

明治三十五年七月十日

海軍省

受第九四二九號

今般軍事調査上必要相生之候有左記浦塩港  
 外二十三所ニ於ケル官有ノ民有ラ問ハレ現在貯藏スル所  
 石炭ノ種類・概噸數并ニ艦船機械用ノ油及其概量ト  
 右ニ對シテ所有者ノ氏名詳知致度殊ニ該諸港中浦  
 塩・仁川・大連・旅順・膠州ノ五港ニアリテハ茲ニ輸送ニ未  
 ル該物質ノ發送地名并ニ仕向商人ノ姓名ヲモ併セテ  
 知悉致度希望ニ候條下御手数數其向御下人命  
 之上何分之御報相煩度此段及御照會候也

明治三十五年七月十日

海軍軍令部第三局長細谷資氏  


### 外務省通商局長杉村清殿

(別記)

浦塩	元山	釜山	仁川	平壤	大連
旅順	營口	太沽	芝罘	膠州	上海
福州	厦門	香港	西貢	盤谷	新嘉坡
パルウエー	(Pallouei, N.W. of the Island of Sumatra)		馬尼刺	汕頭	
ペナン	海防	(東京灣)	ムアラ	Muala	(北ボルネオ)

明治卅五年七月十八日  
通商局長 主任 87  
海書 校正 簿

明治卅五年七月十八日起算  
同 年七月廿一日發遣

通商局長

主任

代

村通商局長

仁川、牛莊、芝罘、元山、釜山、福安、廈門

香港、盤谷、各領事

天津、上海、總領事

上海、新嘉坡、事務代理

外務省

平壤、分館主任、副領事

現在貯藏之石炭、種類、概噸數并

艦船機械用、油等、圖を取調、付

軍軍事上調査、必要、天津、貴地、代、本活 俟、趣、ラ、以、テ

貯地、於、ケル、官、有、民、有、ク、同、ハ、ス、現在貯藏之

炭、石炭、種類、概噸數、并、艦船機械用

油及其概量、右、對、之、所有、者、氏、名、浦

潮、仁川、一、并、送、地、名、仕、向、商、人、姓、名、

5-0240

0007

詳知致度旨今般海軍々令部より依頼  
有之候間右御調査・上向令、御回報相  
成度此般申進候也

申付

牛莊及芝罘ト

牛莊及芝罘

追テ〔牛莊(一)大連及(二)旅順(芝罘(一)

膠州)ニ於テ本文ノ事項及該物貨、

發送地名并ニ仕向商人ノ姓ヲモ取調

方依頼有之候付出来得限御取

外務省

調相成度此般申進候也

廈門、香港、盤谷、新嘉坡

追テ〔廈門(一)汕頭(香港(一)海防(東京湾)

盤谷(一)西貢(新嘉坡(一)ポナン「ムアラ

Amura (北マリア) 及「フルウエー」(Guillo-Wee)

N.W. of the Island of Sumatra) 〃於テ

水ノ事項モ取調方依頼有之候間

出来得限御取調相成度此般

申進候也



省務

在韓各公館										
在平壤	在城津	在群山	在馬山領事館	在鎮南浦領事館	在木浦領事館	在元山領事館	在釜山領事館	在仁川領事館	在京城領事館	在韓公使館
送第 三二號	送第 號	送第 號	送第 號	送第 號	送第 號	送第 八〇號	送第 三三號	送第 九五號	送第 號	送第 號
送第 號	送第 號	送第 號	送第 號	送第 號	送第 號	送第 號	送第 號	送第 號	送第 號	送第 號

省務

在清國各公館											
在漢口領事館	在重慶領事館	在福州領事館	在沙市領事館	在杭州領事館	在蘇州領事館	在廈門領事館	在牛莊領事館	在芝罘領事館	在天津領事館	在上海總領事館	在清公使館
送第 號	送第 號	送第 五六號	送第 號	送第 號	送第 號	送第 四九號	送第 七〇號	送第 七三號	送第 一四號	送第 九八號	送第 號
送第 號	送第 號	在瓊州(香港)	在廣東(香港)	在嗎港(香港)	在汕頭(廈門)	在宜昌(沙市)	在温州(上海)	在寧波(上海)	在九江(上海)	在蕪湖(上海)	在鎮江(上海)
送第 號	送第 號	送第 號	送第 號	送第 號	送第 號	送第 號	送第 號	送第 號	送第 號	送第 號	送第 號

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外務省

		在印、濠、悉各公館									
	在暹	公使館	送第								
	在盤谷	領事館	送第	二七	號						
	在香港	領事館	送第	六四	號						
	在新加坡	領事館	送第	六五	號						
	在孟買	領事館	送第		號						
	在マニラ	領事館	送第	四七	號						
	在シドニー	領事館	送第		號						
	在タウンズビル	領事館	送第		號						
	在哥爾薩	領事館	送第		號						
	在浦潮貿易	事務館	送第	九五	號						
			送第	三	號						
			送第		號						

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0010

七ノ二アハ

朝鮮通信使 八月六日 受 通商局

公文一のハ

女炭の白皎油現在教報告

本年七月二十日付送第一一號書信

以下尚老現在貯蔵之石炭種

及び其噸數並機械用油之噸數

方印の示す如く敬承致候

之由調査の報告を同印を査察上

之に付不調の事も同印を返答中

進三教員

北派三十五年七月廿一日

上屋山

領事部 奉 命 官 氏

在朝鮮國釜山日本領事館

朝鮮大臣 閣下 村 壽 大 以 啟

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子中

石炭並白鯨油産山現在数調査表

種類	産地	石炭現在数	回船中数量	貸主姓名
切込炭	筑前若松	四万斤		今井友吉
"	"		塩一万斤	石同人
"	"	九万斤		中村俊松
"	"	十萬斤		藤浪彌市

備考 産山海軍用品支庫現在数之者之

榎木油、白鯨油、現在数

貳石四斗

橋本清三郎

壹石四斗

梶谷種松

壹石九斗

上野市之助

在朝鮮國釜山日本領事館

但外ニ各店ニ貯藏セル石内外ノ見込

明治三十五年八月十五日發 通商局

公第一二七號

現在貯藏スル石炭ノ種類概噸數并ニ艦艇  
機材用ノ油等ノ圖スル報告ノ件

當地ニ於ケル官有民有ノ同ハズ現在貯藏石炭ノ種類  
概噸數并ニ艦艇機材用ノ油概噸數取調方ニ関シ七月二十  
一日附送才八〇號ヲ以テ了レ越ノ趣致致承テ右ノ別表  
ノ通り取調茲ニ及提出美条海軍省ハ正移牒方可然  
レ取斗モ以テ様々分申及報告至敬具

明治三十五年八月七日

在元山領事館事務代理

山崎 三雄

外務大臣男爵小村壽太郎殿

在韓國元山港

日本領事館



元山港に於て現在貯蔵石炭ノ種類噸數表

品名種	類	噸數	所有者氏名
石炭英	國	一〇〇	海軍省
金	田	四三〇	全
唐	津	二四〇	全
不明	(若格ニ種入)	二〇〇	福島福松
"	(川口ニ種入)	一〇〇	田口吉次郎
"	全	八〇	古賀庄太郎
"	全	四〇	尾谷潔之
"	全	八〇	横山喜太郎

附 艦船機用ノ油ハ貯蔵者皆無キ

在韓國元山港 日本領事館

大書院

明治廿五年八月廿二日

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明治廿五年 八月廿一日起算  
同 年 九月十三日發遣

通商局長

主任

第 二 二 七 號

板北通商局長

佐野之令新第三局長

細谷資次郎

石炭、種類、概噸數并、艦船材

用、油等、関之、取調、行

外務省

農官事上相、其、必要、相生、候、速、決

浦潮港外二十三ヶ所、於之、官有、民有

ノ、同、之、現在、貯藏、之、處、石炭、種類、

概噸數并、艦船材、用、油、及、其他、

関之、取調、方、々、付、察、月、十、日、付、以、テ、御

照會、相成、夫、之、通、達、致、置、候、事、知、今、般

在、全、山、帝、國、領、事、及、元、山、領、事、館、事、務、分

代理、ノ、別、紙、字、通、下、回、答、有、之、其、付

外務省  
送付状

別紙(公身一〇八号及公身一三七号) 附属

子送付(一)

外務省

通商  
三三三  
載濟

在韓仁川日本領事館

明治三十五年八月廿二日 通商局

公第一三八号

一三九

石炭及艦船機械油取調報告、件  
石炭及艦船機械用、油、状況ニ付テ取調ノ報告  
又可キ旨七月廿一日并送第九五号ヲ以テ申出  
、趣、知致ス依、別紙取調ニ及申報告ヨリ  
所査収相成度矣敬具

明治三十五年八月十四日

在仁川

領事 加藤本四郎



外務大臣 野村吉三郎 殿

三十五年九月十八日

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0017

29 通商

<p>昨年中當港に輸入セシ石炭ハ凡ソ六千八百屯計リ          ニシテ此等ハ多ク不定時帆船ニテ九州各港(門司、          唐津若松等)ヨリ運搬セシ輸入商人ノ手ヲ經テ          直ニ一般消費者ノ手ニ分配セラルヲ以テ多量ハ          貯藏スルモノトシテ、<small>現在セラル石炭ノ</small>          種類ハ伊田、唐津、伊萬里、今福炭等ニシテ就中          伊田炭最多ク、<small>京仁鐵道ニ使用セラルコトナル</small>          モ、<small>ニシテ其内譯ハ右表ニ示スカ如シ</small></p>		
石炭、種類	概屯數	仕商ノ商人等ノ 所有者
伊田炭	一、〇〇〇	藤木秀次郎 三仁鐵道
唐津炭	一三〇	上田依一郎
今福炭	五〇	令
伊萬里炭	七〇〇	木村友吉
在韓國仁川港 日本領事館		
<p>猶官有之月尾島海軍物品支庫ニアシモノハ小          松浦徳及英山炭ニシテ當月々於テ概屯數ハ千          三百五拾五屯ナリ</p>		
<p>昨年中輸入セシ畧械油ハ五千三百五十三屯ニシテ          現在々尙、油、種類及概量ハ左ニ示スカ如シ</p>		
鑛油	五〇〇	
種油	二三〇	
白紋油	二八	
コシ油	七	
シヤ油	五	
カスト油	四	
大豆油	五	
<p>右ノ中鑛油ハ宋人タウセント、輸入ニ係リ其他ハ</p>		

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通箱

大坂水野商店、富永商店、高田商店ノ發送  
ニ係ルモノ、而シテ、吉藏地ニ於テハ、販賣店ニ付、  
吉藏、田中、富永、郎等ナリ

明治三十五年八月十四日

在仁川

日本領事館

仕

在韓國仁川港

日本領事館

文書課長

明治廿五年八月廿九日受

明治廿五年八月廿九日發遣  
同 九月十三日發遣

通商局長

主任

三三五

通商局長 杉村清

海軍少令 野村浩平 長 白根富太郎

三十號九月十八日發遣

外務省

海軍少令 野村浩平 長 白根富太郎  
 海軍少令 野村浩平 長 白根富太郎  
 海軍少令 野村浩平 長 白根富太郎  
 海軍少令 野村浩平 長 白根富太郎  
 海軍少令 野村浩平 長 白根富太郎  
 海軍少令 野村浩平 長 白根富太郎  
 海軍少令 野村浩平 長 白根富太郎  
 海軍少令 野村浩平 長 白根富太郎  
 海軍少令 野村浩平 長 白根富太郎  
 海軍少令 野村浩平 長 白根富太郎

1912

1525

明治廿五年九月九日 臺灣總督府

公第一〇二號

一九九八

香港ニ於ケル石炭油ノ種類  
概量等取調回答ノ件

去月廿一日付送第百四十九号ヲ以テ  
地帯ニ汕頭ニ於ケル石炭油ノ概量并  
ニ所有者ノ氏名等取調方海軍  
ニ令部ヨリ依頼有之候旨傳  
越ニ趣了承者ニ答我之通り有  
之候此及及テ回答候也

在厦門

明治廿五年八月十八日 領事 上野專



在清厦門日本帝國領事館

外務大臣男爵小村書太郎殿



Present Stock of Coal & Machine Oil  
 (Aug, 1903 August 1903)  
 Coal

Name	Tonnage	Owner
Fruturno Lumps	about 300 Tons	J. Matheson Co.
Reelung	600 Tons	Douglas & Co.
Australian	100 Tons	"
Karatou Kungom	2,000 Tons	Boyd & Co
Cardiff	200 Tons	Rosedog & Co
Ngai Kungom	2,000 Tons	"
Unknown	1,000 Tons	Butterfield & Swire
Machine Oil		其他数百噸支那人所有 = 標記不明

Name	Tonnage	Owner
Quilting & Lubricating Engine Oil	1 case = 44 3/4 gal. 34 drums @ 5 gal.	A. Inverle etc.
Shafting Oil	1 case = 44 3/8 " 1 case = 41 13/18 "	"

山頭 = 於此現在高小分明ナラズ但之同地ヲラツトビ  
 商會 (Bradley & Co) = 貯藏セル在庫ハ下ノ如ク  
 1. 2. 3. 4. 5.  
 1. Ohnoura Lumps  
 2. White Washed Kapo.  
 3. Braide Lumps.  
 4. Takano Pillar Kungom  
 5. Tamora Lumps & Chest



公信第一之六

通商局  
管收務局

一三二四

石炭並艦船機械用油等

調査報告ノ件

海軍々令部ヨリ依頼有之ニ趣ヲ以テ当港ニ於テ  
現在貯藏スル石炭ノ種類概噸數並艦船機  
械用ノ油等調査ニ関シ本年七月三十一日自貴  
信送第七三号ヲ以テ示未示ノ趣致敬兼候  
乃千別紙ノ通リ調査及報告候向可然  
事取斗相成度共段申進候教具

明治三十五年九月三日

在芝罘

領事小野幸十



在芝罘日本領事館

外務大臣男爵小村寿太郎殿

追テ全信追書ヲ以テ示未示相成候膠州灣ニ  
於ケル本文調査事項ノ関シハ早速全地在  
番ノ者ニ依テ致置候間回答接于次ノ信報  
可申進共段申添也

明治三十五年九月二日現在芝罘

石炭概算高

日本炭

開平鑛務公司

千四百噸

招商局

千五百噸

捷成洋行

千五百噸

士美洋行

千八百噸

太古洋行

三百噸

德和洋行

貳千噸

其和洋行

三百三拾噸

合順洋行

五百噸

毛興

？ 五百噸

在芝罘日本領事館

和記洋行

千貳百噸

大羅洋行

四百噸

三井洋行

八百噸

合計 壹萬參千四百參拾噸

英炭

大羅洋行

參百噸

捷成洋行

千八百噸

和記洋行

千六百噸

士美洋行

四千噸

合計 七千七百噸

開平炭(粉)

開平鑛務公司

八百噸

機械油概數、詳查、途ナシト虫氏左ノ二

在芝界本日領事館

店持高ハ

順泰

エトナエンジンオイル

二拾樽

但凡五十ガロン入

合順

バキヤムエンジンオイル

二拾樽

但一箱二罐入一罐五ガロン入

全

拾樽

但四十五ガロン入

以上

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文書課長

明治廿五年九月十七日接獲

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明治廿五年九月十六日起草  
同 年 一月十八日發遣

通商局長

信子 主任

送第 二 五 〇 號

松本通商局長

海軍令部第三局長

細谷資氏宛

石炭并 艦艇機用油等ニ関ス

取調付

外務省

貴 御依頼相成候石炭、種類概

并 艦艇機用油及其他ニ関ス

取調付付今般在芝罘及厦門

帝國領事ヲ別紙ニ通シ回答有之

候簡右及御送付也

(別紙ニ付テハ一六六号及一〇二号ノ附信書)

字添付ノ)



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アジア歴史資料センター

Japan Center for Asian Historical Records

<http://www.jacar.go.jp/>





合計

三十三五〇

大正十一年三月三十一日現在野島ノ名義五隻船積付用油

所有者名

種類

数量

英國加タタール炭

五〇,〇〇〇

(Peabody's Coal)

大正十一年三月三十一日現在

種類

数量

Carole Navy Yard

種類

一六〇〇

種類

四五九五

大正十一年三月三十一日現在野島ノ名義五隻船積付用油  
大正十一年三月三十一日現在野島ノ名義五隻船積付用油

在外公館

5-0240

0030

九月廿五日

通商局

公ノ八四号

受領二六五四番

新嘉坡港ニ於ケル貯藏石炭、種類ニ数  
并ニ艦船機械用、油等ニ関スル件報告

当地ニ於ケル現在貯藏石炭、種類ニ数并ニ  
艦船機械用油等ニ関スル取調ヲ海軍々  
令部ヨリ依頼有之共、趣ヲ以テ去ル七月二十日  
付送テ六五号信ニテ申訓達、次ヲ領承致共  
右取調、結果左ニ申述共、同其趣同軍令  
部ハ申通牒相成共、殊致度共

一当地ニ於ケル貯藏石炭、比数、如キハ船舶  
、出入ト共ニ日々増減アルコト勿論ナレ共ハ  
月十五日現在貯藏石炭、種類并ニ概比数  
三井物産會社支店  
在新嘉坡日本領事館

左ノ如シ

日本炭

十萬七千九百屯

ウエールス炭 (Welsh)

六萬〇三百屯

ベレガレ炭 (Bengal)

一萬六千屯

澳州炭 (Austrian) 八千九百屯

一当地ニ於ケル石炭取扱店左ノ如シ

三井物産會社支店

パターソン・サイモン會社 (Paterson & Simon & Co)

ガスワリ會社 (Guthrie & Co)

ハウスレット會社 (Household & Co)

ヘーレ・マイヤー會社 (Bein Meyer & Co)

シンガポレットレーディング會社 (Singapore Trading Co)

マンズフィールド會社 (Mansfield & Co)

等ニシテ三井物産會社ヲ除クノ外ハ各汽船  
會社ノ代理店業務ヲ取扱ヒ居ルモノニシテ  
具各自取扱汽船ニ對スル石炭ノ供給ヲナス  
カ為メ之レヲ貯藏シ且フ臨機賣却スルヲ業  
トセルモノナリ

一艦船機械用油ノ貯藏高ハ各其營業店  
ニ就テ問合スモ容易ニ正確ノ報告ヲ得レコ  
ト出来難ク到底之レヲ知レコト能ハサル共今  
當業者ノ談ニ依レハ一時數千隻ノ軍艦來  
港スルカ如キコトアルモ当地ニテ該品ノ供給  
ヲ欠ク様ノコト決シテ可無之トコトナリ現  
日々五十隻乃至八十隻ノ船舶出入スル當港  
ノコトナレハ其必要品タル機械用油ノ如キハ

在新加坡日本領事館

当地ニ於テ十分得ラレハキ見込ナリ其重モナル  
營業店也、如シ

マカリスター商會 (MacAlister & Co)

ガジノ一商會 (Gaggino & Co)

ヴァキエナム・スイレ會社 (Vacuum Oil Co)

右ノヴァキエナム・スイレ會社ハ有名ナル米國ノスイレ  
會社ニシテ東洋ニ於テハ当地ヲ以テ本據トシ  
香港・マニラ・バタビヤ・スラバヤ等ニ支店ヲ有スル  
諸種ノ機械用油ヲ供給スルヲ以テ專業  
トスル商社ナリトス

右及由回報ニ敬貝

明治三十五年九月三日

在新嘉坡領事館事務代理

外務書記生大賀 龜吉



外務大臣男爵小村壽老郎殿

追テ「ハナレ」ムアラ「フル」ニ「ケル」本支事項、  
調査方モ「軍令部」ヨリ「依頼」有之「趣」ニ  
得共「当地」ニ「於テ」右等「各地」ニ「於ケル」分、取調ヲ  
遂ク「ハキ」便宜ノ「方法」無之「到底」实地「踏査」ヲ  
ナスニ「非ラサレ」ハ「十分」報告「出来」兼「其間」具  
旨「洗」セ「テ」「軍令部」へ「由」通報「有」之「度」此段  
申「添」也

在新嘉坡日本領事館



365

野老之石及油  
 野老之石及油  
 野老之石及油  
 野老之石及油

石

野老之石

野老之石

野老之石

野老之石

野老之石

Cylinder Oil

Engine Oil

Machine Oil

石

1100333

1005231

1100311

1005200

石

1100333

1100333

在外公館

石

1005211

5-0240

0035

アジア歴史資料センター

Japan Center for Asian Historical Records

http://www.jacar.go.jp/

明治三十五年十月十四日受  
普通郵便局

公信第一九號

第三四八二號

膠州灣に於て石炭並に船  
機用油調査報告、件

海軍を令部より依頼有之候趣より  
当港並に膠州灣に於て現在貯蔵  
スル石炭種類噸數及び艦船機  
用油等調査方針を制定し直に  
三揮り四に油未示、件当港に  
事、項の公信第一六六号より已  
報告候父膠州灣に於て油調査  
項別紙通り更ニ差進復間可  
由取計相成度申進復候具

明治三十五年十月廿三日記

在芝罘日本領事館

明治三十五年十月七日

在芝罘

領事 水野 幸吉



外務大臣 野村 壽太郎 殿

明治三十五年九月十日現在膠州灣石炭及艦船機  
械油概集高

石炭

日本炭

五徳炭 千噸

田川炭 二千噸

高料炭 二千噸

雜炭 三千噸

合計一万二千噸

獨逸炭

是レハ悉皆軍艦用ニテ正碓七噸數知リ

雜キ元現在四五千噸ニ裕ニ貯藏スル見込

艦船機用油及其數量

該港ニ於テ造船所鐵工所等ニ使用スル艦船機  
械油ニ悉ク獨逸本國製ヲ一時多量ニ輸入シテ  
供給スル者ナシハ高價ニ貯藏スル令量トシテ僅カ  
衣今之ノ場合ニ補充シテ位ニ過キテ貯藏  
高トシテ石炭且テ燈サナリトシテ造船所鐵工所  
見合量ニ秘密ニ貯藏セシメテ調査  
途ナシ



文書課長

明治廿五年十月十八日接受

21

津島校正原

明治廿五年十月廿六日  
同 年十月廿一日發遣

通商局長

倉

主任

送第

一八三

松本通商局長

海軍大臣事務局長

細谷資貞氏宛

石炭并、船舶燃料用ノ油等ニ

関スル取調ノ件

外務省

曩ニ御依頼相成候現在貯藏スル石炭、種類并

船舶燃料用、油及其他ニ関スル取調ノ件ニ

関シ今般別紙ヲ如ク新嘉坡マニラ及膠州

湾ニ於テ分、回答ニ接シ候間右及御送付候也

近テマニラニ於テ取調申取調書未國陸

軍輸重部ノ項ハ其取調ノ当時今部ヨリ回答

無之ヲ以テ不得止同部ノ事情ニ精通ス民間

当局者等ニ就テ調査シモニシテ別紙ノ分ハ

其後全輜重部長ヨリ回答有之タルモノト  
申越候間此段申添也

別紙 公作第一八九号 公第七十三号、七十七号

附属書ノ字及公第八四号全部ノ字添付

一)

外務省

公第 一五一 號

當牛莊港ニ於テ現在貯藏スル石炭ノ種類概噸數並ニ船舶機械用油ニ関シ回報之件

海軍軍令部ヨリ依頼ニ係ル當地ニ於テ現在貯藏スル石炭ノ種類概噸數並ニ機械用油及其概量取調方去ル七月二十一日付送第70號ヲ以テ御申越之趣敬承即チ別紙之通リ取調差出仕間可然御取計相成度尚ホ旅順大連ニ於ケル分ニ就テハ先頃中其向取調方依頼致置候一共未タ回答ニ接セズ候間右ハ速テ取調次第呈報可致候此段固

在牛莊日本領事館

答申進候敬具

明治三十五年十月六日

在牛莊

領事

瀨川淺之進



外務大臣男爵小村壽太郎殿

牛莊港ニ於テ現在貯藏スル石炭ノ種類  
概噸數並ニ船舶機軸用油及其概量ニ  
関スル調査

一石炭

當年牛莊港ニ於ケル内外商店若クハ會社ノ目下貯藏  
セシ石炭概噸數ハ約壹萬八千噸ニシテ今其種類及所  
有者氏名等ヲ表示スルニ即テ在リ如シ

炭種別	噸數	所有者	發送地	積出人
開平種炭	三千五百噸	英商 亞細亞火油公司	開平	谷口加藤會社
全上	二千五百噸	太古洋行	全上	不詳
大過三尺	七百噸	開平礦務局	全上	三井物産會社

五十一年日本領事館

開平粉炭	五百噸	全	上	天津	開平礦務局
門司糖炭	五百噸	清商	東永茂	門司	三井物産會社
全上	一千噸	全	東盛和	全上	西川商會
全上	八百噸	全	怡興源	全上	不詳
全上	一千噸	全	東生怡	全上	西川商會
全上	一千噸	全	大古元	全上	三井物産會社
三池炭	一千三百噸	全	裕發	中津	三井物産會社
門司糖炭	一千五百噸	榆管	鐵道	門司	三井物産會社
唐津	參千噸	東清	鐵道	唐津	三井物産會社
一第炭	六百噸	果商	海仁洋行	門司	西川商會

右ハ大抵各持主ニ於テ自家油坊用若ハ汽車炭  
 船用トシテ輸入シタルモノナレハ賣品ノ貯藏ハ目下甚ク少  
 ナリ僅カニ貳千噸内外ニ過ギスト云フ

東清鐵道會社ハ本年開河迄ニ尚ホ一万二千噸ノ  
 入用アリテ三井物産會社ト已ニ約定濟ナル由而セラ同  
 會社ノ當港ニ輸入スル石炭ハ牛家池停車場ニ陸揚スル  
 ト同時ニ直ニ内地各停車場ニ運搬スルカ故ニ當地ニ貯藏シ  
 置クモノハ僅カニ其ノ一部分ニ止レリ

一船舶機械用油

a. 機械用油 Oil Lubricating ハ當地方ニ於テ需  
 用甚タ少ナク本年開河ヨリ今日ニ至ル迄ノ輸入高僅カニ  
 七百五十ガロンニ過キス而シテ右ハ總テ東清鐵道會社  
 ニ於テ輸入シタルモノナレハ目下當地ニ幾許ノ現品ヲ貯藏  
 シ居ルヤ之ヲ調査スルニ由ナレ

b. 蓖麻子油 ハ當港輸出品ノ一ニシテ目下當地ニ於  
 テ本品ノ取扱販賣ニ從事セル商店三戸アリ現在貯藏  
 在牛莊日本領事館

セル在荷高ハ大畧八百篁ニシテ之ヲ各商店ニ區別スルハ  
 ハ即チ左ノ如シ但シ一篁ノ容量ハ約四十四ガロンナリ

天合錦

三百五六十篁

恒利徳

三百篁

同恭興

一百五六十篁

文書課長

明治卅五年十二月一日發着

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淨書 校正原

明治三十五年十二月四日發着

主任

通商局長

人

杉村 長

細谷海軍司令部第三号

石炭系、艦艇機用油等、関及前件

目表、仰依表作成、不炭、柱炭系、艦艇機

三月九日十一月二十五日記録

外務省

用ノ油日其他、関及、果、潤、方、件、自、今、既、在

牛、在、帝、国、領、事、多、別、紙、了、之、通、了、回、報、接、也

向、方、之、事、業、却、也、成、成、成、也、中、途、也、也

別紙、公、牙、一、五、号、位、接、着、上、海、自、ノ、子

牛、在、領、事、束、公、第、一、五、一、号

14  
112

軍令部 第三局 陸 號

軍事調査上必要有之島流外ニ于テ所ニ  
於ケル石炭并ニ船舶補給用油ノ種類及  
其貯蔵量等事ニ於テ既ニ調査ノ在リ  
方量ニ對シテ亦依テ未定山北等ノ  
所ニ對シテ亦逐次調査ニ續ク爲メ大  
ノ調査ヲ得ル事ヲ期スルニ付  
調査ノ進行上必要有之島流外ニ於  
テ皇陸軍次官ニ對シテ未定ノ所ニ對シテ  
ハ亦調査ヲ得ル事ヲ期スルニ付  
ハ亦調査ヲ得ル事ヲ期スルニ付  
ハ亦調査ヲ得ル事ヲ期スルニ付

二十五年十一月九日

海軍

ニ於テハ炭油ノ概貯蔵量ニ詳知スルノ必要  
有之島流外ニ於テ亦調査ヲ得ル事ヲ期スルニ付

明治三十五年十一月九日

細谷海軍令部第三局長



杉村和助有通商局長

(北政印)



5-0240

0046

海軍

石炭及船所用樟油元開方  
 大原於之所  
即開查者款到連ノモノ又ハ  
 附者ノ付法マシノ其他ハ未達

浦塩	元山	仁山	平壤	大連	旅順	管口
太沽	芝罘	膠州	上海	福州	厦門	香港
盤石	新嘉坡	ポルツエー	馬尼刺	汕頭	波南	海防
						西貢

コトサコフニ(三)ハ船務ノ調査ニ由ルカニ分

文書課

明治三十五年十二月三日接受

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清書校正

明治三十五年十二月一日起申  
同日發遣

主任

通商局長

物

倉

了了

送第

三六號

送第

五五號

小村大目

在 瀨谷

在 子儀分館

在 福

小松領事

主任

領事

在 浦朝

在 上海

送第一

小松領事

但各通

石原、程其、概、噸、數、等、艦、艇、標、幟、用、油、等、

外務省

関スル取調ノ件

本年七月廿一日

鹽谷

送第二十七号

平漢分館

送第三二号

福

送第五二号

浦朝

送第九五号

上海一送第九八号ヲ以テ其地ニ於テ現在貯存スル

所ノ石炭ノ粒粒、概噸數等、艦艇標幟用ノ油等

概重量、所有者ノ氏名等詳細調査方々件

送第、本、及、了、了、報告、不、接、者、之、急、ク、要、ル、ハ、各

令、回、重、ク、海、軍、令、部、ヲ、越、ク、以、テ、身、ヲ、以、テ、

5-0240

0047

石見國出雲國松江府松江藩  
藩政ノ上ノ御用ノ爲ニ  
御用ノ爲ニ

外務省

5-0240

0048

アジア歴史資料センター

Japan Center for Asian Historical Records

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文書課長  
明治三十五年十二月八日  
明治卅五年十二月三日接受

同 明治三十五年十二月八日 日發遣

主任

總務課

通商局長

救

倉

送第六〇號

小村大目

在阿可也隆港  
野村副領事宛

現在貯蔵する炭ノ種類概噸數年

艦艇操械用ノ油号・潤滑系取調ノ件

三十一年十二月九日

外務省

軍事上調査ノ必要有之趣ソレ其地ノ貯蔵官

有目有之調査現在貯蔵する炭ノ種類概噸數

手・艦艇操械用ノ油日其概量ト古ニ對スル所有者

ノ氏名詳細姓名及今般海軍ノ全部ヨリ依頼品

ニ之調査上之必要何カノ返答有之

生般中送也

7/12

明治卅六年一月六日

公第一九六号

旅順口貯藏ノ石炭ニ関シテ回報ニ付

本年七月中送第七〇號ニ以テ御申越  
相成候當地ニ於テ貯藏スル石炭ノ種類  
數并ニ艦船機用油ノ關シテノ量及御  
報置候處右ノ關シテ旅順及大連ニ於ケル  
査方其向ニ依頼致置候處旅順ノ分ニ疾  
ニ回報致末候一共大連ノ分ニ今以テ確報  
接セ候間不取敢旅順ノ分大別我ニ記載差  
出候尤モ同地貯藏ノ機油ノ高ニ調査出  
未葉候由ニ付右様御善知相成度此段御  
回報旁中進出敬具

明治三十五年十二月八日

在年並日本領事館

在付庄

領事 瀬川 淺之佳



外務大臣 岡田 小村 壽太郎 殿

5-0240

0050

旅順口に於て貯藏せる石炭ノ種類所有者  
並ニ概噸數表 (三十五年十月調査)

炭種別噸數	所有者	主發送地	納付人
カライフ炭 六万噸	海軍部		ギンスブルグ
高島炭 三万噸			左 上
川目三等炭 三万噸	東清鉄道會社		東亜商會
杵島炭 三万五千噸	東清鐵道會社 社長 峯		三井物産會社
川目下等炭 五万噸	流國 人		
左 上 八万噸	英國 人		
カライフ炭 五拾噸	海軍水電部		ギンスブルグ
カライフ粉炭 五拾噸			左 上

在牛莊日本領事館

明治卅六年一月六日 臺灣通商局

公傳第七五號

受第二三九號

石炭の種類噸数并艦船機械用油等

三関に取調件回申

當地大同江、對岸一帶、無烟炭ヲ産スルモ右、鍊製ヲ經セハ  
艦船用、燃料ニ適ク、其他當市内外ニ石炭并機械用油貯  
藏スル者無之候

右及回申候敬具

明治三十五年十二月二十一日

在平壤分館主任

外務書記生 新庄 順貞

在平壤  
分館主任  
新庄 順貞

外務大臣男爵 小村 壽太郎 殿

在外公館（平壤）

明治卅六年一月十二日

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文書課長

明治廿六年一月八日接獲

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文書課長

明治廿六年 一月十七日 發達

主任

通商局長

倉

明治廿六年一月十日

送第

第

杉村 長

細谷海軍少令部第三局長宛

石炭等、艦艇機用、油等、関之、取調、件

目録、此、係、在、石炭、ノ、様、状、等、ノ、艦、艇、機、

外務省

用、油、等、其、他、之、関、之、取、調、件、目、今、在、本

在、帝、國、領、事、ノ、旅、順、口、於、レ、ル、別、紙、ヲ、以、テ

報、告、ノ、様、子、ヲ、以、テ、其、様、子、ヲ、以、テ、報、告、ス、ル、事、

（英公使等）

（別紙第一九六号）

14  
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明治二十六年一月十一日

公方三九号

石炭及艦艇機械用油等取調の件

本年七月廿日付送中九五年一ラ以テ法米  
 訓有ルル地官民ノ所在ニ係ル石炭  
 ノ種類概シテ艦艇機械用油等取調  
 ノ件ニ早速調査可及報告セザル  
 可ク各地ニ於テハ商運取外所ノ整  
 備等ニ非ス之ヲ業者者ニ尋ヌルモ  
 自己ノ商運取上容易ニ之ヲ得ル  
 モノニモ多ク殊ニ官有炭油ノ種類  
 教類ノ如キニ尋テ常番通ノ探査  
 方也ニ到底之ヲ調出政務局

二十六年一月廿九日

在浦潮港日本貿易事務館

右様有リ  
 査査ニ業者者其地ニ就キ  
 中ノ不詳或ハ僅少  
 トセルニ所  
 調査ノ途  
 シロムフ  
 報表  
 及  
 系  
 予  
 才  
 四

昭和三年五月二十日  
古河

東京市外務局書記官  
外務書記官 鈴木陽之

外務省書記官 鈴木陽之

東京市外務局書記官  
外務書記官 鈴木陽之

在清滿洲日本貿易事務所

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浦潮：現在在る石炭額其他

石炭産地	塊	炭	現在在る額	石炭坑主	取賣者 氏名
薩哈連島	塊	炭	約四〇〇噸	露人 マコフスキー会社	露人 マコフスキー会社
沿海州 ヒルコフ	塊	不詳	不詳	露人 ワルネンシテラ合名会社	露人 ワルネンシテラ合名会社
沿海州 （津浦線）	塊	約	四〇〇噸	英人 タムソンシテラ合名会社	英人 タムソンシテラ合名会社
沿海州 （津浦線）	塊	約	五〇〇噸	英人 タムソンシテラ合名会社	英人 タムソンシテラ合名会社
北海道 幌内	塊	約	五〇〇噸	露人 タムソンシテラ合名会社	露人 タムソンシテラ合名会社
日本 （豊）	塊	約	一五〇噸	不詳	露人 タムソンシテラ合名会社

尚市前表ニ就キ畧説セシニ

一、マコフスキー石炭会社ハ海軍省ト特約シ毎年浦潮鎮守府納付スル事トナリ居レリ若シ同會社炭ガ契約額ニ充テサル時ハ日本炭ヲ以テ補充シ居レト云フ

在浦潮港日本貿易事務館

一、太平洋艦隊ノ消費額ハ毎年三百五十万噸ト云フ尤モ旅順口ニ於ケル海軍用石炭ハ右ノ外ニシテ専ラ日本産ヲ需用セルガ如シ

一、薩哈連島石炭最近三ヶ年間ノ輸出額ハ百三十一万六千六百十八噸ナリ

一、明年度ノ需用トシテ本年當地鎮守府ガ購入シタル英國「カダワ」炭ハ

第一回	不詳
第二回	露曆十月十日英船「ガメセン」号 ニテ輸入 六、〇〇〇噸
第三回	全十月廿九日英船「ハトワクル」号 ニテ輸入 二、〇〇〇噸
第四回	全十一月十日露國船「ウエーキー」号 ニテ輸入 二、六〇〇噸

但其他「カダワ」炭ノ輸入アリシヤモ係セス

一、ワルネンシテラ合名會社ハ陸軍省ト特約シ居ル其契約

約額ハ今年約百カ存ニシテ毎日貨車ニ十台許ヅ浦潮運

搬シ居レト云フ島蘇里鐵道ノ燃料是ナリ其産額ハ陸軍省

ハ納付額ヲ合シテ年約一千カ布ナリト云フ

一「カカシエワー」ハ合名會社ハ浦潮ヲ距ル西北ニ十露里「ロ」ナテ

ジヤスキ停車場間ニ炭坑ヲ有セリ現時同坑ノ倉庫ニ貯

藏セシ額ハ六カ五千噸ナリ需用者アリ次第産地ヨリ當地ニ運搬

スヲ以テ現時浦潮ノ倉庫ニ有セシ額ハ僅カナリト云フ(約四〇〇噸)

一「クラークソン」ハ浦潮ヲ距ル北方約二十露里「スイ」河左岸「ク

ヌイ」岬ニ炭坑ヲ有セリ「三」ホ「ス」マイルト稱ス(約四〇〇噸)毎年採掘額約

三五千噸ニシテ本年八千噸ヲ採出シ大部分東清鐵道會

社ニ供給セリ現時貯有高ハ當地ニ約五百噸ヲ有セシ

炭坑ニ斯炭ナリ

一「ブリーチル」ハ前表ノ額ヲ有スルノミナリ

在浦潮港日本貿易事務館

但シ本年中北海道炭礦鐵道會社ヨリ輸入額ハ

五百噸ナリト云フ

一「クントア」ハ「ル」商會ハ長崎ニ支店ヲ有シ長崎又ハ唐津

門司等ノ石炭ヲ取扱ヒ時々唐津ニ輸入スル事アリ別表

本邦汽船九隻ニテ門司ヨリ輸入スル石炭一萬千五百

噸ハ當地同商會ニ於テ取扱ヒテ為セリ是ハ「ヨ」スキ「山」會

社ノ依託品ナリト云フ此他外國船ニ輸入セシ高ハ當分

ラス

一「青」港鎮守府各部署島蘇里鐵道東清鐵道汽船

部其他會社商會及個人(電燈「」)ノ貯有額詳カ

トラス

月日	船名	地	噸數
五月廿三日	河野浦丸	門司	二二三五噸
五月廿四日	膠山丸	全	二五五〇
五月廿五日	交通丸	全	四〇〇
五月廿六日	大洋丸	全	五〇
五月廿七日	立山丸	全	一四一四
五月廿八日	神威丸	全	二〇二一
五月廿九日	靛國丸	全	一五〇〇
五月三十日	凱旋丸	全	三六五
五月三十一日	第二千代丸	全	一四八五
合計			一、一、一、〇〇

在浦潮港日本貿易事務館

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艦船機械用ノ油及其概量所有者氏名

現在概数量

取有者ノ氏名

機油	全	油	
一〇四〇	六〇〇〇	クレストアリス	商會
ハ〇〇	六八〇〇	ハベロ兄弟會社	
不詳 (但僅)	不詳 (但僅)	エルトイクラフ	商會
二二	二七	ラビグチエ	商會
不詳	不詳	ヴァキチオイル	會社支店
全	全	チエリソ	商會
全 (但僅)	全 (但僅)	スウォーロ	商會

右内ノ「ハベロ」兄弟會社「エルトイ」クラフ「ヴァキチ」會社支店ハ油類  
専門ノ商店「ハベロ」ノ専ラ石油ヲ取扱後

二者ハ機油類ヲ専門業トセガ故從テ其貯  
藏額モ大ナル

又香港鎮守府各部局島蘇里鐵道東清  
鐵道會社其他會社商會個人等ミニテ  
機械業ヲ經營スル者ノ貯藏額詳カラス

在浦潮港日本貿易事務館

The Petroleum Oil Company, an American corporation, had had a branch office at Yokohama, since 1898.

The kinds of oil used in all the company's own products are:-

- (1) Marine Engine Oil,
- (2) Compound Lubricating Oil,
- (3) Shell Marine Engine Oil,
- (4) Kerosene for stoves,

All these are of a very superior quality for the kinds and have proved really good a market on their merit.

There is great demand on the oil here. From that time to this, as well as here, for the five years the company had had an office at Yokohama, and orders have been obtained from the Russian steamers, as well as from river steamers and private yachts, partly in some cases, \$ to \$10,000 worth, per order.

The duty paid under the oil licence bond, was \$1.10 on net weight. In this country the new tariff, the Company stand against it, and here before Jan. 1, 1901, and

P.S. I should have added that, owing to the absence of the agent, at present I cannot give the amount now on storage; but I judge it is sufficient for all present needs. R. W. G.

to a large extent have drawn on that bank =  
My view. One of the largest customers  
has been the engineering firm of the  
Chinese Eastern railroad. But, within  
five months, when more received for the  
steamers to buy oil at Yokohama, Port Ar-  
thur and Shanghai, at various companies'  
option, where, the duty charge was raised.  
The oil is sold at prices as follows:-  
No. 1 @ 6.75 R. per barrel; No. 2, @ 6.5 R. per  
barrel; No. 3, @ 6.5 R. per barrel; No. 4, @ 6.5  
R. per barrel.

This oil is a high priced oil. However,  
I must say, there is a cheap oil, that  
of Russian (Siberian) (Russian) Baku, known  
as kerosene oil, from 2.50 to 4.50 R. per barrel,  
and a good quality of oil. My opinion is  
the American oil would be sold cheaper if  
the competition were sufficient to force the  
reduction; but at present, the Russian grade  
is available to hold its market. In 1901,  
the maximum of oil sold was 35,000 R.  
worth of the No. 1 @ 6.75 R. per barrel. 1902, sales  
fell by from lack of shipping, 15,000 R. worth  
only sold. These figures, however, are of the best  
vicinity. Saw, via,  
Yamaguchi in 1902, and  
Richmond of the  
Commercial Agent, R. W. G.



Vladivostock, 30 Октября 1902.

Господину Управляющему делами Императорского  
Японского Коммерческого Агентства.

Здесь.

Във отговоръ на вопросы, предложенные Вами въ от-  
ношении отъ 25го Октября с.г. № 92, ниже расчит  
сообщимъ Вамъ.

1. Коммерство угля, производимое при рудниках, считается  
около 4-хъ миллионов тоннъ.

Коммерство все угля, уже выработаннымъ и находящаяся  
на складъ рудника - 65.000 тоннъ. Рудники находятся  
въ разстоянии 50-ти верстъ отъ Владивостока, по  
железной дорожкѣ.

2. Уголь одного сорта - коричневый - прекраснаго качества.  
Анализъ этого угля далъ:

分析表	(Углерода въсу . . . 1.32%)
	Железа . . . . . 5.35%
	Летучихъ газовъ . . . 53.95%
	Коммерски чистаго углерода 42.70%
	100%

3. Уголь добывается изъ пласта 12-ти футовъ толщины,  
съ глубины - 110 футовъ.

Vladivostock, ..... 1902.

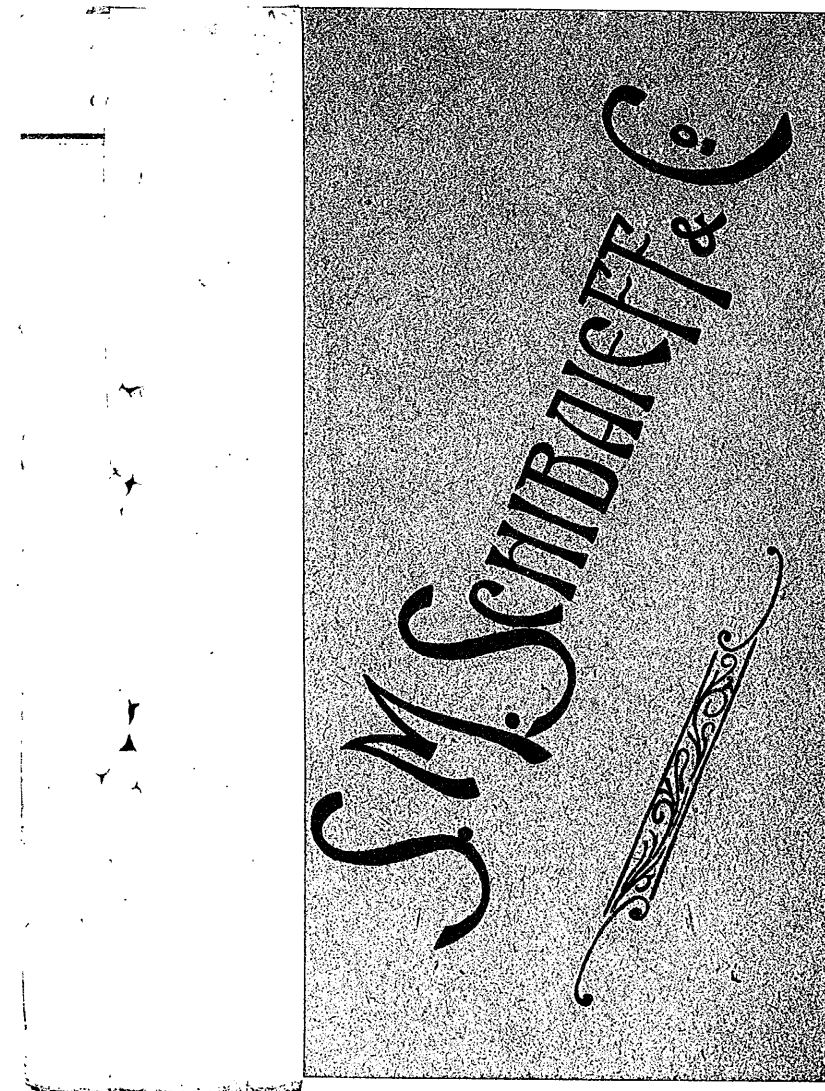
4. Уголь за уголь: во Владивостоке - 7р 50к. за тонну  
: у угля мартъ - 5р. 40. . . . .

Цены уведомляются при бившихъ заказахъ.

Правитель уведомленъ въ совершенномъ  
порядкѣ.

по. Дов. Уг. Тр. П. М. на. Коп. А. Д. Смаркова и К<sup>о</sup>.

Crompton & Schwabe



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складъ и представительство  
Т.Д.ШВАРЦЪ и КРАВЦОВЪ  
ВЛАДИВОСТОКЪ

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0065

S. M. SCHIBAIIEFF & Co  
MOSCOW.

Lubricating Oils.

КОРГОВЫЙ ДОМЪ  
ИВАНЦЪ И КРАВЦОВЪ  
ВЛАДИВОСТОКЪ.

MOSCOW  
Printed by A. I. Mamontoff & Co  
1901

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Допущено цензурою, Москва, 19 мая 1901 г.

Of late there has appeared on the Russian Market a considerable variety of fluid and solid lubricants to which advertisement attributes the most marvellous properties. Among other exaggerated statements, it is asserted that these lubricants polish those parts of a machine where friction usually occurs, reduce the force of friction to vanishing point, and, not only lighten the work of the machine, but actually augment its productiveness to such an extent that the cost of lubrication disappears. Evidently the day of miracles is not yet passed.

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Our Firm annually manufactures some two and a half million poods of Machine Oils. This is largely exported to Foreign Markets where there is great demand for lubricating oils of perfect purity and of highest quality. During many years past in all the great centres of European industry our oils have enjoyed the highest reputation, and that deservedly. But we consider it only right to give a most positive assurance that our oils possess no miraculous qualities.

**The purpose of Lubrication.** Where the solid surfaces of a machine are required to move upon each other, great friction must result.

Between the moveable parts, a thin film of oil is usually introduced

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to minimise the force of this friction. Metal no longer rubs against metal but slides upon films of oil.

As a result:

- 1) The wear and tear is enormously reduced at the lubricated surfaces, parts fit for a much longer time and so reduce the cost of stoppages and repairs.
- 2) The energy required to drive the machinery is very much less as the fuel bill will prove.

To increase the life of the machine, to lessen the number of stoppages, to minimise the charge for repair, and to reduce the cost of driving—these are the purposes of lubrication.

**Bad Lubricants.** Expensive wonder working lubricants and cheap residuum when employed for

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lubrication may be extremely harmful as the following facts will show.

1. Most of the expensive mixtures on our market consist of either animal or vegetable oil which has been blended with mineral oils. It has long been taught by scientific authorities that animal and vegetable oils absorb oxygen when exposed to the atmosphere, and in consequence undergo changes in composition extremely injurious to their lubricating properties. They rapidly become sticky or gummy, and instead of aiding surfaces to glide smoothly and freely over one another, they actually tend to glue them together. The friction developed is very great, brasses become heated and scored, while the efficiency of the machine may drop to a startling extent.

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Well refined Mineral Oil is a pure hydro-carbon unable to absorb oxygen from the air, and so cannot become resinous while in use on the journal.

2. In works where exhaust steam is condensed and returned to the feed water, these animal and vegetable mixtures are a source of very real danger. Under the action of superheated steam they are decomposed into acids and glycerine. The acids attack the most susceptible portions of the plates, cause pitting to proceed rapidly, and gradually weaken the shell. The greasy glycerine becoming mixed with deposit from the water, frequently forms a soft nonconducting mass upon the furnace crowns, local overheating results, and collapse may readily follow.

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In the case of pure mineral oils no accident of the kind can occur, as no similar decomposition of pure mineral oils is possible. Their only action is to soften the incrustation, producing thereby a more readily detached scale.

3. Vegetable and animal oils when introduced with the steam supply into an ordinary pump for the lubrication of the slide valve will undergo decomposition. There gradually accumulates in the steam end a paste-like, insoluble mass very harmful to the cylinders, pistons, and valves of the machine.

It will be seen that in many departments of machinery works—on bearings, in the pump and in the boiler—these over-praised blended oils are very harmful. Instead

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of their being wonder workers, they are expensive mischief makers. Their use in no way contributes to technical progress; on the other hand they mark a distinctly backward step.

Petroleum residuals are sometimes employed as lubricants because of their lower first cost. Though cheap, they are nasty, and in the end are really more costly than a well prepared mineral oil. For residues, both in chemical composition and in physical properties, have little in common with a good lubricating oil; their composition is extremely varied, and is variable.

They always contain sulphur, several organic acids, and certain other compounds which exercise a most deleterious influence upon machines, while in addition they

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readily "gum" and produce needless friction. Two examples may be cited, selected from many instances which we have ourselves verified.

1. On one of the largest French railways, residuum was tried throughout an entire year in order to test its economy and efficiency. Cases of heated axles so increased in number that at the expiration of the trial the Directors resumed the use of № 1 Russian Mineral Oil.

2. Again, in a very large Russian mechanical works petroleum residuum was introduced for lubrication.

Immediately there was observed a decrease in the working capacity of the machines, and a marked increase in expenditure for fuel. The Works' Administrators were keenly

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interested in the matter, and, after exhaustive investigation found that the fault lay entirely with the unsatisfactory nature of the lubricating material. They then adopted № 1 Russian lubricating oil with most gratifying results.

One cannot too clearly recognise that the costly, much puffed, marvellous mixtures, and the cheaper, but ineffective petroleum residues alike are unsuitable for the lubrication of machinery.

**The Qualities of a Good Lubricant.** 1. In order to allow the moving parts of any machine to slide smoothly on each other, and so to maintain friction at the lowest possible point, a film of some body like oil is introduced between the surfaces. The oil adheres to the rubbing faces and should pre-

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vent them coming into contact, and to do this the lubricant must have a certain amount of body or viscosity.

The viscosity must be such as will suit the movement of the machine. Where the pressure applied is great the lubricant requires a high viscosity, for a thinner, or less viscous oil would be squeezed from between the moving surfaces. With rapid movement, such as that of spindles or of dynamo-armatures, a thinner oil is essential, or heat would be produced, and the motion retarded.

2. Fluidity of the lubricant is a very important property if a regular and proper supply is to be maintained. Many oils are extremely thick at moderately low temperatures, but will run like water on

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a hot day, causing thereby bad lubrication and great waste. The oil must show no tendency to solidify with an ordinary fall in temperature, nor must it run too freely within normal rises of temperature. Russian Mineral Oils are especially good in this respect.

3. The oil must be perfectly refined. By this means are removed all traces of acid, alkali, sulphur, and soaps—bodies which would corrode the bearing, disturb the quiet working of the machine and compel expensive repair. It is from such accidents that the proprietor learns how dearly he must pay for his “penny-wise and pound foolish” policy in employing either unrefined or imperfectly refined oils.

4. It is generally recognised that the flashpoint of an oil is important.

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It must also be remembered that the temperature of evaporation and the temperature of decomposition should be considerably higher than that at which the lubricated part of the machine will be worked. Otherwise, the oil might evaporate excessively and so fail to lubricate, or it might decompose, producing substances which would harm the bearings.

5. A good lubricant must not combine with oxygen while exposed to air, even at high temperatures. If such oxydation take place the bearings invariably clog. This is especially noticeable after a short stoppage during which the bearing has had time to cool. On restarting, great friction develops and a thorough removal of the oxydation products is im-

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perative before quiet running is obtained.

6. The oil should be entirely free from grit and solid matter, such as lime, talc etc. These substances, which may give an artificial body to the oil, multiply the friction enormously, choke the machine, increase the wear and tear, involve costly repair, and augment the expenditure for fuel.

In these six statements are embodied the essential qualities of a good lubricating oil. Of all the lubricants known pure, well refined mineral oil alone answers these conditions in satisfactory degree, and there is no purer mineral oil in Russia than that manufactured by S. M. Schibaieff & Co.

A question of reputation. In

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large manufactories, it is no uncommon thing to carefully test all properties of an oil before it is employed, but in less extensive works there may be no opportunity of carrying out a complete investigation, without the purchase of special apparatus. In such cases how is a purchaser to distinguish a good lubricating oil, from products which have only an external resemblance to the desired substances?

This is almost entirely a question of confidence. In no industry is reliability of greater importance than in the production and sale of lubricating oils. Establish a reputation for consistency of your product, justify in practice every guarantee that is given and the purchasers' faith will remain firm.

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Our productions have long enjoyed an unparalleled success, have solidly established a reputation both in Russia and abroad, and the sole secret of that success lies in the fact that in our Baku refinery the utmost care is taken in every step of the manufacture; each product is accurately distinguished, and no oil is allowed to leave the refinery unless it answers precisely the tests which it should pass. Our oils are manufactured from selected varieties of crude petroleum which are most carefully chosen. They have a constant fractional composition, they are irreproachably refined, and the strictest control is exercised to ensure their complete neutrality and that their viscos-

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ity, colour, flashpoint and fire test are strictly in accordance with the specification. Permanency in quality is thus obtained and it cannot possibly happen that one delivery of oil may fall below standard and another be above it. Customers purchasing our oils from year to year know precisely what they buy. We have not one class of oil for foreign export and another for home use. We guarantee that our customers at home and abroad shall receive machine oils of the highest quality. We do not send out refined mixtures or half refined petroleum distillates to damage their machinery, and we desire to warn buyers against being led into a false economy or a rash expenditure in their

purchases of lubricating oils. The difference in price of a good and a doubtful lubricating oil is expressed in copecks per pood.

But these copecks are magnified into roubles and hundreds of roubles of loss or gain when the matter concerns repairs to machines and expenditure for fuel.

Here we give a series of specifications of those oils which our twenty years of manufacturing practice teach us are required to meet the various conditions of lubrication. All are constant in chemical composition, are perfectly refined, and are absolutely neutral.

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0075

**Spindle Oil.**

Spindle Oil No II s.  
Sp. Gr. 0.887 to 0.890 at 15/15 deg. C.  
Colour: pale yellow.  
Flash point 155° to 160° C. } Open  
Fire test 175° to 180° C. } test.  
Viscosity 50° C. - 1'40" to 1'50"  
Viscosity 80° C. - 1'12" to 1'16".

This oil is adapted for lubricating the rapidly moving mechanism of spinning machines. In certain special cases where it would be required to somewhat increase the adhesive power of this oil without increasing internal friction, we would recommend mixing with it a little well refined castor oil. This is done in certain Refineries manufacturing special sorts of

spindle oils; and for this, purchasers, notwithstanding the simplicity of manipulation, pay dearly.

Spindle Oil No II. w.

Sp. Gr. 0.895 to 0.897 at  $15/18$  deg. C.

Colour: yellow.

Flashpoint 151° to 163° C. } Open

Fire test 175° to 180° C. } test.

Viscosity 50° C.—2' 6" to 2' 10"

Viscosity 80° C.—1'20" to 1' 24"

and

Spindle Oil No II.

Sp. Gr. 0.896—0.898 at  $15/18$  deg. C.

Colour somewhat darker than the previous.

Flashpoint 158° to 165° C.

Fire test 175° to 180° C.

Viscosity 50° C 2'10" to 2' 15"

Viscosity 80° C 1'20" to 1' 24".

These two classes are adapted for lubricating spindles and light machinery. They differ only in their viscosity at 50 deg. C., and selection of one or other depends on the greater or less rapidity of the movement of the mechanism. To the same class may also be ascribed our oils

Nos IVa and IVb, although the latter have their own special use. They may also be used for lubricating the delicate mechanism of watches, telegraphic apparatus, various scientific instruments etc., etc. Oil No IVa was previously manufactured by us with the following specification:

Sp. Gr. 0.872 to 0.876.

Flashpoint not less than 150 deg. C. by the Martin-Pensky apparatus. Colour not less than 50 m/m Schtammer. At the present time however, we find it necessary to lower both specific gravity and flashpoint, and we now make this oil of the following quality:

Sp. Gr. 0.863 to 0.868.

Flashpoint not less than 130° C.

Colour not less than 50 m/m Schtammer.

In refining this oil considerable quantities of anhydrous and ordinary sulphuric acid are employed. Later it is so thoroughly washed that no trace of acid or alkali remains. It is a splendid basis for the preparation of burning oils used in

image lamps, and, as already indicated, for the lubrication of delicate mechanism. Vaseline Oil No 1Vb.  
Sp. Gr. 0.870 to 0.875.  
Flashing point not less than 160 deg. C. with Martin Pensky apparatus.

This oil is without taste or smell and almost colourless. It is adapted for use in perfumery, for the preparation of medicinal vaseline and various ointments. It is refined with excess of anhydrous sulphuric acid and repeatedly filtered through animal charcoal. It can thus resist the action of the strongest reagents.

#### Machine Oil.

Of our Machine Oil No 1 we manufacture two and a half million poods annually; the greater part of this is exported abroad, where it has long enjoyed a deservedly high reputation; we send exactly the same oil into Russia, we have no so-called "Russian" and "Foreign" oil. We presume that Russian as well

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as Foreign customers alike require a good product.

For the last fifteen years we have been selling our Machine Oil No. 1. with the following properties:

Sp. Gr. 0.907 to 0.9095.  
Colour 20 to 22 m/m. Dubos.-Schtammer.  
Flashpoint 185° to 190° C.  
Fire test 208° to 212° C.  
Viscosity 50° C.—5'39" to 5'40"  
Viscosity 80° C.—2'21/2" to 2' 4"

and presume that the quality of this is well known to all. It is adapted for the lubricating of every variety of heavy mechanism whose movements do not exceed 1700 revolutions per minute. It is also a splendid medium for coating metallic articles of every description in order to preserve them from rusting, and is excellent for softening leather etc.

Besides this main type of machins oil, we have:

Machine Oil No. 1. M. B.  
Sp. Gr: 0.907 to 0.9095.

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0078



Colour 30 to 34 m/m Dubos.  
Flashpoint 190° to 194° C.  
Fire-test 214° to 218° C.  
Viscosity 50° C.—5'44" to 5'48".  
Viscosity 80° C.—2' 3" to 2' 6".

and

Machine Oil No 1 MBB.  
Sp. Gr. 0.907 to 0.9095 at 15/17 C.  
Colour 40 to 44 m/m Dubos.  
Flashpoint 190° to 194° C.  
Fire-test 214° to 218° C.  
Viscosity 50° C.—5'50" to 5'55".  
Viscosity 80° C.—2' 4" to 2' 9".

Both classes of Machine Oils are employed for the same purposes as ordinary machine oil. They are of higher quality, are of lighter colour, and are distinguished by greater viscosity, a higher flash-point and firetest. They are manufactured only by special order.

**Cylinder Oils.**

The above oils, as is indicated by the name, are adapted principally for the

lubricating of the steam cylinders of engines and pumps. As pressure in the boilers increases, the temperature of the steam vapour rises. The following relations are of value:

Pressure in atmospheres	Temperature in deg. C.	Pressure in mm of mercury
1,000	100	760,00
1,193	105	906,41
1,416	110	1075,37
1,673	115	1269,41
1,962	120	1491,28
2,294	125	1743,88
2,671	130	2030,28
3,097	135	2353,73
3,575	140	2717,63
4,112	145	3123,55
4,712	150	3581,23
5,380	155	4083,56
6,120	160	4651,62
6,940	165	5274,54
7,844	170	5961,66
8,838	175	6717,43
9,929	180	7546,39
11,122	185	8453,23



Pressure in atmospheres	Temperature in deg. C.	Pressure in mm of mercury
12,424	190.	9442,70
13,841	195	10519,73
15,380	200	11688,96
17,047	205	12955,66
18,848	210	14324,80
20,791	215	15801,33
22,881	220	17390,00
25,127	225	19097,04
27,534	230	20926,40

As is seen from an examination of the above table, with the increase of the elasticity of the steam, its temperature, very quickly rises: for instance, with a pressure of about 12 atmospheres, the temperature of the steam will be 190 deg. C. It is evident that in this case to lubricate the cylinders it is necessary to select an oil the flashpoint of which would be considerably above the temperature observed in the cylinder, so that the oil should not then commence to evaporate, since the temperature of the flashpoint approximately indicates the temperature of great evaporation.

Besides high pressure machines, in recent times there are daily coming into use more and more engines driven by superheated steam. In some rare cases the temperature of this steam reaches 400 deg. C. It is evident that in such cases special cylinder oils are needed for lubricating. Suitable for the various conditions indicated, the Company manufactures cylinder oils of the following types:

#### Cylinder Oil № 0.

Sp. Gr. 0.911 to 0.914.  
Flashpoint 205° to 209° C.  
Fire-test 236° to 239° C.  
Viscosity 50° C.—8'11" to 8'11".  
Viscosity 80° C.—2'28" to 2'54".

Colour, reddish-brown, entirely transparent and brilliant. It is adapted for the lubrication of steam cylinders, with a steam temperature not higher than 190° C. and for certain very heavy mechanism working at moderate speed.

From this oil is manufactured a special product:

#### Sebonapthe "G"

It is sent out from the Refinery with a melting point not less than 40 deg. C. It is used for the lubricating of cylinders, boxes etc., also for the oiling of leather good and to protect metallic articles from rusting.

#### Cylinder Oil № 00.

Sp. Gr. 0.911 to 0.917 at  $15\frac{1}{15}$  deg. C.  
Flashpoint 230° to 250° C.  
Fire-test. 270° to 290° C.  
Viscosity 50° C.—18'00" to 24'00".  
Viscosity 80° C.—4'00" to 6'00".

This class is, especially recommended to all users of cylinder oils, and is adapted for the cylinders of machines working under very high pressure or with super-heated steam up to a temperature of 220 to 225 deg. C.

It is employed to lubricate rolling stands and electrical machines, and also in all cases where the frictional parts work at slow speed in ordinary temperatures, under

great pressure. This oil, notwithstanding its dark colour, is refined with a considerable quantity of sulphuric acid, which is entirely removed by further refining.

#### Cylinder Oil № 000.

Sp. Gr. 0.930 to 0.935.  
Flashpoint 300° C.  
Fire-test. higher than 360° C.  
Viscosity 80° C.—14'00" to 18' 00".

This oil is specially adapted for machines working with steam super-heated to 300 deg. C., since even at 360 deg. C., the oil, although giving off vapour, still completely maintains its liquid consistency. Though dark in colour, it is refined with 9% of sulphuric acid, completely neutral and does not contain any foreign mixture; it is adapted also for the lubricating of heavy mechanism with very slow rotation, and flows very slowly at ordinary temperatures. It cannot be used with advantage for the lubrication of cylinders, the temperatures of which do not reach 200 deg. C. because of its great viscosity, to which we draw the attention of oil

users. In such cases № 00 should be substituted.

From this oil is manufactured № 000E. It is adapted for the same purposes, and also for lubricating metallic and wooden cog-wheels.

In concluding the description of the products manufactured by us, we cannot pass without saying a few words concerning circulars issued by the representatives of American Refineries, in which is often mentioned the low specific gravity of American cylinder oils and the high specific gravity of Russian, as if the former had some special pre-eminence over the latter. The specific gravity of one or the other depends entirely on the natural properties of American and Russian petroleum, and in no way on system of refining. Just as we are unable to manufacture oil with a viscosity at 80 deg. C. of 14' and specific gravity 0.900, so American Refiners however much they may wish, cannot make the same article with a gravity of 0.930 unless they employ foreign admixtures. However, for the

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essential point of lubrication specific gravity has hardly any importance. The main thing is viscosity. As a rough example water may be taken, having a specific gravity of 1,000 and an oil having a specific gravity of 0.908. Nobody would lubricate with water, although its specific gravity is 0.1 more, but on the other hand its viscosity at 50 deg. C. is 6 to 7 times less.

In conclusion we consider it necessary to say a few words concerning the determination and measurement of all those properties by which we characterise our products, i. e. concerning the determination of specific gravity, temperature of flashpoint, inflammability etc.

The specific gravity of a product is the relation of the weight of a certain volume of liquid (petroleum in the given case) at 15.15 deg. C. to the weight of the same volume of water also at 15 deg. C. and not at 4.1 deg. C. (the temperature of the greatest density of water), which is the reason why we have everywhere indicated specific gravity at  $15/15$

— 33 — 3

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0082

deg. C. This specific gravity when the goods are despatched from the Refinery is determined by a verified Deny's areometer, which is in turn verified by the Westphal-Mohr balance. The temperatures of the flashpoint and inflammability, indicated in the present brochure, are all determined in an open cup having a double copper bottom. The same purpose is also served by an ordinary porcelain crucible, placed in a sand bath, and a thermometer inserted in the liquid. This method of trial with due practice gives a completely reliable and accurate result as regards the flashpoint, but the temperature of inflammability can only be fixed in an open vessel.

For the determination of viscosity we employ the universally known apparatus of professor Engler in its most recent form, where the outlet is formed by a platinum tube which, for accuracy of work, is of great importance.

For the determination of colour, we use the apparatus of Dubosk and Schtammer, and where the height is measured

of a column of oil whose colour is the same in intensity as that of a standard coloured glass.

For the determination of the temperature of melting we employ the electrical apparatus of Aller, which is described in almost all the technical works upon fats and oils. We deem it useful to attach a table of corrections for bringing specific gravities measured at various temperatures to the specific gravity at 15 deg. C. and a table of comparison of the scales of Celsius, Reamur and Fahrenheit.

Table of corrections at various specific gravities based upon the experiments of Mendelejeff.

At temperatures above 15 deg. C. for each degree of temperature add the given correction, and at temperatures lower than 15 deg. C. subtract the correction numbers.

Specific Gravity.	Correction.
700—720	0,00082
720—740	0,00081
740—760	0,00080

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Specific Gravity.	Correction.
760-780	0,00079
780-800	0,00078
800-820	0,00076
820-840	0,00074
840-850	0,00072
850-860	0,00071
860-865	0,00070
865-870	0,00069
870-875	0,00685
875-880	0,00677
880-885	0,00067
885-890	0,00066
890-895	0,00065
895-900	0,00064
900-905	0,00063
905-910	0,00062
910-920	0,00061

Comparison of the thermometrical scales  
of Celsius, Reamur and Fahrenheit:

C.	R.	F.
0	0	32,0
1	0,8	32,8
2	1,6	35,6

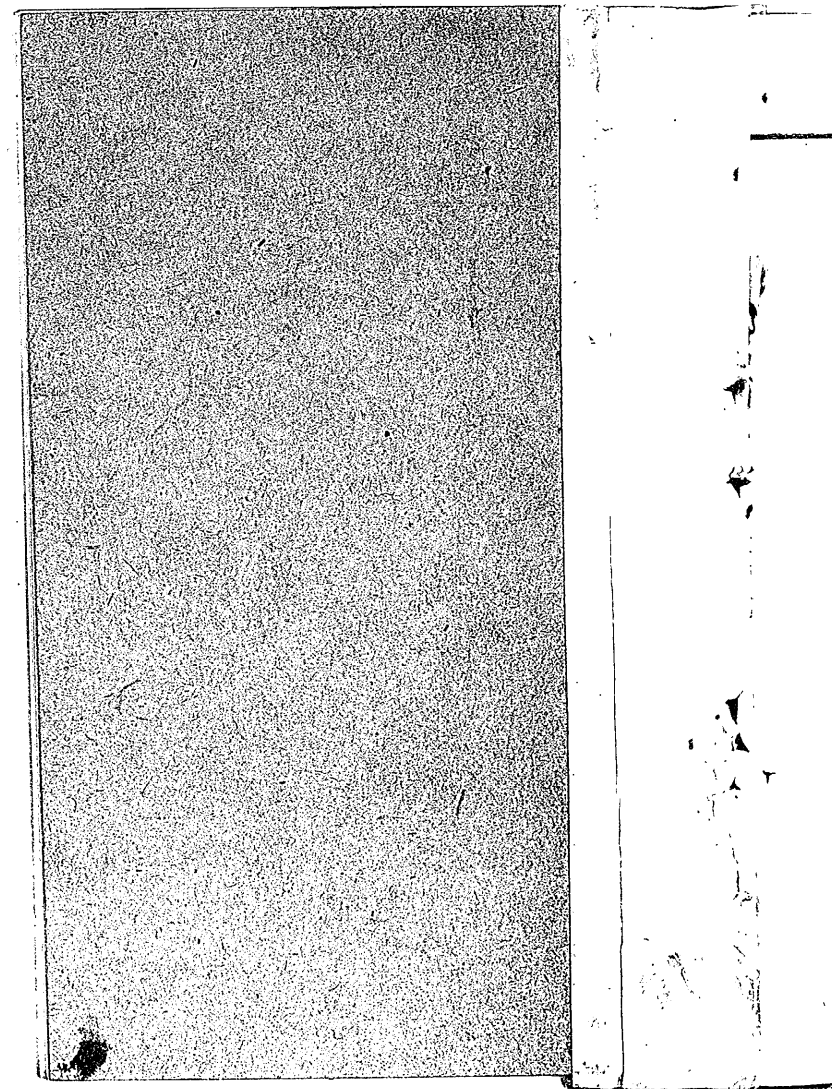
C.	R.	F.
3	2,4	37,4
4	3,2	39,2
5	4,0	41,0
6	4,8	42,8
7	5,6	44,6
8	6,4	46,4
9	7,2	48,2
10	8,0	50,0
11	8,8	51,8
12	9,6	53,6
13	10,4	55,4
14	11,2	57,2
15	12,0	59,0
16	12,8	60,8
17	13,6	62,6
18	14,4	64,4
19	15,2	66,2
20	16,0	68,0
21	16,8	69,8
22	17,6	71,6
23	18,4	73,4
24	19,2	75,2
25	20,0	77,0
26	20,8	78,8
27	21,6	80,6



G.	R.	F.	G.	R.	F.
28	22,4	82,4	53	42,4	127,4
29	23,2	84,2	54	43,2	129,2
30	24,0	86,0	55	44,0	131,0
31	24,8	87,8	56	44,8	132,8
32	25,6	89,6	57	45,6	134,6
33	26,4	91,4	58	46,4	136,4
34	27,2	93,2	59	47,2	138,2
35	28,0	95,0	60	48,0	140,0
36	28,8	96,8	61	48,8	141,8
37	29,6	98,6	62	49,6	143,6
38	30,4	100,4	63	50,4	145,4
39	31,2	102,2	64	51,2	147,2
40	32,0	104,0	65	52,0	149,0
41	32,8	105,8			
42	33,6	107,6			
43	34,4	109,4			
44	35,2	111,2			
45	36,0	113,0			
46	36,8	114,8			
47	37,6	116,6			
48	38,4	118,4			
49	39,2	120,2			
50	40,0	122,0			
51	40,8	123,8			
52	41,6	125,6			

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0085



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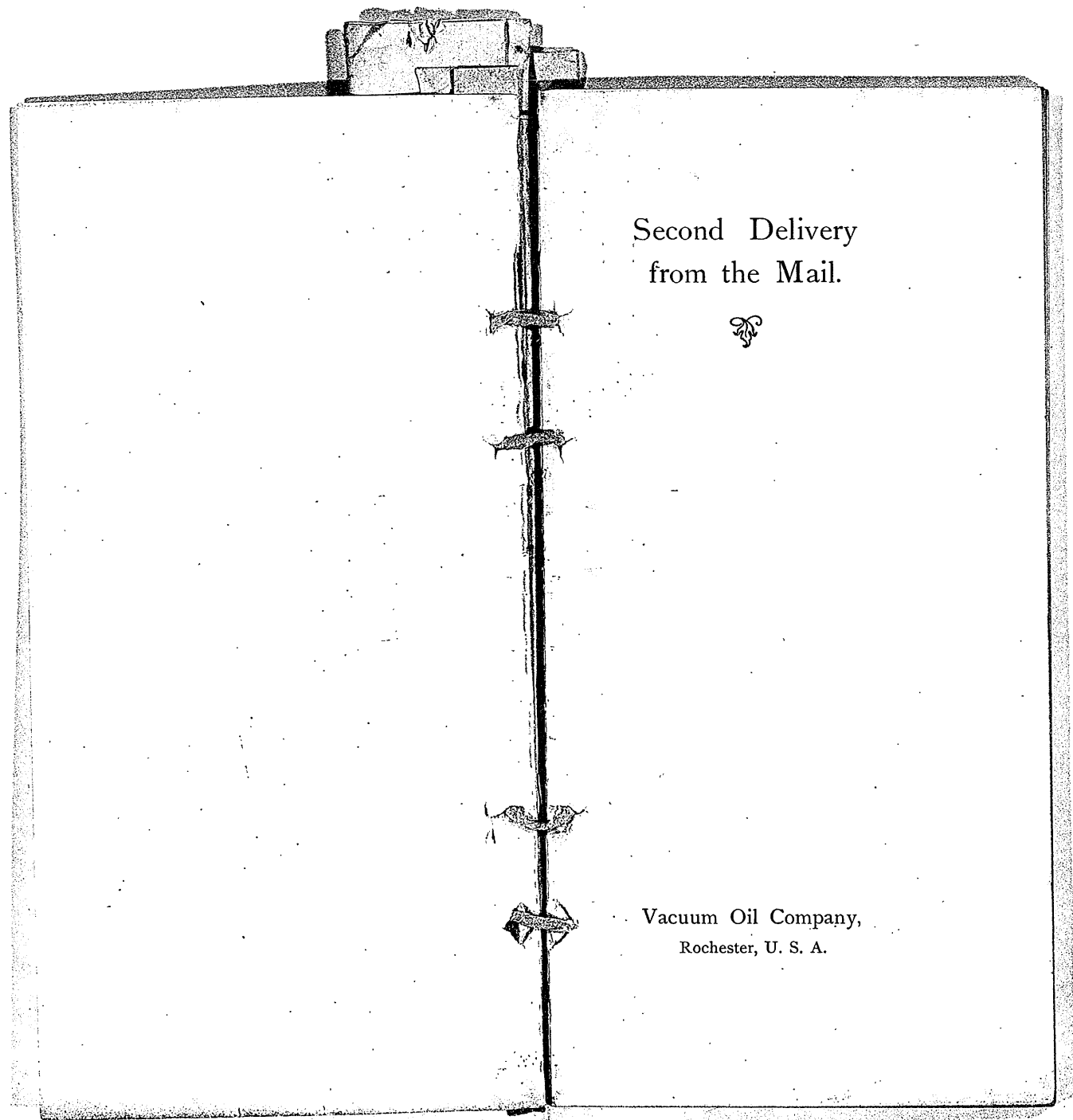
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18  
Compliments of  
Richard A. Green,  
Commercial Agent,  
U. S. America,  
at  
Wladivostok.

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0087



Second Delivery  
from the Mail.



Vacuum Oil Company,  
Rochester, U. S. A.

5-0240



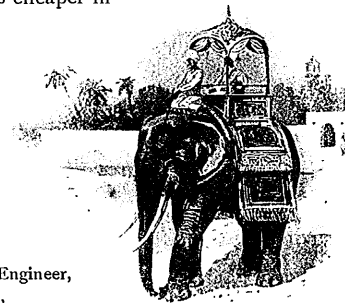
Copyright, 1898, by  
Vacuum Oil Company,  
Rochester, U. S. A.

Bartlett & Company  
The Orr Press  
New York

Cheaper  
In the  
End.



\*\*\* "Vacuum Oil  
has been used for some time past  
in connection with these works on  
all kinds of machinery, rolling  
stock, dredging craft, etc., and has  
answered very satisfactorily in the  
place of native and other oils, in  
that it lubricates more effi-  
ciently and is cheaper in  
the end."



From  
The Resident Engineer,  
Harbor Works,  
Colombo,  
Ceylon.

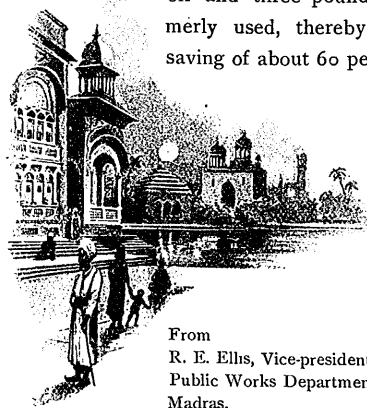
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0089

Compared  
With  
Castor Oil.



"We have used your Heavy Engine and 600 W Cylinder Oils for nearly twelve months, and find that one quart of the former and one pint of the latter are consumed in twenty-four hours for one engine and pump, compared with one and a-half gallons castor oil and three pounds tallow formerly used, thereby effecting a saving of about 60 per cent."



From  
R. E. Ellis, Vice-president,  
Public Works Department,  
Madras,  
India.

One-third  
As Much  
Oil.



"I have been using your 600 W Cylinder Oil through one of your Vacuum sight-feed lubricators for the last three months with every satisfaction, only one-third of the oil previously used being necessary to give perfect lubrication."



From  
W. H. Clark, Manager,  
New Victoria Catherine  
General Mining Co.,  
Long Gully,  
Bendigo,  
Australia.

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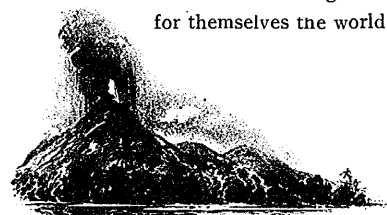
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Speak for  
Themselves  
The World Over.

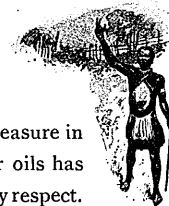


"The fact that the chief engineer of the Italian man-of-war 'Christoforo Colombo' knew and selected the Vacuum Oils for his ship when in this port is evidence that good oils speak for themselves the world over."

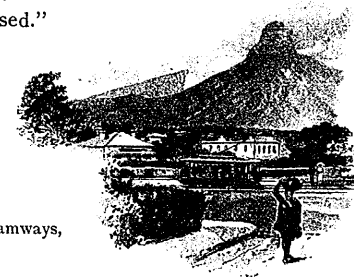


From  
The "Advertiser,"  
Honolulu,  
Sandwich Islands.

Best  
We  
Ever Used.



"We take pleasure in stating that a trial of your oils has proven satisfactory in every respect. Our present plant consists of three vertical engines built by the Philadelphia (Pa.) Engineering Company, each engine developing 300 horse-power with steam pressure of 140 pounds. Your Cylinder Oil is higher in price than the one formerly used, but we have been able to get better lubrication from 40 gallons of it than from 80 gallons of previous oil. The net saving is 35 per cent. We consider your Cylinder Oil the best we have ever used."

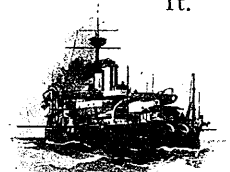


From  
Capetown Tramways,  
Capetown,  
South Africa.

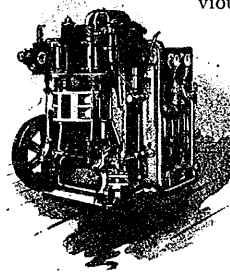
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0092

We Have  
Adopted  
It.



"After careful test with your Arctic Engine Oil, we have adopted it in preference to all others for use in connection with our refrigerating machines and have recommended it to our numerous customers. We find it very economical in comparison with the lubricant which we previously used, and it stands well the low temperature to which it is subjected."

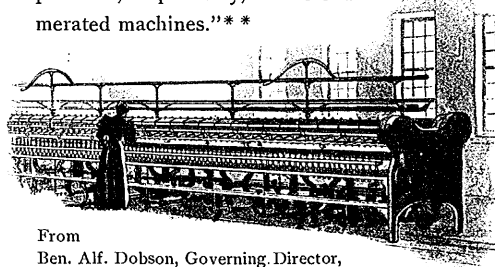


From  
J. & E. Hall, Limited,  
Dartford,  
England.

Astonished  
At Economy of  
Horse-power.



\*\*\* "We have three ring frames in our experimental room: one the ordinary ring frame, one a patent cop spinner to spin on the bare spindle twist or weft, and one doubling frame. In each case we had previously imagined that we were on the best conditions as regards quality of oil and lubrication. To our considerable astonishment Mr. Bower has clearly proved an economy of horse-power of 12 per cent., 26 per cent., and 8½ per cent., respectively, for the enumerated machines."\*\*

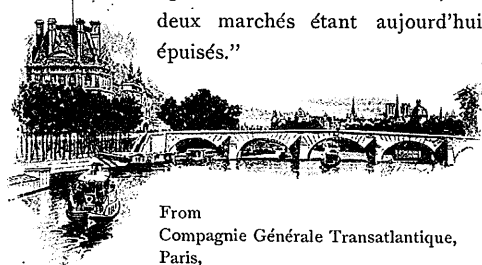


From  
Ben. Alf. Dobson, Governing Director,  
Dobson & Barlow, Limited,  
Bolton,  
England.

Both  
Contracts  
Renewed.



“ Nous vous informons que nous acceptons vos offres de prolonger les deux derniers contrats que nous avons passés avec vous, dont l'un du 17 Juin, 1896, pour la fourniture de 100,000 kilos d'huile No. 1 Marine Engine Oil à nos agences du Hâvre et de St. Nazaire, et l'autre du 19 Novembre de la même année pour celle de 20,000 kilos de Dark Marine Cylinder Oil à ces mêmes agences et celle de Marseille, ces deux marchés étant aujourd'hui épuisés.”



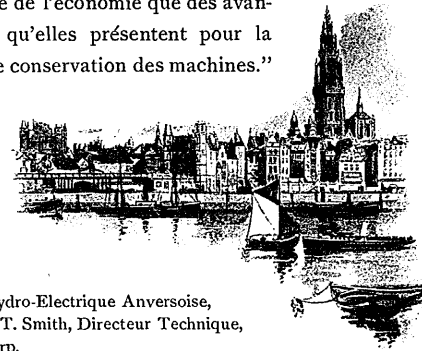
From  
Compagnie Générale Transatlantique,  
Paris,  
France.

“ We beg to state that we accept your offer to renew the last two contracts we made with you, one of June 17th, 1896, to supply 100,000 kilos of No. 1 Marine Engine Oil to our agencies at Havre and St. Nazaire, and the other Nov. 19th, 1896, for 20,000 kilos Dark Marine Cylinder Oil for the same agencies and also for Marseilles, these two contracts having to-day expired.”

From  
The Point  
Of Economy.



\*\*\* “ Depuis la fin de 1894, époque à laquelle vous avez commencé à nous fournir vos différentes marques, soit— Vacuoline, Viscolite, 600 W, nous avons toujours apprécié l'excellente qualité de ces huiles, tant au point de vue de l'économie que des avantages qu'elles présentent pour la bonne conservation des machines.”



From  
Cie Hydro-Electrique Anversoise,  
Roger T. Smith, Directeur Technique,  
Antwerp,  
Belgium.

“ Since 1894, at which time you commenced to deliver us your various brands, i. e., Vacuoline, Viscolite, and 600 W, we have always appreciated the excellent quality of these oils from the point of view of economy and of the advantages they offer as to the preservation of engines.”

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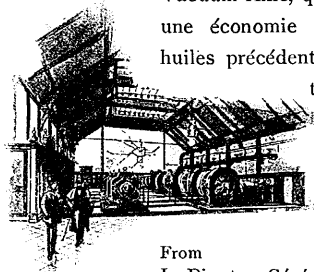
0094



A  
Sensible  
Economy.



“Comme suite au désir que vous nous avez exprimé, nous avons le plaisir de vous faire savoir que nous sommes fort satisfaits des huiles de la Vacuum Oil Company, dont nous faisons usage depuis quelques années à notre usine électrique—notamment des marques 600 W, Arctic Engine, Vacuum Axle, qui nous ont donné une économie notable sur nos huiles précédentes, tout en facilitant l'entretien de nos machines.”



From  
Le Directeur Général  
des Tramways Bruxellois,  
Brussels, Belgium.

“In accordance with your request, we take pleasure in advising you that we are extremely satisfied with the oil of the Vacuum Oil Company, which we have used for several years in our electrical plants, and especially the brands 600 W, Arctic Engine, and Vacuum Axle, which have given us a sensible economy as compared with oils previously used, facilitating at the same time the keeping of the engines in good condition.”

Spindles  
Run  
Cooler.



\*\*\* “Par l'emploi des huiles de la Vacuum Oil Company nous avons constaté, en outre de l'excellent entretien de toutes nos machines, une économie de force de 5%; de plus, nos broches de continus ont infiniment moins d'échauffement qu'avec la meilleure huile que nous employions précédemment.”



From  
Parmentier Van Hoegaerden & Cie.,  
Tubize,  
Belgium.

“By the adoption of the oils of the Vacuum Oil Company, we have secured, besides a perfect condition of all of our machinery, a saving in power of 5 per cent. Our ring spindles run a good deal cooler than with the best oil that we have employed in the past.”

5-0240

0095

An  
Economy  
Of 70%.

"J'ai le plaisir de vous déclarer que je suis très satisfait de toutes les marques d'huiles de la Vacuum Oil Company, 600 W, Arctic Engine, Etna, et Vélocité-Spindle. Aussi par l'emploi de votre 600 W je suis arrivé à obtenir une économie de 70% sur mes huiles précédentes, étant arrivé à ne donner que deux gouttes par minute. Vos autres marques me donnent des résultats des plus satisfaisants comme économie de force et entretien de mécaniques."

From  
J. Raes,  
Sweveghem,  
Belgium.

"I take pleasure in advising you that I am very well satisfied with all the brands of Vacuum Oils that you are supplying me: 600 W, Arctic Engine, Etna, Vélocité Spindle. By the use of your 600 W I have succeeded in securing an economy of 70 per cent. as compared with other oils, as I have cut down the feed to two drops per minute. Your other brands give me the best results as to power, saving and condition of the machine."

Our Fears  
Without  
Foundation.



"Vis à vis du prix assez élevé de vos huiles 600 W pour cylindres, Etna et Viscolite, nous avons hésité quelque temps avant d'en faire usage de peur d'élever le prix de revient du graissage. Aujourd'hui nous reconnaissons que notre crainte n'était nullement fondée, que nous avons un excellent graissage, supérieur à celui que nous obtenions auparavant, avec un prix de revient inférieur par cheval heure de marche." \* \* \*

From  
L'Ingénieur en Chef,  
Usines et Mines  
de Houille  
du Grand Hornu,  
Belgium.

"Considering the rather high price of your brands, 600 W for cylinders, and Etna and Viscolite, we hesitated some time before using them, fearing to increase our oil bill. Today we recognize that our fears were without foundation, that we have secured an excellent lubrication, superior to that we obtained in the past, with less cost per horse-power per hour."



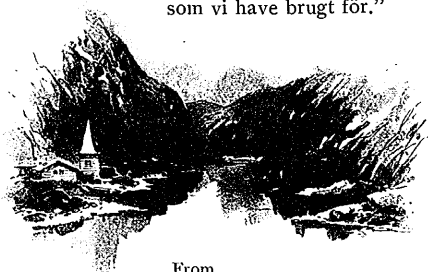
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0096

A  
Saving of  
One-half.



“Vi ere meget godt  
fornøjede med den fra Vacuum  
Oil Company leverede 600 W  
Cylinderolie, idet vi finde, at  
Brugen af den bevirker ca. 50%  
Besparelse i Forhold til den Olie,  
som vi have brugt før.”



From  
Frederiksstad mek.  
Værksted,  
Frederiksstad,  
Norway.

The above letter is from one of the largest mechanical  
works in Norway. It reports that 600 W Cylinder Oil not  
only gives great satisfaction, but causes a saving of 50 per  
cent. over the oil previously used.

Better  
Than  
Any Other.



“ \* \* \* Vid began-  
andet af 600 W Cylinderolja och  
Viscolite Maskinolja här i raffin-  
aderiet har jag konstateradt en  
betydlig besparing. Oljan använ-  
das å alla våra maskiner och är  
den bästa jag ännu arbetadt med.”

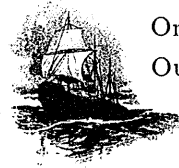


From  
E. Ekström, Chief Engineer,  
Aktiebolaget Sockerraffinaderiet,  
“Öresund,” Lund,  
Sweden.

The above is an extract from a letter from the chief  
engineer of one of the largest sugar manufacturing com-  
panies of Sweden, and states that there is a considerable  
saving in the use of Vacuum Oils, which have proven to  
be better than any other they have ever tried.

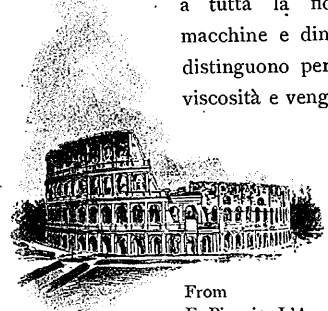
5-0240

0097



Used  
On All  
Our Fleet.

"Ci é grato significarvi che da parecchi anni adoperiamo i vostri olii minerali lubrificanti, con soddisfacenti risultati, tanto che ne abbiamo ormai da oltre un anno esteso l'uso generale a tutta la flotta, per cilindri, macchine e dinamo. Tali olii si distinguono per la costanza della viscosità e vengono da noi adoperati con lubrificatori automatici a contagocce."



From  
E. Piaggio, L'Amministratore Delegato  
Navigazione Generale Italiana,  
Rome,  
Italy.

"We take pleasure in advising you that we have been using your lubricants for several years with satisfactory results, and that, as a consequence, we have, since more than one year, extended their general use to all of our fleet for the lubrication of cylinders, engines and dynamos. Your oils are remarkable for the uniformity of their viscosity, and we use them with sight-feed lubricators and others."



On  
1000-horse-power  
Engines.

"A vostra richiesta, ben volentieri attestiamo che i vostri lubrificanti per cilindri e movimenti di macchine a vapore che dal mese di Novembre, 1896, usiamo per le nostre motrici di 1000 H. P., eccellono per bontà e superiorità, ed hanno il merito speciale di essere sempre dello stesso ed ugual tipo e di essere somministrati colla massima accuratezza."



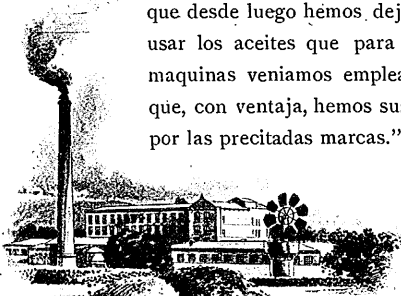
From  
Officine Elettriche Genovesi,  
Genoa,  
Italy.

"In accordance with your request, we are very glad to certify that your lubricants for cylinders and engines, which we have used since the month of November, 1896, on our 1000-horse-power engines, are most excellent and superior to all others. One of their special merits is their uniformity, and we are also pleased with the accuracy with which our orders are filled."

Discontinued  
At Once  
Our Old Oils.



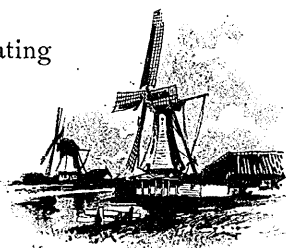
"Tenemos la satisfacción de manifestarle que las pruebas hechas con sus aceites minerales marcas 600 W Cylinder y Arctic Machine en nuestras maquinas de vapor y de hilar han sido tan satisfactorias, que desde luego hemos dejado de usar los aceites que para dichas maquinas veniamos empleando, y que, con ventaja, hemos sustituido por las precitadas marcas."



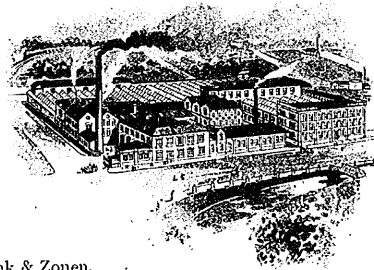
From  
Güell Parellada y C<sup>a</sup>,  
Barcelona,  
Spain.

"We have the satisfaction of informing you that the tests made with your brands of mineral oils, 600 W Cylinder and Arctic Machine, on our steam engines and spinning machinery (textile), have been so satisfactory that we discontinued at once the use of our old oils, and have replaced them with your two brands above mentioned."

Great  
Lubricating  
Power.



"Sinds 1895 hebben wij uwe olie soorten Etna voor de weefstoelen en transmissie en 600 W voor de cylinders in gebruik en hebben de groote smeerkraft geconstateerd."



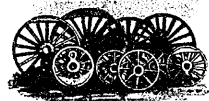
From  
G. Jannink & Zonen,  
Euschede,  
Holland.

"Since 1895 we have used your oils: Etna for looms and transmission, and 600 W for cylinders, and have proven their superior lubricating capacity."

5-0240

0099

We Gladly  
Advise  
You.



“Wir bestätigen Ihnen  
gern, dass wir mit dem 600 W  
Cylinderöl der Vacuum Oil Com-  
pany an unserer Stahlwerks-Ge-  
bläsemaschine einen Versuch an-  
gestellt haben. \* \* \* Es wurde  
die Oelmenge pro 10,000 Umdre-  
hungen der Maschine festgestellt  
und ergab sich, dass früher für  
Schmiermaterial des Cylinders  
M. 146.30 p. Monat ausgegeben  
wurden, während mit 600 W Cylin-  
deröl die Kosten nur M. 79,—be-  
trugen, somit sich eine Ersparnis  
von M. 67.30 einstellte. \* \* \*  
Beim Gebrauche der neuen Oel-  
sorte zeigte sich keinerlei Unregel-  
mässigkeit im Betriebe der Ma-  
schine.”



From  
Union Actien-Gesellschaft,  
Dortmund,  
Germany.

\* \* \* \* We gladly advise you that we have made a  
trial with 600 W Cylinder Oil of the Vacuum Oil Company  
at our steel works on the blowing engine. The quantity  
per 10,000 revolutions established and proved that our  
former cost for cylinder oil on this engine was marks 146.30  
per month; with your oil it was marks 79 per month, for a  
saving of marks 67.30. There was no irregularity whatever  
with your oil in the work of the engines.

We  
Certify with  
Pleasure.



“Hierdurch beschei-  
nigen wir Ihnen gerne, dass wir  
seit Mai 1896 Ihre Maschinenöle  
Arctic und Etna verwenden und  
mit den Oelen sehr zufrieden  
sind.”



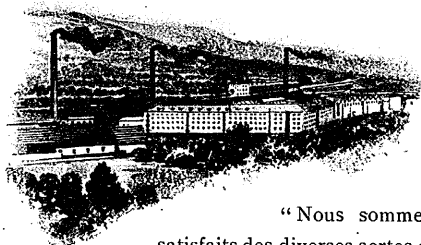
From  
Norddeutsche  
Jute-Spinnerei & Weberei,  
Der Technische Director,  
Hamburg,  
Germany.

\* \* \* We certify with pleasure that we have used your  
brands Arctic Machine Oil and Etna Engine Oil since  
the month of May, 1896, and that we are very well satisfied  
with the results.

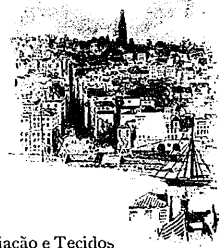
5-0240

0100

We  
Congratulate  
Ourselves.



"Nous sommes très satisfaits des diverses sortes d'huile que vous nous avez fournies jusqu'à ce jour et nous n'avons qu'à nous louer de leur emploi."



From  
Fabrica de Fiação e Tecidos  
do Rio Vizella,  
Negrellos,  
Portugal.

"We are very well satisfied with the different brands of oil that you have supplied to us up to this date, and we congratulate ourselves on their adoption."

On  
Triple-expansion  
Engines.



"Ihrem Wunsche nachkommend, bestätigen wir dass wir das Vacuum Cylinderoel 600 W seit  $\frac{3}{4}$  Jahren bei unserer Triple-Expansions-Dampfmaschine mit befriedigendem Ergebnisse in Verwendung haben und uns deshalb veranlasst fanden, es auch bei der kürzlich in unserer Eisenbroder Baumwollspinnerei in Betrieb gekommenen Dampfmaschine in Gebrauch nehmen zu lassen."



From  
Johann Liebig & C.,  
Reichenberg,  
Bohemia,  
Austria-Hungary.

"In accordance with your wish, we take pleasure in advising you that during the last nine months we used on our triple-expansion engines your 600 W Cylinder Oil with satisfactory results, which have decided us to adopt it also for the new engine in our other mill at Eisenbrod."

5-0240

0101

Considerable  
Economy  
In Oil Bill.



“Das Vacuum Oel  
ermöglichte uns auf dem Oelconto  
(in der Oelwirtschaft) wesentliche  
Ersparungen zu machen. Was wir  
an demselben unter anderem beson-  
ders schätzen, ist die vollkommen  
gleiche Qualität jeder einzelnen  
Lieferung.”



From  
Ganz & Comp.,  
Budapest,  
Austria-Hungary.

“The oils of the Vacuum Oil Company have enabled  
us to realize a considerable economy in our oil bill. What  
we particularly appreciate among other advantages is the  
fact that their quality is always uniform.”

I Find  
Your Oils  
Very Satisfactory.



“Referring to your  
inquiry as to the value of the lubri-  
cating oils supplied to users of my  
system of electric lighting, I beg  
to inform you that from the in-  
quiries I have made, I find that  
the oils which you have furnished  
have proven very satisfactory.”

From  
Thomas A. Edison.



The above letter was given us by Mr. Edison nearly  
ten years ago. It is still applicable, because we have con-  
tinuously supplied the General Electric Co., of Lynn,  
Mass., since its formation, and of which the Edison system  
became a part.

5-0240

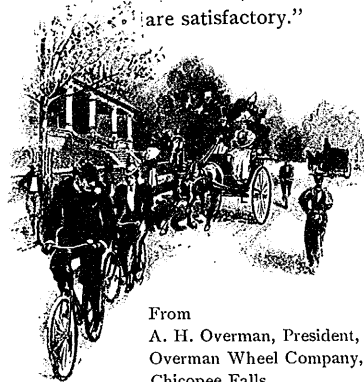
0102



Result  
Of  
Learning.



"We have learned that it is a very difficult matter to get good machinery oil. The result of this learning is that we are large users of Vacuum Oils. They are satisfactory."

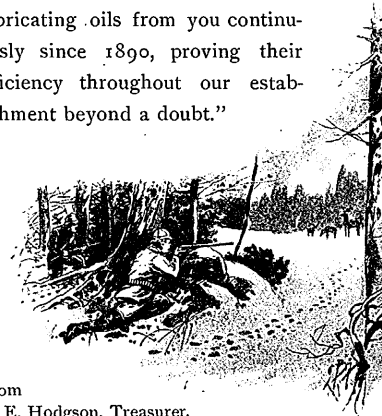


From  
A. H. Overman, President,  
Overman Wheel Company,  
Chicopee Falls,  
Massachusetts.

Beyond  
A  
Doubt.



"We unhesitatingly say that the satisfaction your goods have given us is evidenced by the fact that we have bought our lubricating oils from you continuously since 1890, proving their efficiency throughout our establishment beyond a doubt."



From  
G. E. Hodgson, Treasurer,  
Winchester Repeating Arms Co.,  
New Haven,  
Connecticut.

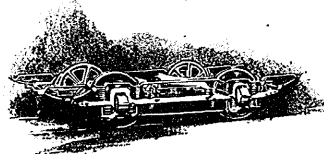
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0103

After  
Careful  
Experiment.

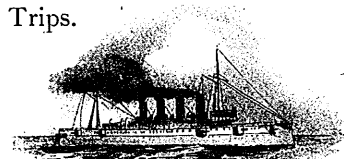


"The lubricants used in our patented journal boxes should possess good body and high endurance and at the same time maintain proper limpidity at varying temperatures, even as low as 10 degrees Fahrenheit. We have ascertained after careful experiment that your Vacuum Journal Box Oil possesses these qualifications and we have as a consequence adopted it and recommend it as a standard for use."

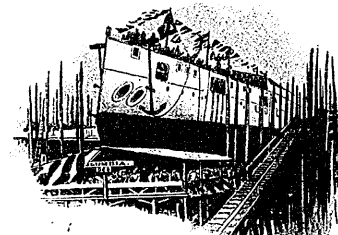


From  
J. G. Brill Company,  
Philadelphia,  
Pennsylvania.

Used  
Them on  
Trial Trips.



"We have found Vacuum Oils satisfactory. We are using them in our yards and shops, and have used them with most excellent results on the trial trips of the battle ships and cruisers we have built for the United States Navy."



From  
Henry W. Cramp, Vice-president  
The Wm. Cramp & Sons  
Ship and Engine Building Co.,  
Philadelphia.

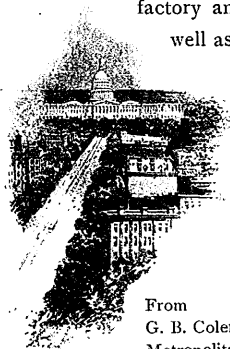
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0104

The  
Practical  
Test.



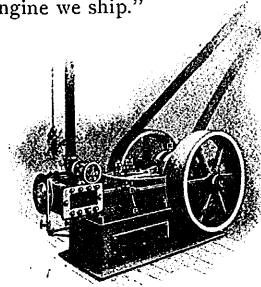
"We are using Vacuum Oil at both our 4½ and P Street stations, and have been since the starting up of the machinery some two years ago. This oil has been submitted to the practical test of hard service and it has been satisfactory and uniform in grade, as well as economical in cost."



From  
G. B. Coleman, General Manager,  
Metropolitan Railroad Co.,  
Washington,  
District of Columbia.

Send It  
With Each  
Engine.

\*\*\* "A fine high-speed engine, such as we build, \*\*\* offers the best opportunities to test the quality of lubricating oils, and we are pleased to state that among satisfactory oils we have used, we have found yours one of the best, and furnish a can of it with each engine we ship."



From  
Ball Engine Company,  
Erie,  
Pennsylvania.

5-0240

0105



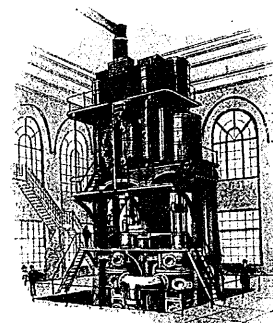
The Oil  
The Best  
Advertisement.

"Your pamphlet is an excellent advertisement and we have read it with interest, but you have a better one—your oil. We have tried 'just as good' and 'just as cheap' and are now ready to stick to the Vacuum as long as their standard of quality and reasonable price are maintained."

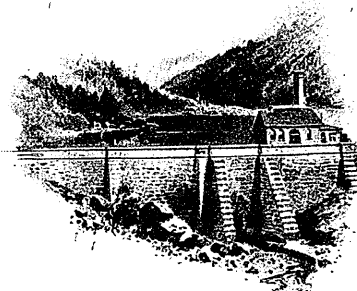


From  
Joseph Loth & Co.,  
New York City.

Wants  
Well  
Attended To.



\*\*\* "We are using your oils with very satisfactory results, both at our works and foundry. \*\*\* We thank you for the courtesy you have displayed in attending to our wants."



From  
Theo. F. Miller, Secretary and Treasurer,  
Henry R. Worthington,  
Brooklyn,  
New York.

With  
Satisfactory  
Results.



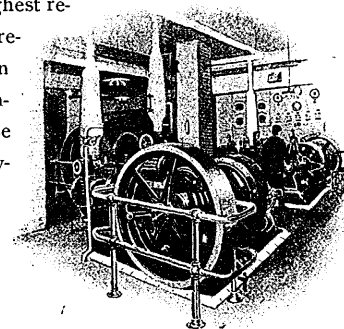
"Your letter of August 10 is received. \* \* \* We have been using Vacuum Oil for the past two years with satisfactory results to us and are using it at the present time."



From  
C. A. Carlisle, P. A.,  
Studebaker Brothers Mfg. Co.,  
South Bend,  
Indiana.

Have  
Never  
Failed.

"Before perfecting and patenting our system of automatic lubrication for both high and low-speed machinery, for eight years upon the Harrisburg engines, we made an exhaustive study of oils and friction, periodically testing many brands of oil products. Your 600 W Cylinder and Arctic Machine Oils, however, have never failed to give the highest results, and our recommendation of them is sincere because strictly deserving."



From  
W. R. Fleming,  
Vice-president and General Manager,  
Harrisburg Foundry and Machine Works,  
Harrisburg,  
Pennsylvania.

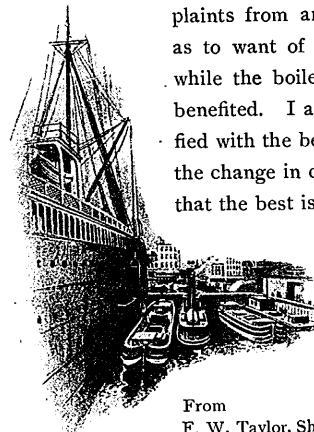
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0107

Boilers  
Have Been  
Benefited.



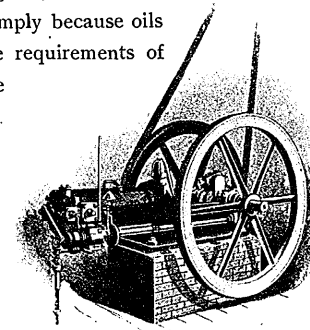
\*\*\* "We have effected an economy in the use of the oil (600 W Cylinder), ranging from 50 to 66 per cent., and, further, there have been no complaints from any of the engineers as to want of proper lubrication, while the boilers have also been benefited. I am more than satisfied with the benefits derived from the change in cylinder oil, proving that the best is the cheapest."



From  
F. W. Taylor, Shipping and Freight Agt.,  
Philadelphia & Reading Trans. Line,  
Philadelphia,  
Pennsylvania.

Very  
Satisfactory for  
Gas Engines.

"We have found your oils very satisfactory for our gas and gasoline engines, and we recommend them simply because oils not suited for the requirements of our engines make trouble."



From  
F. F. Burns, Treasurer,  
Otto Gas Engine Works,  
Philadelphia,  
Pennsylvania.

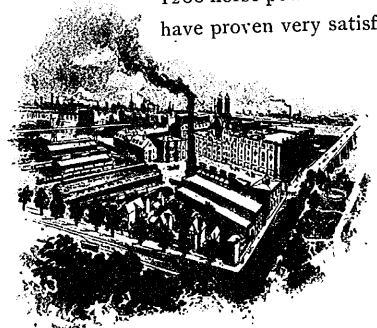
5-0240

0108

On  
Refrigerating  
Plants.



\*\*\* "We are using  
your engine and cylinder oils on our  
refrigerating plant, the capacity of  
which is 650 tons, operated by  
1200 horse-power. \*\*\* Your oils  
have proven very satisfactory."

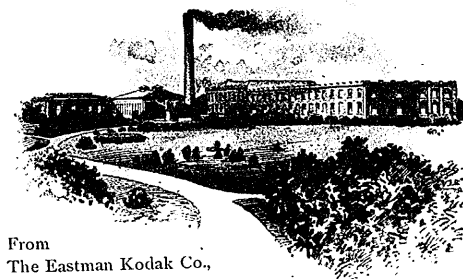


From  
W. Bartholomay, General Manager,  
Bartholomay Brewing Company,  
Rochester,  
New York.

Careful  
Attention  
To Power.



"We have given very  
careful attention to the cost of de-  
veloping power, as it is a consider-  
able item. While your oils cost  
more than some others, we have  
proven their value in our service,  
and hence we use them."



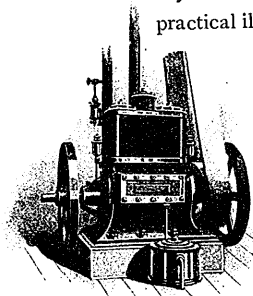
From  
The Eastman Kodak Co.,  
Rochester,  
New York.

5-0240

0109

Convinced Us  
Much Less Cylinder  
Oil Necessary.

\*\*\* "We must also, in justice to the Vacuum Oil Company people, say that we have used their 600 W. Cylinder Oil for several years past with such good results that we are still using it and recommending its use in our circulars. It is also due them to say that they first convinced us, by practical illustrations in our testing department, that much less cylinder oil of a good quality—such as theirs is—will adequately lubricate a steam cylinder than we had before that time suspected."\*\*\*

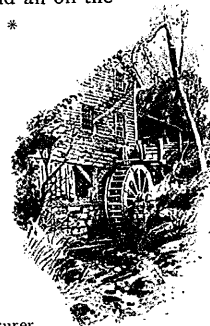


From  
Westinghouse Machine Company,  
Pittsburg,  
Pennsylvania.

Unable to  
Find an  
Equal.



"We have used your 600 W Cylinder Oil for the past four or five years with the most satisfactory results; indeed, we have made a number of tests with other cylinder oils, but never have as yet been able to find an oil the equal of 600 W."\*\*\*



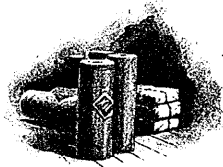
From  
Charles R. Connell, Treasurer,  
The Lackawanna Mills,  
Scranton,  
Pennsylvania.

5-0240

0110



Just as  
You Represent  
Them.



"Having used your oils for the past eight years, I find them just as you represent them—power-saving and strictly uniform. I can cheerfully recommend them to any manufacturer as being all right."



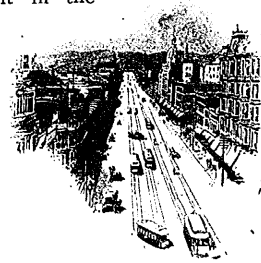
From  
R. W. Sawyer, Treasurer,  
Orono Pulp and Paper Company,  
Bangor,  
Maine.

One  
Drop per  
Minute.



"We have used 600 W Mineral Cylinder Oil for eight years. Our engines were built by the Union Iron Works, of this city, with O'Neill cut-off valves, and are 20" 30"—48", 20" 36"—48", 68 revolutions and 100 pounds steam pressure. We feed the oil through lubricators attached to high-pressure cylinders, and at the rate of one drop per minute, which is sufficient for both cylinders. Air-pump valves and, in fact, all machinery that the oil comes in contact with, are in excellent condition. The oil caught in the heater is like new oil."

From  
Johnson Reynolds,  
Superintendent,  
Sutter Street Railway,  
San Francisco,  
California.



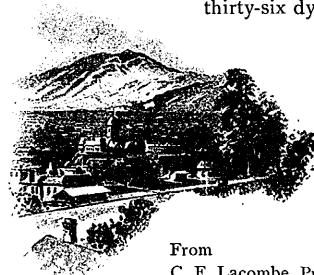
5-0240

0111

Use  
Them in  
All Our Plants.



"We have been using your Vacuum Oils for some six years and for the last two years exclusively. We have found them very satisfactory and expect to continue to use them in all our electric plants in this State. We are now operating about twenty-five high-speed engines and about thirty-six dynamos."

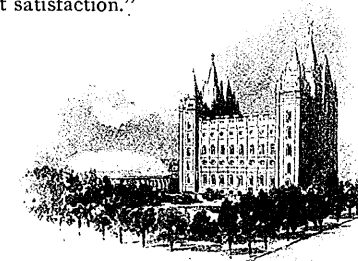


From  
C. F. Lacombe, President,  
Mountain Electric Company,  
Denver,  
Colorado.

Always Given  
Perfect  
Satisfaction.



"We have to state that we have used your oils for several years on our steam engines and electric light machinery and that they have always given us perfect satisfaction."



From  
R. F. Hayward, General Manager  
Salt Lake & Ogden  
Gas & Electric Light Company  
Salt Lake City,  
Utah.

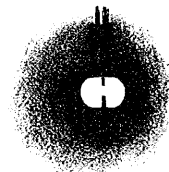
5-0240

0112

Best  
Dynamo  
Oil.



"We use Arctic Engine Oil on all dynamos and believe it is the best dynamo oil on the market—at least this has been our experience thus far."

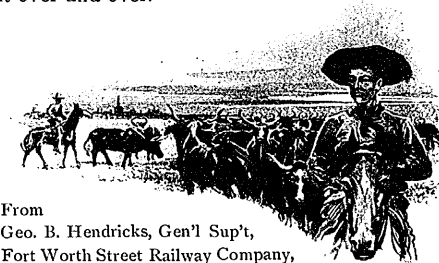


From  
W. E. Boileau, Superintendent,  
Brush Electric Light & Power Co.,  
Columbus,  
Georgia.

Filter and  
Use It  
Over and Over.



\*\*\* "With ordinary care to prevent waste, the last barrel of 600 W Cylinder Oil ran us five months and the last barrel of Arctic Engine Oil six months, our plant running sixteen hours per day. We operate a large compound Hamilton-Corliss engine, several pumps and three 80-horse-power generators. We filter our engine oil and use it over and over."



From  
Geo. B. Hendricks, Gen'l Sup't,  
Fort Worth Street Railway Company,  
Fort Worth,  
Texas.

Making Ice  
Requires  
Good Oil.



"Making ice is particular work and requires good oil as well as good water. We have used Vacuum Oil for a number of years and find it entirely satisfactory and fully adapted to the requirements of our ice-making machinery. It has invariably given entire satisfaction."

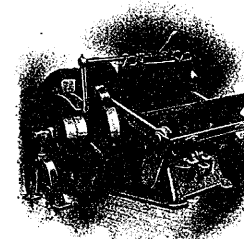


From  
L. R. Logan, Secretary,  
Shreveport Ice & Refrigerating Company,  
Shreveport,  
Louisiana.

For Our  
Own Ease of  
Mind.



"Our presses work at very high speed and under many tons pressure. Improper oil is responsible for more trouble, expense and breakdowns than any other fault we know of. For our own ease of mind in starting up, a can of Marine Engine Oil is sent with every new press shipped. We also use your Slushing Oil. It has given us ideal satisfaction in shipments and in the protection of unassembled parts at Colt's Armory, Hartford."



From  
John Thomson, President,  
John Thomson Press Co.,  
New York City.

5-0240

0114

General Offices:

Rochester, N. Y., U. S. A.

Works: Rochester and Olean.

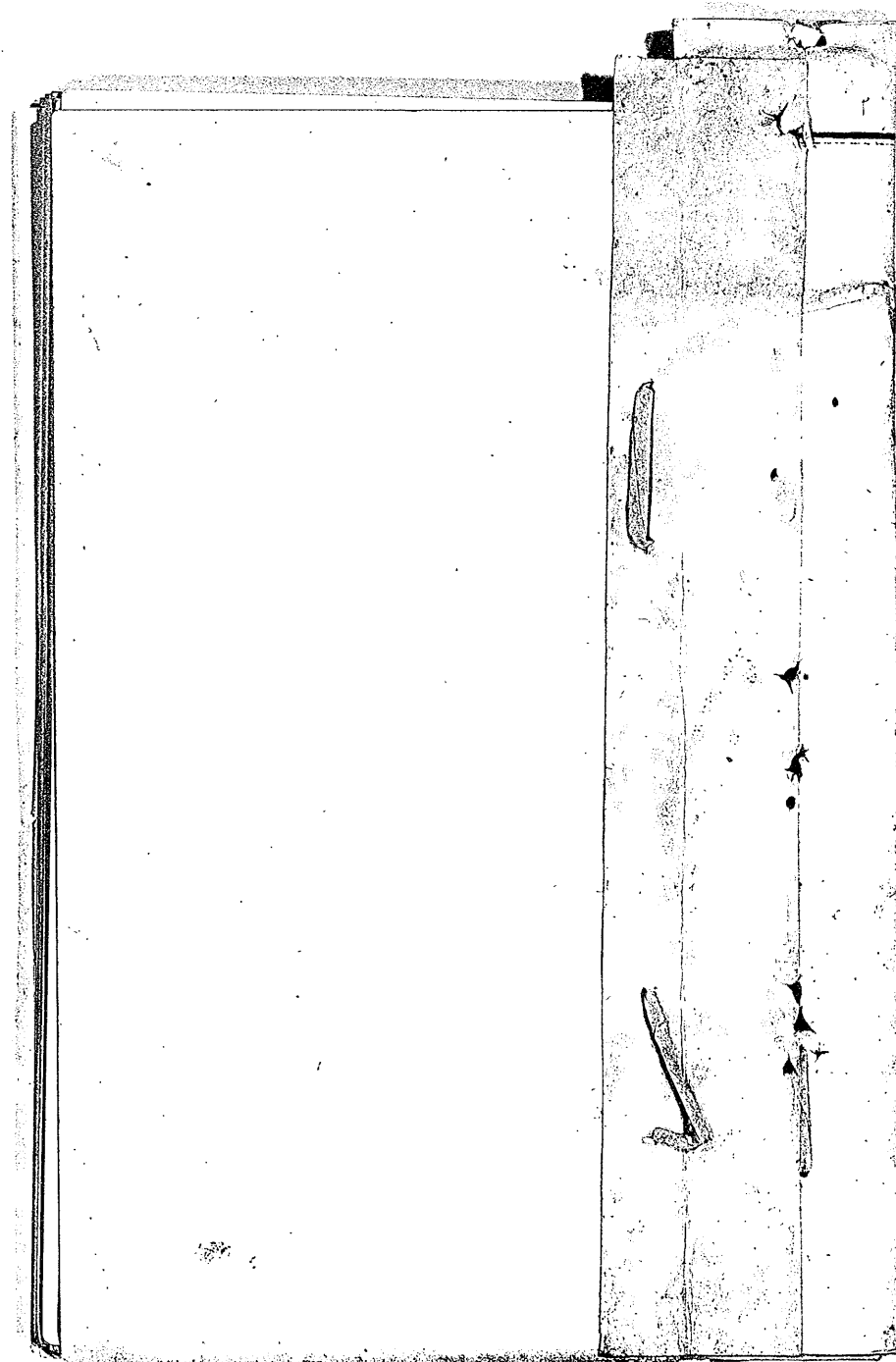
Branch Offices and Agencies:

BOMBAY	67 Esplanade Road
BOSTON	45 Purchase Street
CAPE TOWN	29 Atkinson's Chambers
COPENHAGEN	26 St. Anneplads
HAMBURG	36 Alterwall
KOBE	16 Concession
LONDON	47 Victoria Street
MELBOURNE	9 Queen Street
MILAN	Panizzardi & Cie., Via Dante 4
NEW YORK	29 Broadway
PARIS	Panizzardi & Cie., Rue du Louvre 34
SINGAPORE	Battery Road
TORONTO	Corner Front and Scott Streets
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