research."

In accepting the glider for the Smithsonian, Dr. Abbot prefaced his remarks with a brief history of the achievements of gliding pioneers and referred to the glider as "an excellent laboratory of the air and a 'flying school' for the Wrights. I am



★

(Above) The *Eaglet* Hangs from the Lofty Rafters of One of the Halls in the Smithsonian



★

(Left) Captain Hawks Makes the Official Presentation to Dr. Abbot of the Smithsonian

happy to say that the United States has always taken a prominent part in the development of gliding," he said. "Conspicuous are the outstanding achievements of Captain Hawks in the *Eaglet*. I cordially congratulate Captain Hawks upon his transcontinental towed flight in the *Eaglet*, as well as for his several transcontinental and cross country records made in powered airplanes. I would also like to congratulate Professor R. E. Franklin and his brother, Wallace, who designed and built the *Eaglet*. The Texas Company is to be commended for fostering this worthy enterprise.

"In the several buildings of the National Museum, under the direction of the Smithsonian In-

stitution, there is maintained an aircraft collection of wide renown. It includes the gliders of Lillenthal, Chanute and Martin; pioneer airplanes made by Stringfellow, Hargrave, Langley, the Wrights, Curtiss and others; and many original airplanes of more recent date. It is with pleasure that I accept the *Eaglet* for addition to the national aircraft collection."

F. Trubee Davison spoke of gliding as being valuable as a means of imparting the fundamentals of flying, and said that since flight or aviation is an essential part of our national defense, any pioneer work in gliding is a valuable contribution to the country's security. (Continued on last page)



A Rodsman Searching for Oil

## Oil at the Dip of a Wooden Needle

*Prospectors Once Swore by  
the Magical Divining Rod*



**E**VEN in what we consider our present age of enlightenment old faiths and superstitions are put to everyday use. Actors, sailors, athletes, travelers and farmers have their pet theories that wearing yellow on the stage, shaving on the day of a game, or planting crops when the moon is not right, is a means of courting failure. The suburbanite and the city dweller walk around a ladder propped against a building or shudder when a black cat crosses the sidewalk, especially if the moon is new and seen over the left shoulder.

Still implanted in the faiths of some prospectors for oil, minerals and water is the belief in the divining rod—a stubby elder fork which, if held

tightly in a certain way will dip like a magnetic needle when the prospector walks over ground containing the substance he seeks. Many scientists who were otherwise skeptics have been known to place implicit faith in the “dowsing” or “wishing” rod, and its use has not passed entirely out of the oil country.

With the assurance of scientists of our own time that alchemy is not impossible, though the cost of transmuting baser metals into gold is prohibitive, advocates of the divining rod have renewed their hope that there may be something in their “art.” There are said to be scientific bodies in France and England which take divining quite to heart, though all discredit theories of centuries ago that the contents of a sealed letter might be read by one experienced in the use of the instrument.

German mediaeval miners first used the rod in their search for metals, and later it became popular in attempts to detect buried treasure, landmarks, water, oil, and even felons, for it was supposed to dip toward ground saturated with blood, or earth in which a murdered person had been buried.

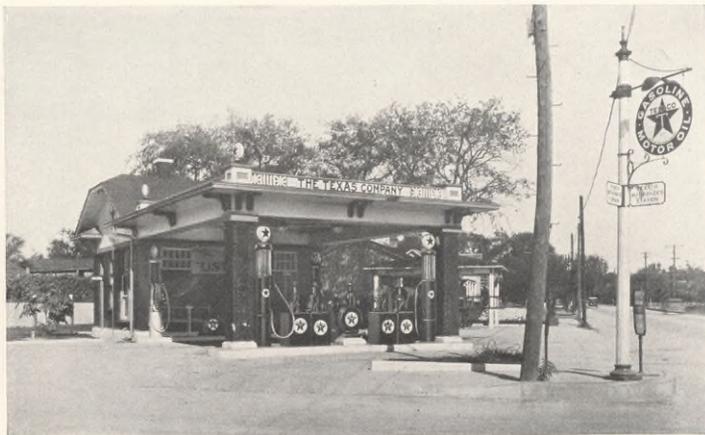
One scientist not so long ago described the divining rod as a “rhabdoactive” instrument, and another explained that all bodies emitted lines of force which, when crossed by an expert rodsman, caused electro-magnetic waves to pass through his body, making the rod move.

Sometimes the Y-shaped divining rod was cut from hazel, and at other times from elder, but when the art was still in its infancy it was necessary to sever the twig at sunset with pious incantations and much hokus-pokus. In the treeless plains of Australia diviners have been known to use bent pieces of fence wire or even a clock spring.

Among divining beliefs was one that a search for water should begin near the left-hand fork of a creek. Being close to water, the odds favored the diviner at the outset.

Those who look upon “dowsing” as a fraud contend that movement of the rod is caused by unconscious movements of the thumbs that press tightly against the prongs of the fork as the diviner holds them in his upturned fists. Others say that experienced rodsmen are influenced by superficial signs of the substance they are seeking on the surface of the ground.

“Oil-smelling” by the use of the divining rod is still practiced extensively by native tribesmen of Colombia, South America, but it is likely that until modern science absolves such methods of witchcraft, divination by the elder fork will remain among the black arts of primitive superstition.



Mayor Walker's Service Station at Eagle Pass, Texas

## The Desert Shall Blossom

### *Texaco Aids an Irrigation Project Along the Rio Grande*

By AUSTIN CALLAN

PRODUCTS of The Texas Company go ahead of the flag of development into many lands. Proof of this was furnished by the sight of a fleet of trucks lined up at a Texaco service station in Eagle Pass, Texas. The trucks belonged to contractors working on an irrigation project that will convert a section of the Rio Grande country into a garden spot and will bring a part of Texas into development which has formerly been noted mostly for its rugged scenery and historic settings.

On this enterprise, unique from an engineering standpoint, \$6,600,000 is being expended. A total of 1,500 feet of water is to be taken from the Rio Grande and used for irrigation adjacent to Eagle Pass and the development of hydroelectric power by the Insull interests. For the right to use this water the Maverick County Development Board, which has the project in charge, will receive the sum of \$270,000 a year.

The water is diverted from the Rio Grande at a point 40 miles above the historic city of Eagle Pass without the building of a dam. Where there is a little fall in the river a concrete dividing wall has been erected only a few feet in height and a canal dug in the rocky bed. This divides the stream and sends a portion of it down an artificial course with a gradient of from seven to nine inches to the

mile, while the drop in the river is from three to four feet. This means that in 36 miles, the distance to the power plant, an elevation of 87 feet is secured for the water fall.

The main canal will be about 90 miles in length. It will be 32 feet wide at the water line and ten feet deep, and wherever the character of the country calls for it the walls and bottom will be concreted to prevent waste from seepage. The canal goes out from the river banks through a solid rock tunnel and there will be three tubes, each ten and one-half feet in diameter, at this point. Huge iron gates weighing many tons will be placed at the head of the tunnel to control the flow of water.

In the vicinity of Eagle Pass, where there are many acres of fertile soil, the canal will be 100 feet above the level of the river. The water can be distributed without the use of pumping plants as it is all gravity flow and no artificial drainage will be necessary.

A number of difficult engineering feats mark the course of the diverted waters. It is a task gradually to lift the canal from the river banks, along rugged bluffs, and around the hills. In addition to this, seven creeks must be crossed and at each of these it is necessary to build inverted concrete siphons. These dip into the bed of the stream, where

they are set in rock with one-half of the diameter above the level.

The work is being carried forward by the Trinity Farms Construction Company, of Dallas; Bart Moore, Incorporated, of San Antonio, and a number of subcontractors. Powerful drag-lines of the Monighan design are being used, and The Texas Company is doing its usual bit by supplying oils and gasoline to the many motor cars and trucks employed in carrying on the development. One of the favorite service stations belongs to the Mayor of Eagle Pass.

Irrigation has been conducted on a small scale in the vicinity of Eagle Pass for many years. More than 500 cars of onions and spinach were shipped from this point last season, and it has been proved that the territory is excellent for growing citrus and other profitable fruits, as well as alfalfa and nuts.

Irrigation has come to be of increasing importance in dry regions in the past few years, and the use made of it in semi-arid regions has made unproductive soil bring forth food for an increasing population. Modern engineering methods and new machinery have done much to facilitate the bringing of water from places where it is not needed to the dry lands, and this machinery, of course, depends upon proper lubrication for its functioning. The time when the United States shall have to utilize every square foot of soil is so far in the future that it may never arrive, but there are many regions in this country where irrigation is a wise procedure and a good investment.



(Top) Digging the Canal Around a Hill

(Center) Rio Grande at Eagle Pass

(Below) An Eagle Pass Spinach Farm

# YOU CROSS Y ON TEXACO

*Of Great Importance in  
of a Bridge Is a Tough  
Here Are Shown a Few  
Which Texaco Asphalt*



*(Above) Opening of the  
Sixth Street Viaduct in To-  
peka, Kansas: Pavement  
is Texaco Sheet Asphalt*



*Texaco Asphalt Pavement  
on the Melon Bridge at  
Topeka, Kansas (Above)  
is Eighteen Years Old*



*Cincinnati St. Viaduct  
in Tulsa, Oklahoma, Re-  
cently Opened, Has 3964  
Square Yards of Texaco*



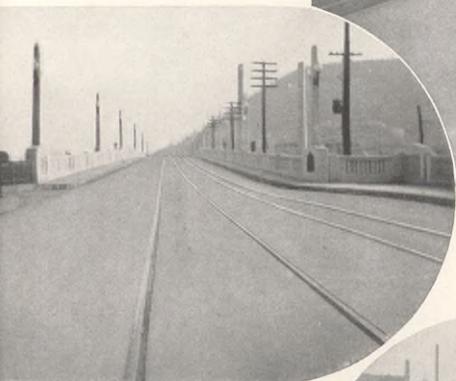
*The Minco Bridge (Right)  
Spans the Canadian Riv-  
er Near Minco, Oklahoma,  
and is Texaco Paved*

# OUR BRIDGES ON ASPHALT

*Proper Maintenance  
of Resilient Pavement:  
Representative Bridges  
and Viaducts that Feature*



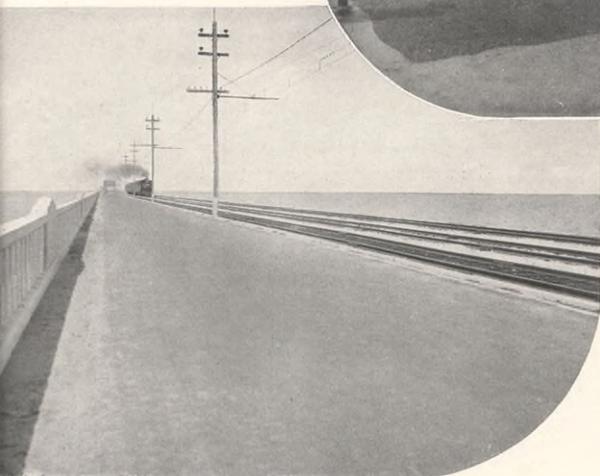
*(Above) 50,000 Vehicles  
Daily Pass Over This  
Texaco-Paved Dallas-Oak  
Cliff Viaduct in Texas*



*The Walnut Avenue  
Bridge in Roanoke, Vir-  
ginia, has a Pavement  
of Texaco Sheet Asphalt*



*Laying Texaco Asphaltic  
Concrete Pavement on the  
Bridge Across the Kaw  
River at Topeka, Kansas*



*The Galveston Causeway  
Joining Galveston to the  
Mainland of Texas: Brick  
Pavement, Texaco Filler*

Feb 1930

# GASOLINE TAXES AND EVASIONS OF PAYMENT

By HARRY T. KLEIN

General Counsel, The Texas Company

**T**HE Legislatures of more than 40 states are in session at the present time and, in at least 20 of these states, bills proposing an increase of gasoline taxes either have been introduced or are being agitated.

It would be far more in the interest of all concerned (the state, the motoring public and the oil industry) if such efforts were devoted to securing amendments of existing laws prohibiting evasion of payment of present taxes, rather than increasing the amount of the tax. The present rate of the tax is far too high.

In March 1929 the Board of Directors of the American Petroleum Institute adopted the following resolution:

"RESOLVED: That we do not oppose the levying of a gasoline tax where all the revenue derived therefrom is used solely for highway construction and maintenance purposes; but we oppose the fixing of a rate per gallon tax beyond reasonable bounds, or where the rate the consumer must pay is out of equitable proportion to the price of the gasoline."

The first gasoline tax adopted in the United States was in February 1919 by an initiative in Oregon. This was a tax of one cent a gallon. Since that time the tax has grown in size and spread in area to such an extent that it is now in force in every state in the Union with the rate varying from two to six cents per gallon. Probably no other system of taxes in history has experienced such enormous growth from such a small beginning.

The following table will illustrate the rapidity of the increase in this tax since 1925:

NUMBER OF STATES WITH GASOLINE SALES TAXES (Including the District of Columbia)						
Rate of Tax Cents Per Gallon	1925	1926	1927	1928	1929	1930
6	0	0	0	0	3	3
5	1	2	5	6	8	10
4½	0	1	1	0	0	0
4	5	6	10	11	19	17
3½	2	2	1	1	1	1
3	12	9	18	18	10	11
2½	1	1	0	0	0	0
2	21	22	12	10	8	7
1	3	2	0	0	0	0
<b>Total</b>	<b>45</b>	<b>45</b>	<b>47</b>	<b>46</b>	<b>49</b>	<b>49</b>
SIMPLE AVERAGE OF GASOLINE SALES TAXES						
Cents Per Gallon	2.11	2.41	2.81	3.04	3.50	3.79
WEIGHTED AVERAGE PRICE						
58-60 U. S. MOTOR GASOLINE F.O.B. GROUP 3 (OKLA.)						
Cents Per Gallon	10.65	10.46	6.86	7.97	7.78	6.25

The tabulation also shows the average price per gallon since 1925 paid for 58-60 motor gasoline in tank car lots in Group 3 (Oklahoma). As the average tax rate has increased, the average price per gallon for gasoline has substantially decreased.

In 1925 the average tax equalled approximately 20 percent of the Group 3 tank car price. In 1930 it was more than 60 percent of this price, and at the present time the average tax equals nearly 85 percent of the Group 3 tank car price.

The price of gasoline in tank car lots at Texas Gulf ports is approximately one and one-half cents per gallon higher than the Group 3 price, but even on this basis at the present time the average tax is more than 60 percent of the price of gasoline at Texas Gulf ports in tank car lots.

Manifestly a sales tax of this magnitude is out of all proportion to the price of the commodity and can in no sense be considered equitable or fair. It more resembles confiscation.

Consumers of gasoline should also bear in mind that in addition to this sales tax there is included in the cost of each gallon of gasoline sold at service stations a proportionate part of production taxes, ad valorem taxes, franchise taxes, inspection taxes and income taxes paid by the oil industry; and also a proportionate part of the taxes paid by the transporting companies and the distributor or wholesaler and the dealer or retailer.

In addition motor car owners pay property taxes on their cars and also substantial license or registration taxes. The American motorist is a very patient individual but the time has arrived to call a halt on mounting gasoline taxes.

In contrast to this sales tax, representing an amount equal to at least 60 percent of the tank car price of the commodity, the total of which tax in the year 1930 is conservatively estimated to have aggregated more than \$500,000,000, it is estimated that during the years 1921 to 1928 inclusive (the last years for which figures are available) the oil industry earned an average of approximately \$245,000,000 annually. It is conservatively estimated that the earnings of the oil industry for the year 1930 will be far less than this average annual earning.

## The TEXACO STAR

With an average invested capital during the period 1921 to 1928 inclusive of more than \$9,000,000,000 the rate of return for the period from 1921 to 1928 was less than two and one-quarter percent, and for the year 1930 with a larger invested capital it is conservatively estimated that the earnings of the oil industry will be less than two percent.

Furthermore, the revenue derived from these taxes is not being used solely for highway construction and maintenance purposes and each year a larger diversion of the fund is being made to other purposes. The American motorist and the business men of the country interested in motor transportation as well as the representatives of the oil industry are entitled to a careful consideration of these facts by the legislatures of the various states of this country. The high rate of the tax and the diversion of funds are manifestly unfair.

The rate of the tax should not be increased as it is already excessive. Any effort to procure a larger return from the tax should be devoted to amendments of the various state laws in an endeavor to prevent evasions of payment.

The following have been suggested as the principal methods of evading the payment of gasoline taxes:

(a) Tank car shipments across state boundary lines, exemption being claimed in the state where purchased and the tax not paid in the state where used or sold.

(b) Mixture of kerosene and distillates with natural gasoline and other mixtures.

(c) Failure to report all gasoline sold subject to the tax.

(d) Fraudulent claims of consumers for exemption or refund.

It is quite evident that in a large number of states the practice of evading payment of the gasoline tax is widespread. Reports of evasions have been received from the following states, among numerous others: California, Illinois, Indiana, Louisiana, Mississippi, Oklahoma, Texas and Virginia.

In certain states the amount of evasion runs into very large figures and as the rate of the tax increases greater efforts are made to evade payment. That gasoline tax evasion is a fact and not a theory is demonstrated by the following excerpts from a few of the reports received from numerous sections of the country:

In Texas suits have recently been filed by the state authorities for the collection of delinquent gasoline taxes against a number of individuals and companies. In four of these cases the amounts involved aggregate more than \$130,000.

Louisiana reports writs of attachment against certain companies for alleged failure to pay gasoline taxes.

The State of Kansas reports 23 cases as a partial list of dealers arrested and convicted for failure to make reports of gasoline received and to pay the state tax thereon. In all of these cases the dealers pleaded guilty to such charge.

The former State Auditor of Indiana reports \$115,000 collected in settlement of charges for alleged evasions of payment of gasoline tax.

Kentucky reports cases of dealers caught blending kerosene and natural gasoline, who were compelled to pay the tax.

California reports substantial evasions of payment, by means of (a) fictitious exports to adjoining states and to Mexico, (b) illegal tax refunds, and (c) the blending of kerosene distillate with casinghead gasoline. Also, that the gasoline taxes past due and unpaid amount to a very large sum.

An outside informant connected with the oil industry estimated the loss in revenue in his state by evasions of payment at nearly \$2,000,000 annually.

The act of evading payment of the gasoline tax in and of itself is bad enough. But it also seriously and directly affects legitimate dealers, who pay the tax, by permitting the tax evader to sell his products at cut prices and thus demoralize the market. All marketers of petroleum products owe to the public and the petroleum industry the duty of reporting to appropriate state authorities suspected evasions of the gasoline tax laws.

We believe that amendments of existing laws along the following lines would be very helpful:

(1) Requiring a satisfactory bond of at least \$10,000 from all distributors and dealers.

(2) Appointment of a larger number of inspectors.

(3) Making all wilful violations a misdemeanor punishable by fine and imprisonment.

(4) Requiring reports by refineries and common carriers of all shipments of gasoline and motor fuels and reports by all dealers of dispositions of gasoline and motor fuels whether the tax is paid thereon or not.

(5) Making provision for the interchange of information as to shipments of gasoline and motor fuels among the tax officials of the several states.

(6) Extending the tax to cover all kinds and variety of motor fuels.

(7) Drastically curtailing the refund and exemption privileges.

Henry F. Long, Commissioner of Corporations and Taxation for the Commonwealth of Massachusetts

sets and one of the foremost tax experts in the country, in a letter under date of December 2, 1930, to the American Petroleum Institute replying to an inquiry regarding tax evasions in his state, remarks in part as follows:

"It seems to me that your association could accomplish a great deal if they could indicate what would be a fair tax per gallon on gasoline wherever purchased. \* \* \* My own opinion in the matter is that the rate should not be more than three cents per gallon in any state in the Union, but in that I may be wrong. It might be that the gasoline excise near the field of production should carry a lower rate than one further away or vice versa. If your association could give some attention to the accumulation of facts which would prompt a stabilized amount per gallon for excise I think we could have a good success.

"As I look at the gasoline tax with most people urg-

ing this or that without any general economic background or any idea of the practical side of taxes, it is bound to break down because it is exactly like the real estate tax. Apparently so simple that everybody thinks they know all about it and it is quite in the nature of a free horse that may be ridden to death. \* \* \*

"If the gasoline tax or its equivalent is going to stay as I think is the case then it at least ought to be put on a reasonable basis. It does not occur to me as though it is on a reasonable basis and I do not see anything being done by a well recognized authority to prompt anything in the way of sensible gasoline tax legislation in any state of the Union."

We earnestly and in a spirit of fairness to the motoring public and the oil industry advocate amendments to prohibit evasion of payment, rather than increases in the rate of the gasoline tax laws of the states of this country.

## What Is This Power?

### *Magnetism Still Hovers in the Realm of Mumbo Jumbo*

A SMALL piece of metal that can be bought as a toy in any department store holds what some have called the greatest mystery in the world. Scientists the world over know what the power known as magnetism does, but the puzzle of what it is seems to defy solution.

Ages ago, when superstition ruled men's minds far more than it does today, sailors feared the Mountain of Lodestone as much as they did the mythical strait between Scylla and Charybdis. Although the location of the Mountain of Lodestone was unknown, every mariner prayed before he left port that winds would not blow him near it, for if his ship came within a mile or two of it, the magnetism of the magic mountain would pull the iron nails from her hull, and men and cargo would sink to the bottom.

The lodestone itself—that bit of ore in which magnetism is a natural quality, and which today is called "magnetite"—was one of the tools of the magician long before the Christian Era. It possessed "the power of drawing to it the all-conquering iron", which the ancients worshipped as a symbol of power. Any sub-

stance that could make iron subservient must indeed have magical powers, according to the reasoning of these primitive peoples.

Tradition relates that the Chinese invented the compass, although historians believe it doubtful that they made any continuous systematic application of the value of lodestone. They used a tiny rod of magnetic iron, pointed at both ends and suspended so as to swing freely in a horizontal plane not only as an aid to navigation, but also as a guide in making land journeys, especially across deserts.

Hoang-ti is said to have built a chariot about 2637 B. C. on which was a female figure indicating

the four cardinal points of the compass. Chinese cars that had as part of their equipment a needle floating in a vessel of water were sometimes called "chariots of the south", and it was customary to present such a chariot to an envoy to direct him on his homeward journey. The South rather than the North was assumed by the Chinese to have magnetic power because the South was known as "the honorable quarter."

It has been assumed by scientists and historians that the

Early Italian Chart of Compass Points



## The TEXACO STAR

Arabs and Persians learned the use of the compass from the Chinese, and that trading ships of early days brought the device to Europe. An Italian later claimed to be the inventor of the compass. It was not known in Europe, so far as the writings of the day indicate, until about the twelfth century. The century following, there were writings about mariners that mentioned a primitive compass: "They have an ugly brown stone which attracts iron. They mark the exact quarter to which the needle points, which they have rubbed on this stone and afterwards stuck into a straw. They merely put it in water, in which the straw causes it to swim; then the point turns directly toward the (North) star, with such certainty that it will never fail."

In later times magnetism achieved wider uses.

Not long ago an army engineer took two ancient cannon, wound them with copper wire and lashed them together with a steel rail. A powerful magnet resulted when an electric current was passed through the copper wire.

The engineer's purpose was to conceal a number of similar magnets, connected with electric generators on shore, beneath the mouth of a harbor. It was believed that if an enemy warship, built of iron and steel, were to come near one of these magnets, it would attach itself to the ship's hull. If a second one could also be brought in contact with the ship, the two poles thus established were supposed to stop the

ship's engines, make all iron or steel objects, such as guns, immovable, and set her compass whirling. Though the engineer's device has never been exploited, it is an example of the uses that may yet be made of magnetism in war as well as in peace.

Today the forces of magnetism serve the world in many ways just as magical as in ancient times. If magnetic forces fail in a power plant, thousands of persons in a city are without lights until generators are repaired. Without electric motors, run on magnetic principles, the wheels of industry would stand just as still as if there were no oil to eliminate friction in industrial machinery. Just as surely as an automobile would stop if the tank were drained of gasoline, so it would if the magnetically controlled forces of ignition were to get out of order. Without

the magnetic compass there would be no fast liners crossing the sea unerringly. There could be no airplanes making record-breaking flights by the shortest route if it were not for the forces of magnetism.

There is no fear of magnetism today. It has become man's servant, sometimes lifting tons of iron-bearing material in industrial plants. The myth of the Mountain of Lodestone, such as the one upon which the ship of Sinbad the Sailor was wrecked, has vanished under present day enlightenment. We hear no more tales such as Gulliver's magnetic island, which was made to rise or fall or move horizontally by means of a lodestone 13 feet long.

*A 3000-pound Magnet Aids in Reclaiming Raw Material Worth a Billion Dollars a Year to the United States*



EWING GALLOWAY



TEXACO STAR PHOTOS

*The Cannonball House—a Hostelry of Former Days*

THE MOTORIST who follows the Texaco trail, marked by the Red Star with the Green T, up through Connecticut on the road to Danbury is following the route of a stage coach line that existed between New York, Hartford and Boston long before the Revolution. Then, it took four days to travel from New York to Boston; now, the motorist can cover the route in a few hours.

In pre-Revolutionary days the stage coach passenger started from New York at four a. m. and with good luck the coach reached Danbury at seven p. m. If there were delays, the coach might stop at the Keeler Tavern, Ridgefield, Connecticut. Some stage lines made it a point to stop there anyway.

The main street of Ridgefield is widely known for its beauty. In 1721 a street eight rods wide was laid out, and now elms arch over wide lawns stretching between the roadway and the sidewalks. The old houses that remain, the Keeler Tavern among them, give the village, one of the richest small towns in the United States, a truly early American atmosphere.

Arrow heads and Indian relics that have been found within the town limits indicate that Ridgefield, high on a chain of hills overlooking Long Island Sound 14 miles away, was an encampment of Indians from whose chief, Catoonah, the land was purchased in 1708. The town borders on Westchester County, New York State, and is coffin-shaped, bearing the markings of the boundary dispute between the English and the Dutch of New Amsterdam.

Ridgefield received its baptism of fire in the Revolution, when a battle fought there won a major generalship for Benedict Arnold, who later proved a traitor to his country. In 1775 Ridgefield voted to remain loyal to George III, but further developments in the conflict between the Colonies and

England soon caused her to support the Colonies.

The Keeler Tavern, or Cannonball House, is the principal building of historic interest in Ridgefield, and was chosen by Cass Gilbert, noted architect, for his residence. Mr. Gilbert built a wing on the old tavern, adhering to the original style of architecture, and retaining many of the antiques used in stage coach days. In one room is the tavern sign that hung from a pole stuck in the crotch of an elm. On one side of the sign is a trooper in uniform and on the other, two Indians on horseback.

At one time Ridgefield was a bustling manufacturing center, but now has settled down to a quiet residential town. Among those who have chosen it for their homes are Miss Geraldine Farrar, opera singer; Walter Hampden, actor; Prof. Frederic Dielman, for ten years president of the National Academy of Design; Will Payne, writer; Robert P. Scripps, newspaper owner; Eugene O'Neill, dramatist, and many others equally prominent. The home of the late Governor George E. Lounsbury of Connecticut stands in Ridgefield.

*Looking Down Ridgefield's Broad Main Street*



## HISTORIC RIDGEFIELD

*Colonial Charm in the Nutmeg State  
that Greet the Observant Motorist*

## YOU CAN'T TELL TIME

*But for Centuries Man Has Been  
Attempting to Keep Track of It*

TIME was just as important in the law courts of Rome as it is today. The Roman lawyer, his gestures hampered just a bit by the flowing sleeves of his toga, pleaded his case while drops of water trickled from a hole in a timepiece called the clepsydra. When all the water had run out of the clock he was told by the judge that the time allotted for his plea had been exhausted.

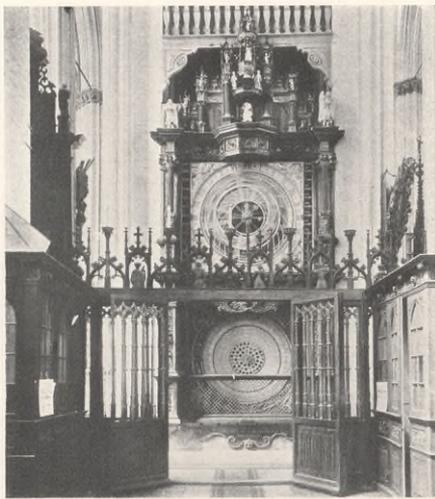
Of all mechanical objects, perhaps none has been so subject to ingenious variations as the timepiece. There have been many wonders and freaks, and some men have spent the greater part of their lives building a clock that would perform a dozen functions or so at one time.

The astronomical clock of Strasbourg cathedral is one of the wonders of Europe. It dates from 1338, and some portions of it were made from a clock constructed as early as 1571. From this it may be seen that building an intricate clock was something like building an ancient cathedral—one generation took up the work where the other left off until eventually the clock was completed.

In the Strasbourg clock there is a complete planetary system, a perpendicular calendar and a number of automatic marionettes. These marionettes are angels that strike the quarter hours and 12 Apostles that come out and pass in a procession before a figure of Christ. As if these objects did not tell the time clearly enough, there is also a chanticleer to crow at set intervals.

A mechanical clock at Lyons has a cock that crows and flaps its wings every three hours. In a gallery beneath the clock's face a set of doors open, and from them emerge a number of figures.

Early man told time by the sun, planting a stick in the ground and watching the shadow it cast as the sun passed overhead. About 250 B. C. a Chaldean historian and priest named Perosus invented



PHOTOS, BROWN BROS.

*Astronomical Clock in Lübeck Cathedral, Germany*

a sundial shaped like a bowl, which was a trifle more accurate and remained for some time the best method of telling time.

The water clock came next in the cycle of evolution, and the hour glass, invented in Alexandria, was another type. This was used in the British Navy as late as 1839.

Not long after the first timepiece was invented man began to devise methods of announcing the hour without going to look at his timepiece. In Egypt and the Eastern countries it was the custom in early days to station a slave beside the sundial whose duty it was to strike the hours on a large, brazen gong.

Some water clocks had a vessel holding water marked with rings to determine the time as the water sank. The ancient Persians told the time by a large delicately perforated brass bowl, floating in a fountain, which was supposed to fill with water and sink in exactly an hour.

Charlemagne had one of the most striking water clocks in the year 802. The wheels of this clock were set in motion by a waterfall. The dial had 12 doors representing the hours, and according to one account when the hand pointed to any hour, the door would open and allow a number of little balls to fall down upon a bass drum, thus announcing the hour.

King Alfred of England is said to have originated the candle clock. This was a candle marked off into sections, each of which was consumed in an hour.

## The TEXACO STAR



*Burning Oil Marked the Passing Hours in Days of Old*

The sand glass was another method of telling time, and Charlemagne also had a peculiar type of this timepiece. It consisted of ten glass compartments, one above the other, through each of which the sand flowed in an hour. Thus the hour glass was transformed into a ten-hour glass. The portable hour glass carried in the hand in Athens was one of the ancestors of the present day timepiece.

All authorities do not agree upon the date of appearance of the first mechanical clock but this type was not used extensively until the closing years of the twelfth century.

The earliest clocks were placed in cathedrals and monasteries, where they gradually displaced the hour glass. There they ticked to the accompaniment of scratching pens as the monks laboriously copied books in fine hand script.

Oil lamps were also used as clocks in the Middle Ages, and their principle was the same used in Colonial times in America for lighting. A perpendicular glass vessel was marked off much the same as King Alfred's candle clock, and the receding surface of the oil marked the passing hours.

The first pocket watch, called the "Nuremburg live egg" from its shape, was made in Nuremburg, Bavaria, by a locksmith. It had one hand and no

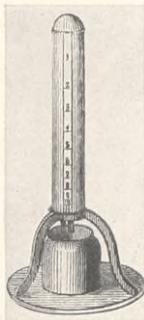
crystal, and its works were modeled after those in the clocks of the time. The minute hand on watches did not come into use until 1687, and it was one hundred years later before the second hand was used. The first crystal was used on a watch in 1650.

The timekeeping ability of the type known as the "grandfather clock" owes a debt to a Dutchman named Ahasuerus Fromanteel, who early in the seventeenth century introduced the long-hanging, weighted pendulum. From that time the floor clock became popular, and clocks of this type were brought by many settlers into Colonial America.

Clock making was one of the popular crafts of the colonies of Connecticut and Massachusetts. A tall clock was one of the first requisites of family life, and up to 1800 was almost the only clock used in the home. Then the Yankee ingenuity of Simon Willard, Eli Terry and others perfected the shelf clock, which was first made with wooden works.

The skill of the Colonial clockmakers was remarkable. It was said of Simon Willard that he never needed to mark out the cogwheels of brass, but trusted to his eye as he filed them. The early American clockmakers strove for simplicity, though Yankee sailors sometimes made clock cases on shipboard and had them decorated in Chinese ports.

Sixty-three kinds of time (Continued on last page)



*The Clepsydra or Water Clock was a Simple Timekeeper*

### *Scholars in Centuries Past Told Time by the Hour Glass*





*Aerial View of Our Los Alamitos Tank Train—Note Airplane Marker*

## Los Alamitos—A Model Tank Farm

*New Unit Designed for Maximum Flexibility of Operation*

SIX MILLION, three hundred and seventy-two thousand barrels of crude oil in an area covering 139 acres. That is part of the story of our Los Alamitos tank farm, located seven miles east of Long Beach, California, and serving one of Southern California's most prolific producing areas.

The storage capacity of this group of 118,000-barrel tanks is not the only virtue of the Pacific Coast's most modern tank farm. The accurate alignment of its 54 aluminum-coated tanks, the trimness of its seven and one-quarter miles of fire walls and the cleanliness of all facilities make for beauty as well as utility. These same qualities speak well of the engineering skill behind the project and its efficiency in operation.

A 118,000-barrel tank is much larger than the casual observer would at first imagine. Its height of 40 feet, six inches, and its diameter of 144 feet, seven inches, give little indication of the amount of material and labor put into it. A tank of this size contains 431 tons of steel and rests upon 202 tons of concrete. The steel in one of these huge containers, if wrought into four-inch standard pipe, would

be sufficient to extend over more than 15 miles.

The pipe line facilities of Los Alamitos are designed to give the maximum flexibility of operation; the oil gathered from Santa Fe Springs, Montebello, Yorba Linda and Huntington Beach fields can be pumped directly into the tank farm, it can be brought through the Los Alamitos pumping plant and boosted on its 11 and one-half mile journey to the Company's Los Angeles Works, or it can be sent directly to refinery storage without ever entering the tank farm limits.

Two eight-inch pipe lines bring crude into the tanks at the rate of 68,000 barrels every 24 hours. More than nine days of steady pumping would be necessary to fill all the tanks to capacity. One eight-inch line carries the crude from Los Alamitos tank farm to the Company's Los Angeles Works at the rate of 48,000 barrels daily. If it became necessary to draw upon Los Alamitos to the limit, its supply would last nearly 13 days.

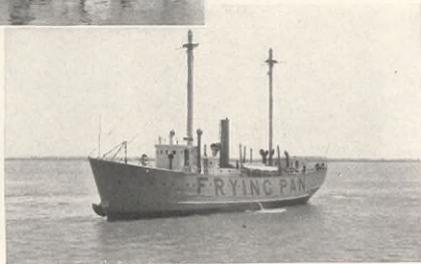
In addition to the great steel storage already mentioned, Los Alamitos has a modern pumping plant, an adequate water *(Continued on last page)*

## The TEXACO STAR

*The Famous Nantucket Lightship (Below): The First "Signpost" in New York City's Great Harbor System*



*The Fenwick (Left) Is Stationed Near Lewiston, Del. The Frying Pan (Below) Is Off the Carolina Coast*



## Ships You Pass in the Night

*Texaco Lubricates These Faithful Sentinels of the Sea*

FOR ages the symbol of the lighthouse has been used to convey the meaning of enlightenment or safety. As a guide for ships, lighthouses have been in use since Ptolemy built the Pharos, a 550-foot structure of white marble, near Alexandria, Egypt, about 282 B. C. Of late years the lightship has been the natural development of the lighthouse, combining the purposes of a stationary marker for ocean lanes with the mobility of a buoy.

Not long ago the Department of Commerce was authorized to build six modern, steel, power-driven lightships, and for three of these chose to lubricate them with Texaco Ursa Oil. These three were built at Charleston, South Carolina, and have been placed in service this year. Previous experiments with motor-driven lightships were so successful that Congress voted funds for the building of a fleet, and the intention of the Department of Commerce is to build enough of them to take the place of the old wooden ships now in service.

After the experiments with the first motor-driven ship, the problem of equipping the ships with motors that would serve both for propulsion and the other requirements of a ship that remained stationary a large part of the time arose. It was finally

decided to install multiple Diesel generating units to act in a two-purpose way. These units supply the ship's requirements while standing in her position and they can also be switched over to provide propulsion for the vessel.

A lightship is anchored and stationed at a point for about three months at a time. During this period the vessel is forbidden to move, even to make a rescue under the most urgent conditions. Stationed as they are away from land, lubrication plays a most important part in the functioning of these "Eyes of the Sea" in keeping all parts lubricated, especially as the Diesel engines operating the generators that furnish the light must never fail.

Lightship 115, known as the *Frying Pan*, is anchored off Frying Pan Shoals, near Wilmington, North Carolina; Lightship 116, the *Fenwick*, is off Fenwick Shoals, near Lewiston, Delaware, and Lightship 117, the *Nantucket*, is stationed at Nantucket Shoals, near Nantucket Island, off the coast of Watch Hill, Massachusetts.

The lightship at Nantucket, though it is 200 miles east of New York City, is regarded as the first signpost in the protective system of the Port of New York.



The Indian Performs his Ablutions—Bathing Ghats at Benares

## Globe Trotting With Texaco

### XVIII—INDIA

By H. A. THOMAS

Assistant to the Management, Export Department

WHILE geographically India is an individual country, there is no continent aside from Asia, of which it is a part, with greater diversity in topography, climate, race, intellectual attainment, religion and, in a measure, language.

From its Himalayan hills stations, with their cool and invigorating atmosphere, one may view Mounts Everest and Kanchinjunga, the loftiest peaks of the globe, while its vast expanse of lowlands is sweltering in heat and humidity about nine months out of the entire year. There are also mountains in southern India with many peaks rising to well over 10,000 feet.

India's separate races, about eight in number, are classified and distinguished by authorities under headings of Aryan, Dravidian, Scythian, Pathon, Mongoloid, Negritos, pacific and fighting, dark and white, short and tall, aggressive and indolent.

Her philosophy and culture dates beyond historic records when Europe's population was still aboriginal, and yet there remain savage tribes within her boundaries that are as uncivilized as any

within the wild regions of the African hinterland.

The religions of the country include the Hindu, Sikh, Jain, Zoroastrian (Parsi), Mohammedan, Christian, Hebrew, several primitive and many minor faiths, not defined. The Hindu religion with its complicated caste system is further divided into Brahmanic, Arya and Brahma. And then there is Buddhism; India was the cradle of this faith and there remain many beautiful and well preserved temples to attest to its original popularity. However, less than three percent of the present population now adheres to it, though the seeds which its missionaries planted in the Orient have multiplied to tremendous proportions. In the whole Indian Empire 222 languages were returned at the latest census, without considering dialect.

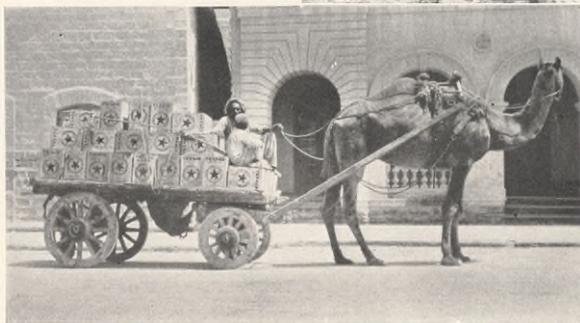
Historical information on ancient India is vague and highly colored by superstition, mythology and folk lore. Tradition records individual monarchs, each of whom reigned for centuries and also gods and saints with weird and impossible careers, all of which is accepted as unquestioned truth by many of the castes today.

The orthodox Hindu, who invaded the country from the uplands of Persia and is of the same Aryan stock as the present European, began the political history of India about 3,000 B.C. but left scanty records of events up to the time of the conquest of Alexander in 326 B.C. He conquered and partially absorbed the Dravidian, darker of skin and smaller of stature, who although known to be an invader is of unknown origin.

Recent excavations have disclosed that both the Aryan and the Dravidian were preceded by a high-



*Kashmiri Scenery—Lidar River on the Road to Kolahoi Glacier*



*(Left) Camel Cart at the Port of Karachi With a Load of Texaco*

ly civilized race of beings believed by authorities to have been of Sumerian extraction—the lost race of Babylonia. These people have apparently disappeared entirely. Perhaps they were exterminated by disease or annihilated by the Dravidians.

In parts of the country Dravidian strains are still to be found among the high caste Hindu Brahmans but generally speaking that race was subjugated and assigned by the Hindu religion, which it adopted, to a servile caste. You will find them hoeing tea in Asaam, the Duars or the Nilgris, cutting rice in the swamps of Eastern Bengal, doing scavengers' work in the streets of the cities or, in fact, wherever menial labor is to be performed.

The Indo-Aryan and his close relation, the Turko-Iranian, both above mean stature and of fair skin, are and always have been the intellectual leaders of India. Their position as members of the ruling class has remained predominant. It is to the genius of the Indo-Aryan that the country owes its early philosophy; centuries before Christ he introduced the use of stone in building and from it erected palaces and temples that are practically indestructible and which have survived countless ages. He



*(Below) Buddhist Temple at Buddh Gaya, A Famous Landmark*



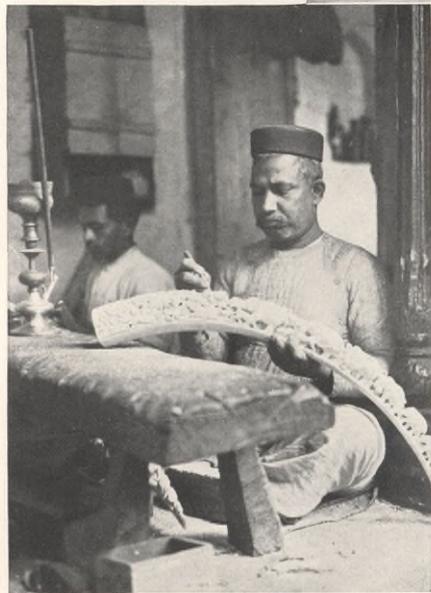
One of India's Niagaras in the Hills  
—the Rocket-Fall Gersoppa



(Right) The Camel Shuffles from  
Dock to Warehouse with Oil Drums



(Below) Ivory Workers at Delhi  
Carve Ornaments from Ugly Tusks



founded Benares and other cities in Northern India thousands of years ago which still flourish, and about 300 A.D., he cast in one piece a monument of anti-rust iron near the City of Delhi that is one of the largest single castings that has ever been made in any country or by any people up to this day. The Turko-Iranians who swept over the country with the waves of Mohammedan invaders in the 7th Century also contributed many attractive monuments of architecture including the famed Taj Mahal at Agra.

The area of India, including Burma, is approximately two thirds that of the United States, or 1,805,332 square miles. The latest figures on population indicate about 320,000,000 inhabitants or nearly one-fifth of the population of the world. The density of population is 177 per square mile as compared with Belgium which has 651 per square mile; England and Wales, with 649 per square mile; France, which has 181 per square mile; Germany, which has 332 per square mile; Japan, with 215 per square mile; and the United States, which has 32 per square mile.

The country with its vast developed and undeveloped natural resources and its commercial and industrial possibilities could probably comfortably support twice that number with both the necessities and the luxuries required by modern civilization.

Of the total of the present population a very large part is not directly under British administration. The area covered in the Indian native states is 675,267 square miles with a population of 70,000,000. The Indian states embrace the widest variety of country and jurisdiction. They vary in size from petty states like Lawa, in Rajputana, with an

area of 19 square miles, and the Indian Hill States, which are little more than small holdings, to states like Hyderabad, as large as Italy with a population of 13,000,000; Baroda and Mysore, rich in agricultural wealth, and Kashmir, one of the most beautiful and favored spots on the face of the globe, which has spread its fame over the world.

A few general statistics on India may prove of interest: It is, primarily, an agricultural country, and agriculture supports 224,000,000 or 71 percent of the population. Industry supports 33,167,000; transportation, 4,350,000; trade, 13,200,000; the administration and protection of the country, 4,325,000; the professions and liberal arts, 5,021,000 and domestic service, 4,570,000.

Cotton milling in Bombay and vicinity and jute milling in Calcutta are the principal industries, although coal, iron and manganese ore, and gold mining employ a large force of operatives. The Tatta Iron and Steel Company runs a large factory near Calcutta. Many important hydro-electric plants have been completed, are in course of construction or definitely projected, which are also affording employment for a relatively large staff in the aggregate.



*The Secretariat and Viceroy's House at Delhi*

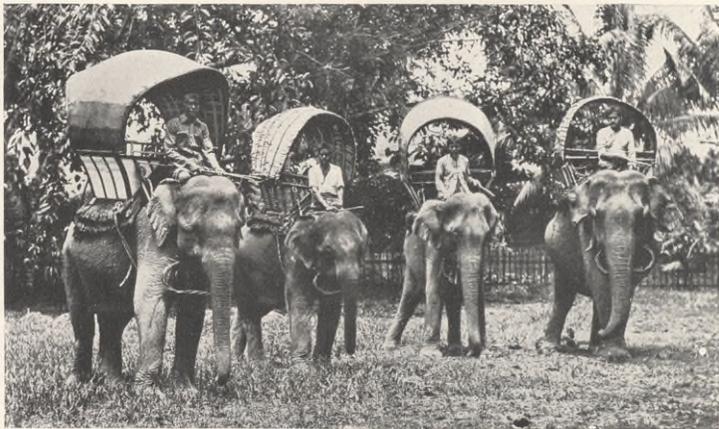
During the past fifteen years the productive area of land has been materially increased through artificial irrigation. Government projects completed and under construction are reclaiming between 40 and 45 million acres. This brings the total cropped area up to around 220,000,000 acres.

The railway mileage is approximately 55,000 miles, generally with good road bed and modern equipment.

Oil is produced in the Punjab in northern and in Assam in northeastern India, as well as in Burma. The Assam Oil Company has a refinery at Digboi of 5,000 barrels per day capacity and the Attock Oil Company operates one at Rawalpindi of 1,000 barrels per day capacity. The total capacity of refineries in Burma is approximately 23,000 barrels per day.

Roads are fairly good except during the monsoon, when travel by motor vehicle in certain parts is a problem. Progress, however, is being gradually made in covering the country with asphalt surfaced highways and there are indications that the various presidencies and native states are awakening to the need of good roads. A concerted country-wide effort to this end is in the stages of negotia-

*Taxi?—Sure-Footed Elephants are the Native Cabs of India*



## The TEXACO STAR

tion and it is expected this campaign will soon be in full swing. When India is thoroughly covered with a network of roadways serviceable in all weather, car registrations should increase from a total of 175,000 for all motor vehicles at present to well over a million passenger automobiles.

Most of the roads existing at present were originally built for military purposes and great cleverness was used in concealing them from view. On approaching the foot of a hill or a mountain it is impossible to outline with your vision the course of your continued route as this is generally so effectively hidden in cuts and valleys or behind mounds, hillocks and shrubbery.

Bus transportation for passenger traffic is expanding rapidly, but the native bullock cart still predominates on short hauls for freight. On the

long routes, from the northern frontier to and from Afghanistan, Persia and other outside countries, the camel caravan remains practically the sole agency of transport. The streets of Karachi are crowded with camel drawn carts, for the local movement of package goods. The city of Aden, formerly administered as a part of British India, also uses this method of cartage.

It must not be assumed that India is all primitive and aboriginal. Many of its inhabitants are well educated and highly cultured. Its commercial and the greater proportion of its political leaders are men with keen intellects, progressive ideas, and a high standard of morality and ethics. Their methods of business inspire one with the greatest confidence and with the keenest pleasure in dealing and associating with them. (Continued on last page)

*The Story of the Ramayana is Written in Stone in the Ellora Caves*



PHOTOS OTHER THAN THOSE SHOWING COMPANY FACILITIES ARE BY COURTESY OF THE INDIAN STATE RAILWAYS BUREAU

## INDIAN REFINING COMPANY

THE Texas Corporation entered into an agreement on November 1, 1930, with certain directors and stockholders of the Indian Refining Company under which agreement it offered to exchange one share of its stock for each eight shares of Indian Refining Company stock, providing among other things that at least 51 percent of Indian stock must be deposited for exchange or the agreement would not become operative.

On January 14, 1931, The Texas Corporation declared the plan effective and we now own more than 60 percent of the stock of the Indian Refining Company.

The principal assets of the Indian Refining Company are distributing facilities mainly in Michigan, Indiana, Illinois, Kentucky and Ohio and a refinery located at Lawrenceville, Illinois, with a daily crude charging capacity of approximately 16,000 barrels.

At a meeting of stockholders held at Augusta, Maine, on January 22, the following were elected directors of the Indian Refining Company: C. B. Ames, F. T. Manley, Harvey D. Gibson, E. A. Potter, Jr., R. C. Holmes, T. Rieber, H. T. Klein, W. S. S. Rodgers and P. C. Scullin.

At a meeting of the new board of directors of the Indian Refining Company held in New York City on January 23, the following officers were elected: R. C. Holmes, President; P. C. Scullin, Vice-President and General Manager; F. T. Manley, Vice-President; W. S. S. Rodgers, Vice-President; S. B. Wright, Vice-President; E. M. Crone, Secretary; and C. E. Woodbridge, Treasurer.

## TELLING TIME

(Continued from page 24)

are used throughout the world, and even the layman in horology knows that on the American continent alone there are variations of many hours in time between the east and west coasts. The present system of 12-hour clock dials was invented by monks in the Canterbury Cathedral, England, at the close of the thirteenth century. The 24-hour dial is still found in Europe.

Even the most accurate clock, it is said, is subject to variations, the result of astronomical or physical phenomena. However, the Colonial housewife learned that careful oiling of a clock enabled it to remain accurate so far as was needed at the time. When petroleum was discovered and kerosene became known, it was the custom of housewives to clean their clocks by

AUSTIN CALLAN, author of the article "The Desert Shall Blossom," which appears in this issue of THE TEXACO STAR, is a veteran Texas newspaper man. He is at present Secretary of the Eagle Pass Chamber of Commerce, Eagle Pass, Texas.

## LOS ALAMITOS

(Continued from page 25)

supply for cooling and other purposes, a separator to recover oil from the drainage of the entire area and a manifold pit. This manifold, although to the layman a mere maze of valves and fittings, is the "switchboard" of the tank farm, for by means of it the flow of the oil to the various points is controlled.

The tank farm is a worthy addition to the equipment of The Texas Company (California). As for the little town of Los Alamitos, it is evident that big tanks rather than little cottonwoods will henceforth be its chief characteristic.

## EAGLET FINDS A NEST

(Continued from page 12)

Immediately after the ceremony the *Eaglet* was dismantled and taken to the museum where the work of assembly and hanging in the Arts and Industries Building was undertaken. It is in this building that the pioneer planes mentioned by Dr. Abbot are kept. The *Texaco Eaglet*, however, is the first motorless craft to go into the museum since the advent of the powered airplane.

The *Texaco Eaglet* has the distinction, in addition to being the first craft of its kind to cross the continent, of having covered more mileage than any other glider. It has spent 570 hours in the air in approximately 50 flights.

The increasing use of the motor car is reflected in figures showing that in 1928 the Federal Government and the 48 states spent \$832,000,000 for good roads, to which can be added county and local government expenditures to bring the total up to about one billion dollars. In 1904, when the automobile industry was still in its infancy, the Federal and State governments spent only \$2,500,000 for roads.

brushing the works with a feather dipped in kerosene. Some believed that the fumes of kerosene, which was placed in an open vessel in the bottom of the clock, rose and cleansed the works of particles of dust.

## GLOBE TROTTER

(Continued from page 31)

Those who travel in India will find an agreeable surprise awaiting them in the service of its modern and well administered railway systems, and in the hotel accommodations afforded at its metropolitan centers and pleasure resorts.

Nor does the rudimentary existence of some of its interior tribes detract from the interest and pleasure of those touring the country. These complexities impress one as staged like a great carnival for his especial entertainment. And the wild animal life is one of India's principal attractions.

The sportsman and the naturalist find there a veritable paradise. Monster tigers, wild elephants, buffalo, bear, boar and monkeys of great variety inhabit its jungles. Its rivers and bayous are filled with fish and crocodile. Vast herds of buck of large and small varieties roam its plains and birds of both rare plumage and delicious flesh are to be found in abundance in many sections.

India is becoming an important market for American manufactured goods and many of our big firms are establishing profitable branches there.

The marketing organization of The Texas Company (India) Ltd., administered from head offices in Bombay, Calcutta, Karachi, Madras and Colombo. At the present time only lubricating oils, greases, asphalts and specialties are being marketed.

Texaco products are well received by the Indian merchant and the consumer, our Golden Motor Oils, textile spindle oils and cylinder oils proving especially popular. Municipalities have also been highly pleased with our asphalts and the demand for Thuban and Grater Compound is rapidly increasing.

Mysterious India! We have all heard that expression since early childhood but the only outstanding mysteries there, which seem incapable of solution, are the elusive "Coral Strands;" the fabled "rope trick"—on which the most authentic information one can get is to see some one whose father saw some one who saw some one who witnessed it—and the fact that cables sent from Bombay and Calcutta are received in America about eight hours before they are despatched!

The hinterland of America, the "provinces" and the "sticks," has disappeared, according to S. L. Rothafel (Roxy), theatrical man, who told persons representing the film industry that the public at large is quite intelligent and has good judgment in general.



SERVING THE MOTORING PUBLIC  
OF THE NATION'S CAPITAL WITH  
QUALITY PRODUCTS: ONE OF THE  
MANY BEAUTIFUL TEXACO SER-  
VICE STATIONS IN WASHINGTON,  
D. C.





**DRY, LIVE STEAM**  
*for the "limited"*  
**DRY, LIVE GAS**  
*for your car—*

## TEXACO-ETHYL *is the* "DRY" ETHYL GASOLINE

**T**HE steam that turns the drivers of the mighty "Limited" is dry—superheated. It gives almost a third more tractive power than ordinary wet steam.

The Texaco-Ethyl Gasoline that powers the cars of the most exacting motorists is dry. It's alive—dry as it leaves the manifold of your engine—an active, vital power in every cylinder, ready to be released by the first spark flash.

You'll doubly appreciate the quick, unhesitating starts of this dry Ethyl gasoline on winter's trying days, the anti-knock qualities, the smooth, rhythmic

idling of your engine, the sparkling pick-up and responsive, flashing speed.

Nothing but "dry" anti-knock gasoline can give such perfect action in the engine. Texaco-Ethyl is dry as it leaves the manifold, dry in the cylinders. It distributes evenly. That's the reason.

Drive in for the "dry" Texaco-Ethyl Gasoline when next your tank is low. Texaco-Ethyl is the only Ethyl gasoline available in all our 48 States.

**THE TEXAS COMPANY**  
 Refiners of a complete line of Texaco Petroleum Products, including Gasoline, Motor Oil, Industrial, Railroad, Marine and Farm Lubricants, Road Asphalts and Asphalt Roofing



**TEXACO**  
*the original*  
 "DRY" GAS



**ETHYL**  
*nationally famous*  
 ANTI-KNOCK COMPOUND



**TEXACO-ETHYL**  
 THE "DRY" ANTI-KNOCK  
 GASOLINE