

MINES

Administration Reports

1927-38

TRINIDAD AND TOBAGO.

Council Paper No. 66 of 1928.

MINES DEPARTMENT.

Administration Report of the Inspector of Mines for the year 1927.

*Circulated for information. To be laid before the
Legislative Council.*

Previous Council Paper No. 29 of 1927.

Registered No. of Correspondence relating to the subject—M.P. No. 2372/1928.

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Administration Report of the Inspector of Mines for the year 1927.

Council Paper No. 66 of 1928.

M.P. No. 2372/1928.

HONOURABLE COLONIAL SECRETARY, .

I have the honour to submit for the information of His Excellency the Governor the following report on the work of the Mines Department for the year 1927.

2. I am glad to be able to report that the year under review has been marked by a continued increase in activity in the petroleum industry. This activity would have been, no doubt, on a much greater scale but for two factors : for some time past, the Trinidad Leaseholds, Ltd., found that its pipeline and refinery capacity was inadequate to deal with its own production from the fields at Fyzabad and Barrackpore and at the same time cope with the increased production of other companies whose output is purchased. Steps were taken to increase the pipeline capacity by replacing the existing 6-inch pipeline from Fyzabad to Pointe-a-Pierre by a 10-inch line (completed at the time of writing) and to greatly increase the refinery facilities at Pointe-a-Pierre. Unfortunately, in order to enable other Companies' oil to be purchased, it was necessary for the Trinidad Leaseholds, Ltd., to curtail its own production for a considerable part of the year. The other factor which has affected the oil industry has been the low prices ruling for petroleum products in the world's markets for the greater part of 1926, which restricted, to some extent at any rate, the operations of the Companies.

3. Since 1920 there has been a steady increase in the production of oil to which the year 1927 was no exception, the quantity of oil won being 408,993 barrels more than in 1926.

4. One new shipping depot was constructed during the year under review, viz. : that of the Trinidad Oil Fields Operating Company, Ltd., who installed a tank farm near La Brea and erected a pier at La Brea Point on which was laid the shipping line. Up to the present crude oil only has been exported by this Company.

As mentioned above the Trinidad Leaseholds, Ltd., during the past year commenced the installation of extensive additions to its refining plant and at the time of writing these additions are nearing completion.

5. As, is only to be expected in view of the increased production, the quantity of Petroleum products exported has shown a large increase compared with the previous years, the figures being 155,900,000 gallons as against 139,500,000 gallons for the year 1926. Owing to the low price of oil obtainable in the world's markets for these products during the greater part of the year I regret to have to record that the values of this export have not shown a corresponding increase. In spite of this fact, however, petroleum products are still greater in value than any other export as will be shown from the following table:—

	Value.	Percentage of total.
	£	
Petroleum products	1,783,000	32.8
Cocoa	1,671,883	30.7
Sugar, Molasses and Rum	784,900	14.4
Asphalt	464,458	8.5
Coconuts and Copra	179,193	3.3
Other exports not enumerated	557,271	10.3
Total domestic exports	5,440,795	100.0

6. The following table will show the number of feet drilled and the quantity of oil produced during 1927 as compared with the years 1925 and 1926:—

	YEAR ENDED 31ST DECEMBER, 1925.		YEAR ENDED 31ST DECEMBER, 1926.		YEAR ENDED 31ST DECEMBER, 1927.	
	Feet drilled.	Oil won Brls. of 35 galls.	Feet drilled.	Oil won Brls. of 35 galls.	Feet drilled.	Oil won Brls. of 35 galls.
Crown Lands	105,631	2,877,437	126,339	2,976,227	119,284	2,362,150
Private Lands	63,522	1,509,070	73,739	1,995,243	121,440	3,018,341
	<u>169,153</u>	<u>4,386,507</u>	<u>200,078</u>	<u>4,971,470</u>	<u>240,724</u>	<u>5,380,491</u>

7. The total number of wells drilled in the Colony to 31st December, 1927, is 1,312 of which 823 are on Crown Lands. During the year under review 158 new wells were drilled, of which 84 were on Crown Lands and 74 on private lands, an increase of 31 compared with 1926. In 116 of these wells oil was struck.

8. The number of Companies engaged in the winning of oil at the close of the year was 14 as against 17 at the end of 1926.

9. ROYALTY.—The Royalty collected in respect of oil won from Crown Land showed a decrease as compared with 1926 the figures being £39,965 3s. 7½d. and £54,950 3s. 3d. respectively.

This decrease is due to three factors :

- (a) Restriction of production by the Trinidad Leaseholds, Ltd., in order to purchase oil won by other Companies, referred to previously in this report.
- (b) The bringing to account of certain arrears of royalty during 1926.
- (c) The fact that a large payment on account of minimum rental due in 1927 was only brought to account during 1928.

10. WAYLEAVES.—The revenue obtained from wayleaves in respect of pipelines along the Trinidad Government Railway and the public roads of the Colony has shown an increase. The amounts for the years 1926 and 1927 are as follows :—

	<i>Trinidad Government Railway.</i>	<i>Roads.</i>
1926 ..	£ 9,121 11s. 8d.	£3,704 5s. 7d.
1927 ..	£10,381 0s. 5d.	£4,179 4s. 6d.

11. FEES.—Fees charged for crossing the foreshore, the Railway and the public roads amounted to £71.

12. Three leases and three licences were issued during the year as follows :—

Mining Lease to Apex (Trinidad) Oilfields, Ltd., over 52 acres the surface of which was alienated subsequent to 16th January, 1902—Reg. No. 653 of 1927.

Mining Lease to Trinidad Petroleum Development Company, Ltd., over 19,620 acres of Crown Lands.—Reg. No. 1983 of 1927.

Mining Lease to United British Oilfields of Trinidad, Ltd., over 1,101 acres the surface of which was alienated subsequent to 16th January, 1902, and 22 acres of Crown Land.—Reg. No. 2528 of 1927.

Prospecting Licence to Michael Hamel Smith over 59 acres the surface of which was alienated subsequent to 16th January, 1902.—Reg. No. 1240 of 1927.

Exploration Licence to Trinidad Leaseholds, Ltd., over 7,634 acres of Crown Land.—Reg. No. 806 of 1927.

Exploration Licence to Kern Trinidad Oilfields, Ltd., over 1,445 acres.—Reg. No. 2736 of 1927.

The Trinidad Central Oilfields, Ltd. asked to be allowed to relinquish the greater part of its holdings (64,434 acres) under mining lease dated 24th August, 1926 (Council Paper No. 100 of 1926) as from 9th November, 1927, and to retain an area not exceeding 7,000 acres. This request was acceded to and steps are now being taken for the execution of a new mining lease over the reduced area in the latest model form.

13. The various oil companies have regularly submitted to the department the returns required to be furnished by them. After being checked, these have been filed with the records of the department.

14. A large number of inspections have been carried out by the officers of the department in connection with the operations taking place on the fields and I have great pleasure in placing on record that close co-operation exists between the officials of the various companies and the department in carrying out the various ordinances and regulations.

15. ACCIDENTS.—The accidents which occurred during the period under review were with one exception such as are usually incident to mining operations of this nature and do not call for special comment. The exception mentioned was an accident which occurred at Well No. 178 of the United British Oilfields of Trinidad, Ltd.—after flowing for about six hours on being drilled in the oil from this well became ignited and four employees were severely burnt, one of them, an American driller, succumbing to his injuries. Enquiries revealed the fact that no breach of the Boring Regulations had been committed and that the ignition of the oil was purely accidental. A verdict of accidental death was returned by the Coroner.

SAN FERNANDO BRANCH OF THE DEPARTMENT.

16. This branch deals with the conservation of oil and gas and other related problems with which the department is concerned and during the whole of the period under review was under the charge of Mr. C. A. P. Southwell, M.C., B.Sc.

REVENUE FROM THE PETROLEUM INDUSTRY.

17. During the past year there has been a considerable amount of discussion in the press of the Colony regarding the contribution of the industry to the Colonial revenue. From the usual statistics published by the Government, it is impossible to differentiate between payments made through the Customs, Income Tax and similar departments, by the petroleum industry, other industries and the general public, and, as I am doubtful whether it is generally realized how great a proportion of the Colonial revenue is due to the presence of this industry, I requested the Petroleum Association of Trinidad to supply me with such figures as are available from the Companies' records. These contributions in respect of the year 1927, together with those from the asphalt industry, are as follows :—

HEAD.	Oil.	Asphalt.	Total.	Colonial Revenue from Yellow Book.
	£	£	£	£
1. Customs	56,000	68,183	124,183	676,400
2. Licences	59,402	536	59,938	511,246
3. Income Tax (Includes Est. for Employees)	78,923	9,208	88,131	161,538
4. Fees of Court and Office	6,953	908	7,861	154,601
5. Post Office	942	89	1,031	35,239
6. Government Railway and Telegraph	14,523	22	14,545	..
7. Rents of Government Property	2,833	..	2,833	1,717
8. Land Sales and Royalties	56,522	30,738	87,260	108,362
9. Coastal Steamer "Belize"	8	..	8	15,235
	276,106	109,684	385,790	1,664,338

18. It must also be realized that, apart from contributions of the oil companies to the general revenue by way of direct taxation, large sums are also obtained indirectly by the circulation of money in the Colony through the medium of salaries and wages, payments to contractors, and the purchase of stores and other materials in the Colony, &c. The following figures have been supplied to me by the Petroleum Association of Trinidad in respect of the petroleum and asphalt industries :—

HEAD.	Oil.	Asphalt.	Total.
	£	£	£
Salaries and Wages	632,606	96,060	728,666
Contractors' payments	145,944	2,274	148,218
Local purchases of materials	380,850	21,132	401,982
Legal and other fees and retainers	10,429	570	10,999
Other Local Expenditure (including Rents, Private Royalties, &c.)	190,639	13,109	203,748
	1,360,468	133,145	1,493,613

In forwarding these figures, the Association informed me that it was estimated that, under the following heads, the percentages of the total revenue that were attributable directly and indirectly to the presence of an oil industry in the Colony were:—

(a) Customs	.. .. .	23 per cent.
(b) Port and Harbour dues	.. .. .	38 do.
(c) Income Tax	.. .. .	49 do.
(d) Licence fees for timber cut on Crown lands		78 do.

The total estimated contribution (direct and indirect) of the petroleum industry is estimated by the Petroleum Association of Trinidad, to be 21 per cent. of the Colony's revenue.

PREVENTION OF ACCIDENTS ORDINANCE, CAP. 157.

19. During the period under review 94 factories in Trinidad and 17 in Tobago were worked. Regular visits were paid to the various factories and I am pleased to be able to report that the provisions of the Ordinance were carefully observed.

QUARRIES.

20. The number of quarries worked during the period under review was 81 as compared with 82 in 1926. From inspections made, they have, in most cases, been found to be worked in a careful manner, but, with few exceptions, they are relatively unimportant.

PETROLEUM ORDINANCE, CAP. 145.

21. The premises in which the various products of petroleum are stored have been carefully inspected, and it is satisfactory to note that as a rule great care has been undertaken to ensure safety.

ASPHALT INDUSTRY ORDINANCE, CAP. 147.

22. No asphalt has been dug on the village lots at La Brea since 1914.

APPENDICES.

23. Appendix A shows the list of oil companies operating in the Colony during the year 1927.

24. In Appendix B will be found the daily average number of persons employed in oilfields and quarries and the quantity and value of minerals obtained during the period under review.

25. A comparative statement of the oil produced, refined and exported is shown in Appendix C.

26. Appendix D consists of a series of charts depicting in graphical form the progress made in various industries during the past few years.

27. Appendix E shows the relation of Mineral Exports to Agricultural Exports.

STAFF.

28. Mr. H. W. Reid, B.sc., was appointed to the post of Deputy Inspector of Mines as from 29th August and arrived in the Colony on 10th September.

Mr. B. A. Spence, Draughtsman, was promoted to the post of Chief Forest Ranger as from 1st May. Since then the post has been temporarily filled by the appointment of Mr. C. Harding.

I was on leave of absence out of the Colony from 22nd March to 23rd September. During the period 23rd March to 3rd May, Mr. D. M. Hahn, M.I.C.E., Assistant Director of Public Works, acted as Inspector of Mines in addition to performing the duties of his own office. When this officer went on leave Mr. N. Betancourt, Assistant Inspector of Mines, acted as Inspector of Mines until the arrival of Mr. Reid in the Colony on the 10th September.

I wish to place on record my appreciation of these officers' services in carrying on the work of the department during my absence and of the staff generally for their able and loyal assistance.

A. P. CATHERALL,
Inspector of Mines.

APPENDIX A.

No.	Companies.	Nature of tenure of lands on which operations took place.	Disposal of Oil.	Remarks.
1	Trinidad Leaseholds, Ltd.	Crown Lands under lease. Private lands . . .	Fyzabad, Barrackpore, Guayaguayare. Barrackpore	Pumped to the Company's refinery at Pointe-à-Pierre, and there refined. Most of the production is exported in bulk. The most important Company in the Colony. Production was restricted during the greater part of the year in order to purchase crude oil from other Companies. The major portion of the production is from the fields at Fyzabad and Barrackpore. An intensive development programme was undertaken at Guayaguayare during the greater part of the year but operations were somewhat curtailed towards the close. Considerable extensions to the refinery and shipping depot at Pointe-à-Pierre were in progress during the year.
2	United British Oilfields of Trinidad, Ltd.	Crown Lands under lease Private Lands . . .	Point Fortin, Morne L'Enfer Reserve, Los Bajos. Point Fortin.	Sold to United British Refineries, Ltd. Drilling was confined to the Parry Lands field. A small production is still obtained from the Point Fortin and Los Bajos fields.
3	Trinidad Central Oilfields, Ltd.	Crown lands under lease	Tabaquite and Guapo	Refined, sold locally and exported. Small amount of drilling on the Tabaquite field. Drilling on the Cruse field suspended during the year.
4	Trinidad Lake Petroleum Company, Ltd.	Private lands . . .	Brighton . . .	The bulk of the production is exported to the United States of America. Producing only.
5	Petroleum Development Company, Ltd.	Crown lands under lease	Morne L'Enfer Forest Reserve	Sold to Trinidad Lake Petroleum Company, Ltd. Drilling on Crown oil rights near the Pitch Lake. Satisfactory production.
6	Apex (Trinidad) Oilfields, Ltd.	Crown lands under lease and prospecting license and Private lands	Fyzabad . . .	Sold to Trinidad Leaseholds, Ltd. Very active programme during the year, with the result that this Company had the largest production in the Colony.
7	Kern Trinidad Oilfields, Ltd.	Crown lands under lease Private lands . . .	La Brea Guapo and Rousillac	Sold to United British Refineries, Ltd. Development of Perseverance Estate, Guapo, continued during the whole of the year. Operations were continued on Crown Lands near Guapo. A satisfactory production was obtained.

APPENDIX A.—Continued.

No.	Companies.	Nature of tenure of lands on which operations took place.		Disposal of Oil.	Remarks.
8	Oropuche (Trinidad) Oilfields, Ltd.	Private lands	Fyzabad and San Francique	Sold to Trinidad Leaseholds, Ltd.	Now acquired by Trinidad Leaseholds, Ltd. Small production obtained.
9	Trinidad Petroleum Development Company, Ltd.	Private lands	Naparima, Palo Seco, Cedros.	Sold to United British Refineries, Ltd.	A very active development programme has been carried on in the Palo Seco District, but up to the present the production has been relatively small. Drilling has also been undertaken in the Cedros District with disappointing results.
		Crown lands	Palo Seco, Cedros and Guapo.		
10	Petroleum Options, Ltd.	Private lands	Fyzabad	.. Sold to Trinidad Leaseholds, Ltd.	The properties of this Company have now been leased to the Trinidad Oilfields Operating Company, Ltd.
11	Venezuelan Consolidated Oilfields, Ltd.,	Private lands	Fyzabad	.. Sold to Trinidad Leaseholds, Ltd.	This Company was formerly the Trinidad Friendship Petroleum Company, Ltd. Towards the close of the year an active drilling programme was commenced with a resultant increase in production.
12	British Controlled Oilfields, Ltd.	Crown lands under lease	Oropuche	.. Sold to Trinidad Leaseholds, Ltd.	Drilling operations have been suspended since January, 1926, and a very small production is obtained from existing wells.
13	Trinidad Oil Producing and Refining Company, Ltd.	Private lands	Fyzabad	.. Sold locally	Producing only during early part of the year. Lease surrendered to owner as from 28th June, 1927.
14	Palo Seco Oilfield. (C. C. Stollmeyer) ..	Crown lands under lease	Palo Seco	.. Sold to United British Refineries, Ltd.	Drilling continued during the period under review, and a small production was obtained.
15	Trinidad Oilfields Operating Company, Ltd.	Private lands	Fyzabad, San Francique, Palo Seco and Aripero	Sold to Trinidad Leaseholds, Ltd., United British Refineries, Ltd., and also exported direct	This Company continued a most active programme, with the result that it now has the third largest production in the Colony.

APPENDIX B.

Daily average number of persons employed in Oilfields and Quarries and the quantity and value of minerals obtained during the year ended 31st December, 1927.

Minerals.	Daily average number of persons employed.		Total.	Quantity.	Approximate value.*
	Males.	Females.			
Oil	5,050	75	5,125	5,380,464 Barrels.	£ 1,152,352
Asphalt	1,120	10	1,130	242,131 Tons.	151,332
Private Quarries (Limestone, Gravel, &c.)	343	156	499	137,832 Tons.	15,915
Government Quarries (Limestone, &c.)	330	117	447	52,520 Tons.	9,483

* N.B.—The values in this column are those returned by owners and managers, and represent the value at the place of production.

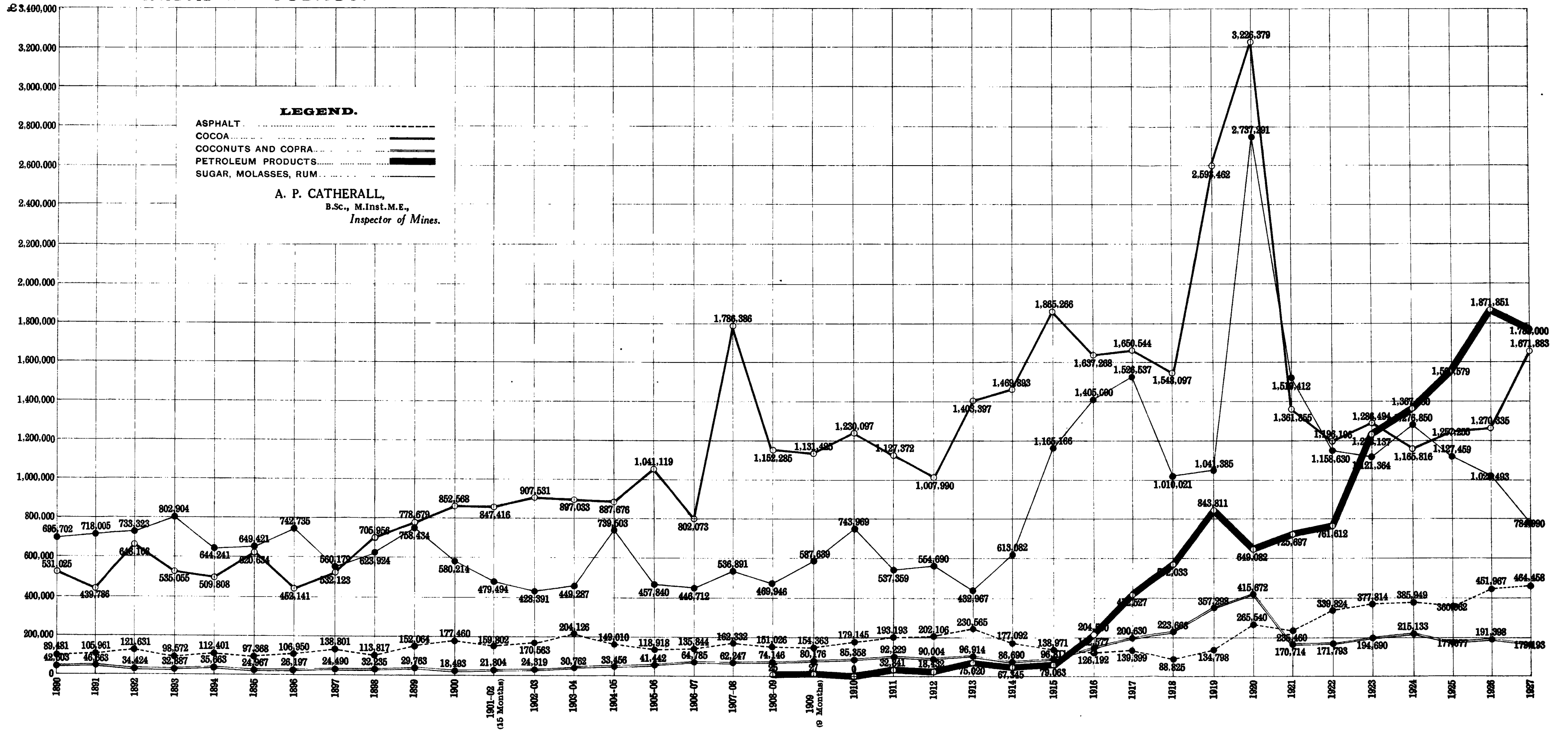
APPENDIX C.

Comparative statement of oil produced, refined and exported year by year since the inception of the Petroleum Industry in the Colony.

Year.	Production in barrels.	Quantity of Crude Oil refined in barrels.	Quantity of Crude oil and refined oil exported in barrels.
1905 to 31st March, 1910 ..	10,541	..	..
1910-1911	225,112	..	..
1911-1912	285,307	Previous to 1912 to 1913	37,842
1912-1913	503,616		9,484
1913-1914	643,516		35,061
1914-1915	1,050,112		41,413
9 months ended December, 1915 ..	671,125		58,437
1916	927,877		107,822
1917	1,602,312		505,002
1918	2,082,068		2,106,369
1919	1,841,047		1,149,943
1920	2,083,027		1,395,487
1921	2,354,160		1,806,016
1922	2,444,752		1,820,018
1923	3,050,872		2,360,279
1924	4,056,612		3,433,902
1925	4,386,507		3,790,343
1926	4,971,471		3,786,876
1927	5,380,464		4,796,223
	38,470,498		27,240,517
			27,835,434

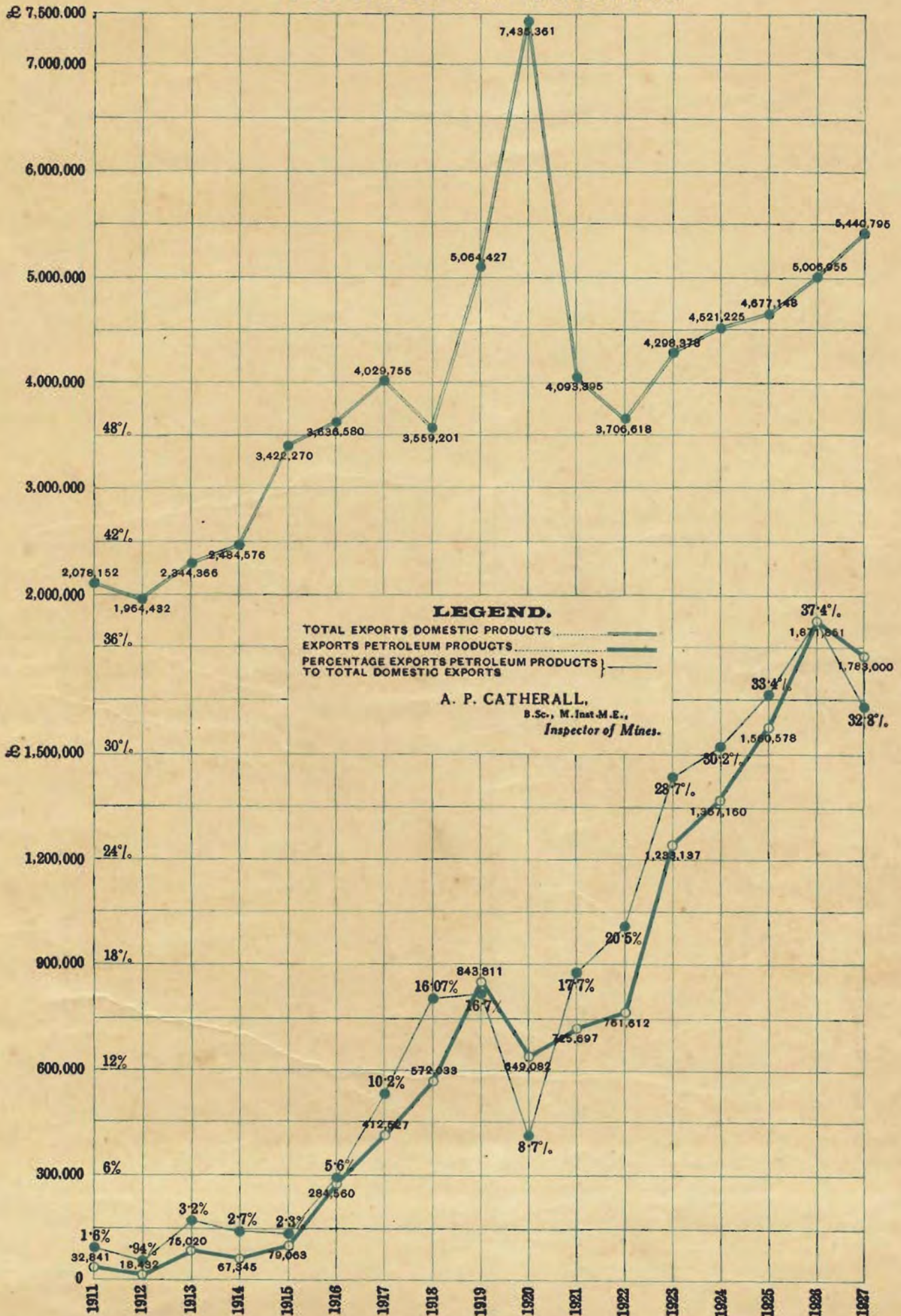
A EXPORT OF LOCAL PRODUCE.

TRINIDAD AND TOBAGO.



B

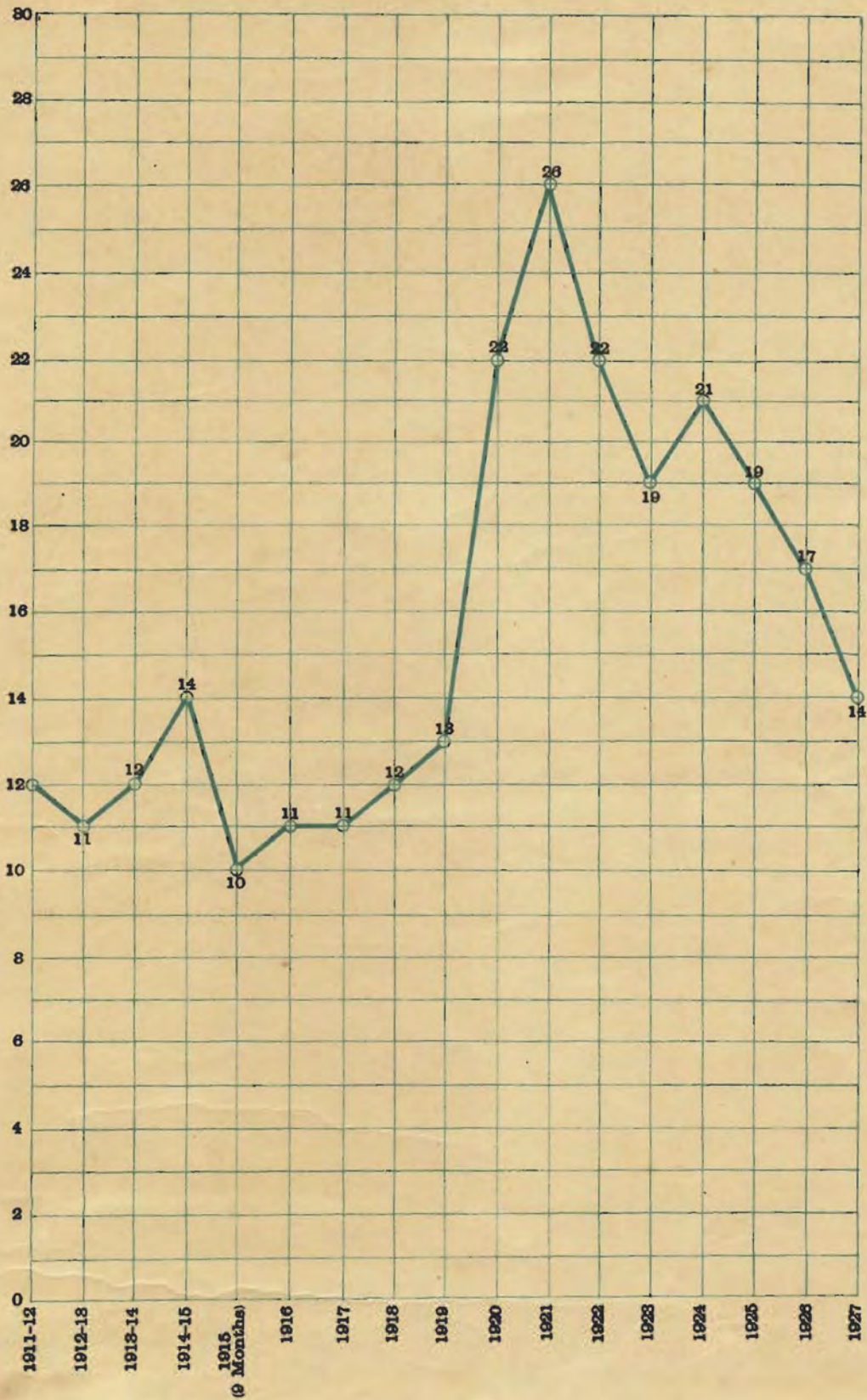
TRINIDAD AND TOBAGO.



APPENDIX-D.

C

Curve showing the number of Oil Companies that have operated annually in the Colony from 1st April, 1911, to 31st December, 1927.

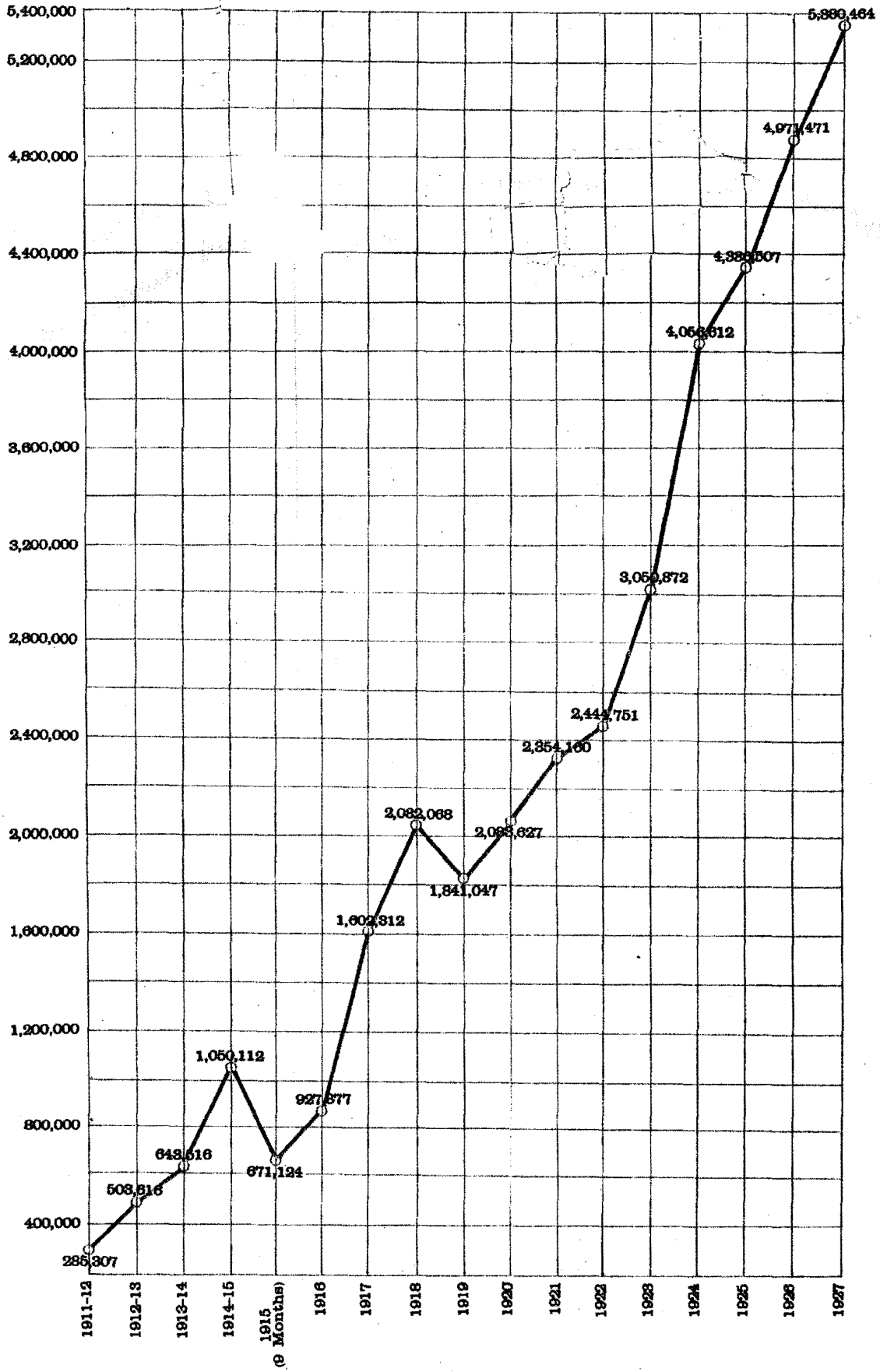


APPENDIX-D.

D

TOTAL ANNUAL PRODUCTION OF CRUDE OIL IN BARRELS.

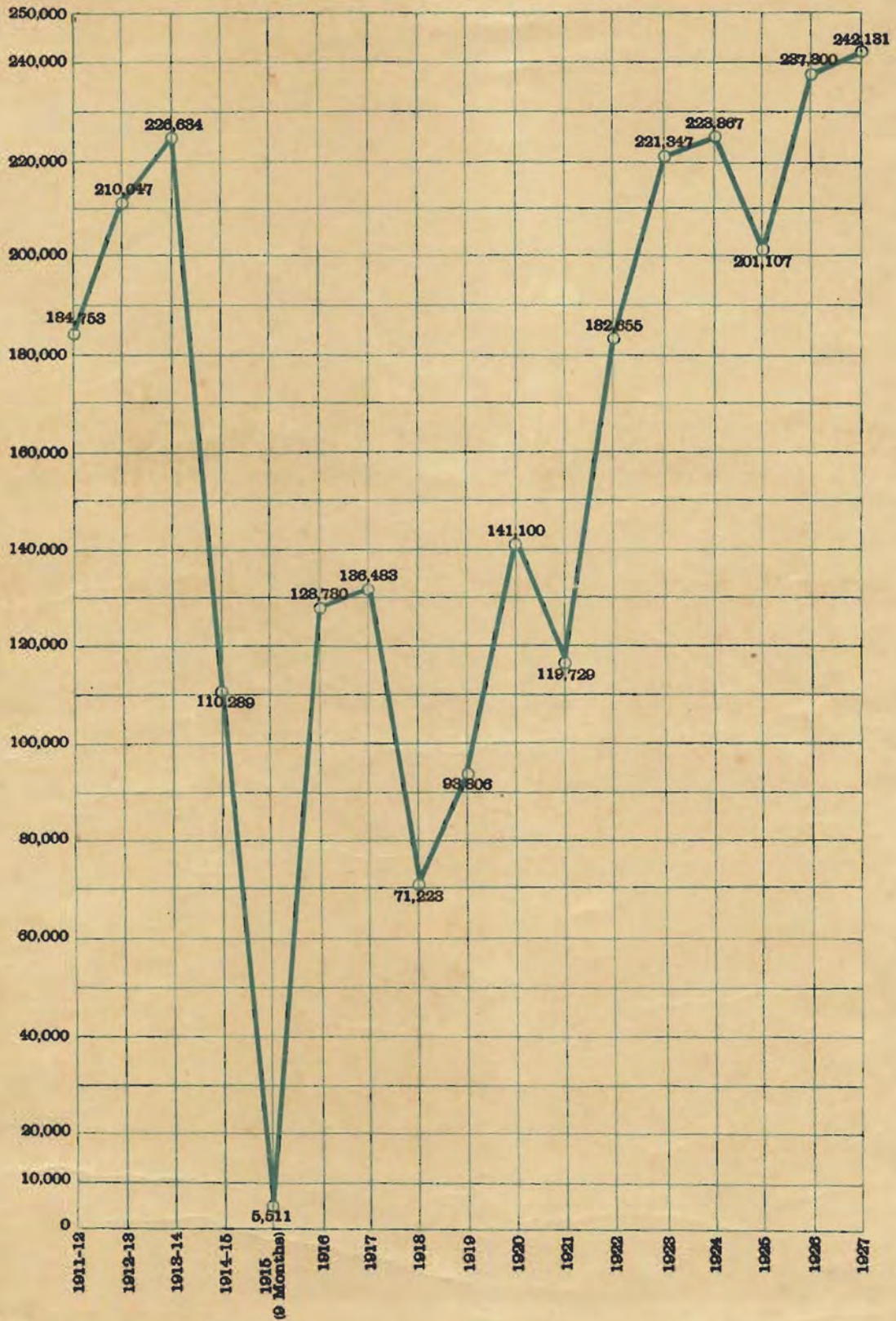
One barrel = 35 gallons.



APPENDIX-D.

E

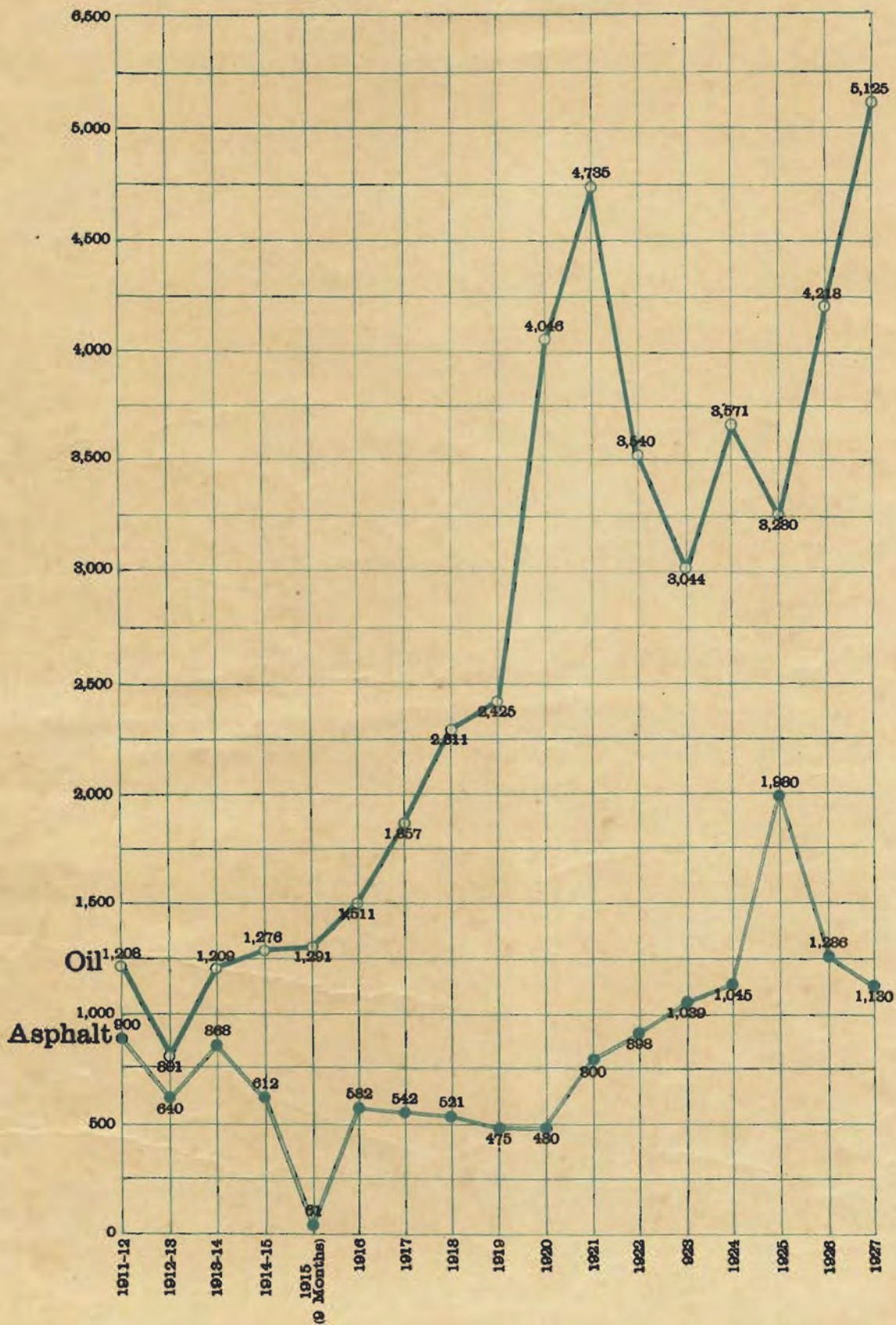
Curve showing yearly output of Asphalt from the Colony in Tons from 1st April, 1911 to 31st December, 1927.



APPENDIX-D.

F

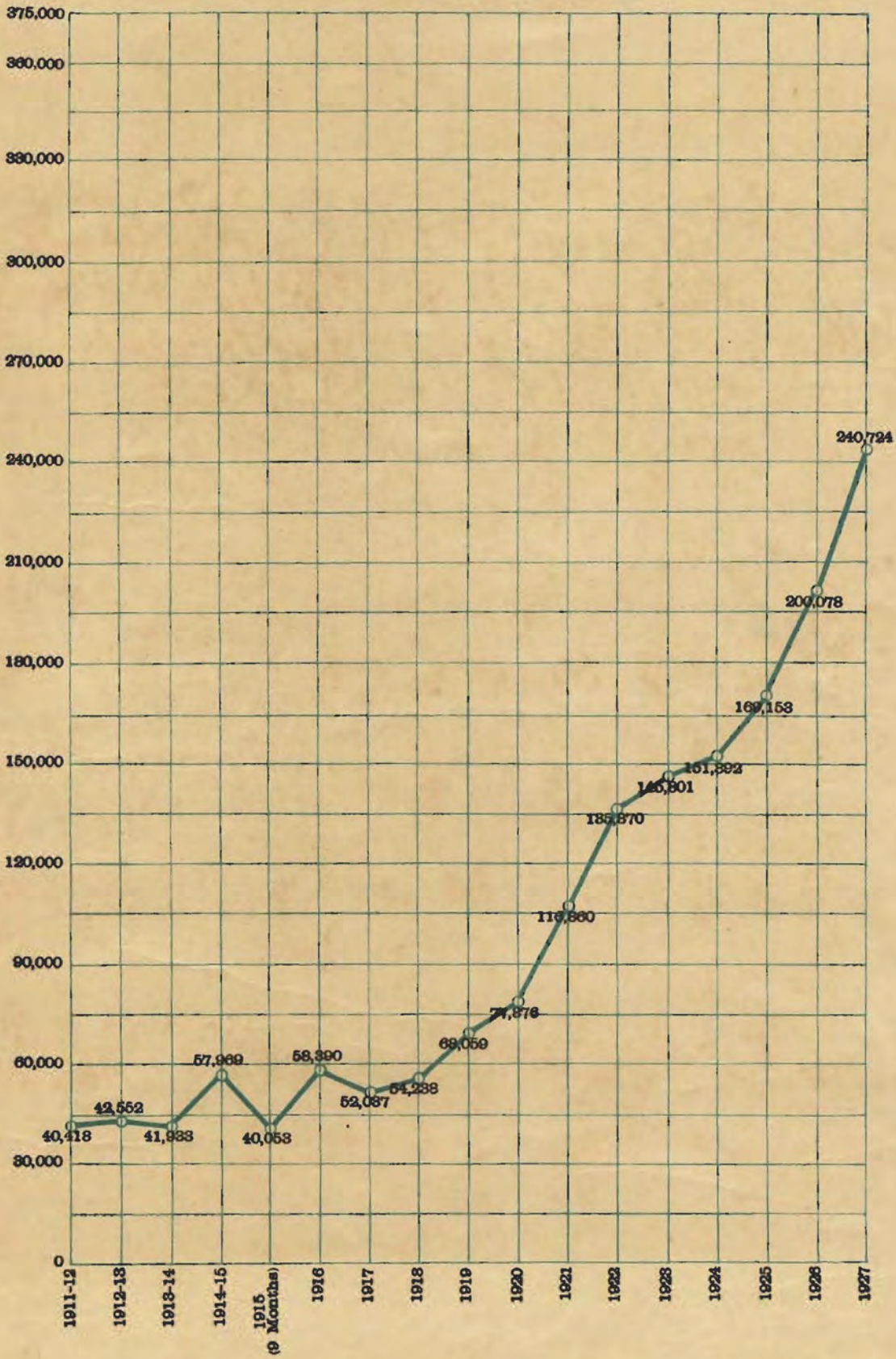
Curve showing comparison of daily average number of persons employed in the Oil and Asphalt Industries of the Colony from 1st April, 1911 to 31st December, 1927.



APPENDIX-D.

G

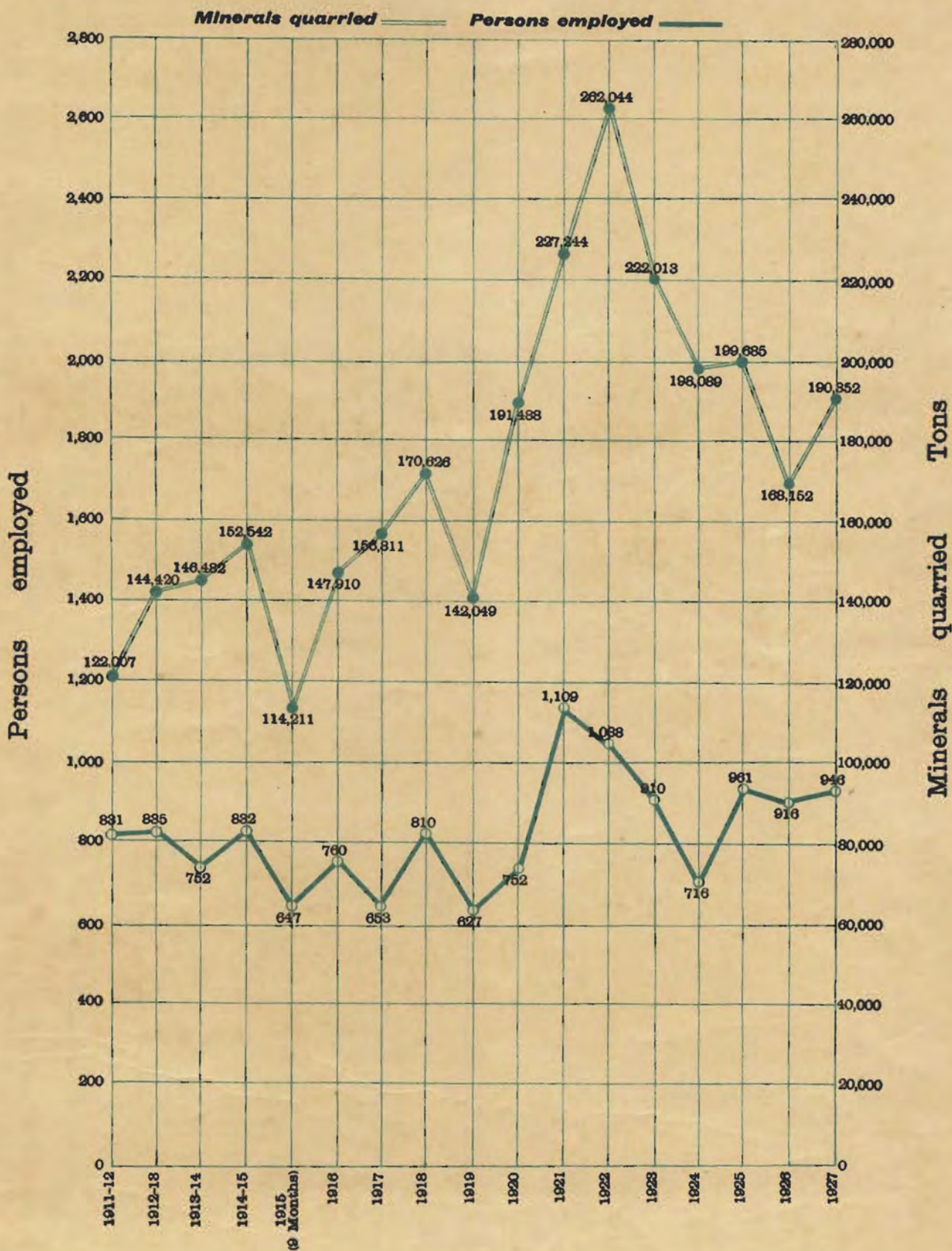
Curve showing yearly total number of feet drilled in the Colony from 1st April, 1911 to 31st December, 1927.



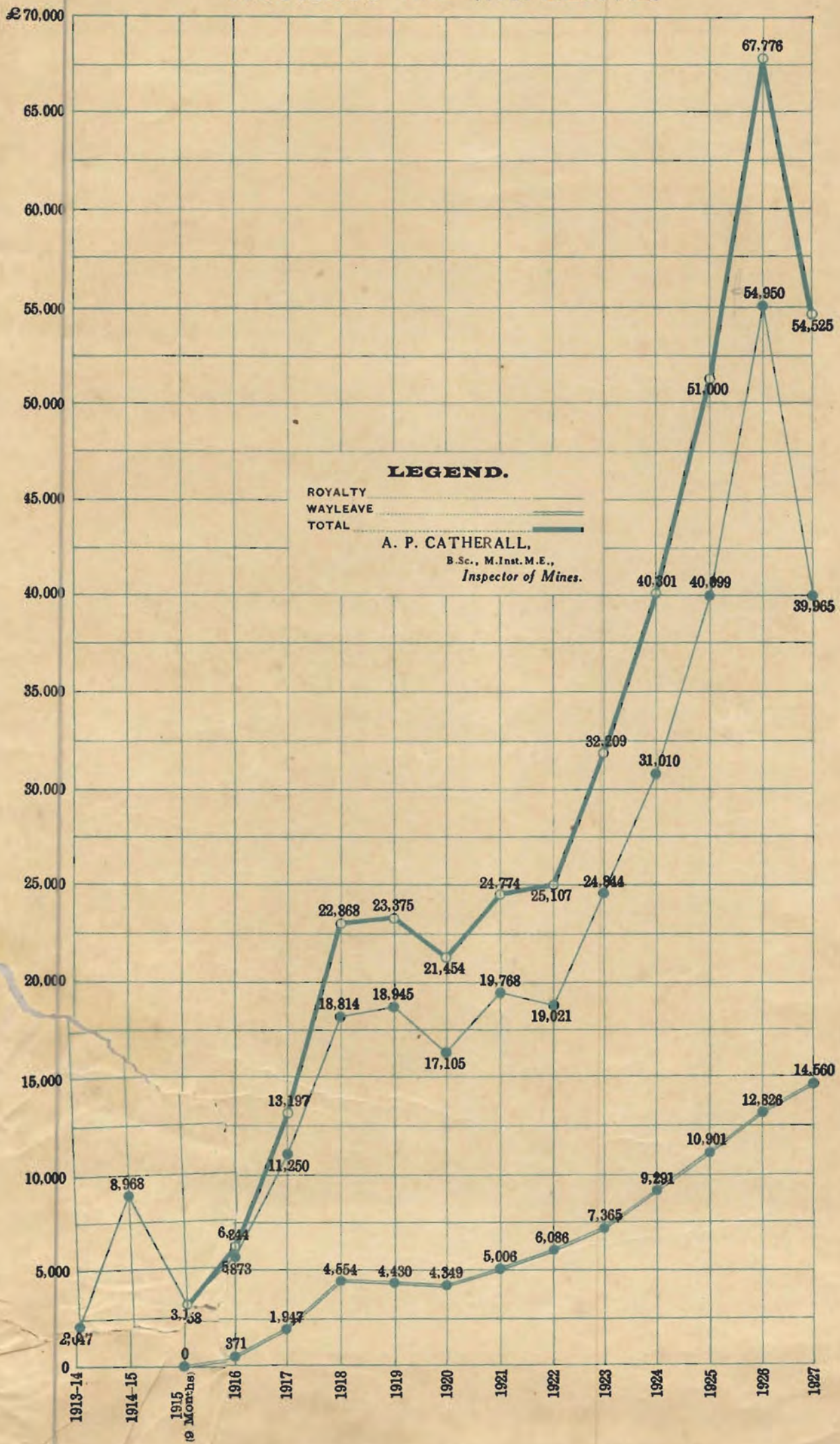
APPENDIX-D.

H

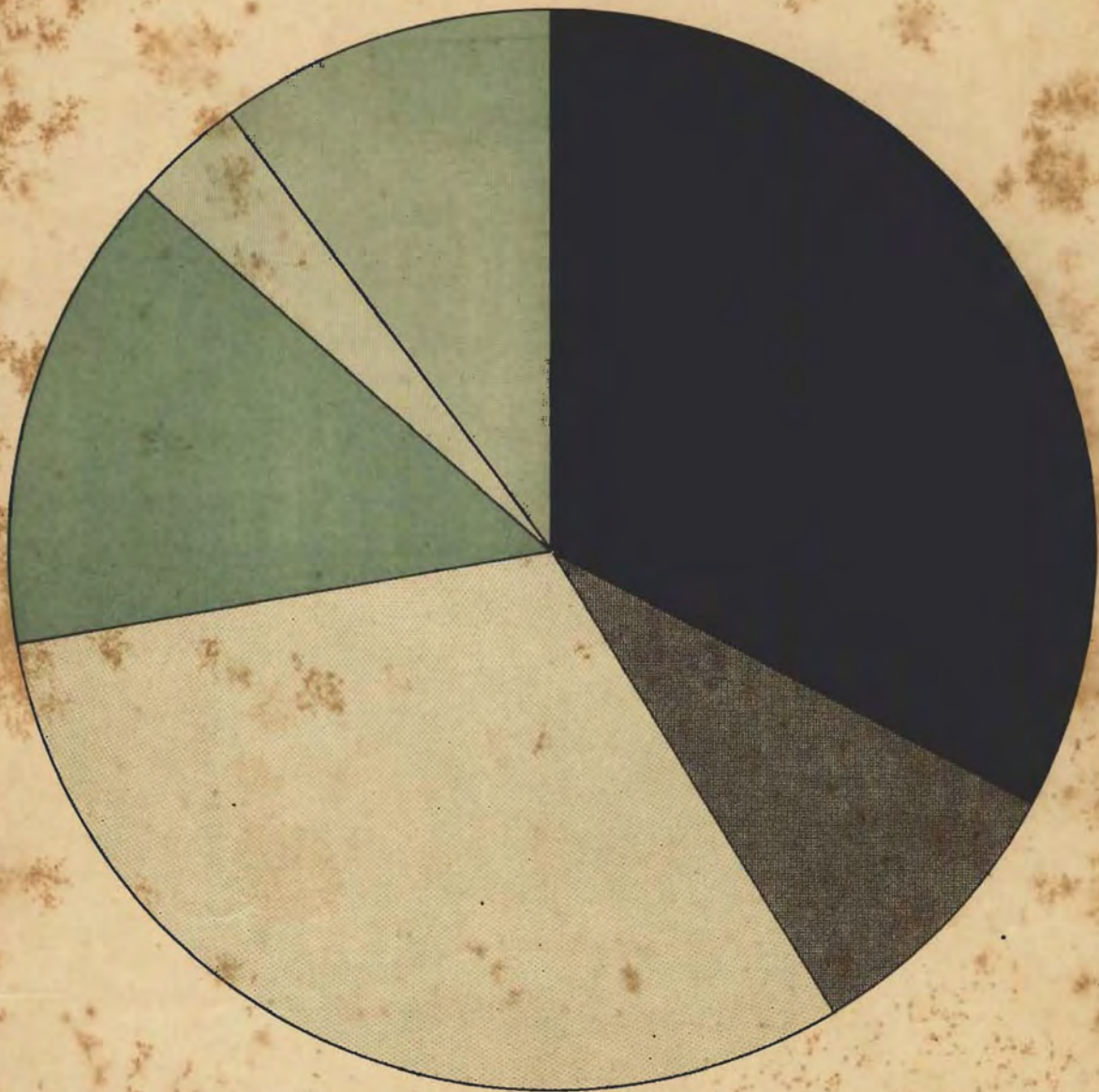
Curve showing the yearly total quantity of Minerals quarried and a comparison of the daily average number of persons employed in Quarries in the Colony from 1st April, 1911 to 31st December, 1927.



ROYALTY AND WAYLEAVE.



APPENDIX-E.



1927

MINERAL EXPORTS

41.3%

Petroleum Products

32.8%

Asphalt

8.5%

AGRICULTURAL AND OTHER EXPORTS

58.7%

Cocoa

30.7%

Sugar, Molasses, Rum

14.4%

Coconut and Copra

3.3%

Other Exports

10.3%

$\frac{10.3}{48.4}$

TRINIDAD AND TOBAGO.

Council Paper No. 42 of 1929.

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HONOURABLE COLONIAL SECRETARY,

I have the honour to submit for the information of His Excellency the Governor the following report on the work of the Mines Department for the year 1928.

2. The year under review has been marked by the low prices obtainable for petroleum products in the world's markets ; but, in spite of this, there has been considerable activity in the Colony's oil industry and a large increase in production as compared with the previous year. The increased refining capacity of the Trinidad Leaseholds, Ltd., at Pointe-a-Pierre, mentioned in my last report has been completed with the result that the Company has been able to cope with a much larger throughput and as a consequence has ceased the restriction of production mentioned in my last report.

3. There have been no new shipping or refining depots constructed during the period under review, but at the time of writing the Trinidad Oil Fields Operating Co., Ltd., are making preparations for the erection of a refinery adjacent to their shipping depot near La Brea Point. The shipping depots are now five in number as follows :—

Claxton Bay	....	....Trinidad Central Oilfields, Ltd.
Pointe-a-Pierre	....	....Trinidad Leaseholds, Ltd.
La Brea	....	....Trinidad Oil Fields Operating Company, Ltd.
Brighton	....	....Trinidad Lake Petroleum Co., Ltd.
Point Fortin	....	....United British Refineries, Ltd.

at each of which ocean going vessels can be loaded.

4. The increase in production during 1928 was much greater than ever recorded before being 2,303,986 barrels greater than that for 1927, or an increase of nearly 43 per cent.

5. The exports of petroleum products have naturally also shewn a large increase compared with the previous year, the figures being 222,600,000 gallons as against 155,900,000 gallons for the year 1927. The value of petroleum products exported remains greatly in excess of the value of the products of any other industry and formed 37 per cent. of the total exports of the Colony.

The value of the exports of the leading staples of the Colony and their relation to the total exports is shewn below :—

			Value.	Percentage of	
			£	total.	
Petroleum products	2,493,290	37.29
Cocoa	1,651,179	24.70
Sugar, Molasses and Rum	1,230,547	18.40
Asphalt	402,564	6.02
Coconuts and Copra	262,379	3.91
Other exports not enumerated	646,496	9.68
Total domestic exports	6,686,455	100.00

From which it will be seen that the value of exports of petroleum products exceeded that of cocoa, which is the leading industry of the Colony, by over £800,000.

6. The following table shews the number of feet drilled and the quantity of oil produced during 1928 as compared with the years 1926 and 1927:—

	YEAR ENDED 31ST DECEMBER, 1926.		YEAR ENDED 31ST DECEMBER, 1927.		YEAR ENDED 31ST DECEMBER, 1928.	
	<i>Feet drilled.</i>	<i>Oil won Brls. of 35 galls.</i>	<i>Feet drilled.</i>	<i>Oil won Brls. of 35 galls.</i>	<i>Feet drilled.</i>	<i>Oil won Brls. of 35 galls.</i>
Crown Lands	126,339	2,976,227	119,284	2,362,150	130,630	4,141,816
Private Lands	73,739	1,995,243	121,440	3,018,341	114,010	3,542,634
	<u>200,078</u>	<u>4,971,470</u>	<u>240,724</u>	<u>5,380,464</u>	<u>244,640</u>	<u>7,684,450</u>

7. The total number of wells drilled in the Colony to 31st December, 1928, is 1,452 of which 899 are on Crown Lands. During the year under review 140 new wells were drilled of which 76 were on Crown Lands and 64 on private lands, a decrease of 18 compared with 1927. In 102 of these wells oil was struck.

8. The number of Companies engaged in the winning of oil at the close of the year was 15 as against 14 at the end of 1927.

9. ROYALTY.—The Royalty collected in respect of oil won from Crown Lands shewed a considerable increase as compared with the previous year, the figures being £54,573 6s. 11d. and £39,965 3s. 7½d. respectively.

10. WAYLEAVES.—The revenue obtained from this source during 1928 has shewn a considerable decrease. This is due to the fact that the Trinidad Leaseholds, Ltd., completed the laying of the 10-inch line from Fyzabad to Pointe-a-Pierre during the year and that this line has been laid along roads instead of along the Trinidad Government Railway, the wayleave in the former case being at the rate of 2d. per ton and in the latter 5d. per ton. The amounts for the years 1927 and 1928 are as follows:—

	<i>Trinidad Government Railway.</i>			<i>Roads.</i>		
	£	s.	d.	£	s.	d.
1927	10,381	0	5	4,179	4	6
1928	7,453	11	8	5,157	11	10

11. FEES.—Fees charged for crossing the foreshore, the Railway and the public roads amounted to £98 5s. 0d.

12. One lease and two licences were issued during the year as follows:—

Mining Lease to Trinidad Petroleum Development Company, Ltd., over 249 acres the surface of which was alienated subsequent to 16th January, 1902—Reg. No. 2415 of 1928.

Prospecting Licence to Trinidad Petroleum Development Company, Ltd., over 1,711 acres the surface of which was alienated subsequent to 16th January, 1902—Reg. No. 2716 of 1928.

Prospecting Licence to Apex (Trinidad) Oilfields, Ltd., over 1,755 acres of Crown land—Reg. No. 4159 of 1928.

The new mining lease to the Trinidad Central Oilfields, Ltd. over some 7,000 acres, as mentioned in my last report, has not yet been executed, but the surveys are now nearing completion and it is expected that the deed will be completed at an early date.

13. The various returns required to be furnished by the oil companies have been regularly submitted and, after being carefully checked, filed with the records of the department.

14. A large number of inspections have been carried out by the officers of the department in connection with the operations taking place on the fields and I have great pleasure in placing on record that close co-operation exists between the officials of the various companies and the department in carrying out the various ordinances and regulations.

15. ACCIDENTS.—I regret to have to record that by far the worst accident in the history of the oil industry of the Colony occurred during the year. Well No. 3 of the Fyzabad Dome Oilfields, owned by the late Mr. Ralph Sammy, came in some time in the afternoon of the 8th December last with a very large flow of oil. At about midnight it became ignited and the owner, Mr. Ralph Sammy, several of his relatives, the driller, Mr. R. A. Wade, and a number of workmen, sixteen persons in all, were either burnt to death on the spot or succumbed shortly after. As the Coroner's enquiry into the matter has not yet been completed it is not possible to make further comment.

SAN FERNANDO BRANCH OF THE DEPARTMENT.

16. This branch of the department, which deals with the conservation of oil and gas, was under the charge of Mr. C. A. P. Southwell, M.C., B.Sc. with the exception of the time when he was on leave out of the Colony from 28th July to 30th November, during which period his duties were performed by Mr. H. W. Reid, B.Sc., Deputy Inspector of Mines. Before going on leave Mr. Southwell submitted a series of reports which were forwarded to His Excellency the Governor and the Companies concerned.

17. During the period under review 95 factories in Trinidad and 14 in Tobago were worked. I am pleased to be able to report that the provisions of the ordinance were, on the whole, carefully observed.

During the year a serious explosion occurred at the Match Factory of Messrs. Alston & Co., Ltd. Subsequent to manufacture and prior to boxing, the matches at this factory were stored in a large room and in the course of his duties an employee, according to his own account, allowed a ruler to fall on a container full of matches thereby causing them to ignite. An explosion of all the rest of the matches followed, the roof of the room was blown off and the flames burnt eighteen persons in the vicinity, five of whom succumbed to their injuries. Since the occurrence the storage of matches in this room has been abandoned and new arrangements made by which comparatively few matches are stored in any one place in order that any accidental ignition may be localized.

In delivering his verdict the Coroner, *inter alia*, made the following remarks :—

“ A considerable part of the cross-examination of witnesses was directed
 “ to management of this factory and its suitability for its purpose
 “ and after careful consideration I am of opinion that this factory
 “ is up-to-date in every respect and well managed. It was entirely
 “ re-conditioned a few years ago on the advice and under the
 “ supervision of a German expert who was sent out for this purpose
 “ by the manufacturers of the machinery.”

“ I am of opinion that all the deaths were due to burns received from
 “ the explosion of matches in the match room due to the act of
 “ the deceased Hackshaw in either permitting his wooden rule to
 “ accidentally fall on a punt of matches or allowing a punt to fall
 “ to the ground when removing it from its place on the rack.”

QUARRIES.

18. The number of quarries worked during the period under review was 76 as compared with 81 in 1926. With few exceptions they are relatively unimportant.

PETROLEUM ORDINANCE, CAP. 145.

19. In all, 457 licences to store and sell petroleum products were issued during the year.

ASPHALT INDUSTRY ORDINANCE, CAP. 147.

20. No asphalt has been dug on the village lots at La Brea since 1914.

APPENDICES.

21. Appendix A shows the list of oil companies operating in the Colony during the year 1928.

22. In Appendix B will be found the daily average number of persons employed in oilfields and quarries and the quantity and value of minerals obtained during the period under review.

23. A comparative statement of the oil produced, refined and exported is shown in Appendix C.

24. Appendix D consists of a series of charts depicting in graphical form the progress made in various industries during the past few years.

25. Appendix E shows the relation of Mineral Exports to Agricultural Exports.

STAFF.

26. There has been no change in the staff during the year.

4th April, 1929.

A. P. CATHERALL,
Inspector of Mines.

APPENDIX A.

No.	Companies.	Nature of tenure of lands on which operations took place.	Disposal of Oil.	Remarks.
1	Trinidad Leaseholds, Ltd.	Crown lands under lease. Private lands	Fyzabad, Barrackpore Guayaguayare. Fyzabad and Barrackpore.	Pumped to the Company's refinery at Pointe-a-Pierre, and there refined. Most of the production is exported in bulk The most important Company in the Colony. An active programme has been undertaken on its fields in the Fyzabad area during the past year resulting in a very large increase of production. The development of the Barrackpore fields has proceeded as in previous years whilst at Guayaguayare operations have been on a small scale during the whole of the year. The extensions to the refinery and shipping depot mentioned in my last report were completed during the year.
2	United British Oilfields of Trinidad, Ltd.	Crown lands under lease. Private lands	Point Fortin, Morne L'Enfer Reserve Los Bajos. Point Fortin.	Sold to the United British Refineries, Ltd. The majority of the production was obtained from the Parry Lands field. Small quantities of oil still continue to be obtained from the old Point Fortin field and that at Los Bajos.
3	Trinidad Central Oilfields, Ltd.	Crown lands under lease.	Tabaquite, Guapo and Lizard Springs.	Production from Tabaquite refined, sold locally and exported; that from Cruse area sold to Trinidad Leaseholds, Ltd. A moderate production continued to be obtained from the Tabaquite field. Some work was done on the Cruse area and production obtained. The Company also commenced to develop the Lizard Springs area but the production was negligible.
4	Trinidad Lake Petroleum Company, Ltd.	Private lands	Brighton	The bulk of the production is exported to the United States of America. Producing only.
5	Petroleum Development Company, Ltd.	Crown lands under lease.	Morne L'Enfer Forest Reserve.	Sold to Trinidad Lake Petroleum Company, Ltd. Drilling on Crown oil rights near the Pitch Lake. Satisfactory production. Development of the area sub-leased from this Company by the Trinidad Oilfields Operating Co., Ltd., under deed dated 19th December, 1927—No. 4072 of 1927—has commenced but so far no oil has been produced.
6	Apex (Trinidad) Oilfields, Ltd.	Crown lands under lease and Prospecting license and Private lands.	Fyzabad and Siparia	Sold to Trinidad Leaseholds, Ltd. Very active programme during the past year, production only second to that of the Trinidad Leaseholds, Ltd.

7	Kern Trinidad Oilfields, Ltd. . .	.. Crown lands lease	under La Brea	.. Sold to United British Refineries, Ltd.	Development of Perseverance Estate, Guapo, continued during the whole of the year. Operations were continued on Crown lands near Guapo. A satisfactory production was obtained.
		Private lands	.. Guapo and Rousillac		
8	New (Oropuche) Trinidad Oilfields, Ltd.	Private lands	.. Fyzabad and San Francique.	Sold to Trinidad Leaseholds, Ltd.	This Company is owned by the Trinidad Leaseholds, Ltd. A certain amount of drilling has been done and a moderate production obtained.
9	Trinidad Petroleum Development Company, Limited	Private lands	.. Naparima, Palo Seco, Cedros.	The bulk of this Company's production is exported in the crude state, the remainder of it is sold to the United British Refineries, Ltd., and the Trinidad Leaseholds, Ltd.	A very active development programme has been undertaken in the Palo Seco district and from the middle of the year the production was very largely increased. Some drilling has also been done in the Fyzabad, San Francique and Cedros districts and a small production obtained from the Fyzabad area.
		Crown Lands	.. Palo Seco, Cedros, Guapo, Erin and Siparia.		
10	Petroleum Options, Ltd. . .	.. Private lands	.. Fyzabad ..	.. Exported by Trinidad Oilfields Operating Co., Ltd.	The properties of this Company have now been leased to the Trinidad Oilfields Operating Company, Ltd.
11	Venezuelan Consolidated Oilfields, Ltd.	Private lands	.. Fyzabad. ..	.. Sold to Trinidad Leaseholds, Ltd.	Drilling on private lands in the Fyzabad area and a fair production obtained.
12	British Controlled Oilfields, Ltd.	.. Crown lands lease	under Oropuche ..	.. Sold to United British Refineries, Ltd.	Drilling operations have been suspended since January, 1926, and a very small production is obtained from existing wells.
13	Palo Seco Oilfield (C. C. Stollmeyer)	.. Crown lands lease	under Palo Seco ..	.. Sold to Trinidad Petroleum Development Co., Ltd.	Drilling continued during the period under review, and a small production was obtained.
14	Trinidad Oilfields Operating Company, Ltd.	Private lands	.. Fyzabad, San Francique and Palo Seco	Exported	The drilling operations of this Company have been curtailed during the year but the production has not greatly lessened. The Company is now owned by the West India Oil Company.
15	Fyzabad Dome Oilfields ..	.. Private lands	.. Fyzabad ..	.. Sold to Trinidad Leaseholds, Ltd.,	This Company commenced operations during the early part of the year on a small area of private lands and a moderate production was obtained until nearly the close of the year when a very prolific well was drilled.

APPENDIX B.

Daily average number of persons employed in Oilfields and Quarries and the quantity and value of minerals obtained during the year ended 31st December, 1928.

Minerals.	Daily average number of persons employed.		Total.	Quantity.	Approximate Value*.
	Males.	Females.			
Oil	5,339	63	5,402	7,684,450 Barrels.	£1,557,250
Asphalt	938	8	946	195,980 Tons.	122,487
Private Quarries (Limestone, Gravel, &c.)	302	129	431	135,888 Tons.	15,958
Government Quarries (Limestone, &c.)	294	88	382	56,677 Tons.	9,613

* N.B.—The values in this column are those returned by owners and managers, and represent the value at the place of production.

APPENDIX C.

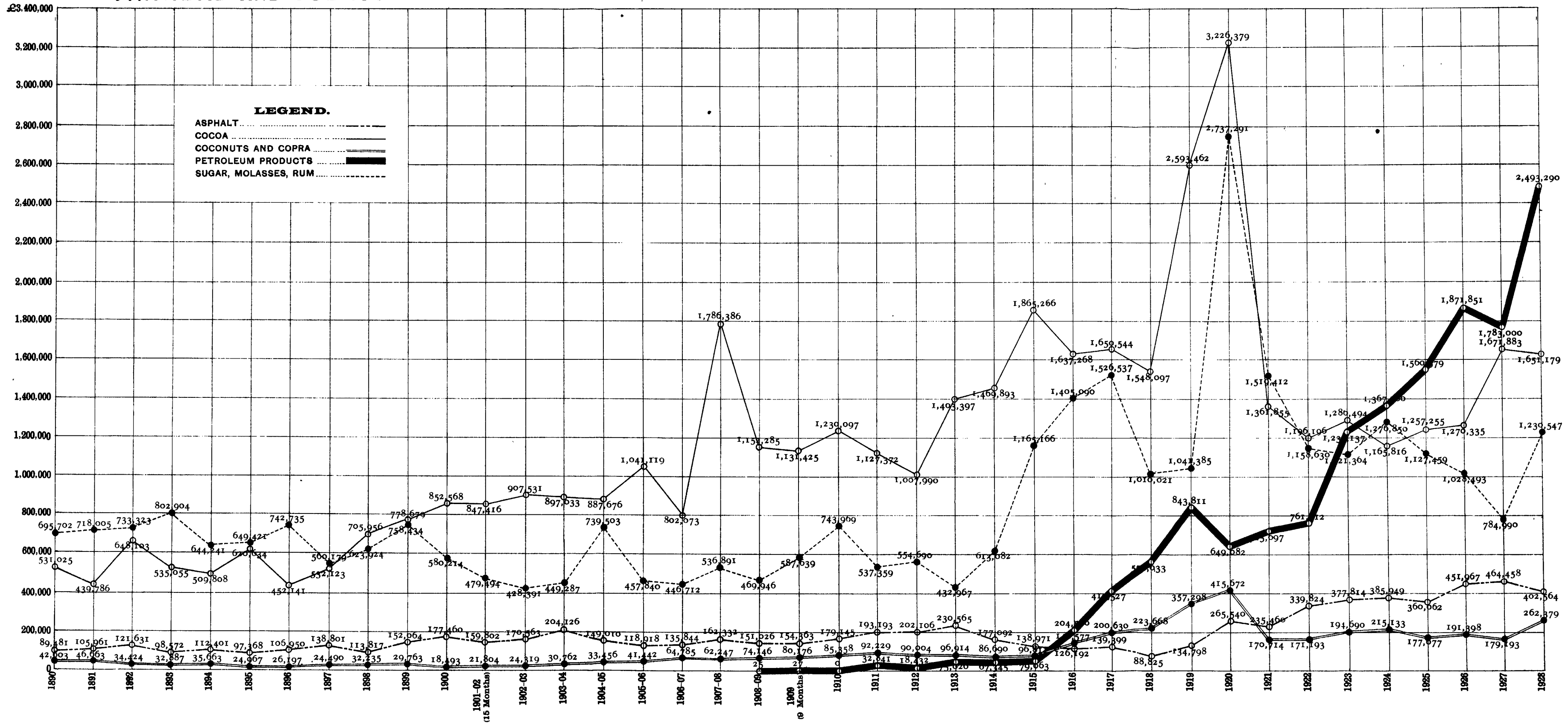
Comparative Statement of oil produced, refined and exported year by year since the inception of the Petroleum Industry in the Colony.

Year.	Production in barrels.	Quantity of Crude Oil refined in barrels.	Quantity of Crude oil and refined oil exported in barrels.
1905 to 31st March, 1910 ..	10,541	—	—
1910-1911	225,112	—	—
1911-1912	285,307	Previous to 1912-1913	37,842
1912-1913	503,616		9,484
1913-1914	643,516		35,061
1914-1915	1,050,112		41,413
9 months ended December, 1915	671,125		58,437
1916	927,877		107,822
1917	1,602,312		505,002
1918	2,082,068		2,106,369
1919	1,841,047		1,149,943
1920	2,083,027		1,395,487
1921	2,354,160		1,806,016
1922	2,444,752		1,820,018
1923	3,050,872		2,360,279
1924	4,056,612		3,433,902
1925	4,386,507		3,790,343
1926	4,971,471		3,786,876
1927	5,380,464		4,796,223
1928	7,684,450		6,725,383
	46,154,948		33,965,900
			34,197,109

A

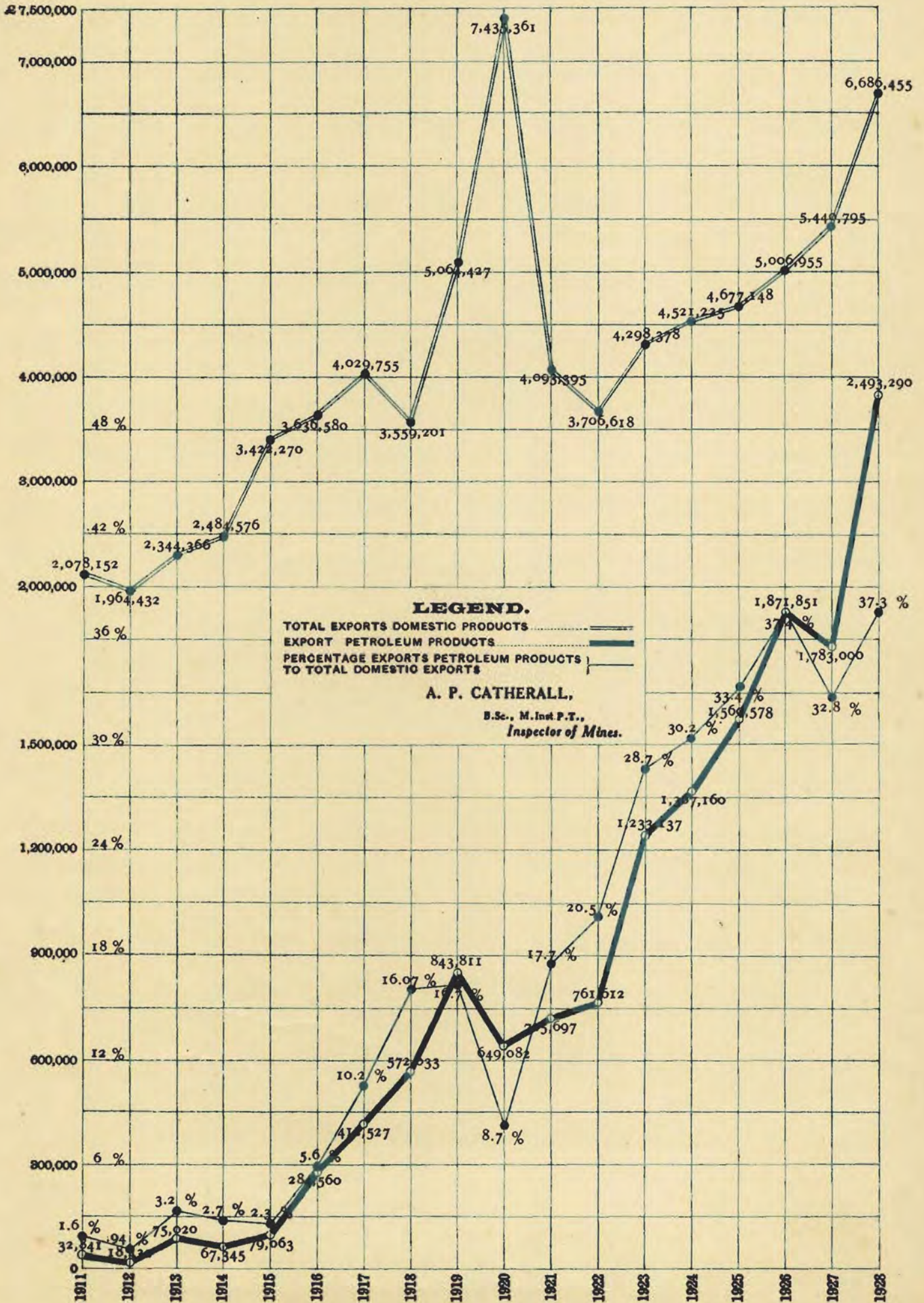
EXPORT OF LOCAL PRODUCE.

TRINIDAD AND TOBAGO.



B

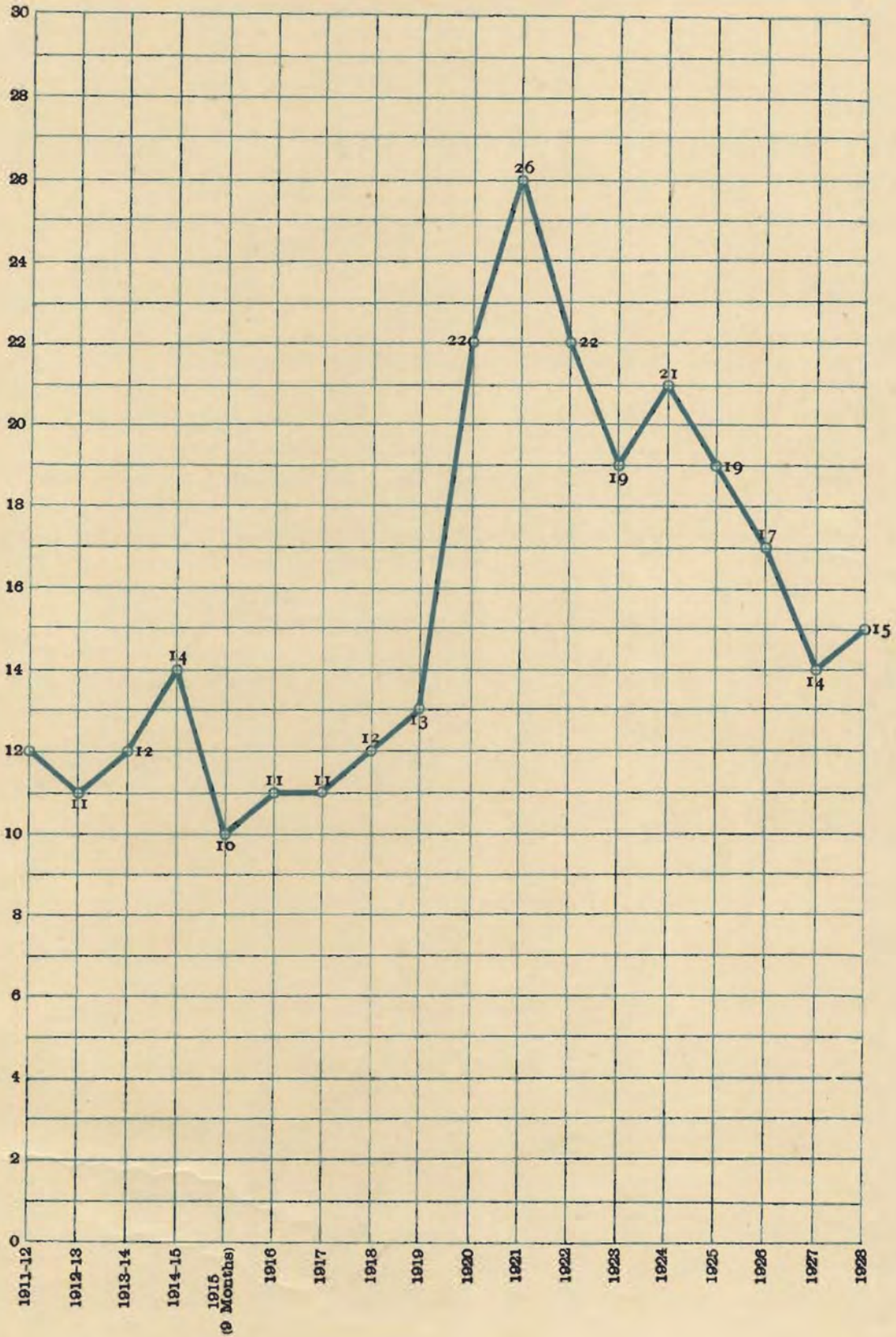
TRINIDAD AND TOBAGO.



APPENDIX - D.

C

Curve showing the number of Oil Companies that have operated annually in the Colony from, 1st April, 1911 to 31st December, 1928.

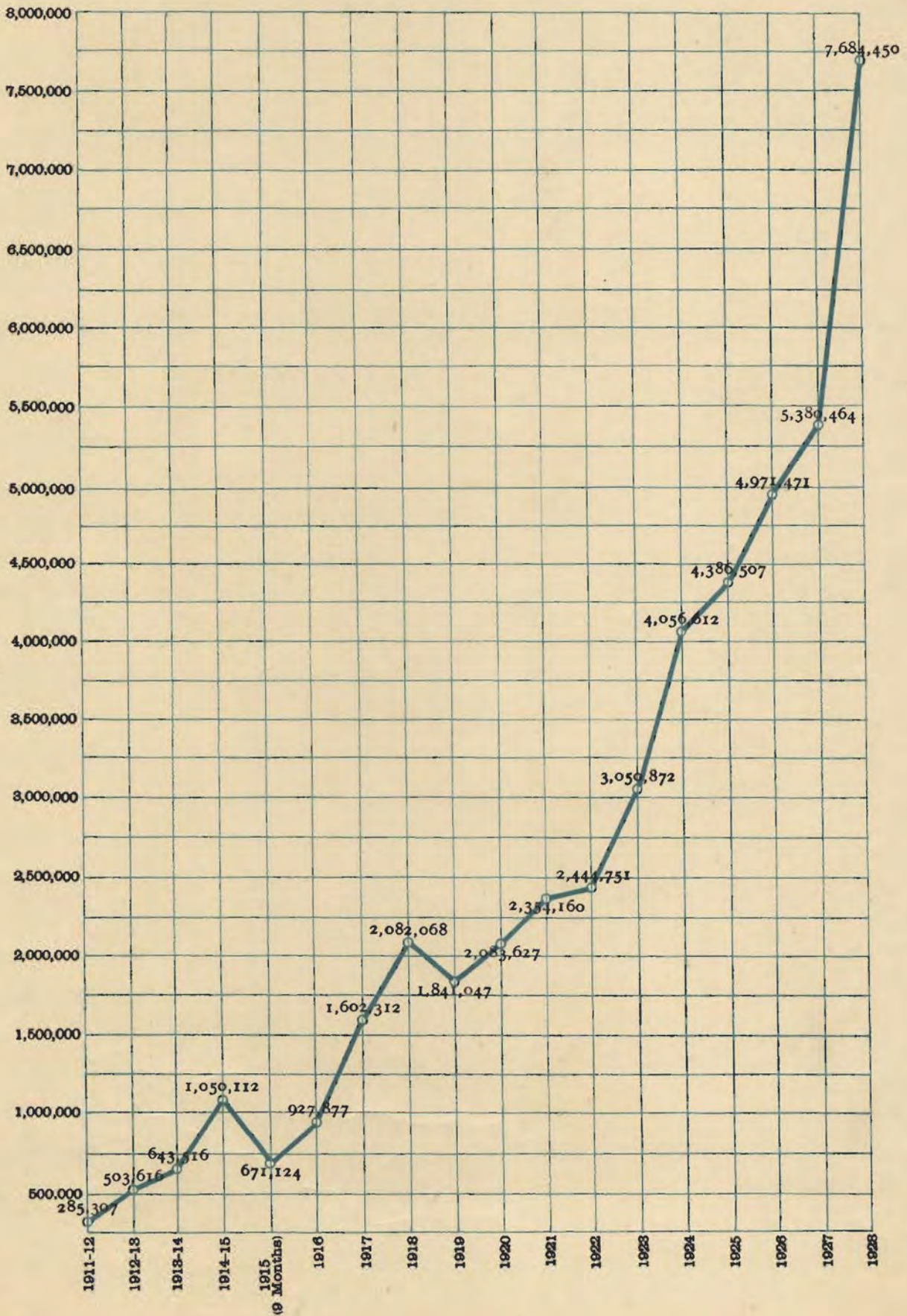


APPENDIX--D.

D

TOTAL ANNUAL PRODUCTION OF CRUDE OIL IN BARRELS.

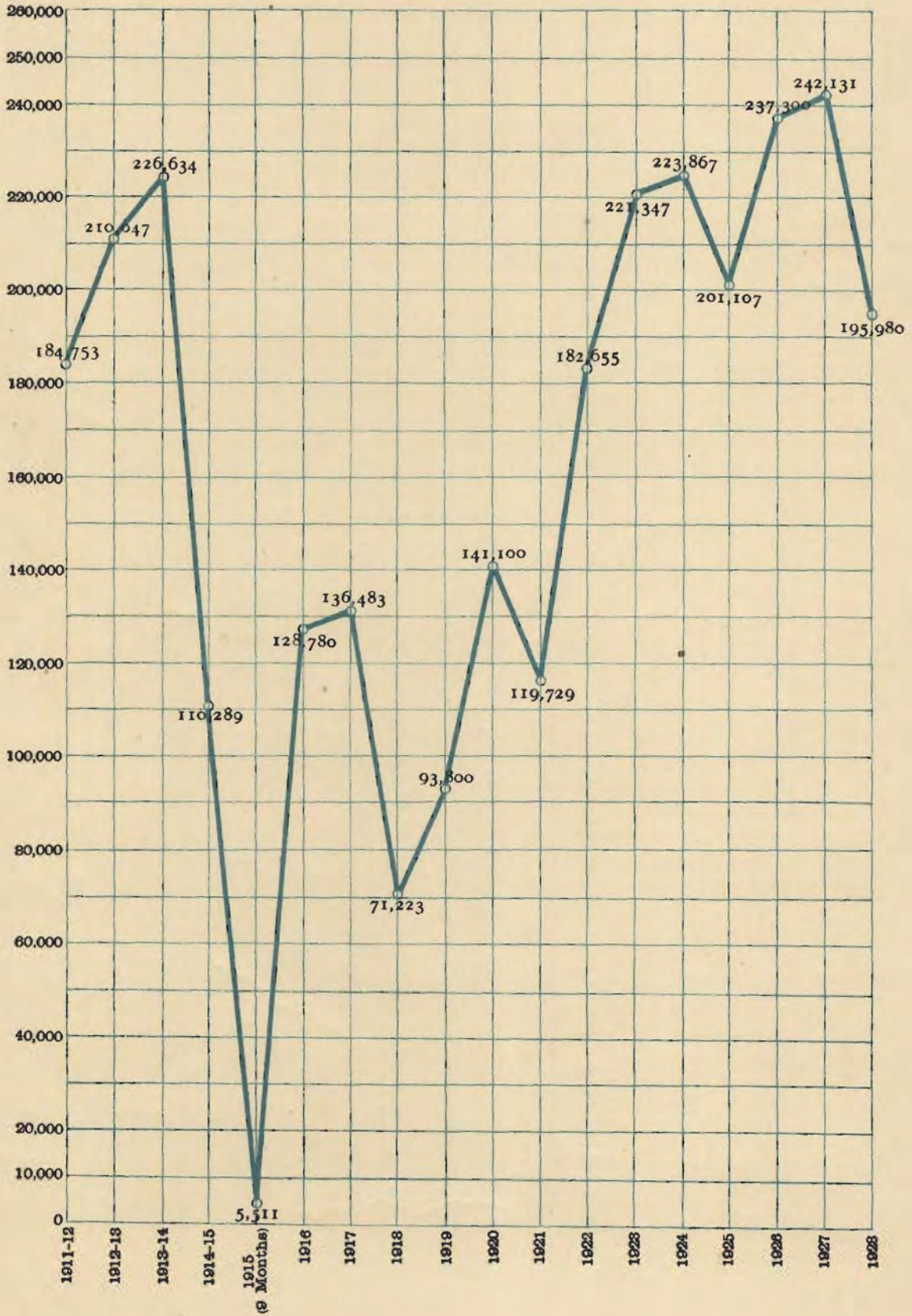
One barrel = 35 gallons.



APPENDIX-D.

E

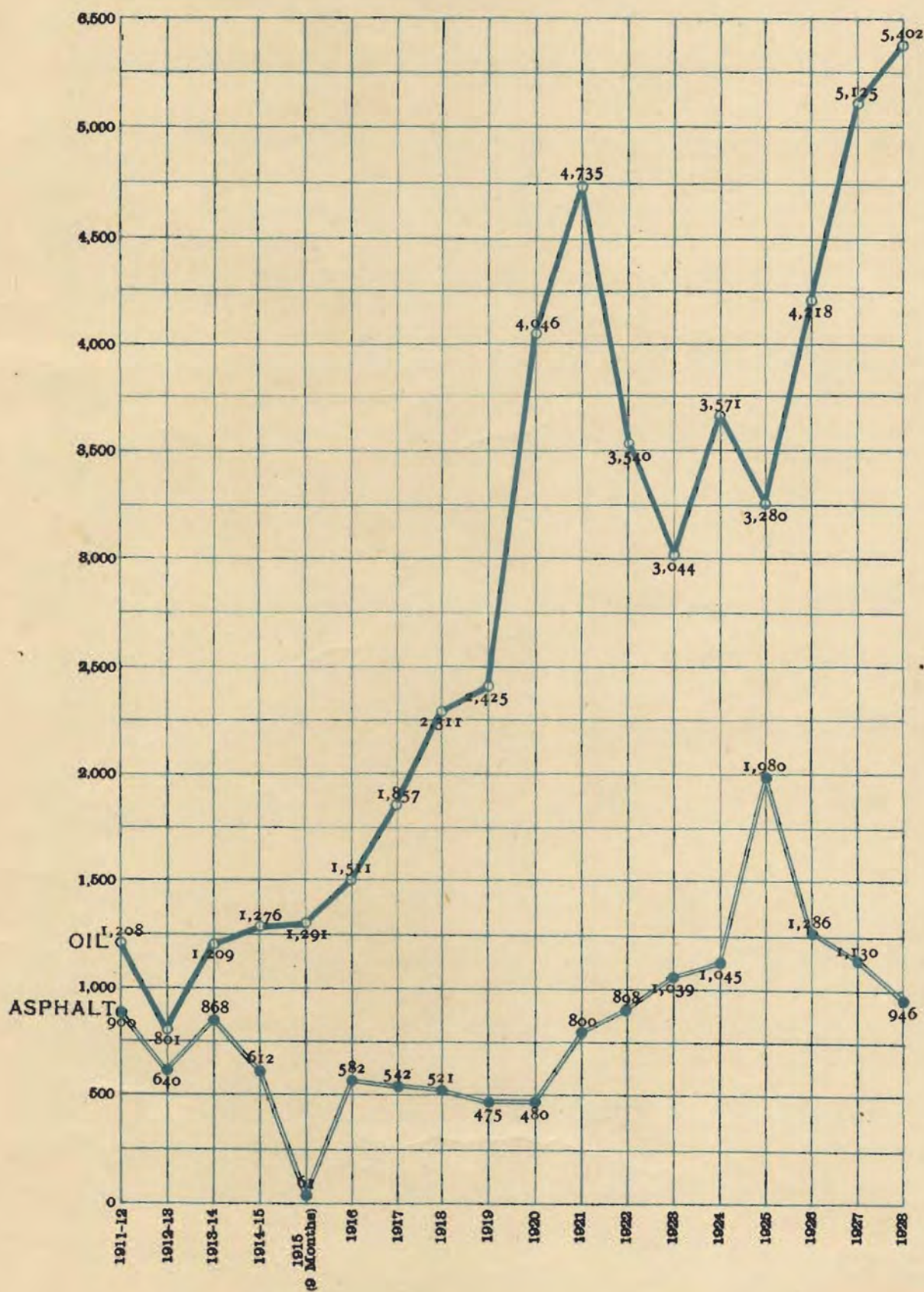
Curve showing yearly output of Asphalt from the Colony in Tons, from 1st April, 1911 to 31st December, 1928.



APPENDIX-D.

F

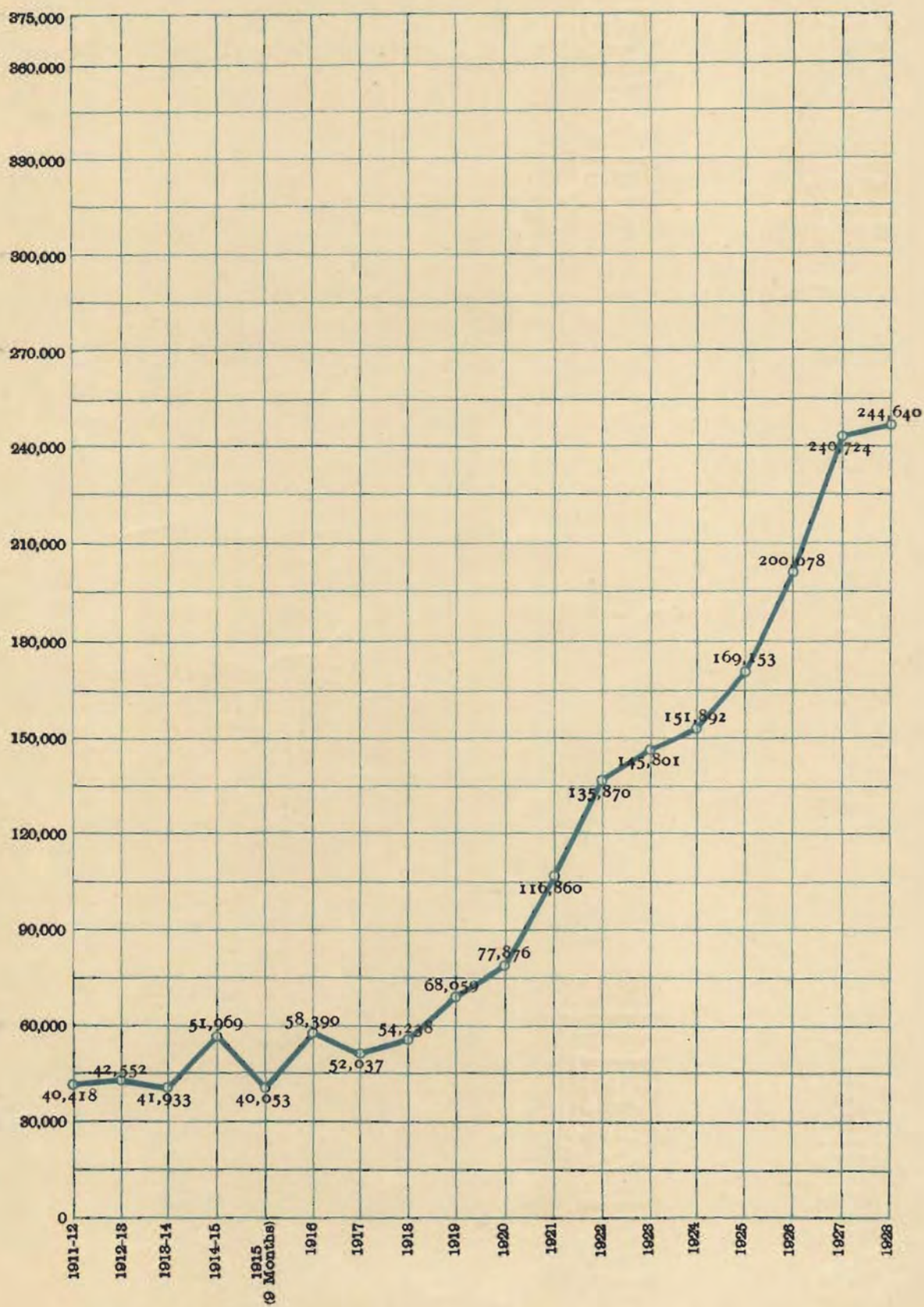
Curve showing comparison of daily average number of persons employed in the Oil and Asphalt Industries of the Colony from 1st April, 1911 to 31st December, 1928.



APPENDIX-D.

G

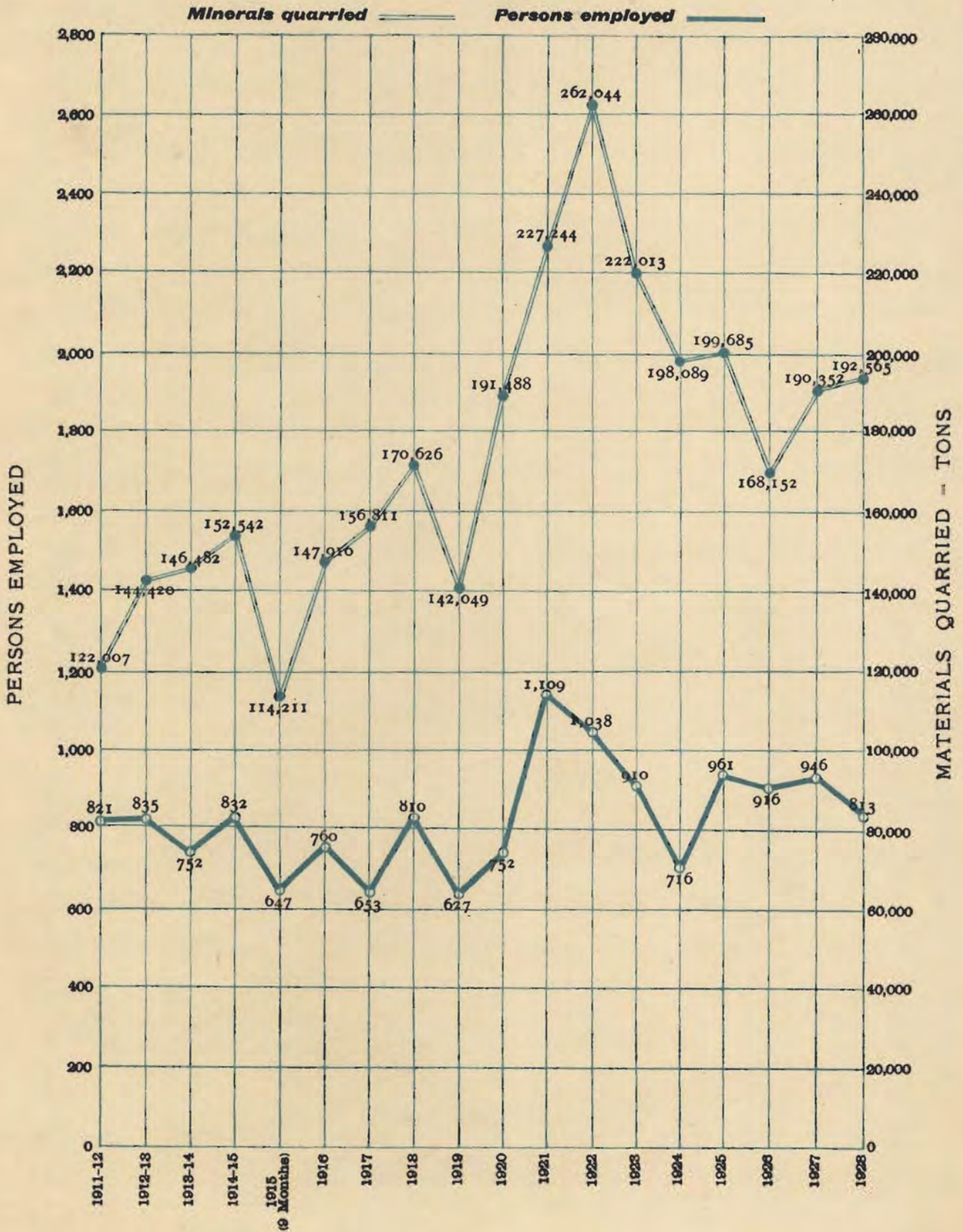
Curve showing yearly total number of feet drilled in the Colony from 1st April, 1911 to 31st December, 1928.



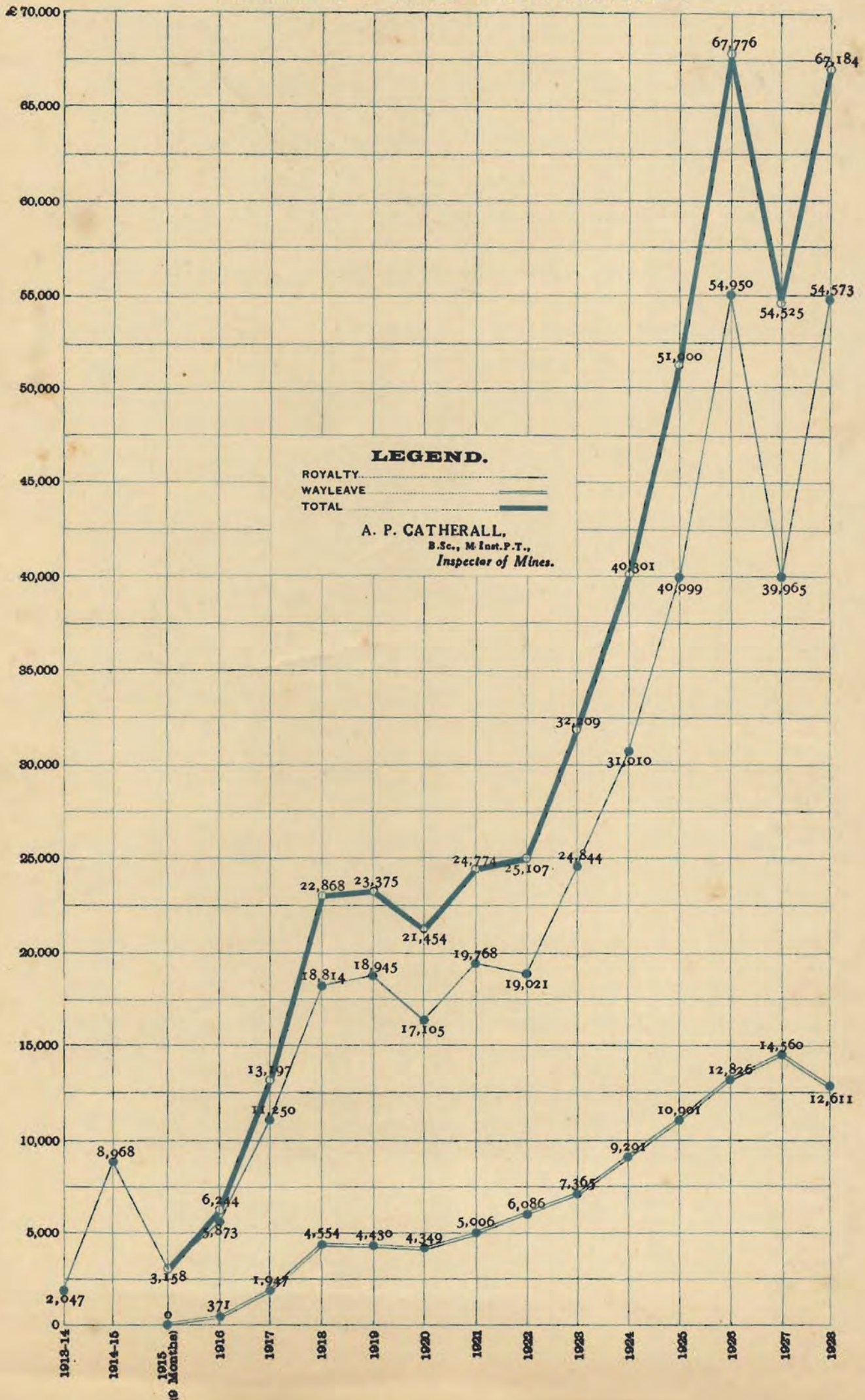
APPENDIX-D.

H

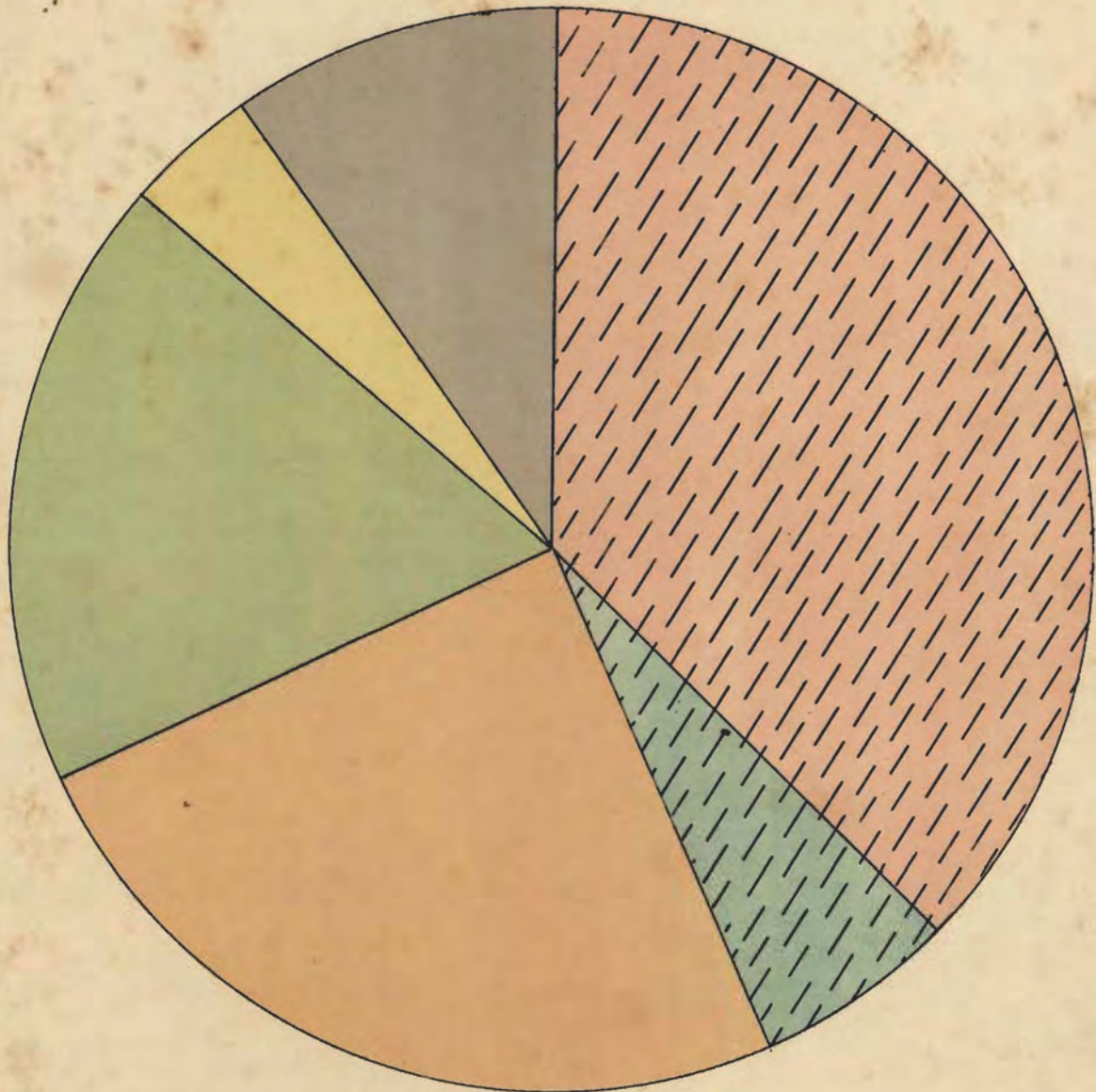
Curve showing the yearly total quantity of Minerals quarried and a comparison of the daily average number of persons employed in Quarries in the Colony from 1st April, 1911 to 31st December, 1928.


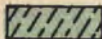
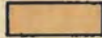
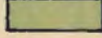




ROYALTY AND WAYLEAVE.



APPENDIX-E.



MINERAL EXPORTS	48.3%	
Petroleum Products	37.3%	
Asphalt	6%	
AGRICULTURAL AND OTHER EXPORTS	56.7%	
Cocoa	24.7%	
Sugar, Molasses, Rum	18.4%	
Coconut and Copra	3.9%	
Other Exports	9.7%	

TRINIDAD AND TOBAGO.

Council Paper No. 49 of 1930.

MINES DEPARTMENT.

Administration Report of the Inspector of Mines for
the year 1929.

*Laid before the Legislative Council on the
9th May, 1930.*

Previous Council Paper No. 42 of 1929.

Registered No. of Correspondence relating to the subject—M.P. No. 1768/1930.

TRINIDAD:
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1930.

[Price 3/2.]

MINES DEPARTMENT.

Administration Report of the Inspector of Mines for
the year 1929.

Council Paper No. 49 of 1930.

M.P. No. 1768/1930.

HONOURABLE COLONIAL SECRETARY.

I have the honour to submit, for the information of His Excellency the Governor, the following report on the work of the Mines Department for the year 1929.

2. The period under review has been marked by an increase in the production of petroleum of over 1,000,000 barrels more than that for 1928 and for the first time on record Trinidad has produced more oil than any other part of the British Empire. In 1928 the production from British India was 8,300,000 barrels whilst the Trinidad production was 7,684,450 barrels. In 1929 the production from British India was maintained at almost the same level namely 8,286,000 barrels, whilst the Colony's production was 8,715,652 barrels. As it is believed that the peak of production has been reached in British India whilst the production of the Colony is increasing steadily it is to be expected that in a few years to come the production from Trinidad will greatly exceed that from any other part of the Empire. It should also be noted that for the first time on record the value of mineral exports amounted to over 50 per cent. of the total domestic exports. During the period under review the value of petroleum products exported was more than double that of cocoa and nearly three times as much as those of the sugar industry. The value of the exports of the leading staples of the Colony and their relation to the total exports is shown below :

	Value. £	Percentage of total.
Petroleum Products	3,051,450	46.66
Cocoa	1,446,127	22.12
Sugar, Molasses and Rum	1,081,729	16.54
Asphalt	432,085	6.61
Coconuts, Copra and Coconut Oil	281,455	4.30
Bitters	87,570	1.34
Coffee	32,288	0.50
Other exports not enumerated	126,639	1.93
	6,539,343	100.00

The sugar industry is now threatened by economic conditions and cocoa by disease therefore, unless there is a marked recovery in these two industries, by far the largest proportion of the exports of the Colony in the near future will be from the mineral industries.

Reference to Appendix E "A" will show that the values of exports of agricultural products reached their peak in the boom year of 1920, the figures for sugar products and cocoa being £2,737,291 and £3,226,379 respectively. The magnitude of the petroleum industry at present may be judged from the fact that the value of exports of oil in 1929 exceeded that of sugar and its products in that year, and it is expected that the value of oil exports will soon exceed the value of cocoa exports in the same record year.

3. As will be seen from the succeeding paragraph there has been greatly increased activity in the development of the fields. In addition to this there has been considerable activity in other phases of the oil industry the chief of which has been the construction of a new refinery near La Brea by the West India Oil Company to deal with the production of the Trinidad Oil Fields Operating Company, Limited, and large additions to the refinery and storage depot of the Trinidad Leaseholds, Limited, at Pointe-a-Pierre. The latter Company has also completed the pipeline to link up its Guayaguayare field with its trunk pipeline at Barrackpore so that this Company now has a pipeline system extending across the width of the island.

4. The following table will show the number of feet drilled and the quantity of oil produced during 1929 as compared with the years 1927 and 1928 :—

	YEAR ENDED 31ST DECEMBER, 1927.		YEAR ENDED 31ST DECEMBER, 1928.		YEAR ENDED 31ST DECEMBER, 1929.	
	<i>Feet drilled</i>	<i>Oil won Brls. of 35 galls.</i>	<i>Feet drilled.</i>	<i>Oil won Brls. of 35 galls.</i>	<i>Feet drilled.</i>	<i>Oil won Brls. of 35 galls.</i>
Crown Lands	119,284	2,362,150	130,630	4,141,816	211,024	4,621,567
Private Lands	121,440	3,018,344	114,010	3,542,634	96,310	4,094,085
	<u>240,724</u>	<u>5,380,464</u>	<u>244,640</u>	<u>7,684,450</u>	<u>307,334</u>	<u>8,715,652</u>

5. The total number of wells drilled in the Colony to 31st December, 1929, is 1,610 of which 1,009 are on Crown lands. During the year under review 158 new wells were drilled of which 111 were on Crown lands and 48 on private lands, an increase of 19 compared with 1928. In 115 of these wells oil was struck.

6. The number of companies engaged in the winning of oil at the close of the year was 15 ; the same as the previous year.

7. ROYALTY.—The royalty collected in respect of oil won from Crown lands showed an increase of over £20,000 as compared with the previous year ; the figures being £74,937 5s. 1½d. and £54,573 6s. 11d. respectively.

8. WAYLEAVES.—Whilst the revenue derived from wayleaves on oil pumped along public roads of the Colony has shown a large increase that from oil pumped along the Railway has dwindled to an almost negligible amount owing to the fact that the Trinidad Leaseholds, Limited main trunk pipeline is now not laid along the Trinidad Government Railway. The revenue for the years 1928 and 1929 is as follows :—

	<i>Trinidad Government Railway.</i>			<i>Roads.</i>		
	£	s.	d.	£	s.	d.
1928	7,453	11	8	5,157	11	10
1929	745	4	3	8,138	15	1½

9. FEES.—Fees charged for crossing the foreshore, the Railway and the public roads amounted to £155.

10. Three leases and five licences were issued during the year as follows :—

Mining Lease to Trinidad Central Oilfields, Limited over 6,996 acres of Crown lands—Reg. No. 2049 of 1929.

Mining Lease to Trinidad Leaseholds, Limited over 44 acres the surface of which was alienated subsequent to 30th January, 1902—Reg. No. 1154 of 1929.

Mining Lease to Trinidad Petroleum Development Company, Limited over 17,269 acres of Crown Lands—Reg. No. 2890 of 1929.

Prospecting Licence to Trinidad Leaseholds, Limited over 7,634 acres of Crown land—Reg. No. 390 of 1929.

Prospecting Licence to Trinidad Petroleum Development Company, Limited over 50 acres the surface of which was alienated subsequent to 30th January, 1902—Reg. No. 1186 of 1929.

Prospecting Licence to Trinidad Petroleum Development Company, Limited over 139 acres the surface of which was alienated subsequent to 30th January, 1902—Reg. No. 3916 of 1929.

Prospecting Licence to Venezuelan Consolidated Oilfields, Limited over 664 acres the surface of which was alienated subsequent to 30th January, 1902—Reg. No. 1742 of 1929.

Exploration Licence to H. B. Phillips over 420 acres of Crown land—Reg. No. 1226 of 1929.

11. The various oil companies have regularly submitted to the Department the returns required to be furnished by them. After being carefully checked these have been filed with the records of the Department.

12. A large number of inspections have been carried out by the officers of this Department in connection with the various operations taking place on the fields, and I have much pleasure in reporting that the managers readily co-operate with this department in endeavouring to carry out the provisions of the ordinances and regulations.

SAN FERNANDO BRANCH OF THE DEPARTMENT.

13. Until 31st May, 1929, this branch of the Department was carried on by voluntary subscriptions from the oil companies as has been done for the past six years. From 1st June, however, this branch was put on a legal footing under Ordinance No. 8 of 1929 in accordance with Clause 3 (1) of that Ordinance which read as follows:—

“For the better conservation of the oil resources of the Colony there shall be established and maintained at San Fernando a branch of the Mines Department to be called the Petroleum Office.”

This office is now called the Petroleum Office and the officer in charge the Petroleum Technologist.

As from 1st June, Messrs. C. A. P. Southwell, M.C., B.Sc., Oilfield Water Inspector and H. W. Reid, B.Sc., Deputy Inspector of Mines were appointed Petroleum Technologist and Assistant Petroleum Technologist respectively.

A report on the working of this branch by the Acting Petroleum Technologist is enclosed at Appendix B.

PREVENTION OF ACCIDENTS ORDINANCE, CAP. 157.

14. During the year 117 factories in Trinidad and 3 in Tobago were worked. Regular visits were paid to these factories and I am pleased to be able to place on record that the provisions of the Ordinance were carefully observed.

QUARRIES.

15. With few exceptions the quarries of the Colony are relatively unimportant and their operations are on a small scale. They have been inspected and in most cases were found to have been worked in a careful manner. The total number worked during the year was 74 as compared with 76 in 1928.

PETROLEUM ORDINANCE, CAP. 145.

16. In all, 445 licences to store and sell petroleum products were issued during the year.

ASPHALT INDUSTRY ORDINANCE, CAP. 147.

17. No asphalt has been dug on the village lots at La Brea since 1914.

APPENDICES.

18. Appendix A shows the list of oil companies operating in the Colony during the year 1929.

19. Appendix B—Report on the working of the Petroleum Office.

20. In Appendix C will be found the daily average number of persons employed in oilfields and quarries and the quantity and value of minerals obtained during the period under review.

21. A comparative statement of the oil produced, refined and exported is shown in Appendix D.

22. Appendix E consists of a series of charts depicting in graphical form the progress made in various industries during the past few years.

23. Appendix F shows the relation of Mineral Exports to Agricultural Exports.

STAFF.

24. Miss M. E. Perry was appointed to the post of Assistant Clerk and Typist in the Petroleum Office as from 19th August, 1929.

Mr. C. A. P. Southwell, M.C., B.Sc., Petroleum Technologist, resigned his post and left the Colony on 13th October.

I have great pleasure in recording the able and loyal assistance I have received from the members of the staff.

A. P. CATHERALL,
Inspector of Mines.

7th April, 1930.

APPENDIX A.

No.	Companies.	Nature of tenure of lands on which operations took place.	Disposal of Oil.	Remarks.
1	Trinidad Leaseholds, Ltd.	Crown lands under lease Private lands .. Fyzabad, Barrackpore Guayaguayare Fyzabad and Barrackpore	Pumped to the Company's refinery at Pointe-a-Pierre, and there refined. Most of the production is exported in bulk	The most important Company in the Island. The fields in the Fyzabad area have been actively developed and considerable increase in production has resulted. The development of the Barrackpore and Guayaguayare fields has been much the same as in 1928, the production from each field having slightly increased. Considerable additions to the refinery and storage depot at Pointe-a-Pierre have been made during the year. The bulk of the production of the Colony is refined by this Company.
2	United British Oilfields of Trinidad, Ltd.	Crown lands under lease Private lands .. Point Fortin, Morne L'Enfer Reserve, Los Bajos Point Fortin	Sold to the United British Refineries, Ltd.	There has been a large increase in production from the Parry Lands field of this Company, but the production from the Point Fortin and Los Bajos fields has declined.
3	Trinidad Central Oilfields, Ltd. ..	Crown lands under lease Tabaquite, Guapo and Lizard Springs	Production from Tabaquite refined, sold locally and exported; that from Cruse area sold to Trinidad Leaseholds, Ltd.	The major portion of the production has been obtained from the Company's Cruse field at Guapo. A considerable amount of drilling has been done on the Lizard Spring field in the Guayaguayare district but up to the present the production has not been great. The production from the old field at Tabaquite has slightly declined.
4	Trinidad Lake Petroleum Company, Ltd.	Private lands .. Brighton	The bulk of the production is exported to the United States of America.	Producing only.
5	Petroleum Development Company, Ltd.	Crown lands under lease Morne L'Enfer Forest Reserve and La Brea	Sold to Trinidad Lake Petroleum Company, Ltd.	Drilling on the Crown oil rights in the La Brea district was continued during the year and a satisfactory production was obtained.
6	Apex (Trinidad) Oilfields, Ltd. ..	Crown lands under lease and prospecting licence and Private lands Fyzabad and Siparia..	Sold to Trinidad Leaseholds, Ltd.	This Company has continued a very active programme during the year with the result that its production is now the largest in the Colony.
7	Kern Trinidad Oilfields, Ltd. ..	Crown lands under lease Private lands .. La Brea Guapo and Rousillac	Sold to United British Refineries, Ltd.	Development of the properties in the Guapo district continued during the whole of the year and an increased production resulted.

APPENDIX A.—Continued.

No.	Companies.	Nature of tenure of lands on which operations took place.	Disposal of Oil.	Remarks.
8	New (Oropuche) Trinidad Oilfields, Ltd.	Private lands .. Fyzabad and San Francique	Sold to Trinidad Leaseholds, Ltd.	A subsidiary of the Trinidad Leaseholds, Ltd. A relatively small amount of drilling was done and a satisfactory production obtained.
9	Trinidad Petroleum Development Company, Ltd.	Private lands .. Naparima, Palo Seco and Fyzabad Crown lands under lease and prospecting licence .. Palo Seco and Fyzabad	The bulk of this Company's production is exported in the crude state, the remainder of it is sold to the United British Refineries, Ltd.	Drilling during the year was confined to the Palo Seco district where a very active development programme has been undertaken, the production has been very largely increased compared with last year. A small production has also been obtained from wells in the Fyzabad and Naparima districts.
10	Petroleum Options, Ltd.	Private lands .. Fyzabad ..	Exported by Trinidad Oil Fields Operating Company, Ltd.	The properties of this Company have been leased to the Trinidad Oil Fields Operating Company, Ltd., and are being developed by the latter Company.
11	Venezuelan Consolidated Oilfields, Ltd.	Private lands .. San Francique Crown lands under prospecting licence .. San Francique and Palo Seco	Sold to Trinidad Leaseholds, Ltd., and Trinidad Petroleum Development Company, Ltd.	Drilling has continued in the Fyzabad district and a moderate production has been obtained. A prospecting licence over alienated lands in the Palo Seco district has been granted to this Company and towards the middle of the year an active drilling programme was commenced. A satisfactory production was obtained and at the close of the year this Company was fourth in order of production.
12	British Controlled Oilfields, Ltd;	.. Crown lands under lease .. Oropuche ..	Sold to United British Refineries, Ltd.	Drilling operations have been suspended since 1926 and towards the close of the year notice to terminate the lease was received from the Company.
13	Palo Seco Oilfield (C. C. Stollmeyer) ..	.. Crown lands under lease .. Palo Seco ..	Sold locally	Drilling continued during the period under review and a small production was obtained.
14	Trinidad Oil Fields Operating Company, Ltd.	Private lands .. Fyzabad, San Francique, Palo Seco and Aripere Crown lands .. Pointe D'Or	Sold to West India Oil Company and Trinidad Leaseholds, Ltd.	This Company, the share capital of which is owned by the West India Oil Company, has continued drilling on its various properties and a fair production has been obtained. A refinery to deal with production from this Company was constructed during the year by the West India Oil Company.
15	Fyzabad Dome Oilfields .. ..	.. Private lands .. Fyzabad ..	Sold to Trinidad Leaseholds, Ltd.	Drilling was continued during the year and a good production obtained from the small plot of land on which the operations were undertaken.

APPENDIX B.

HONOURABLE INSPECTOR OF MINES,

The outstanding features of the year were the increased footage and production, these figures being given in the General Report.

A considerable amount of development was undertaken with the result that 158 new wells were started during the period under review. Active drilling programmes were carried out on most fields, especially on the north of the Palo Seco structure. The latter resulted in a greatly increased production but the results obtained further to the west were disappointing. Two deep sands were penetrated on the south flank of the Parry Lands structure and up to the end of the year these were being exploited in other wells. Exploration work was started on the Pointe-d'Or Estate, near La Brea, and resulted in a small production. In one well Sulphuretted Hydrogen Gas was encountered, and, while this well was being placed on production one of the crew was fatally overcome by the gas.

Fyzabad continued to give the greatest production, 67.96 per cent. of the total being obtained by the Companies operating in this area.

The features of operating technique most deserving of note were:—

- (1) The use of Barytes-laden mud fluid for overcoming high gas pressures.
- (2) The consequent increase in the amount of coring carried out in high pressure wells.
- (3) The introduction of better drilling equipment, and, in some cases, better control fittings.

Frequent inspections of drilling and production machinery were carried out in conjunction with the routine field duties of the Office, such as witnessing Water Shut Off Tests and Shooting operations. All Companies have shown the greatest willingness to co-operate with this Office both as regards conservation problems and in carrying out safety measures for the better protection of the workers. In this connection it should be mentioned that there was a marked improvement in the devices employed to further safety, more strict attention being paid to machinery guards and to the type and quality of fittings for well-head controls. The latter was necessary in some fields owing to the fact that much higher pressures were encountered than had hitherto obtained.

During the period under review there were three fatal accidents. No serious oilfield fires occurred.

On the 1st June, the title of the Office of Oilfield Water Inspector was changed* to Petroleum Technologist upon the establishment of the Petroleum Office under Ordinance No. 8 of 1929. Besides the conservation work which had previously been undertaken, the supervision of safety measures at all wells was included in the duties of the office.

In August, Miss M. E. Perry was appointed to be Typist.

In October, Mr. C. A. P. Southwell, M.C., B.Sc., resigned his post as Petroleum Technologist and left the Colony.

H. W. REID,
Acting Petroleum Technologist.

31st March, 1930.

APPENDIX C.

Daily average number of persons employed in Oilfields and Quarries and the quantity and value of minerals obtained during the year ended 31st December, 1929.

Minerals.	Daily average number of persons employed		Total.	Quantity.	Approximate Value*.
	Males.	Females.			
Oil	5,307	62	5,369	8,715,652 Barrels	£1,686,390
Asphalt	879	9	888	219,603 Tons	137,252
Private Quarries (Limestone, Gravel, &c.)	304	103	407	156,151 Tons	17,417
Government Quarries (Limestone, &c.)	311	102	413	85,231 Tons	13,489

* N.B.—The values in this column are those returned by owners and managers, and represent the value at the place of production.

APPENDIX D.

Comparative Statement of oil produced, refined and exported year by year since the inception of the Petroleum Industry in the Colony.

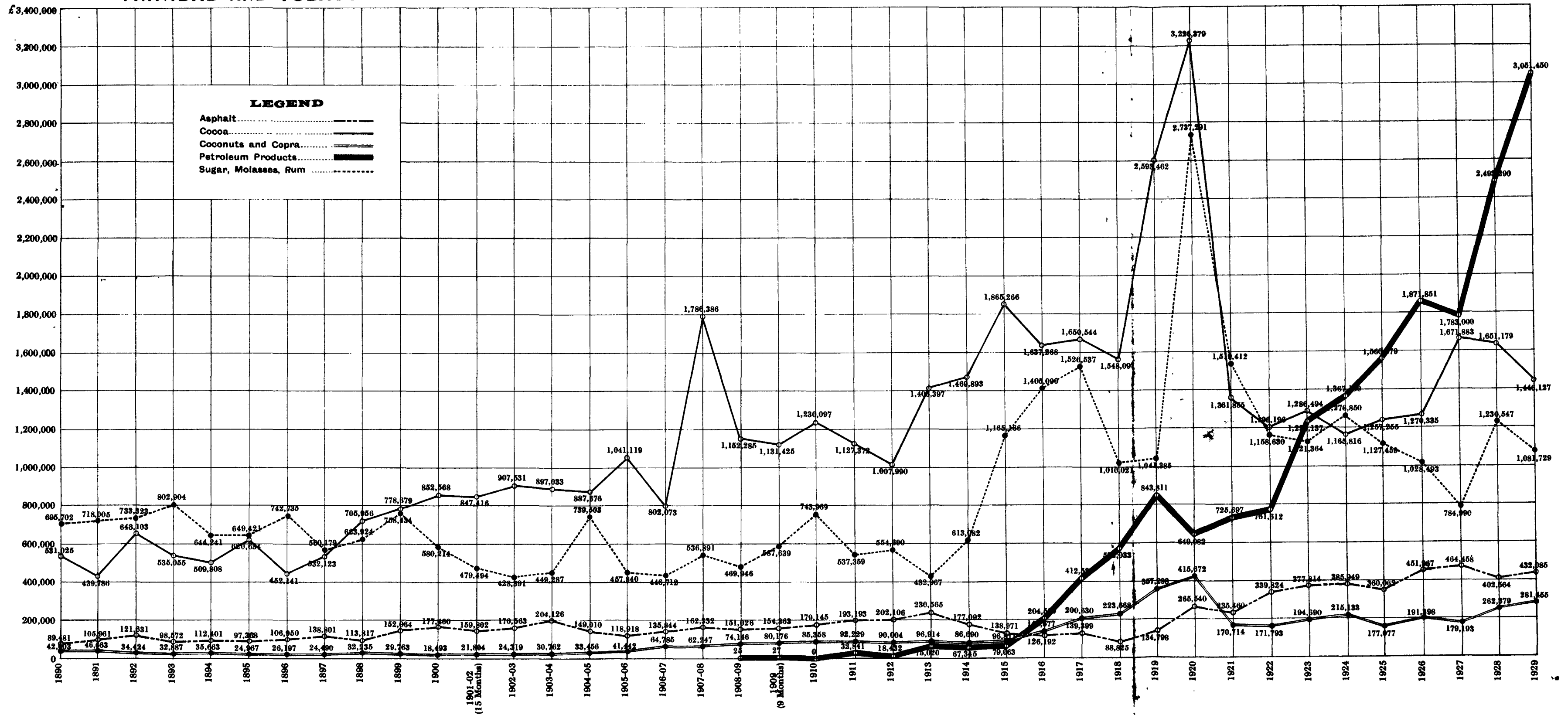
	Production in barrels.	Quantity of Crude Oil refined in barrels.	Quantity of Crude Oil and Refined Oil exported in barrels.
1905 to 31st March, 1910 ..	10,541	—	—
1910-1911	225,112	—	—
1911-1912	285,307	Previous to 1912-1913 37,842	219,582
1912-1913	503,616	9,484	122,734
1913-1914	643,516	35,061	387,719
1914-1915	1,050,112	41,413	348,351
9 months ended December, 1915	671,125	58,437	408,188
1916	927,877	107,822	975,142
1917	1,602,312	505,002	1,079,369
1918	2,082,068	2,106,369	1,305,407
1919	1,841,047	1,149,943	1,406,264
1920	2,083,027	1,395,487	1,034,907
1921	2,354,160	1,806,016	1,223,346
1922	2,444,752	1,820,018	1,615,740
1923	3,050,872	2,360,279	2,432,470
1924	4,056,612	3,433,902	3,224,529
1925	4,386,507	3,790,343	3,606,608
1926	4,971,471	3,786,876	3,988,308
1927	5,380,464	4,796,223	4,456,770
1928	7,684,450	6,725,383	6,361,675
1929	8,715,652	7,642,726	8,243,023
	54,870,600	41,608,626	42,440,132

APPENDIX E.

A

EXPORT OF LOCAL PRODUCE

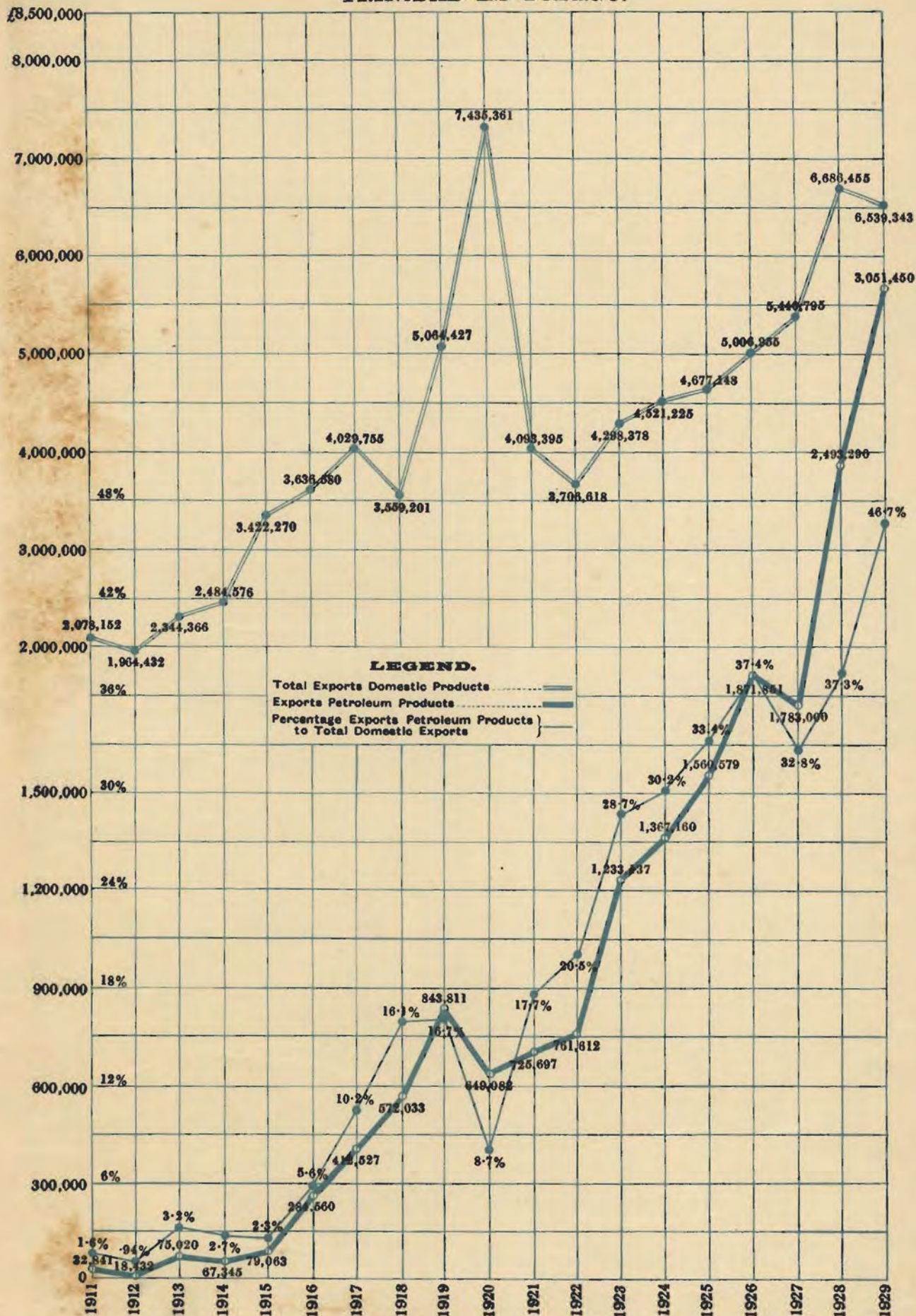
TRINIDAD AND TOBAGO.



APPENDIX E.

B

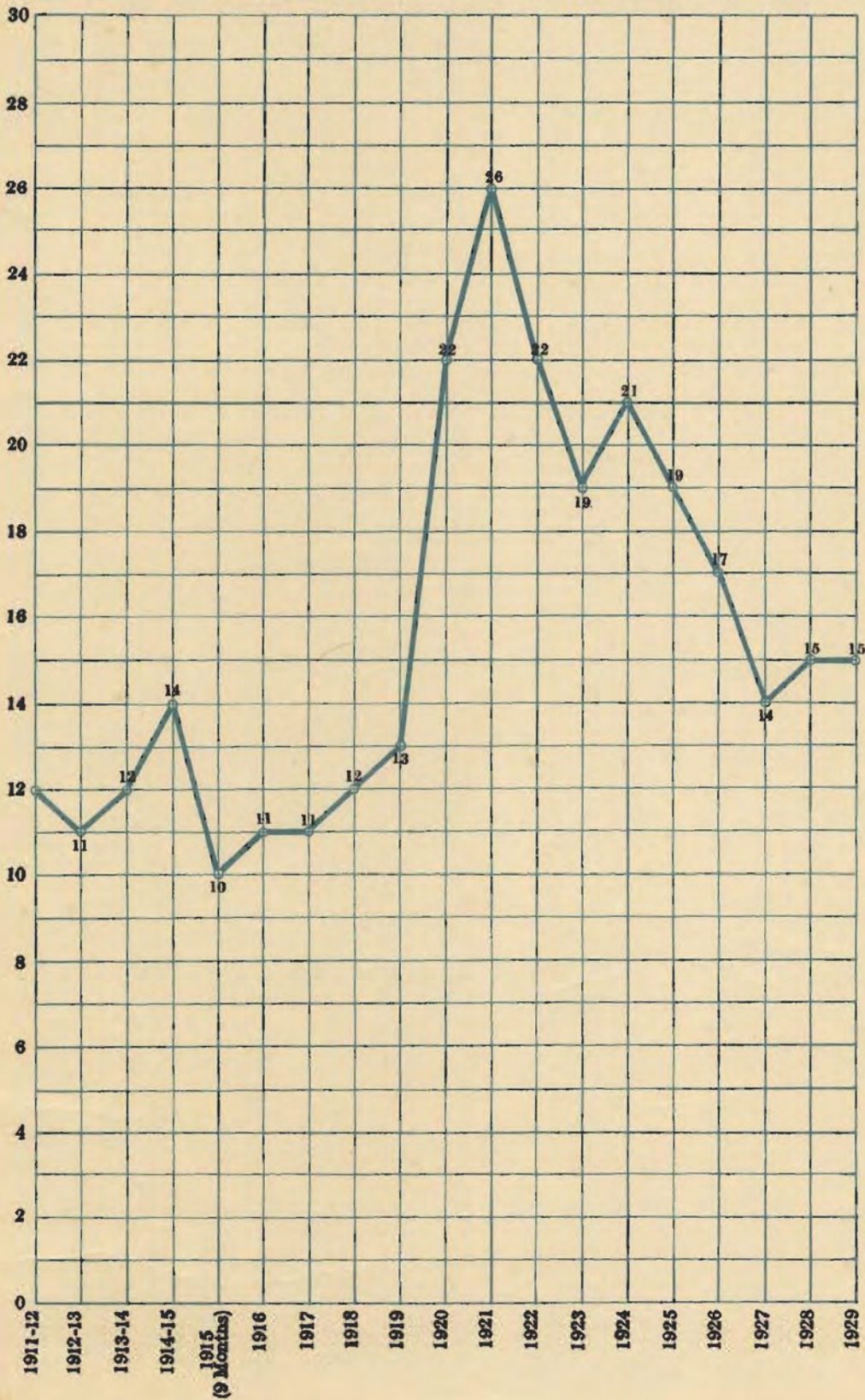
TRINIDAD AND TOBAGO.



APPENDIX E.

C

Curve showing the number of Oil Companies that have operated annually in the Colony from 1st April, 1911 to 31st December, 1929.

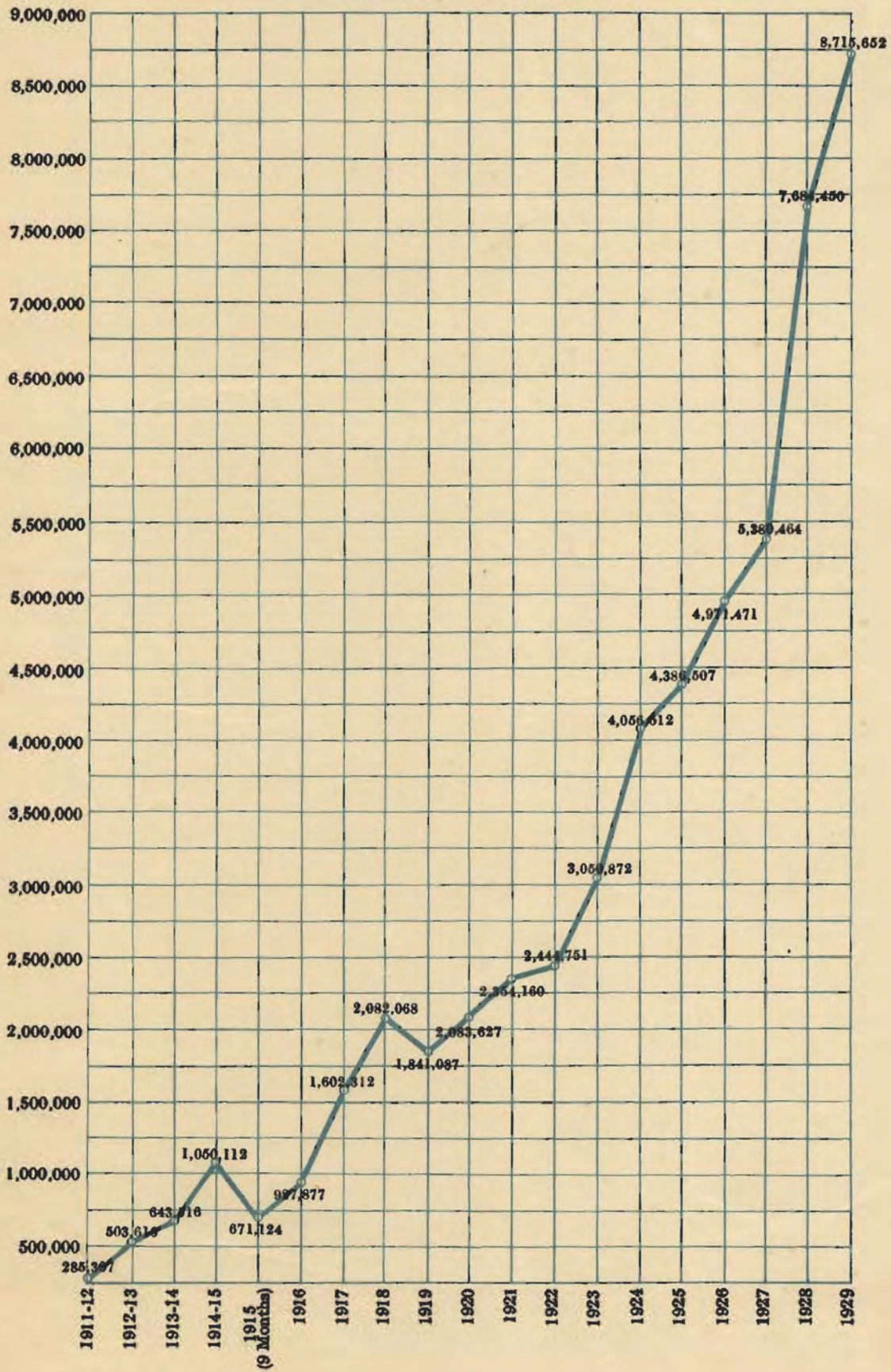


APPENDIX E.

D

Total Annual Production of Crude Oil in Barrels.

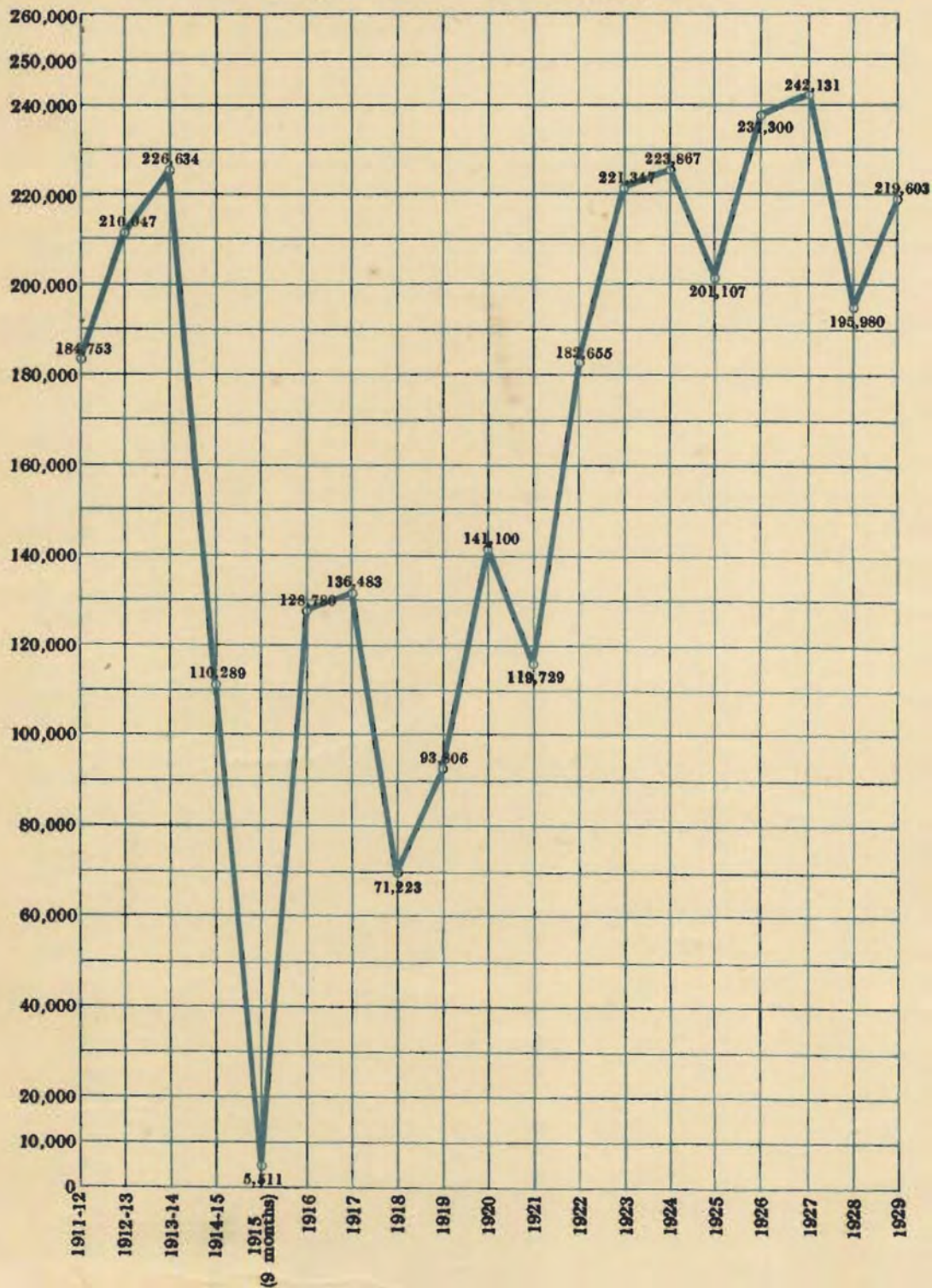
One barrel = 35 gallons.



APPENDIX E.

E

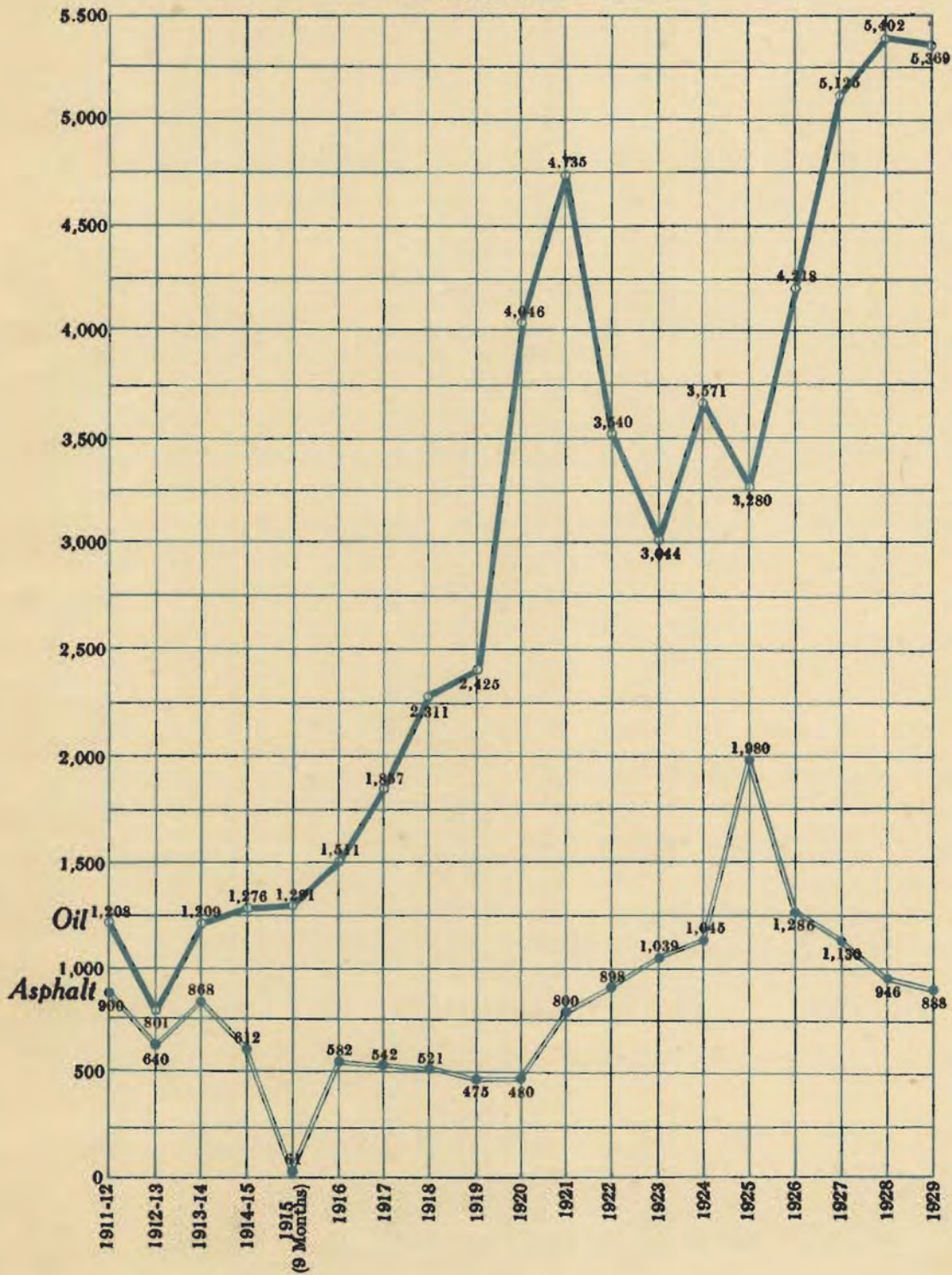
Curve showing yearly output of Asphalt from the Colony in Tons, from 1st April 1911 to 31st December, 1929.



APPENDIX E.

F

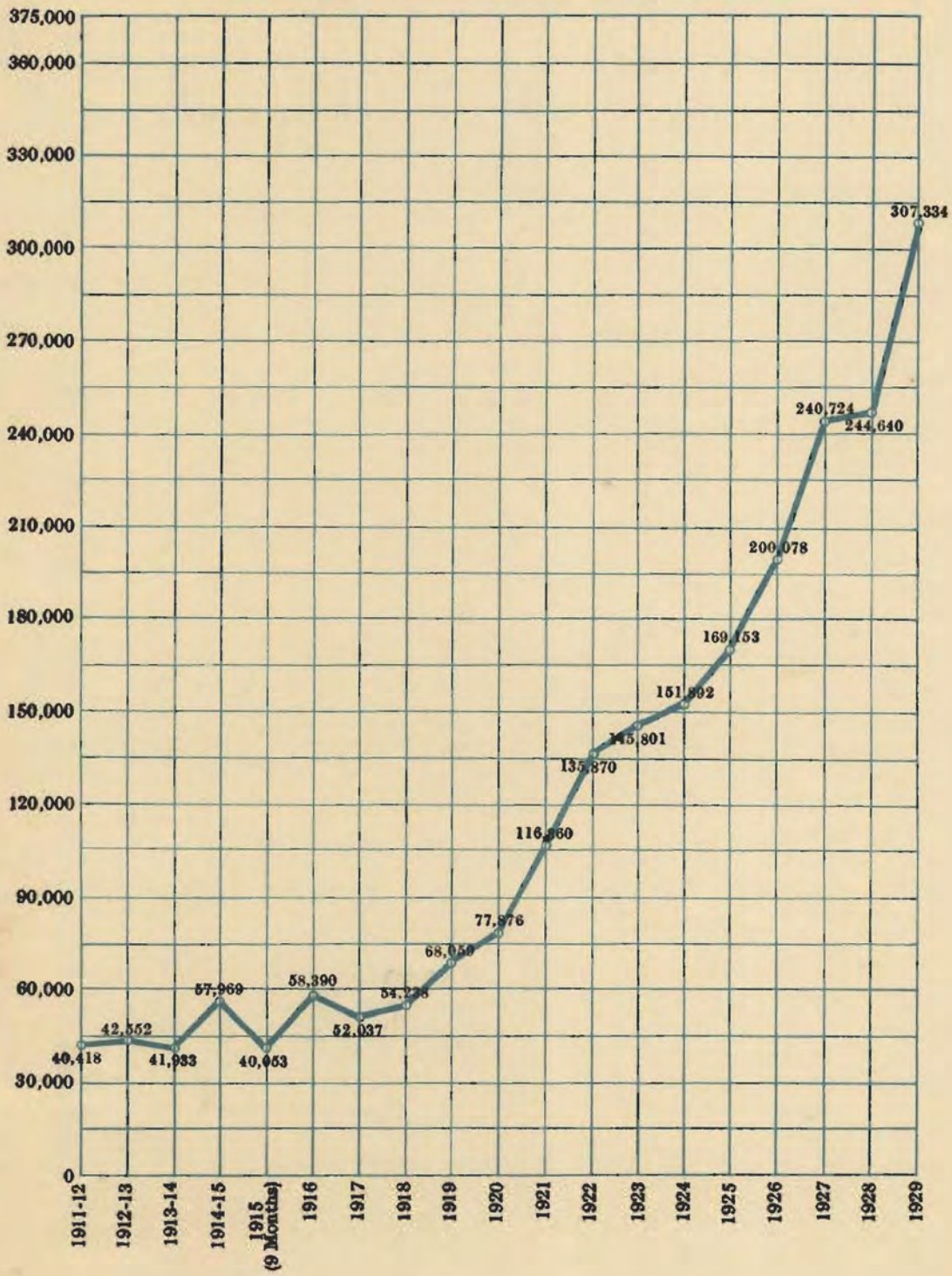
Curve showing comparison of daily average number of persons employed in the Oil and Asphalt Industries of the Colony from 1st April, 1911 to 31st December, 1929.



APPENDIX E.

G

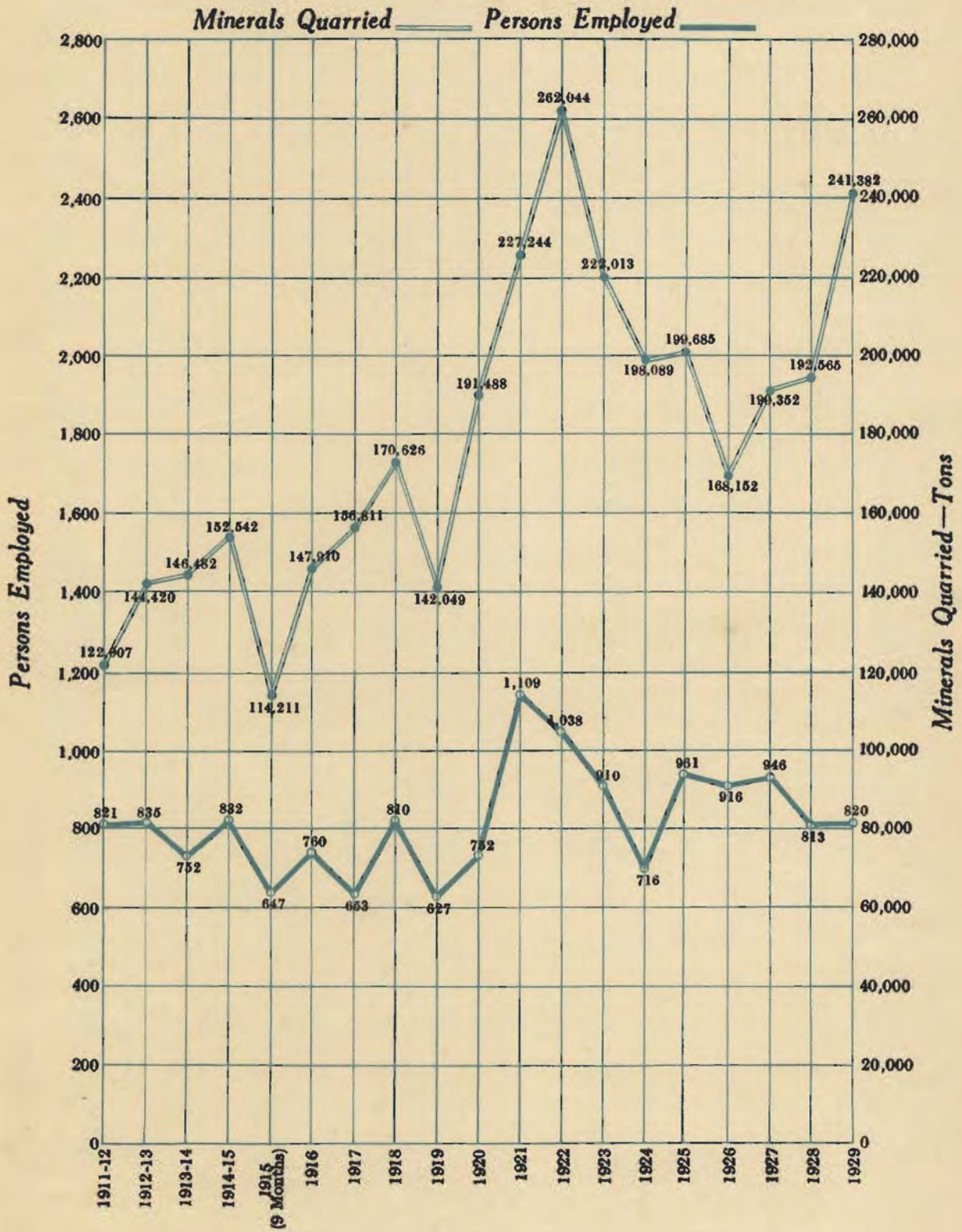
Curve showing yearly total number of feet drilled in the Colony from 1st April, 1911 to 31st December, 1929.



APPENDIX E.

H

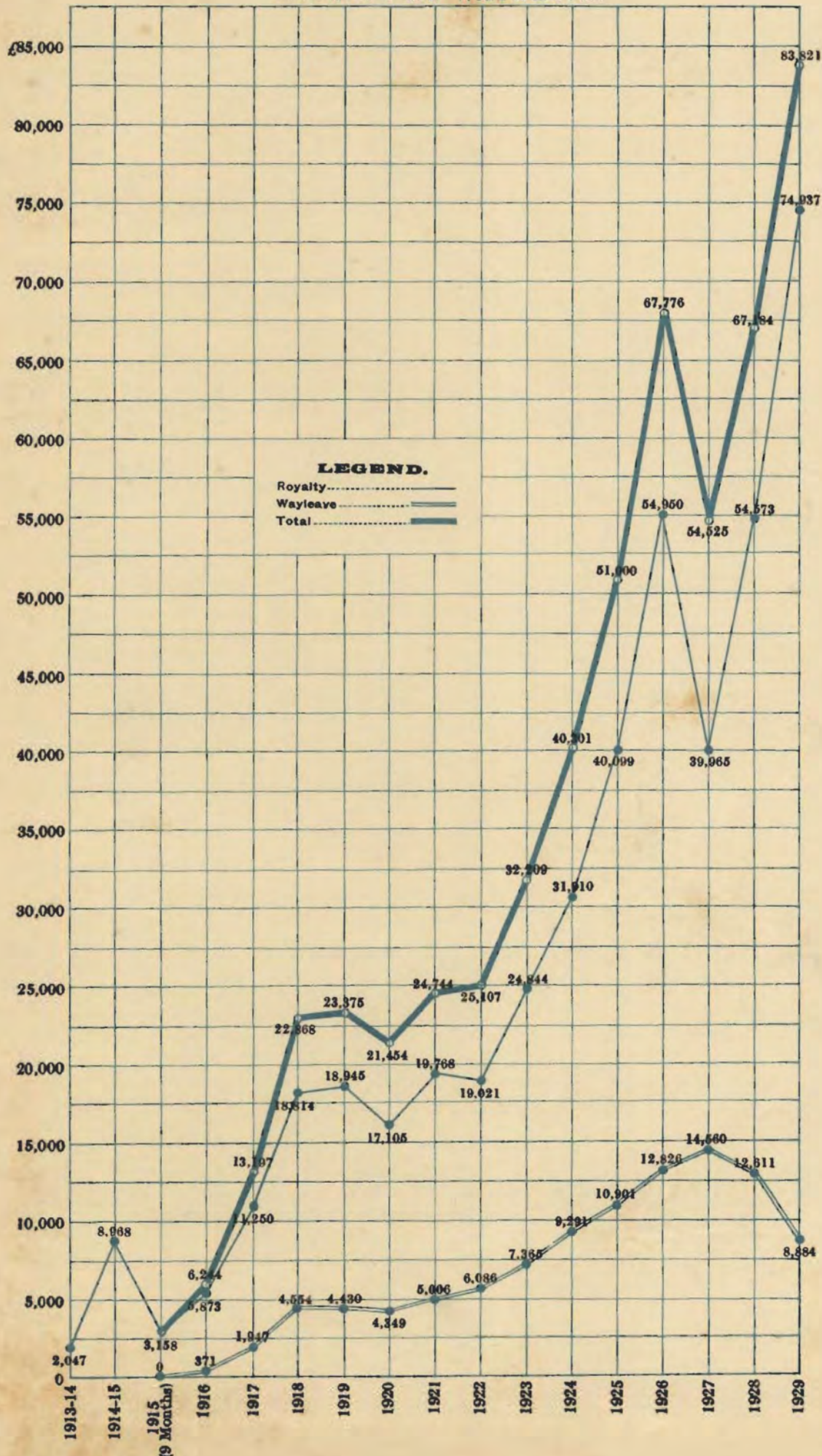
Curve showing the yearly total quantity of Minerals quarried and a comparison of the daily average number of persons employed in Quarries in the Colony from 1st April, 1911 to 31st December, 1929.



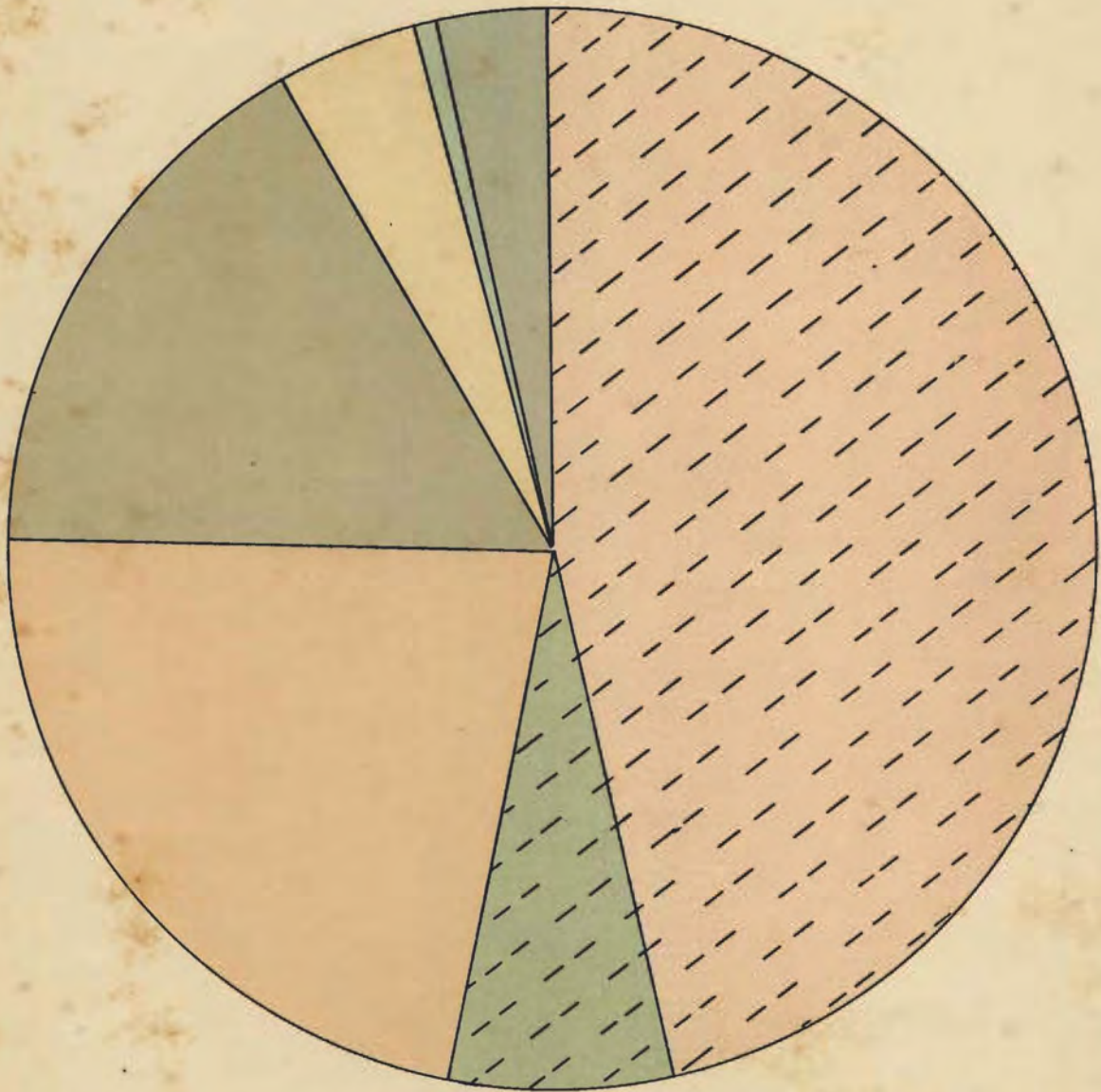
APPENDIX E.

I

ROYALTY AND WAYLEAVE.



APPENDIX F.



Mineral Exports 53.3%
 Petroleum Products 46.7%
 Asphalt 6.6%

Agricultural and other Exports 46.7%
 Cocoa 22.1%
 Sugar, Molasses, Rum 16.5%
 Coconuts, Copra, Coconut Oil 4.3%
 Coffee 5%
 Other Exports 3.3%

TRINIDAD AND TOBAGO.

Council Paper No. 56 of 1931.

MINES DEPARTMENT.

**Administration Report of the Inspector of Mines
for the year 1930.**

*Circulated for information. To be laid before
the Legislative Council.*

Previous Council Paper No.

Registered No. of Correspondence relating to the subject—M.P. No. 2562.

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MINES DEPARTMENT.

Administration Report of the Inspector of Mines
for the year 1930.

Council Paper No. 56 of 1931.

M.P. No. 2562.

HONOURABLE COLONIAL SECRETARY,

I have the honour to submit, for the information of His Excellency the Governor, the following report on the work of the Mines Department for the year 1930.

2. During the period under review the oil industry has been suffering from the economic conditions which prevail throughout the world, and, owing to over-production in the United States of America and other countries, the price obtainable for petroleum products in the world's markets has been very low. It is gratifying to record that, in spite of the fact that the various operating companies have been suffering from the depressed financial conditions, the past year has been marked by an increase in the production of over 700,000 barrels more than that for 1929. I should state, however, that at the time of writing, owing to the continued fall in prices of petroleum products most of the companies have drastically curtailed their operations, and it appears improbable that, until market conditions improve, there will be any marked activity in the industry.

I have also to record that for the first time in the history of the Colony the value of the exports of petroleum and its products amounted to over 50 per cent. of the total domestic exports. The value of the exports of the leading staples of the Colony is shewn below:—

	<i>Value.</i>	<i>Percentage of</i>
	<i>£</i>	<i>total.</i>
Petroleum Products	2,790,695	52.05
Cocoa	1,136,056	21.19
Sugar, Molasses and Rum	801,718	14.96
Asphalt	313,397	5.84
Coconuts, Copra and Coconut Oil	207,733	3.87
Bitters	38,065	.71
Coffec	12,475	.23
Other exports not enumerated	61,671	1.15
	<u>5,361,810</u>	<u>100.00</u>

3. As it is to be expected, in view of current financial conditions, with few exceptions the period under review has not been marked by great activity in new construction work. The Trinidad Leaseholds, Ltd., which has been making large increases to the refining depot at Pointe-a-Pierre during the past few years completed the current construction programme shortly after the middle of the year and since then have not commenced any new works. The Apex (Trinidad) Oilfields, Ltd., have installed a plant for the recovery of casing head petroleum spirit from natural gas and at the time of writing this is working very satisfactorily. The West India Oil Company completed the construction of a pier at its refinery at Point D'Or. This pier is now being extended to allow ocean going vessels to load petroleum products in bulk. When this has been completed the old pier of the Trinidad Oil Fields Operating Company, Ltd., at La Brea will be abandoned.

4. The following table will show the number of feet drilled and the quantity of oil produced during 1930 as compared with the years 1928 and 1929:—

	YEAR ENDED 31ST DECEMBER, 1928.		YEAR ENDED 31ST DECEMBER, 1929.		YEAR ENDED 31ST DECEMBER, 1930.	
	<i>Feet drilled.</i>	<i>Oil won Brls. of 35 galls.</i>	<i>Feet drilled.</i>	<i>Oil won Brls. of 35 galls.</i>	<i>Feet drilled.</i>	<i>Oil won Brls. of 35 galls.</i>
Crown Lands	130,630	4,141,816	211,024	4,621,567	254,116	5,260,366
Private Lands	114,010	3,542,634	96,310	4,094,085	118,414	4,158,541
	<u>244,640</u>	<u>7,684,450</u>	<u>307,334</u>	<u>8,715,652</u>	<u>372,530</u>	<u>9,418,907</u>

5. The total number of wells drilled in the Colony to 31st December, 1930, is 1,780 of which 1,121 are on Crown Lands. During the past year 163 wells were drilled of which 107 were on Crown Lands and 56 on private lands, an increase of 5 compared with 1929. In 121 of these wells oil was struck.

6. The number of concerns engaged in the winning of oil at the close of the year was 14, one less than at the end of 1929.

7. ROYALTY.—The royalty collected during the period under review was £77,260, an increase of £2,322 14s. 10d. as compared with 1929.

8. WAYLEAVES.—The revenue derived from wayleaves on oil pumped along the public roads of the Colony has shewn a slight increase but, as mentioned in my last report, the main trunk pipeline of the Trinidad Leaseholds, Ltd., is not now laid along the Trinidad Government Railway so no payments now accrue from this source. The revenue for the years 1929 and 1930 was as follows:—

		Trinidad Government Railway.			Roads.		
		£	s.	d.	£	s.	d.
1929	.. ..	745	4	3	8,138	15	1½
1930	.. ..	Nil.			8,585	0	0

9. FEES.—Fees charged for crossing the foreshore, the Railway and the public roads amounted to £297.

10. Last year three leases and two licences were issued as follows:—

Mining Lease to Apex (Trinidad) Oilfields, Ltd., over 249 acres of Crown Lands—Reg. No. 421 of 1930.

Mining Lease to Venezuelan Consolidated Oilfields, Ltd., over 59 acres the surface of which was alienated subsequent to 30th January, 1902—Reg. No. 2438 of 1930.

Mining lease to Trinidad Petroleum Development Company, Ltd., over 323 acres of Crown Lands—Reg. No. 3178 of 1930.

Prospecting Licence to Apex (Trinidad) Oilfields, Ltd. over 264 acres the surface of which was alienated subsequent to 30th January, 1902—Reg. No. 1938 of 1930.

Exploration Licence to Trinidad Leaseholds, Ltd. over 775 acres of Crown Lands—Reg. No. 928 of 1930.

In addition to the above Prospecting Licence to Apex (Trinidad) Oilfields, Ltd., Reg. No. 4159 of 1928, was extended for two years from 1st September, 1929, by Deed Reg. No. 420 of 1930, and Prospecting Licences Nos. 2716 of 1928, 1186 of 1929 and 3916 of 1929 to Trinidad Petroleum Development Company, Ltd., were extended for six months from 31st July, 1930, by Deed Reg. No. 3177 of 1930 pending settlement of the new form of mining lease.

11. RETURNS.—The various oil companies have regularly forwarded to the Department the returns required to be submitted by them in respect of their operations. After being carefully checked these have been filed with the records of the Department.

12. A large number of inspections have been carried out by the Officers of the Department in connection with the various operations taking place on the fields and I have much pleasure in reporting that the Managers readily co-operate with this Department in endeavouring to carry out the provisions of the Ordinances and Regulations.

13. LEGISLATION.—During the past year two Ordinances relating to the oil industry were passed, viz. :—

(a) The Oilfield Fires Control Ordinance, 1930.

(b) Water Control (Oil-bearing Sands) Ordinance 1930.

The former Ordinance is to empower the Government to enter upon an oilfield when danger to life or property occurs by uncontrolled fires or flows of oil and gas and when the operator does not take necessary steps for control. The latter Ordinance is to enable the Government to control the intrusion of water into oil-bearing sands when the operator is unable or unwilling to do so.

SAN FERNANDO BRANCH OF THE DEPARTMENT.

14. Mr. C. E. Capito, O.B.E., A.C.G.I., M.Inst.C.E., M.Inst.P.T., was appointed to the post of Petroleum Technologist *vice* Mr. C. A. P. Southwell resigned and arrived in the Colony on the 19th April last.

The contract of Mr. H. W. Reid, B.Sc., Assistant Petroleum Technologist, was renewed for a period of three years from the 10th September, 1930.

A report on the working of this branch by the Petroleum Technologist is enclosed at Appendix "B."

PREVENTION OF ACCIDENTS ORDINANCE, CAP. 157.

15. During the year 122 factories in Trinidad and three in Tobago were worked. From the inspections made I am pleased to be able to record that in most cases the provisions of the Ordinance were carefully observed.

QUARRIES.

16. The number of quarries worked during the period under review was 80 as compared with 74 during 1929. From the inspections made they were found in most cases to have been worked in a careful manner but, with few exceptions, they are relatively unimportant.

PETROLEUM ORDINANCE, CAP. 145.

17. The premises in which the various products of petroleum are stored have been carefully inspected and it is satisfactory to note that as a rule great care has been taken to ensure safety. A number of up to date service stations for the supply of petrol and other requirements of motorists have been constructed in different localities in the Colony during the past year and the public are now very well served with regard to service of this character. In all 451 licences to store and sell petroleum products were issued during the year.

ASPHALT INDUSTRY ORDINANCE, CAP. 145.

18. No asphalt has been dug on the village lots at La Brea since 1914.

APPENDICES.

19. Appendix "A" shows the list of oil companies operating in the Colony during the year 1930.

20. Appendix "B"—Report on the working of the Petroleum Office.

21. In Appendix "C" will be found the daily average number of persons employed in oilfields and quarries and the quantity and value of minerals obtained during the period under review.

22. A comparative statement of the oil produced, refined and exported is shown in Appendix "D."

23. Appendix "C" consists of a series of charts depicting in graphical form the progress made in various industries during the past few years.

24. Appendix "F" shows the relation of mineral exports to Agricultural Exports.

STAFF.

25. Mr. N. A. Brown, 2nd Clerk, was transferred to the Public Works Department as from the 1st June and was replaced by Mr. A. C. Francis-Lau, 3rd Clerk. Miss M. A. Jack was appointed to the vacant post of 3rd Clerk.

Mr. M. W. Gilkes, Clerk Petroleum Office, was appointed to act as Government Shorthand Writer on the 7th April and Mr. C. Niles was appointed to act for Mr. Gilkes.

A. P. CATHERALL,
Inspector of Mines.

7th May, 1931.

APPENDIX A.

No.	Companies.	Nature of tenure of lands on which operations took place.		Disposal of Oil.	Remarks.
1	Trinidad Leaseholds, Ltd.	Crown lands under lease Private lands	Fyzabad, Barrackpore Guayaguayare Fyzabad and Barrackpore	Pumped to the Company's refinery at Pointe-a-Pierre, and there refined. Most of the production is exported in bulk	The most important Company in the Colony. Whilst an active drilling programme has been carried on in the Guayaguayare field there has been a considerable decrease in the development of the Fyzabad field with a resultant diminution of production. The production from the Barrackpore field shows a slight decline. For several years this Company has carried out extensive construction work in extending its refining and shipping depot at Pointe-a-Pierre but shortly after the middle of the year the work in hand was completed. The majority of the production of the Colony is refined by this Company.
2	United British Oilfields of Trinidad, Ltd.	Crown lands under lease Private lands	Point Fortin, Morne L'Enfer Reserve Point Fortin	Sold to United British Refineries, Ltd.	The production of the Parry Lands field of this Company has largely increased. Only a small production was obtained from the old Point Fortin field. The Los Bajos field was not worked.
3	Trinidad Central Oilfields, Ltd.	Crown lands under lease	Tabaquite, Guapo and Lizard Springs	Production from Tabaquite refined, sold locally and exported; that from Cruse area sold to Trinidad Leaseholds, Ltd.	The greater part of this Company's production has been obtained from the Cruse field at Guapo. There was a small increase in both drilling and production at the Lizard Springs field in the Guayaguayare district, but the production from this area has not been large. The production from the old Tabaquite field has again declined.
4	Trinidad Lake Petroleum Company, Ltd.	Private lands	Brighton	The bulk of the production is exported to the United States of America.	Producing only.
5	Petroleum Development Company, Ltd.	Crown lands under lease	Morne L'Enfer Forest Reserve and La Brea	Sold to Trinidad Lake Petroleum Company, Ltd.	An active programme was continued in the La Brea district with a result that there was an increase in both the footage drilled and oil won.
6	Apex (Trinidad) Oilfields, Ltd.	Crown lands under lease and prospecting licence and Private lands	Fyzabad and Siparia.	Sold to Trinidad Leaseholds, Ltd.	This Company still remains the largest producer in the Colony. As compared with last year there was a considerable increase in both footage and production. A plant for the recovery of Casing Head Petroleum Spirit from natural gas was installed during the year and is now working very satisfactorily.

APPENDIX A.—Continued.

No.	Companies.	Nature of tenure of lands on which operations took place.	Disposal of Oil.	Remarks.
7	Kern Trinidad Oilfields, Ltd.	.. Crown lands under lease Private lands ..	La Brea Guapo and Rousillac	Sold to United British Refineries, Ltd. An active development programme of the properties in the Guapo district continued during the whole of the year and an increased production resulted. A number of wells were also drilled in the Rousillac area but the results were not as satisfactory as expected.
8	New (Oropuche) Trinidad Oilfields, Ltd.	Private lands ..	Fyzabad	Sold to Trinidad Leaseholds, Ltd. A subsidiary of the Trinidad Leaseholds, Ltd. Drilling was continued during the early part of the year at Fyzabad; the production as compared with last year has declined.
9	Trinidad Petroleum Development Company, Ltd.	Private lands .. Crown lands under lease and prospecting licence	.. Naparima, Palo Seco and Fyzabad Palo Seco, Fyzabad and Los Bajos	Part of this Company's production is exported in the crude state, the remainder of it is sold to the United British Refineries, Ltd. An active drilling programme was continued in the Palo Seco area with a resultant large increase in the production. Drilling was also commenced in the Los Bajos area but the results were disappointing.
10	Venezuelan Consolidated Oilfields, Ltd.	Private lands .. Crown lands under prospecting licence	.. San Francique San Francique and Palo Seco	Sold to Trinidad Leaseholds, Ltd. and Trinidad Petroleum Development Company, Ltd. This Company continued operating in the Palo Seco and Fyzabad districts during the early part of the year. On the 15th of March the Palo Seco properties were taken over by the Siparia Trinidad Oilfields, Ltd. The Crown Lands and part of the private holdings of the Company in the Fyzabad district were transferred to the Trinidad Oil Field Operating Company, Ltd., as from 1st August and the Company ceased active operations.
11	Palo Seco Oilfields (C. C. Stollmeyer)	.. Crown lands under lease	Palo Seco ..	Sold locally .. Drilling continued during the period under review and a small production was obtained.
12	Trinidad Oil Fields Operating Company, Ltd.	Private lands .. Crown lands ..	.. Fyzabad, San Francique, Palo Seco and Aripere .. Pointe D'Or and Palo Seco	Sold to West Indian Oil Company and Trinidad Leaseholds, Ltd. This Company, the share capital of which is owned by the West India Oil Company, continued drilling on its various properties and a considerable increase in production has resulted. The refinery mentioned in the last Administration Report has been worked during the year and a pier to land machinery and ship products was constructed.
13	New Dome Oilfields, Ltd.	.. Private lands ..	.. Fyzabad ..	Sold to Trinidad Leaseholds, Ltd. Drilling was continued during the year and a good production obtained from the small plot of land on which the operations were undertaken.
14	Siparia Trinidad Oilfields, Ltd.	.. Crown lands under prospecting licence	.. Palo Seco ..	Sold to Trinidad Leaseholds, Ltd. and Trinidad Petroleum Development, Company, Ltd. This Company took over Crown lands formerly held by the Venezuelan Consolidated Oilfields, Ltd., under prospecting licence. An active drilling programme has been carried out and the production increased.

APPENDIX B.

HONOURABLE INSPECTOR OF MINES,

The year under review showed a further increase both in footage and production for the Colony, the figures being given in the General Report.

The outstanding features of the year were the development of the central portion of the Palo Seco structures and the locating of a high pressure good quality oilsand in the south west end of the Parry Lands structure. The development of the Point d'Or estate has been difficult due to the presence of sulphuretted hydrogen gas coupled with high pressures; only small producers have resulted. A geophysical survey is to be undertaken of this area before further development proceeds. At the time of writing this survey is in progress.

The greatest production again came from Fyzabad, with 63.5 per cent. of the total for the Colony divided amongst the Companies operating in that area.

During the year 163 new wells were started making a grand total for the Colony of 1,780, 38 wells were abandoned for various reasons.

Owing to high pressures being encountered with the increasing depth of the wells, it has been necessary for a number of the operators to import larger and higher pressure boilers, pumps and fittings to deal with these pressures. Barytes is now in almost constant use with the circulating mud in these deeper wells.

Frequent inspections of drilling and production machinery were carried out in conjunction with the ordinary routine duties of the Office. All companies have shown the greatest willingness to co-operate with this office in conservation and safety measures and in sending in good records.

During the period under review there were seven fatal accidents and only one oilfield fire of any magnitude.

On the 16th April, Mr. M. W. Gilkes, second class clerk in this office was appointed to act as Government Shorthand Writer *vice* Mr. J. W. Day.

Mr. C. Niles was appointed to act in Mr. Gilkes' post as from the 7th April, and this acting appointment continued to the end of the year.

Mr. C. E. Capito, O.B.E., A.C.G.I., M.Inst.C.E., M. Inst.P.T., was appointed to the post of Petroleum Technologist and arrived in the Colony on the 19th April.

C. ERIK CAPITO,
Petroleum Technologist.

23rd March, 1931.

APPENDIX C.

Daily average number of persons employed in Oilfields and Quarries and the quantity and value of minerals obtained during the year ended 31st December, 1930.

Minerals.	Daily average number of persons employed		Total.	Quantity.	Approximate Value.*
	Males.	Females.			
Oil	6,430	71	6,501	9,418,907 Barrels	£1,690,709
Asphalt	816	7	823	157,859 Tons	98,662
Private Quarries (Limestone, Gravel, &c.)	293	135	428	158,524 Tons	13,378
Government Quarries (Limestone, &c.)	386	117	503	97,338 Tons	14,344

* N.B.—The values in this column are those returned by owners and managers and represent the value at the place of production.

APPENDIX D.

Comparative Statement of oil produced, refined and exported year by year since the inception of the Petroleum Industry in the Colony.

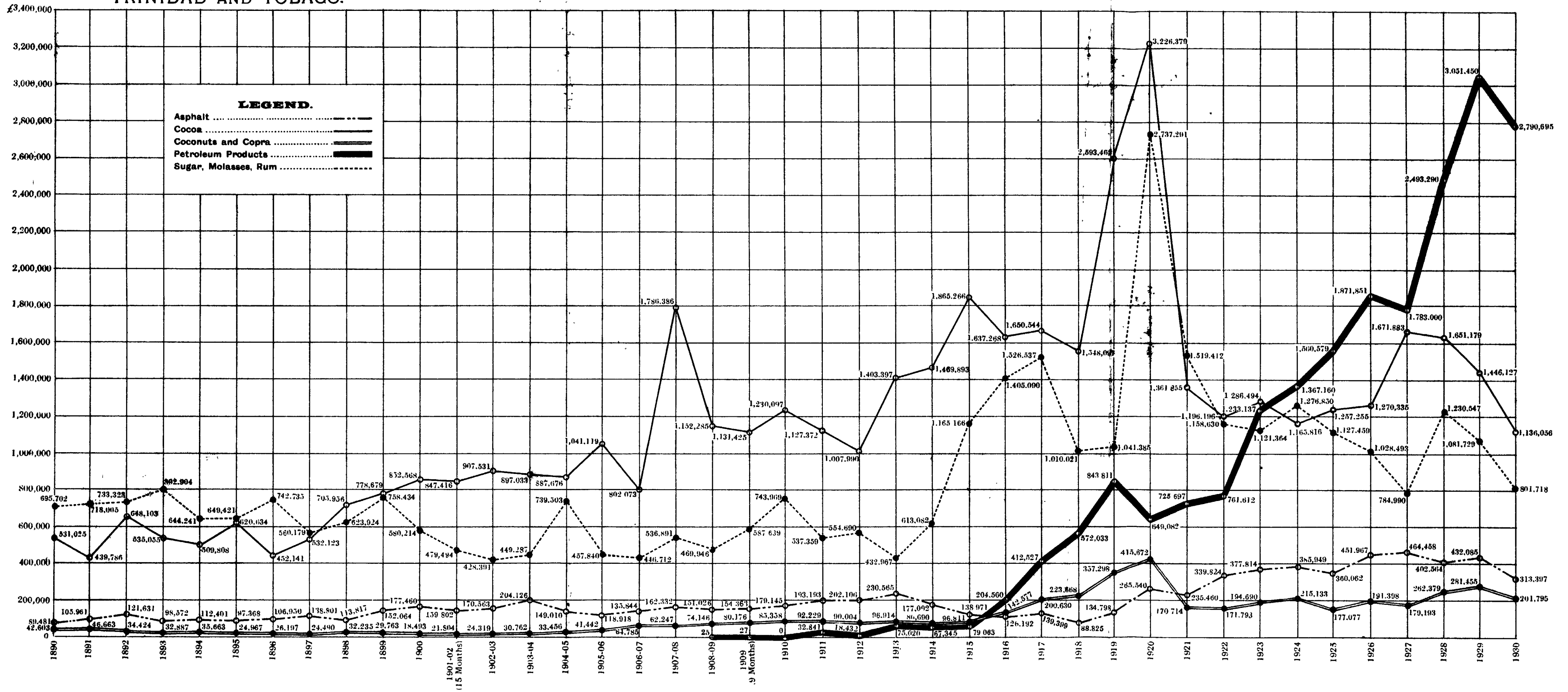
	Production in barrels.	Quantity of Crude Oil refined in barrels.	Quantity of Crude Oil and Refined Oil exported in barrels.
1905 to 31st March, 1910 ..	10,541	—	—
1910-1911	225,112	—	—
1911-1912	285,307	Previous to 1912-1913 37,842	219,582
1912-1913	503,616	9,484	122,734
1913-1914	643,516	35,061	387,719
1914-1915	1,050,112	41,413	348,351
9 months ended December, 1915 ..	671,125	58,437	408,188
1916	927,877	107,822	975,142
1917	1,602,312	505,002	1,079,369
1918	2,082,068	2,106,369	1,305,407
1919	1,841,047	1,149,943	1,406,264
1920	2,083,027	1,395,487	1,034,907
1921	2,354,160	1,806,016	1,223,346
1922	2,444,752	1,820,018	1,615,740
1923	3,050,872	2,360,279	2,432,470
1924	4,056,612	3,433,902	3,224,529
1925	4,386,507	3,790,343	3,606,608
1926	4,971,471	3,786,876	3,988,308
1927	5,380,464	4,796,223	4,456,770
1928	7,684,450	6,725,383	6,361,675
1929	8,715,652	7,642,726	8,243,023
1930	9,418,907	7,989,679	7,678,807
	64,289,507	49,598,305	50,118,939

APPENDIX E.

A

EXPORT OF LOCAL PRODUCE

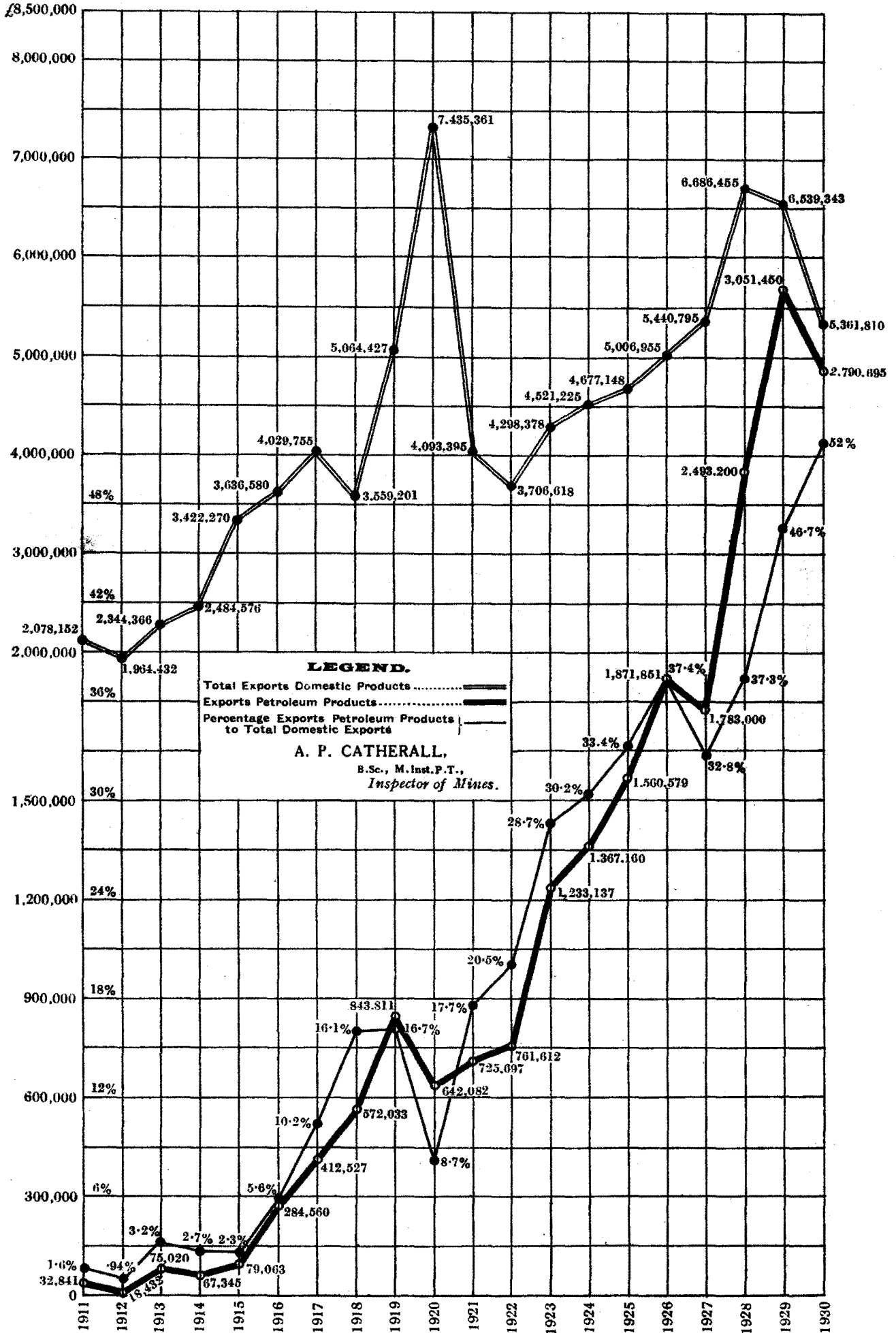
TRINIDAD AND TOBAGO.



APPENDIX F.

B

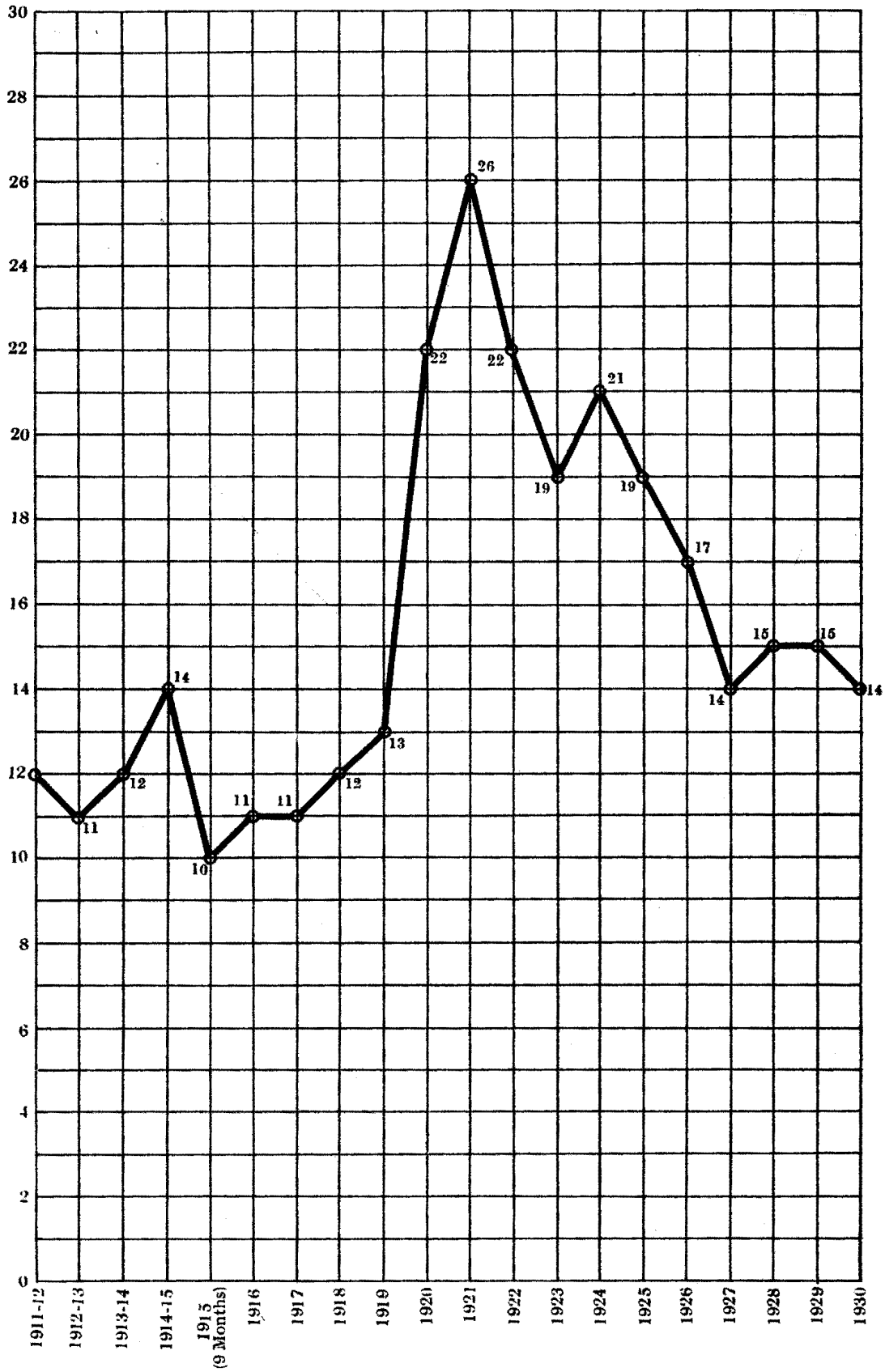
TRINIDAD AND TOBAGO.



APPENDIX E.

C

Curve showing the number of Oil Companies that have operated annually in the Colony from 1st April, 1911 to 31st December, 1930.

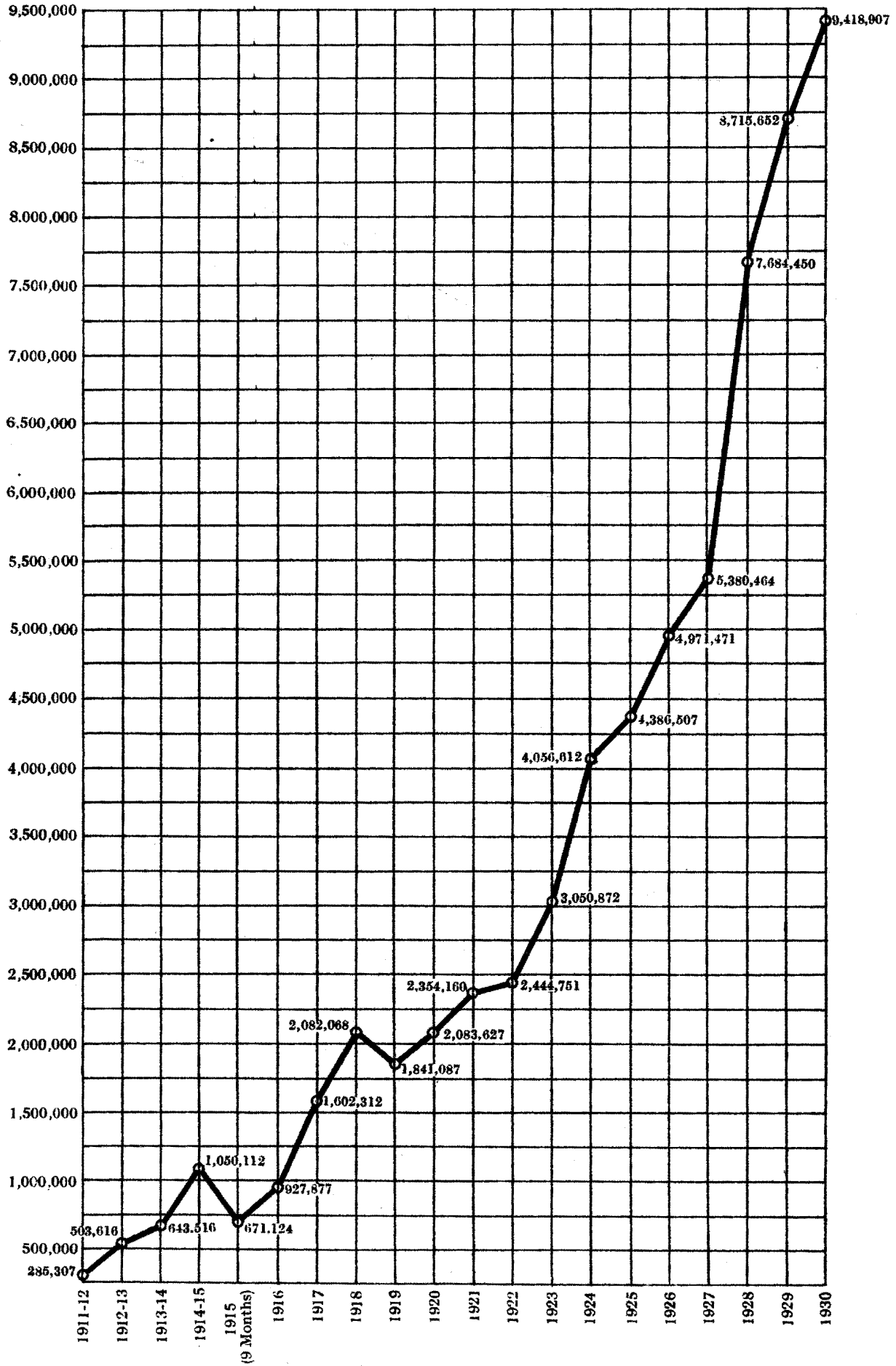


APPENDIX E.

D

Total Annual Production of Crude Oil in Barrels.

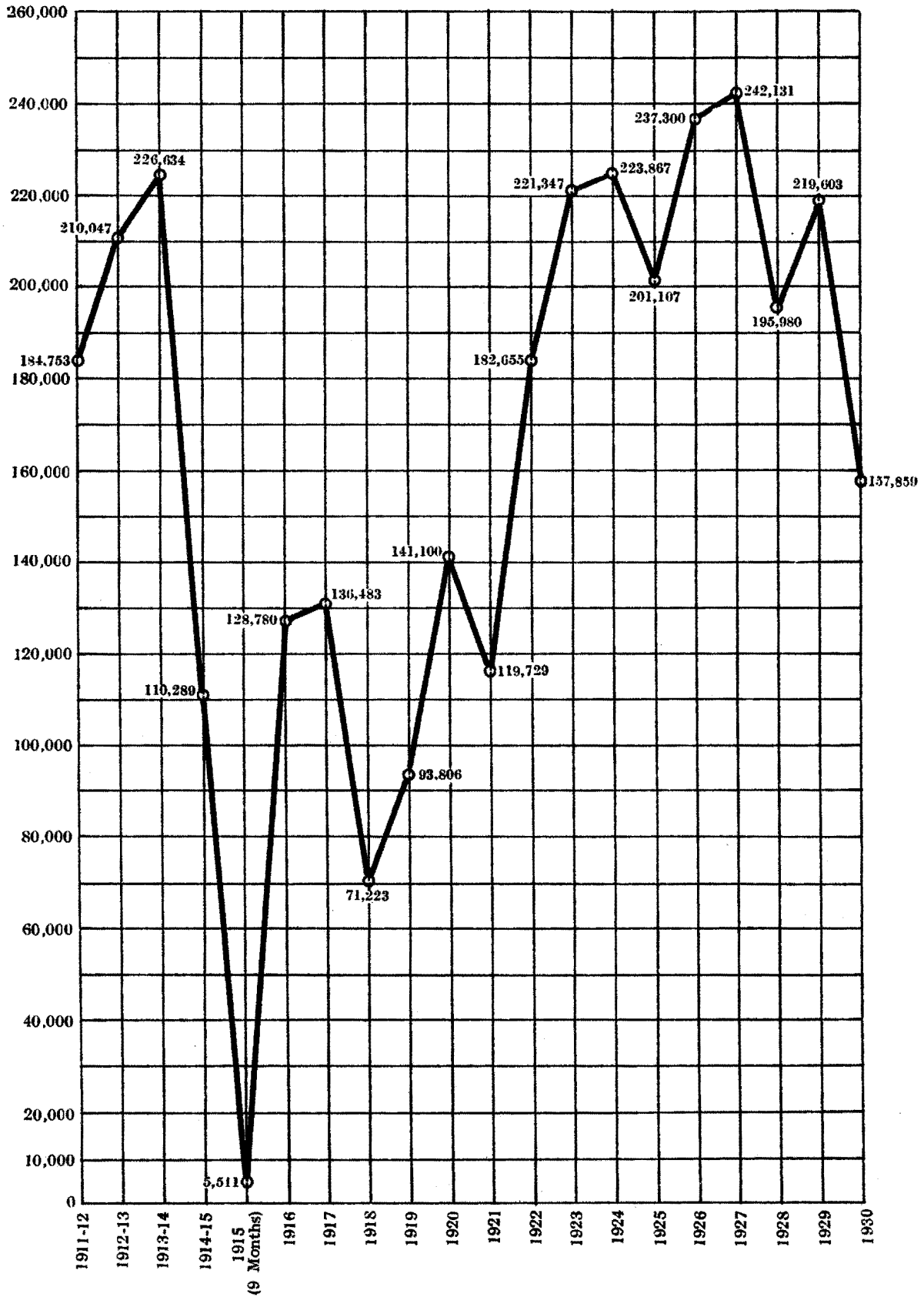
One barrel = 35 gallons.



APPENDIX E.

E

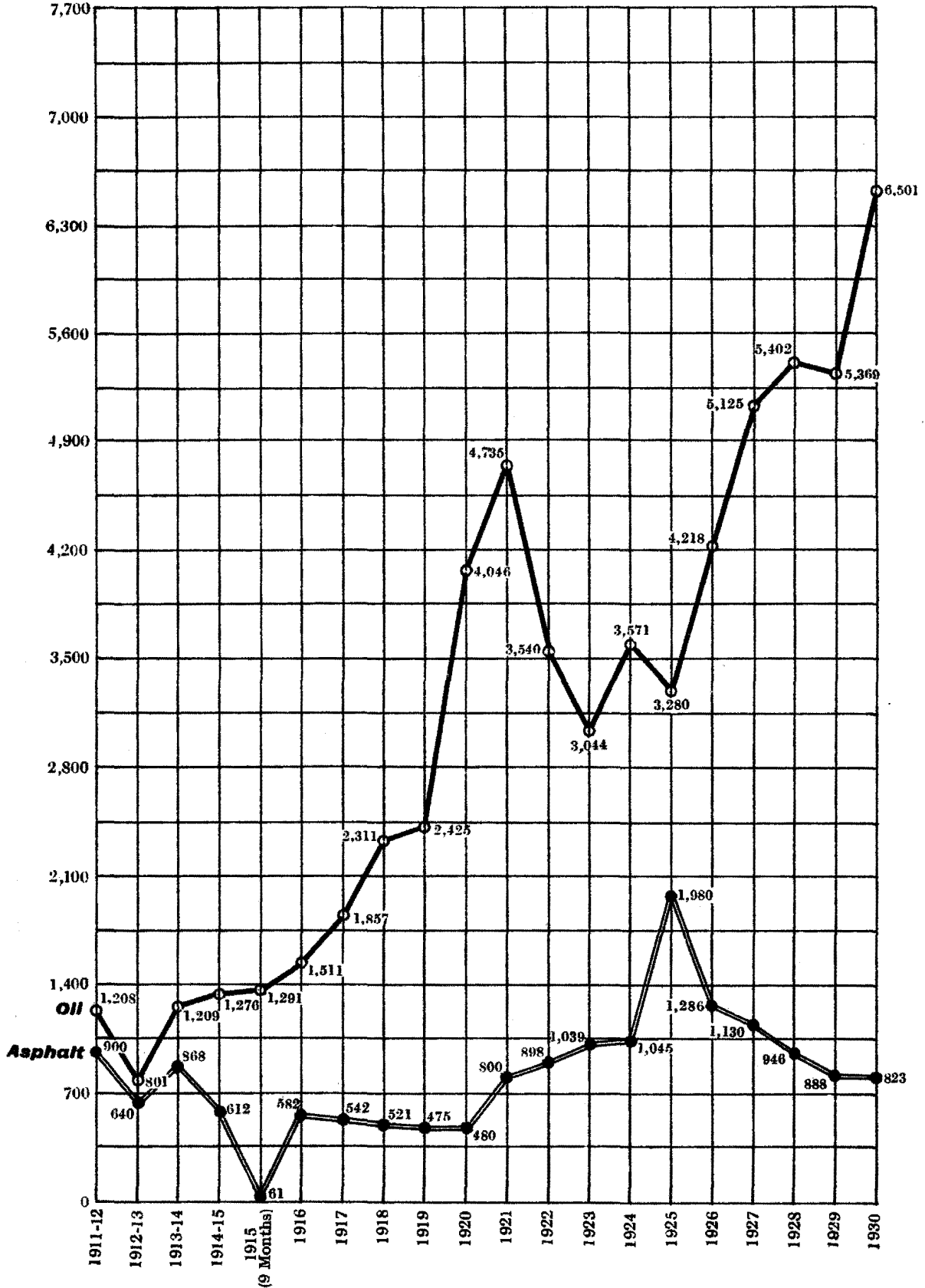
Curve showing yearly output of Asphalt from the Colony in Tons, from 1st April, 1911 to 31st December, 1930.



APPENDIX E.

F

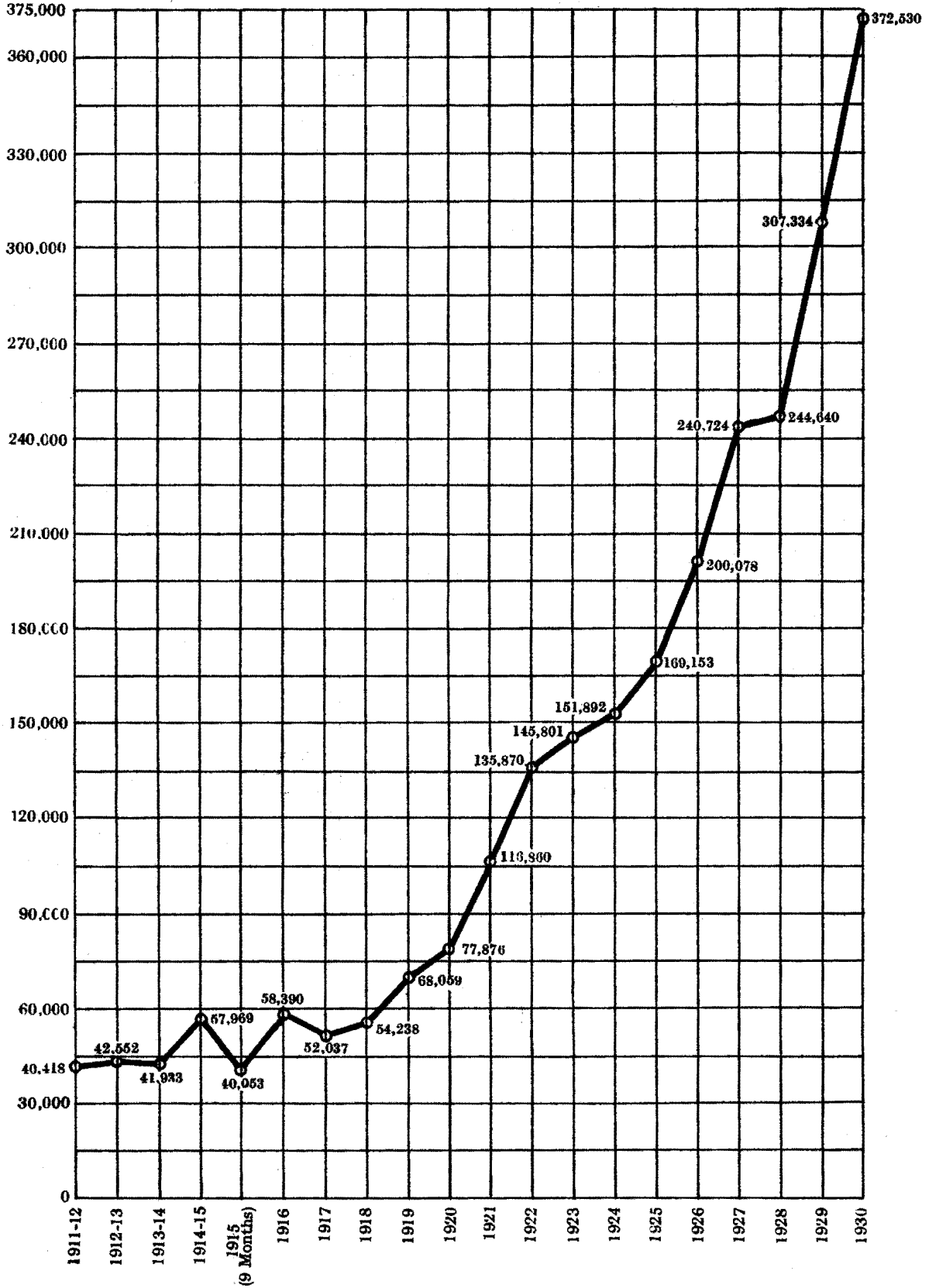
Curve showing comparison of daily average number of persons employed in the Oil and Asphalt Industries of the Colony from 1st April, 1911 to 31st December, 1930.



APPENDIX E.

G

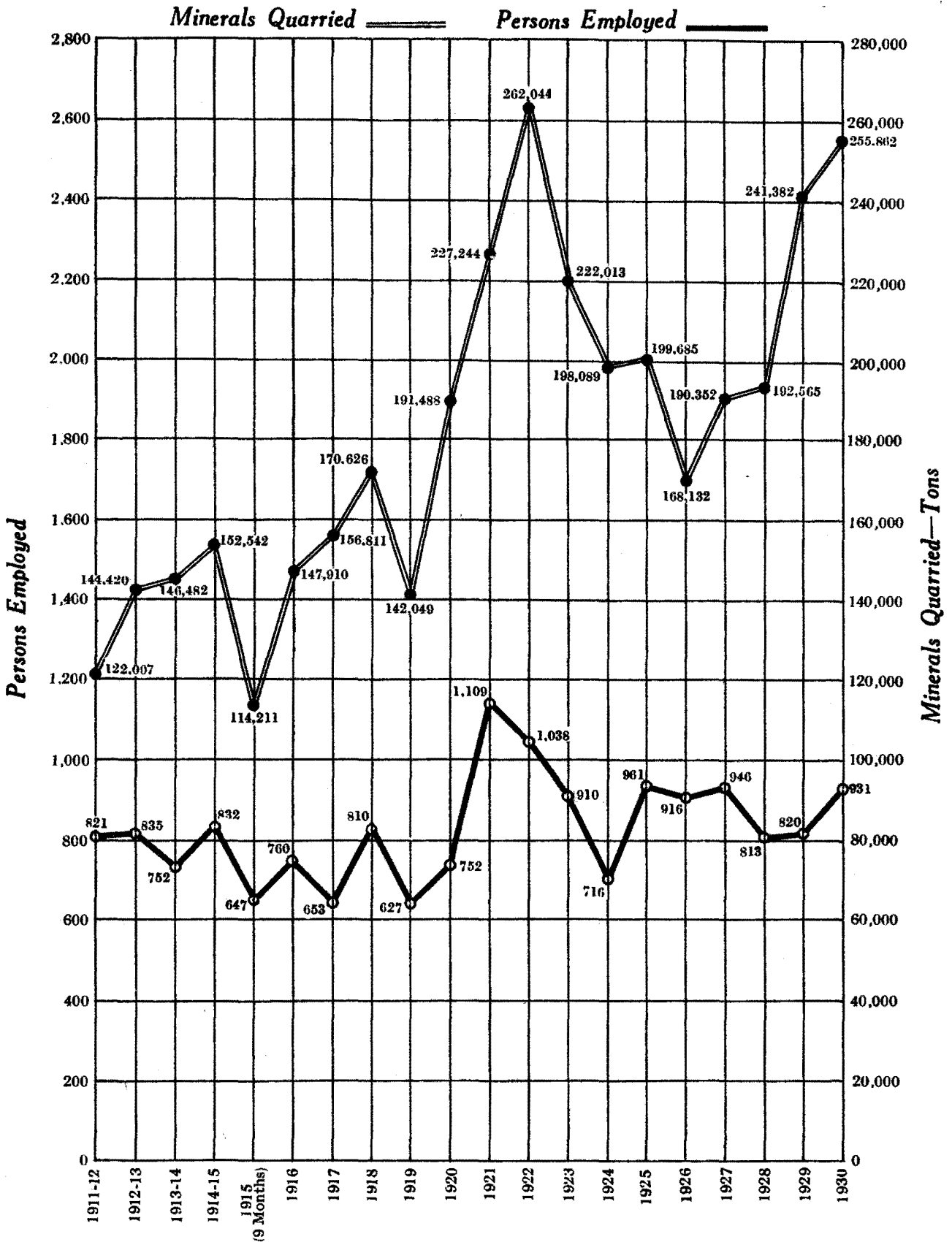
Curve showing yearly total number of feet drilled in the Colony from 1st April, 1911 to 31st December, 1930.



APPENDIX E.

H

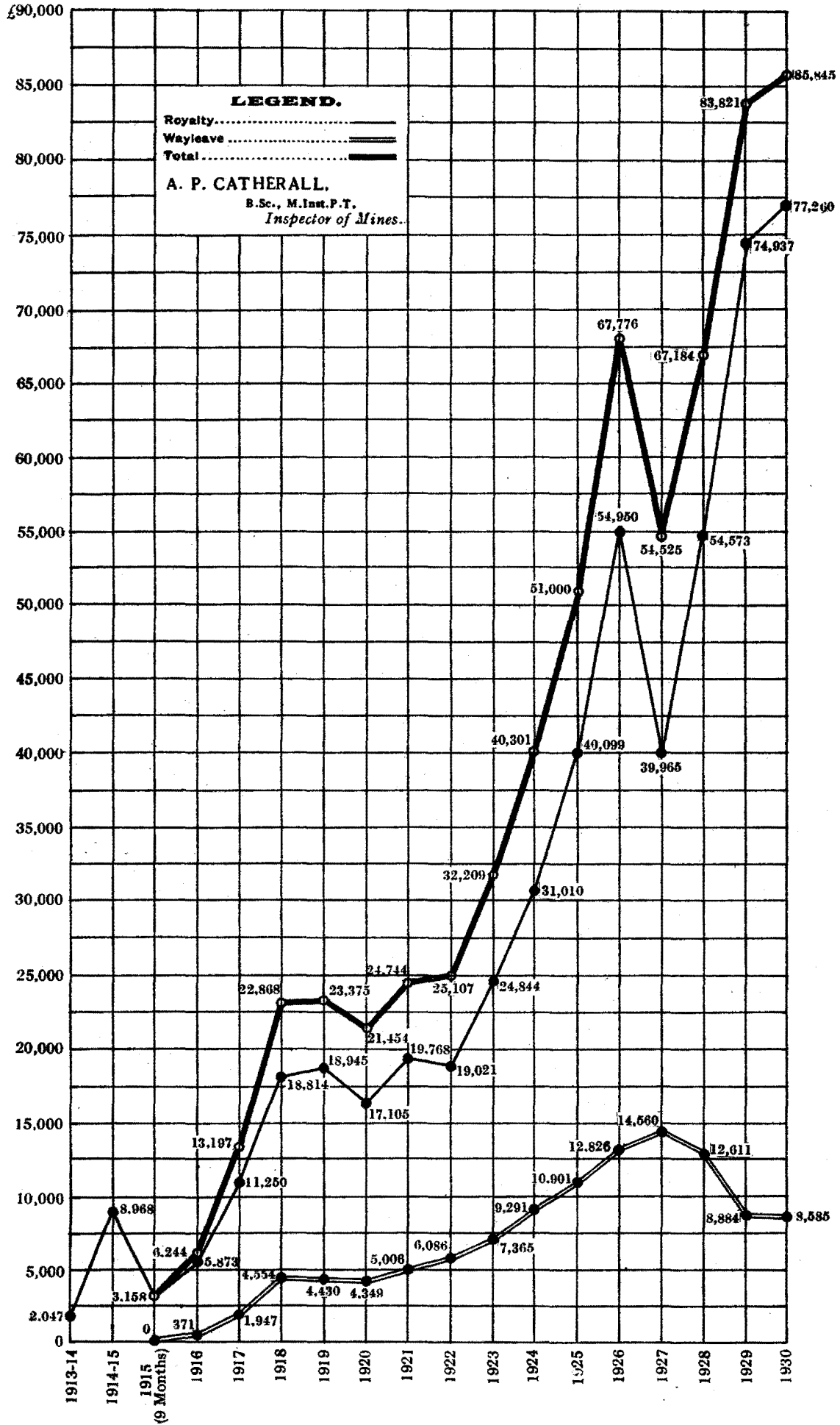
Curve showing the yearly total quantity of Minerals quarried and a comparison of the daily average number of persons employed in Quarries in the Colony from 1st April, 1911 to 31st December, 1930.



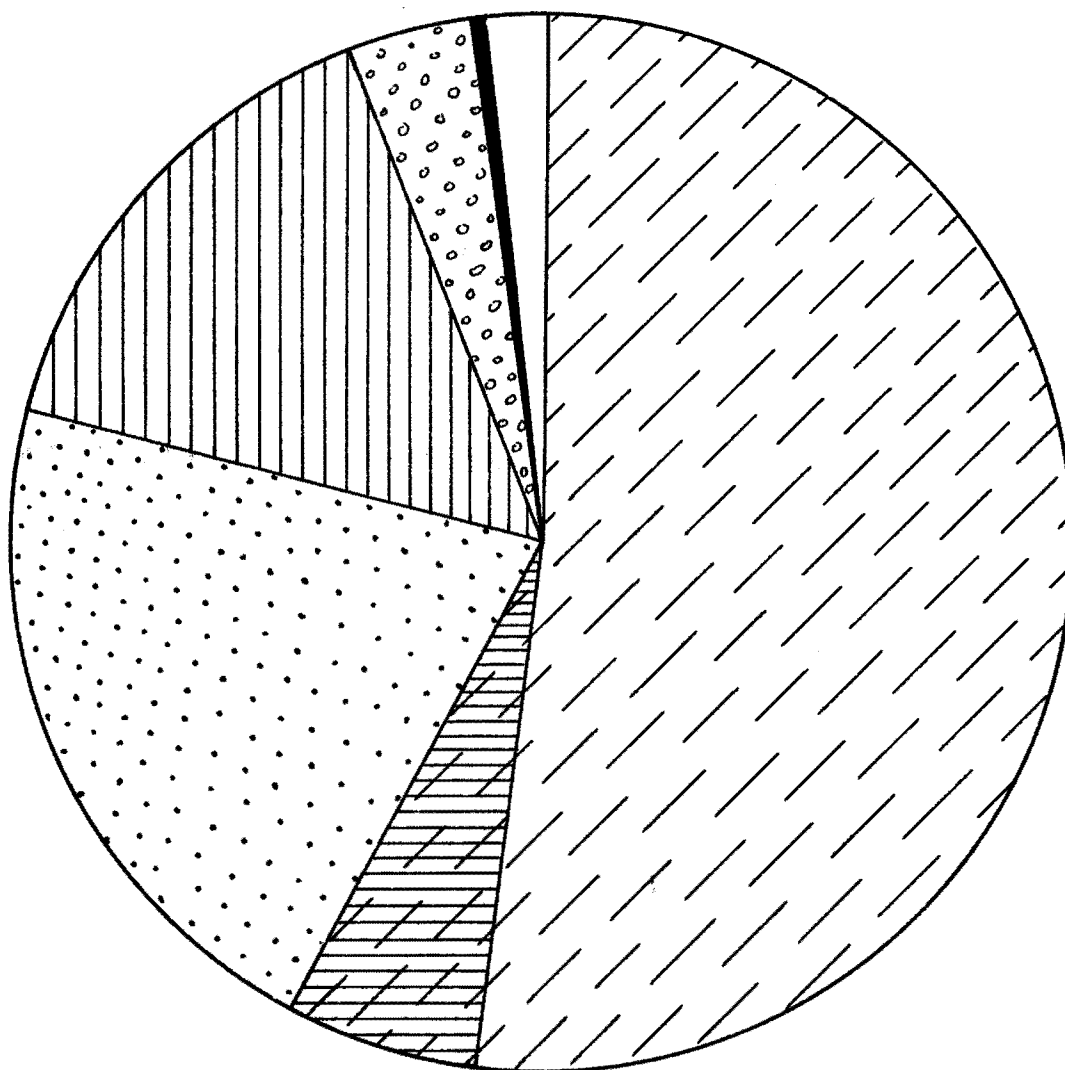
APPENDIX E.

I








ROYALTY AND WAYLEAVE.



APPENDIX F.



1930

<u>Mineral Exports</u>		57·8%
Petroleum Products	52%	
Asphalt	5·8%	
<u>Agricultural and other Exports</u>		42·2%
Cocoa	21·2%	
Sugar, Molasses, Rum	15%	
Coconuts, Copra, Coconut Oil	3·9%	
Coffee	·3%	
Other Exports	1·8%	

TRINIDAD AND TOBAGO.

Council Paper No. 50 of 1932.

MINES DEPARTMENT.

Administration Report of the Inspector of Mines for the year 1931.

*Laid before the Legislative Council on the
29th April, 1932.*

Previous Council Paper No. 56 of 1931.

Registered No. of Correspondence relating to the subject—M.P. No. 9042.

TRINIDAD :
PRINTED BY THE GOVERNMENT PRINTER,
GOVERNMENT PRINTING OFFICE,
PORT-OF-SPAIN.

1932.

[Price 6d.]

MINES DEPARTMENT.

Administration Report of the Inspector of Mines for the year 1931.

Council Paper No. 50 of 1932.

M.P. No. 9642.

HONOURABLE COLONIAL SECRETARY,

I have the honour to submit, for the information of His Excellency the Governor, the following report on the work of the Mines Department for the year 1931.

2. The period under review has been marked by a further fall in prices obtainable for petroleum products in the world's markets with the result that certain companies have found it necessary to drastically curtail their operations. As will be seen from a later paragraph in this report and from Appendix F (G), the footage drilled during the past year was 218,642 feet compared with 372,530 feet drilled in 1930; in fact, not since 1926 has so little drilling been done in the Colony. In spite of this, however, it is gratifying to record that there has been an increase of production of some 324,000 barrels as compared with 1930, this being due to the increased activity by certain companies in the Fyzabad and Palo Seco areas, and by the maintenance of production by working on old wells in other areas.

It is interesting to note that for the first time geophysical surveys have been undertaken. Considerable areas in the Southern district were examined by these methods, but the results of the surveys are not yet available.

In view of the heavy decline in the prices of petroleum in the world's markets, the exports of petroleum and its products, notwithstanding a considerably increased volume, have shown a serious fall in value the figures being:—

1930—7,678,807 barrels valued at	....	....	....	....	£2,790,695
1931—8,964,304	..	..	....	....	£1,949,455

The value of the exports of the leading staples of the Colony during 1931 is shown below:—

				Value £	Percentage of total.
Petroleum Products	....	....	....	1,949,455	46.74
Sugar, Molasses and Rum	....	....	....	934,633	22.41
Cocoa	....	....	....	826,333	19.81
Asphalt	....	....	....	236,597	5.67
Coconuts, Copra and Coconut Oil	....	....	....	115,515	2.77
Bitters	....	....	....	27,288	.66
Coffee	....	....	....	16,080	.39
Other exports not enumerated	....	....	....	64,693	1.55
				<u>£4,170,594</u>	<u>100.00</u>

3. With few exceptions, there has been little new construction work during the past year. The extensions to the pier of the West India Oil Company at Pointe d'Or, mentioned in my last report, have been completed, and the old pier of the Trinidad Oil Fields Operating Company, Ltd., has been demolished. The Trinidad Petroleum Development Company, Ltd., has completed the installation of a plant for recovering light products from natural gas, and this plant is now working satisfactorily. At the time of writing the United British Oilfields of Trinidad, Ltd., have made arrangements for the raising of fresh capital for the purpose of the construction of a new refinery and loading facilities at Point Fortin, and it is expected that this work will be commenced in the near future.

4. The following table will show the number of feet drilled and the quantity of oil produced during 1931 as compared with the years 1929 and 1930:—

	YEAR ENDED 31st DECEMBER, 1929.		YEAR ENDED 31st DECEMBER, 1930.		YEAR ENDED 31st DECEMBER, 1931.	
	Feet drilled.	Oil won Brls. of 35 galls.	Feet drilled.	Oil won Brls. of 35 galls.	Feet drilled.	Oil won Brls. of 35 galls.
Crown Lands	211,024	4,621,567	254,116	5,260,366	138,382	5,325,743
Private Lands	96,310	4,094,085	118,414	4,158,541	80,260	4,417,759
	<u>307,334</u>	<u>8,715,652</u>	<u>372,530</u>	<u>9,418,907</u>	<u>218,642</u>	<u>9,743,502</u>

5. The total number of wells drilled in the Colony to 31st December, 1931, is 1,840 of which 1,155 are on Crown Lands. During the past year 60 wells were drilled of which 34 were on Crown Lands and 26 on private lands, a decrease of 103 compared with 1930. In 43 of these wells oil was struck.

6. The number of concerns engaged in the winning of oil at the close of the year was 14, the same as in 1930.

7. ROYALTY.—The royalty collected in respect of oil won from Crown Lands during the period under review shewed a very considerable increase over that during 1930, the figures being £84,546 14s. 10½d. compared with £77,260 during 1930.

8. WAYLEAVES.—Owing to the fact that the main trunk line of the Trinidad Leaseholds, Ltd., from Fyzabad to Pointe-a-Pierre does not now run along the main roads of the Colony, there has been a considerable falling off in revenue derived from this source, the figures being £6,420 13s. 1d. as compared with £8,585 0s. 0d. during 1930.

9. FEES.—Fees charged for crossing the foreshore, Trinidad Government Railway and public roads amounted to £670.

10. Last year licences were issued as follows:—

Exploration License to United British Oilfields of Trinidad, Ltd., over 7,804 acres Crown Lands to carry out a geophysical survey Reg. No. 2,178 of 1931.

Exploration License to United British Oilfields of Trinidad, Ltd. over 1,715 acres Crown Lands for the purposes of carrying out a geophysical survey Reg. No. 4046 of 1931, supplemental to No. 2178 of 1931.

In addition to the above, Prospecting License to the Apex (Trinidad) Oilfields, Ltd., Reg. No. 4159 of 1928, was further extended for one year from 1st September, 1931 by Deed Reg. No. 4582 of 1931; Prospecting Licenses Nos. 2716 of 1928, 1186 of 1929 and 3916 of 1929 to the Trinidad Petroleum Development Company, Ltd., were further extended to 31st January, 1932; Prospecting License No. 390 of 1929 to the Trinidad Leaseholds, Ltd., was extended for one year from 1st January, 1931, by Deed Reg. No. 1051 of 1932, and Prospecting License Reg. No. 1742 of 1929 issued to the Venezuelan Consolidated Oilfields, Ltd., was assigned to the Siparia Trinidad Oilfields, Ltd. by Deed Reg. No. 1532 of 1931 and extended for one year from 1st May, 1931 by Deed Reg. No. 2995 of 1931.

11. RETURNS.—The various oil companies have regularly forwarded to the Department the returns required to be submitted by them in respect of their operations. After being carefully checked, these have been filed with the records of the Department.

12. A large number of inspections have been carried out by the Officers of the Department in connection with the various operations taking place on the fields, and I have much pleasure in reporting that the Managers readily co-operate with the Department in endeavouring to carry out the provisions of the Ordinance and Regulations.

13. LEGISLATION.—During the past year the following legislation was passed viz:—

- (a) An Ordinance relating to Air Pressure Tanks.
- (b) Drilling Regulations, 1931.

The former provides for a regular testing of air pressure tanks installed in petrol filling stations and in industrial establishments for the starting of internal combustion engines, whilst the latter replaces the Boring Regulations dated 28th June, 1923.

SAN FERNANDO BRANCH OF THE DEPARTMENT.

14. A report by the Petroleum Technologist on the working of his branch is enclosed at Appendix B.

PREVENTION OF ACCIDENTS ORDINANCE, CAP. 157.

15. During the period under review 151 factories in Trinidad and Tobago were worked. Taking the factories as a whole, the owners and Managers co-operate satisfactorily with the Department in ensuring safety to the workmen in their employment.

QUARRIES.

16. From inspections made the various quarries in the Colony have on the whole been found to have been worked in a careful manner, the number operated during the period under review being 79 as compared with 80 during 1930.

PETROLEUM ORDINANCE, CAP. 145.

17. In all 507 licenses to store and sell petroleum products were issued during the year. It is satisfactory to note that as a rule care is taken in petrol service stations to ensure safety.

ASPHALT INDUSTRY ORDINANCE, CAP. 147.

18. No asphalt has been dug on the village lots at La Brea since 1914.

APPENDICES.

19. Appendix A shows the list of oil companies operating in the Colony during the year 1931.

20. Appendix "B" Report on the working of the Petroleum Office.

21. In Appendix C will be found the daily average number of persons employed in oilfields and quarries and the quantity and value of minerals obtained during the period under review.

22. A comparative statement of the oil produced and exported is shown in Appendix D.

23. Appendix E shows the amount of oil refined year by year.

24. Appendix F consists of a series of charts depicting in graphical form the progress made in various industries during the past few years.

25. Appendix G shows the relation of mineral exports to agricultural exports.

STAFF.

26. Mr. A. P. Daly, Chief Clerk, was seconded for duty at the Treasury as from the 1st November, 1931, and his duties are being performed departmentally.

Miss M. A. Jack was transferred to the Registrar and Marshal's Department as from the 1st January, 1931, and was replaced by Mr. R. V. O'Neill.

Mr. M. W. Gilkes, Clerk at the Petroleum Office, was appointed to the post of Government Short-hand Writer as from 4th March, 1931, and Mr. C. Niles, who had been acting for Mr. Gilkes, was appointed to succeed him.

I have great pleasure in recording the very able and loyal assistance I have received from members of the staff.

A. P. CATHERALL,
Inspector of Mines.

9th April, 1932.

APPENDIX A.

No.	Companies.	Nature of tenure of lands on which operations took place.		Disposal of Oil.	Remarks
1	Trinidad Leaseholds, Ltd.	Crown lands under lease Private lands	Fyzabad, Barrackpore and Guayaguayare Fyzabad and Barrackpore	Pumped to the Company's refinery at Pointe-a-Pierre, and there refined. Most of the production is exported in bulk	This Company continues to be the most important one in the Colony from the refining and marketing point of view but owing to the economic situation there has been considerable curtailment in both drilling and production. The main production of the Company continues to be obtained from its various holdings in the Fyzabad area where development work, with a resultant decline in production, has been considerably curtailed. Drilling in the Barrackpore Field has been entirely suspended during the year but the production has only slightly declined. Drilling operations have continued in the Guayaguayare District but the production has remained much the same as during 1930.
2	United British Oilfields of Trinidad, Ltd.	Crown lands under lease	Morne L'Enfer Reserve	Sold to United British Refineries, Ltd.	Work by this Company has been entirely confined to the Parry Lands Field of the Morne L'Enfer Forest Reserve. Whilst there has been a decrease in footage drilled, owing to a number of old wells being worked over, the production has increased. The old fields at Point Fortin and Los Bajos have not been worked.
3	Trinidad Central Oilfields, Ltd.	Crown lands under lease	Tabaquite, Guapo and Lizard Springs	Production from Tabaquite and Lizard Springs refined, sold locally and exported; that from Cruse area sold to Trinidad Leaseholds, Ltd.	Very little drilling has been done by this Company. The majority of the production has been obtained from the Cruse Field at Guapo. No drilling was done on the Lizard Springs Field in the Guayaguayare District where there was a decline in the already small production. There has been a small increase in the production from the old field at Tabaquite.
4	Trinidad Lake Petroleum Company, Ltd.	Private Lands	Brighton	The bulk of the production is exported to the United States of America.	Producing only.
5	Petroleum Development Company, Ltd.	Crown lands under lease	Morne L'Enfer Forest Reserve and La Brea	Sold to Trinidad Lake Petroleum Company, Ltd.	Drilling has been suspended by this Company during the period under review; the production has decreased.

6	Apex (Trinidad) Oilfields, Ltd.	....	Crown lands under lease and prospecting License and Private lands	Fyzabad and Siparia....	Crude oil sold to Trinidad Leaseholds, Ltd. Casing Head Petroleum Spirit sold to United British Refineries, Ltd.	This Company is by far the largest producer in the Colony. During the period under review there has been an increase in the footage drilled and a large increase in production.
7	Kern Trinidad Oilfields, Ltd.	....	Crown lands under lease Private lands	La Brea Guapo and Rousillac	Sold to United British Refineries, Ltd.	There was an increase of footage by this Company chiefly due to drilling on its private lands at Guapo. There was a decrease in both footage and production in the Rousillac Area. The total production of the Company shewed a slight increase.
8	New (Oropuche) Trinidad Oilfields, Ltd.	....	Private Lands	Fyzabad	Sold to Trinidad Leaseholds, Ltd.	A subsidiary of the Trinidad Leaseholds, Ltd. No drilling has been done and the production has decreased.
9	Trinidad Petroleum Development Company, Ltd.	....	Private lands Crown lands under lease and prospecting license	Palo Seco Palo Seco, Los Bajos and Santa Flora	Sold to the United British Refineries, Ltd.	The activities of this Company were largely increased during the year with the result that it was the second largest producer in the Colony. Practically all the production was obtained from its holdings in the Palo Seco Area. The results of drilling at Los Bajos were disappointing and operations were discontinued as also at Santa Flora where one well was drilled. A plant for the recovery of light products from natural gas was installed during the year and the products recovered were returned to crude oil in storage.
10	Palo Seco Oilfields (C. C. Stollmeyer).	....	Crown lands under lease	Palo Seco	Sold to Trinidad Leaseholds, Ltd.	Although there was a decrease in drilling the production increased.
11	Trinidad Oil Fields Operating Company, Ltd.	....	Private lands Crown lands	Fyzabad, San Francique and Palo Seco Pointe d'Or and San Francique	Sold to West India Oil Company.	Drilling operations were suspended in the early part of the year by this Company. The production has greatly declined.
12	New Dome Oilfields, Ltd.	....	Private lands	Fyzabad.	Sold to Trinidad Leaseholds, Ltd.	Drilling on the ten acre block in the Fyzabad area held by this Company continued during the year and a considerably increased production resulted.
13	Siparia Trinidad Oilfields, Ltd.	....	Crown lands under Prospecting license	Palo Seco	Sold to Trinidad Leaseholds, Ltd., and Trinidad Petroleum Development Company, Ltd.	Drilling continued and an increased production was obtained.

APPENDIX B.

HONOURABLE INSPECTOR OF MINES.

The year under review shewed an increase of about 3·4 per cent. in production but a decrease in footage drilled of over 40 per cent. on the 1930 figures. Of the total footage 138,382 feet were drilled on land over which the Crown retains the oil rights and 80,260 feet on privately owned land. Undoubtedly both production and footage would have gone well ahead of the 1930 figures if curtailment had not been brought in.

The average number of wells producing monthly shewed a slight decrease over 1930 as follows :

	1930	1931
Wells Flowing	170	185
Wells Pumping	544	504
Wells Swabbing or Bailing	38	60
Wells Air or Gas Lift	19	13
Total...	771	762

With the exception of the flowing wells many of the others were only operated for a short period each month.

The more general use of tubing in new wells brought in has had a beneficial effect on the flowing life of the well.

The greatest production again came from the Fyzabad area with 56·5 per cent. of the total for the Colony divided amongst the companies operating there.

During the year 60 new wells were started of which 34 were on land over which the Crown retains the oil rights and 26 on privately owned lands, making a grand total for the Colony of 1,840 wells ; 52 new wells were completed and brought on to production while 35 wells were abandoned for various reasons.

Magnetometer and seismographical surveys have been undertaken of the area between the Pitch Lake and Aripero but the results, if anything, tend to give an unfavourable impression of oil prospects in the area. Both surveys show indications of a large fault with a throw of 900 to 2100 feet running to the south of the Lagoon and in order to get readings from the harder or high velocity beds in the seismic survey heavy shots of 1,000 lb. of dynamite had to be fired 3 to 4 kilometers out to sea on both sides of the Pitch Lake point.

A geophysical survey with four Eötvös torsion balances was made of the south-west corner of the Island. The results are still being worked out in Europe and will be available shortly. Meanwhile a certain amount of surface geology is being carried out to fit in with this geophysical survey.

Owing to the curtailment of operations little of outstanding interest has developed. The acid bottle is coming into more general use for testing the verticality of wells whilst drilling.

Frequent inspections of drilling and production machinery were carried out in conjunction with the ordinary routine duties of the office. New Drilling Regulations were passed into law on 20th February, 1931, and all companies have shewn the greatest willingness to co-operate with this office in all ways.

There were no fatal accidents and no well on fire during the period under review.

Mr. C. Niles was confirmed in his appointment as 2nd Class Clerk in this office on the 7th April.

On 30th November Miss Marjorie Perry, 4th Class Clerk, resigned and was replaced by Mr. L. E. McLear.

C. ERIK CAPITO,
Petroleum Technologist.

3rd March, 1932.

APPENDIX C.

Daily average number of persons employed in Oilfields and Quarries and the quantity and value of minerals obtained during the year ended 31st December, 1931.

Minerals.	Daily average number of persons employed		Total.	Quantity.	Approximate Value.*
	Males.	Females.			
Oil	4,126	76	4,202	9,743,502 Barrels	£1,335,437
Asphalt	738	4	742	123,138 Tons.	76,961
Private Quarries (Limestone, Gravel, &c.)	293	116	409	128,047 Tons	11,429
Government Quarries (Limestone, &c.)	408	104	512	84,573 Tons	13,098

* The values in this column are those returned by owners and managers and represent the value at the place of production.

DRILLING AND PRODUCTION RETURN FOR 1931.

Month.	New Wells Started.		New wells completed as producers.		Wells re-completed as producers.		Wells abandoned.		Total Wells started to date.	Footage drilled during Month.	Production for Month.	Wells producing by					Total Number of Wells Producing	Percentage Wells producing to total Wells drilled.	REMARKS.
	Flowing.	Pumping.	Bailing or swabbing.	Air or Gas Lift.	Max-i-flow.														
January	C 7	P 3	C 4	P 1	C 2	P 2	C 4	P 2	1,790	28,784	821,263.79	171	525	55	10	—	761	42.5	
February	1	3	1	5	1	1	1	1	1,794	19,828	744,518.47	174	525	59	15	—	773	43.0	
March	—	2	5	1	4	2	2	1	1,796	18,058	844,533.62	183	531	53	14	—	781	43.5	
April	4	2	3	1	2	2	1	3	1,802	16,578	798,133.92	186	494	53	11	—	744	41.3	
May	6	1	1	3	2	2	2	1	1,809	22,674	788,528.27	183	505	54	13	—	755	41.7	
June	2	2	4	1	2	1	4	1	1,813	19,162	817,759.95	172	504	58	14	—	748	41.3	
July	1	2	1	2	3	1	1	1	1,816	16,376	842,884.10	174	520	68	13	—	775	42.7	
August	2	2	1	2	2	4	1	1	1,820	17,161	891,908.01	191	508	59	14	—	772	42.4	
September	4	4	3	1	3	—	2	3	1,828	15,726	832,483.12	199	505	65	13	1	783	42.8	
October	2	1	2	2	4	—	3	—	1,831	18,680	844,587.46	195	502	74	15	2	788	43.0	
November	4	1	2	3	2	—	—	—	1,836	12,518	737,189.12	196	464	62	15	—	737	40.1	
December	1	3	3	—	1	—	—	—	1,840	13,097	779,712.76	197	461	65	12	—	735	39.9	
Totals	34	26	30	22	28	15	21	14				Averages.							
Grand Totals	60		52		43		35		1,840	218,642	9,743,502.59	185	504	60	13	—	762	41.4	

C—denotes Crown Oil Rights.
P—denotes Private Oil Rights.

C. ERIK CAPITO,
Petroleum Technologist.

APPENDIX D.

Comparative Statement of oil produced and exported year by year since the inception of the Petroleum industry in the Colony.

	Production in barrels.	Quantity of Crude Oil and Refined Oil exported in barrels.
1905 to 31st March, 1910	10,541	—
1910-1911	225,112	—
1911-1912	285,307	219,582
1912-1913	503,616	122,734
1913-1914	643,516	387,719
1914-1915	1,050,112	348,351
9 months ended December, 1915	671,125	408,188
1916	927,877	975,142
1917	1,602,312	1,079,369
1918	2,082,068	1,305,407
1919	1,841,047	1,406,264
1920	2,083,027	1,034,907
1921	2,354,160	1,223,346
1922	2,444,752	1,615,740
1923	3,050,872	2,432,470
1924	4,056,612	3,224,529
1925	4,386,507	3,606,608
1926	4,971,471	3,988,308
1927	5,380,464	4,456,770
1928	7,684,450	6,361,675
1929	8,715,652	8,243,023
1930	9,418,907	7,678,807
1931	9,743,502	8,964,303
	74,033,009	59,083,242

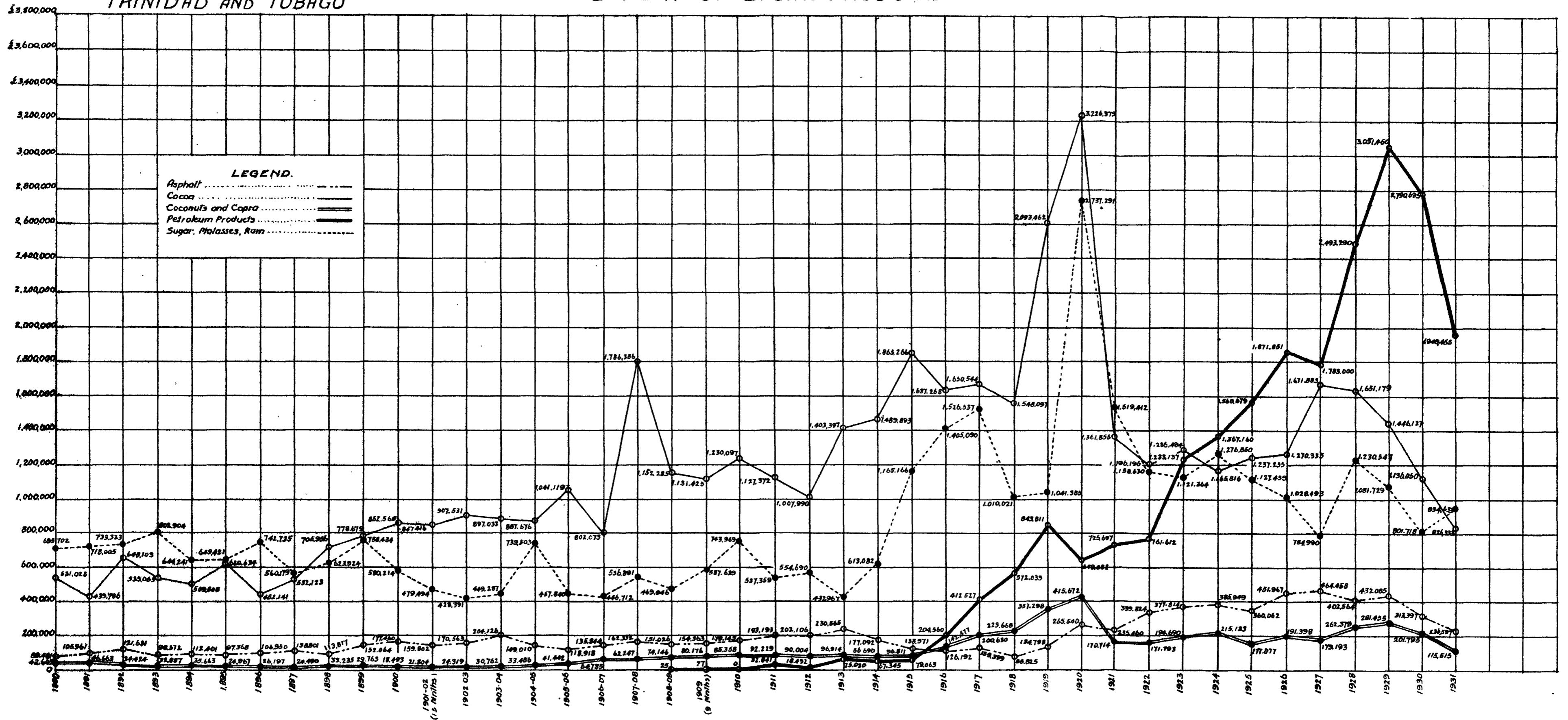
APPENDIX E.

Comparative Statement of oil refined in the Colony.

Previous to 1920....	4,051,373 barrels
1920	1,395,487 "
1921	1,806,016 "
1922	1,820,018 "
1923	2,360,279 "
1924	3,433,902 "
1925	3,790,343 "
1926	3,786,876 "
1927	4,796,223 "
1928	6,725,383 "
1929	7,642,726 "
1930	7,989,679 "
1931	6,899,144 "
Total	56,497,449 "

EXPORT OF LOCAL PRODUCE

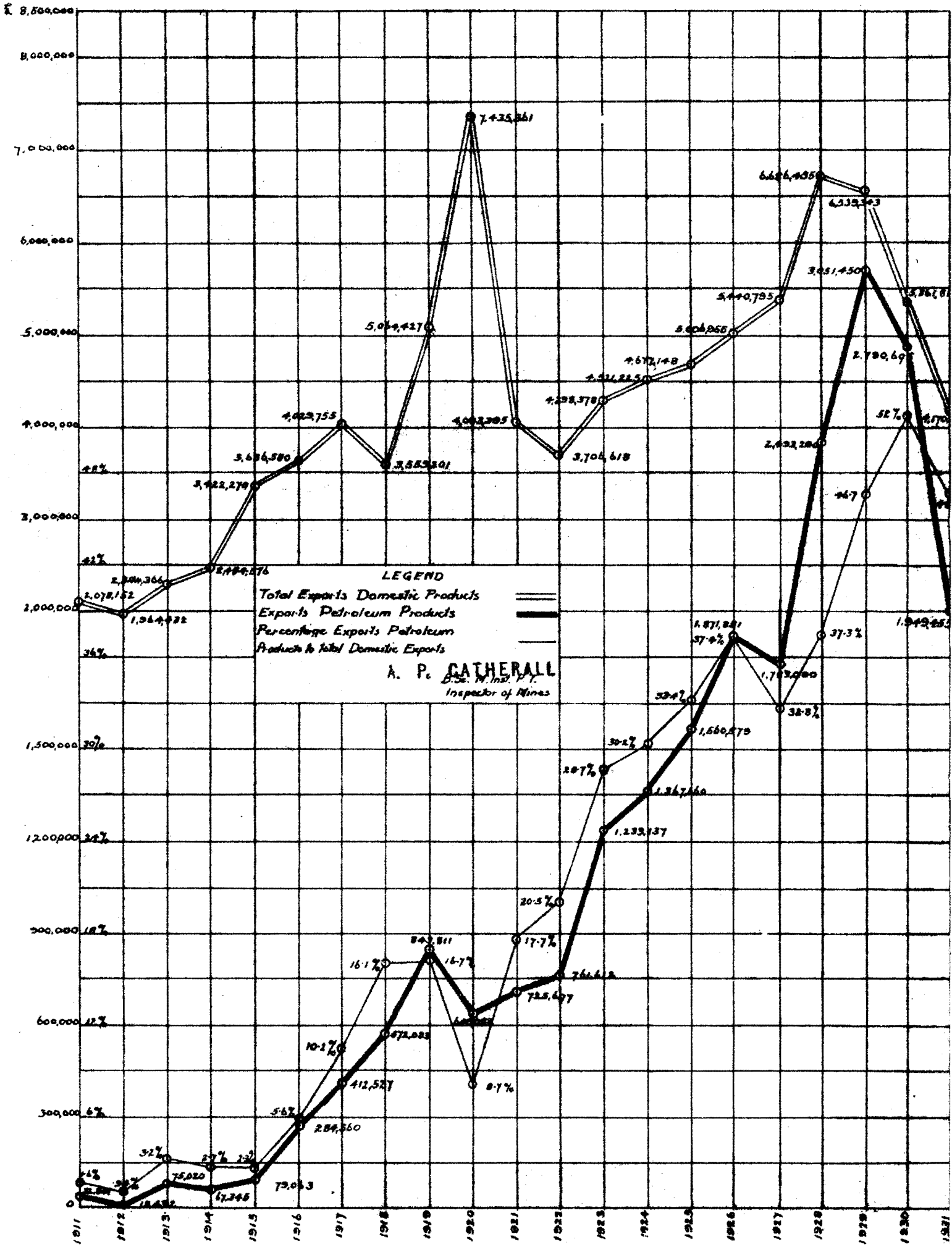
TRINIDAD AND TOBAGO



Appendix F

B

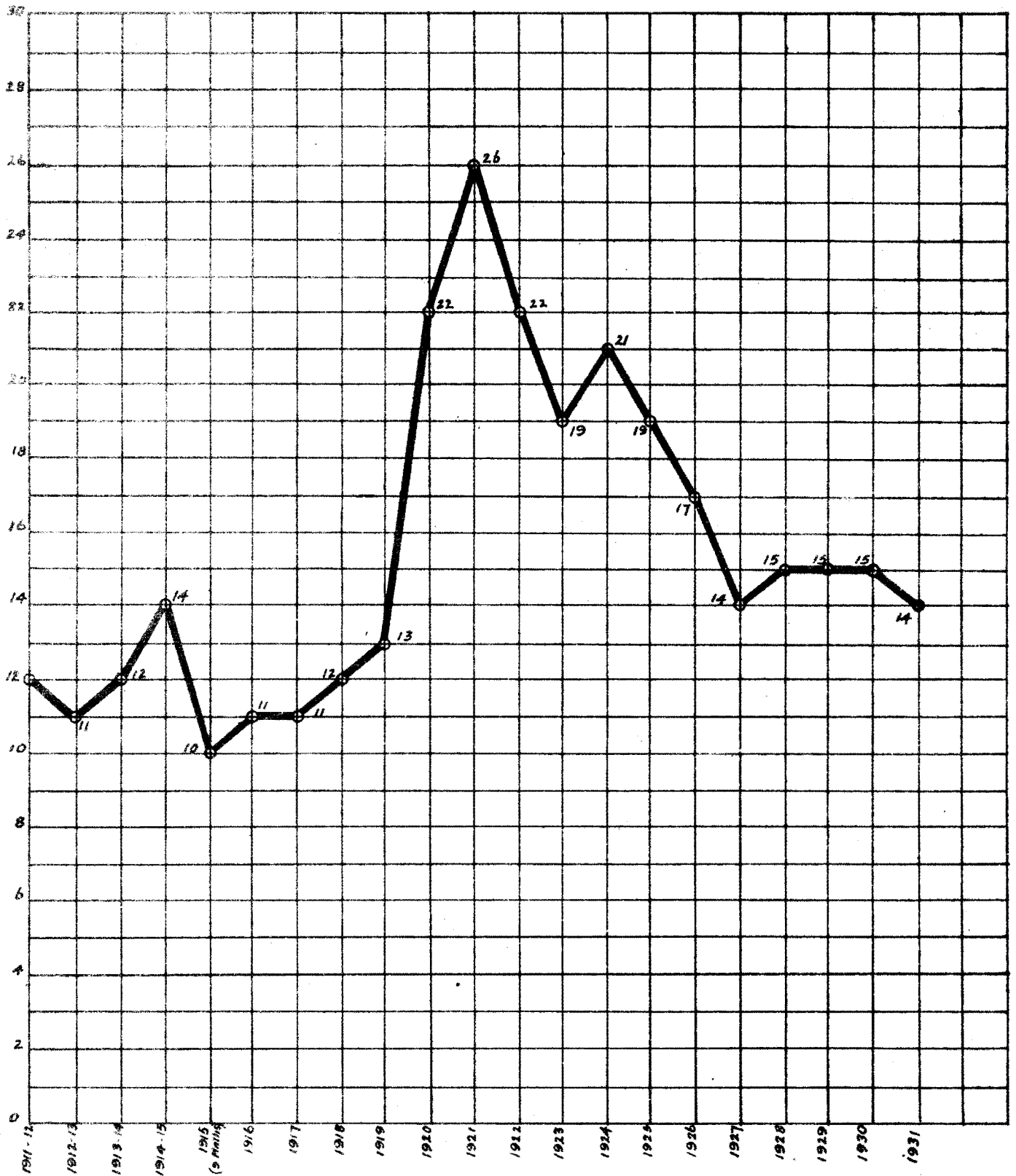
TRINIDAD AND TOBAGO



Appendix F

"C"

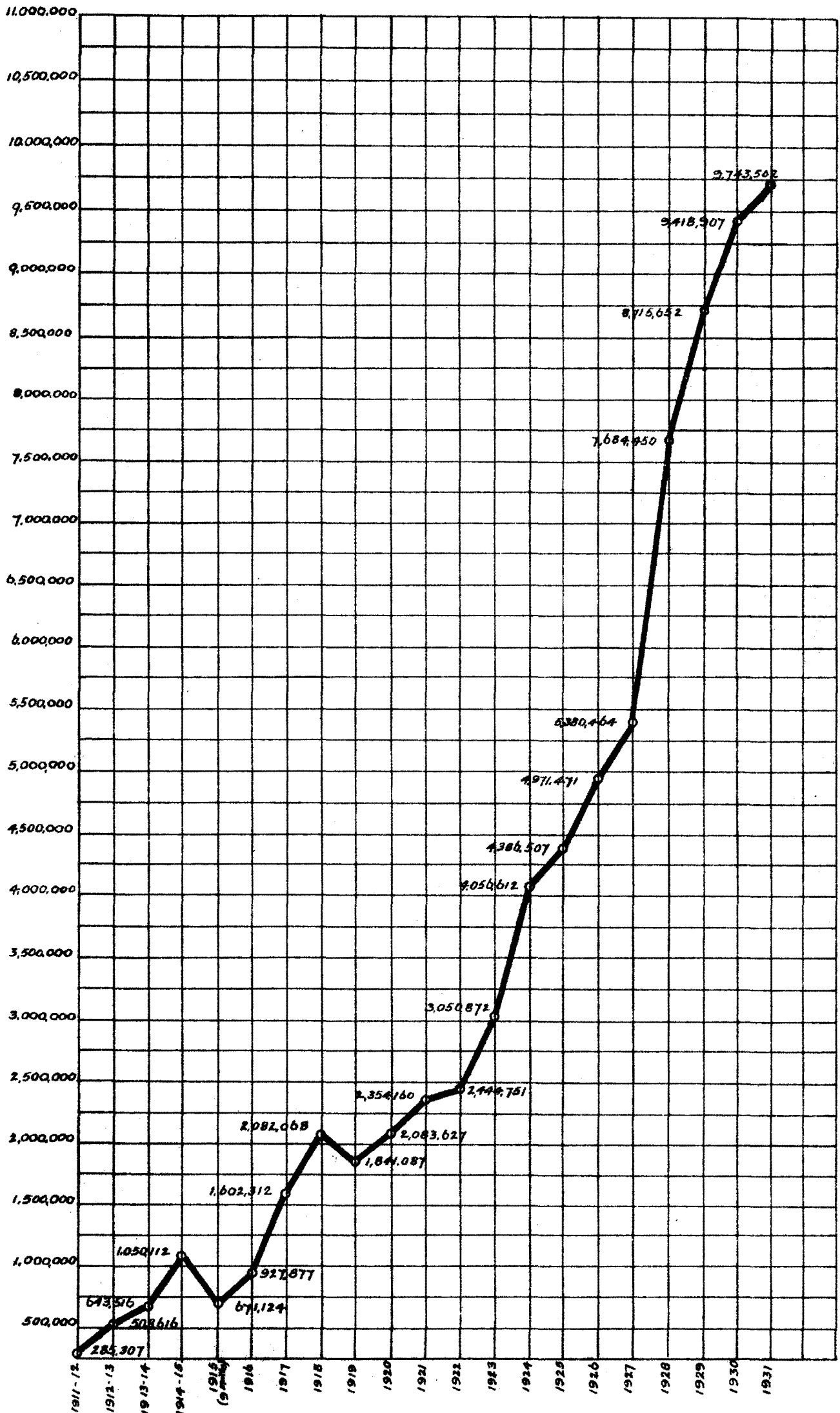
Curve showing the number of Oil Companies that have operated annually in the Colony from 1st. April 1911 to 31st. December 1931



Appendix F

"D"

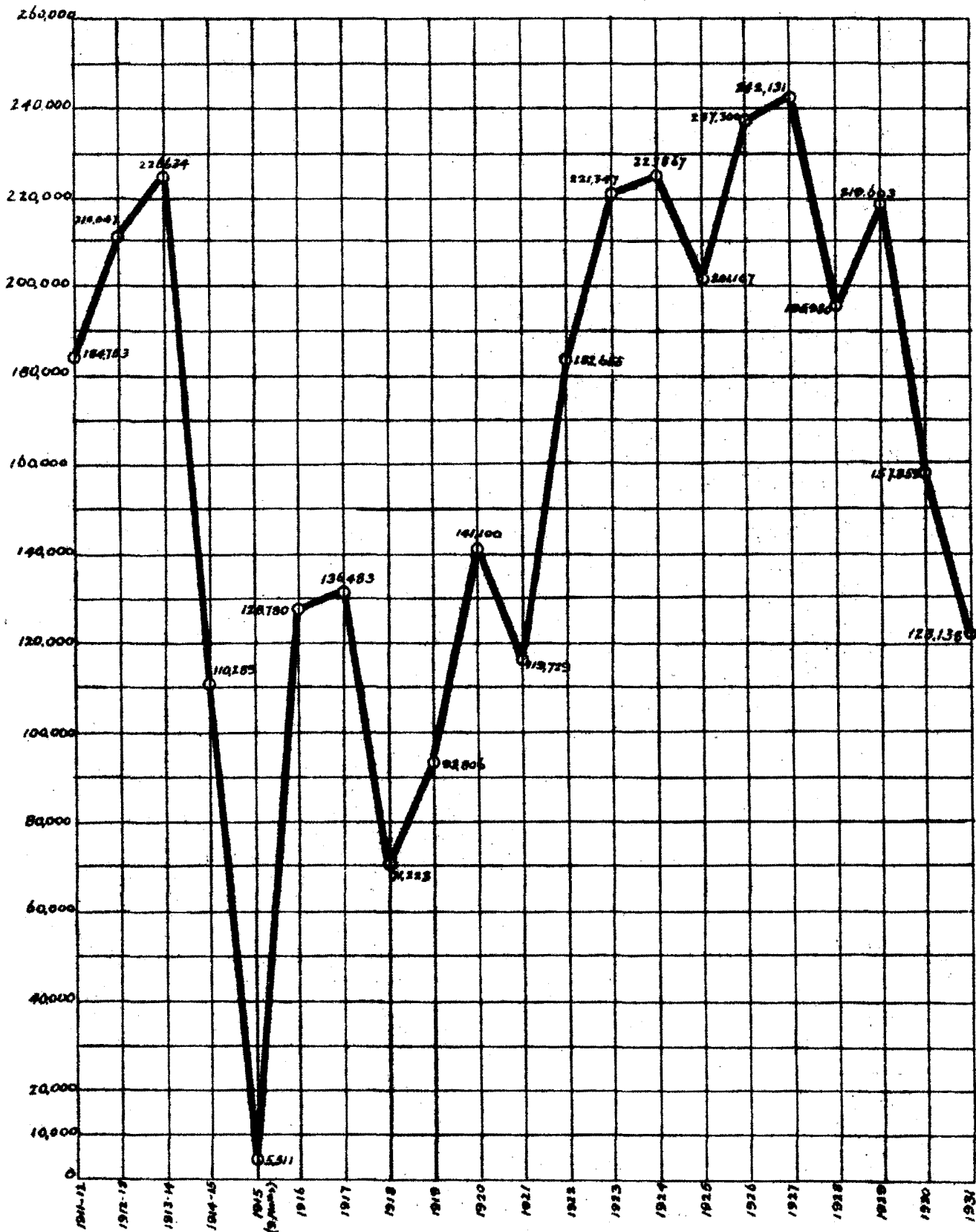
Total Annual Production of Crude Oil in Barrels One Barrel = 35 Gallons



Appendix F

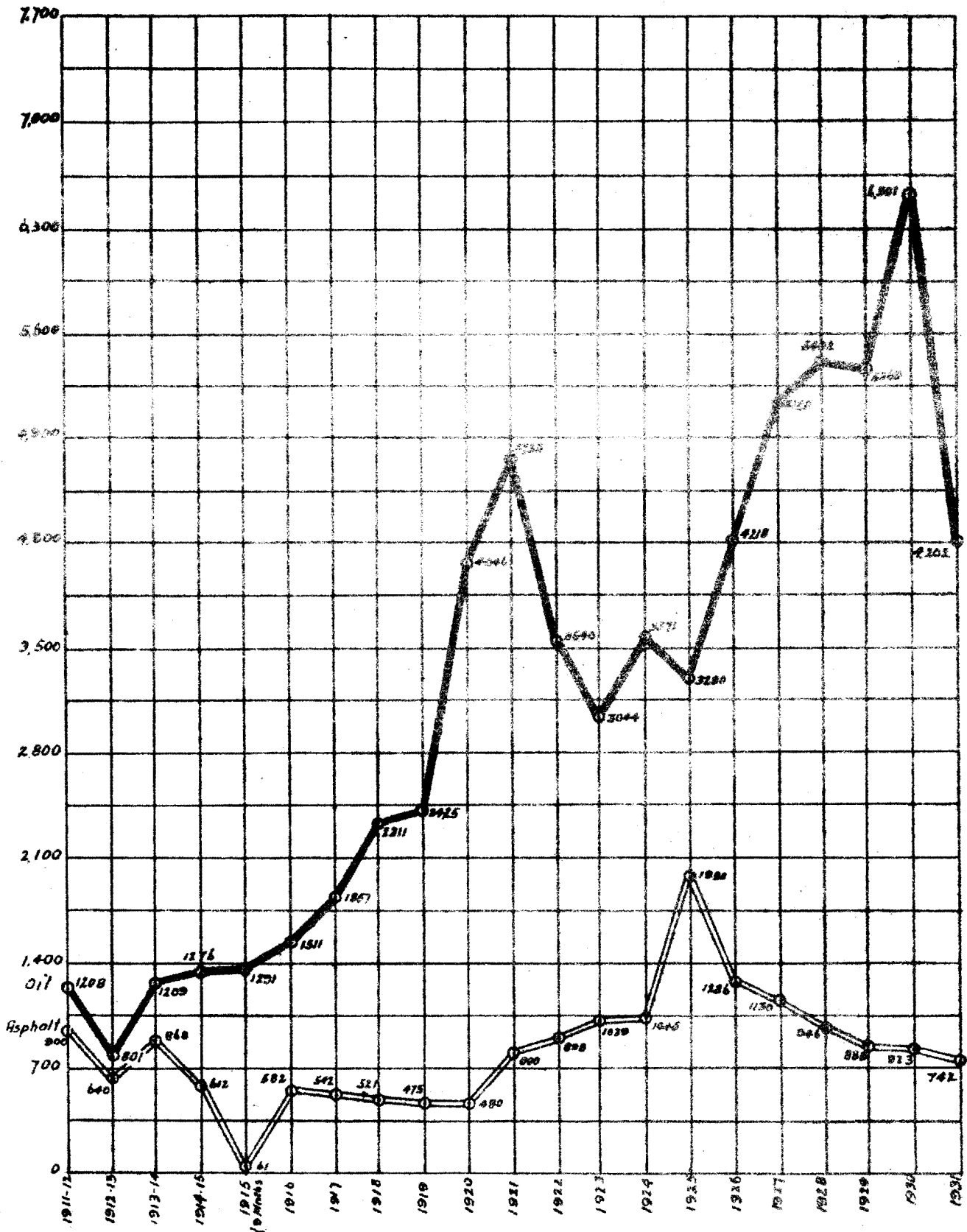
E

Curve showing yearly output of Asphalt from the Colony in Tons from 1st April 1911, to 31st December 1931



Appendix F

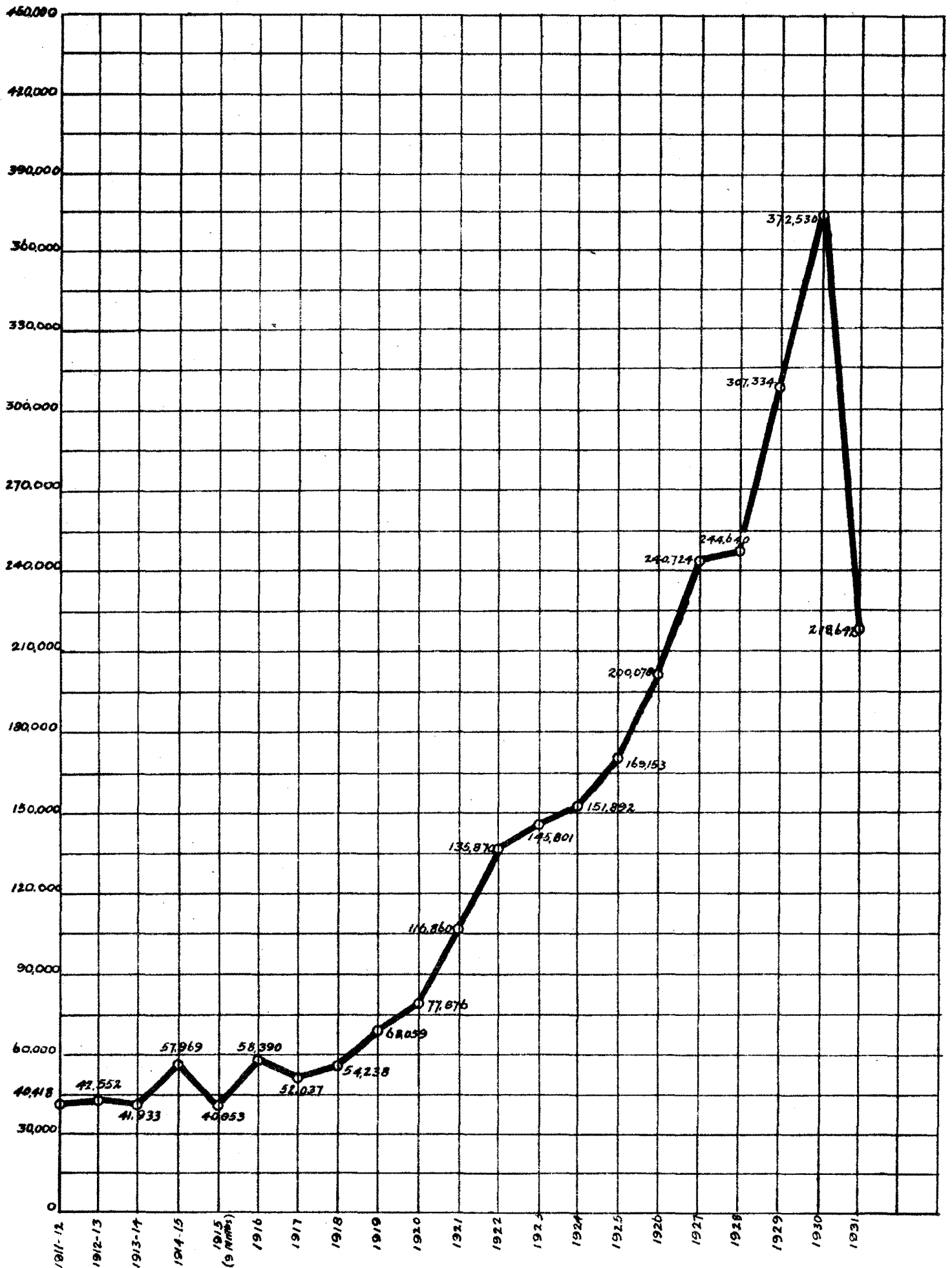
Curve showing comparison of daily average number of persons employed in the Oil and Asphalt Industries of the Colony from 1st April 1911 to 31st December, 1936



Appendix F

"G"

Curve showing yearly total number of feet drilled in the Colony from 1st. April 1911 to 31st. December 1931

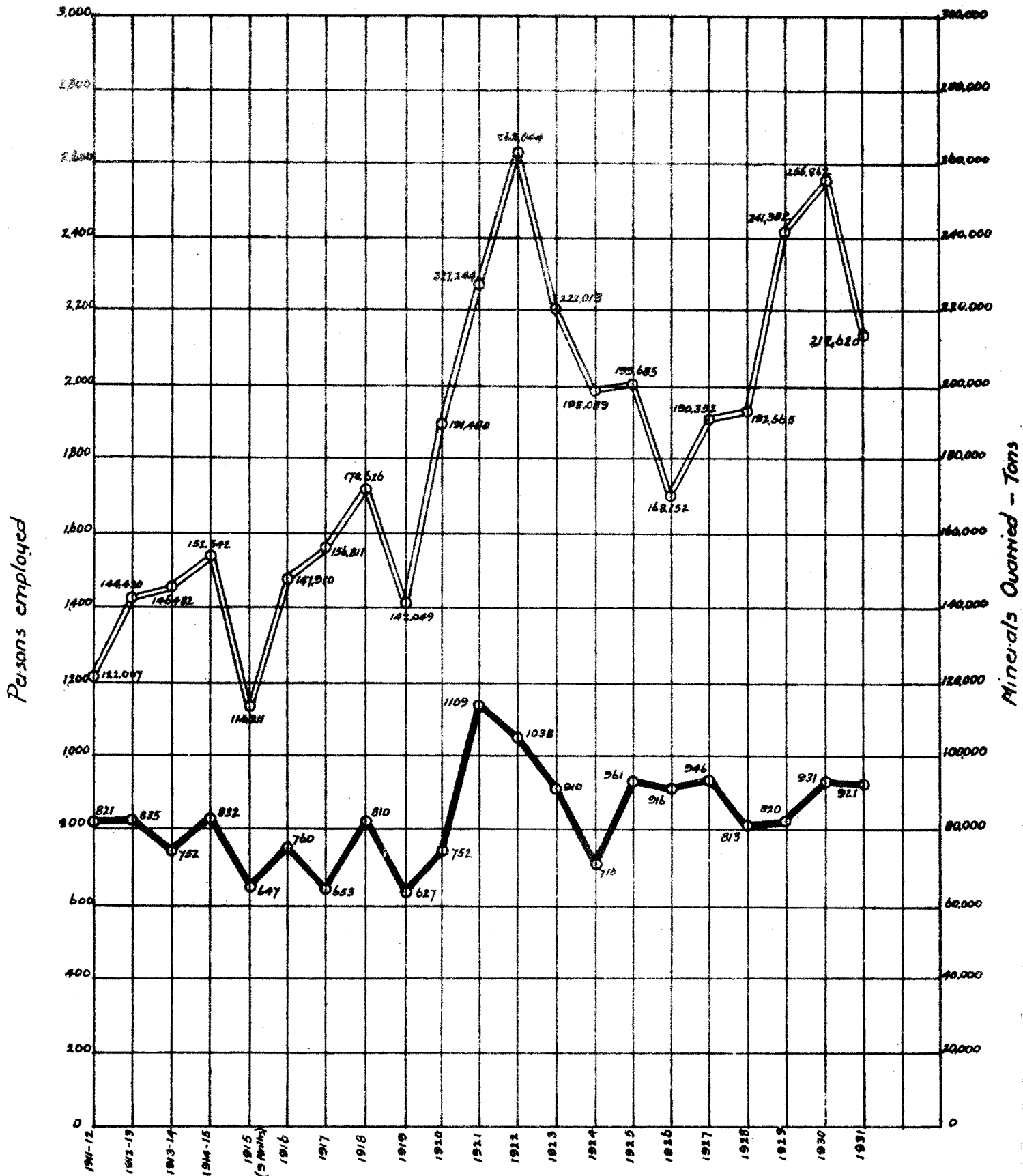


Appendix F

"H"

Curve showing the yearly total quantity of Minerals quarried and a comparison of the daily average number of persons employed in Quarries in the Colony from 1st April 1911 to 31st December 1931

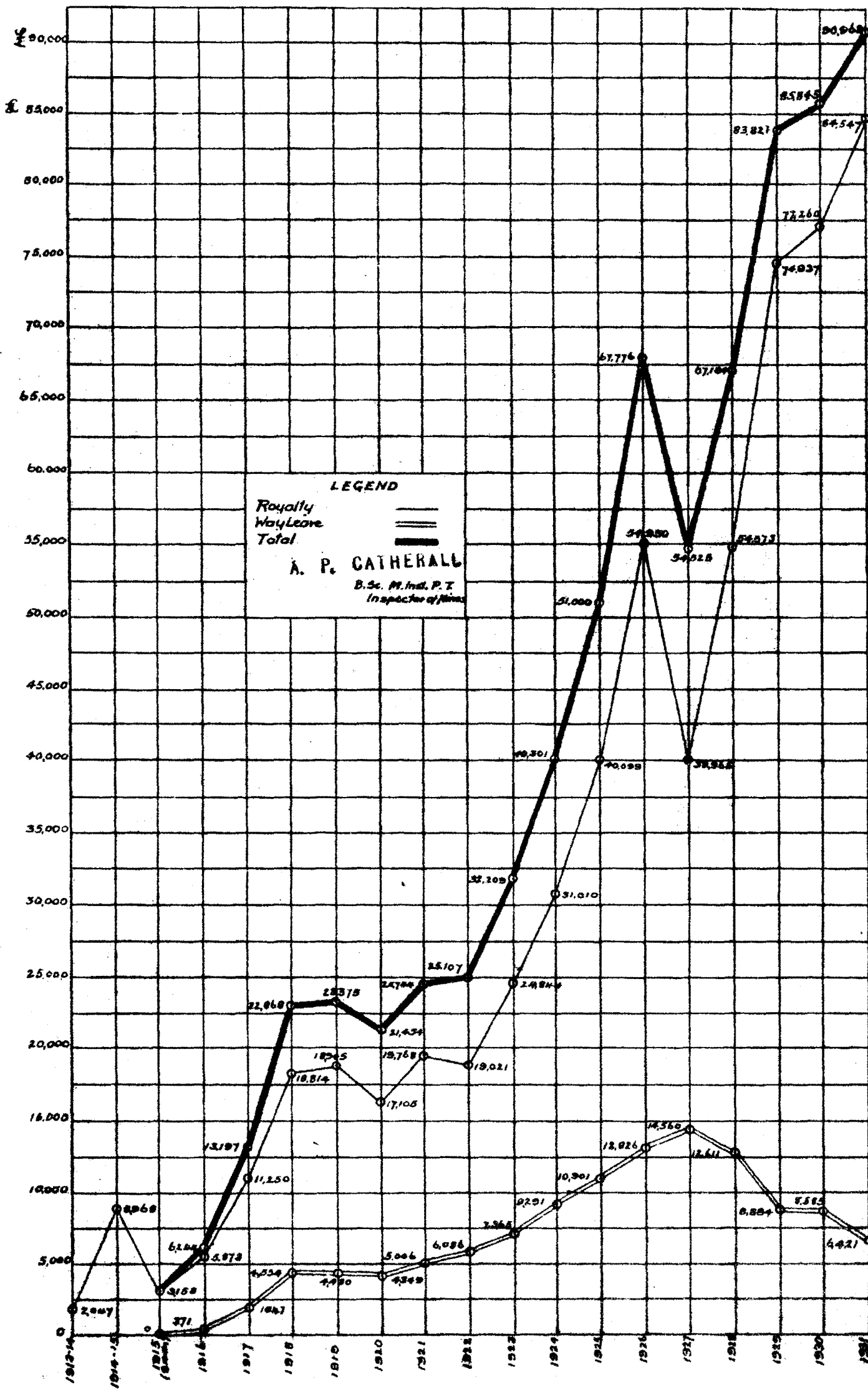
Minerals quarried  Persons employed 



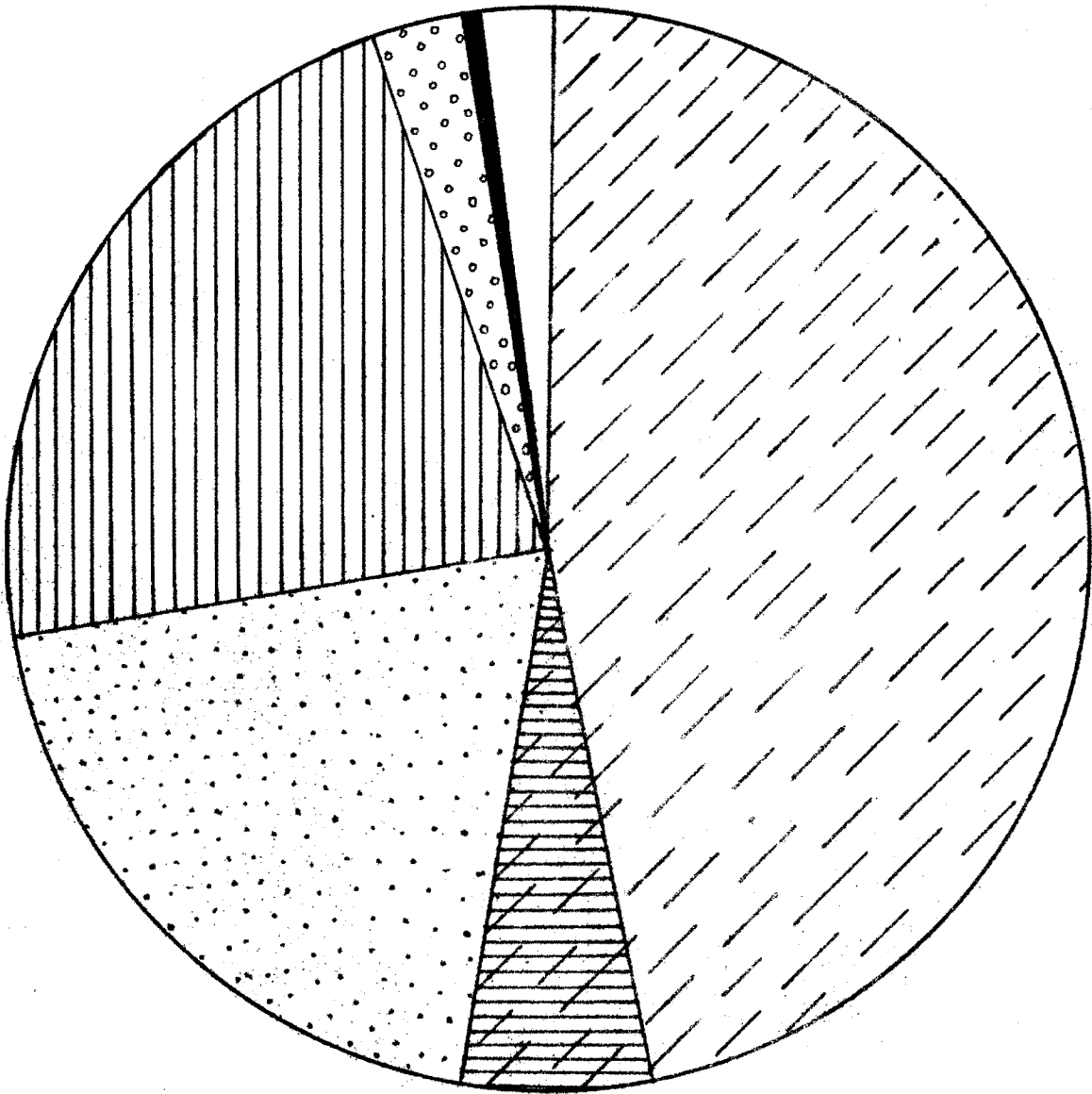
Appendix F

I

ROYALTY AND WAYLEAVE



Appendix G



Mineral Exports 52.4%

Petroleum Products 46.7%

Asphalt 5.7%

Agricultural and other Exports 47.6%

Cocoa 19.8%

Sugar, Molasses, Rum 22.4%

Coconuts, Copra, Coconut Oil 2.8%

Coffee 4%

Other Exports 2.2%

TRINIDAD AND TOBAGO.

Council Paper No. 30 of 1933.

MINES DEPARTMENT.

Administration Report of the Inspector of Mines for the year 1932.

*Laid before the Legislative Council on the
7th of April, 1933.*

Previous Council Paper No. 50 of 1932.

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MINES DEPARTMENT.

Administration Report of the Inspector of Mines for the year 1932.

Council Paper No. 30 of 1933.

M.P. No. 15476.

HONOURABLE COLONIAL SECRETARY,

I have the honour to submit, for the information of His Excellency the Governor, the following report on the work of the Mines Department for the year 1932.

2. Since the year 1920 there has been a steady increase in the Colony's production of crude oil and I am pleased to be able to record that this increase has continued during the period under review, the production during 1932 being the highest yet recorded, viz.: 10,126,065 barrels compared with 9,743,502 for the previous year. It is not generally realised to what proportions the mineral industry of the Colony has grown during recent years, but the fact that petroleum products and asphalt formed 56.80 per cent. and 3.14 per cent. respectively, or a total of practically 60 per cent., of the total exports shows the importance of these industries to the Colony.

In common with other industries the oil industry of the Colony during the past year has suffered from the financial conditions which are prevailing throughout the world, and prices obtainable for petroleum products in the world's markets have continued to be low though in certain cases companies which have entered into sales contracts for their products based on prices ruling in the United States of America have benefited from the rate of exchange since the departure of Great Britain from the gold standard.

In my last report I mentioned that a number of companies had found it necessary to curtail drastically their operations and that in 1931, 218,642 feet were drilled compared with 372,530 feet in 1930. During the period under review drilling operations have been further curtailed in that only 173,287 feet were drilled.

3. In connection with the growth of the industry it is interesting to note that during the last decade the production has more than quadrupled, the production for the year 1922 being 2,444,751 barrels.

There has been a considerable increase not only in the value but also the volume of petroleum products exported during 1932 as compared with 1931, the figures being as follows:—

1931—8,964,304 barrels valued at	..	..	..	..	£1,949,455
1932—9,637,474 do.	..	..	..	..	£2,382,846

From this it will be seen that the average value per barrel of these products was 4s. 11½d. in 1932 as compared with 4s. 5½d. in 1931; it is, however, regrettable that this value is still much below the figure of 7s. 3¼d. returned to the Customs Department in respect of exports for the year 1930.

The value of the exports of the leading staples of the Colony during 1932 is shewn below:—

	Value	Percentage of
	£	Total.
Petroleum Products	2,382,846	56.80
Sugar, Molasses and Rum	888,092	21.17
Cocoa	579,170	13.80
Asphalt	131,651	3.14
Coconuts, Copra and Coconut Oil	106,786	2.54
Coffee	20,822	0.50
Bitters	18,962	0.45
Other exports not enumerated	67,103	1.60
	<u>4,195,432</u>	<u>100.00</u>

4. As I mentioned in my last Administration Report the United British Oilfields of Trinidad, Ltd., had made arrangements for the raising of fresh capital for the purpose of the construction of a new refinery and loading facilities at Point Fortin. These works were commenced, and at the time of writing the

refinery, having a capacity of 1,000 tons of crude oil per 24 hours, is nearing completion. The construction of a pier some 8,500 feet long at which vessels drawing 30 feet of water will be able to load is now in progress, and it is expected will be completed during the year.

The Kern Trinidad Oilfields, Ltd., have also commenced the erection of a refinery designed to treat 1,000 barrels of oil per 24 hours. Apart from the above there has been little of interest to record regarding the construction of new works during the period under review.

5. The following table will shew the number of feet drilled and the quantity of oil produced during 1932 as compared with the years 1930 and 1931 :—

	YEAR ENDED 31ST DECEMBER, 1930.		YEAR ENDED 31ST DECEMBER, 1931.		YEAR ENDED 31ST DECEMBER, 1932.	
	<i>Feet drilled.</i>	<i>Oil won Brls. of 35 galls.</i>	<i>Feet drilled.</i>	<i>Oil won Brls. of 35 galls.</i>	<i>Feet drilled.</i>	<i>Oil won Brls. of 35 galls.</i>
Crown Lands ..	254,116	5,260,366	138,382	5,325,743	111,730	5,610,901
Private Lands ..	118,414	4,158,541	80,260	4,417,759	61,557	4,515,164
	<u>372,530</u>	<u>9,418,907</u>	<u>218,642</u>	<u>9,743,502</u>	<u>173,287</u>	<u>10,126,065</u>

6. During the year 61 wells were drilled of which 41 were on Crown Lands and 20 on private lands, an increase of one as compared with 1931. In 46 of these wells oil was struck. The total number of wells drilled in the Colony to 31st December, 1932, was 1,902 of which 1,197 were on Crown Lands.

7. At the close of the year 16 concerns were actively engaged in the winning of oil as against 14 at the end of 1931.

8. ROYALTY.—The royalty collected in respect of oil won from Crown Lands during the period under review shewed a considerable increase over that during 1931, the figures being £90,053 7s. 4½d. compared with £84,546 14s. 10½d. during 1931.

9. WAYLEAVES.—The revenue collected under this head amounted to £2,619 17s. 1½d., of which £184 4s. 7d. was for oil pumped along the Trinidad Government Railway. In 1931 £6,420 13s. 1d. was collected.

10. FEES.—Fees charged for crossing the Foreshore, the Trinidad Government Railway and public roads amounted to £414.

11. LICENCES.—No new leases or licences were issued during the year but the following extensions were granted :—

Prospecting Licence to Apex (Trinidad) Oilfields, Ltd., Registered No. 4159 of 1928 was further extended to 31st December, 1933 by Deed Registered No. 5021 of 1932.

Prospecting Licence to the Apex (Trinidad) Oilfields, Ltd., Registered No. 1938 of 1930 was extended for one year from 1st July, 1932 by Deed Registered No. 3004 of 1932.

Prospecting Licences to the Trinidad Petroleum Development Company, Ltd., Registered Nos. 2716 of 1928, 1186 of 1929, 3916 of 1929 and 3177 of 1930 were further extended to 31st December, 1933.

Prospecting Licence to the Siparia Trinidad Oilfields, Ltd., Registered No. 1742 of 1929 was further extended for one year from 1st May, 1932 by Deed Registered No. 2703 of 1932.

12. RETURNS.—The various oil companies have regularly forwarded to the Department the returns required to be submitted by them in respect of their operations. After being carefully checked, these have been filed with the records of the Department.

13. A large number of inspections have been carried out by the officers of the Department in connection with the various operations taking place on the fields, and I have much pleasure in reporting that the Managers readily co-operated with the Department in endeavouring to carry out the provisions of the Ordinances and Regulations.

14. No new legislation affecting the petroleum industry was passed during the year.

SAN FERNANDO BRANCH OF THE DEPARTMENT.

15. A report by the Petroleum Technologist on the working of his branch is enclosed at Appendix " B ".

PREVENTION OF ACCIDENTS ORDINANCE, CAP. 157.

16. In general the Owners and Managers co-operate satisfactorily with the Department in ensuring safety to the workmen in their employment. During the period under review 172 factories in Trinidad and Tobago were worked. It is interesting in this connection to note that during the last year or two a considerable number of small factories employing less than half a dozen hands have been established.

QUARRIES.

17. From inspections made the various quarries in the Colony have, on the whole, been found to have been worked in a careful manner, the number operated during the period under review being 77 as compared with 79 during 1931.

PETROLEUM ORDINANCE, CAP. 145.

18. Five hundred and forty-nine licences to store and sell petroleum products were issued during the year. It is satisfactory to note that as a rule care is taken in petrol service stations to ensure safety.

APPENDICES.

19. Appendix " A " shows the list of oil companies operating in the Colony during the year 1932.

20. Appendix " B " is the Report on the working of the Petroleum Office, San Fernando.

21. In Appendix " C " will be found the daily average number of persons employed in oilfields and quarries and the quantity and value of minerals obtained during the period under review.

22. A comparative statement of the oil produced and exported is shown in Appendix " D ".

23. Appendix " E " shows the amount of oil refined year by year.

24. Appendix " F " consists of a series of charts depicting in graphical form the progress made in various industries during the past few years.

25. Appendix " G " shows the relation of mineral exports to agricultural exports.

STAFF.

26. I have great pleasure in recording the very able and loyal assistance I have received from the members of the staff.

A. P. CATHERALL,
Inspector of Mines.

18th March, 1933.

APPENDIX A.

No.	Companies.	Nature of tenure of lands on which operations took place.		Disposal of oil.	Remarks.
1	Trinidad Leaseholds, Ltd.	Crown lands under lease Private lands	Fyzabad, Barrackpore and Guayaguayare Fyzabad and Barrackpore	Pumped to the Company's Refinery at Pointe-a-Pierre, and there refined. Most of the production is exported in bulk	Whilst this Company has the second largest production it continues to be the most important one in the Colony from the point of view of marketing and refining. The major part of the Company's production continues to be obtained from its various holdings in the Fyzabad area; drilling operations in this area have been increased during the year with a resultant increase in production. Some drilling has been done at Barrackpore but the production has slightly declined. Development has continued on the Company's holdings at Guayaguayare and the production has considerably increased.
2	United British Oilfields of Trinidad, Ltd.	Crown lands under lease	Morne L'Enfer Reserve	Sold to United British Refineries, Ltd.	This Company has confined its operations to the Parry Lands area where the production has fallen slightly. There has been under construction during the year a new refinery and new shipping facilities.
3	Trinidad Central Oilfields, Ltd.	Crown lands under lease	Tabaquite, Guapo and Lizard Springs	Production from Tabaquite and Lizard Springs refined, sold locally and exported; that from the Cruse field sold to the Trinidad Leaseholds, Ltd. and United British Refineries, Ltd.	Little work has been done by this Company. The production at Tabaquite and Lizard Springs has been maintained but drilling has been suspended on the Cruse field and the production has greatly declined.
4	Trinidad Lake Petroleum Company, Ltd.	Private lands	Brighton	The bulk of the production is exported to the United States of America	Producing only.
5	Petroleum Development Company, Ltd.	Crown lands under lease	Morne L'Enfer Forest Reserve and La Brea	Sold to Trinidad Lake Petroleum Company, Ltd.	No drilling has been done, production has decreased.
6	Apex (Trinidad) Oilfields, Ltd.	Crown lands under lease and prospecting license and private lands	Fyzabad and Siparia	Crude oil sold to Trinidad Leaseholds, Ltd.; Casing Head Petroleum Spirit sold to United British Refineries, Ltd.	This Company is the largest producer in the Colony. The production has been maintained at much the same rate as last year.
7	Kern Trinidad Oilfields, Ltd.	Crown lands under lease Private lands	La Brea Guapo and Rousillac	The production is exported in bulk	There was a considerable curtailment of footage drilled as compared with 1931 with a decrease in production as a result.

8	New Oropuche Trinidad Oilfields, Ltd...	Private lands	.. Fyzabad ..	.. Sold to Trinidad Leaseholds, Ltd.	No drilling has been done and the production has slightly decreased.
9	Trinidad Petroleum Development Company, Ltd.	Private lands Crown lands	.. Palo Seco Palo Seco, Los Bajos and Santa Flora	Sold to United British Refineries, Ltd.	This Company has again carried on a very active drilling programme in the Palo Seco district and although the footage drilled has not been so great as in 1931 the production has increased.
10	Palo Seco Oilfield (C. C. Stollmeyer)	Crown lands under lease	Palo Seco	.. Sold to Trinidad Leaseholds, Ltd.	Although drilling has been suspended, the production from existing wells has increased.
11	Trinidad Oil Fields Operating Co., Ltd.	Private lands Crown lands	.. Fyzabad, San Francique and Palo Seco .. Pointe d'Or and San Francique	Sold to West India Oil Company	.. Some drilling has been done during the year, and the production has increased.
12	New Dome Oilfields, Ltd.	Private lands	.. Fyzabad ..	.. Sold to Trinidad Leaseholds, Ltd.	This Company has considerably increased its footage but the production has slightly decreased.
13	Siparia Trinidad Oilfields, Ltd.	Crown lands under Prospecting License	Palo Seco ..	.. Sold to Trinidad Leaseholds, Ltd. and Trinidad Petroleum Development Co., Ltd.	Both drilling and production have considerably decreased.
14	Trinidad Freeholds, Ltd.	Private lands	.. Fyzabad ..	.. Sold to Trinidad Leaseholds, Ltd.	No drilling. Small production.
15	H. S. Tucker	Private lands	.. Pointe Ligoure and Fyzabad	Refined and products sold locally	.. Small production obtained from existing wells in the Fyzabad and Pointe Ligoure districts.
16	Coldan, Ltd.	Private lands	.. Williamsville	.. The production was consumed by the Company	This concern drilled one well in an abandoned field and then suspended operations; all the production was consumed.

APPENDIX B.

HONOURABLE INSPECTOR OF MINES,

The year under review shows an increase of about 3.9 per cent. in the production but a decrease in footage drilled of 20.7 per cent. over the 1931 figures. The corresponding figures with regard to 1930 were 7.5 per cent. increase and 53.5 per cent. decrease respectively.

An analysis of the production and feet drilled for 1931 and 1932 shews:—

	1931.			1932.		
	Production brls.	Feet drilled	Average Production per Well.	Production brls.	Feet drilled.	Average Production per Well.
Crown Lands ..	2,816,924.44	42,960	612	3,340,290.65	44,568	806
Alienated Lands	2,511,544.57	95,400	1,828	2,270,610.21	67,162	1,775
Private Lands ..	4,415,033.58	80,107	1,394	4,512,958.49	61,557	1,856

Sixty-one new wells were started up during the year making a grand total for the Colony of 1,902.* These new wells were disposed of as follows:—

					<i>Crown.</i>	<i>Private.</i>
Wells started during 1932 ..	..	..	..	..	41	20
Wells brought forward from 1931	..	..	..	..	17	12
Total ..	..	..	..	..	58	32
Wells completed as producers	..	..	..	..	32	19
Wells completed as a water well ..	..	..	..	..	1	0
Wells completed as dry holes but not abandoned ..	..	..	..	..	1	1
Wells current in 1932 and abandoned as dry or uncommercial holes ..	..	..	..	..	2	1
Wells current in 1932 and abandoned as junked or watered holes ..	..	..	..	..	0	1
Wells unfinished at the end of 1932	..	..	..	..	22	10
Totals ..	..	..	..	..	58	32
Old wells abandoned during 1932	..	..	..	..	3	5
Wells re-completed during the year	..	..	..	..	19	16

The average number of wells producing monthly shewed a slight increase over the 1930 and 1931 figures as follows:—

				1930.	1931.	1932.
Wells flowing ..	..	..	..	170	185	215
Wells pumping ..	..	..	..	544	504	469
Wells Swabbing or Bailing ..	..	..	..	38	60	81
Wells on Air or Gas Lift ..	..	..	..	19	13	15
Wells on Displacement Pumping ..	..	..	..	—	—	6
				771	762	786

From the above it will be seen that the number of flowing wells has increased. This is mostly due to the increased use of tubing to bring a new well in which prolongs the flowing life of a well considerably as was indicated in my last year's report. This use of tubing together with more attention paid to the older producing wells has considerably reduced the number of feet required to be drilled to maintain the Colony's production, despite the fact that in some areas drilling has proceeded further down the flanks necessitating deeper wells.

The greatest production again came from the Fyzabad area with 63.8 per cent. of the total for the Colony divided amongst the Companies operating there.

Surface geology is still being carried out to fit in with the geophysical survey of the south-western corner of the island mentioned in my last year's report.

* One pup well was drilled on Crown Lands in 1926 but was not previously reported.

An additional survey with two Eötvös balances was carried through from Cedros peninsula to Moruga and where the results are available they have confirmed previous geological opinion. This survey is continuing and a magnetometer is now being used in places where the torsion balances were unsuitable.

The most outstanding item of interest of the year was the start in July of checking up strata drilled in a well by an electrical instrument and this apparatus is now run in most of the wells drilled in the Colony. In some areas the instrument is used as a check to mechanical coring and in others it is entirely relied on for placing the perforations in the oilstring.

The acid bottle is generally used to check verticality of a well where such checking is carried out.

During the year four wells were surveyed, the first two by means of a gyroscopically controlled instrument and the other two by an electric teleclinometer. Of these four wells three were found to deviate up dip and the fourth along the strike.

Frequent inspections of drilling and production machinery were carried out in conjunction with the ordinary routine duties. All Companies have continued to shew the greatest willingness to co-operate with this office in all ways.

There was one fatal accident and 22 other accidents reported during the year. An analysis of these accidents shews 48 per cent. were due to carelessness or inattention to what was going on by the man injured, the balance were unavoidable. No well caught fire during the year.

Owing to the small production obtained from the wells and to the sulphur content of the crude it was decided to abandon the Point d'Or Field. This work is now nearing completion.

2nd March, 1933.

C. E. CAPITO,
Petroleum Technologist.

DRILLING AND PRODUCTION RETURN FOR 1932.

Month.	New Wells Started.		New Wells completed as producers.		New Wells completed as dry but not abandoned.		Wells re-completed as producers.		Wells abandoned.		Total Wells started to date. *	Footage drilled during month.	Production for month.	Wells producing by										Grand Total.	Percentage Wells producing to total wells drilled.	REMARKS.		
	C	P	C	P	C	P	C	P	C	P				C	P	Flowing.	Pumping.	Bailing or Swabbing.	Air of Gas Lift.	Displacement Pump.	Total No. of Wells Producing.							
											C/f. 1841		Barrels.	C	P	C	P	C	P	C	P	C	P	C	P			
January ..	2	2	1	3	1	—	1	1	—	1	1,845	12,271	846,955.72	128	82	305	158	67	8	10	2	—	2	510	252	762	41.32	
February ..	—	3	1	3	—	—	1	1	1	2	1,848	10,188	828,859.80	125	82	313	160	68	5	15	3	1	2	522	252	774	41.91	
March ..	3	2	2	1	—	—	1	3	—	—	1,853	10,037	874,144.95	128	83	322	161	67	3	10	3	2	3	529	253	782	42.22	
April ..	2	3	4	2	—	—	3	—	—	1	1,858	14,250	852,080.32	131	83	328	160	74	5	11	4	2	3	546	255	801	43.13	
May ..	5	—	1	—	—	—	2	3	—	—	1,863	15,404	859,609.51	130	73	327	153	75	5	13	4	3	3	548	238	786	42.21	
June ..	2	1	3	4	—	—	1	—	—	—	1,866	17,394	839,247.51	135	76	320	150	76	5	16	3	3	4	550	238	788	42.25	
July ..	3	2	3	1	—	—	3	1	1	—	1,871	17,405	883,101.96	136	75	317	150	80	4	20	2	2	5	555	236	791	42.30	
August ..	5	1	5	2	—	—	1	2	1	1	1,877	16,051	854,301.16	141	80	317	152	75	5	14	2	3	6	550	245	795	42.38	
September ..	6	2	2	—	—	—	1	2	—	1	1,885	12,534	840,980.51	136	82	319	151	81	4	13	1	3	6	552	244	796	42.25	1 Water well.
October ..	3	—	2	2	—	—	—	2	1	1	1,888	17,727	850,281.23	145	81	313	142	77	10	13	2	3	6	551	241	792	41.97	
November ..	4	3	3	—	—	—	3	—	1	—	1,895	12,383	785,155.01	144	75	313	139	76	9	13	1	3	6	549	230	779	41.13	
December ..	6	1	5	1	—	1	2	1	—	—	1,902	17,643	809,139.67	147	77	308	143	87	9	13	1	1	6	556	236	792	41.66	
Totals ..	41	20	32	19	1	1	19	16	5	7				Averages														
Grand Totals	61		51		2		35		12		1,902	173,287	10,123,857.35	136	79	317	152	75	6	13	2	2	4	543	243	786	42.06	

* One pup well was drilled in 1926 on Crown Lands but not previously reported

C—denotes Crown Oil Rights.
P—denotes Private Oil Rights.

C. ERIK CAPITO,
Petroleum Technologist.

2nd March, 1933.

APPENDIX C.

Daily average number of persons employed in Oilfields and Quarries and the quantity and value of minerals obtained during the year ended 31st December, 1932.

Minerals.	Daily average number of persons employed.			Quantity.	Approximate Value. †
	Males.	Females.	Total.		
Oil	4,386	71	4,457	10,126,065 Barrels	£1,378,855
Asphalt	546	3	549	68,266 Tons *	42,666
Private Quarries (Limestone, Gravel, &c.) ..	241	91	332	126,938 Tons	9,417
Government Quarries (Limestone, &c.) ..	335	96	431	74,880 Tons	11,318

* In addition to this amount 39,191 tons were extracted from the Pitch Lake by the Public Works Department for use on the roads of the Colony.

† The values in this column are those returned by owners and managers and represent the value at the place of production.

68266
39191
107457

APPENDIX D.

Comparative Statement of oil produced and exported year by year since the inception of the Petroleum Industry in the Colony.

	Production in barrels.	Quantity of Crude Oil and Refined Oil exported in barrels.
1905 to 31st March, 1910	10,541	—
1910-1911	225,112	—
1911-1912	285,307	219,582
1912-1913	503,616	122,734
1913-1914	643,516	387,719
1914-1915	1,050,112	348,351
9 months ended December, 1915 ..	671,125	408,188
1916	927,877	975,142
1917	1,602,312	1,079,369
1918	2,082,068	1,305,407
1919	1,841,047	1,406,264
1920	2,083,027	1,034,907
1921	2,354,160	1,223,346
1922	2,444,752	1,615,740
1923	3,050,872	2,432,470
1924	4,056,612	3,224,529
1925	4,386,507	3,606,608
1926	4,971,471	3,988,308
1927	5,380,464	4,456,770
1928	7,684,450	6,361,675
1929	8,715,652	8,243,023
1930	9,418,907	7,678,807
1931	9,743,502	8,964,303
1932	10,126,065	9,637,474
	84,159,074	68,720,716

APPENDIX E.

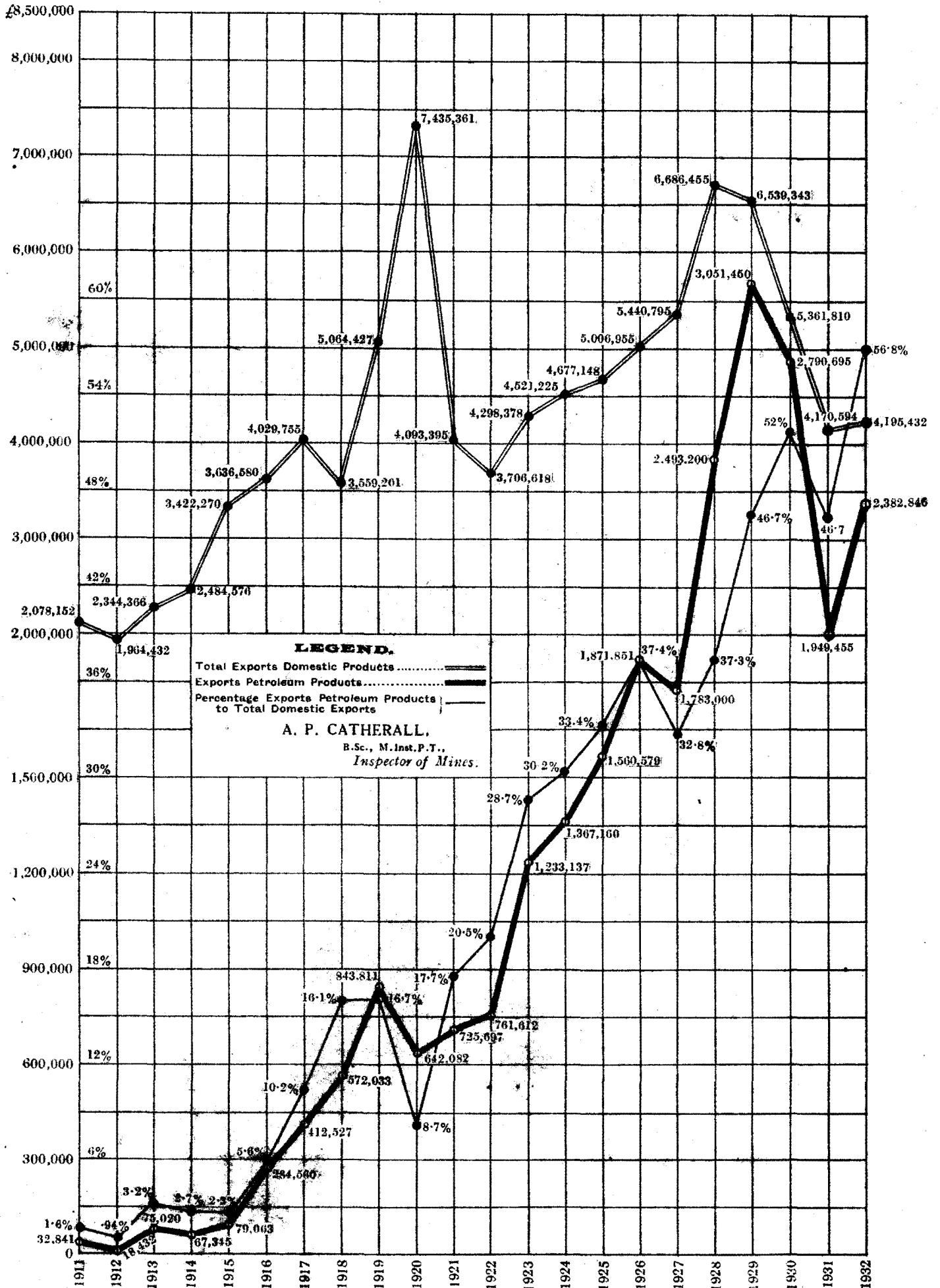
Comparative Statement of Oil refined in the Colony.

Previous to 1920..	..	..	..	..	..	..	4,051,373 barrels
1920 ..	..	..	..	..	..	..	1,395,487 do.
1921 ..	..	..	..	..	..	..	1,806,016 do.
1922 ..	..	..	..	..	..	..	1,820,018 do.
1923 ..	..	..	..	..	..	..	2,360,279 do.
1924 ..	..	..	..	..	..	..	3,433,902 do.
1925 ..	..	..	..	..	..	..	3,790,343 do.
1926 ..	..	..	..	..	..	..	3,786,876 do.
1927 ..	..	..	..	..	..	..	4,796,223 do.
1928 ..	..	..	..	..	..	..	6,725,383 do.
1929 ..	..	..	..	..	..	..	7,642,726 do.
1930 ..	..	..	..	..	..	..	7,989,679 do.
1931 ..	..	..	..	..	..	..	6,899,144 do.
1932 ..	..	..	..	..	..	..	7,635,296 do.
						Total	64,132,745 do.

APPENDIX F.

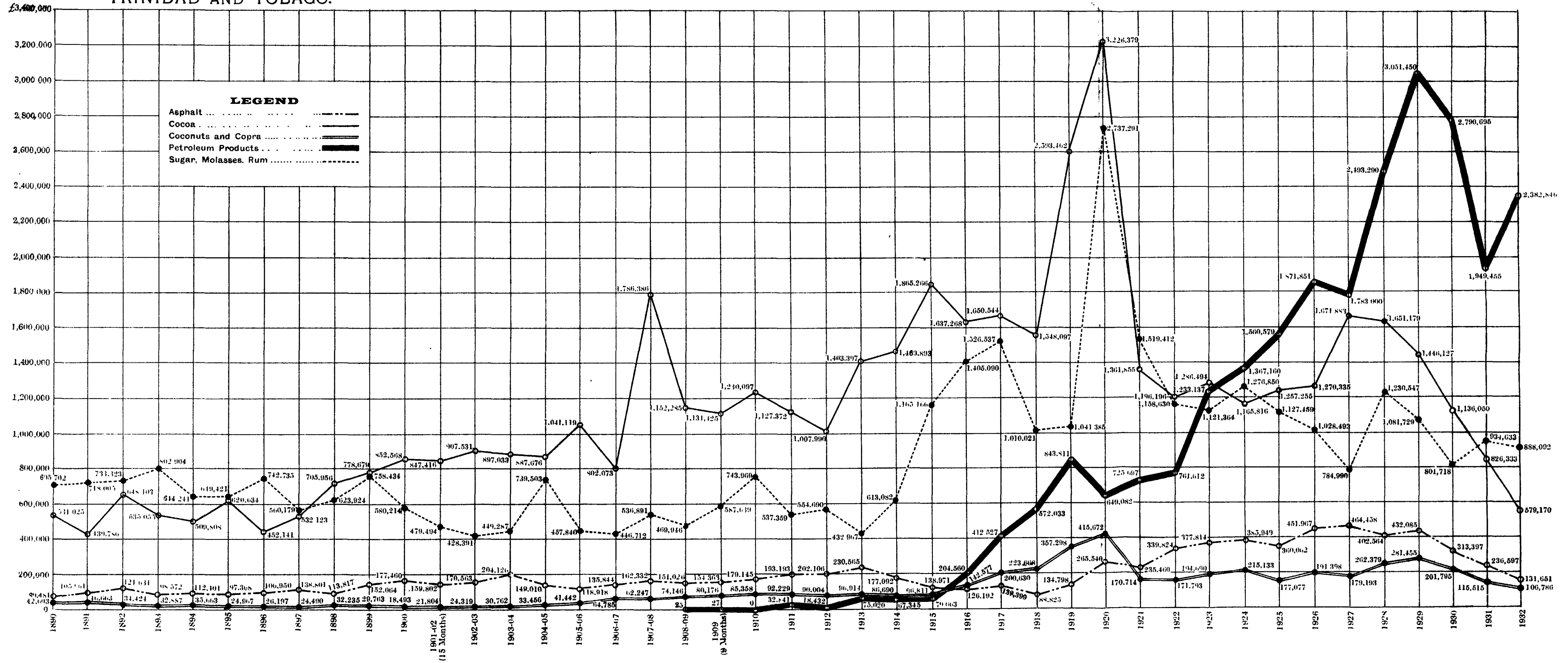
A

TRINIDAD AND TOBAGO.



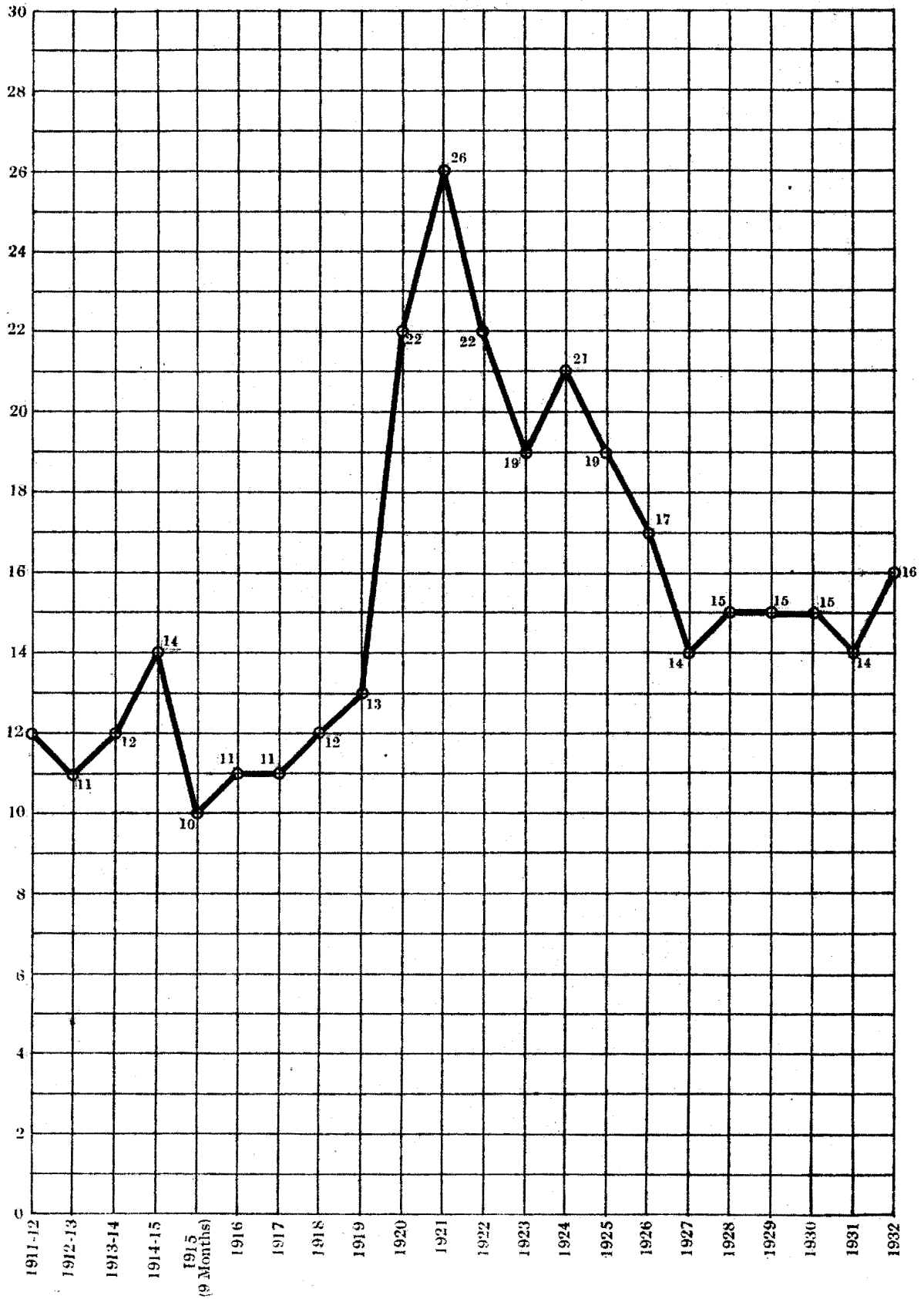
EXPORT OF LOCAL PRODUCE

TRINIDAD AND TOBAGO.



C

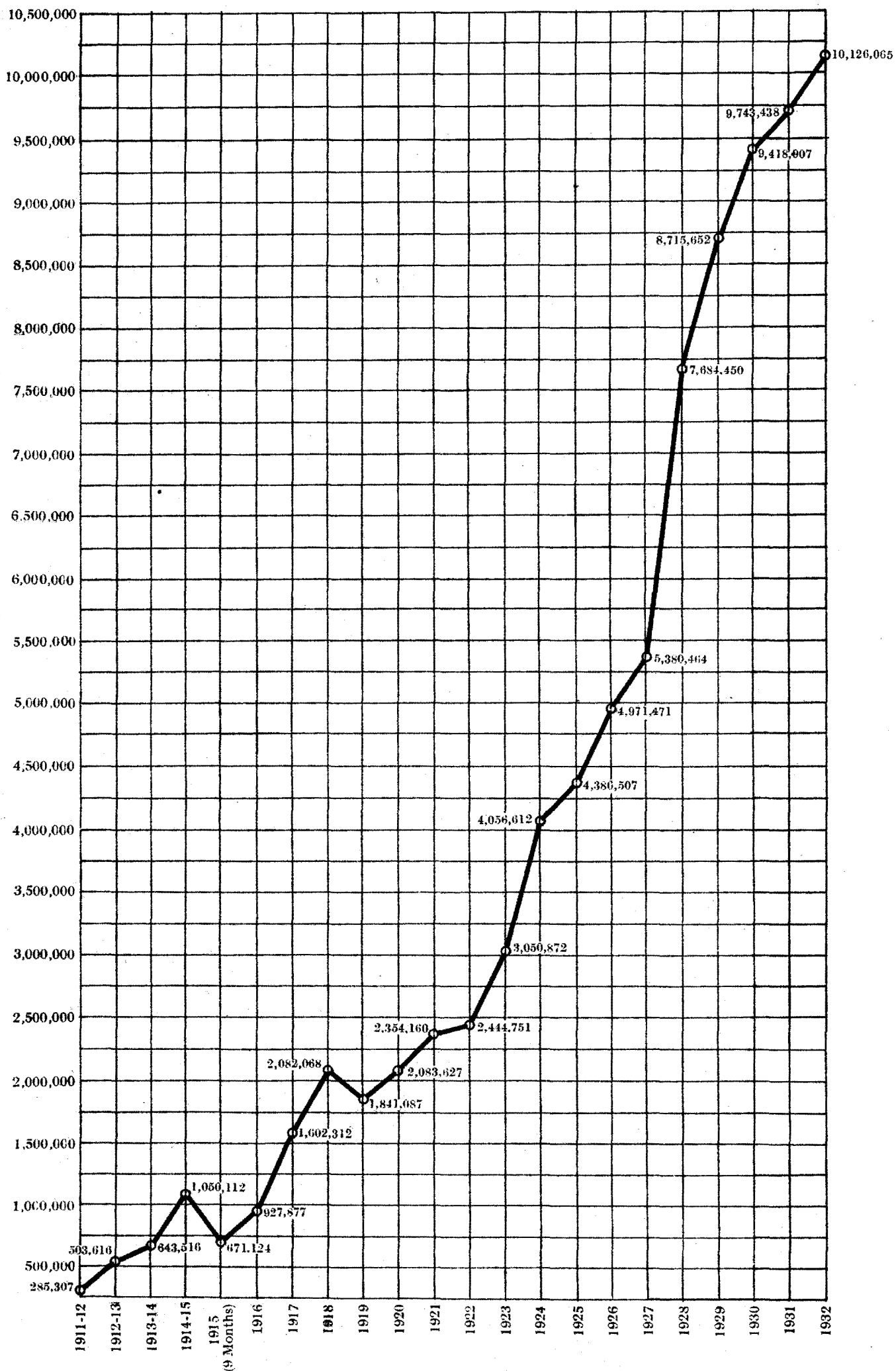
Curve showing the number of Oil Companies that have operated annually in the Colony from 1st April, 1911 to 31st December, 1932.



D

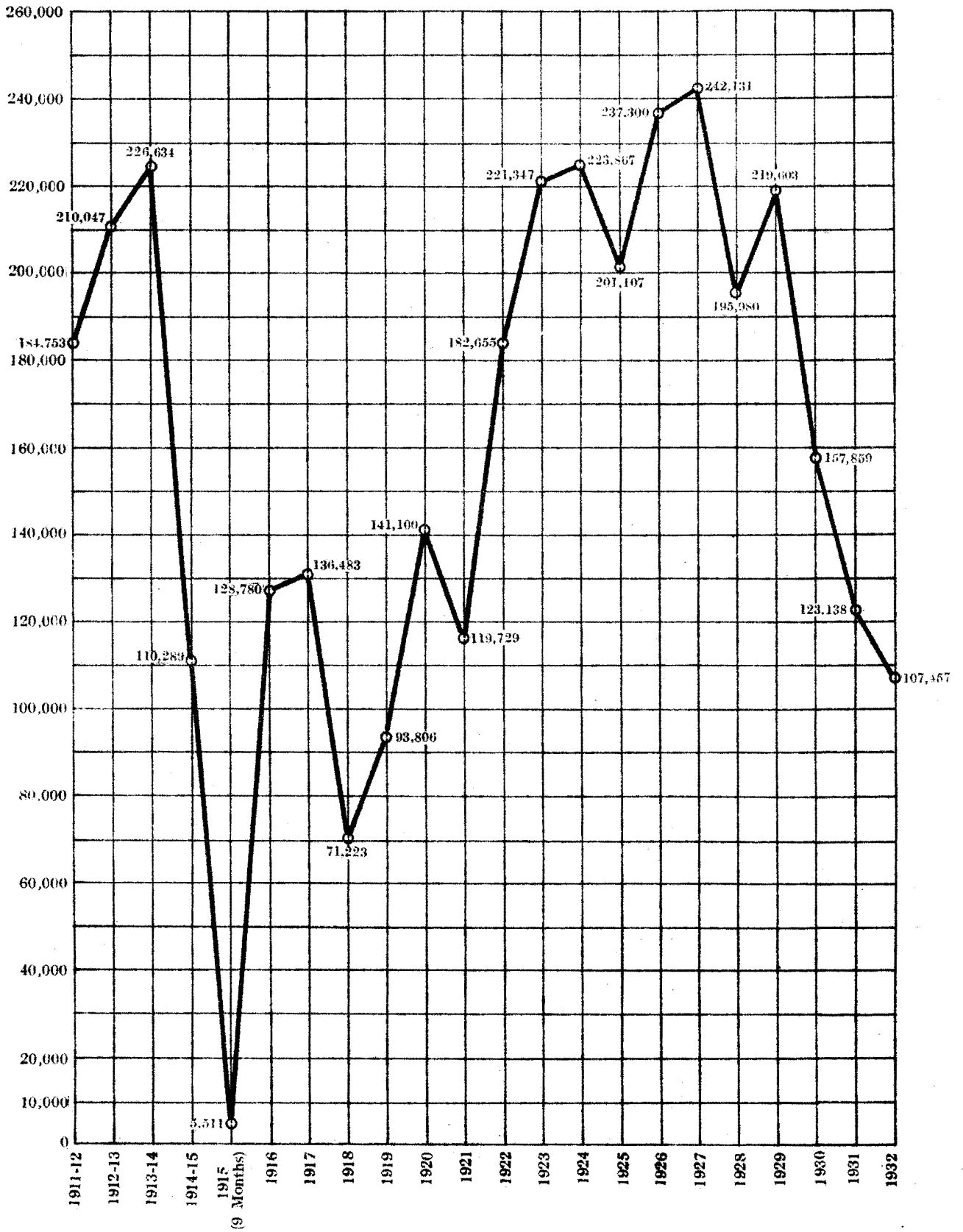
Total Annual Production of Crude Oil in Barrels.

One barrel = 35 gallons.



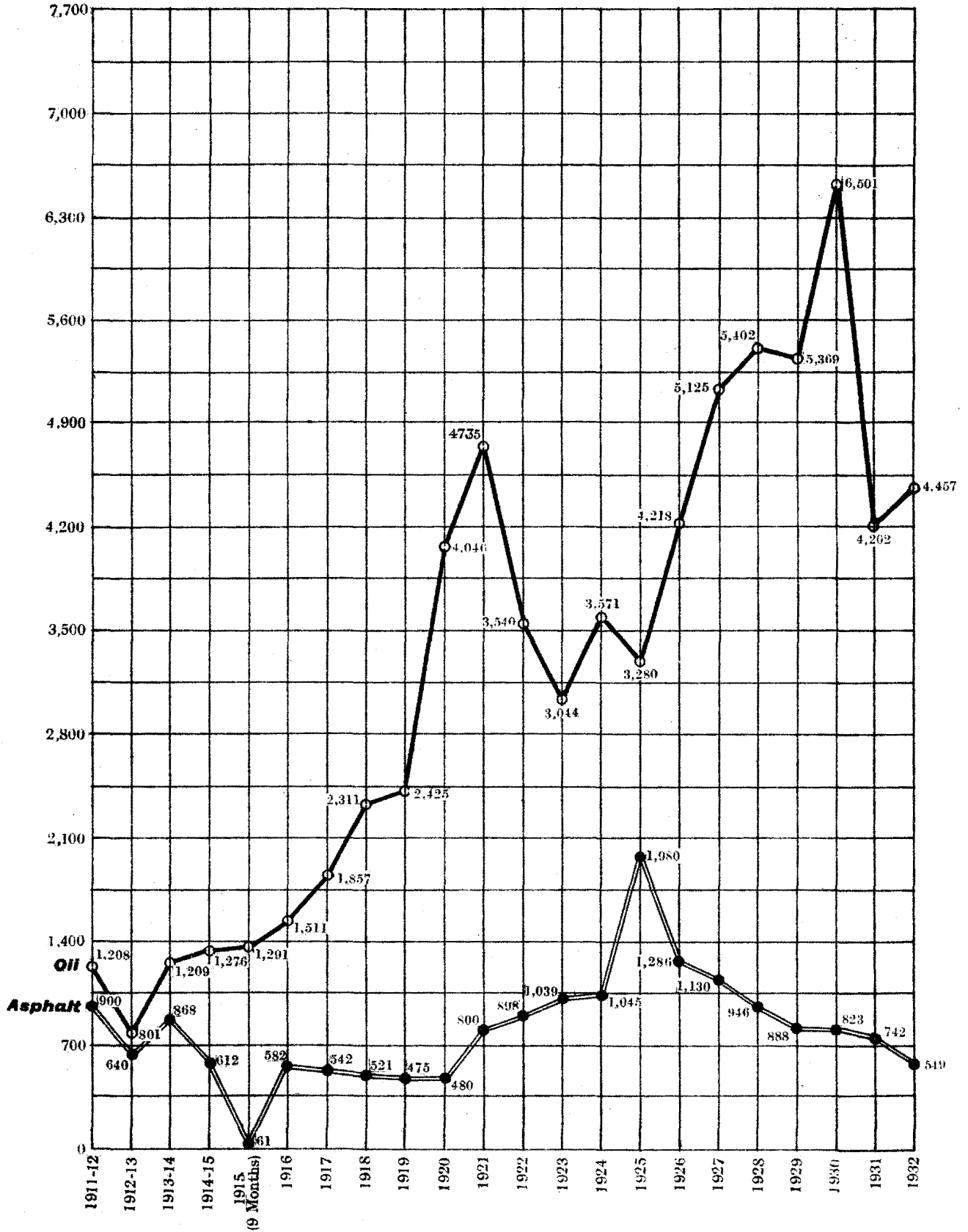
E

Curve showing yearly output of Asphalt from the Colony in Tons, from 1st April, 1911 to 31st December, 1932.



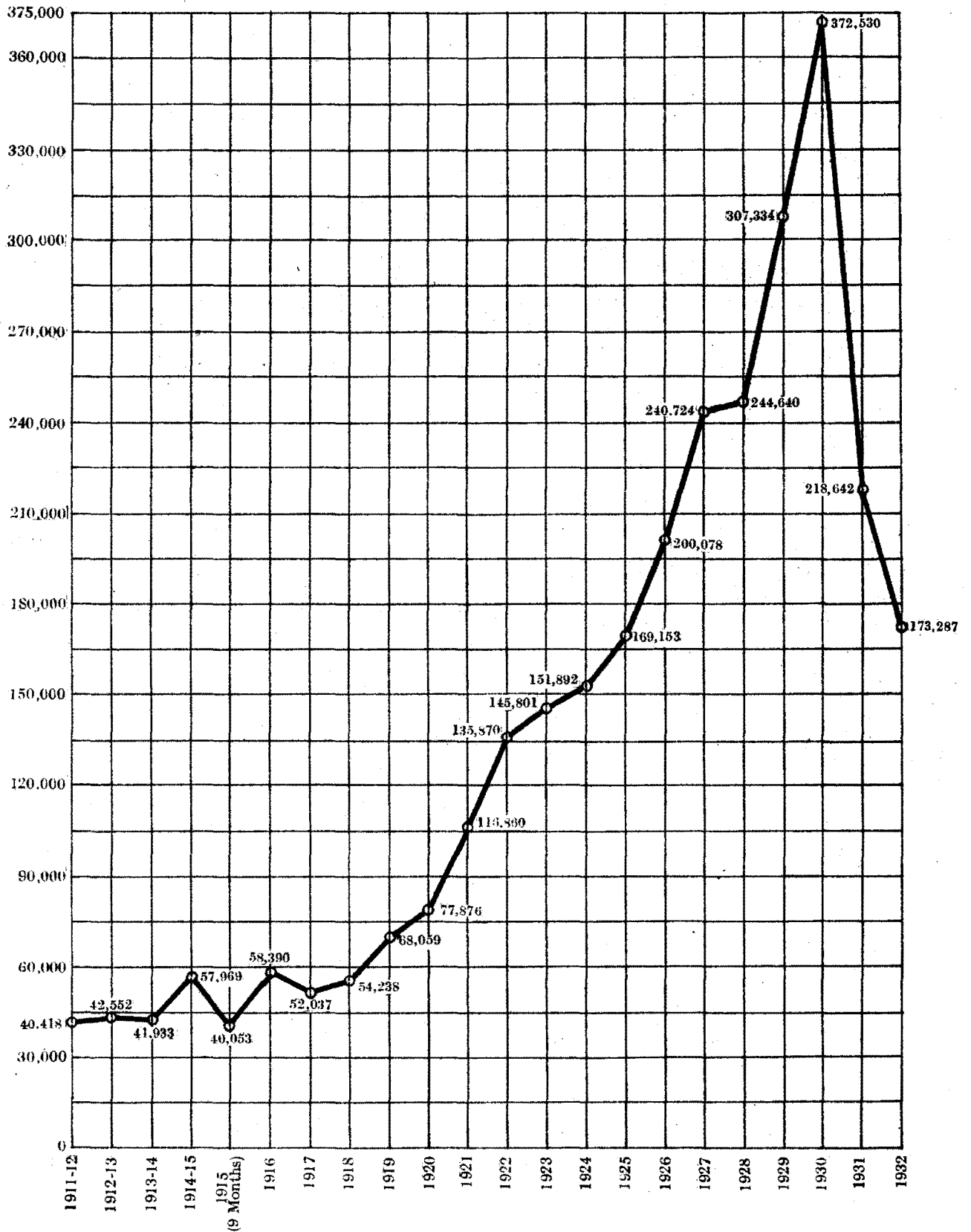
F

Curve showing comparison of daily average number of persons employed in the Oil and Asphalt Industries of the Colony from 1st April, 1911 to 31st December, 1932.



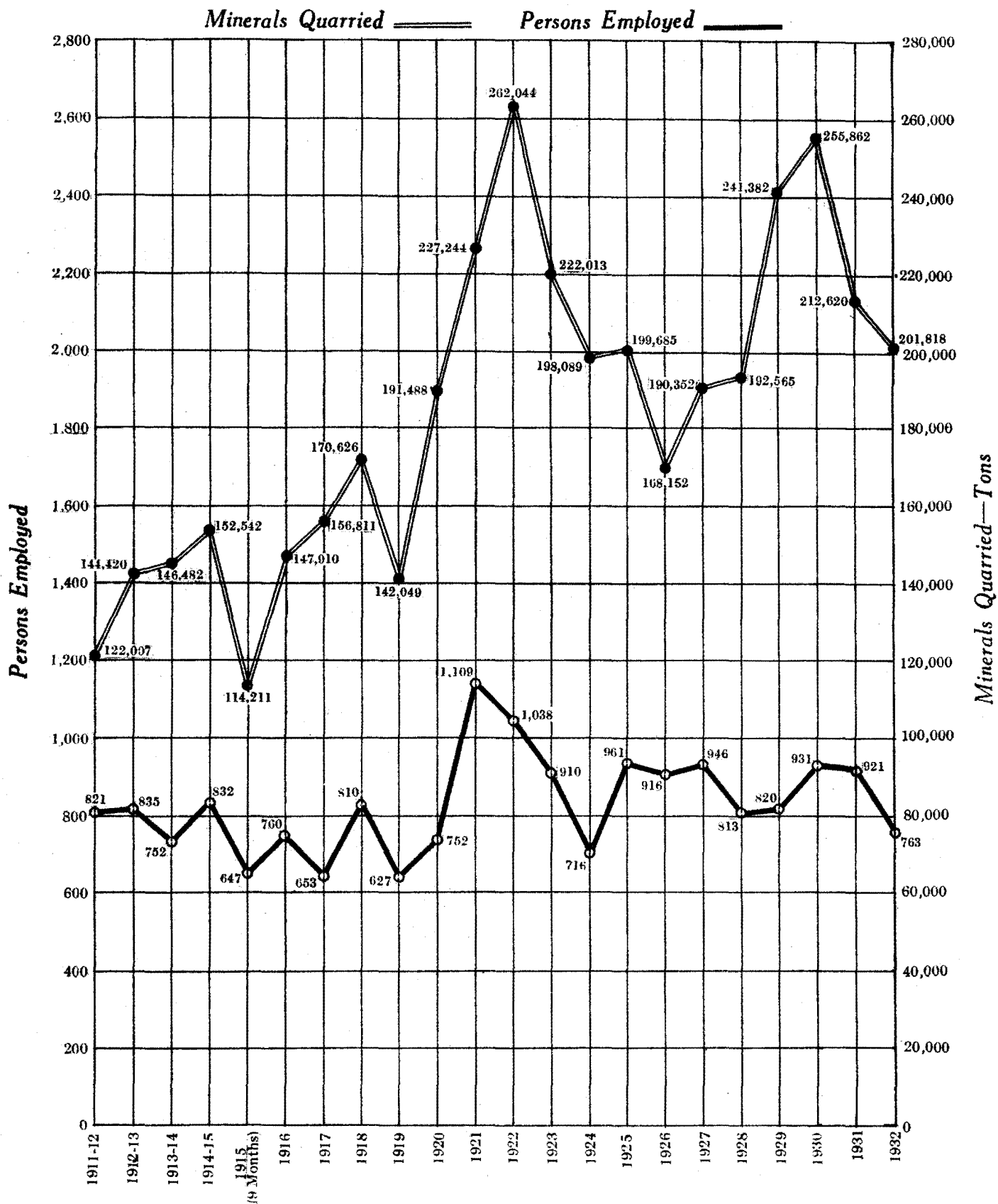
G

Curve showing yearly total number of feet drilled in the Colony from 1st April, 1911 to 31st December, 1932.

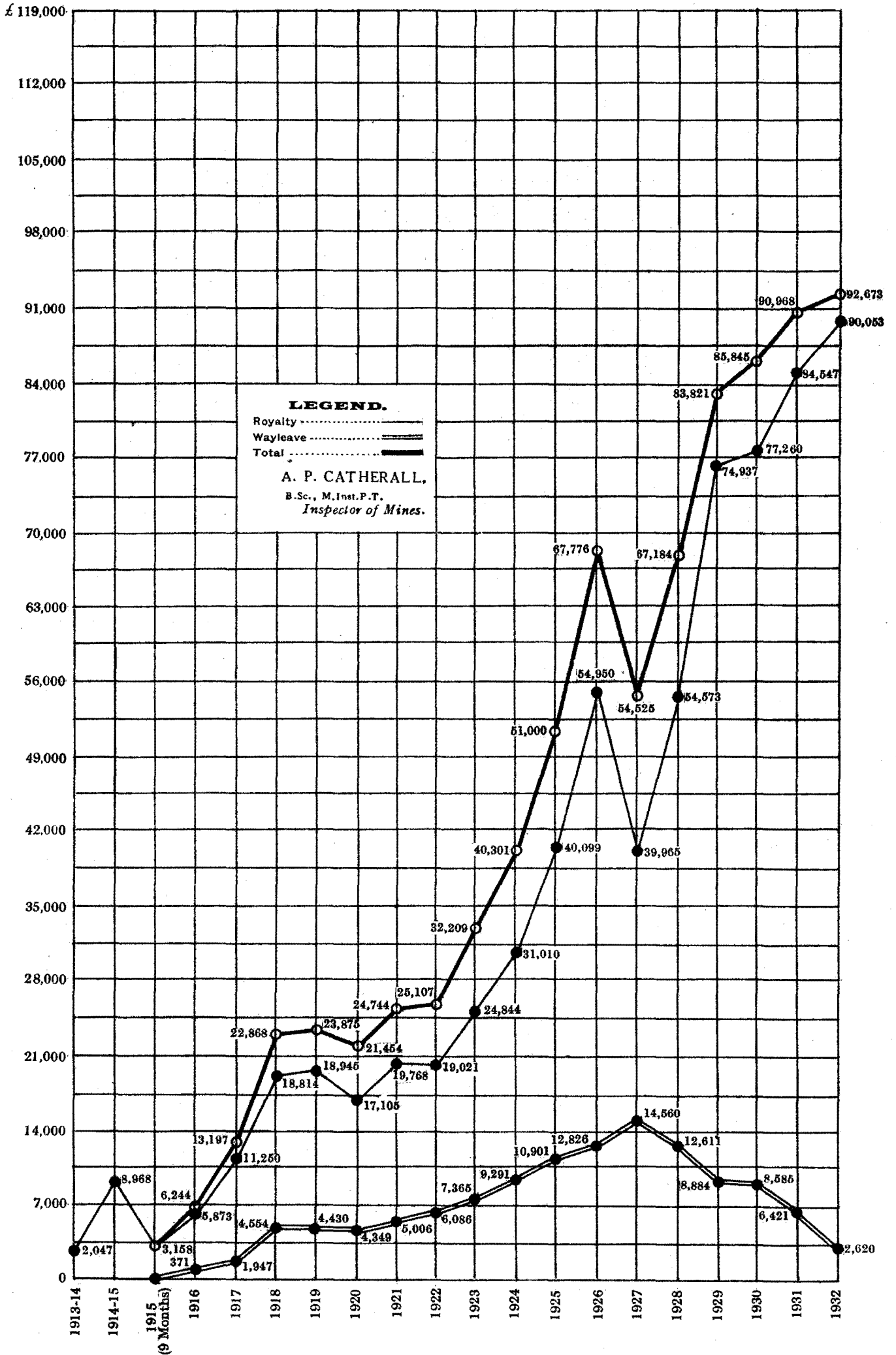


H

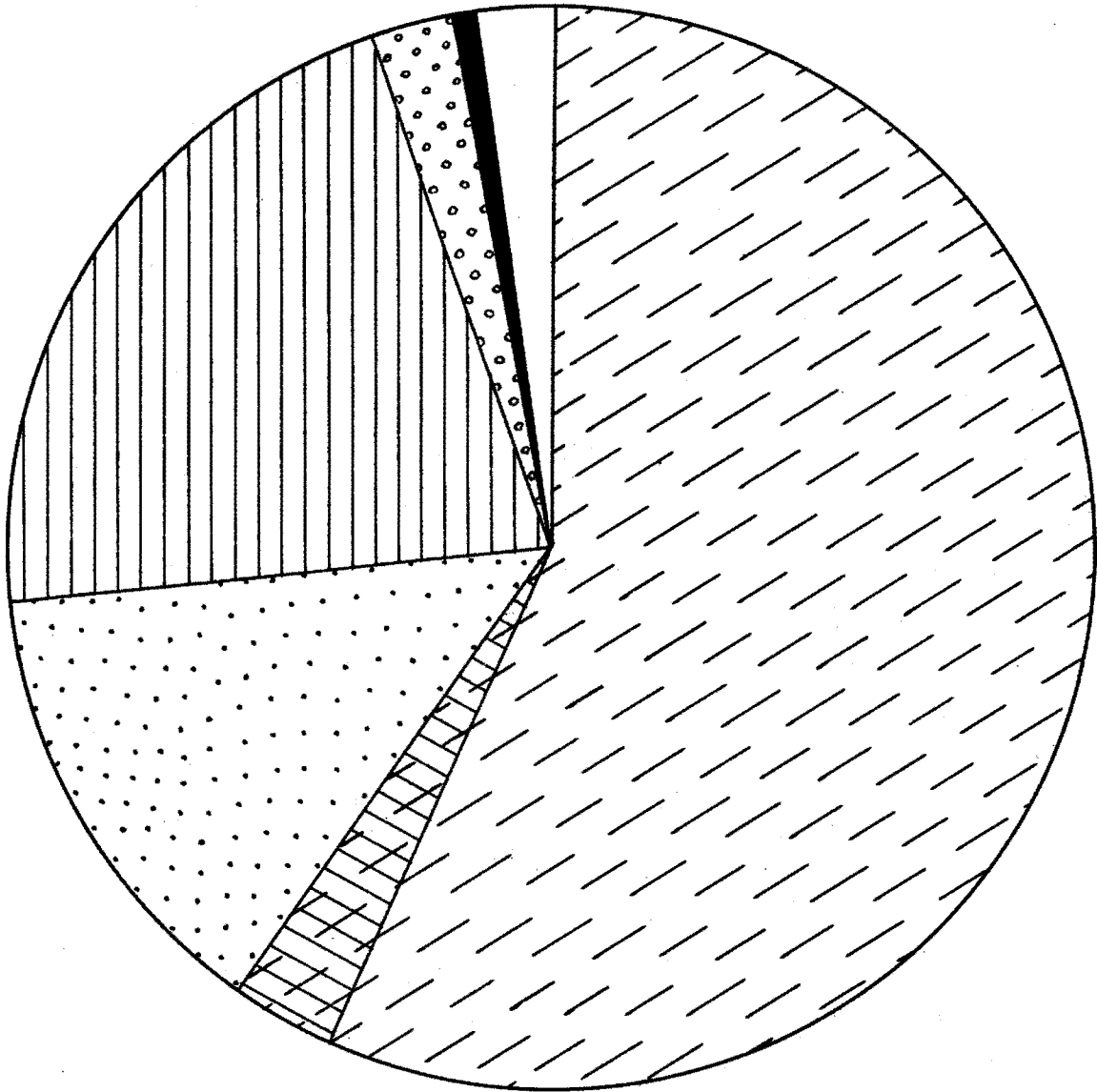
Curve showing the yearly total quantity of Minerals quarried and a comparison of the daily average number of persons employed in Quarries in the Colony from 1st April, 1911 to 31st December, 1932.





ROYALTY AND WAYLEAVE.








APPENDIX G.



Mineral Exports 59.9%

Petroleum Products	56.8%	
Asphalt	3.1%	

Agricultural and other Exports 40.1%

Cocoa	13.8%	
Sugar, Molasses, Rum	21.2%	
Coconuts, Copra, Coconut Oil	2.6%	
Coffee	5%	
Other Exports	2.0%	

TRINIDAD AND TOBAGO.

Council Paper No. 47 of 1934.

MINES DEPARTMENT.

Administration Report of the Inspector of Mines for the year 1933.

*Laid before the Legislative Council on the
20th of April, 1934.*

Previous Council Paper No. 30 of 1933.

Registered No. of Correspondence relating to the subject--M.P. No. 21310.

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MINES DEPARTMENT.

Administration Report of the Inspector of Mines for the year 1933.

Council Paper No. 47 of 1934.

M.P. No. 21316.

HONOURABLE COLONIAL SECRETARY,

I have the honour to submit, for the information of His Excellency the Governor, the following report on the working of the Mines Department for the year 1933.

2. For the first time since 1920 the production of crude oil has shown a decrease as compared with that of the previous year, the figures being 9,561,354 barrels compared with 10,126,065 barrels during 1932. There was also a decline in the quantity of petroleum products exported from the Colony as compared with 1932, the figures being as follows :—

1932—9,637,474 barrels valued at	....	....	...£ 2,382,846
1933—8,909,298 do.	....	....	...£ 2,254,055

It will be seen that during the period under review prices obtainable for petroleum products exported from the Colony still remain very low but there has been a slight rise during the past year as the average value per barrel returned to the Customs Department was 5s. 0 $\frac{3}{4}$ d. compared with 4s. 11 $\frac{1}{4}$ d. in 1932.

In view of the financial conditions existing throughout the world during the period under review, I consider that the situation may be regarded as satisfactory, and that when world conditions in industry approach normal the petroleum industry of the Colony will again continue to expand.

3. Petroleum and its products still formed the largest part of the Colony's exports in 1933, the amount exported being twice that of the products of the next most important of the Colony's industries, viz. : sugar, molasses and rum. Of the Colony's exports 52 per cent. consisted of petroleum products.

The value of the exports of the leading staples of the Colony during 1933 is shown below :—

	Value £	Percentage of total.
Petroleum products	2,254,055	52·13
Sugar, molasses and rum	1,160,054	26·83
Cocoa	555,907	12·86
Asphalt	150,867	3·49
Coconuts, copra and coconut oil	108,009	2·49
Bitters	21,205	·49
Coffee	7,416	·17
Other exports not enumerated	66,601	1·54
	<u>4,324,114</u>	<u>100·00</u>

4. In my last administration report I made mention that the United British Oilfields of Trinidad, Ltd., had commenced the construction of a new refinery and deep water loading pier, and also that a new refinery was in process of erection by the Kern Trinidad Oilfields, Ltd. All these works were completed during the year, and are now in operation. During the period under review, the Trinidad Leaseholds, Ltd., commenced to replace the old Dubbs Cracking Plant at their refining depot at Pointe-a-Pierre. Apart from the above, there is little of interest to note regarding the construction of new works.

5. The following table shows the number of feet drilled and the quantity of oil produced during 1933 as compared with the years 1931 and 1932 :—

	YEAR ENDED 31ST DECEMBER, 1931.		YEAR ENDED 31ST DECEMBER, 1932.		YEAR ENDED 31ST DECEMBER, 1933.	
	<i>Feet drilled.</i>	<i>Oil won Brls. of 35 galls.</i>	<i>Feet drilled.</i>	<i>Oil won Brls. of 35 galls.</i>	<i>Feet drilled.</i>	<i>Oil won Brls. of 35 galls.</i>
Crown Lands	138,360	5,328,469	111,730	5,610,901	173,473	5,290,743
Private Lands	80,107	4,415,034	61,557	4,515,164	62,046	4,270,611
	<u>218,467</u>	<u>9,743,503</u>	<u>173,287</u>	<u>10,126,065</u>	<u>235,519</u>	<u>9,561,354</u>

6. During the period under review 81 new wells were commenced of which 58 were on Crown Lands, bringing the total number of wells drilled in the Colony at the close of the year to 1,983 of which 1,255 are on Crown Lands. Of the wells commenced during the year 41 had been completed at 31st December last, and in 27 of these oil was struck.

7. The number of firms engaged in the mining of oil at the close of the year was 14 as against 16 at the end of 1932.

8. ROYALTY.—As is to be expected in view of the diminished production in 1933, the royalty collected in respect of crude oil won from Crown Lands showed a decrease as compared with that received in 1932. The figures being £89,588 9s. 7½d. compared with £90,053 7s. 4½d. during 1932.

9. WAYLEAVES.—The revenue collected under this head was wholly in respect of oil pumped along the public roads of the Colony and amounted to £1,569 15s. 2d. compared with £2,619 17s. 1½d. for the previous year. The fall in revenue is chiefly due to the fact that oil from the Trinidad Petroleum Development Company, Ltd., is now pumped to Point Fortin instead of to Sobó, the former pipeline not being laid along any roads. → 17,534.34

10. FEES.—Fees charged for pipelines crossing the Trinidad Government Railway, public roads and the foreshore amounted to £430.

11. LEASES AND LICENSES.—During the year 3,703 acres of Crown Lands, situated at Siparia, La Brea and Guayaguayare were selected by the Trinidad Leaseholds, Ltd., from the areas (7,634 acres) held by them under Prospecting License Registered No. 390 of 1929, and a Mining Lease over this area (published as Council Paper No. 122 of 1933) was issued to the Company.

The following Prospecting Licenses were extended pending the settling of the new forms of mining lease now in course of preparation :—

Prospecting License to the Apex (Trinidad) Oilfields, Ltd., Registered No. 1938 of 1930 was further extended for one year from 1st July, 1933 by Deed Registered No. 4090 of 1933.

Prospecting License to the Siparia Trinidad Oilfields, Ltd., Registered No. 1742 of 1929 was further extended for one year from 1st May, 1933.

12. RETURNS.—The returns required to be submitted by the various oil companies in respect of their operations have been regularly forwarded by them to the Department, where, after being checked, they have been filed with the records of the Department.

13. A large number of inspections have been carried out by the officers of the Department in connection with the various operations taking place on the fields, and I have much pleasure in reporting that the Managers readily co-operate with the Department in endeavouring to carry out the provisions of the Ordinances and Regulations.

14. LEGISLATION.—A new Pipelines Ordinance No. 29 of 1933, was passed and the old Ordinance, Cap. 146 (in force since 1911) which had been found to be unduly restrictive on the oil companies was repealed.

Regulations under the Air Pressure Tanks (Regulation) Ordinance No. 3 of 1931 were also passed.

SAN FERNANDO BRANCH OF THE DEPARTMENT.

15. A report by the Petroleum Technologist on the working of his branch is enclosed as Appendix " B ".

PREVENTION OF ACCIDENTS ORDINANCE, CAP. 157.

16. During the period under review 176 factories in Trinidad and Tobago were worked. Taking the factories as a whole the Managers co-operate satisfactorily with the Department in ensuring safety to the workmen in their employment.

QUARRIES.

17. The number of quarries worked during the past year was 81 as compared with 77 during 1932. From inspections that have been made they have, in most cases, been found to have been worked in a careful manner but, with few exceptions, they are relatively unimportant.

PETROLEUM ORDINANCE, CAP. 145.

18. The premises in which the various products of petroleum are stored have been carefully inspected, and it is satisfactory to note that, generally, care has been taken to ensure safety. The revenue derived from licenses issued to sell petroleum products during 1933 amounted to £430.

APPENDICES.

19. Appendix "A" shows the list of oil companies operating in the Colony during the year 1933.

20. Appendix "B" is the Report on the working of the Petroleum Office, San Fernando.

21. In Appendix "C" will be found the daily average number of persons employed in oilfields and quarries and the quantity and value of minerals obtained during the period under review.

22. A comparative statement of the oil produced and exported is shown in Appendix "D".

23. Appendix "E" shows the amount of oil refined year by year.

24. Appendix "F" consists of a series of charts depicting in graphical form the progress made in various industries during the past few years.

25. Appendix "G" shows the relation of mineral exports to agricultural exports.

STAFF.

26. I have great pleasure in recording the very able and loyal assistance I have received from the members of the staff.

A. P. CATHERALL,
Inspector of Mines.

27th March, 1934.

APPENDIX A.

No.	Companies.	Nature of tenure of lands on which operations took place.		Disposal of Oil.	Remarks.
1	Trinidad Leaseholds, Ltd.	Crown oil rights under lease Private lands	Fyzabad, Barrackpore and Guayaguayare Fyzabad and Barrackpore	Pumped to the Company's Refinery at Pointe-a-Pierre, and there refined. Most of the production is exported in bulk	The Trinidad Leaseholds, Ltd., is the most important company in the Colony from the point of view of refining and marketing, and is second only to the Apex (Trinidad) Oilfields, Ltd., in respect of production. The bulk of the Company's production still continues to be obtained from its holdings in the Fyzabad area where there has been a considerable increase in development with a resultant increase of production. In the Guayaguayare field there has been a considerable increase of drilling, and the production has more than doubled. The production from the Barrackpore area has declined.
2	United British Oilfields of Trinidad, Ltd.	Crown lands under lease Private lands	Morne L'Enfer Forest Reserve Point Fortin	Pumped to the Company's refinery at Point Fortin and there refined. Most of the production is exported in bulk	Development of the Parry Lands field in the Morne L'Enfer Reserve has continued during the year, and the production has been maintained at much the same level as last year. Towards the end of the year a mining lease over 1,999 acres of Crown lands in the Morne L'Enfer Reserve, held by the Petroleum Development Co., Ltd., since 1915, was assigned by this Company to the United British Oilfields of Trinidad, Ltd. A new refinery and deep-water loading pier, commenced in 1932, was completed during the period under review.
3	Trinidad Central Oilfields, Ltd. ..	Crown lands under lease	Tabaquite, Guapo and Lizard Springs	Production from Tabaquite and Lizard Springs refined, sold locally and exported; that from the Cruse field is sold to the Trinidad Leaseholds, Ltd.	The operations of this Company during the major part of the year were on a small scale. Recently, agreement was entered into with Trinidad Leaseholds, Ltd., for the development of the Cruse area at Guapo, where the production has been increased. The production from the Tabaquite and Lizard Springs fields has slightly declined.
4	Trinidad Lake Petroleum Co., Ltd. ..	Private lands	Brighton	Refined	Producing only.
5	Petroleum Development Co., Ltd. ..	Crown lands under lease	Morne L'Enfer Forest Reserve and La Brea	Sold to Trinidad Lake Petroleum Co., Ltd.	The lease of Crown oil rights within the Protected Area was surrendered to the Government on the 30th June last, and the lease over Crown lands in the Morne L'Enfer Reserve was assigned to the United British Oilfields of Trinidad, Ltd., later in the year. No drilling was done.

APPENDIX A.—Continued.

No.	Companies.	Nature of tenure of lands on which operations took place.	Disposal of Oil.	Remarks.	
6	Apex (Trinidad) Oilfields, Ltd.	Crown oil rights under lease and prospecting license, and private lands	Fyzabad and Siparia	Crude oil sold to the Trinidad Leaseholds, Ltd., casing head petroleum spirit sold to the United British Oilfields of Trinidad, Ltd.	The Company is the largest producer in the Colony. Drilling and production have been maintained at about the same level as last year.
7	Kern Trinidad Oilfields, Ltd. . .	Crown lands under lease Private lands	La Brea Guapo and Roussillac	Some of the production is exported in bulk and also sold to the Trinidad Leaseholds, Ltd., West India Oil Co., and United British Oilfields of Trinidad, Ltd.	There was a considerable increase of footage by this Company, mostly on its private lands at Guapo. The production from this area has also been increased.
8	Trinidad Investments, Ltd. . .	Private lands	Fyzabad	Sold to the Trinidad Leaseholds, Ltd.	This Company during the year leased the private lands formerly held by the New Oropuche (Trinidad) Oilfields, Ltd. No drilling has been done, and production has been maintained at much the same level as last year.
9	Trinidad Petroleum Development Co., Ltd.	Crown oil rights under lease and prospecting license Private lands	Palo Seco Palo Seco and Naparima	Sold to the United British Oilfields of Trinidad, Ltd.	The Company's operations have been chiefly confined to the Palo Seco district where a very active drilling programme has been undertaken. The production, however, has considerably declined.
10	Palo Seco Oilfield (C. C. Stollmeyer)	Crown lands under lease	Palo Seco	Refined, and products sold locally . .	A small amount of drilling has been undertaken. The production has declined.
11	Trinidad Oilfields Operating Co., Ltd. . .	Private lands Crown lands under lease	Fyzabad, San Francique and Palo Seco Pointe D'Or and San Francique	Sold to the West India Oil Co. . .	Drilling operations were recommenced in the Palo Seco area; the production was smaller than in 1932.
12	New Dome Oilfields, Ltd. . .	Private lands	Fyzabad	Sold to Trinidad Leaseholds, Ltd. and Kern Trinidad Oilfields, Ltd.	A small amount of drilling was done in the Fyzabad field. The production was less than that during the previous year.
13	Siparia Trinidad Oilfields, Ltd.	Crown lands under prospecting license	Palo Seco	Sold to Trinidad Leaseholds, Ltd. and the Trinidad Petroleum Development Co., Ltd.	More drilling was done than in 1932, but a smaller production was obtained.
14	Trinidad Freeholds, Ltd.	Private lands	Fyzabad	Sold to the Trinidad Leaseholds, Ltd.	Small production obtained from this area. No drilling.
15	Tucker, H. S.	Private lands	Pointe Ligoure and Fyzabad	Refined and products sold locally . .	A small production was obtained from an old field at Pointe Ligoure.

APPENDIX B.

HONOURABLE INSPECTOR OF MINES,

The year under review shows a decrease in production of 5.5 per cent, but an increase in footage of 36 per cent. over the 1932 figures. The corresponding figures with regard to 1930 were 1.7 per cent. increase and 36.8 per cent. decrease respectively.

An analysis of the production and feet drilled for 1932 and 1933 shows :—

	1932.			1933.		
	Production Barrels.	Feet drilled.	Average Production per Well.	Production Barrels.	Feet drilled.	Average Production per Well.
Crown Lands ..	3,340,290.65	44,568	806	3,684,148.30	85,946	741
Alienated ..	2,270,610.21	67,162	1,775	1,606,594.66	87,527	1,014
Private ..	4,515,164.49	61,557	1,856	4,270,611.44	62,046	1,226

Eighty-one new wells were started up during the year making a grand total for the Colony of 1,933. These new wells were disposed of as follows :—

					<i>Crown.</i>	<i>Private.</i>
Wells started in 1933	....	....	....	....	58	23
Wells brought forward from 1932	....	....	....	....	22	10
Total	....	....	....	....	80	33
Wells completed as Producers	....	....	....	....	38	21
Wells completed as Water Wells	....	....	....	....	3	—
Wells completed as dry hole but not abandoned	....	....	....	....	1	—
Wells current in 1933 and abandoned as dry or uncommercial	....	....	....	....	7	3
Wells unfinished at end of 1933	....	....	....	....	31	9
Total	....	....	....	....	80	33
Old Wells abandoned in 1933	....	....	....	....	6	3
Well re-completed during the year	....	....	....	....	17	6

The average number of wells producing shows a large increase over 1932 as under :—

				1930.	1931.	1932.	1933.
Wells flowing	....	....	....	170	185	215	231
Wells pumping	....	....	....	544	504	469	443
Wells Swabbing or Bailing	....	....	....	38	60	81	124
Wells on Air or Gas Lift	....	....	....	19	13	15	29
Wells on Displacement Pumping	....	....	....	—	—	6	9
				771	762	786	836

The increase in numbers is mostly due to two private properties starting up again, these wells are practically all included under the pumping and bailing categories. The number of flowing wells has again shown an increase and from the table attached it will be noticed that there has been an increased use of air or gas lift and displacement pumping.

The greatest production again came from the Fyzabad structure with 67.8 per cent. of the total for the Colony divided amongst the Companies operating here.

Surface geological surveys are still being carried out to fit in with the geophysical survey of the south-west corner of the Island as mentioned in my last year's report. Recently the survey work has been helped by some small core drills.

The torsion balance and magnetometer surveys from Cedros to Moruga mentioned in my last year's report did not add materially to our present knowledge though they gave confirmatory evidence of what was already known.

On the Palo Seco structure an oil sand at approximately 2,000 feet below the base of the Forest Clay has been located and is being developed as a good producing horizon.

On one field experiments with drilling under pressure were started which have shown that much lighter mud fluid can be used. One well has been drilled successfully by this means and brought on to production and the experiments are to be continued, the main object being to reduce the use of barytes.

On another field a pressure bomb is being used for determining bottom hole pressures in wells and the rate at which these build up when the well is shut in after producing.

During the year two wells have been surveyed with an electric teleclinometer and three wells were tested for temperature gradient with an electric thermometer, the main object of these latter tests being to locate water ingress to the wells.

There were three fatal accidents and twenty-four other reportable accidents during the year. An analysis of these shows that 66.6 per cent. of the fatal accidents and 20 per cent. of the other accidents were due to carelessness on the part of the deceased or injured man; the balance were unavoidable.

Two wells accidentally caught fire during the year but only minor damage was done in both cases. During the nights of September 9th and 10th five wooden derricks were struck by lightning, one derrick being struck on both nights, damage being done to the legs of the derricks which were struck, the gas from the pop valves of three separators inside the derricks was set on fire. In one case pieces of the derrick leg were hurled over 100 yards away.

On the evening of the 27th June the southern part of the Island was struck by a cyclone which overturned one steel and 150 wooden derricks. Most of these fell in a south-westerly direction. In some cases the derricks when overturning broke away the Xmas tree connections and the wells flowed wild until they could be closed in. The large number of overturned or broken trees hampered the work of closing in the wells and repairing pipelines. Luckily there were no casualties amongst the oilfield workmen.

Owing to considerable difficulties in shutting off the gas in the Point D'Or Field the work of abandoning this area has only just been completed.

Frequent inspections of drilling and production machinery were carried out in conjunction with the ordinary routine duties. I am pleased to report that I have received continued co-operation in carrying out my duties by all the Companies and their Staffs.

9th March, 1934.

C. ERIK CAPITO,
Petroleum Technologist.

DRILLING AND PRODUCTION RETURN FOR 1933.

Month.	New Wells Started.		New Wells completed as producers.		Wells re-completed as producers.		Wells abandoned.		Total Wells started to date.	Footage drilled during month.	Production for month. Barrels.	Wells producing by								Total No. of Wells Producing.		Grand Total Crown and Private.	Percentage Wells producing to total wells drilled.	New Wells completed as dry or uncommercial holes.	REMARKS.			
	C	P	C	P	C	P	C	P				C	P	C	P	C	P	C	P	C	P							
January ..	2	2	3	3	—	—	—	—	1,906	12,952	815,823.70	150	84	296	147	89	49	14	1	4	6	553	287	840	44.07	—	—	
February ..	4	3	6	1	—	1	—	1	1,913	16,784	779,308.14	142	82	306	149	81	48	17	1	4	6	550	286	836	43.70	—	1	
March ..	8	2	3	1	2	1	1	—	1,923	23,856	840,321.29	149	83	294	157	88	51	18	3	4	4	553	298	851	44.25	1	—	2 water wells.
April ..	4	2	5	2	1	1	—	—	1,929	16,572	834,875.62	151	84	294	167	88	34	18	3	4	3	555	291	846	43.81	—	—	
May ..	6	1	1	3	1	—	1	1	1,936	17,946	816,080.12	144	88	293	170	86	33	25	2	3	5	551	298	849	43.85	—	—	1 water well.
June	6	1	2	—	3	—	1	1	1,943	17,595	772,626.37	139	83	285	157	87	27	28	2	3	5	542	274	816	42.00	—	—	
July ..	3	2	3	—	2	1	—	1	1,948	22,273	759,075.69	142	86	260	156	83	31	32	1	2	5	519	279	798	40.97	2	—	
August	5	3	6	2	1	1	—	—	1,956	22,735	780,928.90	142	88	272	165	86	30	32	2	3	5	535	290	825	42.18	—	—	
September	5	2	2	2	3	—	3	—	1,963	21,538	755,676.43	145	86	280	162	88	30	32	4	3	8	548	290	838	42.69	—	—	
October ..	7	1	3	4	1	—	2	—	1,971	23,364	818,183.84	142	89	272	167	95	31	34	5	4	9	547	301	848	43.02	2	—	
November	6	4	2	—	1	—	2	1	1,981	17,496	788,970.30	144	83	269	166	95	31	35	9	3	8	546	297	843	42.55	2	1	
December ..	2	—	2	3	2	1	3	1	1,983	22,591	799,484.00	156	84	281	162	88	32	30	8	2	8	557	293	850	42.81	1	—	
Totals ..	58	23	38	21	17	6	13	6				Averages 146 85		Averages 283 160		Averages 88 36		Averages 26 3		Averages 3 6		Averages 546 290		—	—	8	2	
Grand Totals	81		59		23		19		1,983	235,702	9,561,354.40	231		443		124		29		9		836		836	43.00	10		

"C" denotes Crown Oil Rights.
 "P" denotes Private Oil Rights.

C. ERIK CAPITO,
 Petroleum Technologist.

9th March, 1934.

COLONY OF TRINIDAD.

Yearly details of wells started and footage drilled 1867-1933 inclusive.

YEAR.	TOTAL WELLS STARTED BY YEARS IN COLONY.								FOOTAGE DRILLED ANNUALLY BY ALL COMPANIES (APEX PHANTOM FT. INCLUDED).								Accumulation.
	CROWN.		ALIENATED.		PRIVATE.		TOTALS.		CROWN.		ALIENATED.		PRIVATE.		TOTALS		
	Annual.	Cum.	Annual.	Cum.	Annual.	Cum.	Annual.	Cum.	Annual.	Cum.	Annual.	Cum.	Annual.	Cum.	FOR YEAR.		
1867	—	—	—	—	1	1	1	1	—	—	—	—	964	964	964	964	
1902	1	1	—	—	2	3	3	4	600	600	—	—	1,315	2,279	1,915	2,879	
1903	1	2	—	—	—	3	1	5	1,072	1,772	—	—	1,060	3,339	2,232	5,111	
1904	1	3	—	—	—	3	1	6	860	2,632	—	—	—	3,339	860	5,971	
1905	—	3	—	—	—	3	—	6	—	2,632	—	—	—	3,339	—	5,971	
1906	1	4	—	—	2	5	3	9	1,104	3,736	—	—	1,499	4,838	2,603	8,574	
1907	1	5	—	—	2	7	3	12	798	4,534	—	—	1,563	6,401	2,361	10,935	
1908	—	5	—	—	4	11	4	16	—	4,534	—	—	2,352	8,753	2,352	13,287	
1909	—	5	—	—	6	17	6	22	—	4,534	—	—	5,362	14,115	5,362	18,649	
1910	5	10	—	—	7	24	12	34	3,771	8,305	—	—	4,319	18,434	8,090	26,739	
1911	8	18	1	1	38	62	47	81	4,902	13,207	796	796	33,254	51,688	38,952	65,691	
1912	10	28	—	1	35	97	45	126	6,839	20,046	—	796	32,881	84,569	39,720	105,411	
1913	25	53	—	1	18	115	43	169	13,813	33,859	—	796	26,388	110,957	40,201	145,612	
1914	50	103	—	1	16	131	66	235	35,146	69,005	—	796	23,283	134,240	58,429	204,041	
1915	31	134	—	1	19	150	50	285	29,208	98,213	—	796	25,652	159,892	54,860	258,901	
1916	26	160	2	3	20	170	48	333	27,511	125,724	3,355	4,151	28,035	187,927	58,901	317,802	
1917	38	198	—	3	6	176	44	377	39,942	165,666	1,285	5,436	9,557	197,484	50,784	368,586	
1918	38	236	—	3	4	180	42	419	47,700	213,366	—	5,436	6,796	204,280	54,496	423,082	
1919	39	275	—	3	13	193	52	471	49,741	263,107	—	5,436	16,769	221,049	66,510	489,592	
1920	45	320	—	3	24	217	69	540	54,667	317,774	—	5,436	24,319	245,368	78,986	568,578	
1921	53	373	—	3	32	249	85	625	74,214	391,988	—	5,436	44,631	289,999	118,845	687,423	
1922	70	443	2	5	19	268	91	716	93,855	485,843	3,145	8,581	39,463	329,462	136,463	823,886	
1923	71	514	4	9	33	301	108	824	79,907	565,750	7,060	15,641	58,805	388,267	145,772	969,658	
1924	71	585	4	13	35	336	110	934	90,141	655,891	6,190	21,831	55,197	443,464	151,528	1,121,186	
1925	55	640	7	20	37	373	99	1,033	92,843	748,734	12,507	34,338	63,543	507,007	168,893	1,290,079	
1926	72	712	10	30	46	419	128	1,161	112,053	860,787	15,913	50,251	72,691	579,698	200,657	1,490,736	
1927	73	785	13	43	73	492	159	1,320	101,920	962,707	17,288	67,539	122,465	702,163	241,673	1,732,409	
1928	43	828	32	75	64	556	139	1,459	71,481	1,034,188	58,842	126,381	112,863	815,026	243,186	1,975,595	
1929	52	880	59	134	48	704	159	1,618	92,590	1,126,778	118,583	244,964	96,309	911,335	307,482	2,283,077	
1930	76	956	31	165	56	660	163	1,781	170,389	1,297,167	85,561	330,525	116,706	1,028,041	372,656	2,655,733	
1931	9	965	25	190	26	686	60	1,841	42,972	1,340,139	95,410	425,935	80,260	1,108,301	218,642	2,874,375	
1932	21	986	20	210	20	706	61	1,902	44,568	1,384,707	67,162	493,097	61,557	1,169,858	173,287	3,047,662	
1933	36	1,022	22	232	23	729	81	1,983	85,946	1,470,653	87,550	580,647	62,206	1,232,064	235,702	3,283,364	

APPENDIX C.

Daily average number of persons employed in Oilfields and Quarries and the quantity and value of minerals obtained during the year ended 31st December, 1933.

Minerals.	Daily average number of persons employed.			Quantity.	Approximate Value. †
	Males.	Females.	Total.		
Oil	5,140	79	5,219	9,561,354 barrels	£1,242,156
Asphalt	489	4	493	72,676 tons*	45,423
Private Quarries (limestone, gravel, &c.)	258	123	381	140,757 tons	10,162
Government Quarries (limestone, &c.)	275	67	342	60,452 tons	8,647

* In addition to this amount 38,661 tons were extracted from the Pitch Lake by the Public Works Department for use on the roads of the Colony.

† The values in this column are those returned by owners and managers and represent the value at the place of production.

APPENDIX D.

Comparative Statement of oil produced and exported year by year since the inception of the Petroleum Industry in the Colony.

	Production in barrels.	Quantity of Crude Oil and Refined Oil exported in barrels.
1905 to 31st March, 1910	10,541	—
1910-1911	225,112	—
1911-1912	285,307	219,582
1912-1913	503,616	122,734
1913-1914	643,516	387,719
1914-1915	1,050,112	348,351
9 months ended December, 1915	671,125	408,188
1916	927,877	975,142
1917	1,602,312	1,079,369
1918	2,082,068	1,305,407
1919	1,841,047	1,406,264
1920	2,083,027	1,034,907
1921	2,354,160	1,223,346
1922	2,444,752	1,615,740
1923	3,050,872	2,432,470
1924	4,056,612	3,224,529
1925	4,386,507	3,606,608
1926	4,971,471	3,988,308
1927	5,380,464	4,456,770
1928	7,684,450	6,361,675
1929	8,715,652	8,243,023
1930	9,418,907	7,678,807
1931	9,743,502	8,964,303
1932	10,126,065	9,637,474
1933	9,561,354	8,909,298
	93,720,428	77,630,014

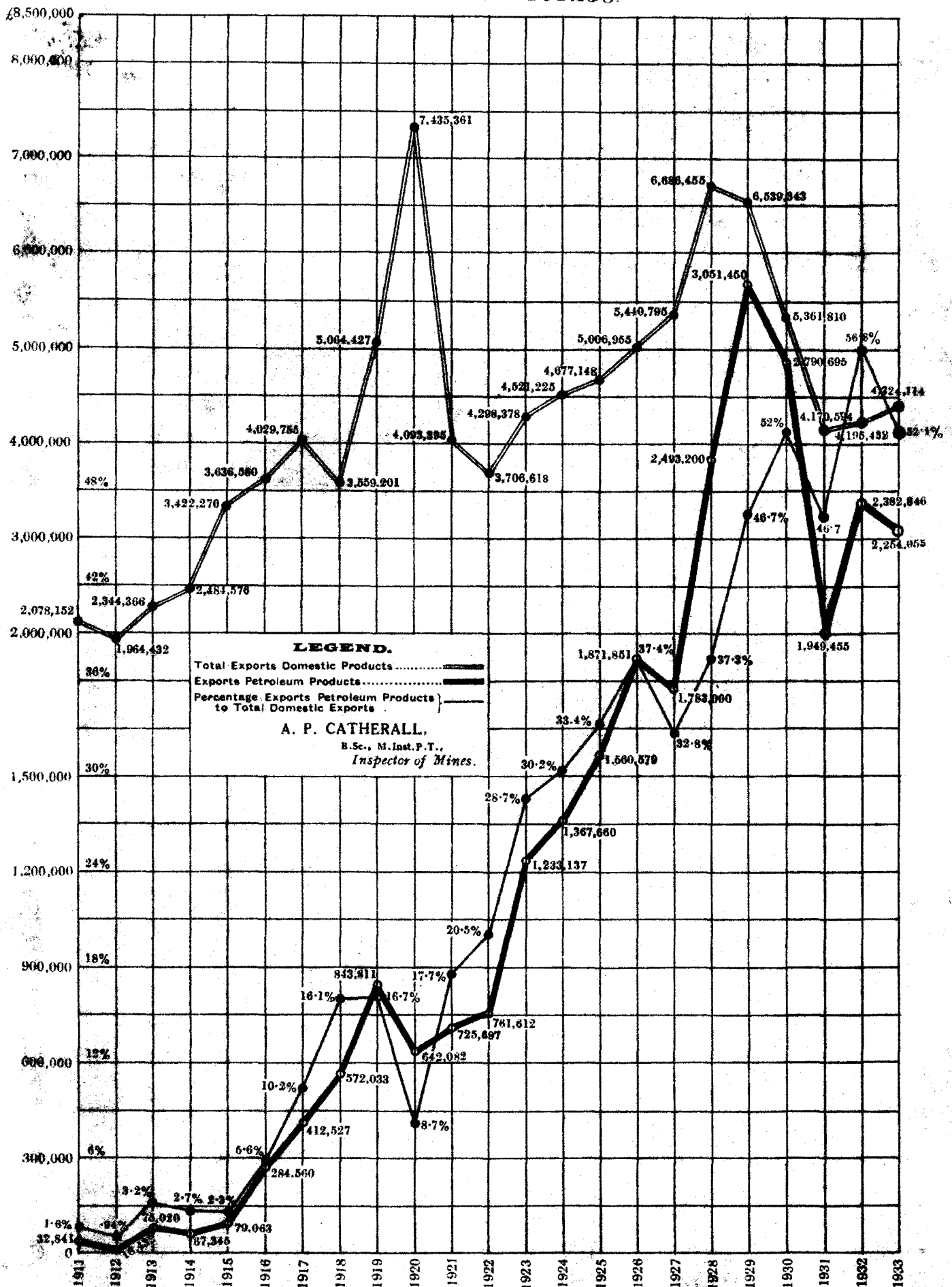
APPENDIX E.**Comparative Statement of Oil refined in the Colony.**

Previous to 1920	..	..	..	..	..	4,051,373 barrels.
1920	..	..	..	..	..	1,395,487 do.
1921	..	..	..	..	..	1,806,016 do.
1922	..	..	..	..	..	1,820,018 do.
1923	..	..	..	..	..	2,360,279 do.
1924	..	..	..	..	..	3,433,902 do.
1925	..	..	..	..	..	3,790,343 do.
1926	..	..	..	..	..	3,786,876 do.
1927	..	..	..	..	..	4,796,223 do.
1928	..	..	..	..	..	6,725,383 do.
1929	..	..	..	..	..	7,642,726 do.
1930	..	..	..	..	..	7,989,679 do.
1931	..	..	..	..	..	6,899,144 do.
1932	..	..	..	..	..	7,635,296 do.
1933	..	..	..	..	..	9,129,810 do.
						<hr/>
				Total	..	73,262,555 do.
						<hr/>

APPENDIX F.

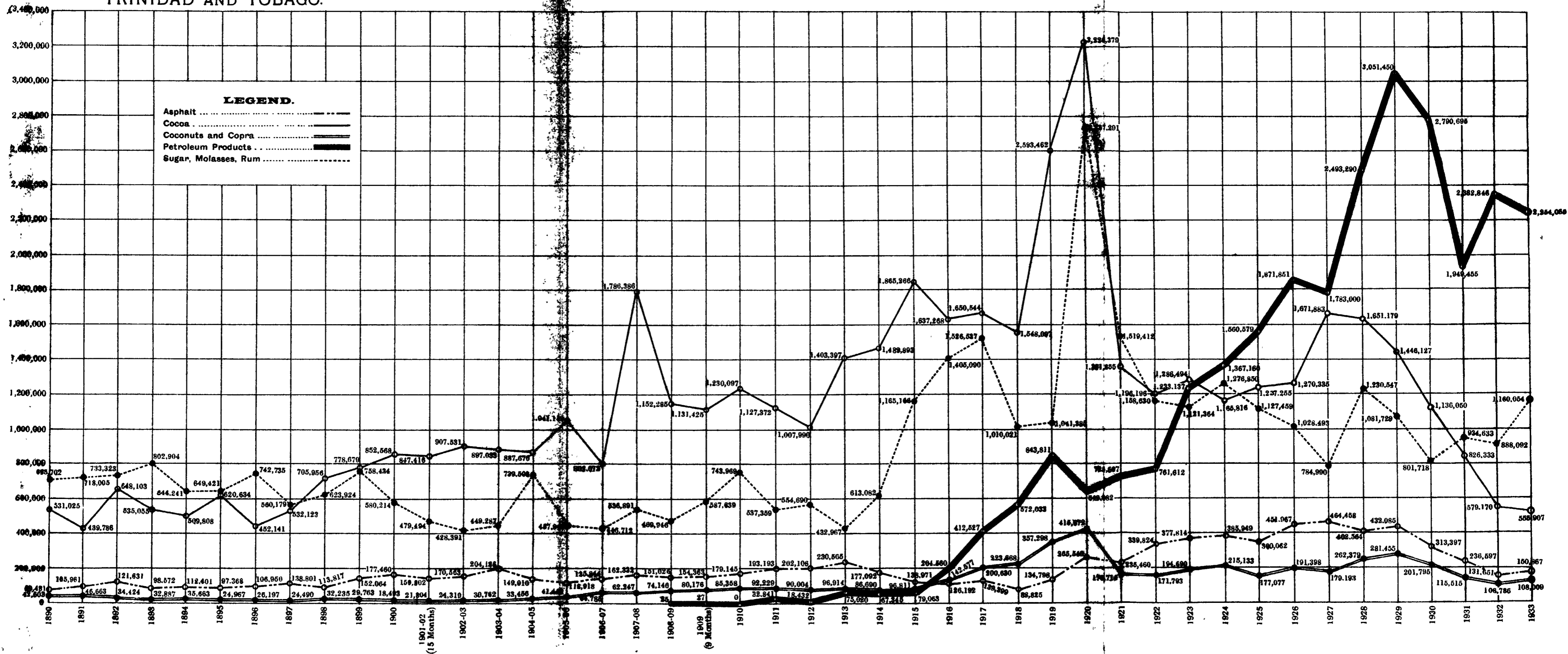
A

TRINIDAD AND TOBAGO.



TRINIDAD AND TOBAGO.

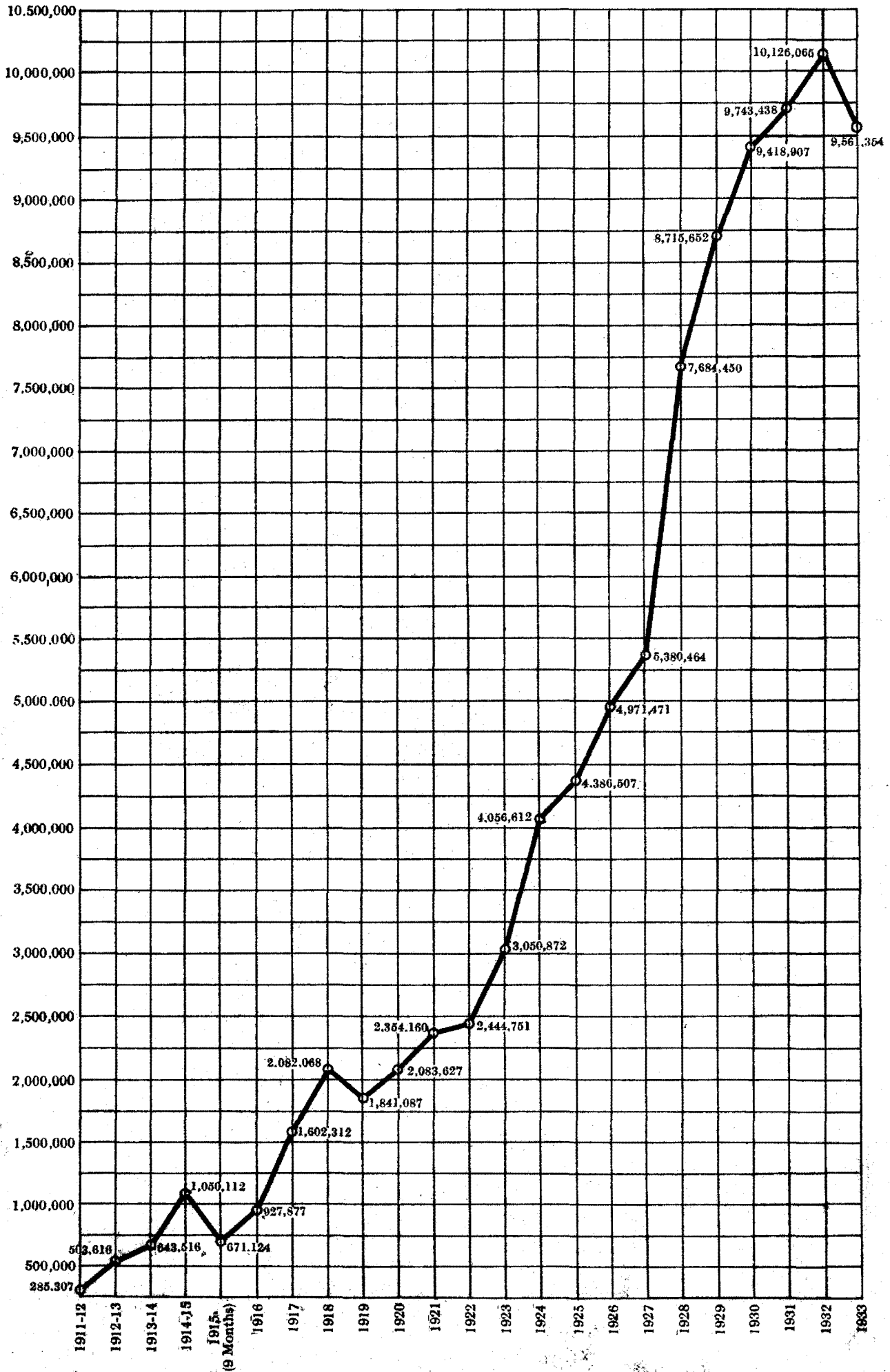
EXPORT OF LOCAL PRODUCE



APPENDIX F.

C

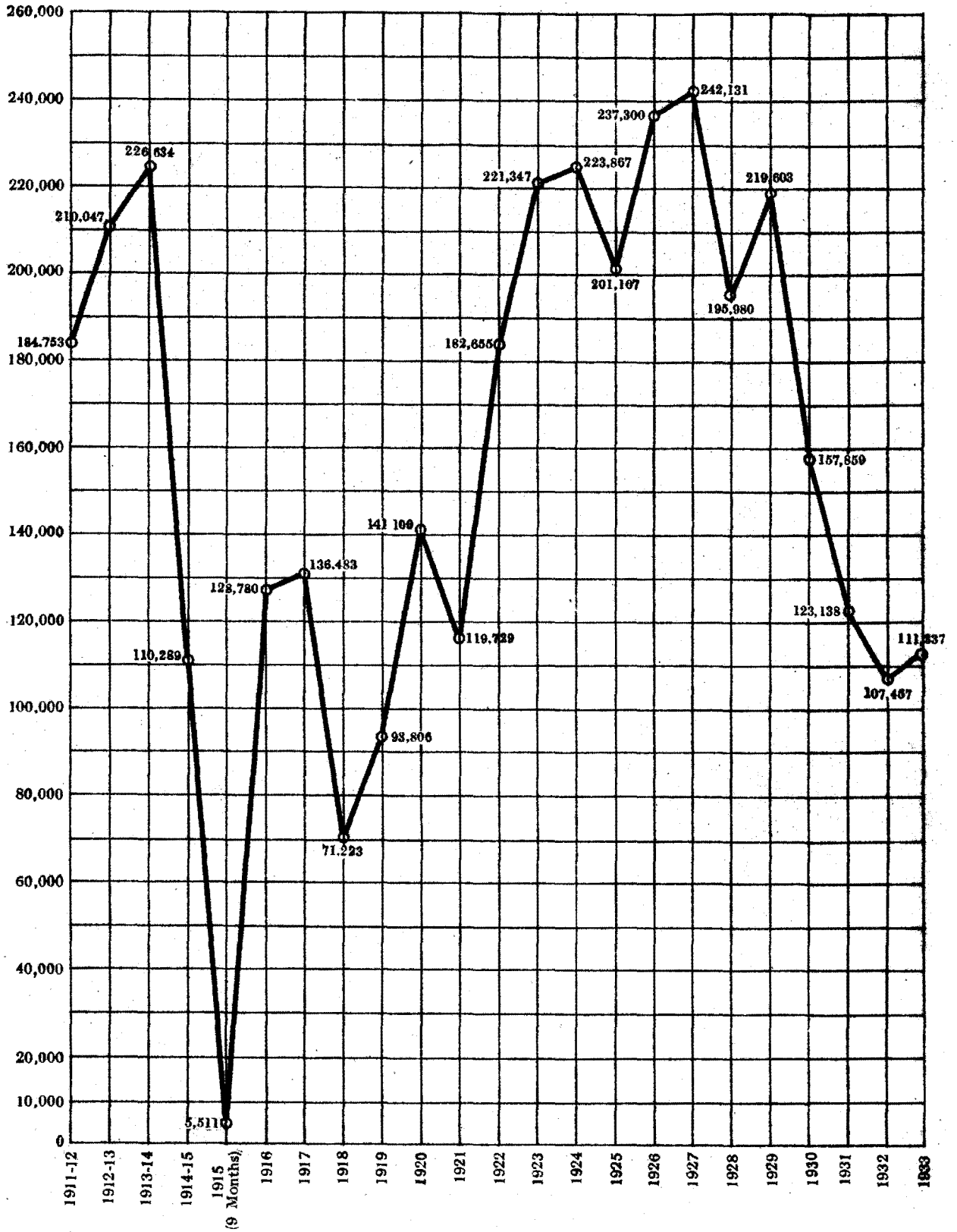
Total Annual Production of Crude Oil in Barrels
One barrel = 35 gallons.



APPENDIX F.

D

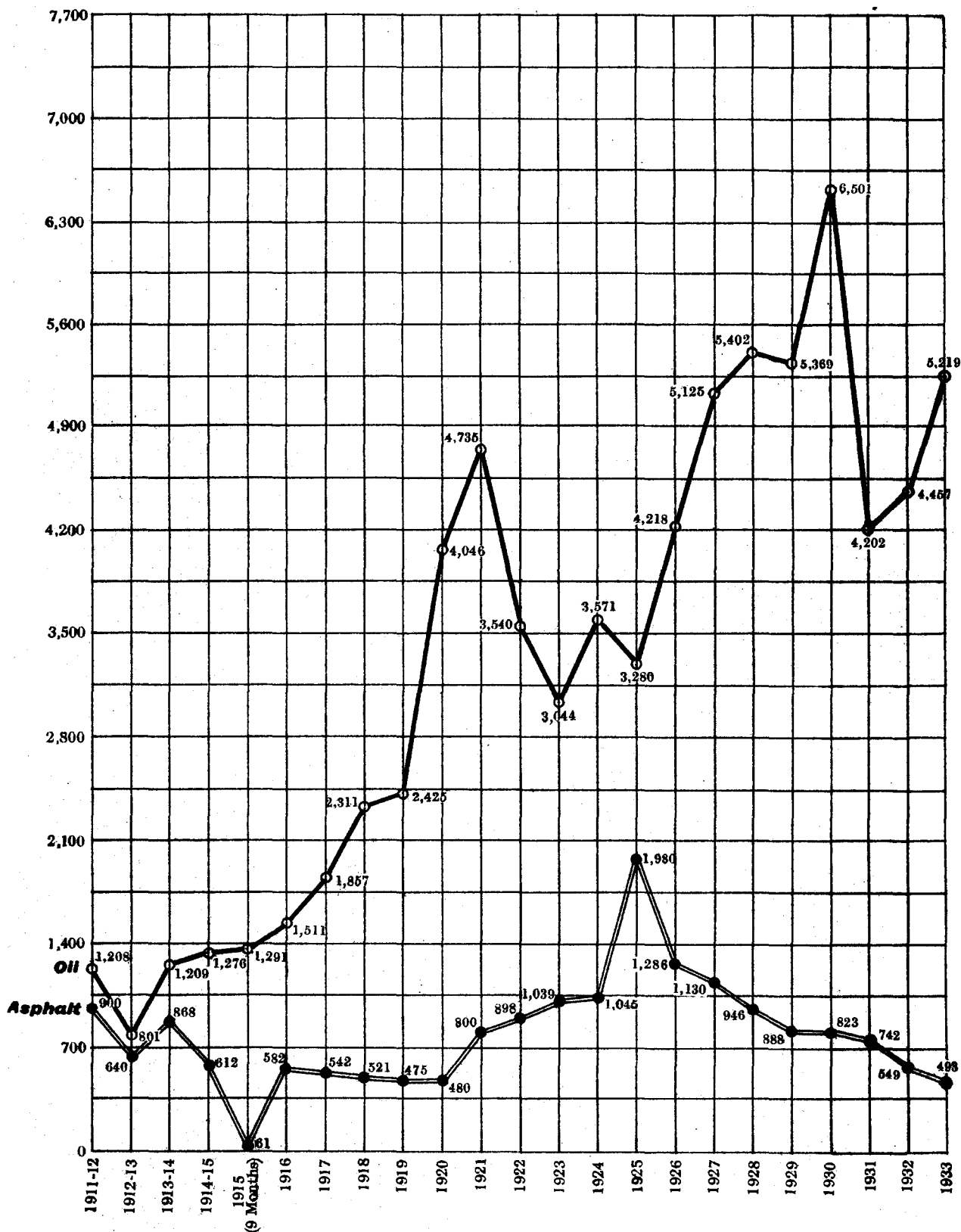
Curve showing yearly output of Asphalt from the Colony in Tons, from 1st April, 1911 to 31st December, 1933.



APPENDIX F.

E

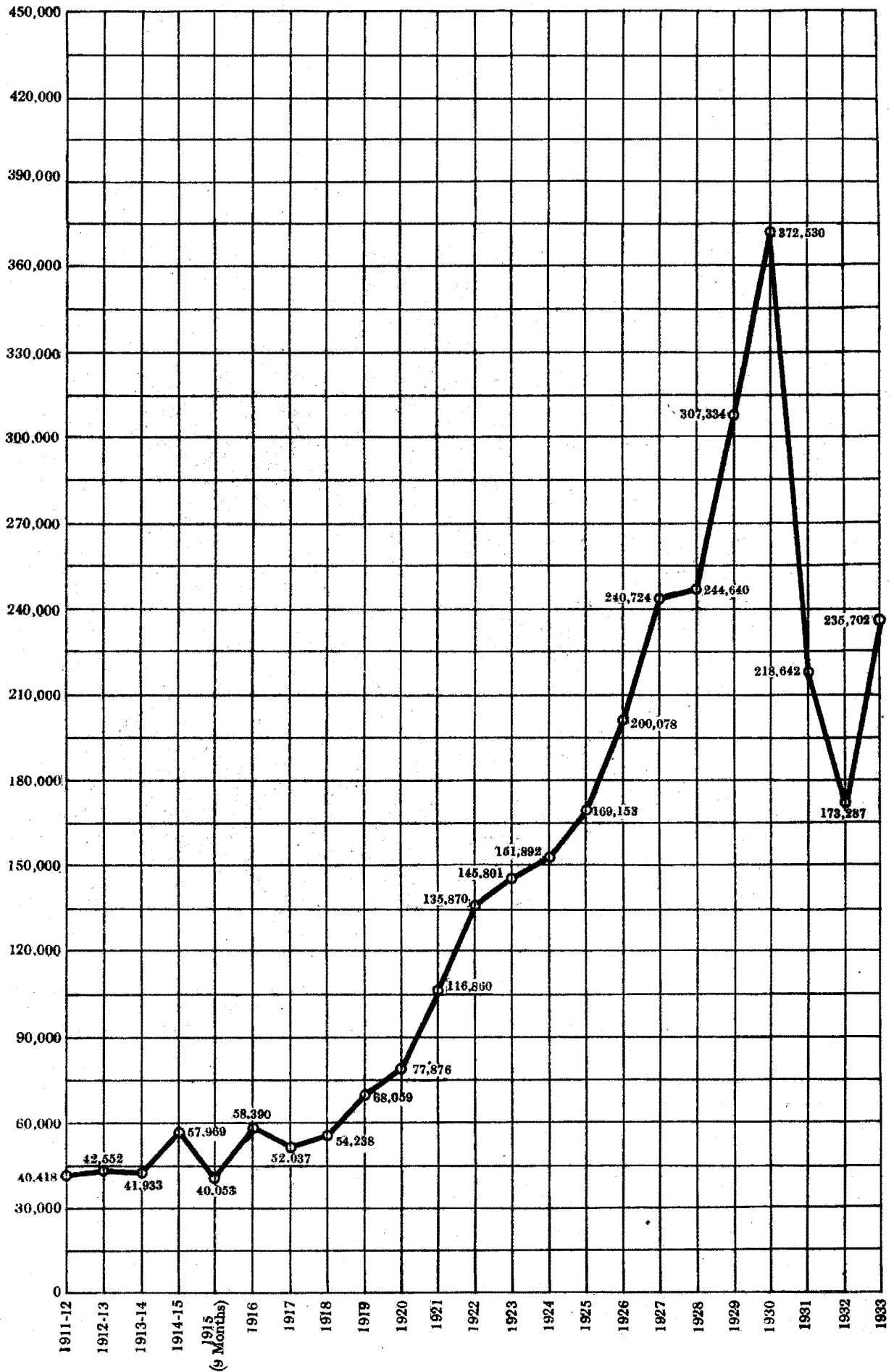
Curve showing comparison of daily average number of persons employed in the Oil and Asphalt Industries of the Colony from 1st April, 1911 to 31st December, 1933.



APPENDIX F.

F

Curve showing yearly total number of feet drilled in the Colony from 1st April, 1911 to 31st December, 1933.

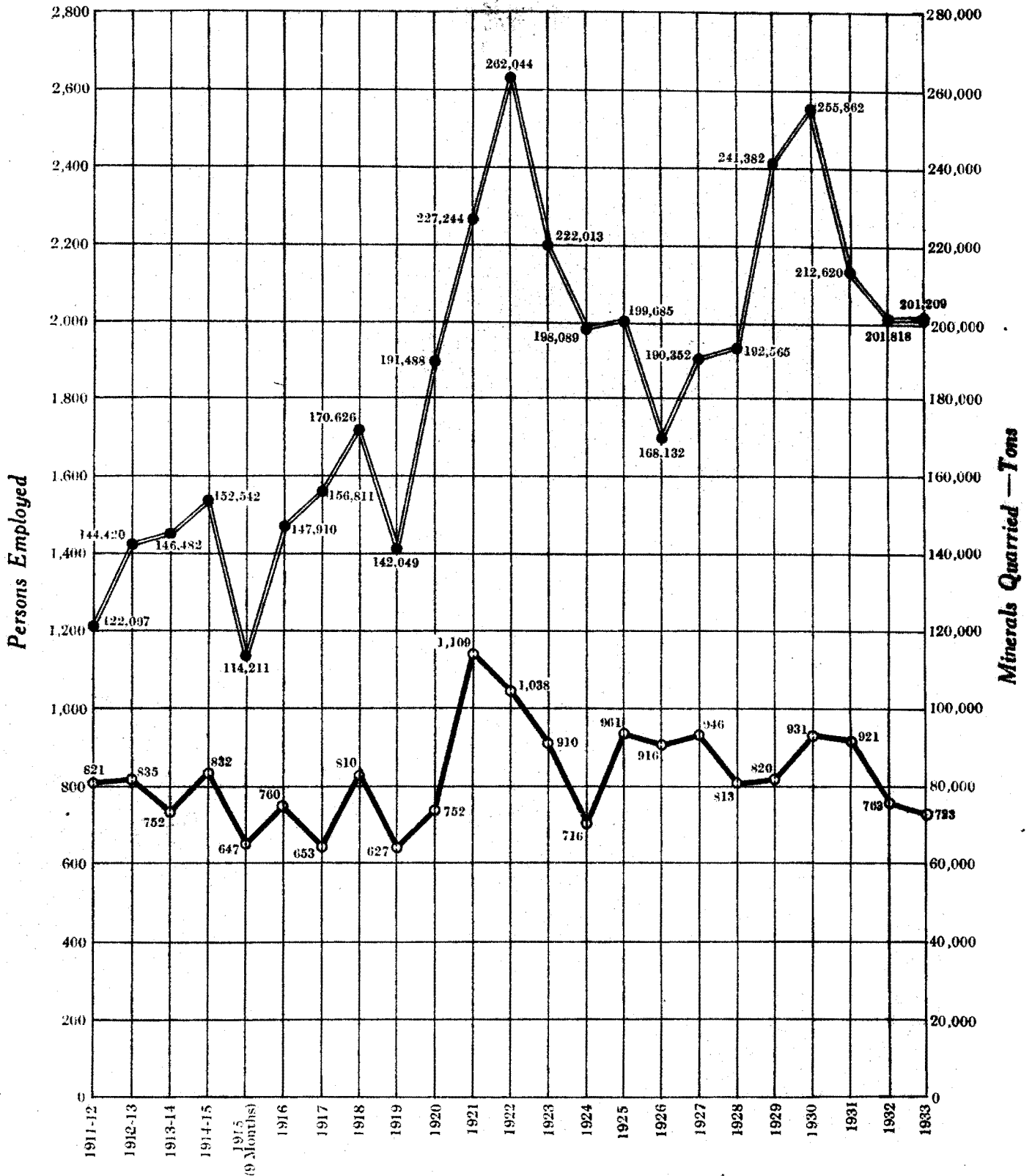


APPENDIX F.

G

Curve showing the yearly total quantity of Minerals quarried and a comparison of the daily average number of persons employed in Quarries in the Colony from 1st April, 1911 to 31st December, 1933.

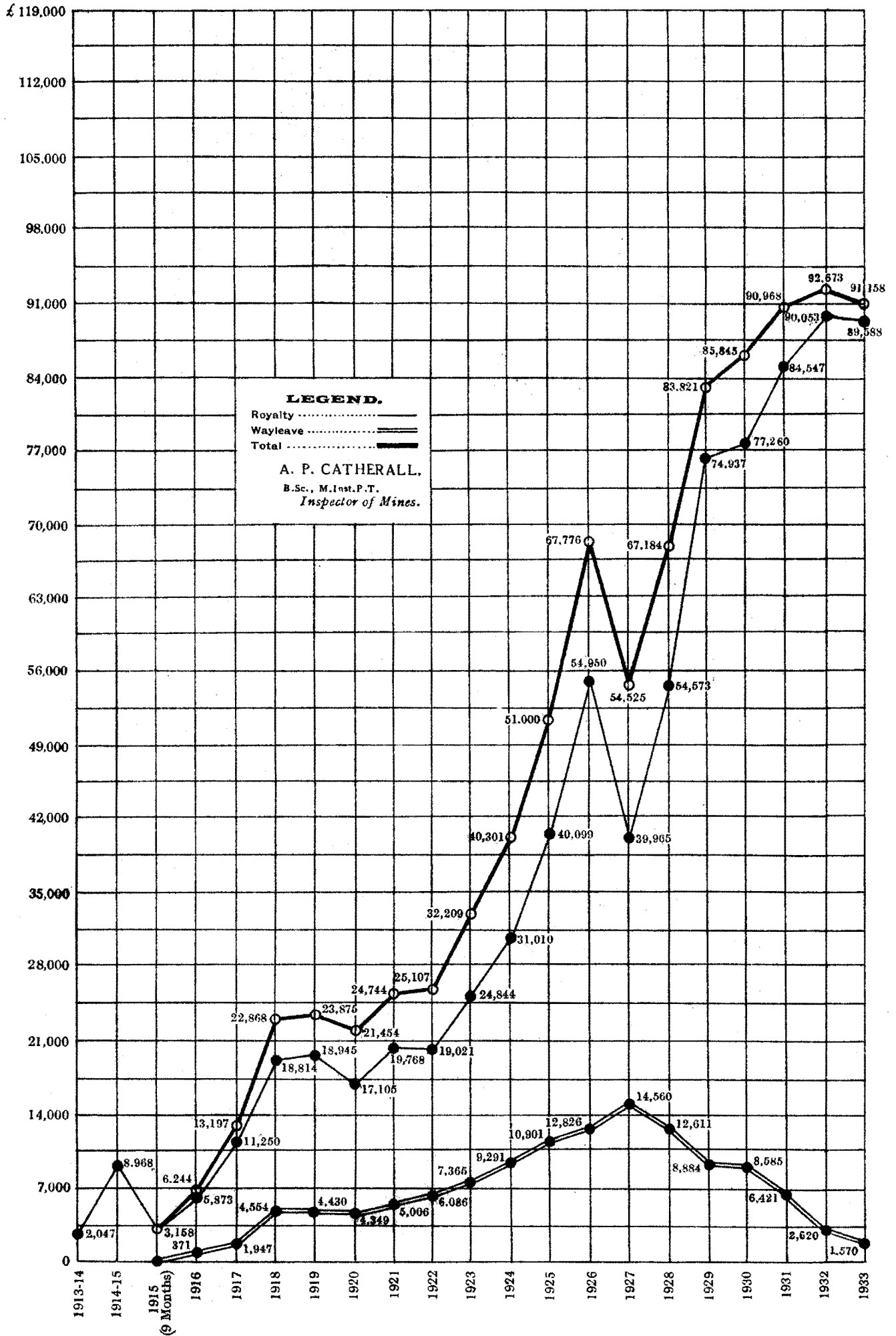
Minerals Quarried ——— Persons Employed ———



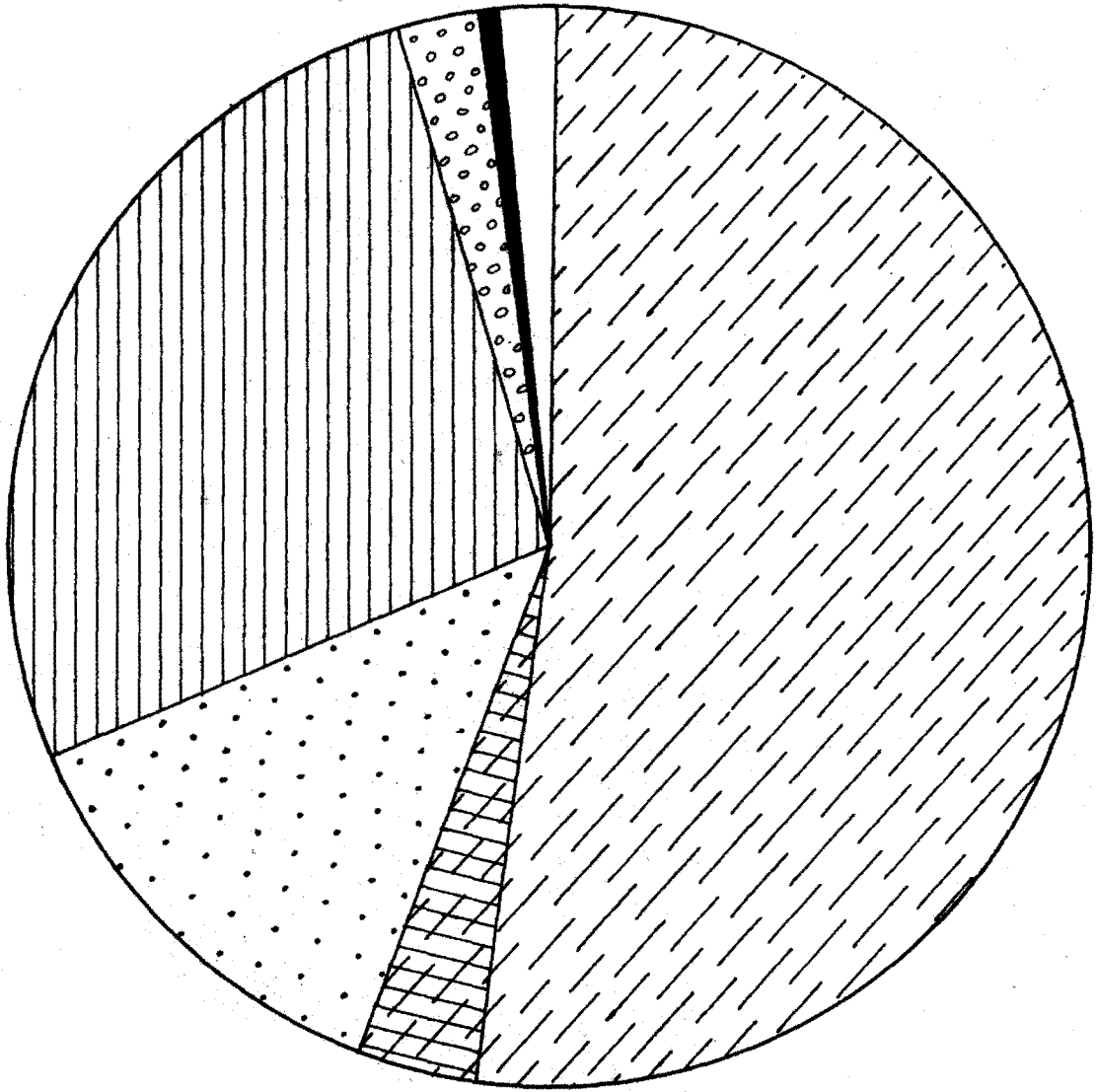
APPENDIX F.

H


ROYALTY AND WAYLEAVE.



APPENDIX G.



Mineral Exports 55.6%


Petroleum Products 52.1% 

Asphalt 3.5% 

Agricultural and other Exports 44.4%

Cocoa 12.9% 

Sugar, Molasses, Rum 26.8% 

Coconuts, Copra, Coconut Oil 2.5% 

Bitters .5% 

Other Exports 1.7% 

TRINIDAD AND TOBAGO.

Council Paper No. 67 of 1935.

MINES DEPARTMENT.

Administration Report of the Inspector of Mines
for the year 1934.

*Laid before the Legislative Council on the
17th of May, 1935.*

Previous Council Paper No. 47 of 1934.

Registered No. of Correspondence relating to the subject—M.P. No. 27271.

TRINIDAD :
PRINTED BY THE GOVERNMENT PRINTER,
GOVERNMENT PRINTING OFFICE,
PORT-OF-SPAIN.

1935,

[Price 84c.]

MINES DEPARTMENT.

Administration Report of the Inspector of Mines for the year 1934.

Council Paper No. 67 of 1935.

M.P. No. 27271.

HONOURABLE COLONIAL SECRETARY,

I have the honour to submit, for the information of His Excellency the Governor, the following report on the working of the Mines Department for the year 1934.

2. The production of 10,894,363 barrels of crude oil during 1934 is the highest obtained in the Colony since the inception of its Petroleum Industry. Of this production 6,391,544 barrels were obtained from lands the oil rights of which are in the Crown at 24.92 barrels per foot drilled, and 4,502,819 barrels from private lands at 47.23 barrels per foot drilled. The total 1934 production was obtained at the rate of 31 barrels per foot drilled, whereas in the year 1930, which is the peak year for footage drilled in the Colony, the production realised 25 barrels per foot drilled.

The year 1934 was also marked by the highest monthly production of over 1,000,000 barrels of crude oil.

The quantity of petroleum products exported shows an increase over 1933, the figures being as follows :

1933—8,909,298 barrels valued at	..	..	..	..	£2,254,055
1934—9,981,774 do.	..	..	..	..	£2,928,360

The Table hereunder, based on the Customs returns, shows a comparative statement of the average price for the years 1933 and 1934 of petroleum and its products exported from the Colony, from which it will be seen that during the period under review the prices on the whole show an improvement over 1933.

Table.

<i>Petroleum and Products Exported.</i>	<i>Average declared value (per barrel) for the years</i>	
	1933	1934
Crude Oil	3/2½d.	3/5d.
Fuel Oil	3/7½d.	4/6½d.
Petrol	9/2d.	9/3¼d.
Kerosene	19/11½d.	£1 3s. 3d.
Lubricating Oil	£2 8s. 1d.	£2 3s. 1½d.
Road Oil	12/5d.	12/1½d.

3. Petroleum and its products still formed the largest part of the Colony's exports in 1934, the value exported being more than three times that of the products of the next most important of its industries, viz., sugar (including molasses and rum). Petroleum and its products and Asphalt formed 66.79 per cent. of the total exports.

The value of the exports of the leading staple products of the Colony during 1934 is shown below :

	<i>Value</i>	<i>Percentage of</i>
	<i>£</i>	<i>total.</i>
Petroleum and its products	2,928,360	63.21
Sugar, molasses and rum	951,835	20.54
Cocoa	349,694	7.55
Asphalt	166,052	3.58
Coconuts, copra and coconut oil	88,823	1.92
Bitters	29,184	.63
Coffee	10,595	.23
Other Exports not enumerated	108,330	2.34
	£4,632,873	100.00

4. The Dubbs Cracking plant of the Trinidad Leaseholds, Ltd., mentioned in the 1933 Administration Report was completed, and is in operation. Apart from the above, there is little of interest to note regarding the construction of new works.

5. **REFINERIES.**—The capacity of the six main refineries operating in the Colony is 2,030,950 tons per annum. This includes two Dubbs Cracking plants.

There are two Edeleanu petroleum distillate refining plants, three Gas Absorption plants and one Gas Adsorption plant in operation in the Colony.

DEEP WATER LOADING PIERS.—Four deep water piers are in use with facilities for the delivery of petroleum and its products in cargo lots, bunkers, and also water supply to vessels. Means are also provided for bunkering vessels in the Harbour of Port-of-Spain.

MAIN PIPELINES.—Approximately 130 miles of main pipelines have been laid in the Colony. These do not include the usual field and gathering lines on the various fields.

MAIN STORAGE CAPACITY.—The total main tank storage capacity is approximately 3,900,000 barrels (35 Imp. gals.) exclusive of the flow tanks connected to the wells and the crude oil settling tanks.

6. The following table shows the number of feet drilled and the quantity of oil produced during 1934 as compared with the years 1932 and 1933 :

	YEAR ENDED 31ST DECEMBER, 1932.		YEAR ENDED 31ST DECEMBER, 1933.		YEAR ENDED 31ST DECEMBER, 1934.	
	<i>Feet drilled.</i>	<i>Oil won byrls. 35 gals.</i>	<i>Feet drilled.</i>	<i>Oil won byrls. 35 gals.</i>	<i>Feet drilled.</i>	<i>Oil won byrls. 35 gals.</i>
Crown Oil rights	111,730	5,610,896	173,496	5,290,743	256,455	6,391,544
Private Lands ..	61,557	4,515,225	62,206	4,270,610	95,328	4,502,819
	173,287	10,126,121	235,702	9,561,353	351,783	10,894,363

7. During the period 1st January to 31st December, 1934, 124 new wells were commenced of which 86 were on lands the oil rights of which are owned by the Crown and 38 were drilled on private lands the oil rights of which are in the surface owner. This brings the total number of wells drilled to the end of 1934 to 2,106, of which 1,339 are on lands the oil rights of which are in the Crown and 767 are on private lands. Of the wells commenced during the year 118 were completed.

8. The number of firms engaged in the mining of oil at the close of the year was 13 as against 14 at the end of 1933.

9. **ROYALTY.**—The royalty paid to the Government in 1934 in respect of crude oil won from lands the oil rights of which are owned by the Government amounted to £86,860 as compared with £89,588 in 1933. It will be noticed that although the production of Crude Oil from lands the oil rights of which are owned by the Government is greater in 1934 than in 1933 yet the royalty collected is less in 1934 than in 1933. This is accounted for by the fact that the production during the half-year ended 31st December, 1934, will be reflected in 1935.

10. **WAYLEAVES.**—The revenue collected under this head was wholly in respect of oil pumped along the public roads of the Colony and amounted to £362 15s. 8½d. as compared with £1,569 15s. 2d. for the previous year. The fall in revenue is chiefly due to the Trinidad Petroleum Development Co., Ltd., having ceased transporting their crude oil through pipelines subject to wayleave along roads.

11. **FEES.**—Fees charged for pipelines crossing the Trinidad Government Railway and public roads amounted to £543.

12. **LEASES AND LICENSES.**—Towards the end of 1933 the Kern Trinidad Oilfields, Ltd., surrendered their Crown and Alienated Lands lease, C.P. 82 of 1926, of 436 acres, and late in December, 1933, took another lease over approximately the same area with the addition of certain other Crown and Alienated lands surrendered by the Petroleum Development Co., Ltd. The new lease was registered as No. 141 of 1934 and was published as C.P. No. 63 of 1934.

The following Prospecting Licenses were extended pending the coming into force of the new forms of Mining Lease.

Prospecting License to the Apex (Trinidad) Oilfields, Ltd., registered No. 1938 of 1930 was further extended for two years from 1st July, 1934, by Deed registered No. 4140 of 1934.

Prospecting License to the Siparia Trinidad Oilfields, Ltd., registered No. 1742 of 1929, was further extended to the 30th April, 1935.

An Exploration License, registered as No. 1583 of 1934, was granted to the United British Oilfields of Trinidad, Ltd., over approximately 107,109 acres of Crown Lands in the Central portion of the Island. The Company have carried out and are still carrying out geophysical surveys over the area.

The Land (Oil Mining) Regulations were brought into force in December, 1934. This code of Rules indicates the conditions under which exploration licenses and mining leases may be granted by the Government.

13. RETURNS.—The various returns required to be submitted by the oil companies in respect of their operations have been regularly received in the Department, where, after being checked, they have been filed with the records of the Department.

14. A large number of inspections have been carried out by the officers of the Department in connection with the various operations taking place on the fields. The Managers have readily co-operated with the Department in endeavouring to carry out the provisions of the Ordinances and Regulations.

15. LEGISLATION.—The Prevention of Accidents Ordinance, Caput 157 and its five amending Ordinances Nos. 11 of 1928, 30 of 1928, 6 of 1929, 12 of 1929 and 18 of 1929 were repealed and consolidated by a new Prevention of Accidents Ordinance No. 28 of 1934.

Drilling Regulations Nos. 13, 21 and 30 were amended during the year.

SAN FERNANDO BRANCH OF THE DEPARTMENT.

16. A report by the Petroleum Technologist on the working of his branch is enclosed as Appendix 'B'.

PREVENTION OF ACCIDENTS ORDINANCE, CAP. 157.

17. During the period under review 170 factories in Trinidad and Tobago were worked. These factories on the whole were regularly inspected by officers of the Department and the recommendations made for ensuring the safety of the workmen employed have been readily carried out by the managers of the various factories.

QUARRIES.

18. The number of quarries worked during the past year was 86 as compared with 81 during 1933. From inspections that have been made they have, in most cases, been found to have been worked in a careful manner but, with few exceptions, they are relatively unimportant.

PETROLEUM ORDINANCE, CAP. 145.

19. The premises in which the various products of petroleum are stored have been carefully inspected, and it is satisfactory to note that, generally, care has been taken to ensure safety. The revenue derived from licenses issued to sell petroleum products during 1934 amounted to £429.

APPENDICES.

20. Appendix 'A' shows the list of oil companies operating in the Colony during the year 1934.

21. Appendix 'B' is the Report on the working of the Petroleum Office, San Fernando.

22. In Appendix 'C' will be found the daily average number of persons employed in oilfields and quarries and the quantity and value of minerals obtained during the period under review.

23. A statement of the oil produced and exported is shown in Appendix 'D'.

24. Appendix 'E' shows the amount of oil refined year by year.

25. Appendix 'F' consists of a series of charts depicting in graphic form the progress made in various industries during the past few years.

26. Appendix 'G' shows the relation of mineral exports to agricultural exports.

STAFF.

27. Mr. A. P. Catherall, B.Sc., late Inspector of Mines, retired from the Service and sailed for England on the 3rd April, 1934. It affords me pleasure to record the able and loyal assistance I have received from the members of the staff.

NELSON BETANCOURT,
Acting Inspector of Mines.

26th April, 1935.

APPENDIX A.

No.	Companies.	Nature of tenure of lands on which operations took place.		Disposal of Oil.	Remarks.
1	Trinidad Leaseholds, Ltd.	Crown Oil Rights under lease	Fyzabad, Barrackpore and Guayaguayare	Pumped to the Company's Refinery at Pointe-a-Pierre and there refined.	The Trinidad Leaseholds Ltd., is the most important company in the Colony from the point of view of refining and marketing, and is second only to the Apex (Trinidad) Oilfields, Ltd., in respect of production. The bulk of the Company's production still continues to be obtained from its holdings in the Fyzabad area where there has been a considerable increase in development with a resultant increase of production. In the Guayaguayare field there has been a small increase of drilling, and the production has fallen slightly. The production from the Barrackpore area has been maintained.
		Private Lands	Fyzabad and Barrackpore	Most of the refined products are exported in bulk	
2	United British Oilfields of Trinidad, Ltd.....	Crown Lands under lease	Morne L'Enfer Forest Reserve	Pumped to the Company's Refinery at Point Fortin and there refined.	Development of the Parry Lands field in the Morne L'Enfer Reserve has continued during the year and the footage drilled has been doubled. The production has been maintained at much the same level as last year. The production in the Morne L'Enfer Reserve formerly operated by the Petroleum Development Co. has been largely increased. The production at Point Fortin has been maintained.
		Private Lands	Point Fortin	Most of the refined products are exported in bulk	
3	Trinidad Central Oilfields, Ltd.	Crown Lands under lease	Tabaquite, Guapo and Lizard Springs	Pumped from Tabaquite and Lizard Springs refined, sold locally and exported; that from the Cruse Field is sold to the Trinidad Leaseholds, Ltd.	The operations of this Company at Tabaquite and Lizard Springs were on a small scale and the production has more or less been maintained. In the Cruse Field, Guapo, there has been a considerable increase in footage drilled with a resultant great increase in production.
4	Trinidad Lake Petroleum Co., Ltd.	Private Lands	Brighton	Refined	Producing only.
5	Apex (Trinidad) Oilfields, Ltd.	Crown Oil Rights under lease and prospecting license and private lands	Fyzabad and Siparia	Crude oil sold to the Trinidad Leaseholds, Ltd., casing head petroleum spirit sold the United British Oilfields of Trinidad, Ltd.	The Company is the largest producer in the Colony. Drilling and production have been maintained at about the same level as last year.

APPENDIX A.—Continued.

No.	Companies.	Nature of tenure of lands on which operations took place.	Disposal of Oil.	Remarks.	
6	Kern Trinidad Oilfields, Ltd.	Crown Lands under lease Private Lands	La Brea Guapo and Roussillac	Some of the production is exported in bulk and also sold to the Trinidad Leaseholds Ltd., West India Oil Co., and also United British Oilfields of Trinidad, Ltd.	There was a considerable increase of footage by this Company, mostly on its private lands at Guapo. The production from this area has also been considerably increased.
7	Trinidad Investments, Ltd.	Private Lands	Fyzabad	Sold to Trinidad Leaseholds, Ltd.	No drilling has been done and production has been increased.
8	Trinidad Petroleum Development Co., Ltd.	Crown Oil Rights under lease and prospecting license Private Lands	Palo Seco Palo Seco and Naparima	Sold to the United British Oilfields of Trinidad, Ltd.	The Company's operations have been chiefly confined to the Palo Seco district where the footage drilled has greatly increased. The production also has considerably increased.
9	Palo Seco Oilfields (C. C. Stollmeyer)	Crown lands under lease	Palo Seco	Refined, and products sold locally....	A small amount of drilling has been undertaken. The production has slightly increased.
10	Trinidad Oilfields Operating Co., Ltd.	Crown Lands under lease Private Lands	San Francique Fyzabad, San Francique and Palo Seco	Sold to the West India Oil Co., for refining purposes. The Refinery has now been taken over by Trinidad Oilfields Operating Co., Ltd.	Both footage drilled and production obtained in the Palo Seco area have decreased. The production at Fyzabad has been maintained and at San Francique has declined. During the year the Company surrendered to the Petroleum Development Company their sub-lease in the Point D'Or and Grant's Trace areas.
11	New Dome Oilfields, Ltd.	Private Lands	Fyzabad	Sold to Trinidad Leaseholds, Ltd., and Kern Trinidad Oilfields, Ltd.	Drilling was considerably increased but the production was less than that during the previous year.
12	Siparia Trinidad Oilfields, Ltd.	Crown Lands under Prospecting license	Palo Seco	Sold to Trinidad Leaseholds, Ltd., and Trinidad Petroleum Development Co., Ltd.	Drilling was considerably reduced and a smaller production was obtained.
13	Trinidad Freeholds, Ltd.	Private Lands	Fyzabad	This Company has now been taken over early in the year by Trinidad Investments, Ltd.	Small production obtained from this area. No drilling.
14	Petroleum Options (1925) Ltd.	Private Lands	San Francique	Sold to Trinidad Leaseholds, Ltd.	This Company was re-organised in 1934, carried out drilling operations and obtained production.

APPENDIX B.

HONOURABLE INSPECTOR OF MINES (ACTING).

Production for the year under review amounted to 10,894,363 barrels or an increase of 13.94 per cent. over the 1933 figure of 9,561,354.40 barrels. This is a record for the Island. The footage drilled for the year was 351,783 feet as compared with 235,702 feet for 1933, or an increase of 49.25 per cent.

A comparative analysis of the figures for 1933 and 1934 respectively is given as follows:—

	<i>Production.</i>	1933. <i>Feet Drilled.</i>	<i>Average production per well.</i>	<i>Production.</i>	1934. <i>Feet Drilled.</i>	<i>Average production per well.</i>
Crown Lands ..	3,684,148.30	85,946	741	4,586,366	167,952	853
Alienated ..	1,606,594.66	87,550	1,014	1,805,178	88,503	987
Private ..	4,270,611.44	62,206	1,226	4,502,819	95,328	1,146

The number of barrels produced per foot drilled works out as follows:—

1930	25.3
1931	44.6
1932	58.6
1933	40.6
1934	31.0

One hundred and twenty-four new wells were started during the year, and were disposed of as under:—

	<i>Crown.</i>	<i>Private.</i>
Wells started in 1934	86	38
Wells brought forward as unfinished in 1933	31	9
Total drilling in 1934	117	47
Wells completed as producers	79	35
Wells completed as water well	1	—
Wells completed as dry holes but not officially abandoned	3	—
Wells temporarily abandoned	1	—
Wells officially abandoned	10	5
Wells unfinished at the end of 1934	23	7
	117	47
Old wells abandoned during 1934	5	3
Wells recompleted	14	8

The average number of wells producing shows an increase over previous years as follows:—

	1931	1932	1933	1934
Wells flowing	185	215	231	222
Wells pumping	504	469	443	465
Wells swabbing or bailing	60	81	124	140
Wells on air or gas lift	13	15	29	70
Wells on displacement pumping	—	6	9	9
	762	786	836	906

It will be noticed from the above that there has been a large increase in the number of wells operated by air or gas lift as compared with previous years. Table No. 1 attached gives the monthly drilling and footage figures.

At the end of the year the depth of the deepest well in the Island was 6,400 feet and there were 56 wells of 4,000 feet or more in depth as compared with 34 wells at the end of 1933.

The greatest production again came from the Fyzabad area with 63.1 per cent. of the total for the Colony divided amongst the Companies operating there.

During the year the past records in this office were overhauled and checked and the following tables have been compiled from the corrected records.

Table (2) showing number of wells started and footage drilled since the inception of the Industry.

Table (3) showing annual production since returns were first sent in to the Government.

Table (4) shows number of wells started annually and the status of these wells at the end of 1934.

During the year there were three fatal accidents and 31 other reportable accidents. An analysis of these shows that 47 per cent. of the whole were classified as unavoidable and 35 per cent. due to carelessness on the part of the deceased or injured man.

One well was struck by lightning and a small quantity of gas ignited but no material damage was done either to the well or surroundings.

A few minor alterations to the Drilling Regulations were made (a) to prevent houses being placed near wells; (b) regarding the reporting of water when found in the oil production from a well and (c) to give the Petroleum Technologist the right of appeal to the Petroleum Conservation Board should he disagree with a drilling or repair programme.

The recovery of barytes from drilling mud has been undertaken in several fields either by the batch principle or continuous process and satisfactory results are being obtained, in most cases the barytes is recovered as a sludge which is then added to the drilling fluid to increase its weight.

A new type of automatic plunger lift has been tried in connection with gas lift wells in the Island and is operating successfully where used.

Frequent inspections of drilling and production machinery were carried out in conjunction with the ordinary routine duties.

I am pleased to report that I have received continued co-operation in carrying out my duties by all the Companies and their Staffs.

11th April, 1935.

C. ERIK CAPITO,
Petroleum Technologist.

TABLE 1.
DRILLING AND PRODUCTION RETURN FOR 1934.

Month.	New Wells started.		New Wells completed as Producers.		Wells re-completed as Producers.		New Wells completed as dry or uncommercial and abandoned, or for fresh water.		Wells abandoned.		Total Wells started to date.	Footage drilled during month.	Production. (Barrels).	Flowing.		Pumping.		Bailing or Swabbing.		Air/Gas Lift.		Displacement Pumps.		Total Number of Wells Producing		Grand Total Crown and Private.	Percentage Wells producing to total drilled.	REMARKS.
	C	P	C	P	C	P	C	P	C	P				C	P	C	P	C	P	C	P	C	P	C	P			
January	7	3	5	3	—	—	—	—	2	—	1,993	18,997	852,189	138	88	283	172	102	38	28	9	2	6	553	313	866	43.45	
February	3	2	1	1	—	2	—	—	2	2	1,998	26,317	766,254	129	91	287	174	101	32	36	10	3	5	556	312	868	43.44	
March	8	4	8	1	3	1	—	—	—	—	2,010	20,082	876,544	140	89	285	181	102	27	43	11	3	5	573	313	886	44.08	
April	4	3	5	1	—	—	—	—	1	1	2,017	34,364	876,950	137	89	269	181	103	31	50	13	1	6	560	320	880	43.63	
May	9	3	3	2	4	1	—	—	—	—	2,029	30,054	926,785	132	85	265	183	110	32	50	15	3	5	560	320	880	43.37	
June	6	3	8	6	1	1	—	—	1	—	2,038	25,757	947,122	132	85	284	191	111	32	51	14	3	6	581	328	909	44.60	
July	11	3	7	1	2	—	1	—	2	—	2,052	31,509	1,008,669	135	85	286	187	109	33	64	15	3	9	597	329	926	45.13	1 Water Well.
August	7	4	5	5	1	—	—	—	—	—	2,063	33,543	975,697	128	88	289	188	113	34	61	16	3	10	594	336	930	45.08	
September	11	2	7	4	—	1	—	—	—	—	2,076	33,435	919,469	137	85	294	184	109	34	58	17	2	11	600	331	931	44.84	
October	5	5	7	3	2	1	—	—	1	—	*2,085	31,864	906,152	140	90	283	190	108	35	66	20	2	9	599	344	943	45.23	*On inspection, one old well recorded in Central Range was found to have never been drilled.
November	8	2	8	1	1	—	—	—	—	—	2,095	35,828	907,655	125	88	282	191	110	36	72	18	3	8	592	341	933	44.53	
December	7	4	15	7	—	1	3	—	6	5	2,106	30,033	930,877	133	87	256	191	110	34	81	19	1	7	581	338	919	43.64	
Totals	86	38	79	35	14	8	4	—	15	8	2,106	351,783	10,894,363	134	88	280	185	107	33	55	15	2	7	Averages				
Grand Totals	124		114		22		4		23		2,106	351,783	10,894,363	222		465		140		70		9		579	327	906	42.90	"C" denotes Crown Oil Rights. "P" denotes Private Rights.

TABLE 2.

COLONY OF TRINIDAD.

Number of Wells Started and Footage Drilled Annually.

YEAR.	WELLS STARTED.								FOOTAGE DRILLED.								YEARLY TOTALS.	CUMULATIVE.
	CROWN.		ALIENATED.		PRIVATE.		TOTALS.		CROWN.		ALIENATED.		PRIVATE.					
	Annual.	Cum.	Annual.	Cum.	Annual.	Cum.	Annual.	Cum.	Annual.	Cum.	Annual.	Cum.	Annual.	Cum.				
1867	—	—	—	—	1	1	1	1	—	—	—	—	964	964	964	964		
1900	—	—	—	—	1	2	2	2	—	—	—	—	600	1,564	600	1,564		
1902	1	1	—	—	2	4	3	5	600	600	—	—	1,315	2,879	1,915	3,479		
1903	1	2	—	—	—	4	1	6	1,172	1,772	—	—	1,060	3,939	2,232	5,711		
1904	1	3	—	—	—	4	1	7	860	2,632	—	—	—	3,939	860	6,571		
1905	—	3	—	—	—	4	—	7	—	2,632	—	—	—	3,939	—	6,571		
1906	1	4	—	—	2	6	3	10	1,104	3,736	—	—	1,499	5,438	2,603	9,174		
1907	1	5	—	—	2	8	3	13	798	4,534	—	—	1,563	7,001	2,361	11,535		
1908	—	5	—	—	4	12	4	17	—	4,534	—	—	2,352	9,353	2,352	13,887		
1909	—	5	—	—	6	18	6	23	—	4,534	—	—	5,362	14,715	5,362	19,249		
1910	5	10	—	—	7	25	12	35	3,771	8,305	—	—	4,319	19,034	8,090	27,339		
1911	8	18	—	—	38	63	46	81	4,902	13,207	—	—	34,010	53,044	38,912	66,251		
1912	10	28	—	—	35	96	45	126	6,839	20,046	—	—	32,881	85,925	39,720	105,971		
1913	25	53	—	—	18	114	43	169	13,813	33,859	—	—	26,388	112,313	40,201	146,172		
1914	50	103	—	—	16	132	66	235	35,146	69,005	—	—	23,283	135,596	58,429	204,601		
1815	31	134	—	—	19	151	50	285	29,208	98,213	—	—	25,652	161,248	54,860	259,461		
1916	28	162	—	—	20	171	48	333	30,866	129,079	—	—	28,035	189,283	58,901	318,362		
1917	38	200	—	—	6	177	44	377	41,227	170,306	—	—	9,557	198,840	50,784	369,146		
1918	38	238	—	—	4	181	42	419	47,700	218,006	—	—	6,796	205,636	54,496	423,642		
1919	39	277	—	—	13	194	52	471	49,741	267,747	—	—	16,769	222,405	66,510	490,152		
1920	44	321	1	1	23	217	68	539	53,002	320,749	1,665	1,665	24,009	246,414	78,676	568,828		
1921	49	370	4	5	32	249	85	624	71,318	392,067	2,896	4,561	44,631	291,045	118,845	687,673		
1922	68	438	4	9	19	268	91	715	88,299	480,366	8,701	13,262	39,463	330,508	136,463	824,136		
1923	71	509	4	13	33	301	108	823	79,907	560,273	7,060	20,322	58,805	389,313	145,772	969,908		
1924	71	580	4	17	35	336	110	933	90,141	650,414	6,190	26,512	55,197	444,510	151,528	1,121,436		
1925	52	632	10	27	37	373	99	1,032	90,908	741,322	14,442	40,954	63,543	508,053	168,893	1,290,329		
1926	69	701	13	40	46	419	128	1,160	109,866	851,188	18,100	59,054	72,691	580,744	200,657	1,490,986		
1927	73	774	13	53	73	492	159	1,319	101,920	953,108	17,288	76,342	122,465	703,209	241,673	1,732,659		
1928	43	817	32	85	64	556	139	1,458	71,481	1,024,589	58,842	135,184	112,863	816,072	243,186	1,975,845		
1929	52	869	59	144	48	604	159	1,617	92,590	1,117,179	118,583	253,767	96,309	912,381	307,482	2,283,327		
1930	76	945	31	175	56	660	163	1,780	170,389	1,287,568	85,561	339,328	116,706	1,029,087	372,656	2,655,983		
1931	9	954	25	200	26	686	60	1,840	42,972	1,330,540	95,410	434,738	80,260	1,109,347	218,642	2,874,625		
1932	21	975	20	220	20	706	61	1,901	44,568	1,375,108	67,162	501,900	61,557	1,170,904	173,287	3,047,912		
1933	36	1,011	22	242	23	729	81	1,982	85,946	1,461,054	87,550	589,450	62,206	1,323,110	235,702	3,283,614		
1934	56	1,067	30	272	38	767	124	2,106	167,952	1,629,006	88,503	677,953	95,328	1,328,438	351,783	3,635,397		
		1,067		272		767		2,106		1,629,006		677,953		1,328,438		3,635,397		

11th April, 1935.

C. ERIK CAPITO,
Petroleum Technologist.

TABLE 3

Yearly Trinidad Production.

YEAR.	Crown.	Accumulative Total.	Alienated.	Accumulative Total.	Private.	Accumulative Total.	Yearly Totals.	Grand Accumulative Total.
1908	—	—	—	—	37	37	37	37
1909	—	—	—	—	47,295	47,332	47,295	47,332
1910	55	55	—	—	105,023	152,355	105,078	152,410
1911	3,994	4,049	—	—	217,298	369,653	221,292	373,702
1912	9,104	13,153	—	—	476,801	846,454	485,905	859,607
1913	52,153	65,306	—	—	533,029	1,379,483	585,182	1,444,789
1914	512,299	577,605	—	—	480,917	1,860,400	993,216	2,438,005
1915	392,389	969,994	—	—	512,330	2,372,730	904,719	3,342,724
1916	478,815	1,448,809	—	—	449,060	2,821,790	927,875	4,270,599
1917	1,065,945	2,514,754	—	—	536,357	3,358,147	1,602,302	5,872,901
1918	1,588,805	4,103,559	—	—	493,115	3,851,262	2,081,920	7,954,821
1919	1,539,973	5,643,532	—	—	301,063	4,152,325	1,841,036	9,795,857
1920	1,758,039	7,401,571	—	—	325,071	4,477,396	2,083,110	11,878,967
1921	1,751,943	9,153,514	300	300	601,916	5,079,312	2,354,159	14,233,126
1922	1,534,796	10,688,310	147	447	909,727	5,989,039	2,444,670	16,677,796
1923	1,847,118	12,535,428	63,334	63,781	1,140,335	7,129,374	3,050,787	19,728,583
1924	2,410,737	14,946,165	76,467	140,248	1,570,856	8,700,230	4,058,060	23,786,643
1925	2,653,541	17,599,706	194,335	334,583	1,538,634	10,238,864	4,386,510	28,173,153
1926	2,642,585	20,242,291	298,468	633,051	2,030,426	12,269,290	4,971,479	33,144,632
1927	2,048,602	22,290,893	288,522	921,573	3,043,676	15,312,966	5,380,800	38,525,432
1928	2,660,649	24,951,542	1,462,665	2,384,238	3,561,273	18,874,239	7,684,587	46,210,019
1929	2,989,501	27,941,043	1,625,733	4,009,971	4,100,554	22,974,793	8,715,788	54,925,807
1930	3,429,030	31,370,073	1,831,338	5,841,309	4,158,589	27,133,382	9,418,957	64,344,764
1931	2,795,572	34,165,645	2,530,175	8,371,484	4,417,751	31,551,133	9,743,498	74,088,262
1932	3,200,083	37,365,728	2,410,813	10,782,297	4,515,225	36,066,358	10,126,121	84,214,383
1933	3,684,148	41,049,876	1,606,595	12,388,892	4,270,610	40,336,968	9,561,353	93,775,367
1934	4,586,366	45,636,242	1,805,178	14,194,070	4,502,819	44,839,787	10,894,363	104,670,099

C. ERIK CARITO,
Petroleum Technologist

11th April, 1935.

TABLE 4.

Table showing Number of Wells started in each Year and Status of these Wells at 31st December, 1934.

YEAR.	WELLS STARTED.			PRODUCING.			IDLE.			ABANDONED.			UNFINISHED.			TOTALS.			
	C	A	P	C	A	P	C	A	P	C	A	P	C	A	P				
1867	—	—	1							—	—	1				—	—	1	—
1900	—	—	1							—	—	1				—	—	1	—
1902	1	—	2							1	—	2				—	—	3	—
1903	1	—	—							1	—	—				—	—	1	—
1904	1	—	—							1	—	—				—	—	1	—
1905	—	—	—							—	—	—				—	—	—	—
1906	1	—	2							1	—	2				—	—	3	—
1907	1	—	2							1	—	2				—	—	3	—
1908	—	—	4	—	—	1	—	—	—	—	—	3				1	—	3	—
1909	—	—	6	—	—	2	—	—	3	—	—	1				2	3	1	—
1910	5	—	7	—	—	1	3	—	1	2	—	5				1	4	7	—
1911	8	—	38	1	—	7	2	—	2	5	—	29				8	4	34	—
1912	10	—	35	2	—	7	3	—	5	5	—	23				9	8	28	—
1913	25	—	18	8	—	4	8	—	1	9	—	13				12	9	22	—
1914	50	—	16	16	—	6	10	—	2	24	—	8				22	12	32	—
1915	31	—	19	10	—	9	8	—	5	13	—	5				19	13	18	—
1916	28	—	20	10	—	10	10	—	6	8	—	4				20	16	12	—
1917	38	—	6	20	—	3	5	—	—	13	—	3				23	5	16	—
1918	38	—	4	18	—	—	10	—	—	10	—	4				18	10	14	—
1919	39	—	13	22	—	2	7	—	2	10	—	9				24	9	19	—
1920	44	1	23	21	—	7	9	—	1	14	1	15				28	10	30	—
1921	49	4	32	25	—	10	9	—	6	15	4	16				35	15	35	—
1922	68	4	19	33	1	5	14	—	5	21	3	9				39	19	33	—
1923	71	4	33	31	1	17	11	—	2	28	3	14	1	—	—	49	13	45	1
1924	71	4	35	32	1	19	14	—	4	25	3	12	—	—	—	52	18	40	—
1925	52	10	37	27	5	17	7	—	7	18	5	13	—	—	—	49	14	36	—
1926	69	13	46	33	4	29	15	1	6	21	8	11	—	—	—	66	22	40	—
1927	73	13	73	33	8	35	15	2	17	25	3	21	—	—	—	76	34	49	—
1928	43	32	64	24	27	42	9	3	8	10	2	14	—	—	—	93	20	26	—
1929	52	59	48	28	37	36	6	17	4	16	5	8	2	—	—	101	27	29	2
1930	76	31	56	52	19	38	9	7	6	13	5	11	2	—	1	109	22	29	3
1931	9	25	26	6	19	19	—	4	1	2	2	6	1	—	—	44	5	10	1
1932	21	20	20	18	16	16	—	3	1	3	—	3	—	1	—	50	4	6	1
1933	36	22	23	25	20	20	1	2	—	7	—	3	3	—	—	65	3	10	3
1934	56	30	38	43	25	31	—	—	—	5	—	1	8	5	6	99	—	6	19
Totals	1,067	272	767	538	183	393	185	39	95	327	44	272	17	6	7	*1,114	319	643	30
	2,106															2,106			

* Includes 6 Gas Wells, and 7 Water Wells.

C. ERIK CAPITO,
Petroleum Technologist.

11th April, 1935.

APPENDIX C.

Daily average number of persons employed in Oilfields and Quarries and the quantity and value of minerals obtained during the year ended 31st December, 1934.

Minerals.	Daily average number of persons employed.			Quantity.	Approximate Value. *
	Males.	Females.	Total.		
Oil	5,347	85	5,432	10,894,363 barrels	1,567,733 2 2
Asphalt	554	3	557	† 70,071 tons	43,794 0 0
Private Quarries (Limestone, Gravel, &c.)	325	97	422	160,717 tons	13,223 5 2
Government Quarries (Limestone, &c.)	256	67	323	80,869 tons	10,948 13 6

* The values in this column are those returned by owners and managers and represent the value at the place of production.

† In addition to this amount 22,758 tons were extracted from the Pitch Lake by the Public Works Department for use on the roads of the Colony.

APPENDIX D.

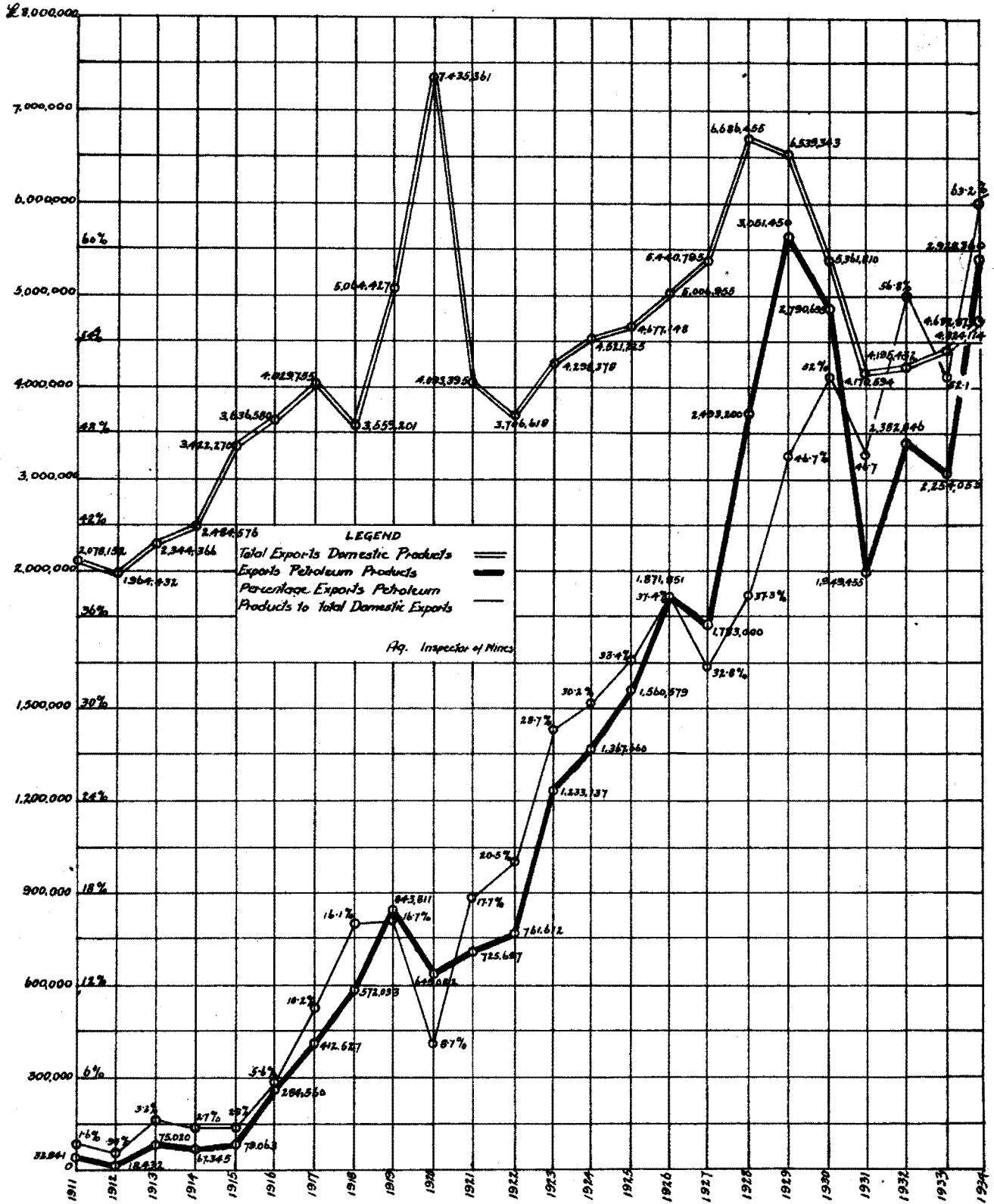
Statement of oil produced and exported year by year since the inception of the Petroleum Industry in the Colony.

Year.	Production in barrels.	Quantity of Crude oil and Refined Oil exported in barrels.
1908	37	—
1909	47,295	46
1910	105,078	—
1911	221,292	219,582
1912	485,905	122,734
1913	585,182	387,719
1914	993,216	348,351
1915	904,719	408,188
1916	927,875	975,142
1917	1,602,302	1,079,369
1918	2,081,920	1,305,407
1919	1,841,036	1,406,264
1920	2,083,110	1,034,907
1921	2,354,159	1,223,346
1922	2,444,670	1,615,740
1923	3,050,787	2,432,470
1924	4,058,060	3,224,529
1925	4,386,510	3,606,608
1926	4,971,479	3,988,308
1927	5,380,800	4,456,770
1928	7,684,587	6,361,675
1929	8,715,788	8,243,023
1930	9,418,957	7,678,807
1931	9,743,498	8,964,303
1932	10,126,121	9,637,474
1933	9,561,353	8,909,298
1934	10,894,363	9,981,774
	104,670,099	87,611,834

APPENDIX "F"

A

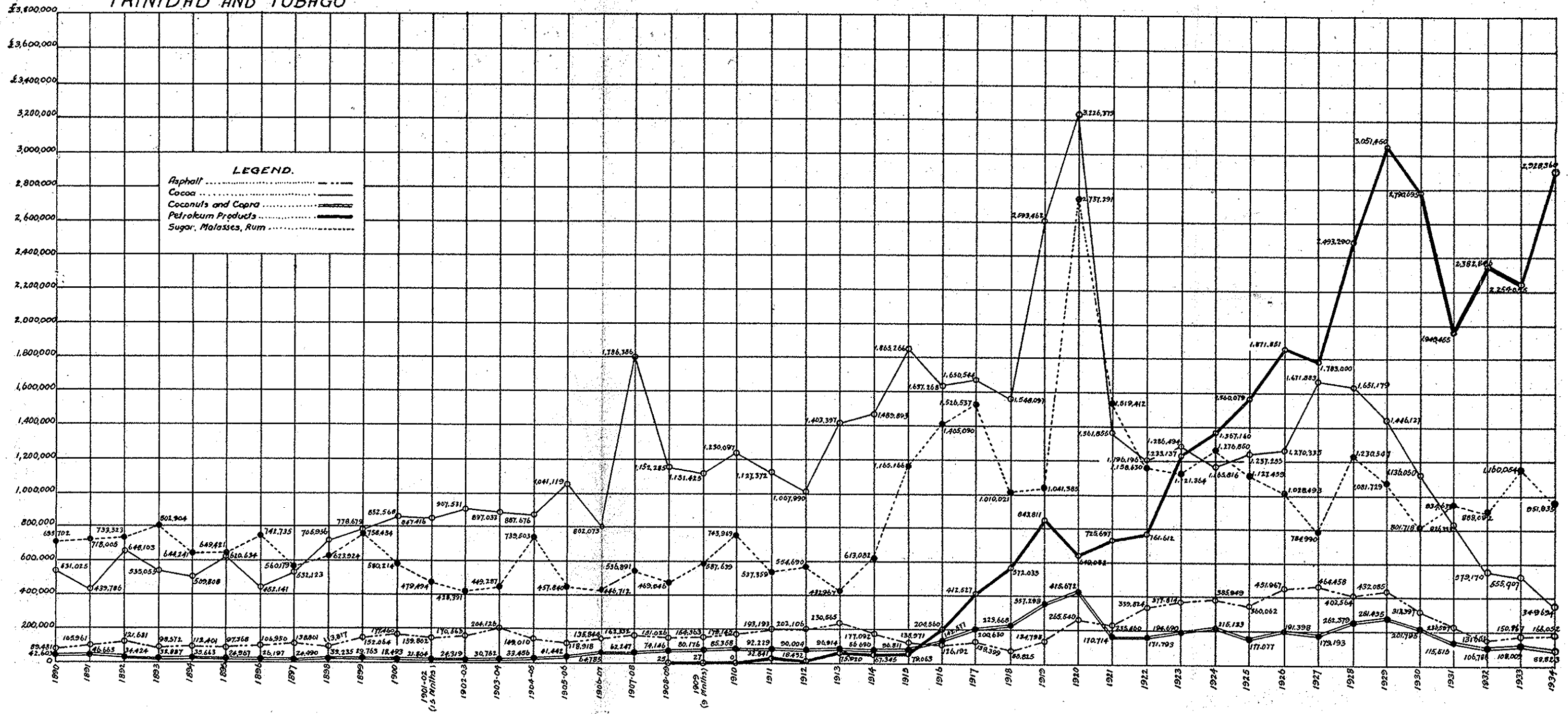
TRINIDAD AND TOBAGO



B

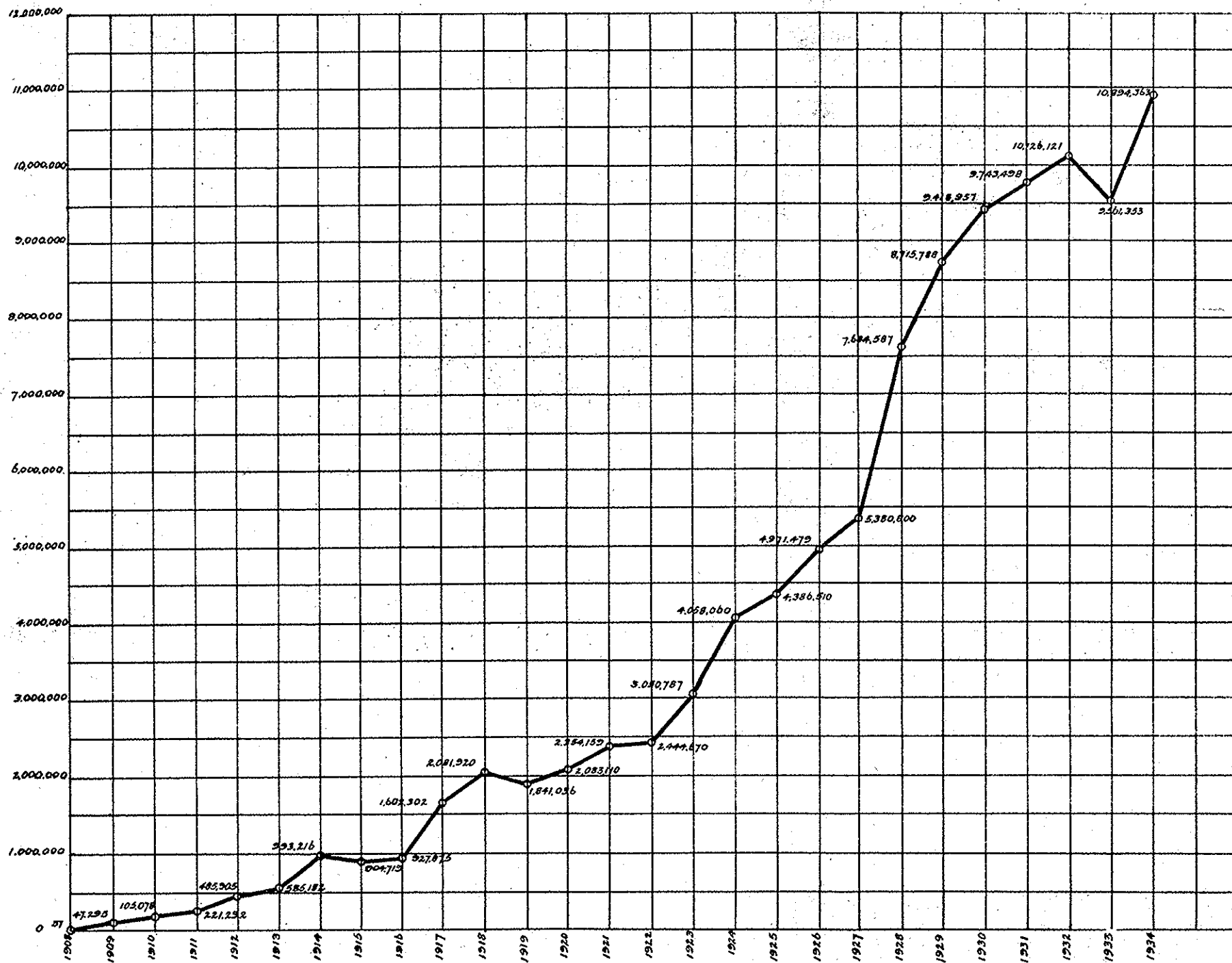
EXPORT OF LOCAL PRODUCE

TRINIDAD AND TOBAGO



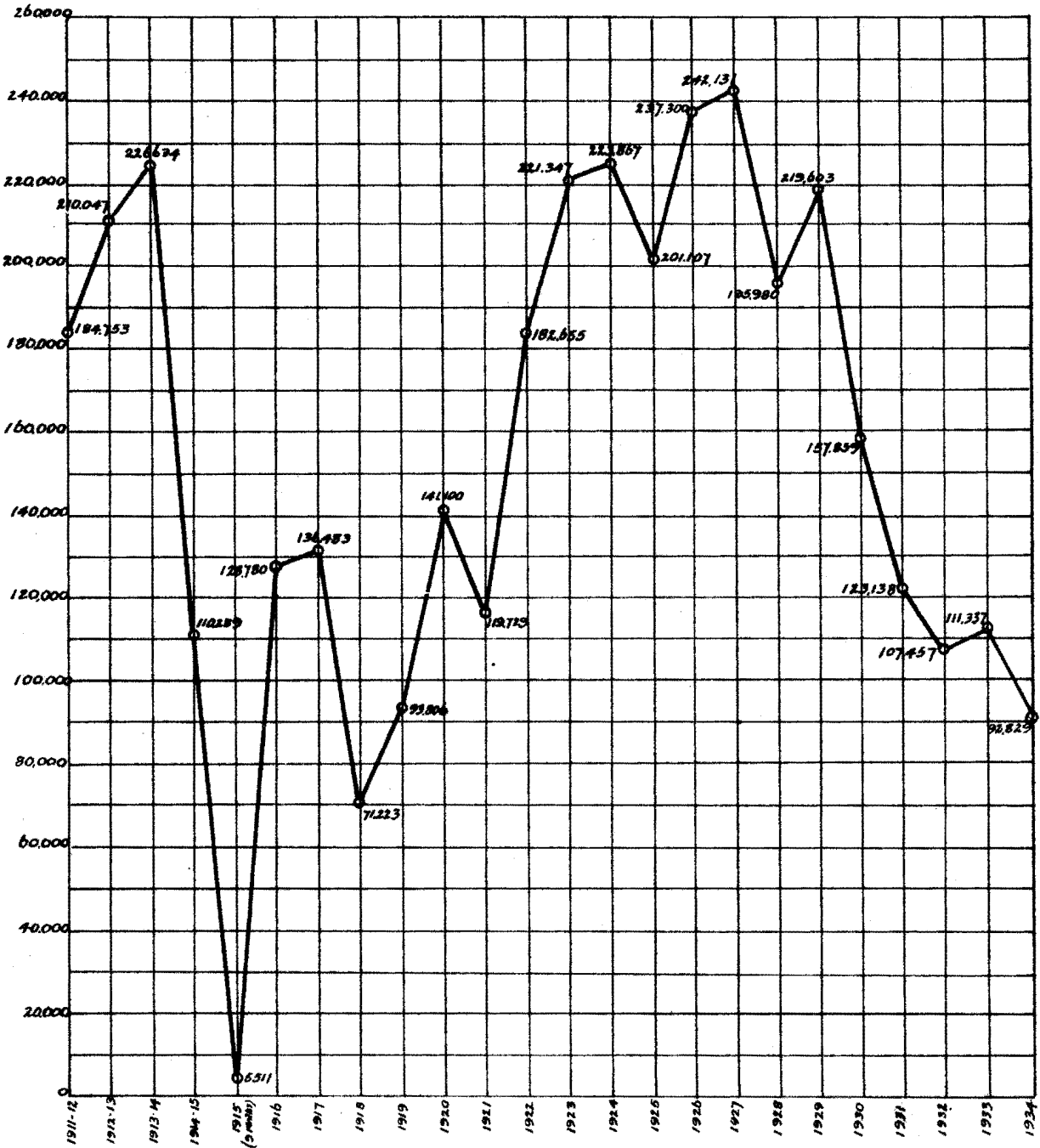
"C"

Total Annual Production of Crude Oil in Barrels
One Barrel = 35 Imperial Gallons



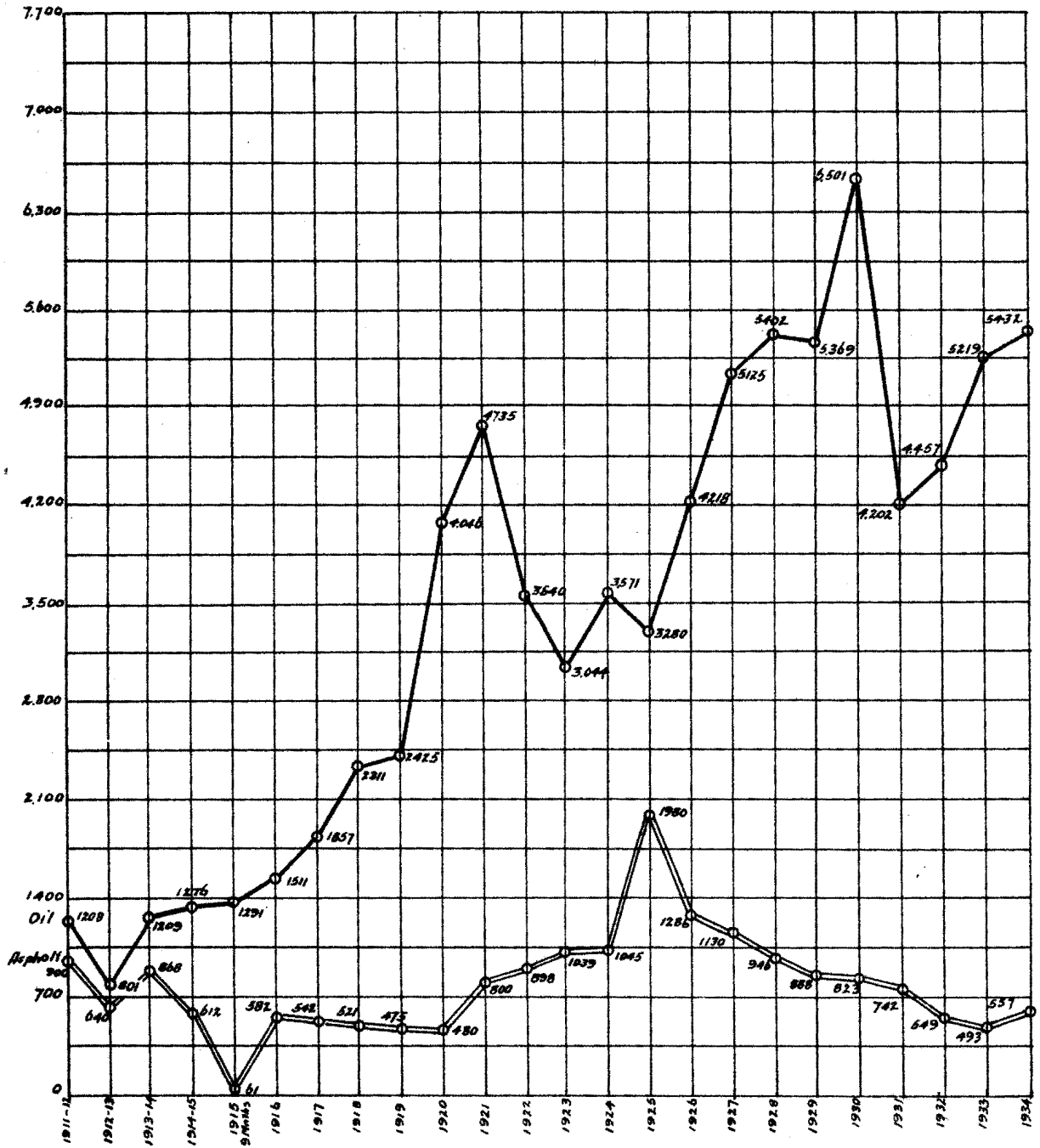
'D'

Curve showing yearly output of Asphalt from
The Colony in Tons from 1st April 1911 to
31st December 1934



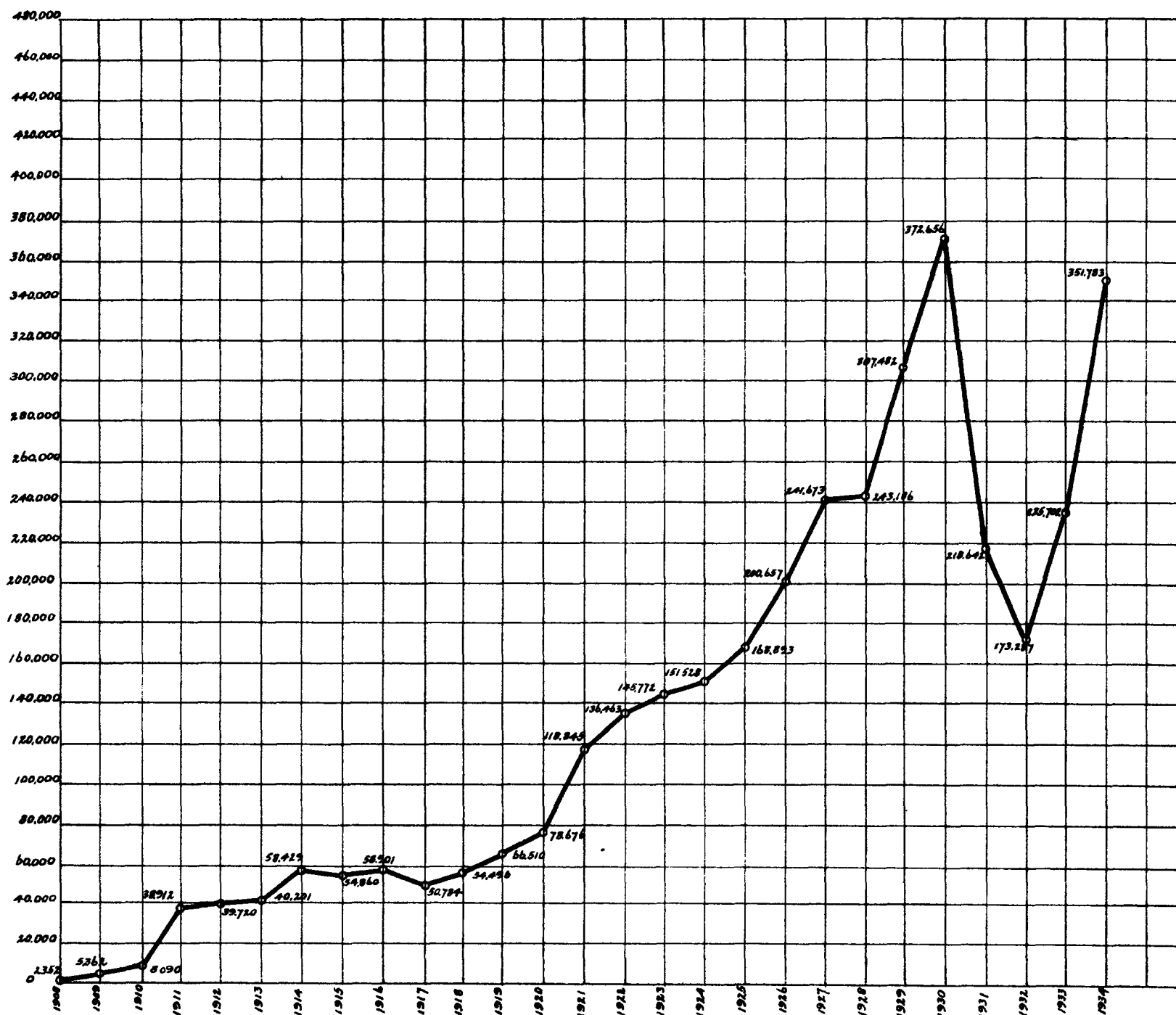
"E"

Curve showing comparison of daily average number of persons employed in the Oil and Asphalt Industries of the Colony from 1st April 1911 to 31st December 1934



"F"

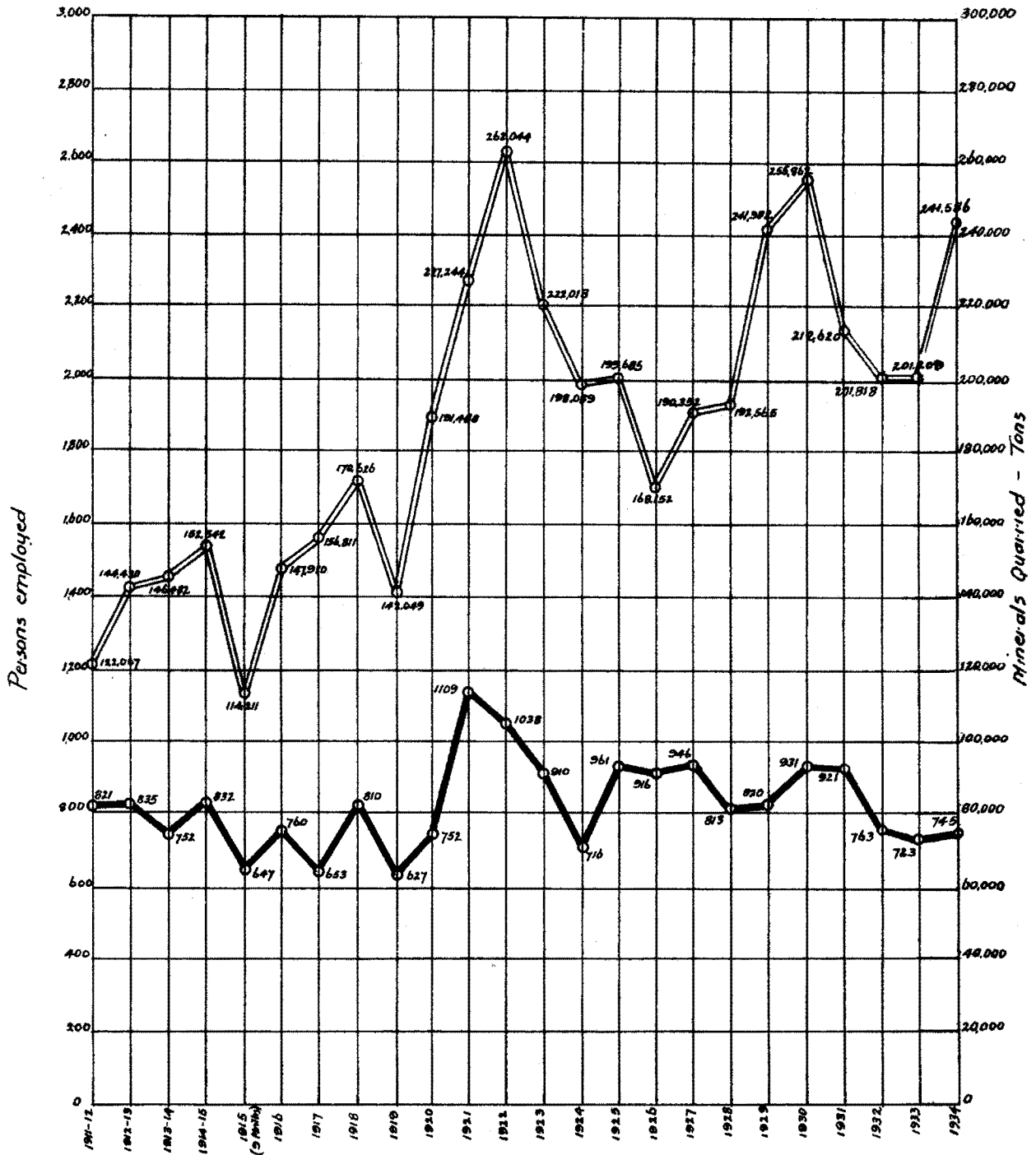
Total number of feet drilled annually
in the Colony



"G"

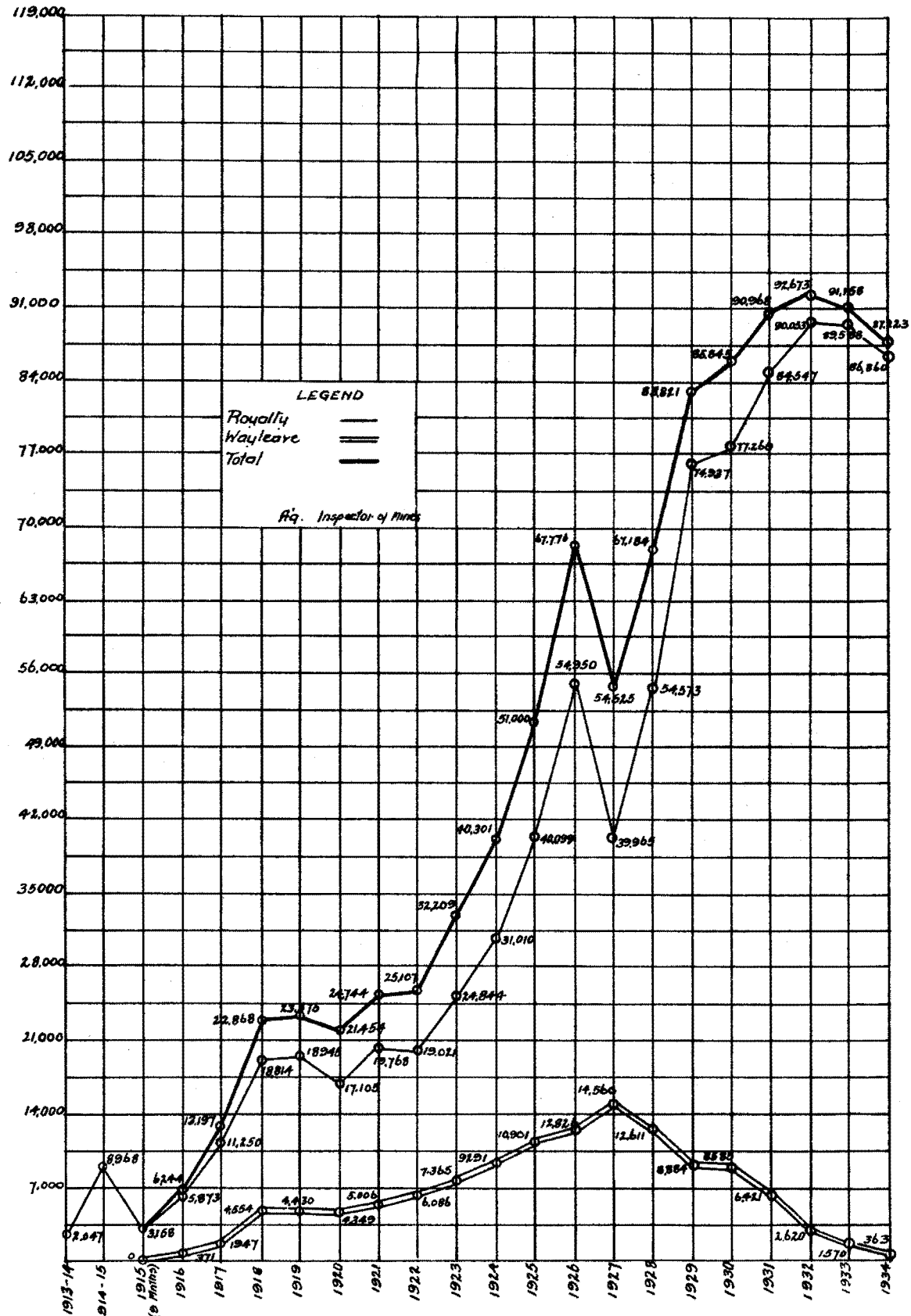
Curve showing the yearly total quantity of Minerals quarried and a comparison of the daily average number of persons employed in Quarries in the Colony from 1st. April, 1911. To 31st. December, 1934

Minerals quarried — Persons employed —

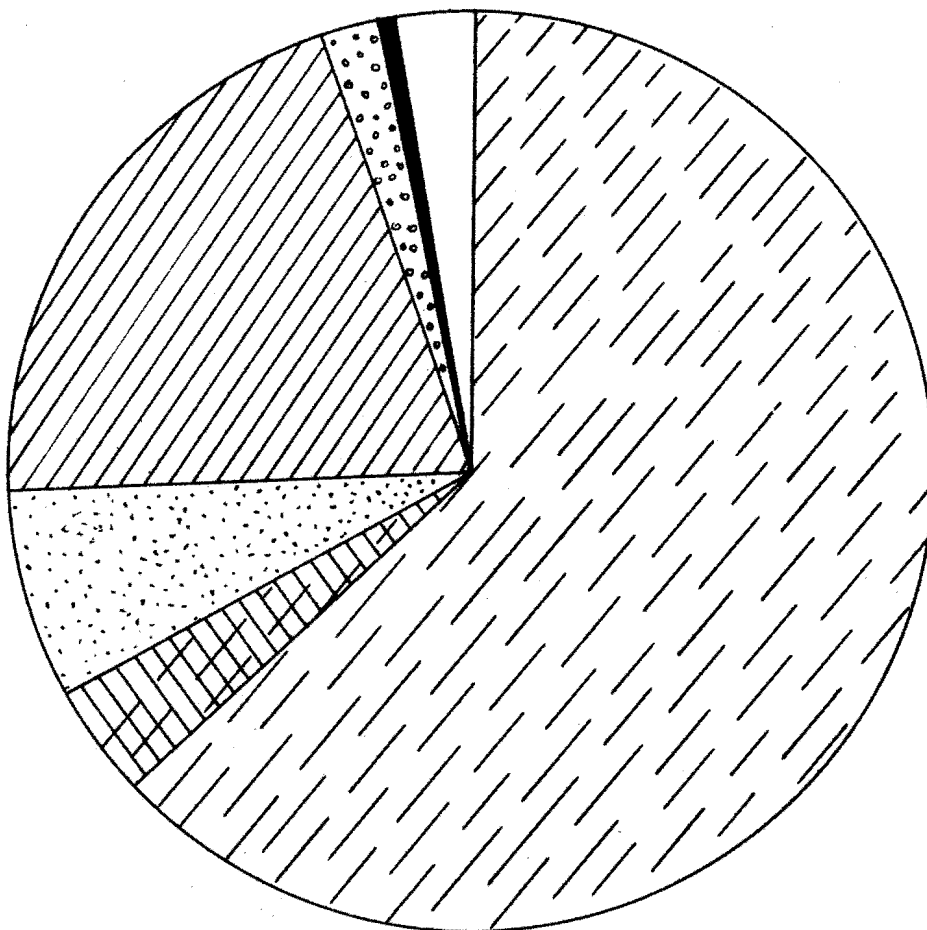









H

ROYALTY AND WAYLEAVE



APPENDIX "G."



<u>Mineral Exports</u>	66.8%	
Petroleum Products	63.2%	
Asphalt	3.6%	
<u>Agricultural and other Exports</u>	33.2%	
Cocoa	7.5%	
Sugar, Malasses, Rum	20.5%	
Coconuts, Copra, Coconuts Oil	2.0%	
Bitters	.6%	
Other Exports	2.6%	

TRINIDAD AND TOBAGO.

Council Paper No. 60 of 1936.

MINES.

**Administration Report of the Acting Inspector of Mines
for the year 1935.**

*Laid before the Legislative Council on the
29th of May, 1936.*

Previous Council Paper No. 67 of 1935.

Registered No. of Correspondence relating to the subject—M.P. No. 33065.

1936.
TRINIDAD AND TOBAGO.
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MINES.

Administration Report of the Acting Inspector of Mines
for the year 1935.

Council Paper No. 60 of 1936.

M.P. No. 33065.

HON. ACTING COLONIAL SECRETARY,

I have the honour to submit, for the information of His Excellency the Acting Governor, the following report on the working of the Mines Department for the year 1935.

2. The production of 11,671,224 barrels of crude oil during 1935 is the highest recorded in the Colony since the inception of its petroleum industry. Of this production 7,544,427 barrels were obtained from lands the oil rights of which are in the Crown at 22.97 barrels per foot drilled, and 4,126,797 barrels from private lands at 38.29 barrels per foot drilled. The total 1935 production was obtained at the rate of 27 barrels per foot drilled.

The year 1935 was also marked by the highest monthly production of 1,087,884 barrels of crude oil.

The quantity of petroleum products exported shows an increase over 1934 and is the highest on record, the figures being as follows :—

1934—	9,981,774 barrels valued at	.....	.....	.....	\$14,056,128
1935—	10,993,540 do.	.....	.....	.....	\$13,321,708

It will be noted that the value of petroleum products exported is less than in 1934 although the exports were greater. This difference is due in the first instance to a slight decrease in the price of oil fuel and, secondly, to an adjustment in the declared Customs value of other petroleum products.

The table hereunder, based on the Customs returns, is a comparative statement of the average price for the years 1934 and 1935 of petroleum and its products :—

Petroleum and Products Exported.	Average declared value (per barrel) for years	
	1934	1935
	Crude Oil	\$0.82	$0.84
Fuel Oil	1.08	0.88
Petrol	2.26	2.08
Kerosene	5.58	3.72
Lubricating Oil	10.35	7.34
Road Oil	2.91	2.87

3. Petroleum and its products still formed the largest part of the Colony's exports in 1935, the value being approximately three times that of the products of the next most important of its industries, viz., sugar (including molasses and rum). Of the total exports petroleum and its products and asphalt formed 63.33 per cent.

The value of the exports of the leading staple products of the Colony during 1935 is shown in the following table :—

	Value.	Percentage of total.
Petroleum and its products	\$13,321,708	58.53
Sugar, Molasses and Rum	4,693,241	20.62
Cocoa	2,530,622	11.11
Asphalt	1,092,982	4.80
Fruits and Fruit Products	351,597	1.54
Coconuts, Copra and Coconut Oil	241,991	1.06
Bitters	134,668	.59
Coffee	87,792	.39
Other Exports not enumerated	310,098	1.36
	\$22,764,699	100.00

4. There is little of interest to note regarding the construction of new works.

5. REFINERIES.—The capacity of the six main refineries operating in the Colony is now 2,366,300 tons per annum. This includes two Dubbs Cracking plants. Two Edeleanu petroleum distillate refining plants, three Gas Absorption plants and one Gas Adsorption plant for the recovery of gasoline from natural gas were operated in the Colony.

Twelve permits for the refining of oil were issued during the year under the Oil Mining and Refining Ordinance, Cap. 143 and 11,148,285 barrels of crude oil were refined during the period under review.

DEEP WATER LOADING PIERS. —Four deep water piers are in use with facilities for the delivery of petroleum and its products in cargo lots, bunkers, and also for supplying water to vessels. Means are also provided for bunkering vessels in the Harbour of Port-of-Spain. No new piers were erected during 1935.

PIPELINES. —Approximately 159 miles of main pipelines have been laid in the Colony. These do not include the usual field and gathering lines on the various fields.

During the year under review five permits under the Pipelines Ordinance No. 29 of 1933 were issued ; this brings the grand total number of permits issued to 174.

OIL STORAGE CAPACITY. —The total main tank storage capacity is approximately 4,085,000 barrels (35 Imperial Gallons) exclusive of the flow tanks connected to the wells, crude oil settling tanks, and oil fuel feed tanks to boilers.

6. The following table shows the number of feet drilled and the quantity of oil produced during 1935 as compared with the years 1933 and 1934 :—

	YEAR ENDED 31ST DECEMBER, 1933.		YEAR ENDED 31ST DECEMBER, 1934.		YEAR ENDED 31ST DECEMBER, 1935.	
	<i>Feet drilled.</i>	<i>Oil won brls. 35 gals.</i>	<i>Feet drilled.</i>	<i>Oil won brls. 35 gals.</i>	<i>Feet drilled.</i>	<i>Oil won brls. 35 gals.</i>
Crown Oil Rights	173,496	5,290,743	256,455	6,391,544	328,510	7,544,427
Private Lands	62,206	4,270,610	95,328	4,502,819	107,789	4,126,797
	<u>235,702</u>	<u>9,561,353</u>	<u>351,783</u>	<u>10,894,363</u>	<u>436,299</u>	<u>11,671,224</u>

During the year 1935 the footage drilled in the Colony was 436,299 feet surpassing the previous record of 372,530 feet drilled in 1930, and it might also be mentioned that the deepest well 7,354 feet in the Colony was drilled.

7. During the period 1st January to 31st December, 1935, one hundred and thirty-nine new wells were commenced of which 101 were on lands the oil rights of which are owned by the Crown and 38 were drilled on private lands the oil rights of which are in the surface owner. This brings the total number of wells drilled to the end of 1935 to 2,245 of which 1,440 are on lands the oil rights of which are in the Crown and 805 are on private lands. Of the wells commenced during the year 118 were completed as producers and four as water wells.

8. The number of firms engaged in the mining of oil at the close of the year was 14 as against 13 at the end of 1934.

9. ROYALTY. —The royalty paid to the Government in 1935 in respect of crude oil won from lands the oil rights of which are owned by the Government amounted to \$505,278.46 as compared with \$416,923.51 in 1934 and has exceeded all previous records.

10. WAYLEAVES. —The revenue collected under this head was wholly in respect of oil pumped along the public roads of the Colony and amounted to \$1,421.59 as compared with \$1,741.37 for the previous year.

11. FEES. —Fees charged for pipelines crossing the Trinidad Government Railway and public roads amounted to \$2,217.60.

12. LEASES AND LICENCES. —During the year under review 17 mining leases were granted bringing the total number of mining leases and licences granted to 34 made up as follows :—

Mining Leases.	Prospecting Licences. †	Exploration Licences. ‡	AREA.					
			Crown.			Alienated.		
			A.	R.	P.	A.	R.	P.
18	..	..	29,066	3	38	..	..	..
4	..	..	..	..	..	4,512	2	25
8*	..	..	76,061	3	32	7,453	0	32
	1	..	1,755	0	00	..	..	..
	2	..	..	..	..	993	2	20
	..	1	107,109	0	00	..	..	..
30	3	1	213,992	3	30	12,959	1	37

*Composite Mining Leases of Crown and Alienated Lands.

†The Prospecting Licences will shortly be converted into mining leases.

‡Exploration Licences are not granted over Alienated Lands with Crown oil rights.

13. RETURNS.—The various returns required to be submitted by the oil companies under the various Ordinances and Regulations in respect of their operations have been regularly received in the Department, where, after being checked, they have been filed with the records of the Department.

14. A considerably large number of inspections have been carried out by the Department in connection with the various operations taking place on the fields. It affords me pleasure to state that the Managers have readily co-operated with the Department in endeavouring to carry out the provisions of the Ordinances and Regulations.

15. LEGISLATION.—The Drilling Regulations were amended by the addition of two sub-clauses which were added to Regulation No. 18 and approved by the Legislative Council.

A new set of Regulations governing the erection of oil tanks were passed by the Governor in Executive Council.

SAN FERNANDO BRANCH OF THE DEPARTMENT.

16. A report by the Petroleum Technologist on the working of his branch is enclosed as Appendix " B ".

PREVENTION OF ACCIDENTS ORDINANCE, CAP. 157.

17. During the period under review 173 factories in Trinidad and Tobago were worked. These factories entailed a large number of inspections by officers of the Department. The recommendations made for ensuring the safety of the workmen employed have been readily accepted and carried out by the Managers of the various factories.

QUARRIES.

18. The number of quarries worked during the past year was 86, the same as 1934. From inspections that have been made they have, in most cases, been found to have been worked in a careful manner but, with few exceptions, they are relatively unimportant.

PETROLEUM ORDINANCE, CAP. 145.

19. The premises where dangerous petroleum products are stored have been carefully inspected, and it is satisfactory to note that all possible care has been taken to ensure safety. The revenue derived from licences issued to sell petroleum products during 1935 amounted to \$2,220.00. During the year 577 licences were issued for the storage and sale of petroleum and its products.

APPENDICES.

20. Appendix " A " shows the list of oil companies operating in the Colony during the year 1935.

21. Appendix " B " is the Report on the working of the Petroleum Office, San Fernando.

22. In Appendix " C " will be found the daily average number of persons employed in oilfields and quarries and the quantity and value of minerals obtained during the period under review.

23. A statement of the oil produced and exported is shown in Appendix " D ".

24. Appendix " E " shows the amount of oil refined year by year.

25. Appendix " F " consists of a series of charts depicting in graphic form the progress made in various industries during the past few years.

26. Appendix " G " shows the relation of mineral exports to agricultural exports.

STAFF.

27. It affords me pleasure to record the very willing and loyal assistance I have received from the members of the staff.

NELSON BETANCOURT,
Acting Inspector of Mines.

5th May, 1936.

APPENDIX A.

No.	Companies	Nature of tenure of lands on which operations took place.		Disposal of Oil.	Remarks.
✓ 1	Trinidad Leaseholds, Ltd.	Crown Oil Rights under lease	Fyzabad, Barrackpore and Guayaguayare	Pumped to the Company's Refinery at Pointe-a-Pierre and there refined	The Trinidad Leaseholds, Ltd., is the most important company in the Colony from the point of view of marketing and refining, and is second only to the Apex (Trinidad) Oilfields, Ltd., in respect of production. The bulk of the Company's production still continues to be obtained from its holdings in the Fyzabad area where there has been a considerable increase in development with a resultant increase of production. In the Guayaguayare field there has been an increase of drilling, and the production has almost been doubled. The production from the Barrackpore area has declined somewhat.
		Private Lands	Fyzabad and Barrackpore	Most of the refined products are exported in bulk	
✓ 2	United British Oilfields of Trinidad, Ltd. . . .	Crown Lands under lease	Morne L'Enfer Forest Reserve	Pumped to the Company's Refinery at Point Fortin and there refined	Development of the Parry Lands field in the Morne L'Enfer Reserve has continued during the year and the footage drilled has been considerably reduced. The production has been maintained at much the same level as last year. The production in the Morne L'Enfer Reserve formerly operated by the Petroleum Development Company has been nearly doubled. The production at Point Fortin has been greatly increased.
		Private Lands	Point Fortin	Most of the refined products are exported in bulk	
✓ 3	Trinidad Central Oilfields, Ltd. . . .	Crown Lands under lease	Tabaquite, Guapo and Lizard Springs	Pumped from Tabaquite and Lizard Springs refined, sold locally and exported; that from the Cruse Field is sold to the Trinidad Leaseholds, Ltd.	The operations of this Company at Tabaquite and Lizard Springs were on a small scale and the production has more or less been maintained. In the Cruse Field, Guapo, there has been a reduction in footage drilled but the production has considerably increased.
✓ 4	Trinidad Lake Petroleum Co., Ltd. . . .	Private Lands	Brighton	Refined	Producing only. The Company's private lands have been taken over by the Antilles Petroleum Company (Trinidad) Ltd., in December, 1935.
5	Apex (Trinidad) Oilfields, Ltd. . . .	Crown Oil Rights under lease and prospecting licence and private lands	Fyzabad and Siparia	Crude Oil sold to the Trinidad Leaseholds, Ltd., casing head petroleum spirit sold to the United British Oilfields of Trinidad, Ltd.	This Company is the largest producer in the Colony. Drilling was slightly increased during the year but the production was somewhat less than in 1934.

APPENDIX A.—Continued.

No.	Companies.	Nature of tenure of lands on which operations took place.	Disposal of Oil.	Remarks.	
✓ 6	Kern Trinidad Oilfields, Ltd.	Crown Lands under lease Private Lands	La Brea . . . Guapo and Roussillac	Some of the production is refined, some exported and some sold to the Trinidad Leaseholds, Ltd., Trinidad Oil Fields Operating Co., Ltd., and United British Oilfields of Trinidad, Ltd.	There was a considerable increase of footage by this Company. The production from this area has also been considerably increased.
7	Trinidad Investments, Ltd.	Private Lands	Fyzabad	Sold to Trinidad Leaseholds, Ltd.	Drilling was carried out in 1935 with a considerable increase in production.
8	Trinidad Petroleum Development Co., Ltd.	Crown Oil Rights under lease and prospecting licence Private Lands	Palo Seco . . . Palo Seco and Naparima	Sold to the United British Oilfields of Trinidad, Ltd.	The Company's operations have been chiefly confined to the Palo Seco District where the footage drilled has greatly increased. The production also has considerably increased.
9	Palo Seco Oilfields (C. C. Stollmeyer)	Crown Lands under lease	Palo Seco	Sold to Trinidad Leaseholds, Ltd. . .	A small amount of drilling has been undertaken. The production has slightly decreased.
✓ 10	Trinidad Oil Fields Operating Co., Ltd.	Crown Lands under lease Private Lands	San Francique, Fyzabad, San Francique and Palo Seco	Refined	Production has increased slightly and footage has slightly decreased.
11	New Dome Oilfields, Ltd.	Private Lands	Fyzabad	Sold to Kern Trinidad Oilfields, Ltd.	No drilling was done and the production was less than during the previous year.
12	Siparia Trinidad Oilfields, Ltd.	Crown Lands under prospecting licence	Palo Seco	Sold to Trinidad Leaseholds, Ltd., and the Trinidad Petroleum Development Co., Ltd.	No drilling was carried out but the production has increased.
13	Petroleum Options (1925) Ltd.	Private Lands	San Francique	Sold to Trinidad Leaseholds, Ltd.	The footage drilled has been doubled and an increase in production realised.
✓ 14	Coldan Co., Ltd.	Private Lands	Fyzabad	Refined	Small amount of footage drilled and production obtained.

APPENDIX B.

HONOURABLE INSPECTOR OF MINES (ACTING).

The production of crude oil in 1935 reached a new record figure of 11,671,224 barrels, or an increase of 7.13 per cent. over 1934. Footage drilled also attained a new high peak of 436,299 feet. This is about 24 per cent. greater than in 1934, and just over 17 per cent. more than in 1930, the previous highest year.

An analysis of the 1934 and 1935 figures is shown below :—

	1934			1935		
	<i>Production.</i>	<i>Feet drilled.</i>	<i>Average production per well.</i>	<i>Production</i>	<i>Feet drilled.</i>	<i>Average production per well.</i>
Crown	4,586,366	167,952	853	5,288,943	185,788	987
Alienated	1,805,178	88,503	987	2,255,484	142,722	1,111
Private	4,502,819	95,328	1,146	4,126,797	107,789	958

During the period under review one hundred and thirty-nine wells were started, and are accounted for as follows :—

	<i>Crown.</i>	<i>Alienated.</i>	<i>Private.</i>
Started in 1935	55	46	38
Unfinished at end of 1934	17	6	7
Drilling in 1935	72	52	45
Completed as Producers	47	36	35
Completed as Water Wells	...	4	...
Officially abandoned	1	5	...
Unfinished at end of 1935	24	7	10
<i>Old wells abandoned in 1935</i>	4	2	5
Re-completed in 1935	13	1	3

At the end of 1935 the total number of wells started in the Colony was 2,245.

The number of producing wells per month increased from 915 in January to 1,024 in November, falling back to 1,017 in December. The average number of producers per month was 974, as shown in the following comparative table :—

	1932	1933	1934	1935
Wells flowing	215	231	222	235
Wells pumping	469	443	465	466
Wells bailing or swabbing	81	124	140	146
Wells air or gas lift	15	29	70	105
Wells plunger lift	...	...	...	8
Wells displacement pumping	6	9	9	14
	786	836	906	974

The steady increase in the use of air or gas lift from 1932 is to be noted.

Of the producing areas Fyzabad was again the largest giving 55.125 per cent. of the total.

At the end of the year the deepest well in the Colony was 7,354 feet deep. There were 88 wells of 4,000 feet or more; 20 over 5,000 feet; 7 over 6,000 feet; and 3 over 7,000 feet deep.

There were 31 reportable accidents during the year, three of which were fatal. Of these accidents 21 were either due to carelessness on the part of the workmen involved, or were unavoidable. No oilfield fires occurred during the year.

Towards the end of the year quebracho came into more general use as an agent for reducing the viscosity of heavy mineral laden drilling mud also more vibrating screens were used on wells for cleaning the mud. A formation tester has been introduced as well as a strata sampler.

New Oil Tank Regulations (1935) were brought into force on the 19th September, 1935, for the greater safety of men employed thereon.

For the last three years experiments have been carried on by one Company with replacing gas both in high pressure and low pressure zones but up to date no definite results are available.

Inspections of safety measures at drilling and producing wells carried out during routine visits to the fields.

The following tables are attached :—

No. 1 showing the monthly drilling and production figures for 1935.

No. 2 showing the number of wells started and footage drilled since the commencement of the industry in 1867.

No. 3 showing the annual production since returns were first sent to the Government in 1908.

No. 4 showing the number of wells started annually and the status of these wells at the end of the year.

You will notice that Tables 2 and 3 have had to be altered from 1923. This was necessitated by information being received here that certain land on which 11 wells were drilled was transferred from Crown to Alienated on the 9th September, 1925.

I should like to record that the Staffs of all operating Companies have continued to give me their assistance in carrying out my duties and I also wish to express my appreciation of the help given me by the Staff of this office since I was first appointed.

C. ERIK CAPITO,
Petroleum Technologist.

3rd April, 1936.

TABLE I.
DRILLING AND PRODUCTION RETURN FOR 1935.

Month.	New wells started.			New wells completed as Producers.			Recompleted as Producers.			New wells completed as dry, or uncommercial and abandoned; or for fresh water.			Wells abandoned.			Total wells started to date.	Footage drilled during month.	Production (barrels).	Flowing.			Pumping.			Bailing or swabbing.		Air or Gas Lift.			Plunger Lift.			Displacement pumps.			Total number of wells producing.			Grand Total.	Percentage wells producing to total wells drilled.				
	C	A	P	C	A	P	C	A	P	C	A	P	C	A	P				C	A	P	C	A	P	C	A	P	C	A	P	C	A	P	C	A	P	C	A			P			
Jan.	6	5	3	4	2	5					2		1	1	2,120	38,504	915,220	97	42	83	197	50	197	110	1	31	20	60	17	1		2	7	424	156	335	915	43.16						
Feb.	6	3	1	4	2	1							1	1	2,130	29,840	843,619	97	41	80	219	53	195	107	1	38	19	60	16	1		2	10	442	158	339	939	44.08						
Mar.	6	4	2	5	4	1	1						2		2,142	25,305	919,848	94	44	79	216	55	198	104	1	40	23	58	19	1		3	10	437	162	346	945	44.12						
April	3	2	4	1	2	1	2	1							2,151	36,063	899,946	97	39	79	216	54	194	105		38	26	62	21	1	2	3	12	444	159	346	949	44.12						
May	5	5	5	7	2	3	2				1			1	2,166	34,792	953,108	105	40	78	199	54	196	105	2	38	24	62	24	1	2	3	12	433	162	350	945	43.65						
June	4	5	4	6	5	3	1								2,179	40,764	972,904	106	43	78	197	51	201	109	3	41	20	63	24	1	2	3	12	432	164	358	954	43.80						
July	4	3	4	1	3	1	3							1	2,190	49,601	988,341	107	43	73	215	55	204	114	1	42	22	63	27	6	2	3	12	458	171	360	989	45.18						
Aug.	5	4	2	4	2	4	1								2,201	32,740	1,003,382	113	44	80	215	55	205	101	2	40	21	61	25	1	8	4	5	13	451	175	367	993	45.12					
Sept.	5	2	3	5	4	5	2								2,211	34,884	992,525	113	44	82	216	53	207	107	3	39	24	62	25	9	5	8	10	460	179	368	1,007	45.54						
Oct.	2	3	4	2	5	1		1					3		2,220	39,904	1,015,490	115	47	84	220	61	211	97	2	40	25	57	26	10	5	6	9	457	183	375	1,015	45.72						
Nov.	4	6	4	4	1	7	1	1					1	2	2,234	39,510	1,078,957	126	49	91	212	60	206	99	1	42	23	55	26	10	8	7	9	460	182	382	1,024	45.84						
Dec.	5	4	2	4	4	3	1				1		2	1	2,245	34,392	1,087,884	145	48	87	191	59	210	98		44	23	54	25	1	11	8	7	6	458	179	380	1,017	45.30					
Totals	55	46	38	47	36	35	13	1	3		4		5	7	2,245	436,299	11,671,224	110	44	Averages			81	209	55	202	105	1	40	22	60	23	5	3	Averages			4	10	446	169	359	974	
Grand Totals	139			118			17			4*			17			2,245	436,299	11,671,224	235			466			146		105			8			14			446	169	359	974	43.38				

6

*Water Wells.

C—Crown. A—Alienated. P—Private.

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TABLE 2.
COLONY OF TRINIDAD.
Number of Wells started and Footage Drilled Annually.

YEAR.	WELLS STARTED.								FOOTAGE DRILLED.								YEARLY TOTALS.	CUMULATIVE.
	CROWN.		ALIENATED.		PRIVATE.		TOTALS.		CROWN.		ALIENATED.		PRIVATE.					
	Annual.	Cum.	Annual.	Cum.	Annual.	Cum.	Annual.	Cum.	Annual.	Cum.	Annual.	Cum.	Annual.	Cum.				
1867	—	—	—	—	1	1	1	1	—	—	—	—	964	964	964	964		
1900	—	—	—	—	1	2	1	2	—	—	—	—	600	1,564	600	1,564		
1902	1	1	—	—	2	4	3	5	600	600	—	—	1,315	2,879	1,915	3,479		
1903	1	2	—	—	—	4	1	6	1,172	1,772	—	—	1,060	3,939	2,232	5,711		
1904	1	3	—	—	—	4	1	7	860	2,632	—	—	—	3,939	860	6,571		
1905	—	3	—	—	—	4	—	7	—	2,632	4	—	—	3,989	—	6,571		
1906	1	4	—	—	2	6	3	10	1,104	3,736	—	—	1,499	5,438	2,603	9,174		
1907	1	5	—	—	2	8	3	13	798	4,534	—	—	1,563	7,001	2,361	11,535		
1908	—	5	—	—	4	12	4	17	—	4,534	—	—	2,352	9,353	2,352	13,887		
1909	—	5	—	—	6	18	6	23	—	4,534	—	—	5,362	14,715	5,362	19,249		
1910	5	10	—	—	7	25	12	35	3,771	8,305	—	—	4,319	19,034	8,090	27,339		
1911	8	18	—	—	38	63	46	81	4,902	13,207	—	—	34,010	53,044	38,912	66,251		
1912	10	28	—	—	35	96	45	126	6,839	20,046	—	—	32,881	85,925	39,720	105,971		
1913	25	53	—	—	18	114	43	169	13,813	33,859	—	—	26,388	112,313	40,201	146,172		
1914	50	103	—	—	16	132	66	235	35,146	69,005	—	—	23,283	135,596	58,429	204,601		
1915	31	134	—	—	19	151	50	285	29,208	98,213	—	—	25,652	161,248	54,860	259,461		
1916	28	162	—	—	20	171	48	333	30,866	129,079	—	—	28,035	189,283	58,901	318,362		
1917	38	200	—	—	6	177	44	377	41,227	170,306	—	—	9,557	198,840	50,784	369,146		
1918	38	238	—	—	4	181	42	419	47,700	218,006	—	—	6,796	205,636	54,496	423,642		
1919	39	277	—	—	13	194	52	471	49,741	267,747	—	—	16,769	222,405	66,510	490,152		
1920	44	321	1	1	23	217	68	539	53,002	320,749	1,665	1,665	24,009	246,414	78,676	568,828		
1921	49	370	4	5	32	249	85	624	71,318	392,067	2,896	4,561	44,631	291,045	118,845	687,673		
1922	68	438	4	9	19	268	91	715	88,299	480,366	8,701	13,262	39,463	330,508	136,463	824,136		
1923	70	508	5	14	33	301	108	823	79,907	560,273	7,060	20,322	58,805	389,313	145,772	969,908		
1924	67	575	8	22	35	336	110	933	90,141	650,414	6,190	26,512	55,197	444,510	151,528	1,121,436		
1925	46	621	16	38	37	373	99	1,032	86,904	737,318	18,446	44,958	63,543	508,053	168,893	1,290,329		
1926	69	690	13	51	46	419	128	1,160	109,234	846,552	18,732	63,690	72,691	580,744	200,657	1,490,986		
1927	73	763	13	64	73	492	159	1,319	101,920	948,472	17,288	80,978	122,465	703,209	241,673	1,732,659		
1928	43	806	32	96	64	556	139	1,458	71,481	1,019,953	58,842	139,820	112,863	816,072	243,186	1,975,845		
1929	52	858	59	155	48	604	159	1,617	92,590	1,112,543	118,583	258,403	96,309	912,381	307,482	2,283,327		
1930	76	934	31	186	56	660	163	1,780	170,389	1,282,932	85,561	343,964	116,706	1,029,087	372,656	2,655,983		
1931	9	943	25	211	26	686	60	1,840	42,972	1,325,904	95,410	439,374	80,260	1,109,347	218,642	2,874,625		
1932	21	964	20	231	20	706	61	1,901	44,568	1,370,472	67,162	506,536	61,557	1,170,904	173,287	3,047,912		
1933	36	1,000	22	253	23	729	81	1,982	85,946	1,456,418	87,550	594,086	62,206	1,323,110	235,702	3,283,614		
1934	56	1,056	30	283	38	767	124	2,106	167,952	1,624,370	88,503	682,589	95,328	1,328,438	351,783	3,635,397		
1935	55	1,111	46	329	38	805	139	2,245	185,788	1,810,158	142,722	825,311	107,789	1,436,227	436,299	4,071,696		
		1,111		329		805		2,245		1,810,158		825,311		1,436,227		4,071,696		

TABLE 3.
Yearly Trinidad Production.

Year.	Crown.	Accu- mulative Total.	Alienated.	Accu- mulative Total.	Private.	Accu- mulative Total.	Yearly Totals.	Grand Accumu- lative Total.
1908	—	—	—	—	37	37	37	37
1909	—	—	—	—	47,295	47,332	47,295	47,332
1910	55	55	—	—	105,023	152,355	105,078	152,410
1911	3,994	4,049	—	—	217,298	369,653	221,292	373,702
1912	9,104	13,153	—	—	476,801	846,454	485,905	859,607
1913	52,153	65,306	—	—	533,029	1,379,483	585,182	1,444,789
1914	512,299	577,605	—	—	480,917	1,860,400	993,216	2,438,005
1915	392,389	969,994	—	—	512,330	2,372,730	904,719	3,342,724
1916	478,815	1,448,809	—	—	449,060	2,821,790	927,875	4,270,599
1917	1,065,945	2,514,754	—	—	536,357	3,358,147	1,602,302	5,872,901
1918	1,588,805	4,103,559	—	—	493,115	3,851,262	2,081,920	7,954,821
1919	1,539,973	5,643,532	—	—	301,063	4,152,325	1,841,036	9,795,857
1920	1,758,039	7,401,571	—	—	325,071	4,477,396	2,083,110	11,878,967
1921	1,751,943	9,153,514	300	300	601,916	5,079,312	2,354,159	14,233,126
1922	1,534,796	10,688,310	147	447	909,727	5,989,039	2,444,670	16,677,796
1923	1,847,118	12,535,428	63,334	63,781	1,140,335	7,129,374	3,050,787	19,728,583
1924	1,410,737	14,946,165	76,467	140,248	1,570,856	8,700,230	4,058,066	23,786,643
1925	2,647,095	17,593,260	200,781	341,029	1,538,634	10,238,864	4,386,510	28,173,153
1926	2,630,100	20,223,360	310,953	651,982	2,030,426	12,269,290	4,971,479	33,144,632
1927	2,039,363	22,262,723	297,761	949,743	3,043,676	15,312,966	5,380,800	38,525,432
1928	2,652,981	24,915,704	1,470,333	2,420,076	3,561,273	18,874,239	7,684,587	46,210,019
1929	2,987,795	27,903,499	1,627,439	4,047,515	4,100,554	22,974,793	8,715,788	54,925,807
1930	3,429,030	31,332,529	1,831,338	5,878,853	4,158,589	27,133,382	9,418,957	64,344,764
1931	2,795,572	34,128,101	2,530,175	8,409,028	4,417,751	31,551,133	9,743,498	74,088,262
1932	3,200,083	37,328,184	2,410,813	10,819,841	4,515,225	36,066,358	10,126,121	84,214,383
1933	3,684,148	41,012,332	1,606,595	12,426,436	4,270,610	40,336,968	9,561,353	93,775,736
1934	4,586,366	45,598,698	1,805,178	14,231,614	4,502,819	44,839,787	10,894,363	104,670,099
1935	5,288,943	50,887,641	2,255,484	16,487,098	4,126,797	48,966,584	11,671,224	116,341,323

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TABLE 4.

Table showing number of Wells started in each year and status of these Wells at 31st December, 1935.

YEAR.	WELLS STARTED.			PRODUCING.			IDLE.			ABANDONED.			UNFINISHED.			TOTALS.			
	C	A	P	C	A	P	C	A	P	C	A	P	C	A	P	Producing.	Idle.	Aban- doned.	Un- finished.
1867 ..	—	—	1									—	—	1		—	—	1	—
1900 ..	—	—	1									—	—	1		—	—	1	—
1902 ..	1	—	2									1	—	2		—	—	3	—
1903 ..	1	—	—									1	—	—		—	—	1	—
1904 ..	1	—	—									1	—	—		—	—	1	—
1905 ..	—	—	—									—	—	—		—	—	—	—
1906 ..	1	—	2									1	—	2		—	—	3	—
1907 ..	1	—	2									1	—	2		—	—	3	—
1908 ..	—	—	4	—	—	1	—	—	—	—	—	—	—	3		1	—	3	—
1909 ..	—	—	6	—	—	2	—	—	3	—	—	—	—	1		2	3	1	—
1910 ..	5	—	7	—	—	1	3	—	1	2	—	5				1	4	7	—
1911 ..	8	—	38	2	—	7	1	—	2	5	—	29				9	3	34	—
1912 ..	10	—	35	2	—	6	3	—	6	5	—	23				8	9	28	—
1913 ..	25	—	18	8	—	6	8	—	—	9	—	12				14	8	21	—
1914 ..	50	—	16	16	—	7	10	—	2	24	—	7				23	12	31	—
1915 ..	31	—	19	10	—	12	8	—	3	13	—	4				22	11	17	—
1916 ..	28	—	20	9	—	11	11	—	5	8	—	4				20	16	12	—
1917 ..	38	—	6	19	—	1	6	—	2	13	—	3				20	8	16	—
1918 ..	38	—	4	18	—	—	10	—	—	10	—	4				18	10	14	—
1919 ..	39	—	13	20	—	2	9	—	2	10	—	9				22	11	19	—
1920 ..	44	1	23	20	—	6	10	—	2	14	1	15				26	12	30	—
1921 ..	49	4	32	25	—	10	9	—	6	15	4	16				35	15	35	—
1922 ..	68	4	19	33	1	6	14	—	4	21	3	9				40	18	33	—
1923* ..	70	5	33	31	1	16	12	—	3	26	4	14	1	—	—	48	15	44	1
1924* ..	67	8	35	30	1	16	16	—	7	21	7	12	—	—	—	47	23	40	—
1925*† ..	46	16	37	24	5	16	10	—	7	12	11	14	—	—	—	45	17	37	—
1926 ..	69	13	46	27	3	26	20	2	9	22	8	11	—	—	—	56	31	41	—
1927 ..	73	13	73	26	6	35	22	4	16	25	3	22	—	—	—	67	42	50	—
1928 ..	43	32	64	22	26	42	11	4	13	10	2	9	—	—	—	90	28	21	—
1929 ..	52	59	48	23	36	34	11	16	5	16	7	9	2	—	—	93	32	32	2
1930 ..	76	31	56	48	19	35	13	7	6	13	5	14	2	—	1	102	26	32	3
1931 ..	9	25	26	6	21	19	—	2	2	2	2	5	1	—	—	46	4	9	1
1932 ..	21	20	20	17	15	14	—	4	3	4	—	3	—	1	—	46	7	7	1
1933 ..	36	22	23	21	17	19	5	5	1	7	—	3	3	—	—	57	11	10	3
1934 ..	56	30	38	47	28	36	—	—	—	7	2	1	2	—	1	111	—	10	3
1935 ..	55	46	38	41	36	30	—	1	—	1	3	—	13	6	8	107	1	4	27
Gand	1,111	329	805	545	215	416	222	45	110	320	62	269	24	7	10	†1,176	377	651	41
Totals ..	2,245			1,176			377			651			41			2,245			

* In 1923—1 Well started on Crown Lands which were subsequently Alienated.

* In 1924—4 Wells do. do. do.

* In 1925—3 Wells do. do. do.

† Three other wells started on Alienated Lands were previously shown as Crown and are now transferred to Alienated.

‡ Includes 6 Gas Wells, 8 Fresh Water Wells and 1 Salt Water Well.

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APPENDIX C.

Daily average number of persons employed in Oilfields and Quarries and the quantity and value of minerals obtained during the year ended 31st December, 1935.

Minerals.	Daily average number of persons employed.			Quantity.	Approximate Value.*
	Males.	Females.	Total.		
Oil	6,098	95	6,193	11,671,224 brls.	\$ 9,192,338 20
Asphalt	616	1	617	111,077 tons†	333,231 00
Private Quarries (Limestone, Gravel, &c.) ..	710	172	882	248,725 tons	129,574 40
Government Quarries (Limestone, &c.) ..	250	68	318	58,048 tons	30,631 83

*The values in this column are those returned by owners and managers and represent the value at the place of production.

†In addition to this amount 23,501 tons were extracted from the Pitch Lake by the Public Works Department for use on the roads of the Colony.

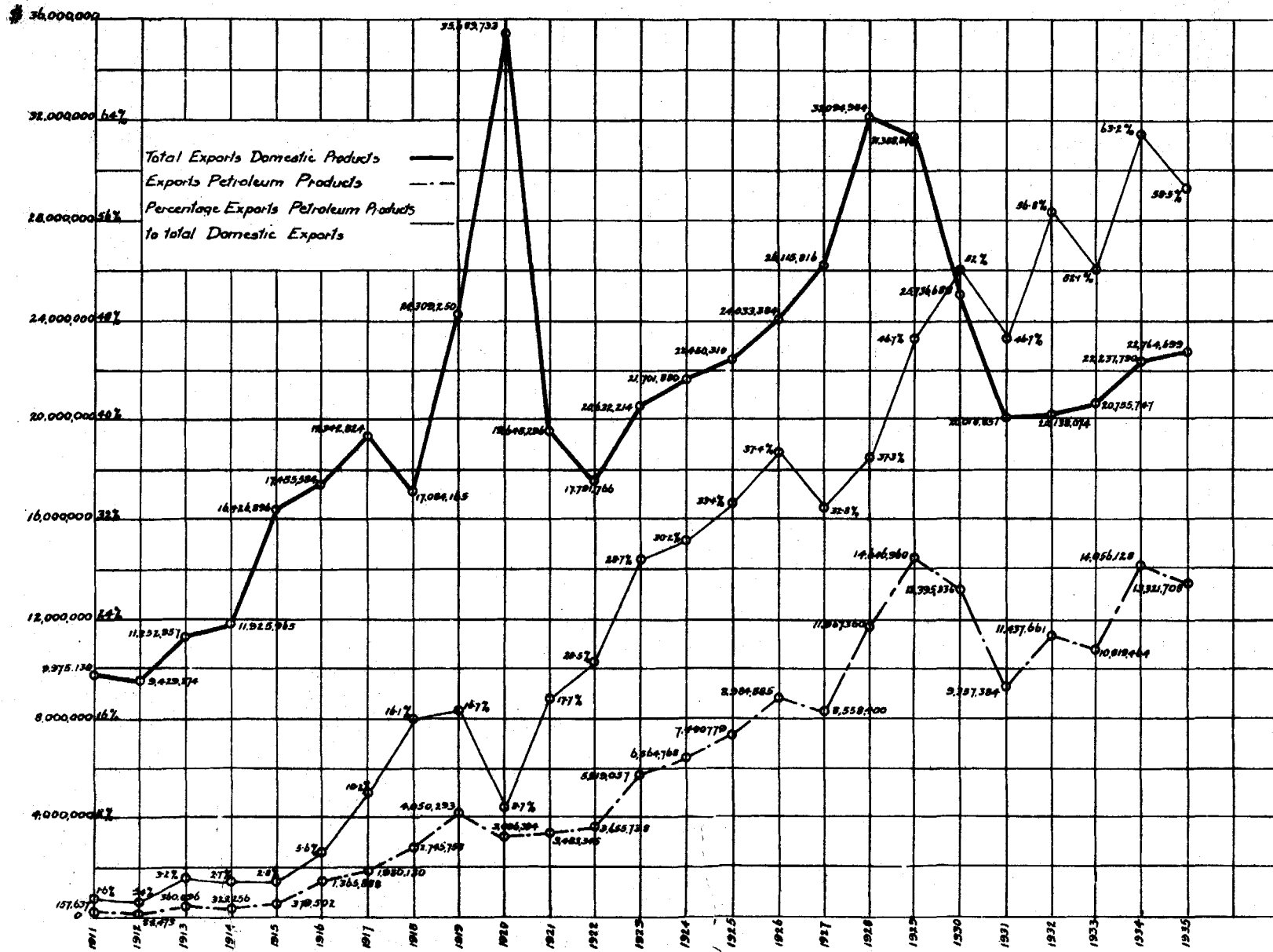
APPENDIX D.

Statement of Oil produced and exported year by year since the inception of the Petroleum Industry in the Colony.

Year.	Production in barrels.	Quantity of Crude oil and Refined oil exported in barrels.
1908	37	—
1909	47,295	46
1910	105,078	—
1911	221,292	219,582
1912	485,905	122,734
1913	585,182	387,719
1914	993,216	348,351
1915	904,719	408,188
1916	927,875	975,142
1917	1,602,302	1,079,369
1918	2,081,920	1,305,407
1919	1,841,036	1,406,264
1920	2,083,110	1,034,907
1921	2,354,159	1,223,346
1922	2,444,670	1,615,740
1923	3,050,787	2,432,470
1924	4,058,060	3,224,529
1925	4,386,510	3,606,608
1926	4,971,479	3,988,308
1927	5,380,800	4,456,770
1928	7,684,587	6,361,675
1929	8,715,788	8,243,023
1930	9,418,957	7,678,807
1931	9,743,498	8,964,303
1932	10,126,121	9,637,474
1933	9,561,353	8,909,298
1934	10,894,363	9,981,774
1935	11,671,224	10,993,540
	116,341,323	98,605,374

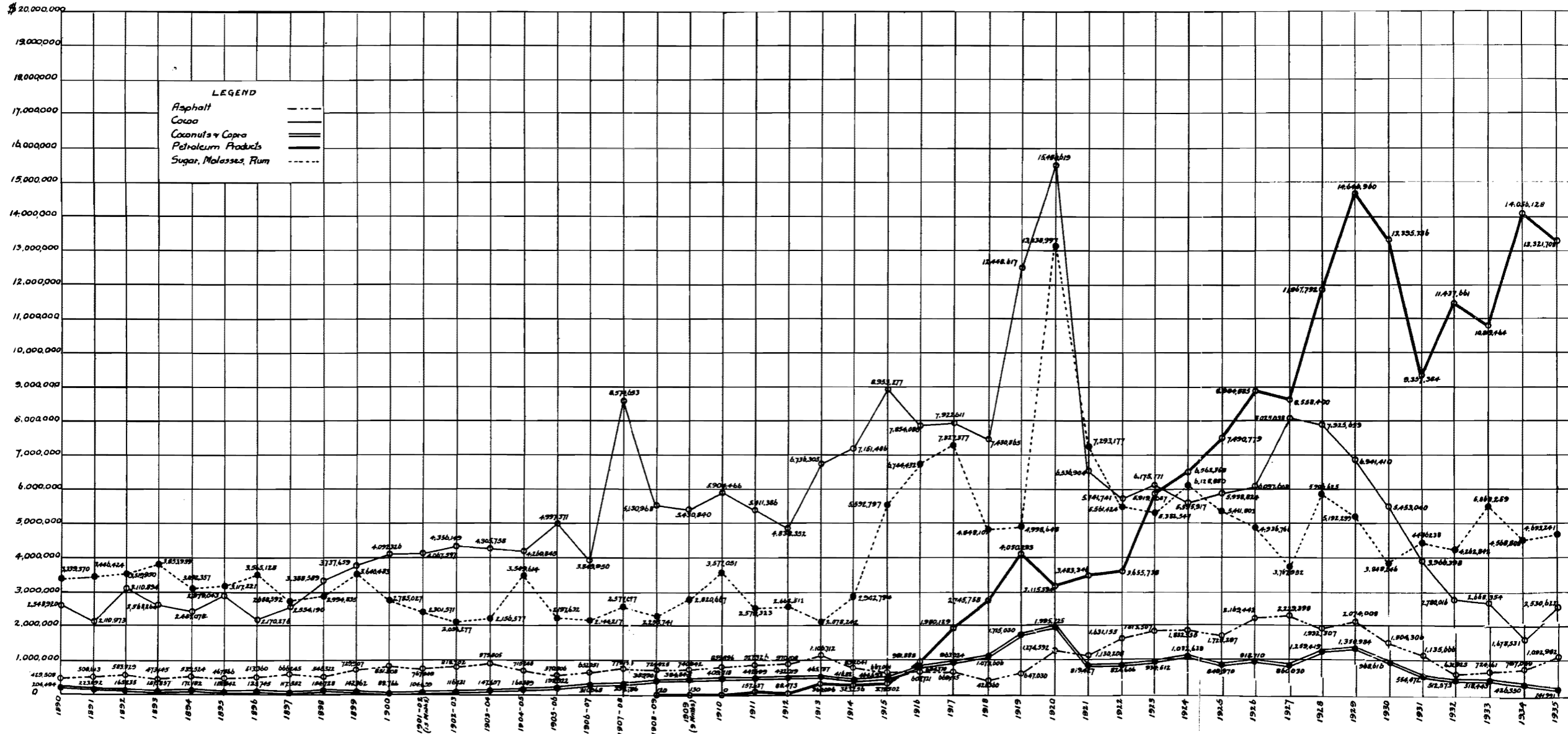
"A"
TRINIDAD AND TOBAGO

APPENDIX "F"



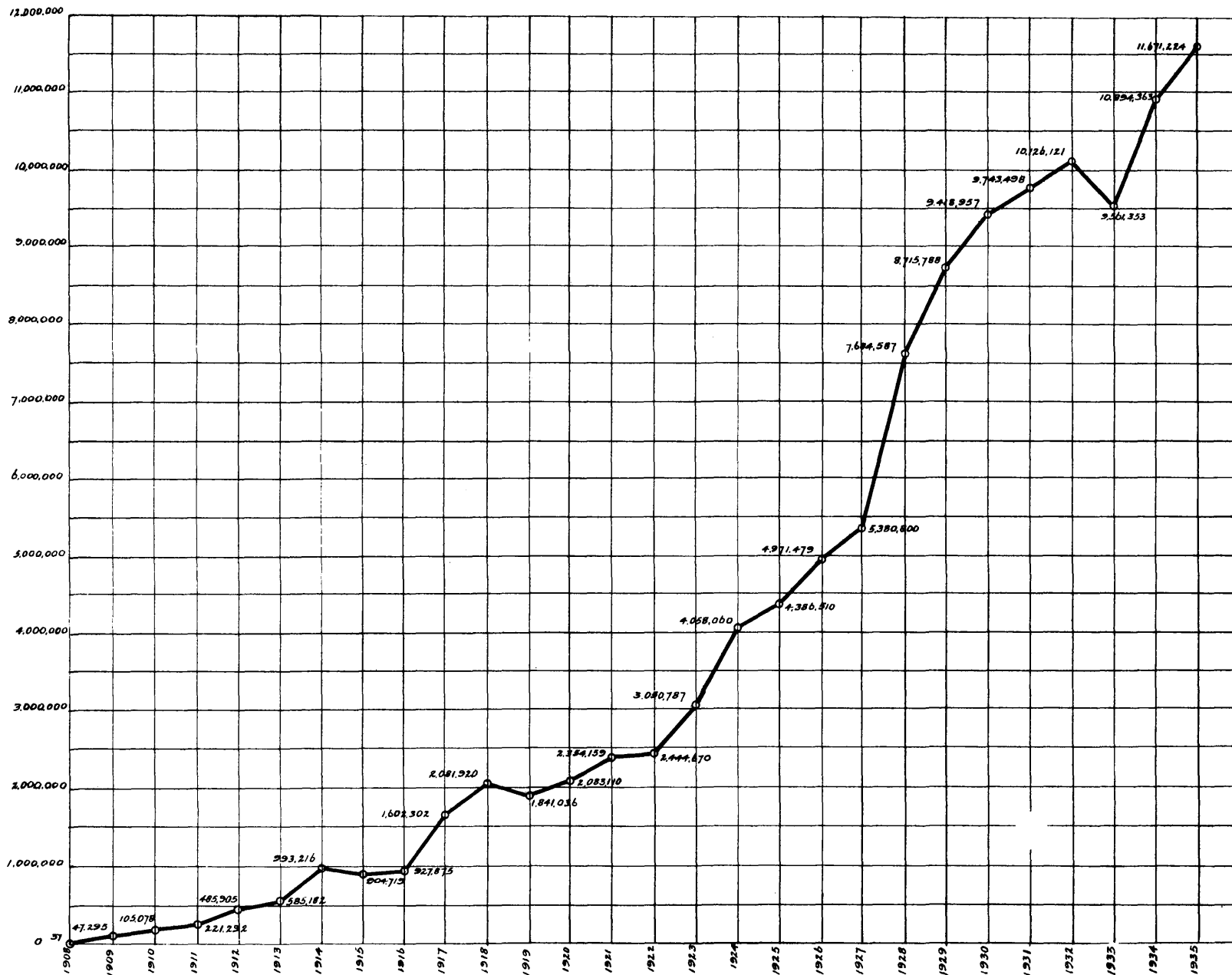
"B"

EXPORT OF LOCAL PRODUCE



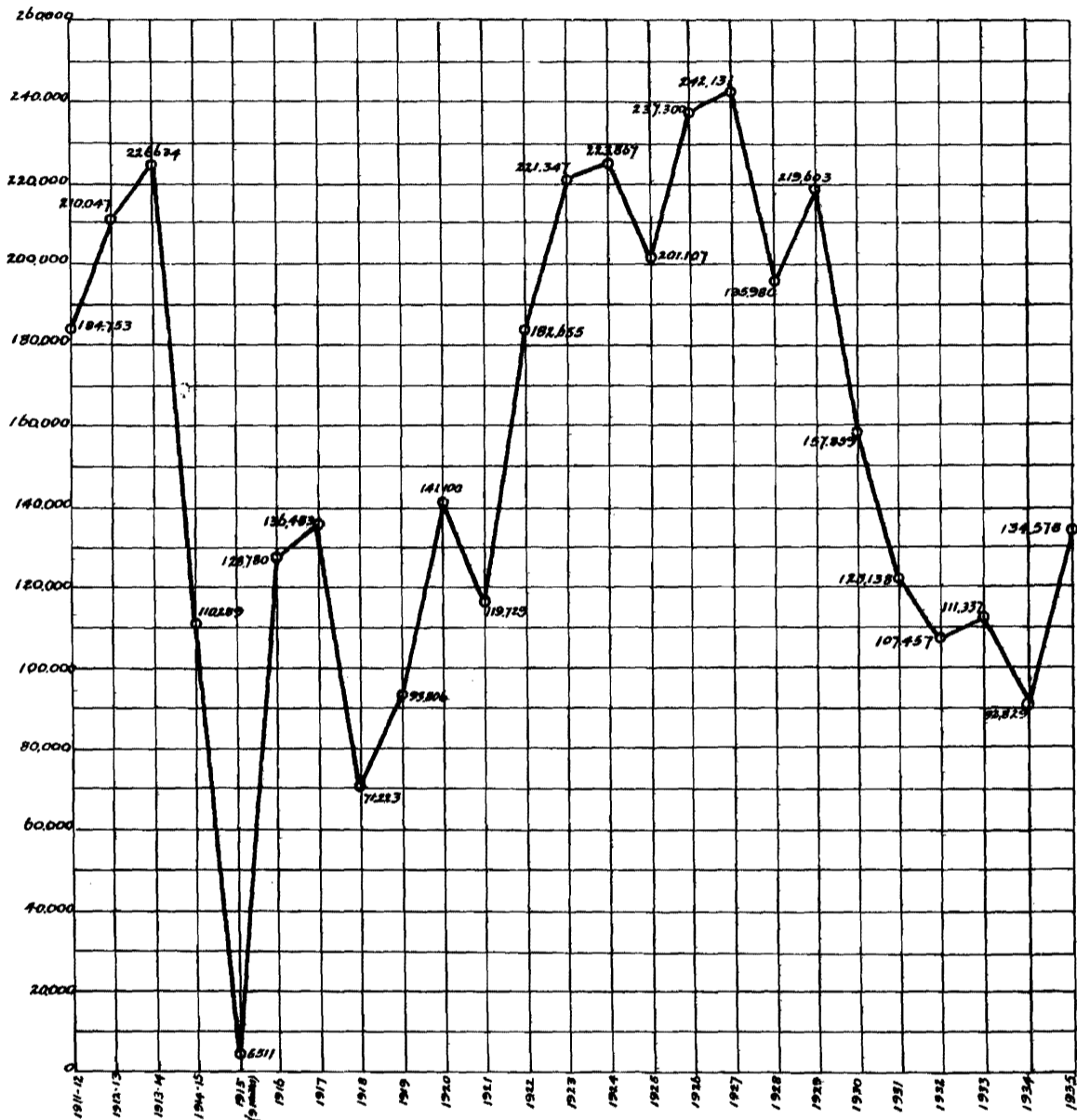
"C"

Total Annual Production of Crude Oil in Barrels
One Barrel = 35 Imperial Gallons



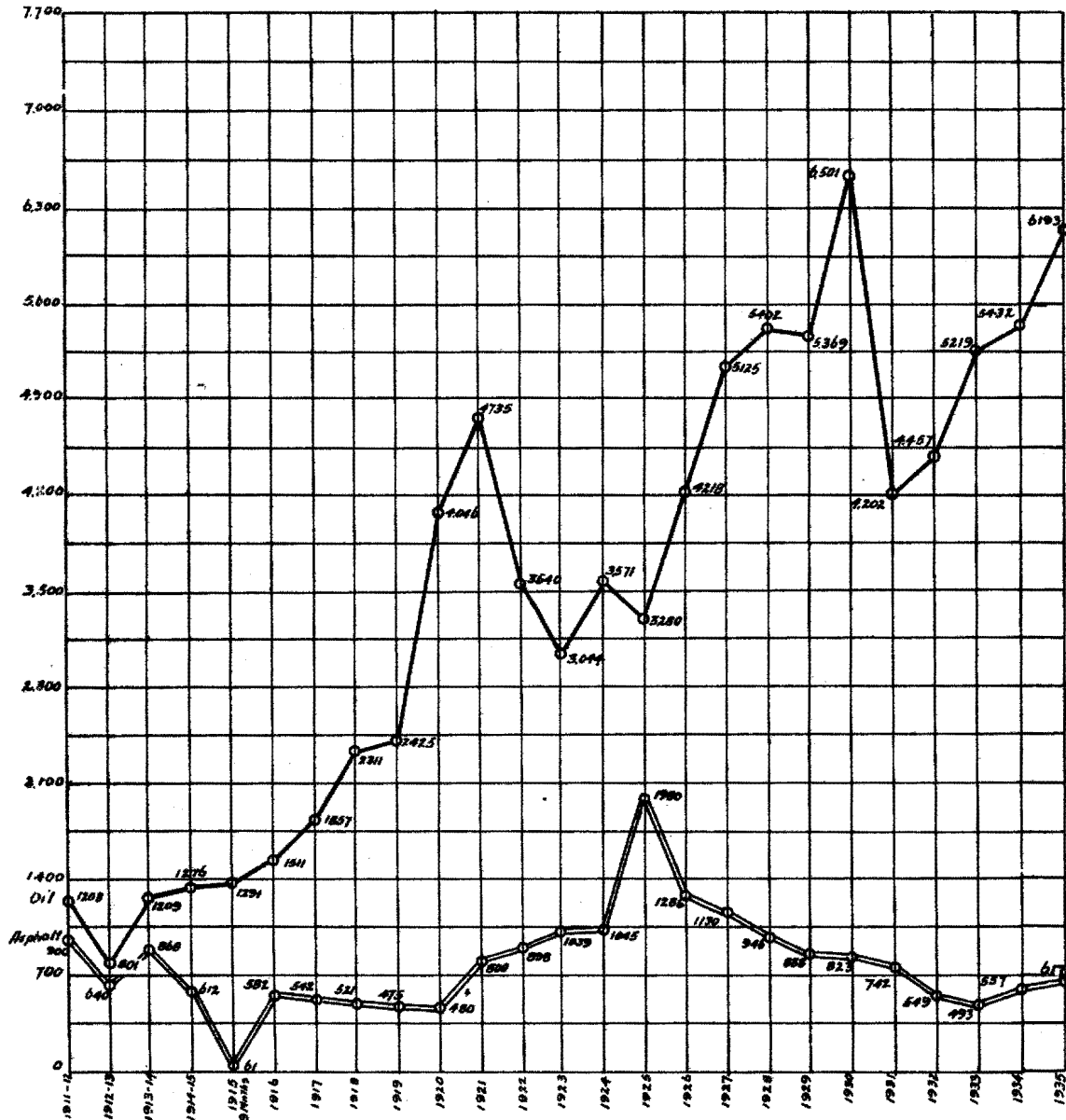
'D'

Curve showing yearly output of Asphalt from
The Colony in Tons from 1st. April 1911. to
31st. December 1935



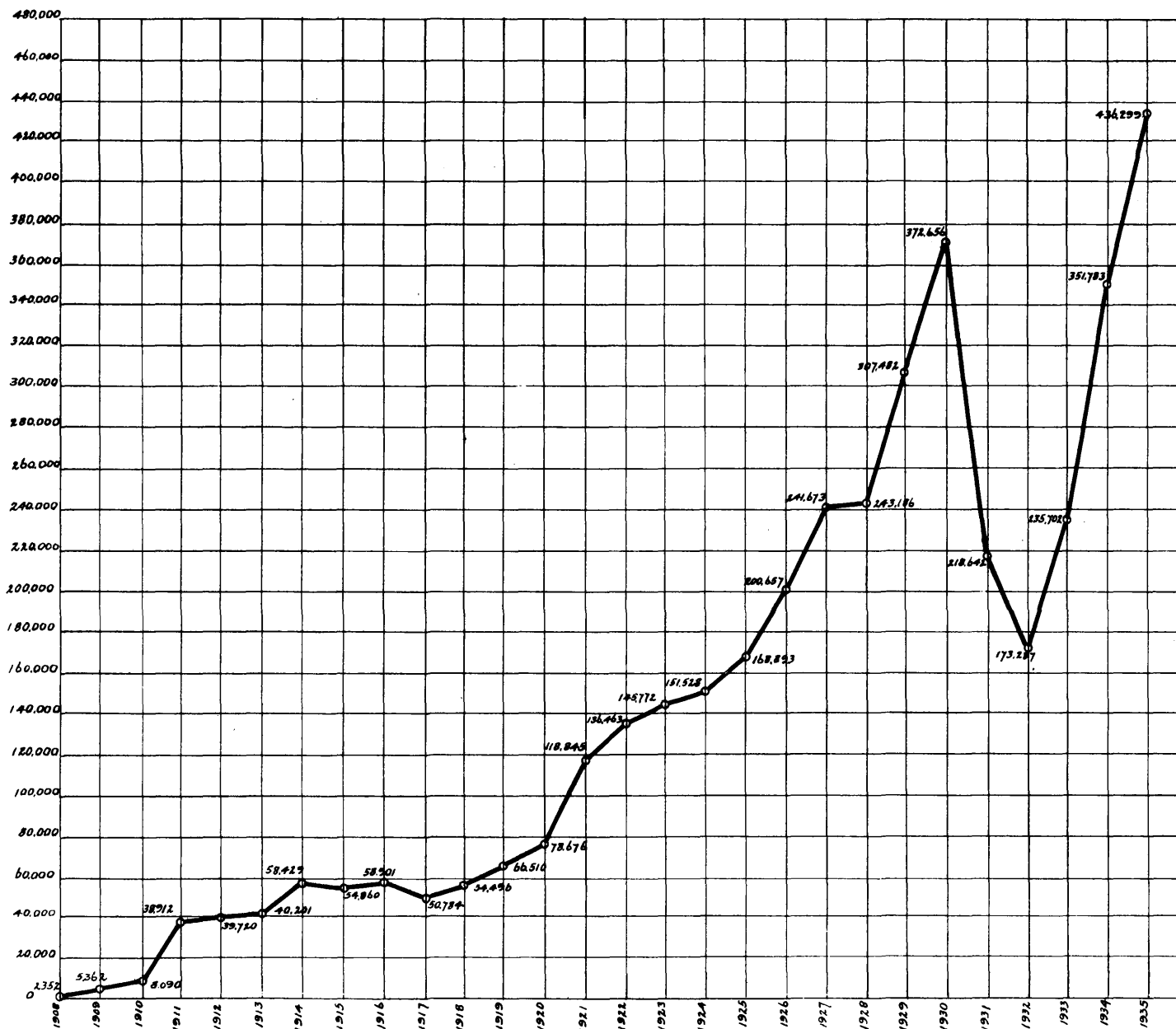
"E"

Curve showing comparison of daily average number of persons employed in the Oil and Asphalt Industries of the Colony from 1st April 1911 to 31st December 1935



"F"

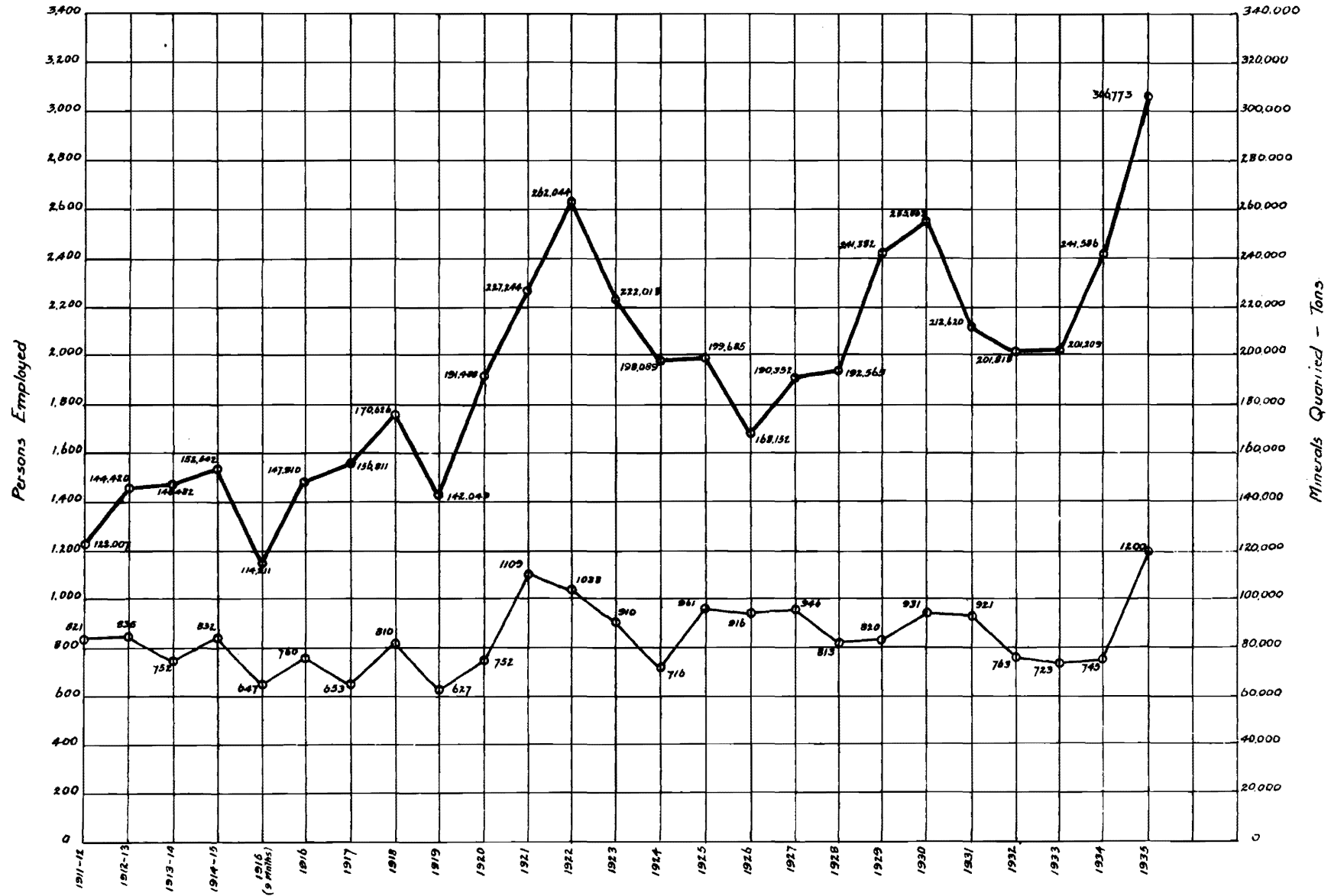
Total number of feet drilled annually
in the Colony



"G"

Chart showing the yearly total quantity of Minerals quarried and a comparison of the daily average number of persons employed in quarries in the Colony from 1st. April 1911 to 31st. December 1935

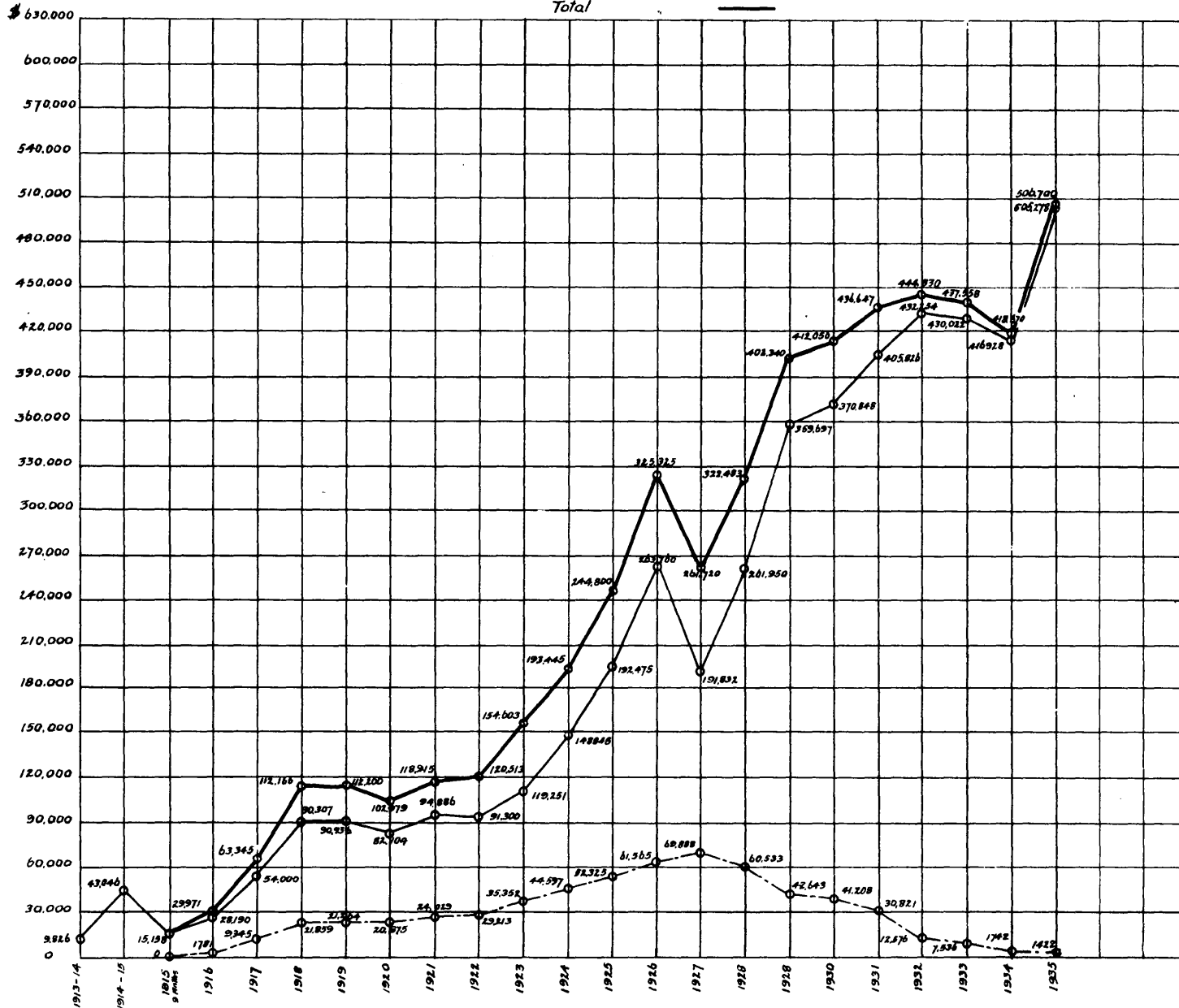
Minerals quarried — Persons employed —



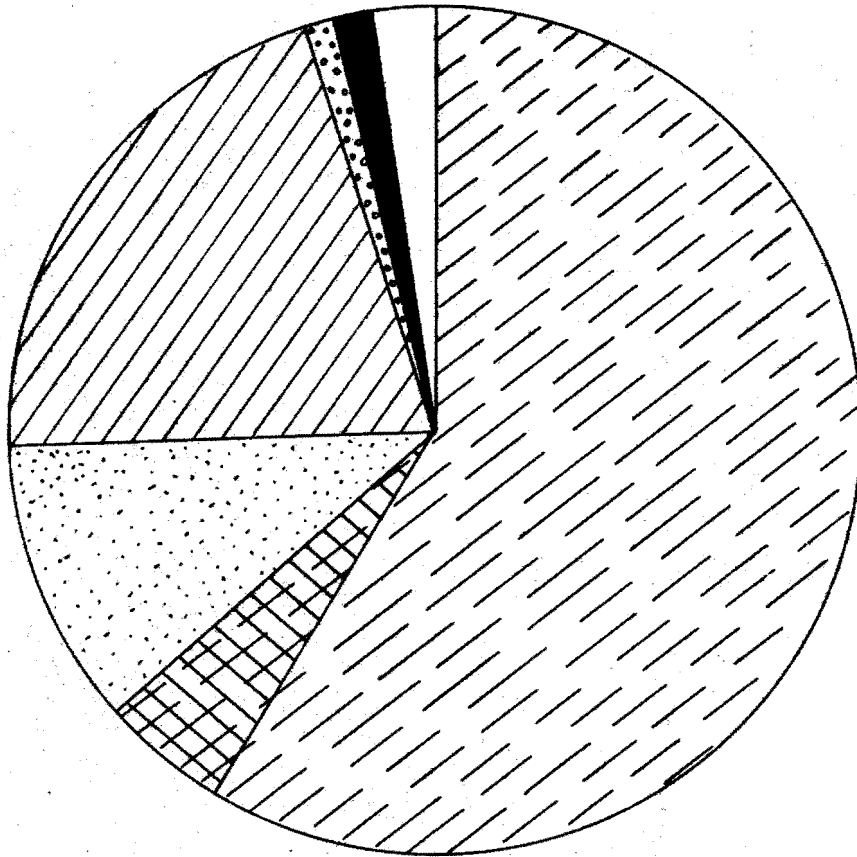
H








ROYALTY AND WAYLEAVE

Royalty shown Thus ———
Wayleave - - - - -
Total ———



APPENDIX "G"



<u>Mineral Exports</u>	63.3%	
Petroleum Products	58.5%	
Asphalt	4.8%	
<u>Agricultural and other Exports</u>	36.7%	
Cocoa	11.1%	
Sugar, Molasses, Rum	20.6%	
Coconuts, Copra, Coconut Oil	1.1%	
Fruit & Fruit Products	1.5%	
Other Exports	2.4%	

TRINIDAD AND TOBAGO.

Council Paper No. 59 of 1937.

M I N E S .

Administration Report of the Inspector of Mines and Petroleum
Technologist for the year 1936.

*Laid before the Legislative Council on the
14th of May, 1937.*

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1937.
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MINES.

Administation Report of the Inspector of Mines and Petroleum Technologist for the year 1936.

Council Paper No. 59 of 1937.

M.P. No. 38446.

HON. COLONIAL SECRETARY,

I have the honour to submit, for the information of His Excellency the Governor, the following report on the work of the Mines Department for the year 1936.

THE PETROLEUM INDUSTRY.

2. The steady expansion which has been taking place in the Petroleum Industry of the Colony during recent years has continued with increasing intensity. This is due to various reasons, among which world conditions, in general, and the active drilling policy adopted by operators in Trinidad have played an important part. It is desired, however, to draw attention to the successful manner in which operating companies (particularly the larger organisations) have approached the many problems they have encountered in exploring and developing the oil resources of Trinidad. The geological conditions under which the petroleum occurs in the Colony are extremely difficult and variable, and it is considered that it is mainly due to the exhaustive research work which has been undertaken by the larger operators, coupled with the skillful manner in which modern exploration and development methods have been generally applied, that the present expansion of the industry has been rendered possible.

3. In addition to a general increase in drilling operations, wide-spread exploration surveys have been carried out during the past year, and this important work is still in progress. These exploration surveys have included the examination of extensive areas by geophysical methods (mainly gravimetric).

4. PRODUCTION OF CRUDE OIL.—The total production of crude oil for the year 1936 amounted to 13,237,030 barrels, which is 1,565,806 barrels or 13.41 per cent., more than the production for 1935, and is the highest yet recorded in the Colony.

It is worthy of note that the increased production has been mainly derived from previously known producing structures and their extensions, and also that the Fyzabad structure contributed 56.7 per cent. of the total production of the Colony. Two new producing areas of promise were discovered during the year, but they are as yet insufficiently developed for their potentialities to be determined, and the quantity of oil produced from them during the period under review is of relative unimportance.

5. DRILLING.—During the year 1936 one hundred and seventy-one new wells were commenced, compared with one hundred and thirty-nine during 1935. The total number of wells commenced in the Colony to the end of 1936 is 2,416, of which 1,538 are on lands the oil rights of which are vested in the Crown and 878 are on private lands.

The number of feet drilled during 1936 amounted to 594,529, which represents an increase of 158,230 feet, or 36.26 per cent. on the footage for 1935.

Various companies have undertaken a larger amount of deeper drilling than in former years, and it is worthy of note that at the end of the year there were 19 wells over 6,000 feet deep and 7 wells over 7,000 feet deep, the deepest being 7,673 feet.

6. The following table shows, comparatively, the number of feet drilled and the quantity of oil produced during the years 1934, 1935 and 1936:—

Land.	Number of Feet drilled.			Production (in brls. of 35 gals.)		
	1934	1935	1936	1934	1935	1936
Crown Oil Rights ...	256,455	328,510	381,358	6,391,544	7,544,427	8,182,018
Private Oil Rights ...	95,328	107,789	213,171	4,502,819	4,126,797	5,055,012
Total ...	351,783	436,299	594,529	10,894,363	11,671,224	13,237,030

7. NATURAL GAS.—Much of the petroleum in Trinidad is associated with considerable volumes of natural gas at high pressures (pressures up to 5,000 lb. per square inch having been recorded), and the efficient control and conservation of this natural gas constitutes a problem which is rendered more difficult by the complicated geological conditions which exist. This problem has been, and continues to be, the object of careful study, especially by the larger organizations. With the object of conserving surplus natural gas some of it is being returned to the formation in three different areas for purposes of repressuring or storage, and it is anticipated that this practice will be extended to other areas where suitable conditions are found to exist. It is considered of prime importance, however, that the quantity of gas produced with the oil should be reduced to an economic minimum. This important factor is fully recognised by most of the larger organizations who are well aware that on the efficient control and conservation of their gas resources depends the flowing, and perhaps the economic, life of their wells. Recognising this, most of them have, for some time past, reduced the gas/oil ratios of the majority of their flowing wells to very low figures, and ratios as low as 400-500 cubic feet of gas per barrel of oil are not uncommon. It is hoped that all operators will recognise the vital importance of this practice and take steps to adopt it without delay.

8. OILFIELD OPERATORS.—The number of oilfield operators at the close of the year was 16, compared with 14 at the end of 1935. As an indication of the increased activity which took place on the oilfields during 1936 it may be noted that the daily average number of persons employed increased from 6,193 in 1935 to 7,796 in 1936.

9. LEASES AND LICENCES.—During the year 50 applications for mining leases and exploration licences were received, and 15 mining leases and 5 exploration licences were registered. The total number of mining leases and exploration licences registered at the end of the year amounted to 54, the details of which are as follows :—

	AREA.					
	Crown.			Alienated.		
	A.	R.	P.	A.	R.	P.
25 Mining Leases	46,571	3	06	...	...	...
9 Mining Leases	...	...	...	9,603	0	35
11 Composite Mining Leases on Crown and Alienated Lands	76,863	2	33	8,159	0	23
3 Prospecting Licences* on Crown and Alienated Lands	1,755	0	00	993	2	20
6 Exploration Licences	120,719	0	00	...	...	...
54	245,909	1	39	18,755	3	38

* These Prospecting Licences are now being converted into Mining Leases.

10. TOTAL AREA UNDER LICENCE OR LEASE.—Including privately owned oil rights under lease, the area of which has been supplied by the various operating companies, the total area of Trinidad under Licence or Lease as at the 31st December, 1936, is 325,021 acres (27.25 per cent. of the total area of Trinidad) as follows :—

	A.	R.	P.
Area of Crown Lands under Exploration and Prospecting Licence and Mining Lease	245,909	1	39
Area of Alienated Lands under Mining Lease and Prospecting Licence* the oil rights of which are vested in the Crown	18,755	3	38
Area of privately owned oil rights under Lease, according to details supplied by the Oil Companies	60,355	1	12
	325,020	2	09

* Now being converted into Mining Leases.

The figures given above for Crown and Alienated Lands include Licences and Leases actually registered. When the further Licences and Leases which have been approved but which have not yet been registered are taken into account, the total area under Exploration Licence or Mining Lease (including private lands) will be approximately 40 per cent. of the total area of Trinidad.

11. MARINE CONCESSIONS.—In the month of June, 1936, the Government published a notice stating that it was prepared to receive applications for the grant of exploration licences in connection with oil concessions over marine areas in the territorial waters of the Colony. As a result of this notice nine applications for such licences were received. The terms and concessions under which concessions will be granted are now under consideration.

12. REVENUE FROM ROYALTIES, WAYLEAVES AND FEES.—The revenue collected under these heads amounted to \$622,892.39, as compared with \$508,917.65 collected during the year 1935. For purposes of comparison, the following table shows the amounts collected under each head for the years 1934, 1935 and 1936 :—

Heads.	Amounts Collected.		
	1934	1935	1936
	\$ c.	\$ c.	\$ c.
ROYALTIES in respect of oil produced from Crown and Alienated lands	416,923 51	505,278 46	617,884 86
WAYLEAVES in respect of oil pipelines laid along public roads	1,741 37	1,421 59	1,877 76
FEES charged for pipelines crossing the Trinidad Government Railway and public roads	2,606 40	2,217 60	3,129 77
Totals	421,271 28	508,917 65	622,892 39

13. REFINERIES.—Twelve permits for the refining of oil were issued during the year under the Oil Mining and Refining Ordinance, Cap. 143. Of these permits six were issued in respect of small field topping plants the operations of which are of relative unimportance.

The total capacity of the refineries operating in the Colony amounts to approximately 17,500,000 barrels per annum. During 1936 a total quantity of 13,028,161 barrels of crude oil was refined, compared with 11,148,285 barrels during 1935.

14. GASOLINE EXTRACTION PLANTS.—Three Gas Absorption Plants and one Gas Absorption Plant for the recovery of gasoline from natural gas were in operation during the year.

15. LOADING FACILITIES.—Four deep-water piers equipped for loading tank steamers with petroleum and its products are in use. Facilities for bunkering vessels in the Harbour of Port-of-Spain are also available.

16. PIPELINES.—Approximately 200 miles of main pipelines have been laid down in the Colony. During the year two new permits under the Pipelines Ordinance No. 29 of 1933 were issued, the total number of permits issued now amounting to 176.

17. TANK STORAGE.—The total main tank storage capacity for petroleum in the Colony is approximately 4,030,000 barrels.

18. EXPORTS OF PETROLEUM AND ITS PRODUCTS.—The quantity of petroleum and its products exported during the year increased substantially as compared with the year 1935, the amounts and values for the two years being as follows :—

1935—10,993,540 barrels valued at \$13,321,708.

1936—12,405,222 barrels valued at \$15,910,638.

Petroleum and its products continued to form the largest part of the Colony's exports in 1936, the value being approximately two and a half times that of the products of the next most important of its industries, viz. : sugar (including molasses and rum). Of the total exports petroleum and its products (including asphalt) formed 62.63 per cent.

The value of the leading staple products of the Colony exported during 1936 is shown in the following table :—

<i>Staple Products Exported.</i>	<i>Value.</i>	<i>Percentage of total.</i>
Petroleum and its products	\$15,910,638	59.07
Sugar, Molasses and Rum	6,425,533	23.86
Cocoa	2,340,377	8.69
Asphalt	959,759	3.56
Fruits and Fruit Products	430,290	1.60
Coconuts, Copra and Coconut Oil	324,832	1.21
Bitters	76,577	.28
Coffee	84,969	.31
Other Exports not enumerated	382,101	1.42
	<u>\$26,935,076</u>	<u>100.00</u>

19. RETURNS.—The various returns required to be submitted by the Oil Companies under the various Ordinances and Regulations in respect of their operations have been regularly received in the Department, where, after being checked, they have been filed with the records of the Department.

20. INSPECTIONS.—The operations on the various oilfields were inspected by officers of this Department as frequently as possible, and I have pleasure in recording that the Managers have readily co-operated with the Department in ensuring that the provisions of the Ordinances and Regulations were effectively carried out.

21. Included in this report as Appendix " B " will be found some interesting notes and statistics relating to the progress of the petroleum industry which have been prepared by the Assistant Petroleum Technologist.

THE ASPHALT INDUSTRY.

22. The Asphalt Industry continued to operate normally. The total production of asphalt for the year amounted to 111,965 tons. The following table shows, comparatively, the quantity of asphalt produced and exported during the years 1934, 1935 and 1936 :—

	1934	1935	1936
Production (in tons)	92,829	134,578	111,965
Export (in tons)	56,089	82,349	70,543

FACTORIES.

23. During the period under review 178 factories were in operation in Trinidad and Tobago. During the inspections carried out in these factories recommendations were made for ensuring the safety of the workmen, and such recommendations were always readily carried out by the Managers concerned.

QUARRIES.

24. The number of quarries worked during the past year was 109, as compared with 86 quarries in operation during the year 1935. Most of these quarries are very small and relatively unimportant. As a result of inspection it was found that, as a general rule, the quarries were being worked in a careful manner. The various recommendations made by officers of this Department for increasing the safety of the workmen were usually carried out without delay.

PETROLEUM ORDINANCE, CAP. 145.

25. The premises where dangerous petroleum products are stored have been carefully inspected, and all possible care has been taken to ensure safety. During the year 573 licences were issued for the storage and sale of petroleum and its products, the revenue derived from such licences amounting to \$1,972.80.

APPENDICES.

26. Appendix " A " shows the list of oil companies operating in the Colony during the year 1936.

27. Appendix " B " gives notes and statistics relating to the Petroleum Industry.

28. Appendix "C" is a statement of the quantity and value of minerals obtained and the daily average number of persons employed in the petroleum, asphalt and quarry industries.

29. A statement of oil produced and exported is shown in Appendix "D."

30. Appendix "E" shows the amount of oil refined year by year.

31. Appendix "F" consists of a series of charts depicting in graphic form the progress made in various industries during the past few years.

32. Appendix "G" shows the relation of mineral exports to agricultural exports.

STAFF.

33. Mr. C. E. Capito, O.B.E., Petroleum Technologist, retired from the Service on the 4th April, 1936, on completion of six years service with the Department. Mr. H. W. Reid, B.Sc., Assistant Petroleum Technologist, who had occupied that position for over seven years, also retired from the Service with effect from the 3rd December, 1936. Mr. W. N. Foster, M.A. (Cantab), was appointed to the post of Assistant Petroleum Technologist on the 24th November, 1936, to succeed Mr. Reid.

In August, 1935, the proposal that the posts of Inspector of Mines and Petroleum Technologist should be amalgamated was agreed to, and this decision was carried into effect on the 4th March, 1936, when Mr. R. S. Mackilligin, O.B.E., M.C., was appointed to the joint post. Mr. Mackilligin arrived in the Colony on the 20th May, 1936, on which date Mr. Nelson Betancourt, Assistant Inspector of Mines, who had been acting as Inspector of Mines for the period 4th April, 1934 to 19th May, 1936, reverted to his substantive post.

Mr. Betancourt was granted six months vacation leave with effect from the 15th September, 1936, during which period a part of his duties were carried out by Mr. T. C. C. Harding, Draughtsman in the Department. Mr. A. C. Francis-Lau, 2nd Clerk, was also granted 66 days vacation leave as from the 27th July, 1936. During his absence Mr. R. V. O'Neill, 3rd Clerk, performed his duties.

I have great pleasure in recording the very able and willing assistance I have received from all members of the Staff.

R. S. MACKILLIGIN,
*Inspector of Mines and
Petroleum Technologist.*

10th April, 1937.

APPENDIX A.

No.	Company.	Nature of tenure of lands on which operations took place.	Disposal of Oil.	Remarks.
1	Antilles Petroleum Company (Trinidad) Ltd.	Private Lands Brighton Vessigny	Crude exported	Operating on Private Lands taken over from Trinidad Lake Petroleum Co., Ltd. in December 1935. An active drilling programme on the Vessigny field has resulted in a considerable increase in production.
2	Apex (Trinidad) Oilfields, Ltd.	Crown Oil Rights under Lease Prospecting Licence and Private Lands	Fyzabad and Siparia Crude oil sold to Trinidad Leaseholds, Ltd. Casing head gasoline sold to United British Oilfields of Trinidad, Ltd.	This Company is the largest producer in the Colony. Both the footage drilled and the production showed an increase over those for 1935.
3	Coldan Oil Company, Ltd.	Private Lands Fyzabad	Refined	Small amount of footage drilled and production obtained.
4	Kern Trinidad Oilfields, Ltd.	Crown Lands under Lease Private Lands	Guapo and Rousillac Some exported Some sold to Trinidad Leaseholds, Ltd. Some sold to United British Oilfields of Trinidad and other Companies	There was a considerable increase in both footage and production won by this Company.
5	Mitchell, F. W.	Private Lands Point Fortin		A small amount of footage was drilled.
6	New Dome Oilfields, Ltd.	Private Lands Fyzabad		A small amount of footage was drilled and production slightly increased.
7	Petroleum Options (1925), Ltd.	Private Lands San Francique	Sold to Trinidad Leaseholds, Ltd.	No drilling was done and production decreased.
8	Scottish Trinidad Oilfields, Ltd.	Private Lands Rio Claro		One well was started.
9	Siparia Trinidad Oilfields, Ltd.	Crown Lands under Prospecting Licence	Palo Seco Morne Diablo Sold to Trinidad Leaseholds, Ltd.	A certain amount of drilling was done and production increased.
10	Stollmeyer, C. C.	Crown Lands under Lease	Palo Seco Sold to Trinidad Leaseholds, Ltd.	A small amount of drilling was done and the production considerably increased.

Appendix A.—Continued.

No.	Company.	Nature of tenure of lands on which operations took place.	Disposal of Oil.	Remarks.	
11	Trinidad Central Oilfields, Ltd. ....	....Crown Lands under Lease	Tabaquite, Guapo and Lizard Springs	Production from Tabaquite and Lizard Springs refined and sold locally That from Guapo is sold to Trinidad Leaseholds, Ltd.	Productions from Tabaquite, Lizard Springs and Guapo were maintained. Operations were started at Barrackpore and production obtained.
12	Trinidad Consolidated Oilfields, Ltd.	....Crown Oil Rights under Lease and Private Lands	Fyzabad	....Sold to Trinidad Leaseholds, Ltd.	Took over lands at Fyzabad from Trinidad Investments, Ltd. in July.
13	Trinidad Investments, Ltd. ....	....Crown Oil Rights under Lease and Private Lands	Fyzabad	....Sold to Trinidad Leaseholds, Ltd.	Mining Lease in Fyzabad area assigned to Trinidad Consolidated in July.
14	Trinidad Lake Petroleum Co., Ltd.	....Crown Lands under Lease	Brighton	....Pitch refined and exported	....Producing and refining pitch only. Private Lands including the Brighton and Vessigny oilfields taken over by Antilles Petroleum Company (Trinidad).
15	Trinidad Leaseholds, Ltd. ....	....Crown Lands and Crown Oil Rights under Lease Private Lands	Fyzabad, Barrackpore and Guayaguayare	Pumped to the Company's refinery at Pointe-a-Pierre and there refined Most of the refined products are exported in bulk.	The most important marketing and refining Company in the Colony. Both the footage drilled and production obtained have been considerably increased this year. Production from the Guayaguayare Field has nearly doubled.
16	Trinidad Oil Lands, Ltd. ....	....Private Lands	....Point Fortin	....	....Have acquired lands formerly operated by the Globe Oilfields, Ltd. No drilling was done during the year.
17	Trinidad Petroleum Developing Co., Ltd.....	....Crown Oil Rights under Lease Private Lands	Palo Seco and Siparia	Sold to United British Oilfields of Trinidad, Ltd.	Both drilling and production have decreased slightly.
18	United British Oilfields of Trinidad, Ltd.....	....Crown Lands under Lease Private Lands	Morne L'Enfer Forest Reserve Point Fortin	Pumped to the Company's refinery at Point Fortin and there refined	A considerable increase in footage drilled. Just maintained production at last year's level.

APPENDIX B.

HON. INSPECTOR OF MINES AND PETROLEUM TECHNOLOGIST.

The production of crude oil reached a record figure of 13,237,030 barrels, which is an increase of 13.41 per cent. over that for 1935. The footage drilled was 594,529 feet. This is also a record and 36.26 per cent. greater than that in 1935.

A comparison of footage and production figures for 1935 and 1936 is given below:—

	Footage.		Production.	
	1935	1936	1935	1936
Crown	185,788	235,804	5,288,943	5,982,993
Alienated	142,722	145,554	2,255,484	2,199,025
Private	107,789	213,171	4,126,797	5,055,012
	<u>436,299</u>	<u>594,529</u>	<u>11,671,224</u>	<u>13,237,030</u>

DRILLING.—During the year 171 wells were started bringing the total number of wells started in the Colony up to 2,416 at the end of the year. The following table gives an analysis of the drilling operations carried out during the year.

	Crown.	Alienated.	Private.	Totals.
Unfinished at end of 1935	24	7	10	41
Started during 1936	59	39	73	171
	<u>83</u>	<u>46</u>	<u>83</u>	<u>212</u>
Completed as oil wells	57	33	54	144
Completed as gas wells ....	....	1	1	2
Completed as water wells ....	....	3	2	5
Completely abandoned	4	3	5	12
Unfinished at end of 1936	22	6	21	49
Old wells abandoned in 1936	2	....	8	10
Old wells re-completed in 1936	9	10	7	26

There was no outstanding advance in drilling equipment or technique during the year but several minor improvements are noted.

The condition of drilling mud was generally carefully controlled, one of the results of which was the larger amounts of open hole which could be carried without trouble being experienced from caving.

An electrically operated gun perforator which was first introduced on the Trinidad oilfields in December, 1935, has rapidly become an indispensable tool, and its general use has resulted in a tendency to set and cement strings of blank casing afterwards gun perforating at selected points.

Three companies started using a wire line retractable core barrel. This device permits the taking of cores while drilling and the withdrawal of the core barrel to the surface without pulling the drillpipe.

One company installed steam operated blow-out preventers and pressure drilling equipment while another experimented with a vertical steam drilling engine directly coupled to the rotary table.

Full hole tool joints were steadily replacing the older types while the wooden derrick has been entirely replaced by steel for drilling.

At the end of the year the deepest well in the Colony was 7,673 feet deep.

There were 144 wells over 4,000 feet deep, 39 over 5,000 feet, 19 over 6,000 feet and 7 over 7,000 feet deep.

PRODUCTION.—The number of wells producing per month ranged from 999 to 1,092, the average being 1,041 per month.

The following table gives an analysis of the average number of producers per month and a comparison with the three previous years.

	1933	1934	1935	1936
Wells flowing	231	222	235	273
Wells pumping	443	465	466	469
Wells bailing or swabbing	124	140	146	140
Wells on air or gas lift	29	70	105	107
Wells on plunger lift ....	....	....	8	38
Wells on displacement pumps	9	9	14	14
	<u>836</u>	<u>906</u>	<u>974</u>	<u>1,041</u>

The Fyzabad structure contributed 56.7 per cent. of the total production of the Colony.

During the year under review there was a laudable tendency on the part of the larger companies to produce flowing wells through smaller chokes than formerly with the effect, in general, of reducing gas/oil ratios.

The recording of casing and tubing pressures and metering of gas from flowing wells notably increased during the year.

The installation of high pressure gas and oil separators became more general—the high pressure gas obtained being used for gas lift and displacement pumping direct—a considerable economy compared with former methods of low pressure separation followed by compression.

The gas actuated plunger lift was extensively used by two companies, the number of units in operation increasing from 8 in December, 1935 to 38 in December, 1936.

There was but little alteration in surface pumping equipment. The Band Wheel type of pumping power is steadily replacing older types of installation and surface equipment is being made heavier.

Surplus gas was being replaced in formation by three companies; in two cases for repressuring producing sands, in the other with a view to storage for future use.

Four small fires occurred on oilfields during the year. They caused but little damage to property and were promptly extinguished.

There were 54 reportable accidents on the oilfields during the year. Investigation of these showed that only 16 were unavoidable. Of the remainder 24 were classed as due to carelessness, 13 to bad practice and one to disobedience. Five of these accidents were fatal. Minor injuries to rigmen are increasing.

Three boiler explosions occurred during the year, and it is fortunate that these extremely dangerous explosions were unaccompanied by loss of life. In at least two of the cases negligence was a contributory cause.

The following tables are attached :—

- No. 1 showing the monthly drilling and production figures for 1936.
- No. 2 showing the number of wells started and footage drilled since the commencement of the industry in 1867.
- No. 3 showing the annual production since returns were first sent to the Government in 1908.
- No. 4 showing the number of wells started annually and the status of these wells at the end of the year.

W. N. FOSTER,
Assistant Petroleum Technologist.

25th March, 1937.

**TABLE I.
DRILLING AND PRODUCTION RETURN FOR 1936.**

Month.	Wells started, 1936.			Wells completed as Producers.			Recompleted as Producers.			Completed fresh water wells.			Wells abandoned.			Total wells started in Colony.	Footage drilled during month.	Production (barrels).	Flowing.			Pumping.			Bailing or swabbing.			Air/or Gas Lift.			Plunger Lift.			Displacement pumps.			Total number of wells producing.			Grand Total.	Percentage wells producing to total drilled.
	C	A	P	C	A	P	C	A	P	C	A	P	C	A	P				C	A	P	C	A	P	C	A	P	C	A	P	C	A	P	C	A	P	C	A	P		
Jan.	4	5	9	7	6	3	2					1			2,263	58,173	1,079,082	139	45	88	202	61	205	104	1	42	26	52	25	14	8	5	6	471	178	374	1,023	45.21			
Feb.	4	3	7	3	2	3	2						1		2,277	42,661	983,424	142	49	89	185	61	204	99	1	39	24	44	23	19	8	6	7	450	180	370	1,000	43.92			
March	4	6	4	3	4	5						1		2,291	43,279	1,081,191	134	49	87	183	62	208	106		43	28	42	25	20	10	6	7	451	179	380	1,010	44.09				
April	4	1	5	3	1	3	1							2,301	45,653	1,026,423	130	45	82	182	60	211	101	1	45	30	42	24	22	11	6	7	443	176	380	999	43.42				
May	5	2	4	5	3	6	1	1	2		1			2,312	39,628	1,066,728	139	43	83	182	60	213	95	2	40	32	50	23	23	13	6	7	448	184	379	1,011	43.73				
June	4	1	5	5		4								2,322	38,645	1,078,186	140	41	86	201	62	218	96	2	41	34	51	24	22	12	7	8	471	185	389	1,045	45.00				
July	3	3	8	3	1	3		1	1					2,336	50,076	1,121,583	145	44	86	196	60	219	90	1	43	34	53	25	24	14	6	8	465	188	395	1,048	44.86				
Aug.	6	2	7	4	3	8		1	1			1		2,351	60,323	1,108,974	147	40	96	196	61	217	91	1	36	37	53	24	26	15	7	8	471	188	396	1,055	44.87				
Sept.	7	4	6	6	*1	2		3	1					2,368	53,238	1,126,420	142	38	88	203	64	220	104	1	38	35	55	22	27	17	7	7	484	192	392	1,068	45.10				
Oct.	5	4	4	6	3	7		2						2,381	49,717	1,179,561	143	33	90	205	61	220	99	3	40	35	55	25	32	18	7	7	482	191	400	1,073	45.07				
Nov.	7	5	6	3	5	*4		1	1	1		1		2,399	61,418	1,154,093	149	33	100	195	65	215	94	2	40	38	51	25	34	15	7	8	476	192	403	1,071	44.64				
Dec.	6	3	8	9	5	7		2	1	1			5	3	13	2,416	51,718	1,231,365	156	37	106	199	68	212	98		40	36	50	24	36	15	7	8	489	198	405	1,092	45.16		
Totals	59	39	73	57	34	55		9	10	7		3	2	6	3	13	2,416	594,529	13,237,030	142	41	90	Averages 194	62	213	98	1	41	33	50	24	Averages 25	13	7	7	467	186	388	1,041	44.59	
Grand Totals	171			146			26				5		22			2,416	594,529	13,237,030	273			469			140		107		38		14			1,041			44.59				

* Including 1 Gas Well.

C=Crown. A=Alienated. P=Private.

W. N. FOSTER,
Asst. Petroleum Technologist.

TABLE 2.
COLONY OF TRINIDAD.

Number of Wells started and Footage Drilled Annually.

YEAR.	WELLS STARTED.								FOOTAGE DRILLED.								YEARLY TOTALS.	CUMULATIVE.
	CROWN.		ALIENATED.		PRIVATE.		TOTALS.		CROWN.		ALIENATED.		PRIVATE.					
	Annual.	Cum.	Annual.	Cum.	Annual.	Cum.	Annual.	Cum.	Annual.	Cum.	Annual.	Cum.	Annual.	Cum.				
1867	—	—	—	—	1	1	1	1	—	—	—	—	964	964	964	964		
1900	—	—	—	—	1	2	1	2	—	—	—	—	600	1,564	600	1,564		
1902	1	1	—	—	2	4	3	5	600	600	—	—	1,315	2,879	1,915	3,479		
1903	1	2	—	—	—	4	1	6	1,172	1,772	—	—	1,060	3,939	2,232	5,711		
1904	1	3	—	—	—	4	1	7	860	2,632	—	—	—	3,939	860	6,571		
1905	—	3	—	—	—	4	—	7	—	2,632	—	—	—	3,939	—	6,571		
1906	1	4	—	—	2	6	3	10	1,104	3,736	—	—	1,499	5,438	2,603	9,174		
1907	1	5	—	—	2	8	3	13	798	4,534	—	—	1,563	7,001	2,361	11,535		
1908	—	5	—	—	4	12	4	17	—	4,534	—	—	2,352	9,353	2,352	13,887		
1909	—	5	—	—	6	18	6	23	—	4,534	—	—	5,362	14,715	5,362	19,249		
1910	5	10	—	—	7	25	12	35	3,771	8,305	—	—	4,319	19,034	8,090	27,339		
1911	8	18	—	—	38	63	46	81	4,902	13,207	—	—	34,010	53,044	38,912	66,251		
1912	10	28	—	—	35	96	45	126	6,839	20,046	—	—	32,881	85,925	39,720	105,971		
1913	25	53	—	—	18	114	43	169	13,813	33,859	—	—	26,388	112,313	40,201	146,172		
1914	50	103	—	—	16	132	66	235	35,146	69,005	—	—	23,283	135,596	58,429	204,601		
1915	31	134	—	—	19	151	50	285	29,208	98,213	—	—	25,652	161,248	54,860	259,461		
1916	28	162	—	—	20	171	48	333	30,866	129,079	—	—	28,035	189,283	58,901	318,362		
1917	38	200	—	—	6	177	44	377	41,227	170,306	—	—	9,557	198,840	50,784	369,146		
1918	38	238	—	—	4	181	42	419	47,700	218,006	—	—	6,796	205,636	54,496	423,642		
1919	40	278	—	—	13	194	52	471	49,741	267,747	—	—	16,769	222,405	66,510	490,152		
1920	43	321	1	1	23	217	68	539	53,002	320,749	1,665	1,665	24,009	246,414	78,676	568,828		
1921	49	370	4	5	32	249	85	624	71,318	392,067	2,896	4,561	44,631	291,045	118,845	687,673		
1922	68	438	4	9	20	269	91	715	88,299	480,366	8,701	13,262	39,463	330,508	136,463	824,136		
1923	70	508	5	14	33	302	108	823	79,907	560,273	7,060	20,322	58,805	389,313	145,772	969,908		
1924	67	575	8	22	34	336	110	933	90,141	650,414	6,190	26,512	55,197	444,510	151,528	1,121,436		
1925	46	621	16	38	37	373	99	1,032	86,904	737,318	18,446	44,958	63,543	508,053	168,893	1,290,329		
1926	69	690	13	51	46	419	128	1,160	109,234	846,552	18,732	63,690	72,691	580,744	200,657	1,490,986		
1927	73	763	13	64	73	492	159	1,319	101,920	948,472	17,288	80,978	122,465	703,209	241,673	1,732,659		
1928	43	806	33	97	64	556	139	1,458	71,481	1,019,953	58,842	139,820	112,863	816,072	243,186	1,975,845		
1929	52	858	58	155	48	604	159	1,617	92,590	1,112,543	118,583	258,403	96,309	912,381	307,482	2,283,327		
1930	76	934	31	186	56	660	163	1,780	170,389	1,282,932	85,561	343,964	116,706	1,029,087	372,656	2,655,983		
1931	9	943	25	211	26	686	60	1,840	42,972	1,325,904	95,410	439,374	80,260	1,109,347	218,642	2,874,625		
1932	21	964	20	231	20	706	61	1,901	44,568	1,370,472	67,162	506,536	61,557	1,170,904	173,287	3,047,912		
1933	36	1,000	22	253	23	729	81	1,982	85,946	1,456,418	87,550	594,086	62,206	1,323,110	235,702	3,382,614		
1934	56	1,056	30	283	38	767	124	2,106	167,952	1,624,370	88,503	682,589	95,328	1,328,438	351,783	3,635,397		
1935	55	1,111	46	329	38	805	139	2,245	185,788	1,810,158	142,722	825,311	107,789	1,436,227	436,299	4,071,696		
1936	59	1,170	39	368	73	878	171	2,416	235,804	2,045,962	145,554	970,965	213,171	1,649,398	594,529	4,666,225		
		1,170		368		878		2,416		2,045,962		970,965		1,649,398		4,666,225		

W. N. FOSTER,
Assn. Petroleum Technologist.

TABLE 3.
Yearly Trinidad Production.

Year.	Crown.	Accu- mulative Total.	Alienated.	Accu- mulative Total.	Private.	Accu- mulative Total.	Yearly Totals.	Grand Accumu- lative Total.
1908	—	—	—	—	37	37	37	37
1909	—	—	—	—	47,295	47,332	47,295	47,332
1910	55	55	—	—	105,023	152,355	105,078	152,410
1911	3,994	4,049	—	—	217,298	369,653	221,292	373,702
1912	9,104	13,153	—	—	476,801	846,454	485,905	859,607
1913	52,153	65,306	—	—	533,029	1,379,483	585,182	1,444,789
1914	512,299	577,605	—	—	480,917	1,860,400	993,216	2,438,005
1915	392,389	969,994	—	—	512,330	2,372,730	904,719	3,342,724
1916	478,815	1,448,809	—	—	449,060	2,821,790	927,875	4,270,599
1917	1,065,945	2,514,754	—	—	536,357	3,358,147	1,602,302	5,872,901
1918	1,588,805	4,103,559	—	—	493,115	3,851,262	2,081,920	7,954,821
1919	1,539,973	5,643,532	—	—	301,063	4,152,325	1,841,036	9,795,857
1920	1,758,039	7,401,571	—	—	325,071	4,477,396	2,083,110	11,878,967
1921	1,751,943	9,153,514	300	300	601,916	5,079,312	2,354,159	14,233,126
1922	1,534,796	10,688,310	147	447	909,727	5,989,039	2,444,670	16,677,796
1923	1,847,118	12,535,428	63,334	63,781	1,140,335	7,129,374	3,050,787	19,728,583
1924	2,410,737	14,946,165	76,467	140,248	1,570,856	8,700,230	4,058,060	23,786,643
1925	2,647,095	17,593,260	200,781	341,029	1,538,634	10,238,864	4,386,510	28,173,153
1926	2,630,100	20,223,360	310,953	651,982	2,030,426	12,269,290	4,971,479	33,144,632
1927	2,039,363	22,262,723	297,761	949,743	3,043,676	15,312,966	5,380,800	38,525,432
1928	2,652,981	24,915,704	1,470,333	2,420,076	3,561,273	18,874,239	7,684,587	46,210,019
1929	2,987,795	27,903,499	1,627,439	4,047,515	4,100,554	22,974,793	8,715,788	54,925,807
1930	3,429,030	31,332,529	1,831,338	5,878,853	4,158,589	27,133,382	9,418,957	64,344,764
1931	2,795,572	34,128,101	2,530,175	8,409,028	4,417,751	31,551,133	9,743,498	74,088,262
1932	3,200,083	37,328,184	2,410,813	10,819,841	4,515,225	36,066,358	10,126,121	84,214,383
1933	3,684,148	41,012,332	1,606,595	12,426,436	4,270,610	40,336,968	9,561,353	93,775,736
1934	4,586,366	45,598,698	1,805,178	14,231,614	4,502,819	44,839,787	10,894,363	104,670,099
1935	5,288,943	50,887,641	2,255,484	16,487,098	4,126,797	48,966,584	11,671,224	116,341,323
1936	5,982,993	56,870,634	2,199,025	18,686,123	5,055,012	54,021,596	13,237,030	129,578,353

W. N. FOSTER,
Asst. Petroleum Technologist.

TABLE 4.

Table showing number of Wells started in each year and status of these Wells at 31st December, 1936.

YEAR.	WELLS STARTED.			PRODUCING.			IDLE.			ABANDONED.			UNFINISHED.			TOTALS.			
	C	A	P	C	A	P	C	A	P	C	A	P	C	A	P	Producing.	Idle.	Abandoned.	Unfinished.
1867	—	—	1									—	—	1	—	—	1		
1900	—	—	1									—	—	1	—	—	1		
1902	1	—	2									1	—	2	—	—	3		
1903	1	—	—									1	—	—	—	—	1		
1904	1	—	—									1	—	—	—	—	1		
1906	1	—	2									1	—	2	—	—	3		
1907	1	—	2				—	—	2			1	—	—	—	2	1		
1908	—	—	4	—	—	1	—	—	—	—	—	—	—	3	1	—	3		
1909	—	—	6	—	—	2	—	—	2	—	—	—	—	2	2	2	2		
1910	5	—	7	—	—	1	3	—	1	2	—	5	—	—	1	4	7		
1911	8	—	38	1	—	4	3	—	8	4	—	26	—	—	5	11	30		
1912	10	—	35	2	—	5	3	—	6	5	—	24	—	—	7	9	29		
1913	25	—	18	8	—	6	6	—	2	11	—	10	—	—	14	8	21		
1914	50	—	16	12	—	6	15	—	3	23	—	7	—	—	18	18	30		
1915	31	—	19	7	—	9	14	—	9	10	—	1	—	—	16	13	11		
1916	18	—	20	7	—	—	11	—	7	10	—	4	—	—	16	18	14		
1917	38	—	6	16	—	1	7	—	2	15	—	3	—	—	17	9	18		
1918	38	—	4	17	—	—	10	—	—	11	—	4	—	—	17	10	15		
1919	40	—	13	17	—	2	12	—	2	11	—	9	—	—	19	14	20		
1920	43	1	23	17	—	6	12	—	2	14	1	15	—	—	23	14	30		
1921	49	4	32	22	—	9	12	—	7	15	4	16	—	—	31	19	35		
1922	68	4	20	24	1	5	22	—	4	22	3	11	—	—	30	26	36		
1923	70	5	33	26	1	11	17	—	5	26	4	17	1	—	38	22	47	1	
1924	67	8	34	24	1	11	23	—	11	20	7	12	—	—	36	34	39	—	
1925	46	16	37	23	4	12	11	1	11	12	11	14	—	—	39	23	37	—	
1926	69	13	46	27	2	23	21	3	12	21	8	11	—	—	52	36	40	—	
1927	73	13	73	21	4	32	27	6	18	25	3	23	—	—	57	51	51	—	
1928	43	33	64	18	24	35	14	7	20	11	2	9	—	—	77	41	22	—	
1929	52	58	48	19	30	32	16	21	6	16	7	10	1	—	81	43	33	1	
1930	76	31	56	34	15	32	28	11	9	13	5	14	1	—	81	48	32	2	
1931	9	25	26	4	16	18	3	7	4	2	2	4	—	—	38	14	8	—	
1932	21	20	20	9	12	13	8	8	4	4	—	3	—	—	34	20	7	—	
1933	36	22	23	16	16	18	10	6	2	7	—	3	3	—	50	18	10	3	
1934	56	30	38	35	23	31	12	5	5	6	2	2	3	—	89	22	10	3	
1935	55	46	38	39	35	27	10	8	6	3	3	2	3	—	101	24	8	6	
1936	59	39	73	43	28	49	4	2	4	2	3	3	10	6	17	120	10	8	33
Totals	1,170	368	878	488	212	410	334	85	174	326	65	273	22	6	21	1,110	593	664	49
	=			=			=			=			=			=			
	2,416			1,110			593			664			49			2,416			

W. N. FOSTER,
Asst. Petroleum Technologist.

APPENDIX C

Statement of the Quantity and Value of Minerals obtained and the Daily Average Number of Persons employed in the Petroleum, Asphalt and Quarry Industries during the years 1935 and 1936.

Industry.	1935					1936				
	Quantity.	Approximate Value.*	Daily average number of persons employed.			Quantity.	Approximate Value.*	Daily average number of persons employed.		
			Males.	Females.	Total.			Males.	Females.	Total.
Petroleum	11,671,224 brls.	\$9,192,338 20	6,098	95	6,193	13,237,030 brls.	\$10,254,853 96	7,680	116	7,796
Asphalt (a)	111,077 tons	333,231 00	616	1	617	91,333 tons	273,999 00	640	2	642
Private Quarries (Limestone, Gravel, &c.)	248,725 tons	129,574 40	710	172	822	257,333 tons	120,625 95	761	226	987
Government Quarries (Limestone, Gravel, &c.)	58,048 tons	30,631 83	250	68	318	67,714 tons	39,158 47	275	73	348

* The values given are those returned by owners and managers and represent value at place of production.

(a) In addition to the figure shown against this item, the following quantities were extracted from the Pitch Lake by the Public Works Department for use on the roads of the Colony, viz. :-

1935 23,501 tons. 1936 20,632 tons.

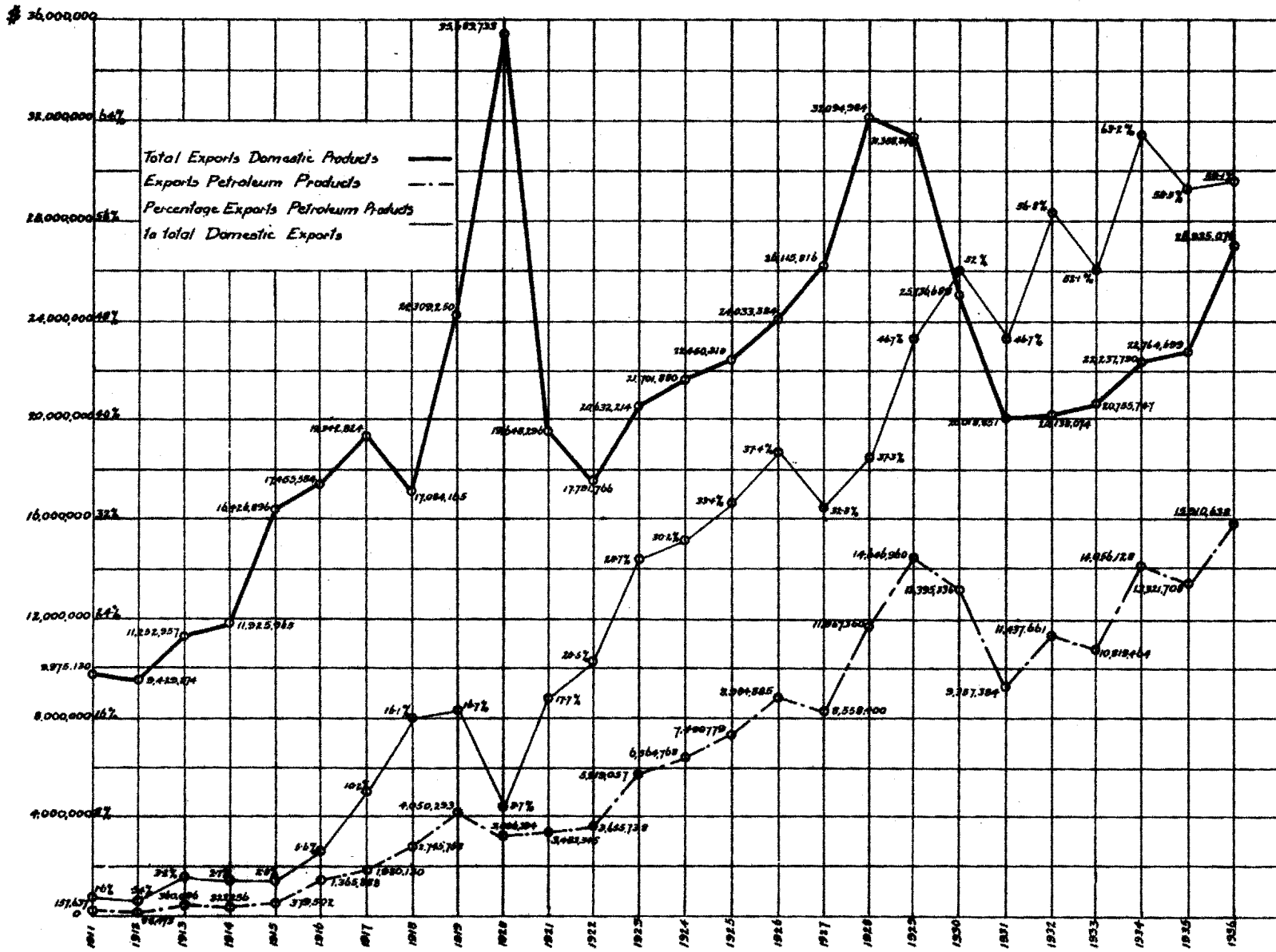
APPENDIX D.

Statement of Oil produced and exported year by year since the inception of the Petroleum Industry in the Colony.

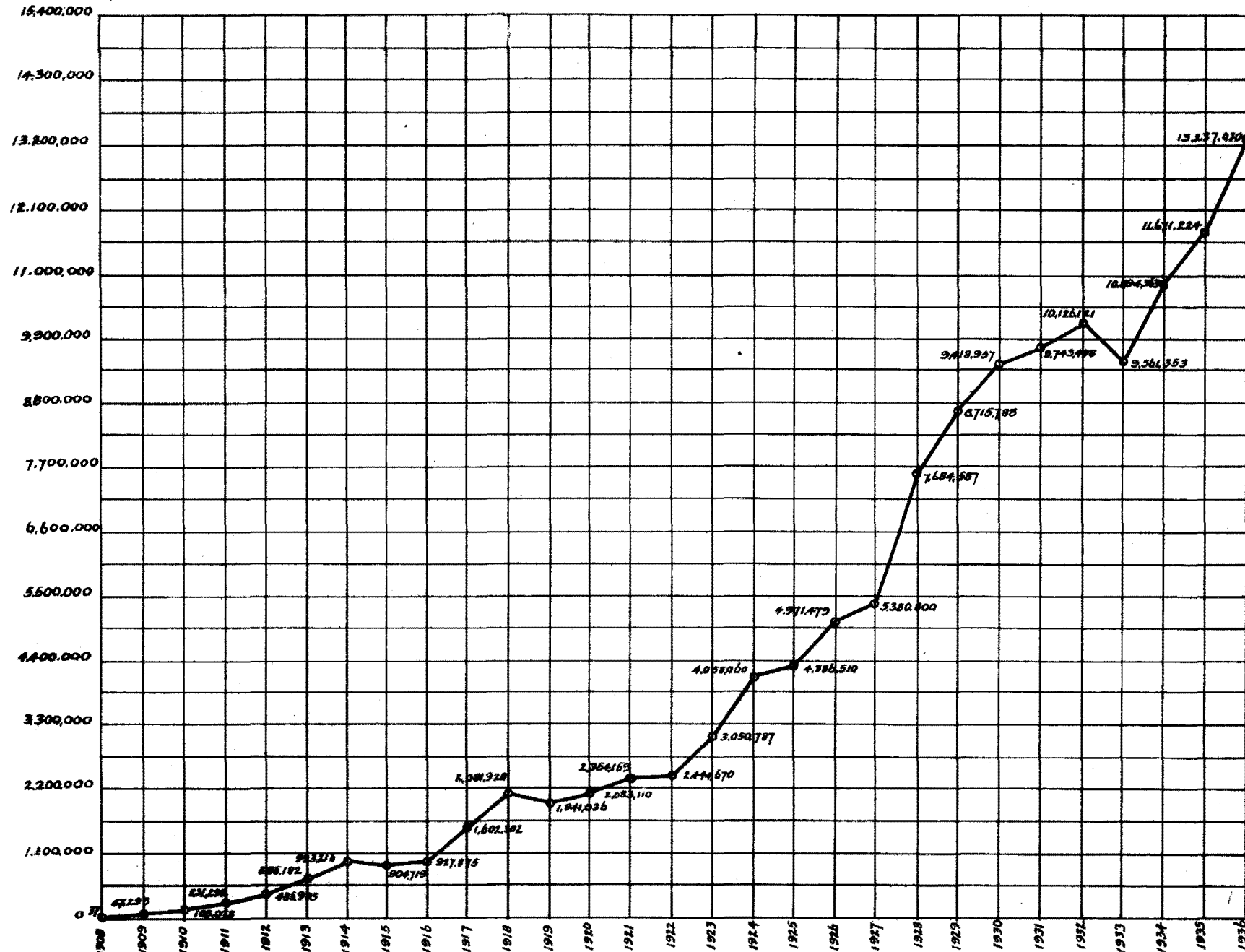
Year.								Production in barrels.	Quantity of Crude oil and Refined oil exported in barrels.
1908	...	...	...	...	...	...	37	—
1909	...	...	...	...	...	...	47,295	46
1910	...	...	...	...	...	...	105,078	—
1911	...	...	...	...	...	...	221,292	219,582
1912	...	...	...	...	...	...	485,905	122,734
1913	...	...	...	...	...	...	585,182	387,719
1914	...	...	...	...	...	...	993,216	348,351
1915	...	...	...	...	...	...	904,719	408,188
1916	...	...	...	...	...	...	927,875	975,142
1917	...	...	...	...	...	...	1,602,302	1,079,369
1918	...	...	...	...	...	...	2,081,920	1,305,407
1919	...	...	...	...	...	...	1,841,036	1,406,264
1920	...	...	...	...	...	...	2,083,110	1,034,907
1921	...	...	...	...	...	...	2,354,159	1,223,346
1922	...	...	...	...	...	...	2,444,670	1,615,740
1923	...	...	...	...	...	...	3,050,787	2,432,470
1924	...	...	...	...	...	...	4,058,060	3,224,529
1925	...	...	...	...	...	...	4,386,510	3,606,608
1926	...	...	...	...	...	...	4,971,479	3,988,308
1927	...	...	...	...	...	...	5,380,800	4,456,770
1928	...	...	...	...	...	...	7,684,587	6,361,675
1929	...	...	...	...	...	...	8,715,788	8,243,023
1930	...	...	...	...	...	...	9,418,957	7,678,807
1931	...	...	...	...	...	...	9,743,498	8,964,303
1932	...	...	...	...	...	...	10,126,121	9,637,474
1933	...	...	...	...	...	...	9,561,353	8,909,298
1934	...	...	...	...	...	...	10,894,363	9,981,774
1935	...	...	...	...	...	...	11,671,224	10,993,540
1936	...	...	...	...	...	...	13,237,030	12,405,222
								129,578,353	111,010,596

A
TRINIDAD AND TOBAGO

APPENDIX "F"

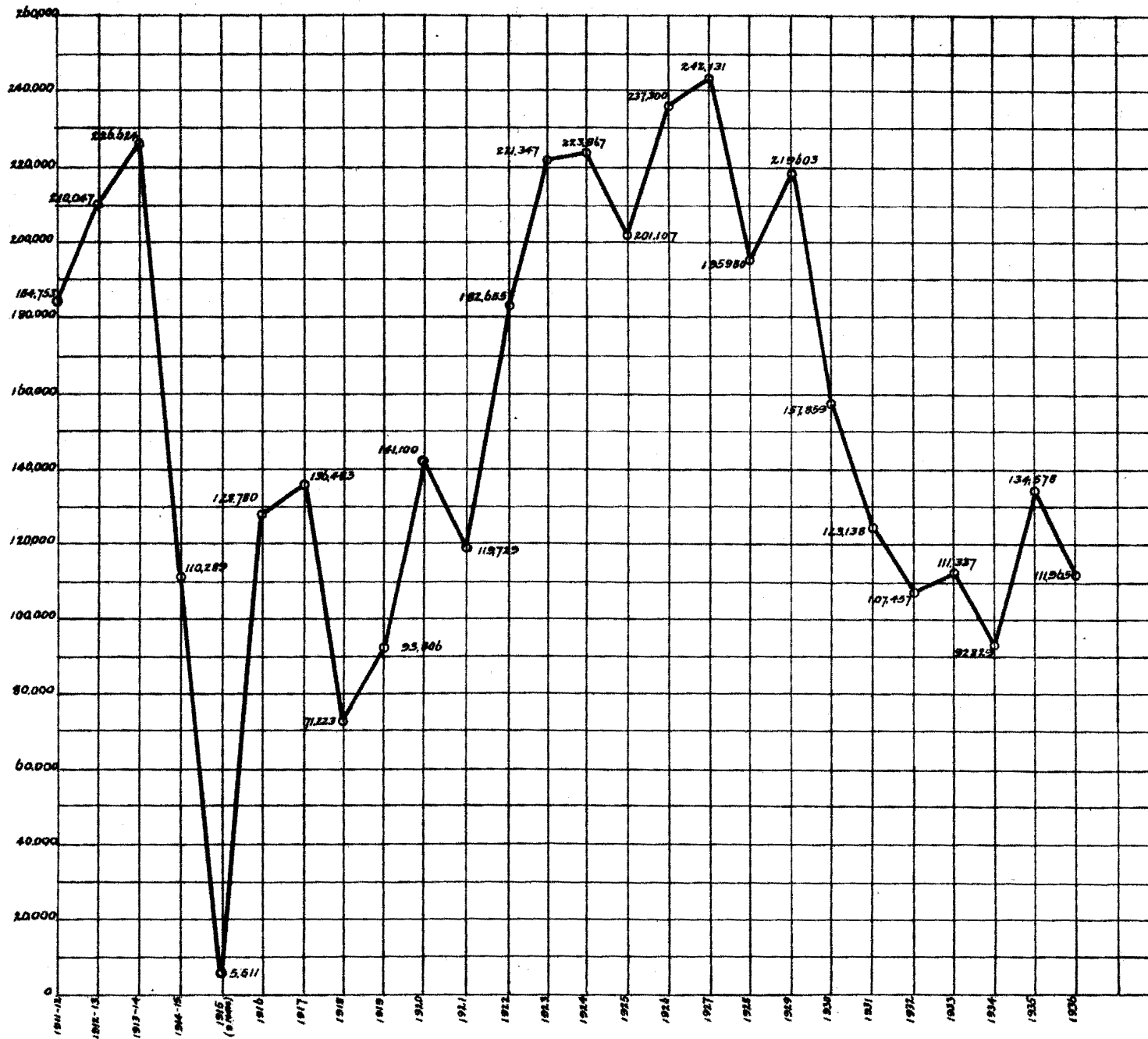


C
Total Annual Production of Crude Oil in Barrels
One Barrel = 35 Imperial Gallons



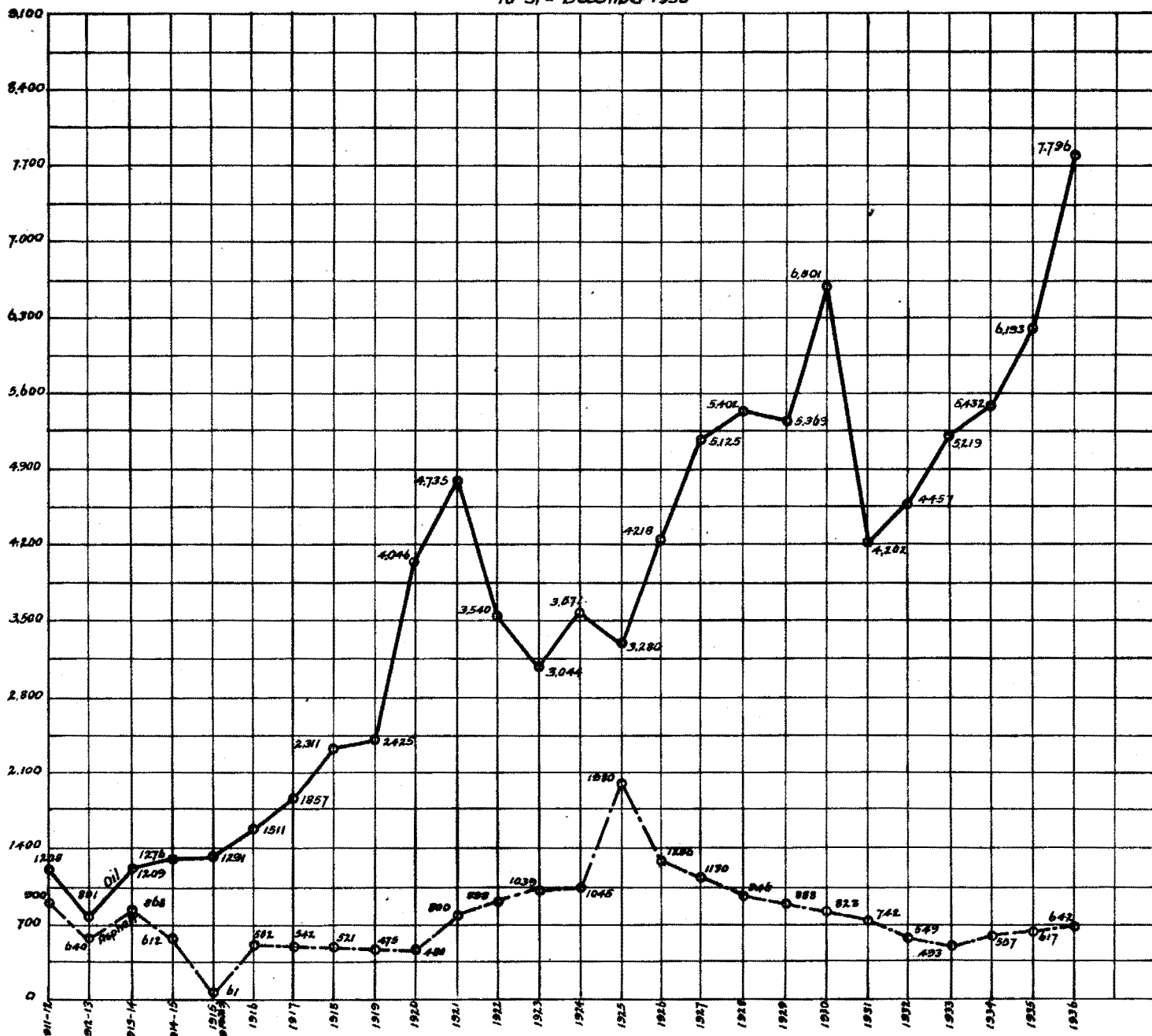
D

Curve showing yearly output of Asphalt from the Colony
in Tons from 1st April 1911 to 31st December 1936



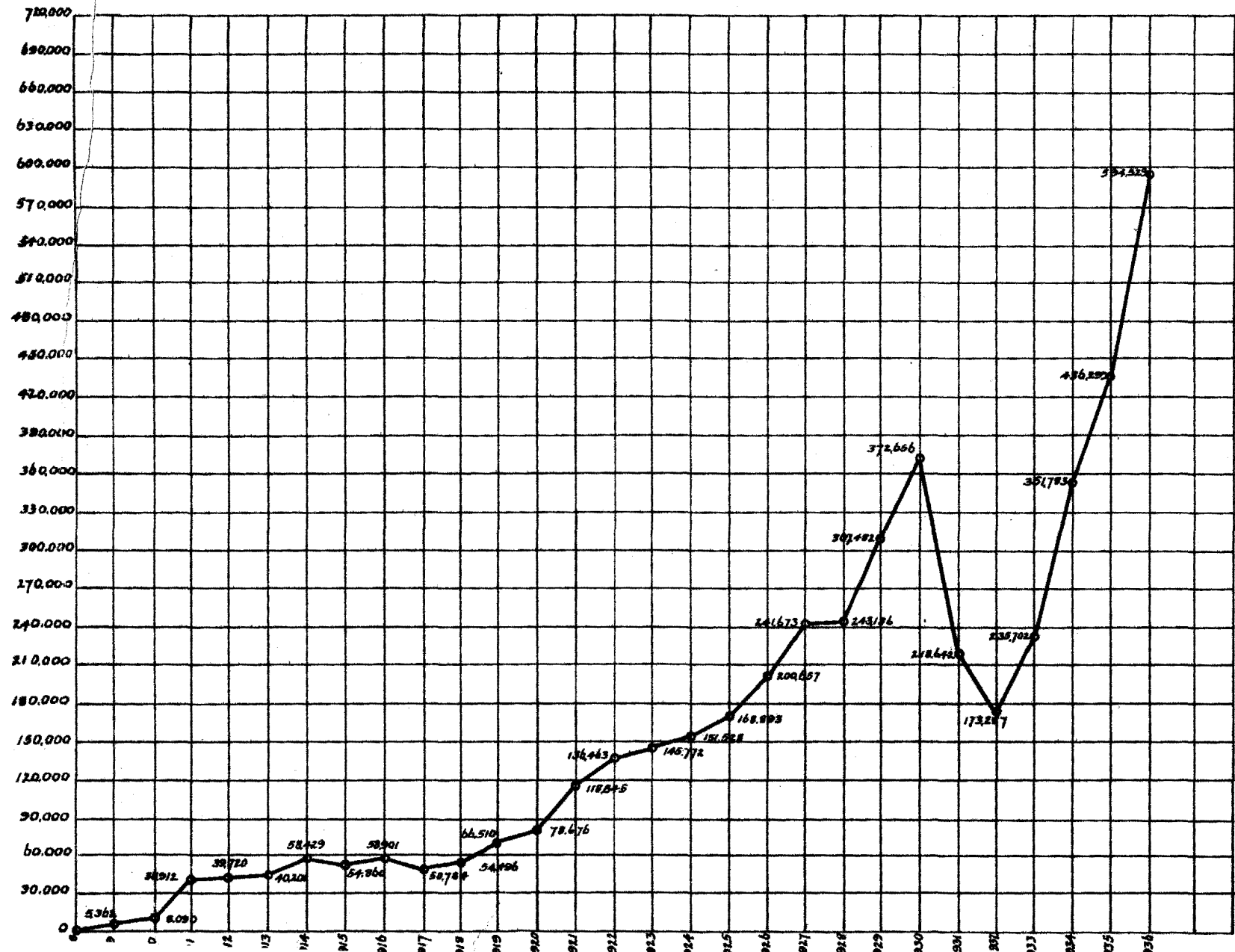
E

Curve showing comparison of daily average number of persons employed in the Oil and Asphalt Industries of the Colony from 1st April 1911 to 31st December 1936



F

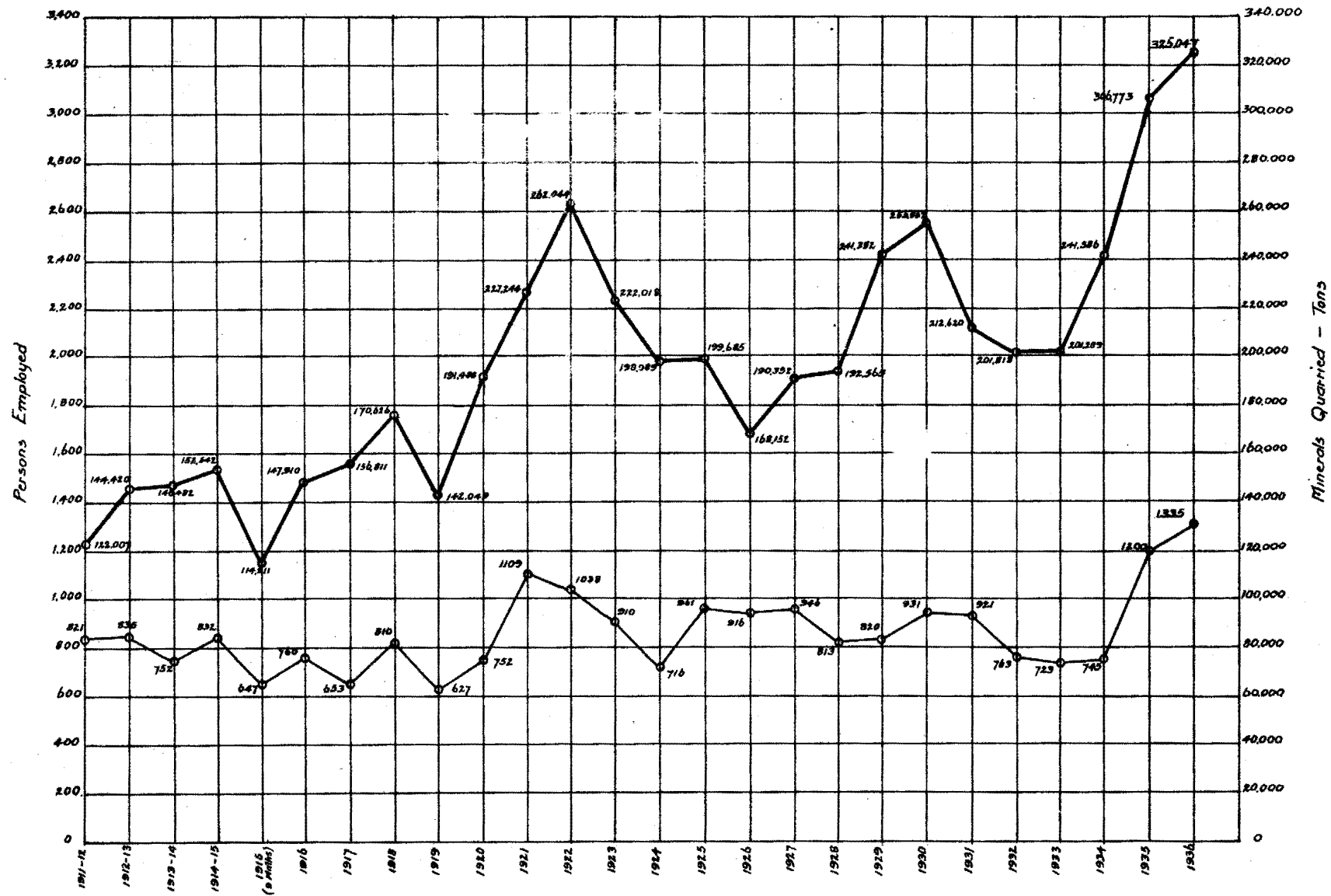
Total number of feet drilled annually
in the Colony



"G"

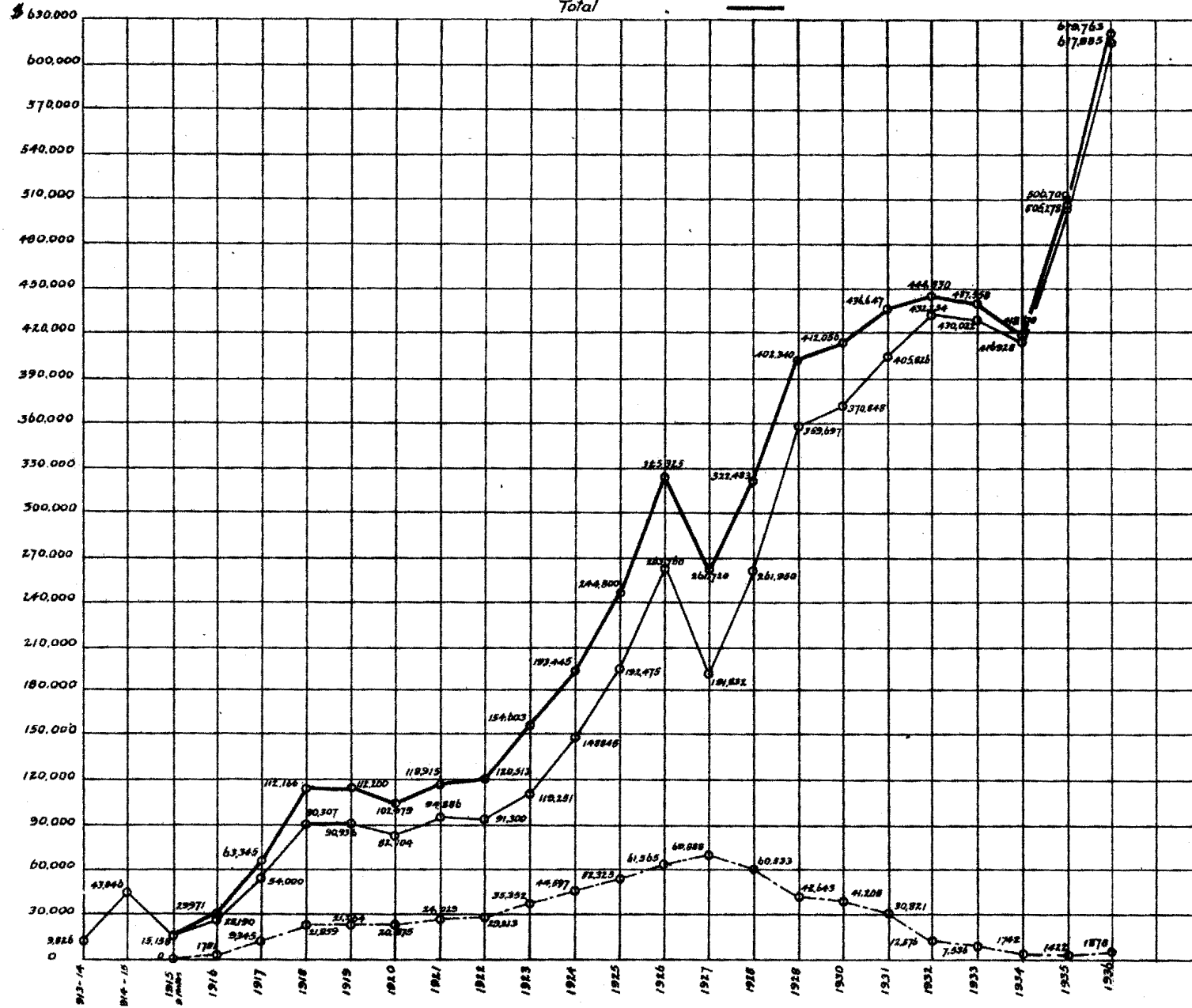
Chart showing the yearly total quantity of Minerals quarried and a comparison of the daily average number of persons employed in quarries in the Colony from 1st April 1911 to 31st December 1936

Minerals quarried — Persons employed —



ROYALTY AND WAYLEAVE

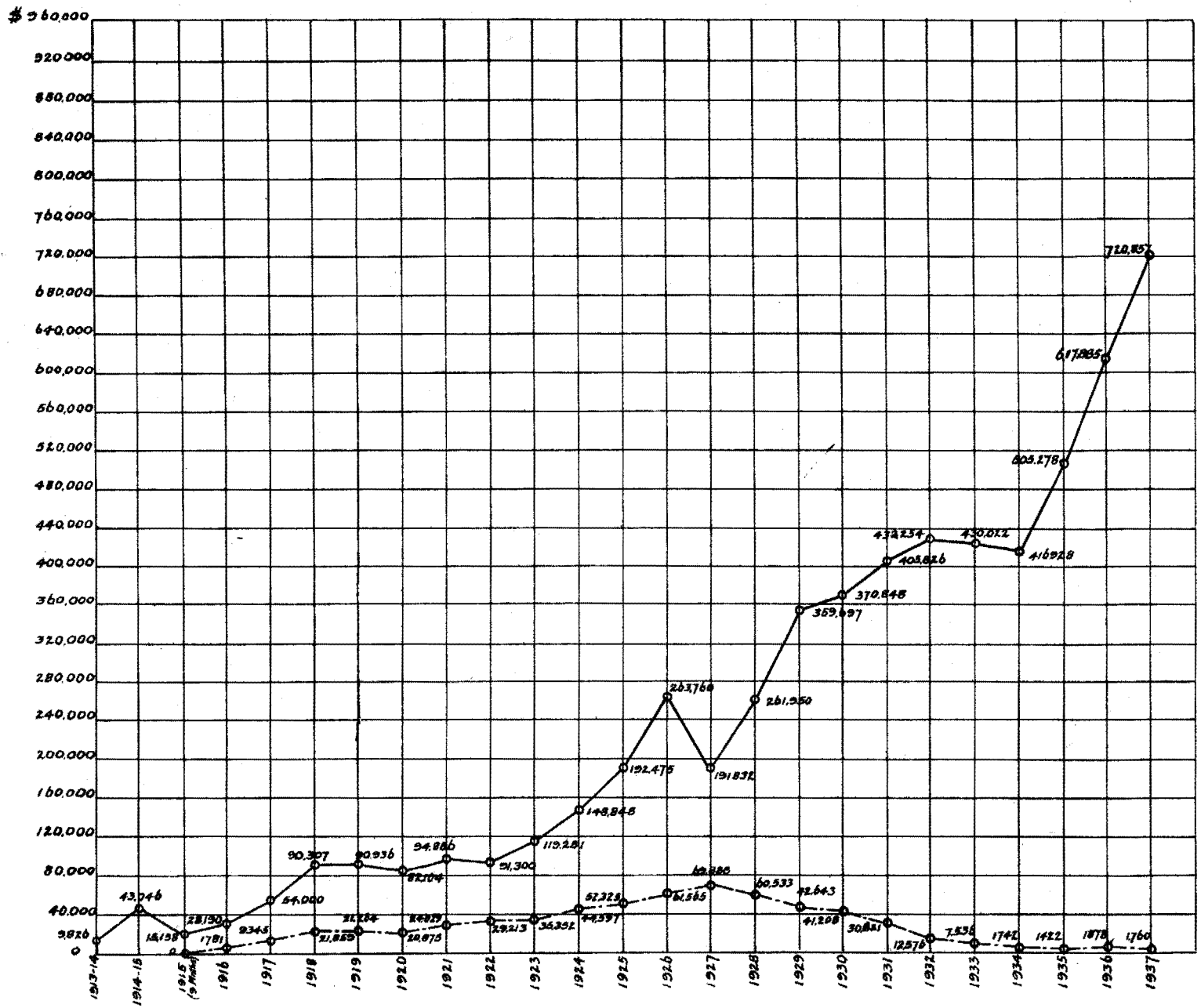
Royalty shown thus ———
Wayleave - - - - -
Total



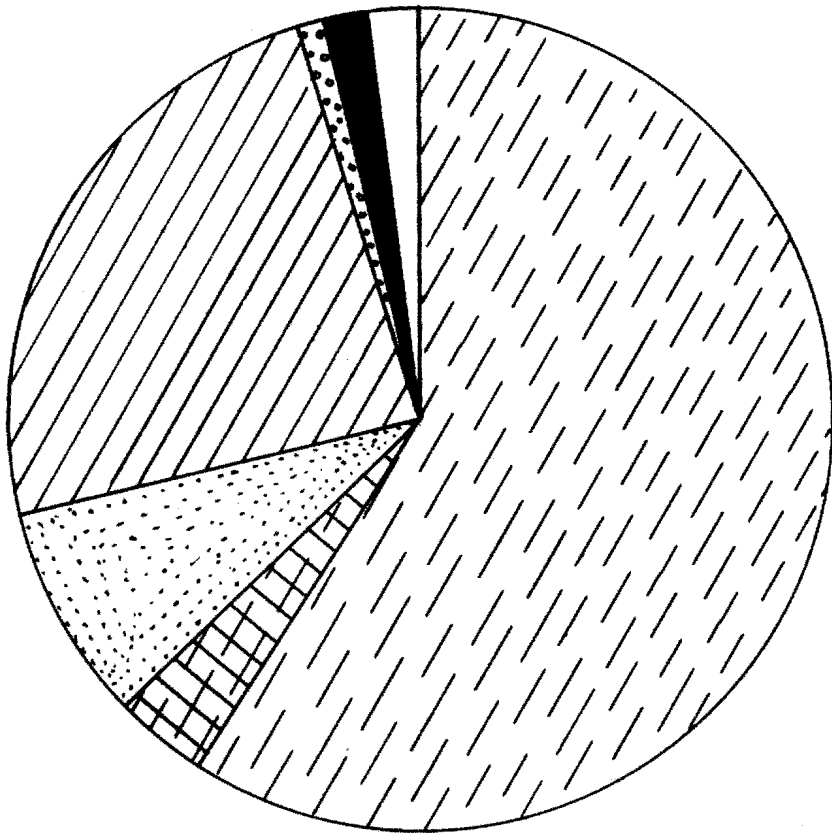
"H"








ROYALTY AND WAYLEAVE

Royalty shown thus ———
Wayleave - - - -



APPENDIX 'G'



<u>Mineral Exports</u>	62.6%	
Petroleum Products	59.1%	
Asphalt	3.5	
<u>Agricultural & other Exports</u>	37.4%	
Cocoa	8.7%	
Sugar, Molasses, Rum	23.9	
Coconuts, Copra, Coconut Oil	1.2	
Fruity & Fruit Products	1.6	
Other Exports	2.0	

TRINIDAD AND TOBAGO.

Council Paper No. 32 of 1938.

M I N E S.

Report of Inspector of Mines and Petroleum Technologist for 1937

*Laid before the Legislative Council on the
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MINES.

Report of Inspector of Mines and Petroleum Technologist for 1937.

Council Paper No. 32 of 1938.

M.P. No. 33446.

HONOURABLE COLONIAL SECRETARY,

I have the honour to submit, for the information of His Excellency the Governor, the following report on the work of the Mines Department for the year 1937.

THE PETROLEUM INDUSTRY.

2. During the year 1937 the Petroleum Industry of the Colony has continued to increase its activities and a substantial development in all branches can be recorded. Interest in acquiring lands for oil exploration has shown no signs of abatement; new records in both the amount of oil produced and the footage drilled have been made, and important extensions and improvements to the principal refineries have been carried out and/or commenced upon. The year has not been a peaceful one for the Industry owing to the labour strike which closed down all operations for the period 19th June to 5th July. In view of this set-back and its attendant troubles which necessarily slowed up operations for a considerable period after the actual strike, it is most satisfactory that the results for the year as set out in the following show so much improvement when compared with the results of the previous year.

3. Exploration survey work has continued to be very actively pursued in the Colony during the past year and in this connection it is of interest to record the extensive use made of the seismic method of geophysical surveying. During the past year this method has, to a very large extent, superseded the gravimetric methods which previously had been mainly used.

4. PRODUCTION OF CRUDE OIL.—The total production of crude oil for the year 1937 amounted to 15,502,989 barrels, which is 2,265,959 barrels or 17.12 per cent. more than the production for 1936, and is the highest yet recorded in the Colony.

The Fyzabad structure continues to maintain its supremacy as the structure from which the major portion of the Colony's production of crude oil is derived and during the year under review it contributed 53.47 per cent. of the total production as compared with 56.70 per cent. for the previous year.

Of the two new producing areas to which reference was made in the last Administration Report one of them has yielded most favourable results and can be said to be a well established producing area.

5. DRILLING.—During the year 1937, 289 new wells were commenced, compared with 171 during 1936. The total number of wells commenced in the Colony to the end of 1937 is 2,705 of which 1,676 are on lands the oil rights of which are vested in the Crown and 1,029 are on private lands.

The number of feet drilled during 1937 amounted to 911,575, which represents an increase of 317,046 feet, or 53.33 per cent. on the footage for 1936.

At the end of the year there were 26 wells over 6,000 feet deep, 12 wells over 7,000 feet deep, and 4 wells over 8,000 feet deep; the deepest being 9,039 feet.

6. The following table shows, comparatively, the number of feet drilled and the quantity of oil produced during the years 1935, 1936 and 1937:—

Land.	Number of Feet Drilled.			Production in barrels of 35 gals.			
	1935	1936	1937	1935	1936	1937	
Crown Oil Rights ...	328,510	381,358	508,197	7,544,427	8,182,018	9,743,292	- 62.55%
Private Oil Rights ...	107,789	213,171	403,378	4,126,797	5,055,012	5,759,697	- 37.15%
Total ...	436,299	594,529	911,575	11,671,224	13,237,030	15,502,989	100%

7. OILFIELD OPERATORS.—The number of oilfield operators at the close of the year was 19, compared with 16 at the end of 1936. As an indication of the increased activity which took place on the oilfields during 1937, it may be noted that the daily average number of persons employed increased from 7,796 in 1936 to 10,084 in 1937.

8. LEASES AND LICENCES.—During the year 28 applications for mining leases and exploration licences were received, and 26 mining leases and 8 exploration licences were registered. The total number of mining leases and exploration licences registered at the end of the year amounted to 83, the details of which are as follows :—

	AREA.					
	Crown.			Alienated.		
	A.	R.	P.	A.	R.	P.
28 Mining Leases	50,580	0	19	...	...	...
21 Mining Leases	...	...	...	21,522	0	34
21 Composite Mining Leases on Crown and Alienated Lands	81,236	3	10	23,413	2	07
13 Exploration Licences	240,730	0	00	...	...	...
83	Total			372,546	3	29
				44,935	3	01

9. TOTAL AREA UNDER LICENCE OR LEASE.—Including privately owned oil rights under lease, the area of which has been supplied by the various operating companies, the total area of Trinidad under Licence or Lease as at the 31st December, 1937, is 496,950 acres (41.66 per cent. of the total area of Trinidad) as follows :—

Area of Crown Lands under Exploration Licence and Mining Lease	A.	R.	P.
	372,546	3	29
Area of Alienated Lands under Mining Lease the oil rights of which are vested in the Crown	44,935	3	01
Area of privately owned oil rights under lease, according to details supplied by the Oil Companies	79,467	0	23
	496,949	3	13

10. MARINE CONCESSIONS.—At the end of the year under review the terms and conditions under which concessions will be granted were still under consideration.

11. REVENUE FROM ROYALTIES, WAYLEAVES AND FEES.—The revenue collected under these heads amounted to \$726,552.56 as compared with \$622,892.39 collected during the year 1936. For purposes of comparison, the following table shows the amounts collected under each head for the years 1935, 1936 and 1937 :—

Heads.	Amounts Collected.					
	1935		1936		1937	
	\$	c.	\$	c.	\$	c.
Royalties in respect of oil produced from Crown and Alienated Lands	505,278	46	617,884	86	720,857	06
Wayleaves in respect of oil pipelines laid along public roads	1,421	59	1,877	76	1,759	50
Fees charged for pipelines crossing the Trinidad Government Railway and public roads	2,217	60	3,129	77	3,936	00
Totals	508,917	65	622,892	39	726,552	56

12. REFINERIES.—Eleven permits for the refining of oil were issued during the year under the Oil Mining and Refining Ordinance, Cap. 143. Of these permits six were issued in respect of small field topping plants the operations of which are of relative unimportance.

The total capacity of the refineries operating in the Colony amounts to approximately 17,500,000 barrels per annum. During 1937 a total quantity of 15,111,046 barrels of crude oil was refined, compared with 13,028,161 barrels during 1936.

13. GASOLINE EXTRACTION PLANTS.—Three Gas Absorption Plants and one Gas Adsorption Plant for the recovery of gasoline from natural gas were in operation during the year.

14. LOADING FACILITIES.—Four deep-water piers equipped for loading tank steamers with petroleum and its products are in use. Facilities for bunkering vessels in the Harbour of Port-of-Spain are also available.

15. PIPELINES.—Approximately 225 miles of main oil pipelines have been laid down in the Colony. During the year 9 new permits under the Pipelines Ordinance No. 29 of 1933 were issued, the total number of permits issued now amounting to 185.

16. TANK STORAGE.—The total main tank storage capacity for petroleum in the Colony is approximately 4,514,293 barrels.

17. EXPORTS OF PETROLEUM AND ITS PRODUCTS.—The quantity of petroleum and its products exported during the year increased substantially as compared with the year 1936, the amounts and values for the two years being as follows:—

1936—12,405,222 barrels valued at \$15,910,638.

1937—14,124,056 barrels valued at \$18,896,422.

Petroleum and its products continued to form the largest part of the Colony's exports in 1937, the value being more than three times that of the products of the next most important of its industries, viz. : sugar (including molasses and rum). Of the total exports petroleum and its products (including asphalt) formed 63.72 per cent.

The value of the leading staple products of the Colony exported during 1937 is shown in the following table:—

<i>Staple Products Exported.</i>	<i>Value.</i>	<i>Percentage of total.</i>
Petroleum and its products	\$18,896,422	59.93
Sugar, Molasses and Rum	6,425,729	20.38
Cocoa	3,086,995	9.79
Asphalt	1,194,914	3.79
Coconuts, Copra and Coconut Oil	653,134	2.07
Fruits and Fruit Products	567,925	1.80
Coffee	134,758	.43
Bitters	112,977	.36
Other Exports not enumerated... ..	457,819	1.45
	<u>\$31,530,673</u>	<u>100.00</u>

18. RETURNS.—The various returns required to be submitted by the Oil Companies under the various Ordinances and Regulations in respect of their operations have been regularly received in the Department, where, after being checked, they have been filed with the records of the Department.

19. INSPECTIONS.—The operations on the various oilfields were inspected by officers of this Department as frequently as possible, and I have pleasure in recording that the Managers have readily co-operated with the Department in ensuring that the provisions of the Ordinances and Regulations were effectively carried out.

20. Included in this report as Appendix "B" will be found some interesting notes and statistics relating to the progress of the petroleum industry which have been prepared by the Assistant Petroleum Technologist.

THE ASPHALT INDUSTRY.

21. The Asphalt Industry continued to operate normally. The total production of asphalt for the year amounted to 145,904 tons. The following table shows, comparatively, the quantity of asphalt produced and exported during the years 1935, 1936 and 1937 :—

	1935	1936	1937
Production (in tons)	134,578	111,965	145,904
Export (in tons)	82,349	70,543	90,872

FACTORIES.

22. During the period under review 195 factories were in operation in Trinidad and Tobago. During the inspections carried out in these factories recommendations were made for ensuring the safety of the workmen, and such recommendations were always readily carried out by the Managers concerned.

QUARRIES.

23. The number of quarries worked during the past year was 112, as compared with 109 quarries in operation during the year 1936. Most of these quarries are very small and relatively unimportant. As a result of inspection it was found that, as a general rule, the quarries were being worked in a careful manner. The various recommendations made by officers of this Department for increasing the safety of the workmen were usually carried out without delay.

PETROLEUM ORDINANCE CAP. 145.

24. The premises where dangerous petroleum products are stored have been carefully inspected, and all possible care has been taken to ensure safety. During the year 564 licences were issued for the storage and sale of petroleum and its products, the revenue derived from such licences amounting to \$2,004.

APPENDICES.

25. Appendix "A" shows the list of oil companies operating in the Colony during the year 1937.

26. Appendix "B" gives notes and statistics relating to the Petroleum Industry.

27. Appendix "C" is a statement of the quantity and value of minerals obtained and the daily average number of persons employed in the petroleum, asphalt and quarry industries.

28. Appendix "D" gives the Rates of Wages and Hours of Labour employed on the Oilfields.

29. A statement of oil produced and exported is shown in Appendix "E".

30. Appendix "F" shows the amount of oil refined year by year.

31. Appendix "G" consists of a series of charts depicting in graphic form the progress made in various industries during the past few years.

32. Appendix "H" shows the relation of mineral exports to agricultural exports.

STAFF.

33. Mr. A. C. Francis-Lau, 2nd Class Clerk, was granted 60 days vacation leave from the 28th July, 1937 and Mr. R. V. O'Neill, 3rd Class Clerk, was also granted 90 days vacation leave from the 18th October, 1937.

Mr. C. Niles, 2nd Class Clerk of the Petroleum Office, San Fernando, was seconded for duty as Shorthand Writer to the Commission of Inquiry into the labour disturbances as from the 1st September to the 4th October, 1937, on which later date he became ill and was granted four months' special sick leave from the 4th October, 1937.

I have great pleasure in recording the very able and willing assistance I have received from all members of the Staff.

R. S. MACKILLIGIN,
*Inspector of Mines and
Petroleum Technologist.*

2nd April, 1938.

APPENDIX A.

No.	Company.	Nature of tenure of lands on which operations took place.		Disposal of Oil.		Remarks.
1	Acme Oil Co., Ltd.	Private Lands	Guapo	...	...	Developing land formerly operated by F. W. Mitchell. A small amount of footage drilled. Company is now in voluntary liquidation.
2	Antilles Petroleum Co. (Trinidad), Ltd.	do.	Brighton, Vessigny, Pt. Ligoure	Crude exported	...	Both footage drilled and production obtained were considerably in excess of those for 1936.
3	Apex (Trinidad) Oilfields, Ltd.	Crown Oil Rights under lease Prospecting Licence and Private Lands	Fyzabad and Siparia	Crude oil sold to Trinidad Leaseholds, Ltd. Casing Head Gasolene sold to United British Oilfields of Trinidad, Ltd.	...	The footage drilled showed a considerable increase, and the production a slight increase over those for 1936.
4	Coldan Co., Ltd.	Private Lands	Fyzabad	Refined	...	A small amount of footage was drilled. Production decreased.
5	Colonial Oil Co., Ltd.	do.	do.	...	...	One well started.
6	Kern Trinidad Oilfields, Ltd.	Crown Lands under Lease Private Lands	Guapo and Rousillac	Some exported	...	Footage was increased and production maintained at last year's level.
7	New Dome Oilfields, Ltd.	Private Lands	Fyzabad	...	...	A small amount of footage was drilled and production maintained.
8	Petroleum Options (1925) Ltd.	do.	San Francique Moruga	Sold to Trinidad Leaseholds, Ltd.	...	A little exploratory drilling was done. Production decreased.
9	Premier (Trinidad) Oilfields, Ltd.	Crown Oil Rights under Lease	Palo Seco	...	...	Developing property formerly operated by C. C. Stollmeyer. One well was started during the year. Production decreased considerably.
10	Scottish (Trinidad) Oilfields, Ltd.	Private Lands	Rio Claro	...	...	One well drilled. No production.
11	Siparia Trinidad Oilfields, Ltd.	Crown Oil Rights under Lease	Palo Seco Morne Diablo	Sold to Trinidad Leaseholds, Ltd.	...	Both footage drilled and production obtained showed an increase over figures for 1936.

Appendix A.—Continued.

No.	Company.	Nature of tenure of lands on which operations took place.	Disposal of Oil.	Remarks.	
12	Trinidad Central Oilfields, Ltd. ...	Crown Oil Rights under Lease	Barrackpore, Guapo Lizard Springs, Tabaquite	Production from Barrackpore and Guapo sold to Trinidad Leaseholds, Ltd. Production from Lizard Springs and Tabaquite refined and sold locally	Both production and footage at Barrackpore considerably increased. Production from Tabaquite and Lizard Springs declined.
13	Trinidad Consolidated Oilfields, Ltd. ...	Crown Oil Rights under Lease and Private Lands	Fyzabad	Sold to Trinidad Leaseholds, Ltd. ...	An active drilling programme resulted in considerable increase in production.
14	Trinidad Investments, Ltd. ...	do.	Siparia	...	Exploratory drilling only. No production obtained.
15	Trinidad Lake Asphalt Operating Co., Ltd.	Crown Lands under Lease	Brighton	Pitch refined and exported	Producing and refining pitch only.
16	Trinidad Leaseholds, Ltd. ...	Crown Lands and Crown Oil Rights under Lease Private Lands	Barrackpore Fyzabad Guayaguayare	Pumped to Company's Refinery at Pointe-a-Pierre and there refined Most of the refined products are exported in bulk	The most important marketing and refining Company in the island; also the biggest producer. Both the footage drilled and production obtained have been increased this year.
17	Trinidad Oil Lands, Ltd. ...	Private Lands	Pointe Ligoure	Sold to United British Oilfields of Trinidad, Ltd.	A small amount of footage was drilled and a little production obtained.
18	Trinidad Oil Fields Operating Co., Ltd. ...	Crown Oil Rights under Lease and Private Lands	Palo Seco San Francique, Sobo	Refined and exported	A small amount of footage drilled. Production decreased.
19	Trinidad Petroleum Development Co., Ltd.	do.	Siparia, Palo Seco	Sold to United British Oilfields of Trinidad, Ltd.	A very considerable increase in production was obtained from the Siparia Field. Palo Seco production declined slightly.
20	Turner, Charles ...	Private Lands	Fyzabad	Sold to Trinidad Oil Fields Operating Co., Ltd.	One well drilled.
21	United British Oilfields of Trinidad, Ltd....	Crown Oil Rights under Lease Private Lands	Cedros, Morne L'Enfer Forest Reserve Point Fortin, Penal	Pumped to Company's Refinery at Point Fortin and there refined	Both footage drilled and production obtained showed an increase on those for 1936.

APPENDIX B.

HON. INSPECTOR OF MINES AND PETROLEUM TECHNOLOGIST.

The production of crude oil reached the record figure of 15,502,989 barrels, which is an increase of 17.12 per cent. over that for 1936. The footage drilled was 911,575 feet. This is also a record and 53.32 per cent. greater than that in 1936.

A comparison of footage and production figures for 1936 and 1937 is given below:—

	Footage.		Production.	
	1936.	1937.	1936.	1937.
Crown	235,804	345,393	5,982,993	7,128,085
Alienated	145,554	162,804	2,199,025	2,615,207
Private	213,171	403,378	5,055,012	5,759,697
	<u>594,529</u>	<u>911,575</u>	<u>13,237,030</u>	<u>15,502,989</u>

DRILLING.—During the year 289 wells were started bringing the total number of wells started in the Colony to 2,705 at the end of the year. The following table gives an analysis of the drilling operations carried out during the year.

	Crown.	Alienated.	Private.	Totals.
Unfinished at end of 1936	22	6	21	49
Started in 1937	92	46	151	289
	<u>114</u>	<u>52</u>	<u>172</u>	<u>338</u>
Completed as Oil Wells	87	38	124	249
Completed Water Wells	5	5	—	10
Completely abandoned	1	3	11	15
Unfinished at end of 1937	21	6	37	64
Old Wells abandoned in 1937... ..	—	1	1	2
Old Wells Re-completed in 1937	7	12	11	30

At the end of the year the deepest well in the Colony was 9,039 feet deep.

There were 199 wells over 4,000 feet deep, 59 over 5,000 feet, 26 over 6,000 feet, 12 over 7,000 feet, 3 over 8,000 feet and 1 over 9,000 feet.

Although a number of deep wells were drilled during the year, the average depth of completions was just over 300 feet per well less than last year. This was due to an active shallow drilling programme on three fields.

In 1936 the Monthly Returns showed that the average number of rigs running was 32, the total footage made during that year being 594,529 feet or an average of 18,579 feet per rig. During the year under review the footage drilled was 911,575 feet, while the average of the Monthly Returns of rigs running was 36, giving an average footage of 25,321 feet per rig. This increase is also largely due to shallow drilling.

A number of new rigs were imported to the Colony during the year, most of which were of a heavier type than was in use last year.

The use of Rotary Tables with directly coupled engines noticeably increased.

Deviation tests were taken at frequent intervals while drilling by the more important Companies who appreciate that the slight delay in drilling occasioned by these tests is more than offset by the insurance they provide against casing and production troubles due to crooked holes, and by the more accurate interpretation which can be put on the geological records with their help.

Of the 911,575 feet drilled during the year, over 850,000 feet were surveyed by electrical methods. While electrical logging of bore holes has resulted during the last few years in a considerable decrease in the amount of footage cored, frequent mechanical coring is still done by the larger Companies in order to obtain palaeontological data.

Multiple stage cement jobs became more frequent during the year.

Samples of water from 26 wells were analysed by this office during the year for those operators who do not undertake this type of work themselves.

Variations in composition of salt waters have been found in several fields to be related to faulting.

PRODUCTION.—The number of wells producing per month ranged from 1,108 to 1,235, the average being 1,170 per month.

The following Table gives an analysis of the average number of producers per month and a comparison with the three previous years:—

	1934	1935	1936	1937
Wells Flowing	222	235	273	357
Wells Pumping	465	466	469	491
Wells Bailing or Swabbing	140	146	140	139
Wells on Air or Gas Lift	70	105	107	100
Wells on Plunger Lift	—	8	38	68
Wells on Displacement Pumps	9	14	14	15
	<u>906</u>	<u>974</u>	<u>1,041</u>	<u>1,170</u>

The Fyzabad Structure contributed 53.47 per cent. of the total production of the Colony.

During the year under review the gas actuated Plunger Lift came into more general use, the number of units increasing from 38 in December, 1936, to 85 in December, 1937. Nearly 75% of these were being operated by one company. It is surprising that this very efficient method of lifting oil has not been more widely applied.

One oil storage tank was struck by lightning during the year, the resulting fire being rapidly extinguished. Five other fires occurred during the year, all of which were due to sabotage. One resulted in the destruction of 100-barrel oil tank, and another in the collapse of a wooden derrick. The damage done by the other three was negligible.

Band Wheel Pumping Powers continued to replace older types of Central Pumping Power. One geared pumping power was put into operation during the year, and a second was being installed.

It is satisfactory to note that several Companies took considerable trouble to prevent pollution of streams by oil. It is hoped that other operators will follow their example, since there are several sections of coast line which are still being fouled by oil.

It is not generally appreciated how much oil can be saved if the well location drains to a pit where oil can be picked up.

In spite of more careful control of gas oil ratios, the gas produced was considerably in excess of the amount which could be usefully employed as fuel and for lifting purposes on the fields.

Three Companies continue to return surplus gas to formation. Temporary local shortage of gas on three fields was met by the purchase of gas from neighbours having a surplus.

The following Tables are attached:—

No. 1 showing the monthly drilling and production figures for 1937.

No. 2 showing the number of wells started and footage drilled since the commencement of the industry in 1867.

No. 3 showing the annual production since returns were first sent to the Government in 1908.

No. 4 showing the number of wells started annually and the status of these wells at the end of the year.

W. N. FOSTER,
Assistant Petroleum Technologist.

March, 1938.

**TABLE I.
DRILLING AND PRODUCTION RETURN FOR 1937.**

1937.	Wells started.			Wells completed as Producers.			Completed water wells.			Wells recompleted as Producers.			Wells abandoned.			Total wells started in Colony.	Footage drilled during month.	Production (barrels).	Flowing.			Pumping.			Bailing or swabbing.			Air or Gas Lift.			Plunger Lift.			Displacement pumping.	Total number of wells producing.			Grand Total.	Percentage wells producing to total wells drilled.	
	C	A	P	C	A	P	C	A	P	C	A	P	C	A	P				C	A	P	C	A	P	C	A	P	C	A	P	C	A	P		C	A	P			
Jan.	8	1	16	6	3	9				2	2	2				2,441	75,996	1,263,456	165	39	109	197	70	212	96			39	37	51	24	37	17	7	8	495	204	409	1,108	45.39
Feb.	5	3	11	7	2	11				1	2	2	1			2,460	64,958	1,157,668	171	41	112	201	72	216	110			39	19	50	24	36	19	7	8	501	206	418	1,126	45.73
March	8	6	10	8	4	9				2	3	1		2		2,484	77,417	1,287,097	172	39	111	206	74	220	92			40	35	53	20	37	21	7	9	505	210	421	1,136	45.73
April	8	3	12	9	3	14	1				1	3			1	2,507	72,619	1,301,250	180	44	114	205	75	227	98			37	29	48	21	23	8	7	8	514	212	432	1,158	46.19
May	8	4	16	4	2	12	1								1	2,535	85,426	1,351,198	177	43	123	204	75	220	103	1		37	29	51	21	23	9	7	8	515	216	434	1,165	45.96
June	4	2	10	4	2	9										2,551	52,905	928,752	179	41	123	198	74	222	88			29	29	51	21	34	1	7	8	497	214	427	1,138	44.61
July	9	2	14	10	2	14				1	1			1	2	2,576	66,273	1,377,549	184	43	130	200	75	226	106	1		41	29	45	23	34	2	7	8	522	213	451	1,186	46.04
Aug.	6	7	16	5	2	8				1	3	2			2	2,605	93,347	1,433,474	186	46	140	198	73	214	94			39	28	44	19	64	1	7	8	512	211	442	1,165	44.72
Sept.	11	5	12	10	9	16	1	1								2,633	80,465	1,358,600	190	56	142	194	69	211	94			42	31	46	21	64	2	7	8	515	220	444	1,179	44.78
Oct.	11	3	16	7	3	7	1	1			1			1	2	2,663	91,794	1,393,317	192	50	144	195	72	223	102			43	31	44	22	65	3	6	8	526	225	464	1,215	45.63
Nov.	7	5	11	7	1	8	1								3	2,686	86,049	1,300,720	189	51	155	197	71	223	115			43	30	47	20	75	0	6	8	538	225	472	1,235	46.00
Dec.	7	5	7	10	5	7	2	1							1	2,705	64,326	1,349,908	198	54	147	185	68	234	105			43	30	42	23	75	5	5	8	525	224	478	1,227	45.36
Totals	92	46	151	87	38	124	5	5		7	12	11	1	4	12	2,705	911,575	15,502,989	182	46	129	198	72	221	100			Average s	per	month				7	8	514	215	441	1,170	
Grand Totals	289			249			10			30			17			2,705	911,575	15,502,989	357			491			139			100	68	15	1,170									

C=Crown. A—Alienated. P=Private.

W. N. FOSTER,
Asst. Petroleum Technologist.

TABLE 2.
COLONY OF TRINIDAD.
Number of Wells started and Footage Drilled Annually.

YEAR.	WELLS STARTED.								FOOTAGE DRILLED.						YEARLY TOTALS.	CUMULATIVE.
	CROWN.		ALIENATED.		PRIVATE.		TOTALS.		CROWN.		ALIENATED.		PRIVATE.			
	Annual.	Cum.	Annual.	Cum.	Annual.	Cum.	Annual.	Cum.	Annual.	Cum.	Annual.	Cum.	Annual.	Cum.		
1867	—	—	—	—	1	1	1	1	—	—	—	—	964	964	964	964
1900	—	—	—	—	1	2	1	2	—	—	—	—	600	1,564	600	1,564
1902	1	1	—	—	2	4	3	5	600	600	—	—	1,315	2,879	1,915	3,479
1903	1	2	—	—	—	4	1	6	1,172	1,772	—	—	1,060	3,939	2,232	5,711
1904	1	3	—	—	—	4	1	7	860	2,632	—	—	—	3,939	860	6,571
1905	—	3	—	—	—	4	—	7	—	2,632	—	—	—	3,939	—	6,571
1906	1	4	—	—	2	6	3	10	1,104	3,736	—	—	1,499	5,438	2,603	9,174
1907	1	5	—	—	2	8	3	13	798	4,534	—	—	1,563	7,001	2,361	11,535
1908	—	5	—	—	4	12	4	17	—	4,534	—	—	2,352	9,353	2,352	13,887
1909	—	5	—	—	6	18	6	23	—	4,534	—	—	5,362	14,715	5,362	19,249
1910	5	10	—	—	7	25	12	35	3,771	8,305	—	—	4,319	19,034	8,090	27,339
1911	8	18	—	—	38	63	46	81	4,902	13,207	—	—	34,010	53,044	38,912	66,251
1912	10	28	—	—	35	96	45	126	6,839	20,046	—	—	32,881	85,925	39,720	105,971
1913	25	53	—	—	18	114	43	169	13,813	33,859	—	—	26,388	112,313	40,201	146,172
1914	50	103	—	—	16	132	66	235	35,146	69,005	—	—	23,283	135,596	58,429	204,601
1915	31	134	—	—	19	151	50	285	29,208	98,213	—	—	25,652	161,248	54,860	259,461
1916	28	162	—	—	20	171	48	333	30,866	129,079	—	—	28,035	189,283	58,901	318,362
1917	38	200	—	—	6	177	44	377	41,227	170,306	—	—	9,557	198,840	50,784	369,146
1918	38	238	—	—	4	181	42	419	47,700	218,006	—	—	6,796	205,636	54,496	423,642
1919	40	278	—	—	13	194	52	471	49,741	267,747	—	—	16,769	222,405	66,510	490,152
1920	43	321	1	1	23	217	68	539	53,002	320,749	1,665	1,665	24,009	246,414	78,676	568,828
1921	49	370	4	5	32	249	85	624	71,318	392,067	2,896	4,561	44,631	291,045	118,845	687,673
1922	68	438	4	9	20	269	91	715	88,299	480,366	8,701	13,262	39,463	330,508	136,463	824,136
1923	70	508	5	14	33	302	108	823	79,907	560,273	7,060	20,322	58,805	389,313	145,772	969,908
1924	67	575	8	22	34	336	110	933	90,141	650,414	6,190	26,512	55,197	444,510	151,528	1,121,436
1925	46	621	16	38	37	373	99	1,032	86,904	737,318	18,446	44,958	63,543	508,053	168,893	1,290,329
1926	69	690	13	51	46	419	128	1,160	109,234	846,552	18,732	63,690	72,691	580,744	200,657	1,490,986
1927	73	763	13	64	73	492	159	1,319	101,920	948,472	17,288	80,978	122,465	703,209	241,673	1,732,659
1928	43	806	33	97	64	556	139	1,458	71,481	1,019,953	58,842	139,820	112,863	816,072	243,186	1,975,845
1929	52	858	58	155	48	604	159	1,617	92,590	1,112,543	118,583	258,403	96,309	912,381	307,482	2,283,327
1930	76	934	31	186	56	660	163	1,780	170,389	1,282,932	85,561	343,964	116,706	1,029,087	372,656	2,655,983
1931	9	943	25	211	26	686	60	1,840	42,972	1,325,904	95,410	439,374	80,260	1,109,347	218,642	2,874,625
1932	21	964	20	231	20	706	61	1,901	44,568	1,370,472	67,162	506,536	61,557	1,170,904	173,287	3,047,912
1933	36	1,000	22	253	23	729	81	1,982	85,946	1,456,418	87,550	594,086	62,206	1,323,110	235,702	3,382,614
1934	56	1,056	30	283	38	767	124	2,106	167,952	1,624,370	88,503	682,589	95,328	1,328,438	351,783	3,635,397
1935	55	1,111	46	329	38	805	139	2,245	185,788	1,810,158	142,722	825,311	107,789	1,436,227	436,299	4,071,696
1936	59	1,170	39	368	73	878	171	2,416	235,804	2,045,962	145,554	970,965	213,171	1,649,398	594,529	4,666,225
1937	92	1,262	46	414	151	1,029	289	2,705	345,393	2,391,355	162,804	1,133,769	403,378	2,052,776	911,575	5,577,800
		1,262		414		1,029		2,705		2,391,355		1,133,769		2,052,776		5,577,800

Cum = Accumulative.

W. N. FOSTER,
Asst. Petroleum Technologist.

TABLE 3.
Yearly Trinidad Production.

Year.	Crown.	Accu- mulative Total.	Alienated.	Accu- mulative Total.	Private.	Accu- mulative Total.	Yearly Totals.	Grand Accumu- lative Total.
1908	—	—	—	—	37	37	37	37
1909	—	—	—	—	47,295	47,332	47,295	47,332
1910	55	55	—	—	105,023	152,355	105,078	152,410
1911	3,994	4,049	—	—	217,298	369,653	221,292	373,702
1912	9,104	13,153	—	—	476,801	846,454	485,905	859,607
1913	52,153	65,306	—	—	533,029	1,379,483	585,182	1,444,789
1914	512,299	577,605	—	—	480,917	1,860,400	993,216	2,438,005
1915	392,389	969,994	—	—	512,330	2,372,730	904,719	3,342,724
1916	478,815	1,448,809	—	—	449,060	2,821,790	927,875	4,270,599
1917	1,065,945	2,514,754	—	—	536,357	3,358,147	1,602,302	5,872,901
1918	1,588,805	4,103,559	—	—	493,115	3,851,262	2,081,920	7,954,821
1919	1,539,973	5,643,532	—	—	301,063	4,152,325	1,841,036	9,795,857
1920	1,758,039	7,401,571	—	—	325,071	4,477,396	2,083,110	11,878,967
1921	1,751,943	9,153,514	300	300	601,916	5,079,312	2,354,159	14,233,126
1922	1,534,796	10,688,310	147	447	909,727	5,989,039	2,444,670	16,677,796
1923	1,847,118	12,535,428	63,334	63,781	1,140,335	7,129,374	3,050,787	19,728,583
1924	2,410,737	14,946,165	76,467	140,248	1,570,856	8,700,230	4,058,060	23,786,643
1925	2,647,095	17,593,260	200,781	341,029	1,538,634	10,238,864	4,386,510	28,173,153
1926	2,630,100	20,223,360	310,953	651,982	2,030,426	12,269,290	4,971,479	33,144,632
1927	2,039,363	22,262,723	297,761	949,743	3,043,676	15,312,966	5,380,800	38,525,432
1928	2,652,981	24,915,704	1,470,333	2,420,076	3,561,273	18,874,239	7,684,587	46,210,019
1929	2,987,795	27,903,499	1,627,439	4,047,515	4,100,554	22,974,793	8,715,788	54,925,807
1930	3,429,030	31,332,529	1,831,338	5,878,853	4,158,589	27,133,382	9,418,957	64,344,764
1931	2,795,572	34,128,101	2,530,175	8,409,028	4,417,751	31,551,133	9,743,498	74,088,262
1932	3,200,083	37,328,184	2,410,813	10,819,841	4,515,225	36,066,358	10,126,121	84,214,383
1933	3,684,148	41,012,332	1,606,595	12,426,436	4,270,610	40,336,968	9,561,353	93,775,736
1934	4,586,366	45,598,698	1,805,178	14,231,614	4,502,819	44,839,787	10,894,363	104,670,099
1935	5,288,943	50,887,641	2,255,484	16,487,098	4,126,797	48,966,584	11,671,224	116,341,323
1936	5,982,993	56,870,634	2,199,025	18,686,123	5,055,012	54,021,596	13,237,030	129,578,353
1937	7,128,085	63,998,719	2,615,207	21,301,330	5,759,697	59,781,293	15,502,989	145,081,342

W. N. FOSTER,
Asst. Petroleum Technologist.

TABLE 4.

Table showing number of Wells started in each year and status of Wells at 31st December, 1937.

YEAR.	WELLS STARTED.			PRODUCING.			IDLE.			ABANDONED.			UNFINISHED.			TOTALS.			
	C	A	P	C	A	P	C	A	P	C	A	P	C	A	P	Producing.	Idle.	Aban- doned.	Un- finished.
1867	—	—	1									—	—	1			—	—	1
1900	—	—	1									—	—	1			—	—	1
1902	1	—	2									1	—	2			—	—	3
1903	1	—	—									1	—	—			—	—	1
1904	1	—	—									1	—	—			—	—	1
1905	—	—	—									—	—	—			—	—	—
1906	1	—	2									1	—	2			—	—	3
1907	1	—	2				—	—	2			1	—	—		—	2	1	
1908	—	—	4	—	—	1	—	—	—			—	—	3		1	—	3	
1909	—	—	6	—	—	3	—	—	1			—	—	2		3	1	2	
1910	5	—	7	—	—	1	3	—	1			2	—	5		1	4	7	
1911	8	—	38	—	—	4	4	—	8			4	—	26		4	12	30	
1912	10	—	35	1	—	8	4	—	3			5	—	24		9	7	29	
1913	25	—	18	10	—	6	4	—	2			11	—	10		16	6	21	
1914	50	—	16	12	—	7	15	—	2			23	—	7		19	17	30	
1915	31	—	19	8	—	7	13	—	11			10	—	1		15	24	11	
1916	28	—	20	7	—	11	11	—	5			10	—	4		18	16	14	
1917	38	—	6	16	—	1	7	—	2			15	—	3		17	9	18	
1918	38	—	4	16	—	—	11	—	—			11	—	4		16	11	15	
1919	40	—	13	17	—	1	13	—	3			10	—	9		18	16	19	
1920	43	1	23	15	—	5	13	—	3			15	1	15		20	16	31	
1921	49	4	32	17	—	9	17	—	7			15	4	16		26	24	35	
1922	68	4	20	24	1	5	24	—	4			20	3	11		30	28	34	
1923	70	5	33	23	1	9	20	—	7			26	4	17	1	—	—	—	
1924	67	8	34	23	—	7	26	1	15			18	7	12	—	—	—	—	
1925	46	16	37	21	3	11	13	2	12			12	11	14	—	—	—	—	
1926	69	13	46	17	2	22	31	3	13			21	8	11	—	—	—	—	
1927	73	13	73	17	2	33	30	8	17			26	3	23	—	—	—	—	
1928	43	33	64	17	23	29	15	7	24			11	3	11	—	—	—	—	
1929	52	58	48	19	31	27	18	21	11			15	6	10	—	—	—	—	
1930	76	31	56	31	17	23	32	9	18			12	5	14	1	—	1	—	
1931	9	25	26	4	13	19	3	10	3			2	2	4	—	—	—	—	
1932	21	20	20	11	12	13	6	8	4			4	—	3	—	—	—	—	
1933	36	22	23	14	9	16	12	12	4			7	1	3	3	—	—	—	
1934	56	30	38	38	22	29	9	6	6			6	2	3	3	—	—	—	
1935	55	46	38	37	31	30	12	13	4			3	2	2	3	—	2	—	
1936	59	39	73	45	31	51	10	4	9			3	4	4	1	—	9	—	
1937	92	46	151	66	34	92	17	4	24			—	2	10	9	6	25	—	
Totals	1,262	414	1,029	526	232	480	393	108	225	322	68	287	21	6	37	1,238	726	677	64
	=			=			=			=			=			=			
	2,705			1,238			726			677			64			2,705			

C= Crown. A= Alienated. P= Private.

March, 1938.

W. N. FOSTER,
Asst. Petroleum Technologist.

APPENDIX C.

Statement of the Quantity and Value of Minerals obtained and the Daily Average Number of Persons employed in the Petroleum, Asphalt and Quarry Industries during the years 1936 and 1937.

Industry.	1936					1937				
	Quantity.	Approximate Value.*	Daily average number of persons employed.			Quantity.	Approximate Value.*	Daily average number of persons employed.		
			Males.	Females.	Total.			Males.	Females.	Total.
Petroleum	13,237,030 brls.	\$10,254,853 96	7,680	116	7,796	15,502,989 brls.	\$12,404,477 66	9,957	127	10,084
Asphalt (a)	91,333 tons	273,999 00	640	2	642	118,474 tons	355,422 00	650	2	652
Private Quarries (Limestone, Gravel, &c.)	257,333 tons	120,625 95	761	226	987	336,462 tons	139,204 94	624	225	849
Government Quarries (Limestone, Gravel, &c.)	67,714 tons	39,158 47	275	73	348	76,632 tons	47,098 97	198	77	275

15

* The values given are those returned by owners and managers and represent value at place of production.

(a) In addition to the figure shown against this item, the following quantities were extracted from the Pitch Lake by the Public Works Department for use on the roads of the Colony, viz. :—

1936 20,632 tons. 1937 27,430 tons.

APPENDIX D.

Rates of Wages and Hours of Labour employed on the Oilfields.

Class of Worker.	HOURLY WAGE.		DAILY WAGE.		Normal Weekly hours of Labour.	Explanatory Notes.
	Min. Cents	Max. per hour.	Min.	Max.		
Rigmen employed in Drilling ...	15	24	56 hours	<p><i>General Remarks.</i></p> <p>1. <i>Housing.</i> Accommodation is sometimes provided for those employees whose presence is required on the Fields.</p> <p>2. <i>Medical attention.</i></p> <p>(a) In the case of accident arising from employment medical attention is usually free. In other cases the practice varies from Company to Company.</p>
Rigmen employed in Production ...	12	26	...	...	48 hours
Production men ...	9	17	...	...	56 hours
Rig Builders ...	12	26				
Blacksmiths ...	9	26				
Boilersmiths ...	9	26				
Cabinet Makers ...	9	26				
Carpenters ...	9	26				
Chauffeurs ...	14	26	\$1.25	\$2.00		
Electricians ...	9	26				
Firemen ...	9	20				
Fitters ...	9	26				
Masons ...	9	22				
Motor Mechanics ...	9	26			45 hours	
Moulders ...	9	22				
Painters ...	9	17				
Plumbers ...	9	26				
Riveters ...	9	26				
Tinsmiths ...	9	26				
Turners ...	9	26				
Welders ...	9	26				
Semi-skilled ...	9	22				
Unskilled ...	9	14				

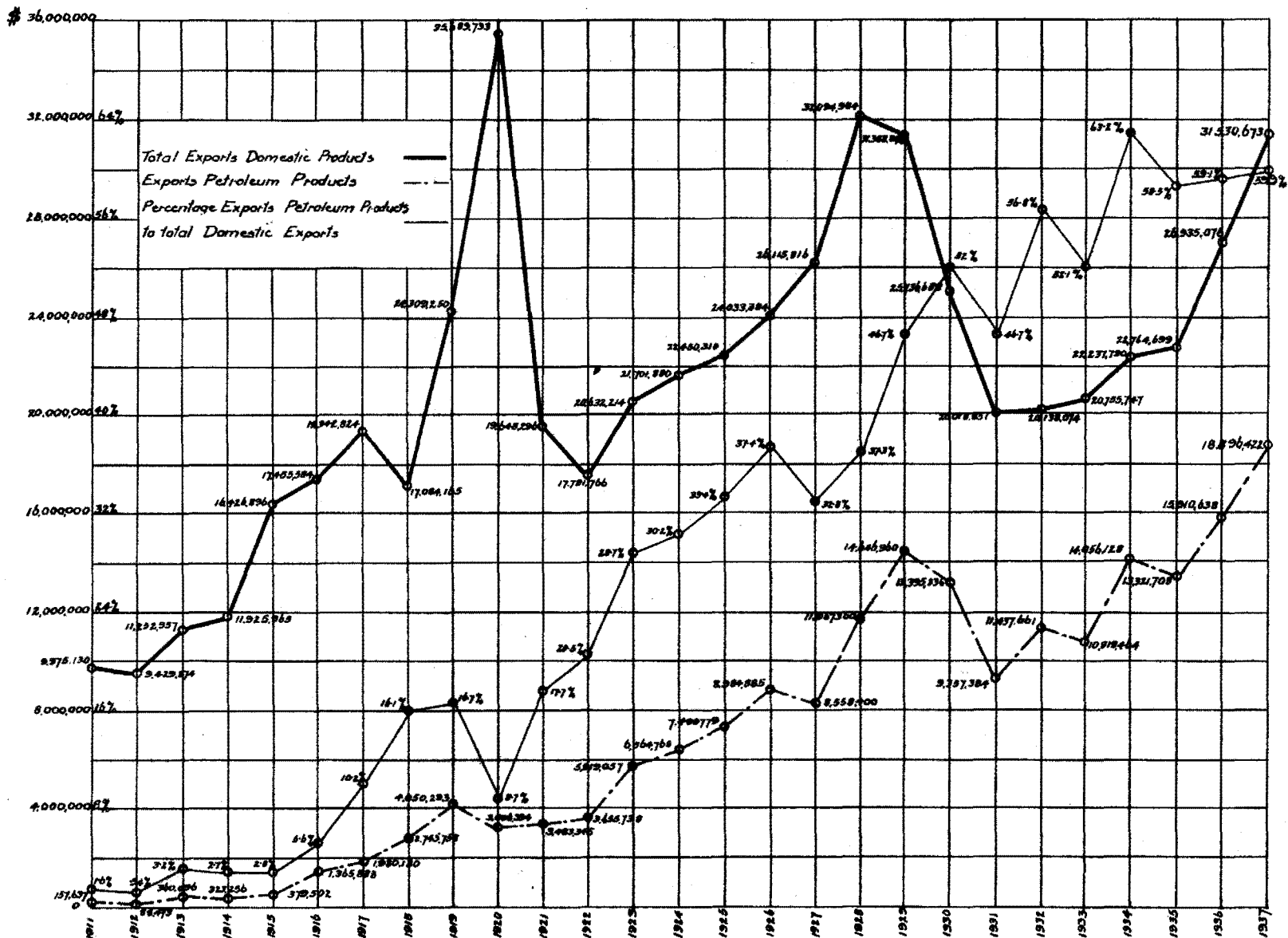
APPENDIX E.

Statement of Oil produced and exported year by year since the inception of the Petroleum Industry in the Colony.

Year.	Production in barrels.	Quantity of Crude oil and refined oil exported in barrels.
1908	37	...
1909	47,295	46
1910	105,078	...
1911	221,292	219,582
1912	485,905	122,734
1913	585,182	387,719
1914	993,216	348,351
1915	904,719	408,188
1916	927,875	975,142
1917	1,602,302	1,079,369
1918	2,081,920	1,305,407
1919	1,841,036	1,406,264
1920	2,083,110	1,034,907
1921	2,354,159	1,223,346
1922	2,444,670	1,615,740
1923	3,050,787	2,432,470
1924	4,058,060	3,224,529
1925	4,386,510	3,606,608
1926	4,971,479	3,988,308
1927	5,380,800	4,456,770
1928	7,684,587	6,361,675
1929	8,715,788	8,243,023
1930	9,418,957	7,678,807
1931	9,743,498	8,964,303
1932	10,126,121	9,637,474
1933	9,561,353	8,909,298
1934	10,894,363	9,981,774
1935	11,671,224	10,993,540
1936	13,237,030	12,405,222
1937	15,502,989	14,124,056
	145,081,342	125,134,652

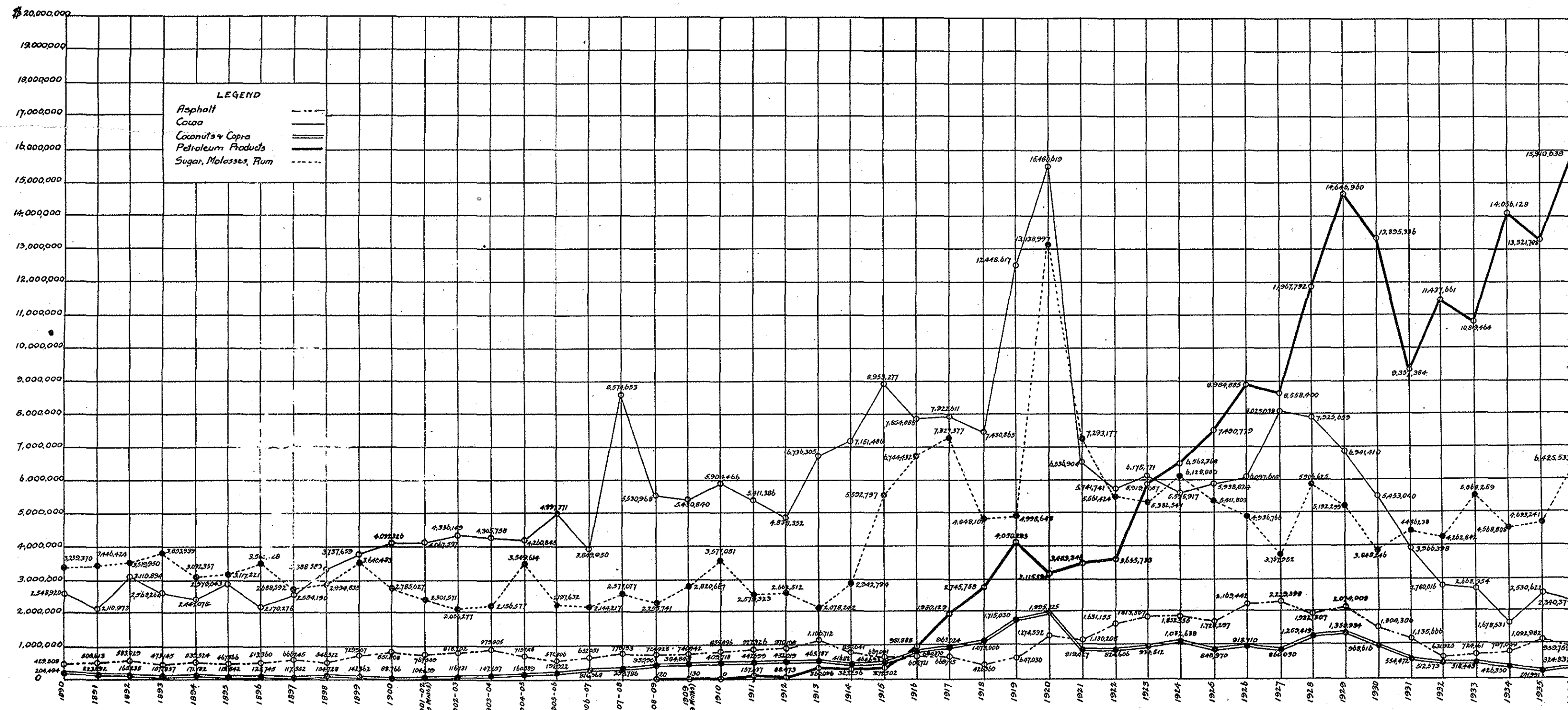
A
TRINIDAD AND TOBAGO

APPENDIX G.

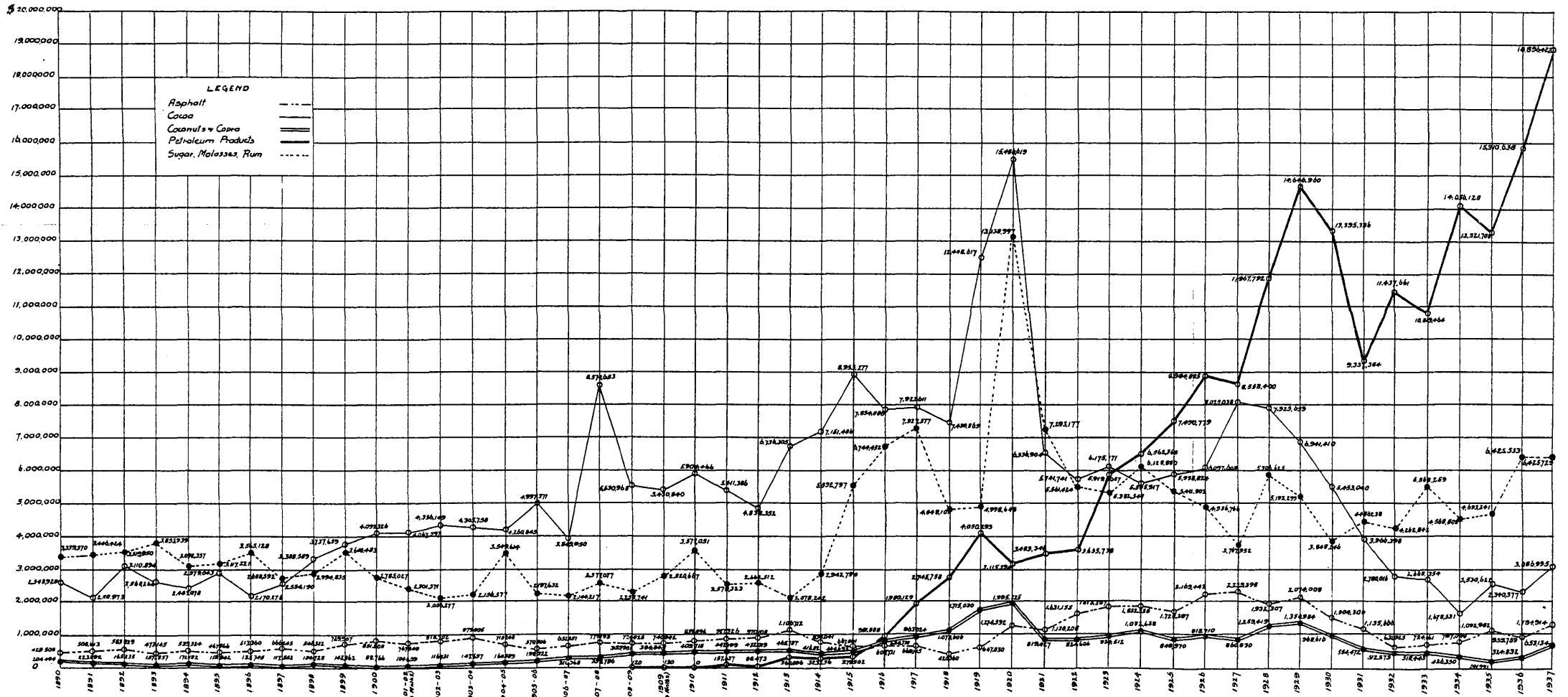


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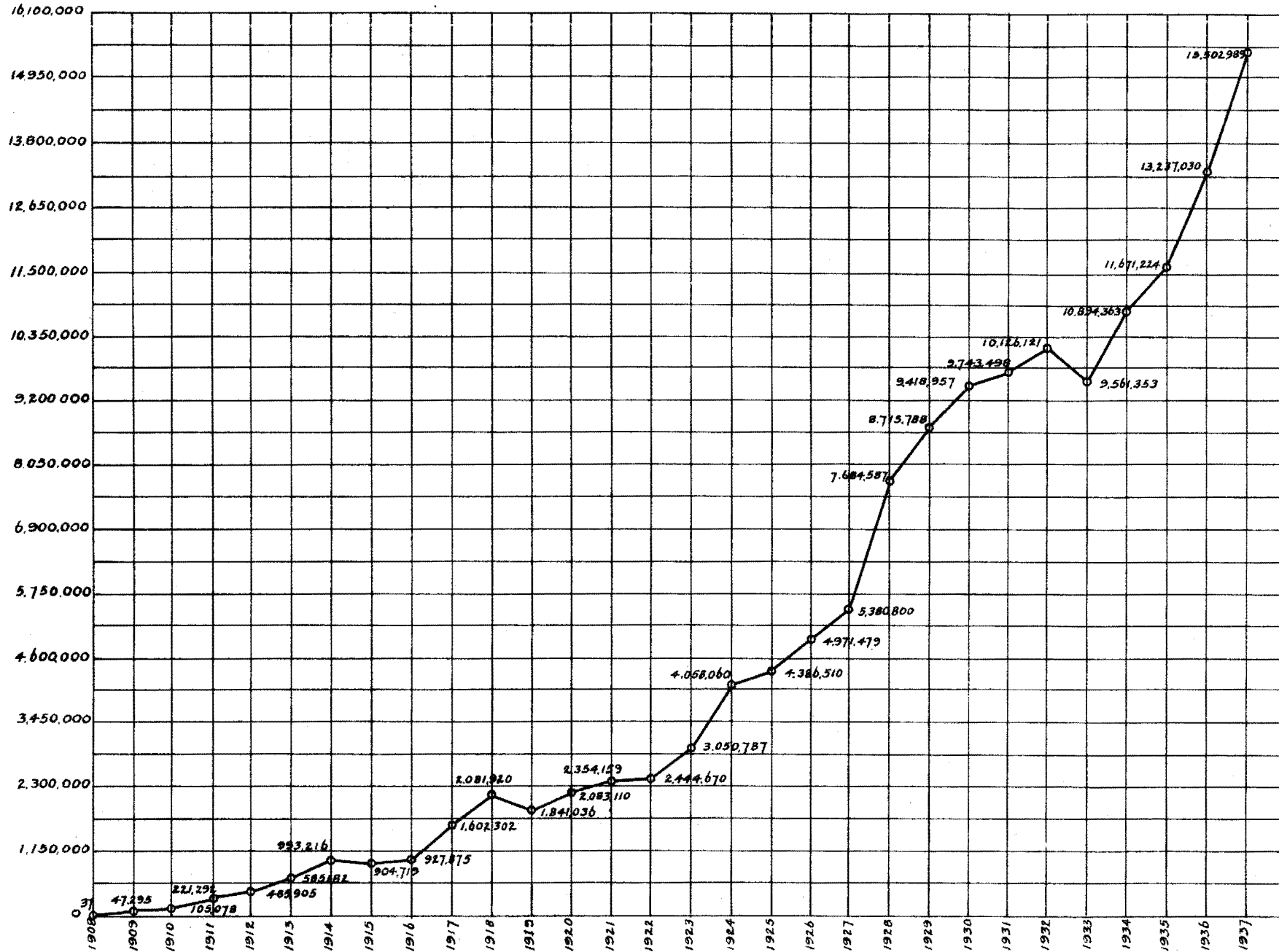
EXPORT OF LOCAL PRODUCE



"B"
EXPORT OF LOCAL PRODUCE



C
 Total Annual Production of Crude Oil in Barrels
 One Barrel = 35 Imperial Gallons



D

Curve showing yearly output of Asphalt from the Colony
in Tons from 1st April 1911 to 31st December 1937

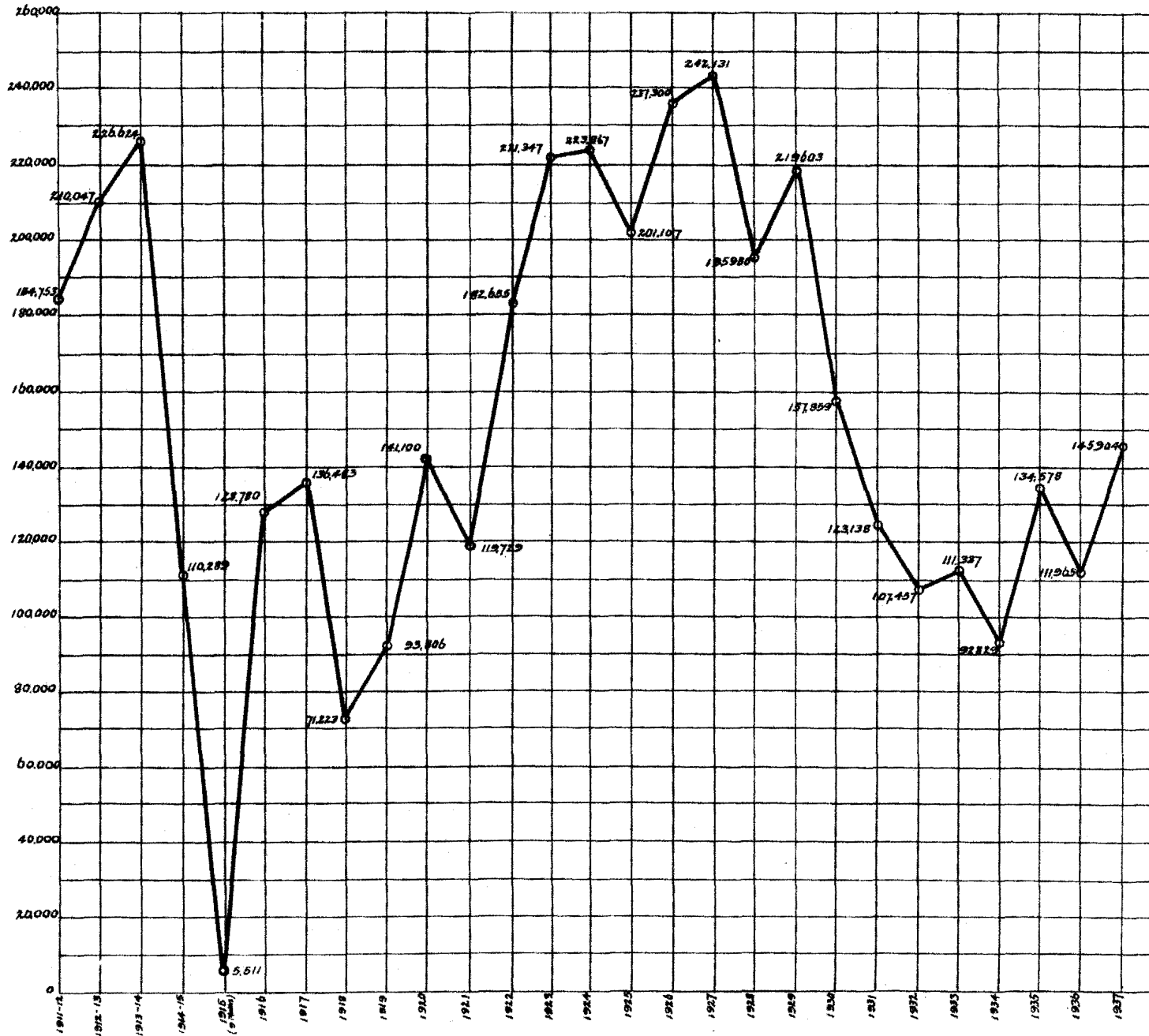
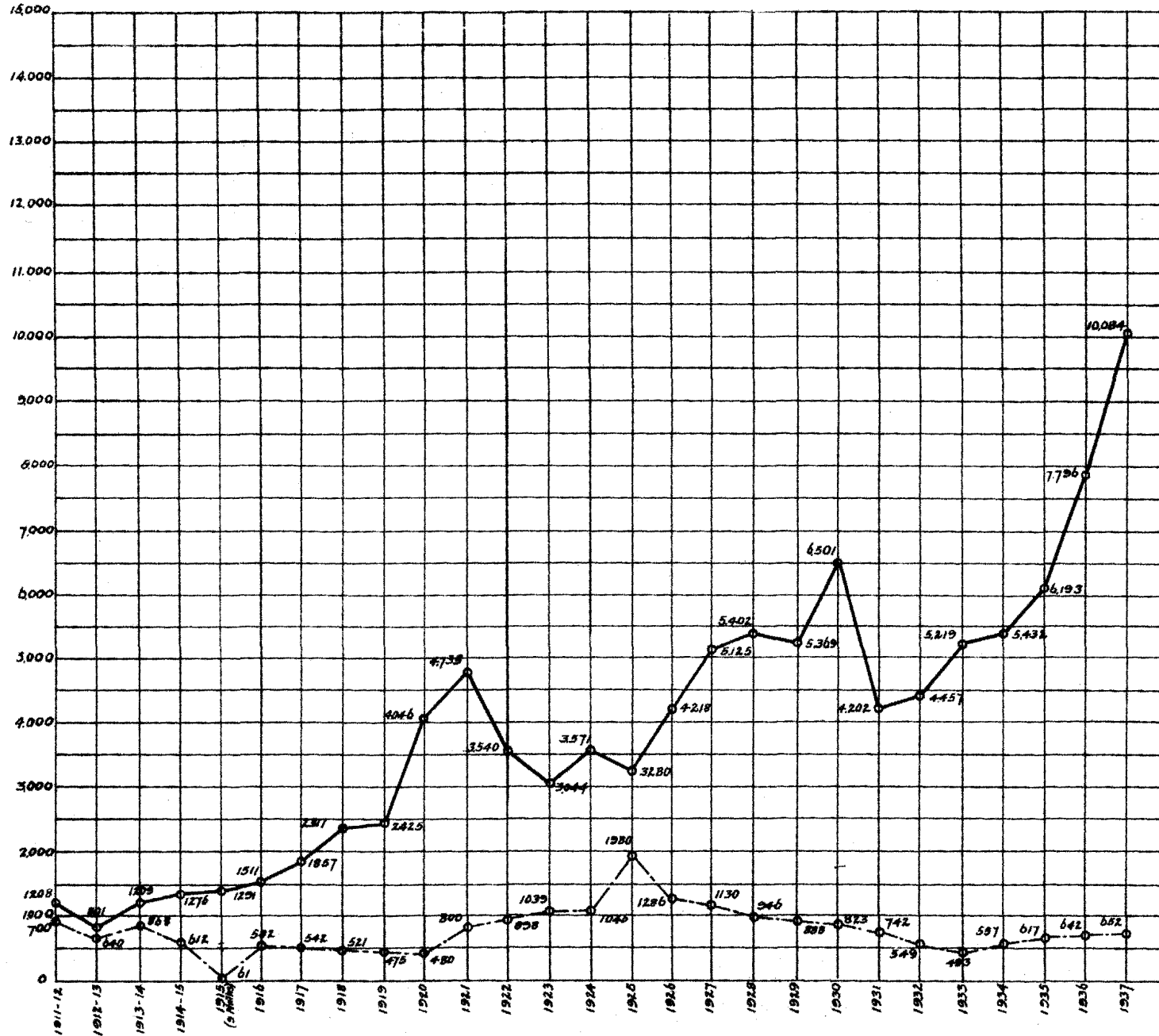
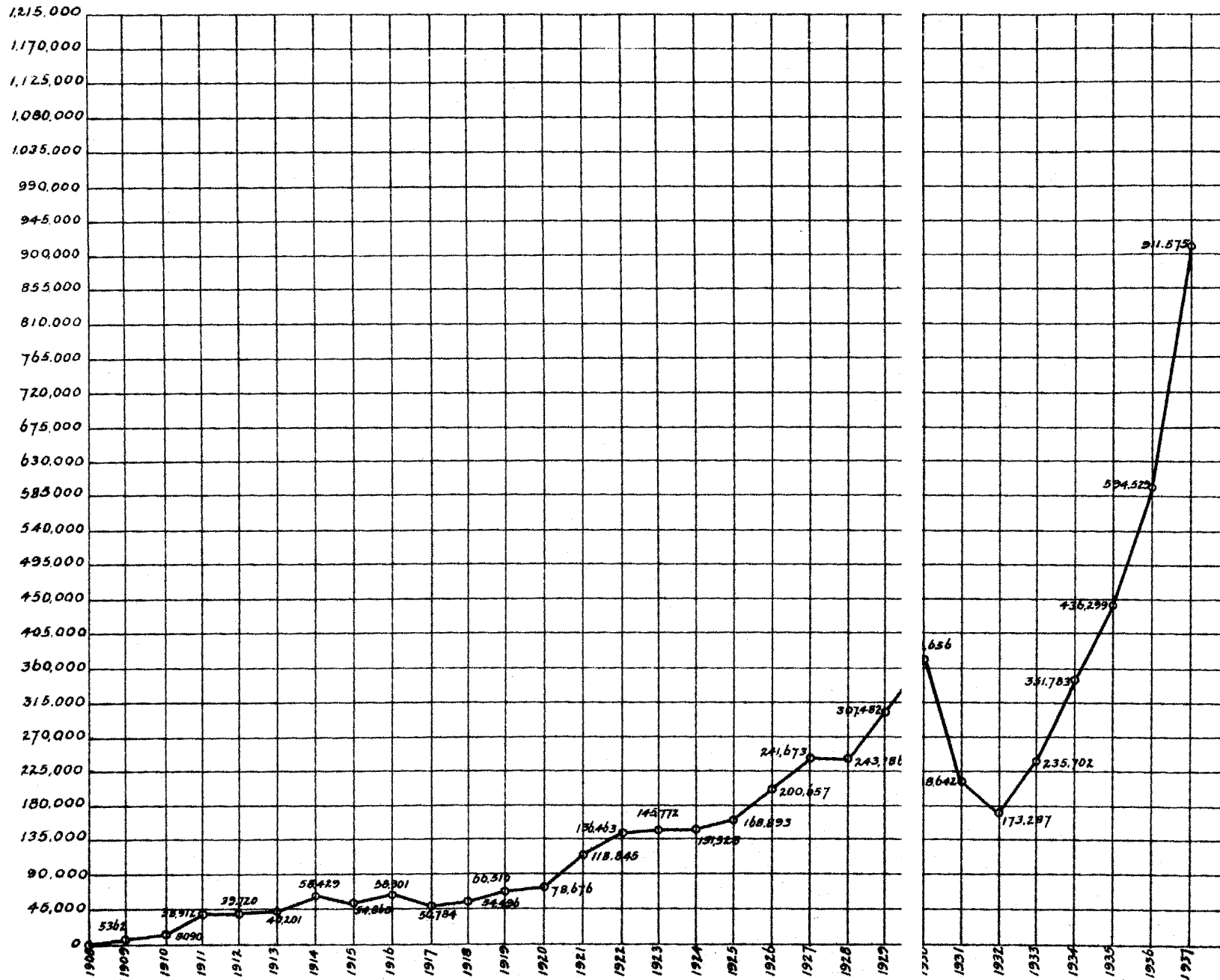


Chart showing comparison of daily average number of persons employed in the Oil and Asphalt Industries of the Colony from 1st April 1911 to 31st December 1937



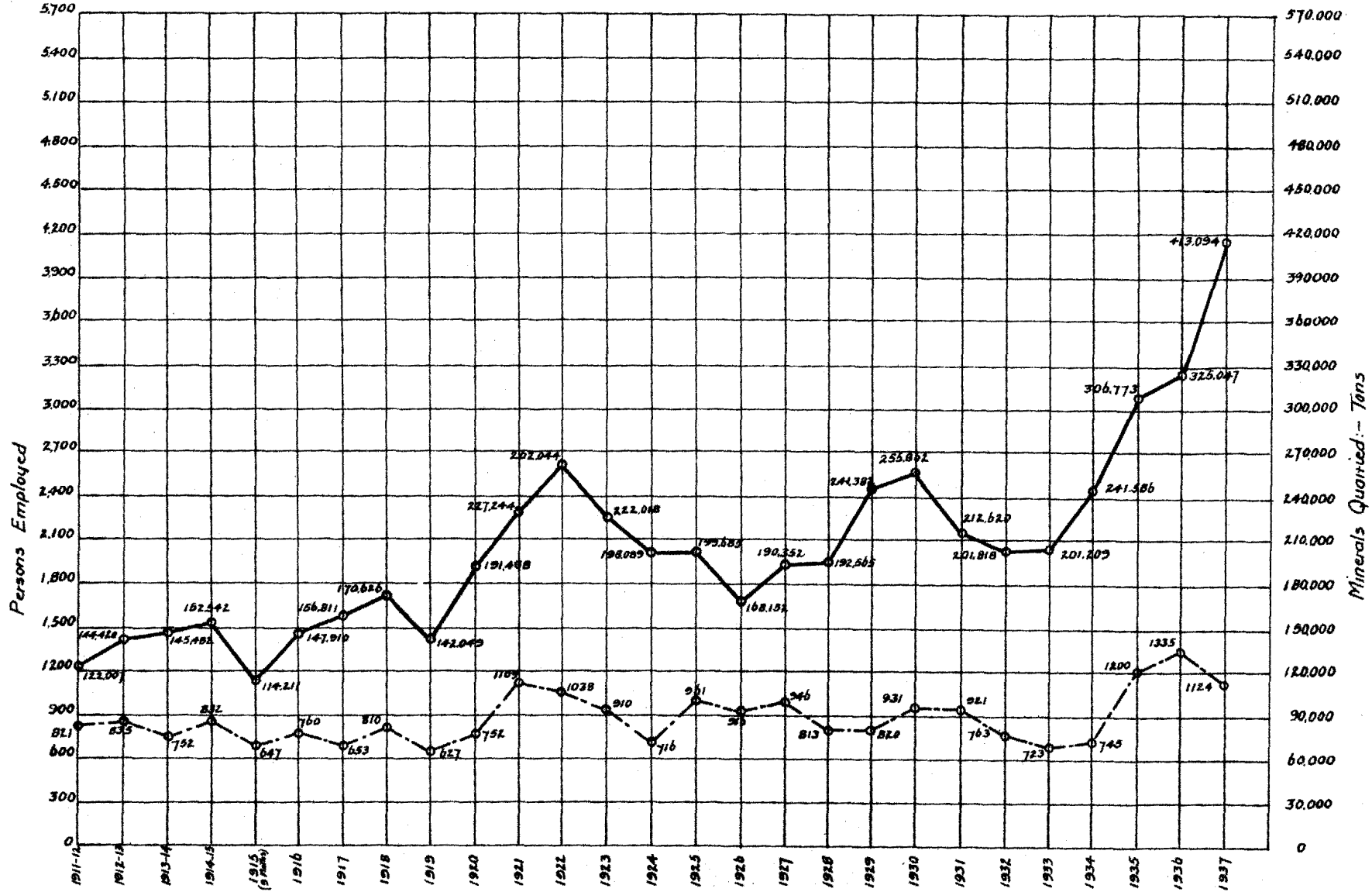
F
Total number of feet drilled annually
in the Colony



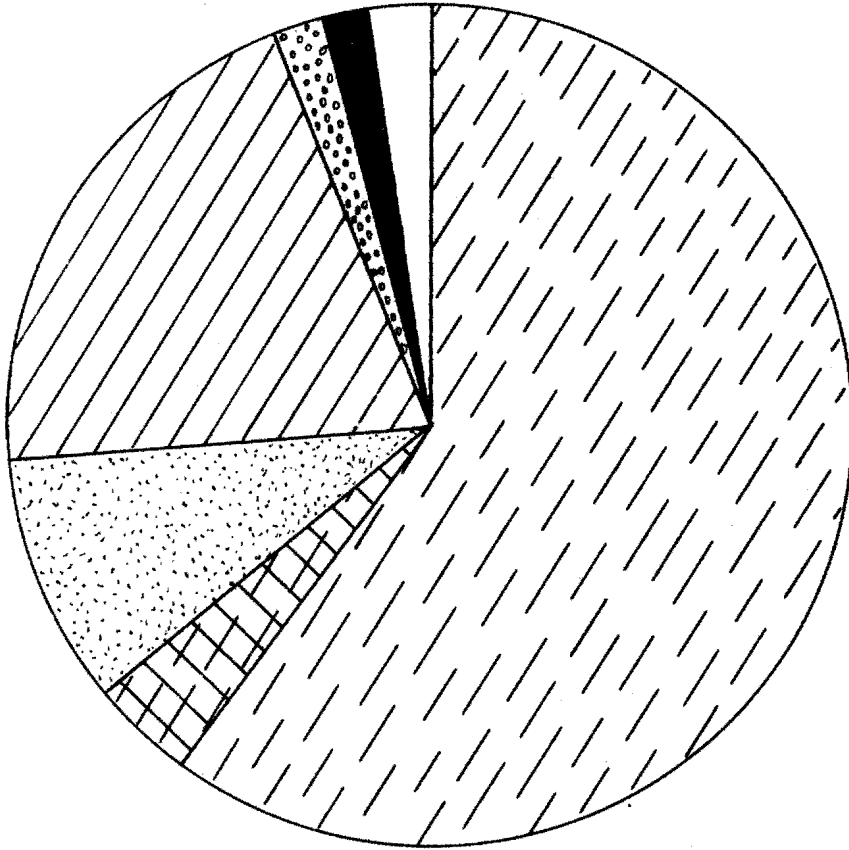
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





Chart showing the yearly total quantity of Minerals quarried and a comparison of the daily average number of persons employed in quarries in the Colony from 1st April 1911 to 31st December 1937

Minerals quarried — Persons employed - - -



Appendix "H"



<u>Mineral Exports</u>	63.7%	
Petroleum Products	59.9	
Asphalt	3.8	
<u>Agricultural & other Exports</u>	36.3%	
Cocoa	9.8	
Sugar, Molasses, Rum	20.4	
Coconuts, Copra, Coconut Oil	2.1	
Fruit & Fruit Products	1.8	
Other Exports	2.2	

TRINIDAD AND TOBAGO.

Council Paper No. 53 of 1939.

MINES.

Report of the Inspector of Mines and Petroleum Technologist
for 1938.

*Laid before the Legislative Council on the
19th of May, 1939.*

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MINES.

Report of the Inspector of Mines and Petroleum Technologist
for 1938.

Council Paper No. 58 of 1939.

M.P. No. 47854.

HON. ACTING COLONIAL SECRETARY,

I have the honour to submit, for the information of His Excellency the Acting Governor, the following report on the work of the Mines Department for the year 1938.

THE PETROLEUM INDUSTRY.

2. The progress made by the Petroleum Industry of the Colony during the year 1938 has been entirely satisfactory and its activities in all branches have been well maintained. Towards the latter part of the year a fall in the price of crude oil and its products resulted in some curtailment of drilling programmes but such curtailment did not affect the production of crude oil which continued to show a steady increase with the result that a new production record was established in respect of the operations for the year 1938. There has been no abatement of interest in acquiring lands for oil development and the area now held under lease or licence shows a substantial increase as compared with the year 1937.

During the past year important additions and improvements to the larger refining installations have been completed and further considerable extensions are now under construction.

3. Exploration work both by geophysical methods (chiefly seismic) and also by actual drilling operations has continued to be actively pursued and various new areas remote from existing known oil bearing areas are now being tested.

4. PRODUCTION OF CRUDE OIL.—The total production of crude oil for the year 1938 amounted to 17,737,201 barrels, which is 2,234,212 barrels or 14.4 per cent. more than the production for 1937 and is the highest yet recorded in the Colony.

The Fyzabad structure continues to maintain its supremacy as the largest producing structure in the Colony and during the year under review it contributed 45.5 per cent. of the total production as compared with 53.47 per cent. for the previous year.

5. DRILLING.—During the year 1938—279 new wells were commenced, compared with 289 during 1937. The total number of wells commenced in the Colony to the end of 1938 is 2,984 of which 1,853 are on lands the oil rights of which are vested in the Crown and 1,131 are on private lands.

The number of feet drilled during 1938 amounted to 905,908, which represents a slight decrease of 5,667 feet, or 0.6 per cent. on the footage for 1937.

At the end of the year there were 34 wells over 6,000 feet deep, 18 over 7,000 feet deep, four over 8,000 feet deep and two over 9,000 feet deep, the deepest being 9,039 feet.

6. The following table shows comparatively, the number of feet drilled and the quantity of oil produced during the years 1936, 1937 and 1938:—

Land.	Number of Feet Drilled.			Production in Barrels of 35 gallons.		
	1936	1937	1938	1936	1937	1938
Crown Oil Rights ...	381,358	508,197	592,042	8,182,018	9,743,292	11,640,696
Private Oil Rights ...	213,171	403,378	313,866	5,055,012	5,759,697	6,096,505
Total ...	594,529	911,575	905,908	13,237,030	15,502,989	17,737,201

7. OILFIELD OPERATORS.—The number of registered oilfield operators during the year was 23 of which 16 were active at the close of the year compared with 19 at the end of 1937.

8. PERSONS EMPLOYED.—The average number of persons employed in the Petroleum Industry during 1938 amounted to 14,199 per day as compared with 10,084 during 1937; this large increase being partly due to the inclusion of contract labour which has not been included in previous years.

9. LEASES AND LICENCES.—During the year 127* applications for mining leases and licences were received and eight Principal and nine Supplemental Mining Leases and one Exploration Licence were registered. The total number of mining leases and exploration licences registered at the end of the year amounted to 92, the details of which are as follows:—

	AREA.					
	Crown.			Alienated.		
	A.	R.	P.	A.	R.	P.
30 Mining Leases	114,431	0	13	...	...	...
28 Mining Leases	...	...	...	36,939	2	16
20 Composite Mining Leases on Crown and Alienated Lands	17,447	3	04	23,681	1	32
14 Exploration Licences	243,520	3	25	...	...	...
92 Total	375,399	3	02	60,621	0	08

*This includes supplemental applications.

10. TOTAL AREA UNDER LEASE OR LICENCE.—The total area under Crown and private leases on the 31st December, 1938, amounted to 567,084 acres (or 47.54 per cent. of the total area of Trinidad) made up as follows:—

	A.	R.	P.
Area of Crown Lands under Exploration Licence and Mining Lease	375,399	3	02
Area of Alienated Lands under Mining Lease the Oil rights of which are vested in the Crown	60,621	0	08
Area of privately owned oil rights under lease, according to details supplied by the oil companies	131,063	0	09
	567,083	3	19

11. REVENUE FROM ROYALTIES, WAYLEAVES AND FEES.—The revenue collected under these heads amounted to \$912,109.18 as compared with \$726,552.56 collected during the year 1937. For purposes of comparison, the following table shows the amounts collected under each head for the years 1936, 1937 and 1938:—

Heads.	Amounts Collected.					
	1936		1937		1938	
	\$	c.	\$	c.	\$	c.
Royalties in respect of oil produced from Crown and Alienated Lands	617,884	86	720,857	06	907,695	00
Wayleaves in respect of oil pipelines laid along public roads	1,877	76	1,759	50	1,774	18
Fees charged for pipelines crossing the Trinidad Government Railway and public roads	3,129	77	3,936	00	2,640	00
Total	622,892	39	726,552	56	912,109	18

12. REFINERIES.—Ten permits for the refining of oil were issued during the year under the Oil Mining and Refining Ordinance, Cap. 143. Of these permits five were issued in respect of small field topping plants the operations of which are of relative unimportance.

The total capacity of the refineries operating in the Colony amounts to approximately 23,600,000 barrels per annum. During 1938 a total quantity of 17,560,515 barrels of crude oil was refined, compared with 15,111,046 barrels during 1937.

13. GASOLENE EXTRACTION PLANTS.—Three Gas Absorption Plants and one Gas Adsorption Plant for the recovery of gasolene from natural gas were in operation during the year.

14. LOADING FACILITIES.—Four deep-water piers equipped for loading tank steamers with petroleum and its products are in use. Facilities for bunkering vessels in the harbour of Port-of-Spain are also available.

15. PIPELINES.—Approximately 285 miles of main oil pipelines have been laid down in the Colony. During the year twelve new permits under the Pipelines Ordinance, No. 29 of 1933 were issued and the total number of permits issued to date amounts to 197.

16. TANK STORAGE.—The total main tank storage capacity for petroleum in the Colony is approximately 4,777,173 barrels.

17. EXPORTS OF PETROLEUM AND ITS PRODUCTS.—The quantity of petroleum and its products exported during the year increased substantially as compared with the year 1937, the amounts and values for the two years being as follows :—

1937	...14,124,056 barrels valued at \$18,896,422.
1938	...16,417,020 barrels valued at \$23,656,561.

Petroleum and its products continued to form the largest part of the Colony's exports in 1938, the value being more than four times that of the products of the next most important of its industries, viz : sugar (including molasses and rum). Of the total exports petroleum and its products (including asphalt) formed 73.46 per cent.

The value of the leading staple products of the Colony exported during 1938 is shown in the following table :—

<i>Staple Products Exported.</i>	<i>Value.</i>	<i>Percentage of total.</i>
Petroleum and its Products	\$23,656,561	70.11
Sugar, Molasses and Rum	5,156,718	15.28
Cocoa	2,369,286	7.02
Asphalt	1,131,078	3.35
Fruits and Fruit Products	617,034	1.83
Coconuts, Copra and Coconut Oil	235,389	0.70
Bitters	114,788	0.34
Coffee	40,504	0.12
Other Exports not enumerated	420,234	1.25
	<hr/> \$33,741,592 <hr/>	<hr/> 100.00 <hr/>

18. RETURNS.—The various returns submitted by the oil companies under the various Ordinances and Regulations in respect of their operations have been regularly received and after being checked have been filed with the records of the Department.

19. INSPECTIONS.—The operations on the various oilfields were inspected by officers of this Department as frequently as possible, and I have pleasure in recording that the Managers have readily co-operated in ensuring that the provisions of the Ordinances and Regulations were effectively carried out.

20. Included in this Report as Appendix " B " will be found some interesting notes and statistics relating to the progress of the petroleum industry which have been prepared by the Acting Assistant Petroleum Technologist.

THE ASPHALT INDUSTRY.

21. The production of asphalt during the year amounted to 127,859 tons as compared with 145,904 tons for the year 1937, a decrease of 18,045 tons. The following table shows, comparatively, the quantity of asphalt produced and exported during the years 1936, 1937 and 1938 :—

	1936.	1937.	1938.
Production (in tons)	111,965	145,904	127,859
Export (in tons)	70,543	90,872	85,089

FACTORIES.

22. During the period under review 219 factories exclusive of oilfield machinery were in operation in Trinidad and Tobago. During the inspections of these factories by officers of this Department recommendations were made for ensuring the safety of the workmen, and such recommendations were at all times readily carried out by the Managers concerned.

QUARRIES.

23. The number of quarries worked during the past year was 124 as compared with 112 quarries in operation during the year 1937. Most of these quarries are very small and relatively unimportant. As a result of inspection it was found that as a general rule, the quarries were being worked in a careful manner. The various recommendations made by officers of this Department for increasing the safety of the workman were usually carried out without delay.

ACCIDENTS.

24. All fatal and serious accidents which occurred on oilfields and in refineries factories and quarries during the period under review have been investigated, as in the past, by officers of this Department under the Mines, Borings and Quarries Ordinance, Cap. 142 and the Prevention of Accidents Ordinance, No. 28 of 1934, and, where necessary, recommendations have been made to the employers with the object of reducing the incidence of such accidents to a minimum. During the year 1938 nine fatal accidents occurred in the Petroleum Industry compared with eight for the year 1937 and three occurred in other industries. Practically all these accidents were due to carelessness on the part of the workmen concerned or were unavoidable.

PETROLEUM ORDINANCE, CAP. 145.

25. The premises where dangerous petroleum products are stored have been inspected, and all possible care has been taken to ensure safety. During the year 613 licences were issued for the storage and sale of petroleum and its products, the revenue derived from such licences amounting to \$2,270.40.

LEGISLATION.

26. An Ordinance No. 4 of 1938 to repeal and replace the Petroleum Office and Conservation Board Establishment Ordinance No. 8 of 1929 and to make further provision in relation to the Petroleum Office and the Conservation Board was passed by Legislative Council on the 1st April 1938 and came into force as from the 7th April, 1938.

The principal innovation introduced by this Ordinance is the obligation on the part of all persons operating for oil to deposit with the Treasurer the sum of Ten thousand dollars or an approved guarantee for that amount as a security for the observance and performance of any of the obligations imposed on them by any law relating to oil mining operations.

APPENDICES.

27. Appendix "A" shows the list of oil and asphalt operators in the Colony during the year 1938.

28. Appendix "B" gives notes and statistics relating to the Petroleum Industry.

29. Appendix "C" is a statement of the quantity and value of minerals obtained and the daily average number of persons employed in the petroleum, asphalt and quarry industries.

30. Appendix "D" gives the Rates of Wages and Hours of Labour employed in the oilfields for the year 1938.

31. A statement of oil produced and exported is shown as Appendix "E".

32. Appendix "F" shows the amount of oil refined year by year.

33. Appendix "G" consists of a series of charts depicting in graphic form the progress made in the various industries during the past few years.

34. Appendix "H" shows the relation of mineral exports to agricultural exports.

STAFF.

35. On the 13th May, 1938, Mr. R. G. Ffoulkes-Jones was appointed to the vacant post of the 2nd Assistant Petroleum Technologist.

Mr. R. S. Mackilligin, Inspector of Mines and Petroleum Technologist, was granted 104 days vacation leave with effect from the 3rd June, 1938, and during his absence Mr. N. Betancourt, Assistant Inspector of Mines, acted as Inspector of Mines and Mr. W. N. Foster, Assistant Petroleum Technologist, acted as Petroleum Technologist.

Mr. W. N. Foster, Assistant Petroleum Technologist, was granted 84 days vacation leave with effect from the 11th December, 1938 and in his absence, Mr. R. G. Ffoulkes-Jones, 2nd Assistant Petroleum Technologist, carried out the duties of Assistant Petroleum Technologist.

During the period 5th December, 1938 to the 30th January, 1939, Mr. C. Niles, 2nd Class Clerk in the Petroleum Office, San Fernando, was seconded for duty as Shorthand Writer to the Oilfields Arbitration Tribunal.

I have great pleasure in recording the very able and willing assistance I have received from all members of the Staff.

R. S. MACKILLIGIN,
Inspector of Mines and Petroleum Technologist.

22nd April, 1939.

APPENDIX A.

No.	Company.	Nature of tenure of lands on which operations took place.	District in which operations took place.	Disposal of Oil	Remarks.
1	Acme Oil Co. Ltd.	Private Lands	Guapo ... ..	...	Land formerly operated by F. W. Mitchell. No drilling during the year. A small production obtained. Company in voluntary liquidation and field now closed down.
2	Antilles Petroleum Co. (Trinidad) Ltd.	Private Lands	Brighton, Vessigny, Pt. Ligoure, Erin	Crude exported	Production and footage drilled both showed large decreases compared with 1937. Some exploratory drilling carried out.
3	Apex (Trinidad) Oilfields, Limited	Private Lands, Crown Lands and Crown Oilrights under Lease	Fyzabad and Siparia	Crude sold to Trinidad Leasehold, Ltd. Casing head gasolene sold to United British Oilfields of Trinidad, Limited	Decrease in footage drilled but production showed only slight decrease. Second largest producer in Colony.
4	Coldan Company Limited	Private Lands	Fyzabad	Refined	Small amount of footage drilled. Production decreased considerably. Field and refinery now shut down.
5	Colonial Oil Company Limited	Private Lands	do. ... ..	...	No footage or production. ∞
6	Golding, C. B.	do.	Boodoosingh ... ..	...	Commenced operations in November. Very small footage and production.
7	Kern Trinidad Oilfields, Limited	Private Lands, Crown Lands and Crown Oilrights under Lease	Guapo, Rousillac	Some exported. Some sold to Trinidad Leaseholds, Ltd. and some to United British Oilfields of Trinidad, Ltd.	Small increase in footage drilled. Appreciable increase in production.
8	New Dome Oilfields, Limited	Private Lands	Fyzabad	Sold to Trinidad Leaseholds, Limited	No footage. Decrease in production. Company now in voluntary liquidation and field shut down at end of year.
9	Petroleum Options (1925) Limited	do.	San Francique, Moruga	Sold to Trinidad Leaseholds, Limited	Some exploratory drilling carried out at Moruga. Production at San Francique showed appreciable decline.
10	Premier (Trinidad) Oilfields, Limited	Crown Lands under Lease	Palo Seco	Sold to Trinidad Leaseholds, Limited	Operated by Trinidad Petroleum Development Co. Ltd. Footage showed large increase. Production increased appreciably.
11	Scottish Trinidad Oilfields, Limited	Private Lands	Rio Claro ... ..	...	No production or footage.
12	Siparia Trinidad Oilfields, Limited	Crown Lands and Crown Oilrights under Lease	Palo Seco, Morne Diablo	Sold to Trinidad Leaseholds, Ltd.	Production and footage both showed small increases.

APPENDIX A.—Continued.

No.	Company.	Nature of tenure of lands on which operations took place.	District in which operations took place.	Disposal of Oil.	Remarks.
13	Trinidad Central Oilfields, Limited ...	Crown Lands under Lease	Barrackpore, Guapo Lizard Springs, Tabaquite	Production from Barrackpore and Guapo sold to Trinidad Leaseholds, Limited, that from Lizard Springs and Tabaquite refined and sold locally	Footage and production from Barrackpore showed appreciable increase. Guapo showed small decrease in both. No drilling at Lizard Springs or Tabaquite but small production maintained.
14	Trinidad Consolidated Oilfields, Limited	Private Lands, Crown Oilrights under lease	Fyzabad ...	Sold to Trinidad Leaseholds, Ltd. ...	Footage showed further appreciable increase and production small increase over previous year.
15	Trinidad Investments, Limited ...	Private Lands and Crown Oilrights under Lease	Siparia ...	...	No drilling or production during year.
16	Trinidad Lake Asphalt Operating Co. Ltd.	Crown Lands under Lease	La Brea ...	Pitch refined and exported ...	Operate for and refine pitch only.
17	Trinidad Leaseholds, Limited ...	Crown Lands and Crown Oilrights under Lease. Private Lands	Barrackpore, Fyzabad Guayaguayare	Pumped to Company's refinery at Pointe-a-Pierre. Most of refined products exported in bulk.	Markets locally in conjunction with Shell. Largest producers and refiners in Colony. Footage showed small increase. Production small decrease.
18	Trinidad Oil Lands, Limited ...	Private Lands ...	Point Ligoure ...	Sold to United British Oilfields of Trinidad, Limited.	No Footage. Production showed slight increase.
19	Trinidad Oil Fields Operating Co. Ltd.	Crown Oilrights under Lease Private Lands	Palo Seco San Francique Sobo	Refined and exported ...	A small amount of footage drilled. Production showed slight increase.
20	Trinidad Petroleum Development Co. Ltd.	Crown Lands and Crown Oilrights under Lease. Private Lands	Coora, Los Bajos Palo Seco	Sold to United British Oilfields of Trinidad, Limited	Footage drilled showed slight decrease. Production at Palo Seco showed a decrease but at Coora and Los Bajos large increases were obtained.
21	Trinidad Northern Areas, Limited ...	Private Lands, Crown Lands and Crown Oilrights under Lease	Talparo ...	...	Commenced operations in December. No production and only small footage obtained. Controlled by United British Oilfields of Trinidad, Limited and Trinidad Leaseholds, Limited.
22	Turner, Charles ...	Private Lands ...	Fyzabad ...	Sold to Trinidad Oilfields Operating Company, Limited.	Very small footage and production. Shut down at end of year.
23	United British Oilfields of Trinidad, Ltd.	Crown Lands and Crown Oilrights under Lease. Private Lands	Cedros, Morne L'Enfer Forest Reserve, Point Fortin, Penal	Pumped to Company's refinery at Point Fortin and refined there.	Footage shows small decrease but production large increase.
24	Zenith Trinidad Oilfields, Limited ...	Private Lands ...	Fyzabad ...	Sold to Trinidad Leaseholds, Limited ...	Started operations in January, 1938. Small footage drilled. Production obtained from two flowing wells.

APPENDIX "B."

HON. INSPECTOR OF MINES AND PETROLEUM TECHNOLOGIST.

The production of crude oil for the year under review reached a further high record of 17,737,201 barrels, an increase of 14.4 per cent. over the figure for 1937.

The footage drilled amounted to 905,908 feet, a small decrease of 0.6 per cent. on the previous year.

A comparison of footage and production figures for 1937 and 1938 is given below.

	Footage.		Production.	
	1937.	1938.	1937.	1938.
Crown	345,393	384,103	7,128,085	8,165,149
Alienated	162,804	207,939	2,615,207	3,475,547
Private	403,378	313,866	5,759,697	6,096,505
	<u>911,575</u>	<u>905,908</u>	<u>15,502,989</u>	<u>17,737,201</u>

DRILLING.—During the year 279 wells were started as compared with 289 in 1937, bringing the total number of wells started in the Colony to 2984 by the end of the year.

The following table gives an analysis of drilling operations carried out during the year.

	Crown.	Alienated.	Private.	1938	
				Totals.	1937 Totals.
Unfinished at end of 1937	21	6	37	64	49
Started during 1938	110	67	102	279	289
	<u>131</u>	<u>73</u>	<u>139</u>	<u>343</u>	<u>338</u>
Completed as oil producers	93	63	99	255	249
Completed Fresh Water Wells	5	4	1	10	10
Completed Dry Hole	0	1	1	2	—
Abandoned	10	4	17	31	15
Unfinished at end of 1938	23	1	21	45	64
Old Wells abandoned in 1938	6	2	6	14	2
Old Wells re-completed in 1938	12	3	14	29	30

The depth of the deepest well drilled in the Colony at the end of the year was still 9,039 feet. Another well drilled during the year, however, reached a depth of 9,033 feet.

There are now in the Colony two wells deeper than 9,000 feet, four deeper than 8,000 feet, 18 deeper than 7,000 feet and 34 deeper than 6,000 feet.

The average depth of completions during the year was about 70 feet less than in 1937.

During 1938 the average number of rigs running was 42. This gives an average footage per rig of 21,568 feet as compared with 25,231 feet per rig last year. At the end of the year only 35 rigs were in operation.

The testing of wells for deviation by running an acid bottle or some such similar device is now adopted as standard practice by all the larger companies whilst some companies find it advisable in certain fields to make directional surveys of all wells drilled.

A total of 807,103 feet or 89.1 per cent. of the footage drilled was surveyed by electrical methods. The difference is due almost entirely to the upper part of the hole cased off by the conductor string not being usually surveyed and it, therefore, appears from these figures that all operators fully appreciate the benefit gained from this device and have adopted its use as standard practice.

The use of the Wire Line Retractable Core Barrel, enabling cores to be taken without withdrawing the drillpipe, further increased during the year, whilst some companies also introduced a lateral wall sampling device. This enables samples of formation to be obtained from the walls of the hole after the well has been drilled.

The completion of wells by cementing blank strings of casing and gun-perforating at selected points opposite the productive horizons has found increasing popularity during the year. This method has met with much success and has certain distinct advantages in Trinidad where oil and watersands often exist in close proximity separated by only thin breaks of shale. Where sand conditions are bad, some operators have been very successful in controlling sand entry by using fine mesh screen pipe.

For exploratory work diesel driven rigs have been generally employed and three such rigs have been in operation for most of the year.

A few 136 feet steel derricks have been put into use during the year.

All operators now appreciate the value of maintaining drilling mud in good condition and most of them pay careful attention to its treatment whilst a few have on their Staffs men specially trained in this type of work.

The use of screens for the removal of drill cuttings from drilling mud showed a further increase during the year.

WATER ANALYSES.—Fourteen samples of water were analysed in this office during the year for those operators who have not the facilities for carrying out this type of work themselves.

PRODUCTION.—The number of wells producing per month ranged from 1213-1319, the average being 1260 per month.

The following table gives an analysis of the average number of producers per month and a comparison with the three previous years. In addition the quantity of production obtained by various methods during 1938 is shown.

	1935.	1936.	1937.	1938.	Production Barrels.
Wells Flowing	255	273	357	405	11,852,792
Wells Pumping	466	469	491	507	3,667,472
Wells on Plunger Lift	8	38	68	108	1,497,104
Wells on Air or Gas Lift	105	107	100	75	622,660
Wells on Displacement Pumps	14	14	15	8	32,671
Wells Bailing or Swabbing or Collected from Sumps	146	140	139	157	29,413
Light Fractions returned to Crude	—	—	—	—	35,089
	<u>974</u>	<u>1,041</u>	<u>1,170</u>	<u>1,260</u>	<u>17,737,201</u>

The Fyzabad structure still continues to be the main producing structure, and contributed 45.5 per cent. of the total production of the Colony. The Point Fortin and Coora Structures, however, both showed appreciable increases.

The number of wells on plunger lift again increased, the total number of units, including self-operated units, increasing from 85 in December 1937 to a maximum of 124 in November, 1938.

As will be seen from the accompanying Table No. 2 the Colony's production is obtained mostly from flowing wells and is made up as follows:—

Flowing	66.8 per cent.
Pumping	20.6 do.
Plunger Lift	8.5 do.
Air or Gas Lift	3.5 do.
Other Methods	0.6 do.

Two large and one small tank fires occurred during the year. Of these fires one was proved to be due to lightning. The fire, in each case, was confined within the firewalls surrounding the tank. No persons were injured and no damage was done to surrounding property.

One other small fire of unknown origin occurred at an old idle well. This was quickly extinguished.

Anti-pollution measures were pursued by some companies with the result that pollution of certain rivers improved considerably. It is to be regretted, however, that in other instances little work was done with the result that some rivers and parts of the foreshore are still being fouled by oil.

Seven fatal accidents occurred in the oilfields in the period under review.

The following tables are attached:—

No. 1.—Showing drilling summary for 1938.

No. 2.—Showing Production Summary for 1938.

No. 3.—Showing number of wells started and footage drilled since the commencement of the industry in 1867.

No. 4.—Showing the annual production since returns were first sent to the Government in 1908.

No. 5.—Showing the number of wells started annually and the status of these wells at the end of the year.

22nd March, 1939.

R. G. FFOULKES-JONES,
Acting Assistant Petroleum Technologist.

TABLE No. 2.
ANNUAL PRODUCTION SUMMARY BY MONTHS DURING 1938.

Month.	Light Fractions returned to crude.	FLOWING		GAS/AIR LIFT.		PUMPING.		PLUNGER LIFT.		DISPLACEMENT PUMP.			BAILING/SWABBING OR COLLECTED FROM SUMPS.			Total No. of Wells started in the Colony	Total No. of Wells	PRODUCTION.					Total Barrels.									
		Percentage.	No. of Wells.	Production.	Percentage.	No. of Wells.	Production.	Percentage.	No. of Wells.	Production.	Percentage.	No. of Wells.	Production.	Percentage.	No. of Wells.			Production.	Percentage.	No. of Wells.	Production.	Percentage.		No. of Wells.	Production.	Percentage.	No. of Wells.	Production.	Percentage.	No. of Wells.	Production.	
January	3,425	.2	385	913,520	66.3	90	59,450	4.3	488	276,579	20.1	88	117,915	8.6	13	4,499	.3	149	2,633	.2	1,213	2,733	44.4	517	640,673	216	259,295	480	478,653	1,378,021		
February	2,821	.2	387	857,377	65.7	82	57,143	4.4	493	273,802	21.0	89	108,140	8.3	12	4,092	.3	151	1,815	.1	1,214	2,755	44.1	522	593,157	208	246,759	484	465,274	1,305,190		
March	2,697	.2	392	933,276	4.8	86	55,313	3.8	505	318,690	22.2	94	121,886	8.5	10	4,360	.3	152	2,214	.2	1,239	2,779	44.6	528	627,720	216	288,979	495	521,737	1,438,436		
April	1,846	.1	386	917,933	64.8	76	55,759	3.9	515	312,187	22.0	93	125,992	8.8	6	2,832	.2	152	2,276	.2	1,228	2,801	43.8	514	644,092	211	267,280	503	507,453	1,418,825		
May	3,012	.2	384	969,904	65.5	82	56,220	3.8	503	312,775	21.2	105	134,929	9.0	5	1,652	.1	160	2,793	.2	1,239	2,828	43.4	502	643,931	227	295,886	510	541,468	1,481,285		
June	2,862	.2	394	943,228	65.9	76	51,510	3.6	490	299,556	21.0	109	130,010	9.0	6	1,819	.1	162	2,491	.2	1,237	2,847	43.4	496	619,286	231	289,871	510	522,319	1,431,476		
July	2,605	.2	406	994,518	66.4	61	46,800	3.0	508	310,056	20.7	117	141,660	9.4	6	2,155	.1	167	2,377	.2	1,266	2,877	44.0	517	665,955	226	310,827	522	523,389	1,500,171		
August	3,510	.2	414	998,160	66.4	71	50,732	3.3	507	315,319	20.9	121	133,298	8.8	8	2,517	.2	151	2,423	.2	1,272	2,899	43.9	509	685,831	242	310,753	521	509,375	1,505,959		
September	2,986	.2	416	1,037,567	68.6	64	41,899	2.8	521	302,995	20.0	120	123,627	8.0	8	2,218	.2	159	3,601	.2	1,288	2,927	44.0	532	708,228	233	297,105	523	509,560	1,514,893		
October	3,149	.2	427	1,076,693	67.7	69	48,063	3.0	531	336,374	21.0	119	125,972	7.9	8	2,169	.1	165	2,060	.1	1,319	2,946	44.8	559	773,214	237	292,114	523	529,152	1,594,480		
November	2,835	.2	440	1,051,989	70.0	73	44,597	3.0	510	280,079	18.6	124	119,644	7.9	8	1,683	.1	155	2,662	.2	1,310	2,966	44.2	556	756,139	245	282,291	509	465,059	1,503,489		
December	3,341	.2	429	1,158,627	69.7	73	55,174	3.3	516	329,060	19.7	123	114,031	6.8	8	2,675	.2	156	2,068	.1	1,305	2,984	43.7	547	807,523	250	334,387	507	523,066	1,664,976		
Totals	35,089	Average	.2 405	11,852,792	Average	66.8 75	622,660	Average	3.5 507	3,667,472	Average	20.6 108	1,497,104	Average	8.5 8	32,671	Average	.2 157	29,413	Average	.2 1,260	2,984	Average	44.0 525	8,165,149	Avg.	228	3,475,547	Avg.	507	6,096,505	17,737,201

TABLE 3.
COLONY OF TRINIDAD.
and Footage Drilled Annually.

YEAR.	WELLS STARTED.								FOOTAGE DRILLED.						YEARLY TOTALS.	CUMULATIVE.
	CROWN.		ALIENATED.		PRIVATE.		TOTALS.		CROWN.		ALIENATED.		PRIVATE.			
	Annual.	Cum.	Annual.	Cum.	Annual.	Cum.	Annual.	Cum.	Annual.	Cum.	Annual.	Cum.	Annual.	Cum.		
1867	—	—	—	—	1	1	1	1	—	—	—	—	964	964	964	964
1900	—	—	—	—	1	2	2	2	—	—	—	—	600	1,564	600	1,564
1902	1	1	—	—	2	4	3	5	600	600	—	—	1,315	2,879	1,915	3,479
1903	1	2	—	—	—	4	1	6	1,172	1,772	—	—	1,060	3,939	2,232	5,711
1904	1	3	—	—	—	4	1	7	860	2,632	—	—	—	3,939	860	6,571
1905	—	3	—	—	—	4	—	7	—	2,632	—	—	—	3,939	—	6,571
1906	1	4	—	—	2	6	3	10	1,104	3,736	—	—	1,499	5,438	2,603	9,174
1907	1	5	—	—	2	8	3	13	798	4,534	—	—	1,563	7,001	2,361	11,535
1908	—	5	—	—	4	12	4	17	—	4,534	—	—	2,352	9,353	2,352	13,887
1909	—	5	—	—	6	18	6	23	—	4,534	—	—	5,362	14,715	5,362	19,249
1910	5	10	—	—	7	25	12	35	3,771	8,305	—	—	4,319	19,034	8,090	27,339
1911	8	18	—	—	38	63	46	81	4,902	13,207	—	—	34,010	53,044	38,912	66,251
1912	10	28	—	—	35	96	45	126	6,839	20,046	—	—	32,881	85,925	39,720	105,971
1913	25	53	—	—	18	114	43	169	13,813	33,859	—	—	26,388	112,313	40,201	146,172
1914	50	103	—	—	16	132	66	235	35,146	69,005	—	—	23,283	135,596	58,429	204,601
1915	31	134	—	—	19	151	50	285	29,208	98,213	—	—	25,652	161,248	54,860	259,461
1916	28	162	—	—	20	171	48	333	30,866	129,079	—	—	28,035	189,283	58,901	318,362
1917	38	200	—	—	6	177	44	377	41,227	170,306	—	—	9,557	198,840	50,784	369,146
1918	38	238	—	—	4	181	42	419	47,700	218,006	—	—	6,796	205,636	54,496	423,642
1919	40	278	—	—	13	194	52	471	49,741	267,747	—	—	16,769	222,405	66,510	490,152
1920	43	321	1	1	23	217	68	539	53,002	320,749	1,665	1,665	24,009	246,414	78,676	568,828
1921	49	370	4	5	32	249	85	624	71,318	392,067	2,896	4,561	44,631	291,045	118,845	687,673
1922	68	438	4	9	20	269	91	715	88,299	480,366	8,701	13,262	39,463	330,508	136,463	824,136
1923	70	508	5	14	33	302	108	823	79,907	560,273	7,060	20,322	58,805	389,313	145,772	969,908
1924	67	575	8	22	34	336	110	933	90,141	650,414	6,190	26,512	55,197	444,510	151,528	1,121,436
1925	46	621	16	38	37	373	99	1,032	86,904	737,318	18,446	44,958	63,543	508,053	168,893	1,290,329
1926	69	690	13	51	46	419	128	1,160	109,234	846,552	18,732	63,690	72,691	580,744	200,657	1,490,986
1927	73	763	13	64	73	492	159	1,319	101,920	948,472	17,288	80,978	122,465	703,209	241,673	1,732,659
1928	43	806	33	97	64	556	139	1,458	71,481	1,019,953	58,842	139,820	112,863	816,072	243,186	1,975,845
1929	52	858	58	155	48	604	159	1,617	92,590	1,112,543	118,583	258,403	96,309	912,381	307,482	2,283,327
1930	76	934	31	186	56	660	163	1,780	170,389	1,282,932	85,561	343,964	116,706	1,029,087	372,656	2,655,983
1931	9	943	25	211	26	686	60	1,840	42,972	1,325,904	95,410	439,374	80,260	1,109,347	218,642	2,874,625
1932	21	964	20	231	20	706	61	1,901	44,568	1,370,472	67,162	506,536	61,557	1,170,904	173,287	3,047,912
1933	36	1,000	22	253	23	729	81	1,982	85,946	1,456,418	87,550	594,086	62,206	1,323,110	235,702	3,382,614
1934	56	1,056	30	283	38	767	124	2,106	167,952	1,624,370	88,503	682,589	95,328	1,328,438	351,783	3,635,397
1935	55	1,111	46	329	38	805	139	2,245	185,788	1,810,158	142,722	825,311	107,789	1,436,227	436,299	4,071,696
1936	59	1,170	39	368	73	878	171	2,416	235,804	2,045,962	145,554	970,865	213,171	1,649,398	594,529	4,666,225
1937	92	1,262	46	414	151	1,029	289	2,705	345,393	2,391,355	162,804	1,133,669	403,378	2,052,776	911,575	5,577,800
1938	110	1,372	67	481	102	1,131	279	2,984	384,103	2,775,458	207,939	1,341,608	313,866	2,366,642	905,908	6,483,708
		1,372		481		1,131		2,984		2,775,458		1,341,608		2,366,642		6,483,708

Cum = Cumulative.

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TABLE 4.
Yearly Trinidad Production.

Year.	Crown.	Cumulative Total.	Alienated.	Cumulative Total.	Private.	Cumulative Total.	Yearly Totals.	Grand Cumulative Total.
1908	—	—	—	—	37	37	37	37
1909	—	—	—	—	47,295	47,332	47,295	47,332
1910	55	55	—	—	105,023	152,355	105,078	152,410
1911	3,994	4,049	—	—	217,298	369,653	221,292	373,702
1912	9,104	13,153	—	—	476,801	846,454	485,905	859,607
1913	52,153	65,306	—	—	533,029	1,379,483	585,182	1,444,789
1914	512,299	577,605	—	—	480,917	1,860,400	993,216	2,438,005
1915	392,389	969,994	—	—	512,330	2,372,730	904,719	3,342,724
1916	478,815	1,448,809	—	—	449,060	2,821,790	927,875	4,270,599
1917	1,065,945	2,514,754	—	—	536,357	3,358,147	1,602,302	5,872,901
1918	1,588,805	4,103,559	—	—	493,115	3,851,262	2,081,920	7,954,821
1919	1,539,973	5,643,532	—	—	301,063	4,152,325	1,841,036	9,795,857
1920	1,758,039	7,401,571	—	—	325,071	4,477,396	2,083,110	11,878,967
1921	1,751,943	9,153,514	300	300	601,916	5,079,312	2,354,159	14,233,126
1922	1,534,796	10,688,310	147	447	909,727	5,989,039	2,444,670	16,677,796
1923	1,847,118	12,535,428	63,334	63,781	1,140,335	7,129,374	3,050,787	19,728,583
1924	2,410,737	14,946,165	76,467	140,248	1,570,856	8,700,230	4,058,060	23,786,643
1925	2,647,095	17,593,260	200,781	341,029	1,538,634	10,238,864	4,386,510	28,173,153
1926	2,630,100	20,223,360	310,953	651,982	2,030,426	12,269,290	4,971,479	33,144,632
1927	2,039,363	22,262,723	297,761	949,743	3,043,676	15,312,966	5,380,800	38,525,432
1928	2,652,981	24,915,704	1,470,333	2,420,076	3,561,273	18,874,239	7,684,587	46,210,019
1929	2,987,795	27,903,499	1,627,439	4,047,515	4,100,554	22,974,793	8,715,788	54,925,807
1930	3,429,030	31,332,529	1,831,338	5,878,853	4,158,589	27,133,382	9,418,957	64,344,764
1931	2,795,572	34,128,101	2,530,175	8,409,028	4,417,751	31,551,133	9,743,498	74,088,262
1932	3,200,083	37,328,184	2,410,813	10,819,841	4,515,225	36,066,358	10,126,121	84,214,383
1933	3,684,148	41,012,332	1,606,595	12,426,436	4,270,610	40,336,968	9,561,353	93,775,736
1934	4,586,366	45,598,698	1,805,178	14,231,614	4,502,819	44,839,787	10,894,363	104,670,099
1935	5,288,943	50,887,641	2,255,484	16,487,098	4,126,797	48,966,584	11,671,224	116,341,323
1936	5,982,993	56,870,634	2,199,025	18,686,123	5,055,012	54,021,596	13,237,030	129,578,353
1937	7,128,085	63,998,719	2,615,207	21,301,330	5,759,697	59,781,293	15,502,989	145,081,342
1938	8,165,149	72,163,868	3,475,547	24,776,877	6,096,505	65,877,798	17,737,201	162,818,543

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Acting Asst. Petroleum Technologist.

TABLE 5.

Table showing number of Wells started in each year and status of Wells at 31st December, 1938.

YEAR.	WELLS STARTED.			PRODUCING.			IDLE.			ABANDONED.			UNFINISHED.			TOTALS.			
	C	A	P	C	A	P	C	A	P	C	A	P	C	A	P	Producing.	Idle.	Aban- doned.	Un- finished.
1867	—	—	1							—	—	1				—	—	1	
1900	—	—	1							—	—	1				—	—	1	
1902	1	—	2							1	—	2				—	—	3	
1903	1	—	—							1	—	—				—	—	1	
1904	1	—	—							1	—	—				—	—	1	
1905	—	—	—							—	—	—				—	—	—	
1906	1	—	2							1	—	2				—	—	3	
1907	1	—	2				—	—	2	1	—	—			—	2	1		
1908	—	—	4	—	—	1	—	—	—	—	—	3			1	—	3		
1909	—	—	6	—	—	3	—	—	1	—	—	2			3	1	2		
1910	5	—	7	—	—	1	3	—	1	2	—	5			1	4	7		
1911	8	—	38	2	—	5	2	—	7	4	—	26			7	9	30		
1912	10	—	35	1	—	6	4	—	6	5	—	23			7	10	28		
1913	25	—	18	7	—	6	7	—	2	11	—	10			13	9	21		
1914	50	—	16	11	—	8	16	—	1	23	—	7			19	17	30		
1915	31	—	19	7	—	8	14	—	10	10	—	1			15	24	11		
1916	28	—	20	7	—	11	11	—	5	10	—	4			18	16	14		
1917	38	—	6	14	—	2	9	—	1	15	—	3			16	10	18		
1918	38	—	4	15	—	—	12	—	—	11	—	4			15	12	15		
1919	40	—	13	15	—	1	15	—	3	10	—	9			16	18	19		
1920	43	1	23	14	—	3	15	—	5	14	1	15			17	20	30		
1921	49	4	32	17	—	9	17	—	7	15	4	16			26	24	35		
1922	68	4	20	23	1	5	24	—	4	21	3	11			29	28	35		
1923	70	5	33	25	1	8	18	—	8	26	4	17	1	—	34	26	47	1	
1924	67	8	34	24	—	7	23	1	15	20	7	12	—	—	31	39	39	—	
1925	46	16	37	17	3	9	17	2	14	12	11	14	—	—	29	33	37	—	
1926	69	13	46	14	2	19	34	3	16	21	8	11	—	—	35	53	40	—	
1927	73	13	73	13	3	32	31	7	17	29	3	24	—	—	48	55	56	—	
1928	43	33	64	12	19	21	20	10	32	11	4	11	—	—	52	62	26	—	
1929	52	58	48	17	23	23	20	29	15	15	6	10	—	—	63	64	31	—	
1930	76	31	56	30	10	20	33	16	21	12	5	14	1	—	60	70	31	2	
1931	9	25	26	4	12	16	3	11	6	2	2	4	—	—	32	20	8	—	
1932	21	20	20	11	12	9	6	8	8	4	—	3	—	—	32	22	7	—	
1933	36	22	23	12	8	12	14	14	8	7	—	3	3	—	32	36	10	3	
1934	56	30	38	33	22	24	14	6	10	6	2	4	3	—	79	30	12	3	
1935	55	46	38	31	25	26	18	18	8	3	3	2	3	—	82	44	8	5	
1936	59	39	73	38	31	44	16	4	16	4	4	10	1	—	113	36	18	4	
1937	92	46	151	63	32	111	28	12	24	1	2	12	—	—	206	64	15	4	
1938	110	67	102	74	58	60	16	4	19	9	4	12	11	1	11	192	39	25	23
Totals	1,372	481	1,131	551	262	510	460	145	292	338	73	308	23	1	21	1,323	897	719	45
	=2,984			=1,323			=897			=719			=45			=2,984			

C=Crown. A=Alienated. P=Private.

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Acting Asst. Petroleum Technologist.

March, 1939.

APPENDIX C.

Statement of the Quantity and Value of Minerals obtained and the Daily Average number of Persons employed in the Petroleum, Asphalt and Quarry Industries during the years 1937 and 1938.

Industry.	1937					1938				
	Quantity.	Approximate Value.*	Daily average number of persons employed.			Quantity.	Approximate Value.*	Daily average number of persons employed.		
			Males.	Females.	Total.			Males.	Females.	Total.
Petroleum	15,502,989 brls.	\$12,404,477 66	9,957	127	10,084	17,737,201 brls.	\$12,741,566 12	14,039	160	14,199
Asphalt (a)	118,474 tons.	355,422 00	650	2	652	104,680 tons	314,040 00	614	3	617
Private Quarries, (Limestone, Gravel, etc.)	336,462 tons	139,204 94	624	225	849	412,366 tons	160,401 57	665	239	904
Government Quarries (Limestone, Gravel, etc.)	76,632 tons	47,098 97	198	77	275	84,797 tons	5 259 93	265	91	356

* The values given are those returned by owners and managers and represent value at place of production.

(a) In addition to the figure shown against this item, the following quantities were extracted from the Pitch Lake by the Public Works Department for use on the roads of the Colony, viz. :—

1937 27,430 tons 1938 23,179 tons.

APPENDIX D.

Rates of Wages and Hours of Labour employed on the Oilfields.

Class of Worker.	HOURLY WAGE.		DAILY WAGE.		Normal Weekly hours of Labour.	Explanatory Notes.
	Min. Cents per hour.	Max.	Min.	Max.		
Rigmen employed in Drilling	15	24	...	...	48-56 hrs.	<i>General Remarks.</i>
Rigmen employed in Production	12	26	...	...	48-56 hrs.	I. <i>Housing.</i>
Production men	9	17	...	...	48-56 hrs.	Accommodation is sometimes provided for those employees whose presence is required on the Fields.
Rig Builders	12	26			} 45-48 hrs.	
Blacksmiths	9	26	...	...
Boilersmiths	9	26				
Cabinet Makers	9	26				
Carpenters	9	26				
Chauffeurs	14	26				
Electricians	9	26				
Firemen	9	20				
Fitters	9	26				
Masons	9	22				
Motor Mechanics	9	26				
Moulders	9	22				
Painters	9	17				
Plumbers	9	26				
Riveters	9	26				
Tinsmiths	9	26				
Turners	9	26				
Welders	9	26				
Semi-skilled	9	22				
Unskilled	9	14				

2. *Medical attention.*

(a) In the case of accident arising from employment Medical attention is usually free. In other cases the practice varies from Company to Company.

APPENDIX E.

Statement of Oil produced and exported year by year since the inception of the Petroleum Industry in the Colony.

Year.	Production in barrels.	Quantity of Crude oil and refined oil exported in barrels.
1908	37	...
1909	47,295	46
1910	105,078	...
1911	221,292	219,582
1912	485,905	122,734
1913	585,182	387,719
1914	993,216	348,351
1915	904,719	408,188
1916	927,875	975,142
1917	1,602,302	1,079,369
1918	2,081,920	1,305,407
1919	1,841,036	1,406,264
1920	2,083,110	1,034,907
1921	2,354,159	1,223,346
1922	2,444,670	1,615,740
1923	3,050,787	2,432,470
1924	4,058,060	3,224,529
1925	4,386,510	3,606,608
1926	4,971,479	3,988,308
1927	5,380,800	4,456,770
1928	7,684,587	6,361,675
1929	8,715,788	8,243,023
1930	9,418,957	7,678,807
1931	9,743,498	8,964,303
1932	10,126,121	9,637,474
1933	9,561,353	8,909,298
1934	10,894,363	9,981,774
1935	11,671,224	10,993,540
1936	13,237,030	12,405,222
1937	15,502,989	14,124,056
1938	17,737,201	16,417,020
	162,818,543	141,551,672

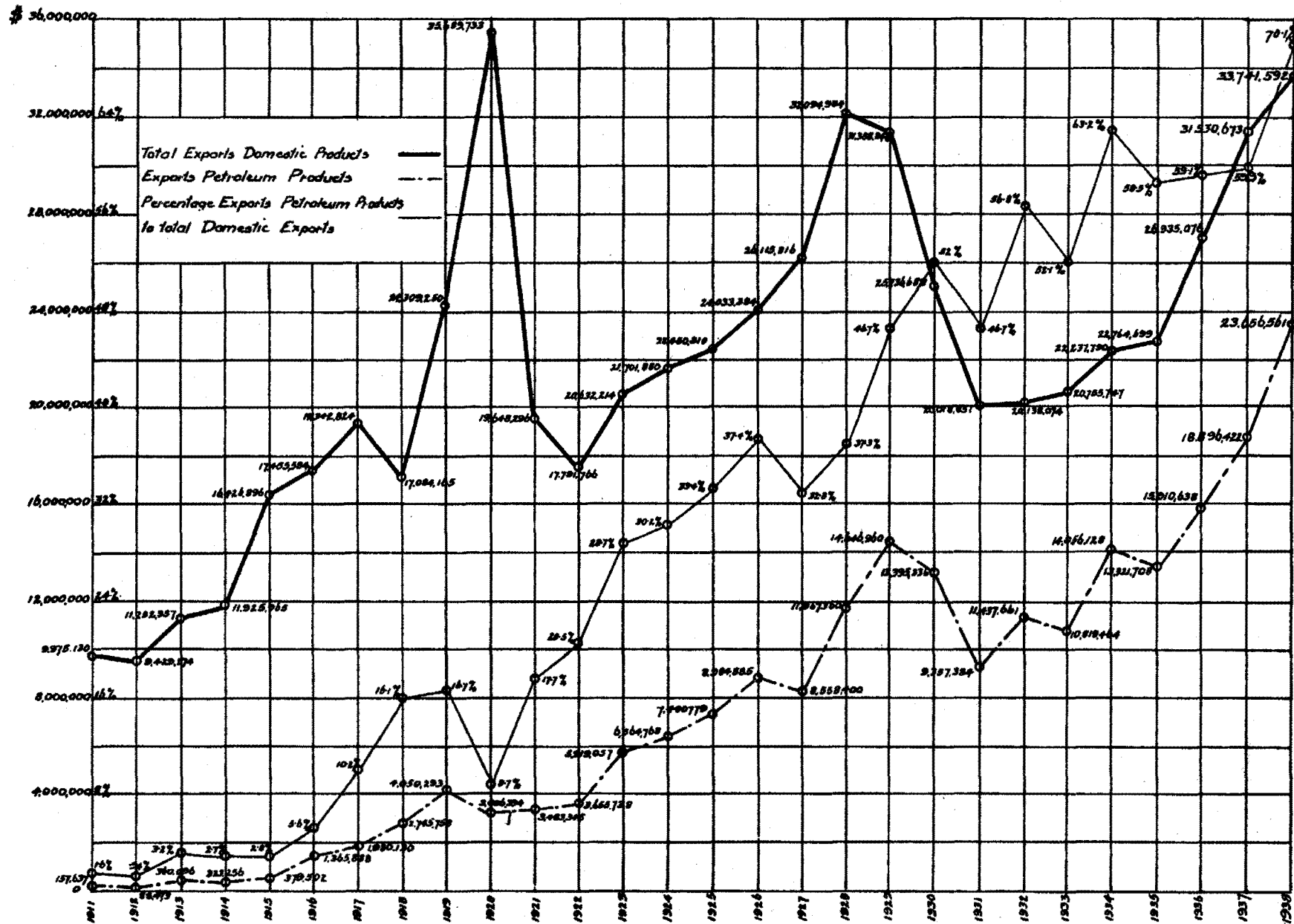
APPENDIX F.

Comparative Statement of Oil refined in the Colony.

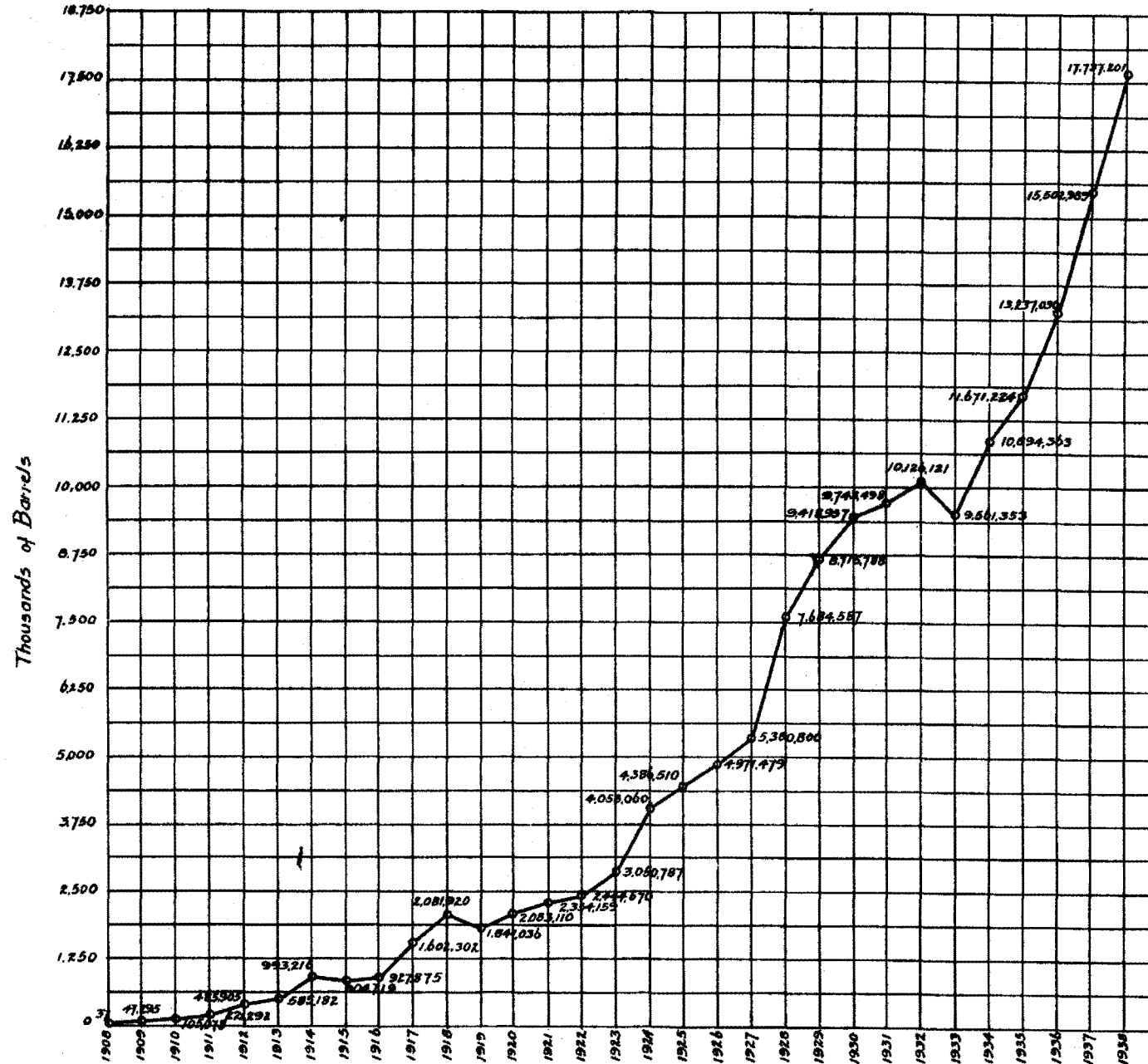
Previous to 1920 ...	...	...	...	...	...	...	4,051,373 barrels.
1920 ...	...	...	...	...	...	...	1,395,487 do.
1921 ...	...	...	...	...	...	...	1,806,016 do.
1922 ...	...	...	...	...	...	...	1,820,018 do.
1923 ...	...	...	...	...	...	...	2,360,279 do.
1924 ...	...	...	...	...	...	...	3,433,902 do.
1925 ...	...	...	...	...	...	...	3,790,343 do.
1926 ...	...	...	...	...	...	...	3,786,876 do.
1927 ...	...	...	...	...	...	...	4,796,223 do.
1928 ...	...	...	...	...	...	...	6,725,383 do.
1929 ...	...	...	...	...	...	...	7,642,726 do.
1930 ...	...	...	...	...	...	...	7,989,679 do.
1931 ...	...	...	...	...	...	...	6,899,144 do.
1932 ...	...	...	...	...	...	...	7,635,296 do.
1933 ...	...	...	...	...	...	...	9,129,810 do.
1934 ...	...	...	...	...	...	...	10,846,584 do.
1935 ...	...	...	...	...	...	...	11,148,285 do.
1936 ...	...	...	...	...	...	...	13,028,161 do.
1937 ...	...	...	...	...	...	...	15,111,046 do.
1938 ...	...	...	...	...	...	...	17,596,932 do.
	Total	...	...	...	...	...	<u>140,993,563</u>

A
TRINIDAD AND TOBAGO

APPENDIX G.

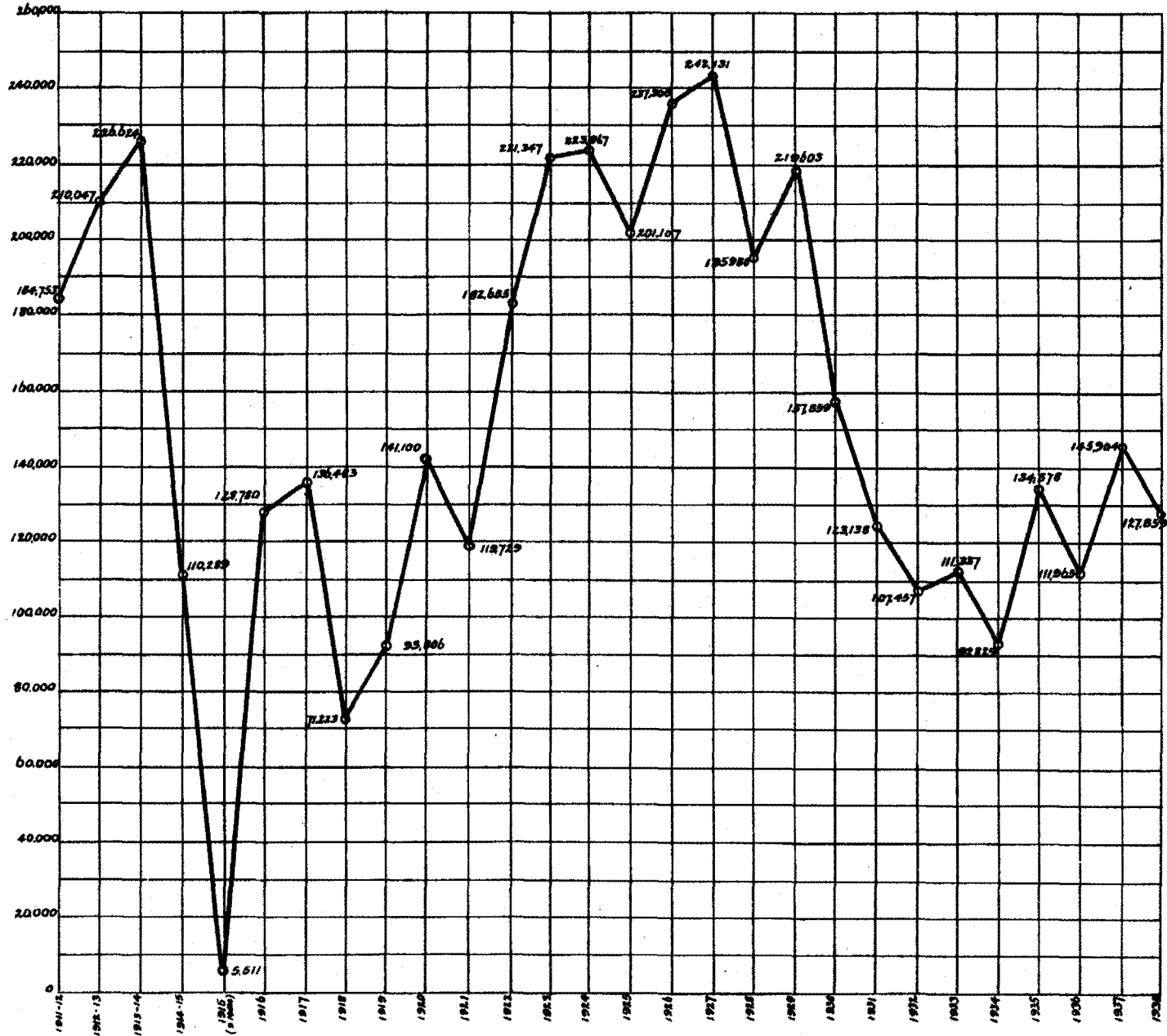


C
Total Annual Production of Crude Oil in Barrels
One Barrel - 35 Imp. Gallons



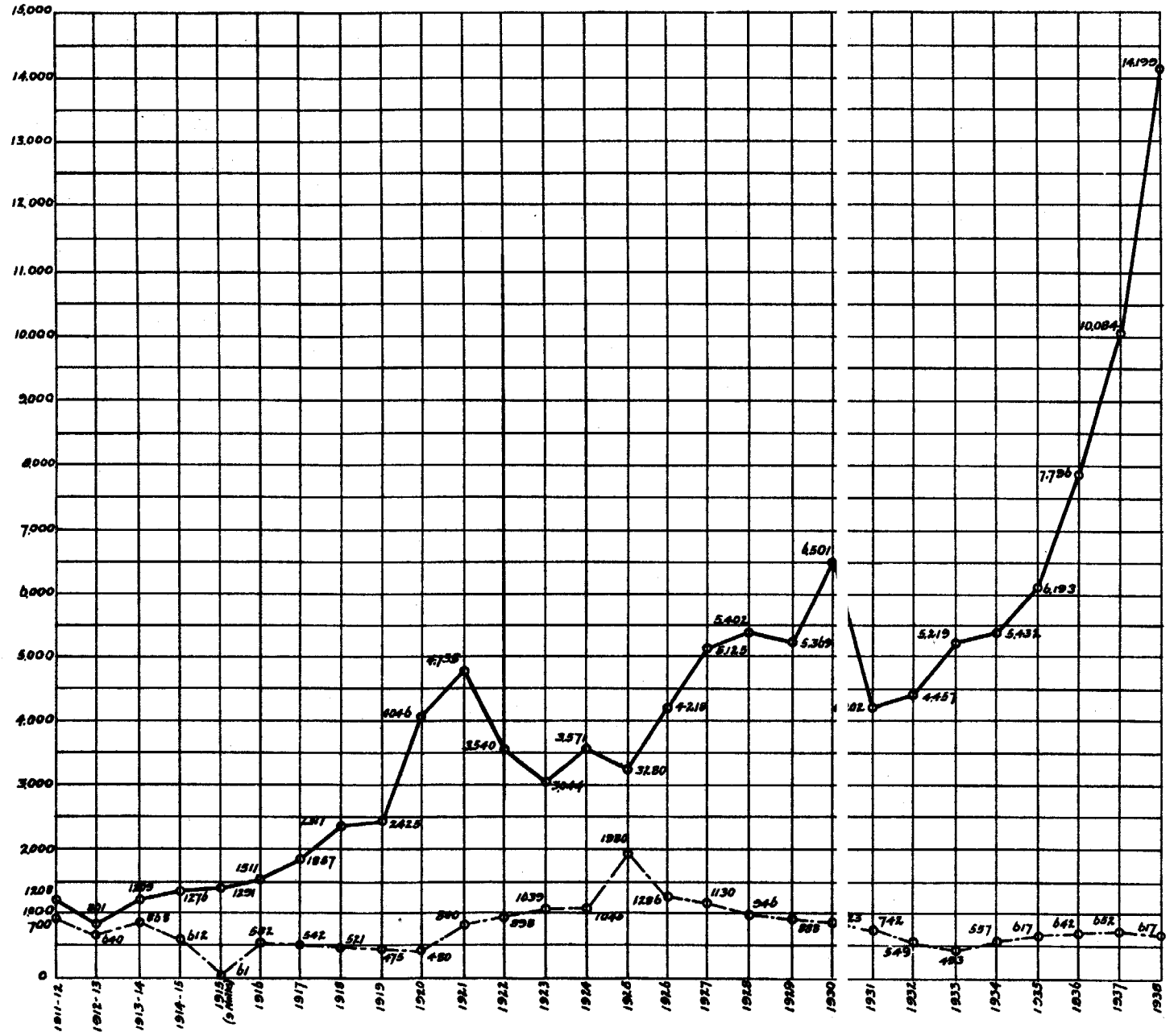
D

Curve showing yearly output of Asphalt from the Colony
in Tons from 1st April 1911 to 31st December 1938



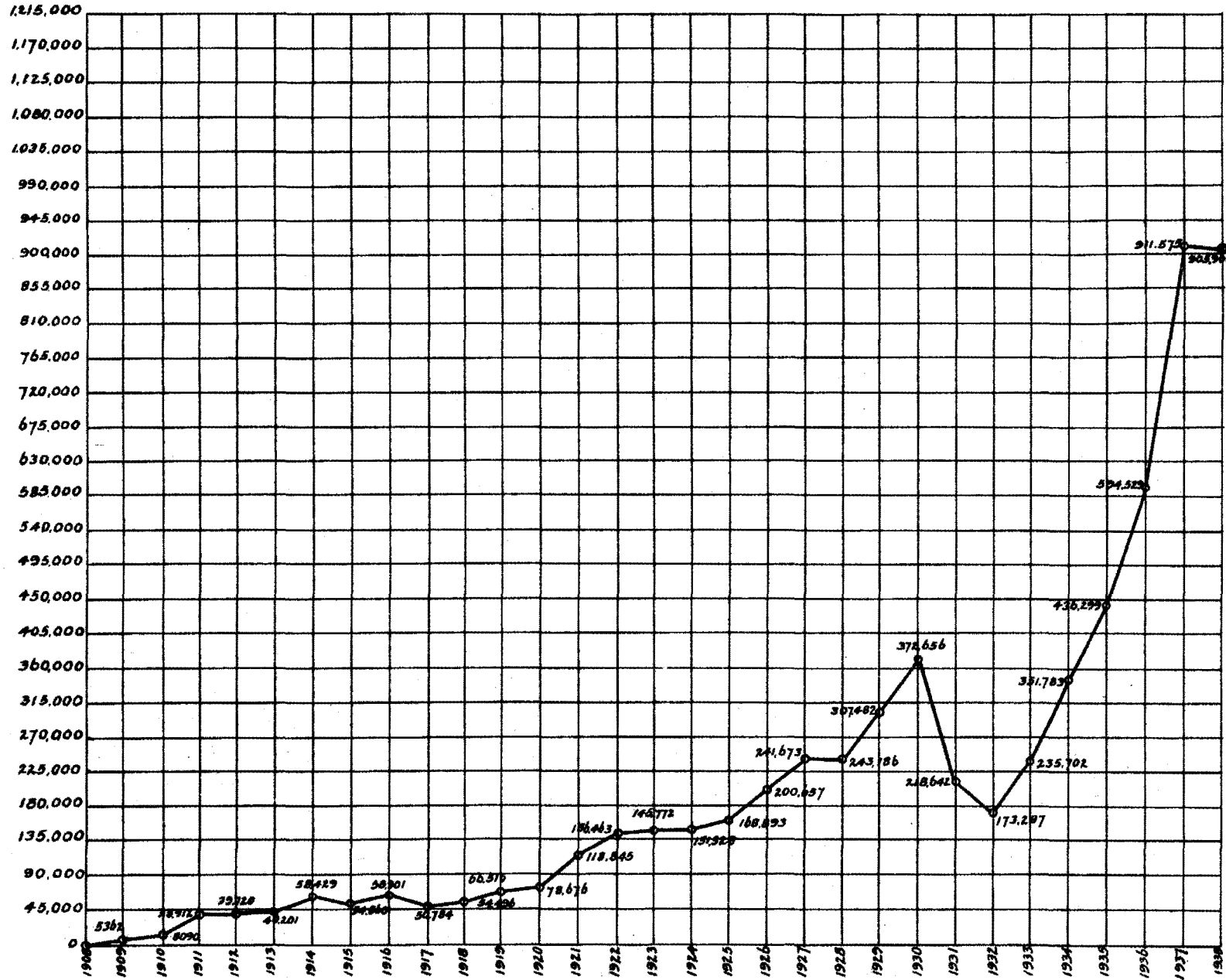
'E'

Chart showing comparison of daily average number of persons employed in the Oil and Asphalt Industrie of The Colony from 1st April 1911 to 31st December 1938



"F"

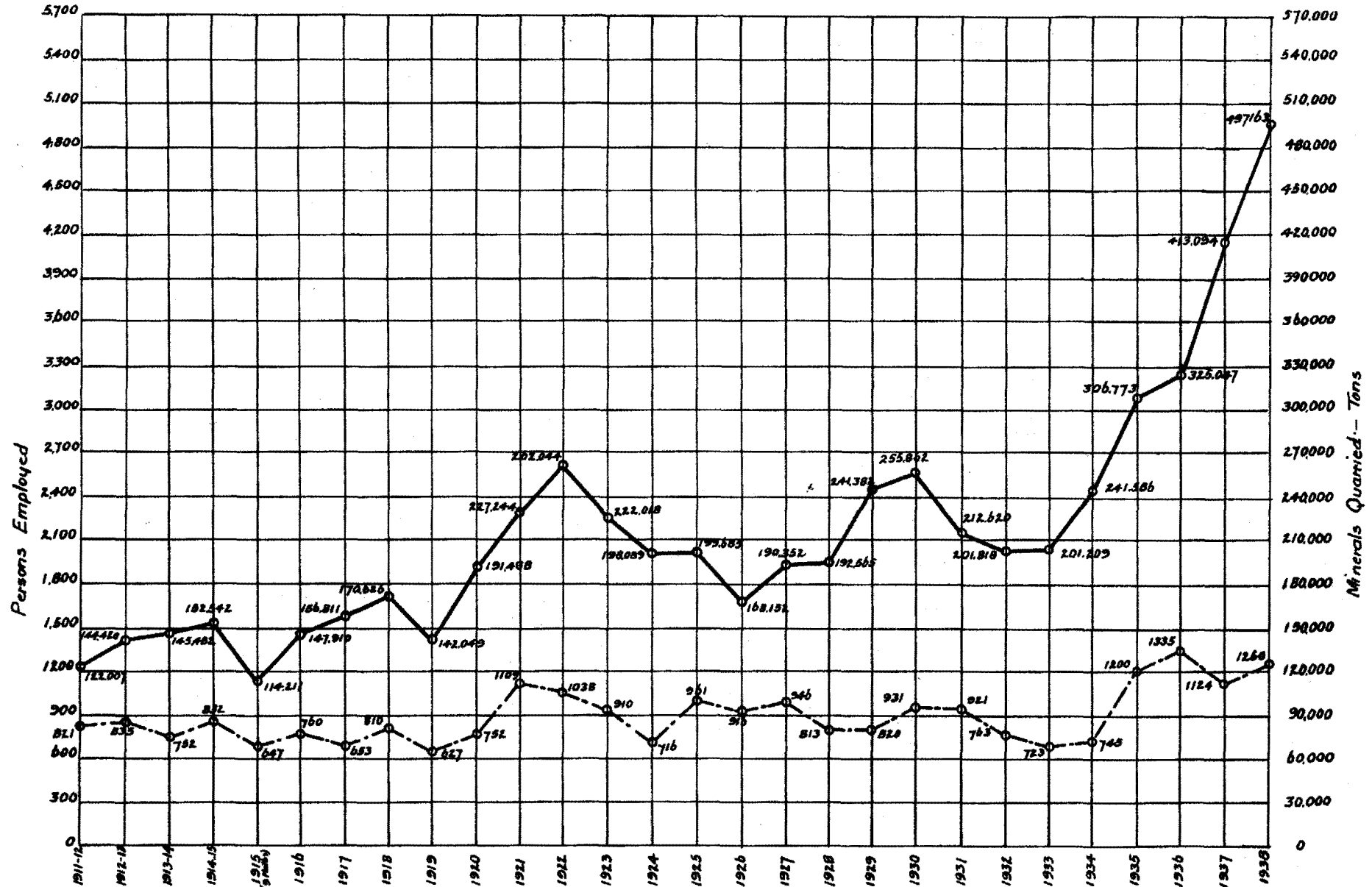
Total number of feet drilled annually
in the Colony



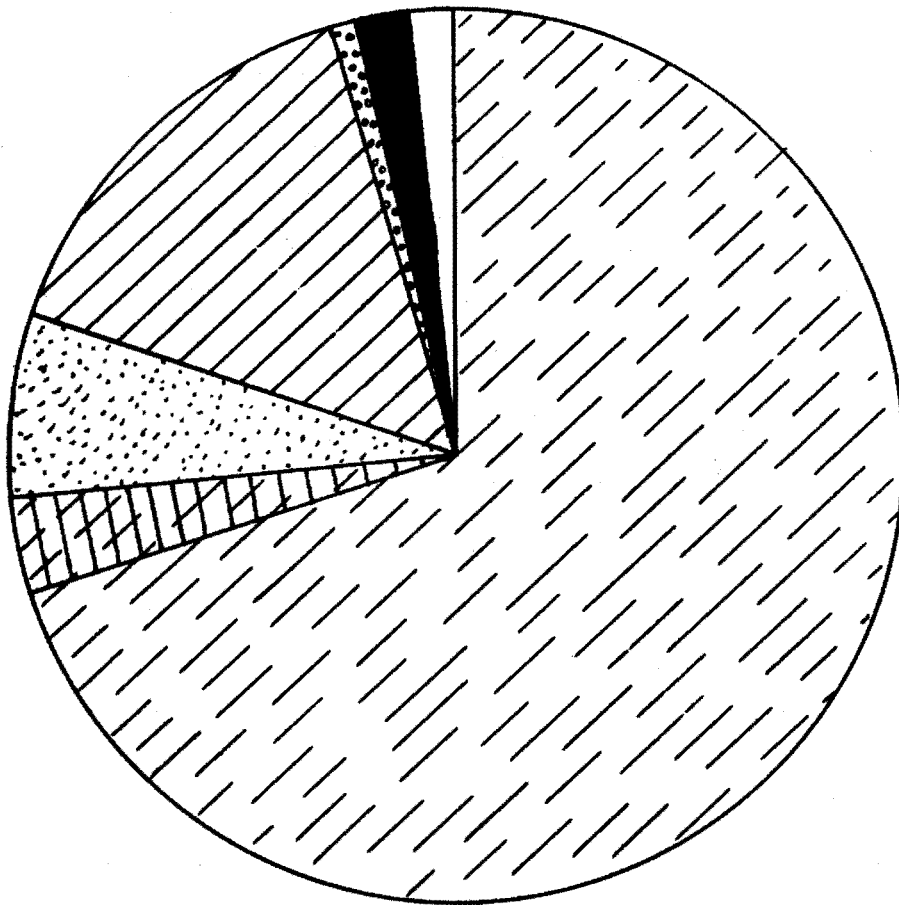
"G"








Chart showing the yearly total quantity of Minerals quarried and a comparison of the daily average number of persons employed in quarries in the Colony from 1st April 1911 to 31st December 1938

Minerals quarried — Persons employed - - -



APPENDIX H.



<u>Mineral Exports</u>	73.5%	
Petroleum Products	7.0%	
Asphalt	3.4	
<u>Agricultural & other Exports</u>	26.5%	
Cocoa	7.0	
Sugar, Molasses, Rum	15.3	
Coconuts, Copra, Coconut Oil	7	
Fruit & Fruit Products	1.8	
Other Exports	1.7	

'H'

ROYALTY AND WAYLEAVE

Royalty shown thus ———
Wayleave - - - -

