交通部上海工业专门学校

交通部
上海工業專門學校

鐵路管理科頭班

紀念冊

張謇

淮海實業銀行

總行設在南通上海已設分行專營各種活期定期儲蓄存款抵押貼現放款各埠滙兌以及銀行一切業務各省會商埠均有特約代理機關倘蒙惠顧無不格外克己以副雅意

上海分行設在九江路念二號

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交通部
上海工業專门学校

鐵路管理科頭班

紀念冊

張謇

序一

民國七年交通部上海工業專門學校添設鐵路管理科以期造就鐵路管理各項人材越三年該科第一班畢業並彙集其歷年成績及有心得之作詮次成篇刋爲一册以資紀念書成問序於余余維交通爲一國之命脈而鐵路尤爲交通之要素故東西各國莫不視爲急務我國興築鐵路亦既有年徒以事實之阻礙或因人材之缺乏乃致進步殊緩歐戰而還各國競謀建設對於交通一道刻意改良我國際此更應急起直追俾免因循自誤然鐵路事業頭緒紛繁經緯萬端卽就管理一方面而言如會計營業客運貨運經濟運費列車轉運統計工廠及材料管理等等均非有專門之學及經驗宏富者不能勝任迺來已成之路亟須改良規畫各路尤待興築種種措置需材孔殷諸生等績學有年對於路務自當具有心得畢業後苟能再加以實地經驗悉心研究羣策羣力共圖發展則其裨益於我國交通前途當非淺鮮也余企望之

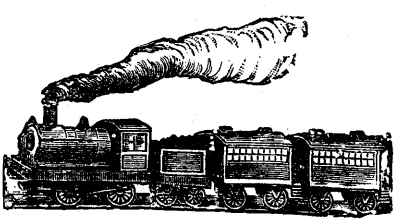
民國九年葉恭綽序

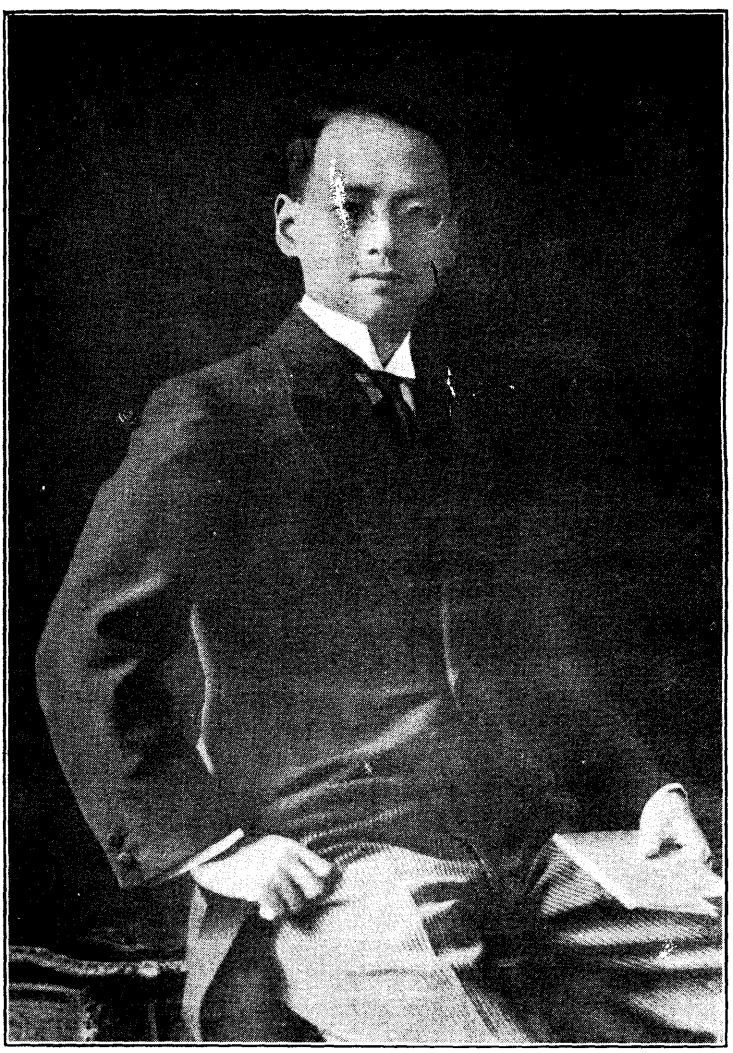
序二

歲在庚申之冬吾校鐵路管理科第一班學生既畢業搜羅成績編爲雜誌書成諸生來問序於余余於光緒三十年秋間來掌是校時諸生程度較淺所設者僅工程班所習者僅測量等科踰年余始改爲鐵路班並創設電機班組織進行不遺餘力迄今路電兩班畢業生足跡遍十八行省浸遍於美國各學校各工廠近且推及於南洋暹羅新加坡以達於歐洲矣戊午之春余復特設鐵路管理班各國學校通例有專科三則爲完全之大學余私心竊計以爲中國東南各省無大學於此蓋始基之矣維時諸生之儁秀者若徐生承燠王生元漢等咸入是科肄業其中並有在路科已習一二年者余以此特班不宜拘四年畢業之例爰以狀達交通部請以三年卒業部中特報可焉且夫天下大利之所在卽大弊之所叢也鐵路營業曰運貨曰載客行李之往來財賄之懋遷雲萃而鱗集管理不得其法措置失當中外人士交相詬病或偶一不愼羣工執事稍稍染指其間而弊竇益不可問往者有滬寧局中人告余吾校人才之盛非特長於科學蓋品行實有過人者若袁君桂森唐君榕錦等皆能廉潔自持絲毫不妄取余聞爲之喜而不寐自來造就才具易造就道德難培因應之人才易培堅卓之人才難近世譚教育者動欲求淺以致用究其極吾國多爲人所用之人而將無能用人之人此其消息影響之大有識之士類能憂之茲者諸生畢業行將效用於世是爲吾校鐵路管理之先河道德聲譽必且駕袁唐諸君而上之鄙人無窮之願望且自此始矣古人詩云君乘車我戴笠他日相逢下車揖余既離校諸生亦將與母校別矣他日相逢或能尙憶吾言而旁人告余諸君興利除弊不稍假借有如余向之所期望者則余之喜可知也敢書此敍以爲券唐文治敍

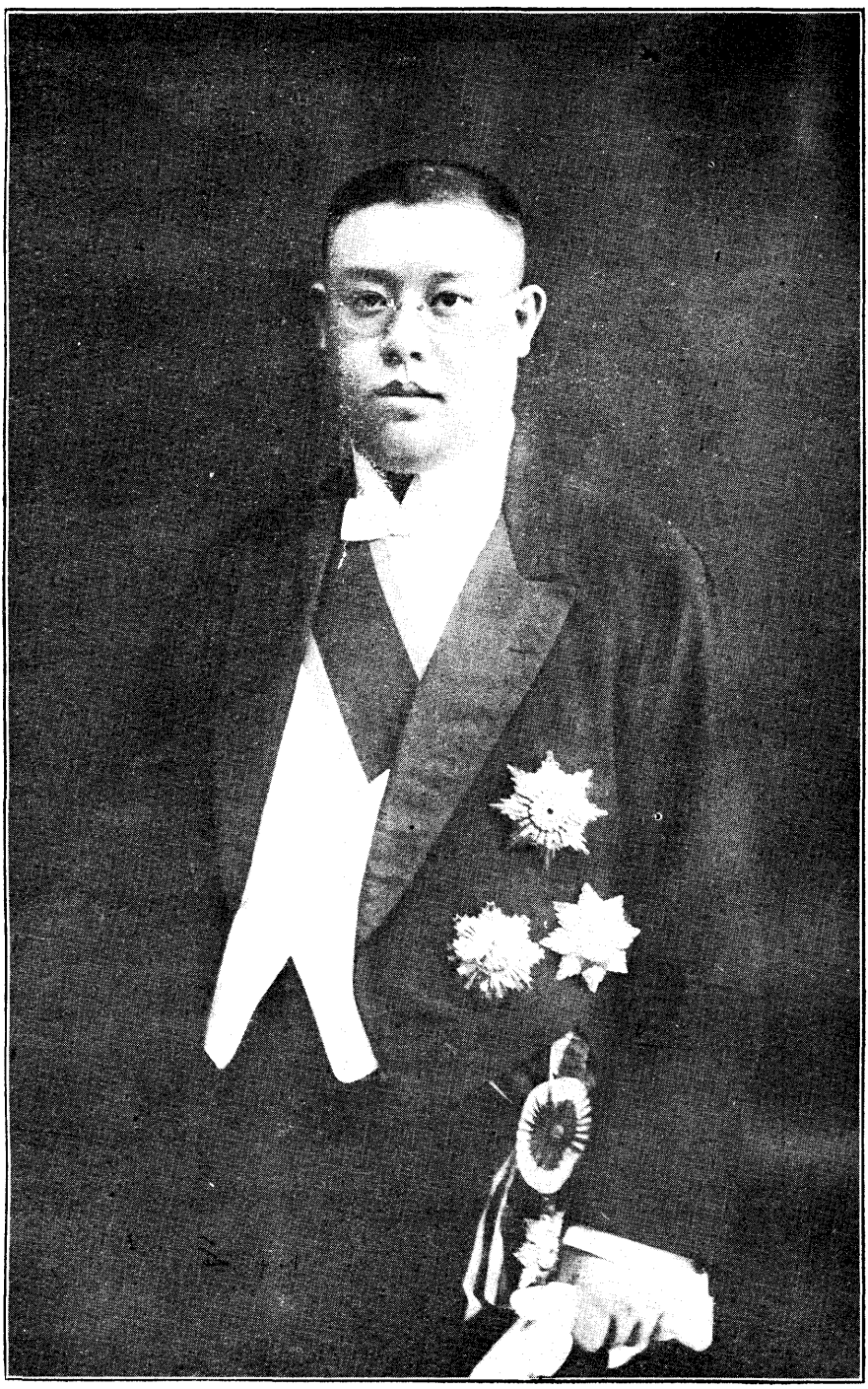
自序

我校鐵路管理科之設。在民國七年。越三載。同人等旣卒業。將於今冬行受成禮。溯開辦伊始時。同學者凡三十八人。三年之間。人事靡常。因事而不獲竟其志者八人。其能堅志砥礪。互相終始以迄於畢業者三十人。此三十人中。或由本校土木電機各科轉入。或由中學升入。相處多者七八年。少亦四五年。鷄鳴風雨。互相切磋。親愛若家人骨肉。今一旦言別。回憶前塵。愴然神往。況際茲灞橋風雪之秋。忽奏折柳陽關之曲。人孰無情。誰能遣此。於是同人等僉議刋印斯册。藉留鴻爪。爰集平昔成績及照像等。都爲一集。異時散處四方。雖不能常相與晤談一室。苟披覽斯篇。一思當年聚首言歡之樂。則感舊懷人之思。有不禁油然以生矣。況乎離合無常。觀摩靡盡。鐵路管理職務之進行。一損一益而已。易益之彖辭曰。凡益之道。與時偕行。損之彖辭曰。損益盈虛。與時偕行。吾人今日之所學。他日出而問世。固將隨時以制宜。若者宜損而革。若者宜益而因。則朋友講習之方。其有須討論者多矣。又豈僅若斯而止耶。詩曰、他山之石。可以攻玉。至於是篇所載。同人等學識譾陋。文之工拙。非所深計。大雅君子。幸垂教焉。謹序。





交通總長葉玉甫先生

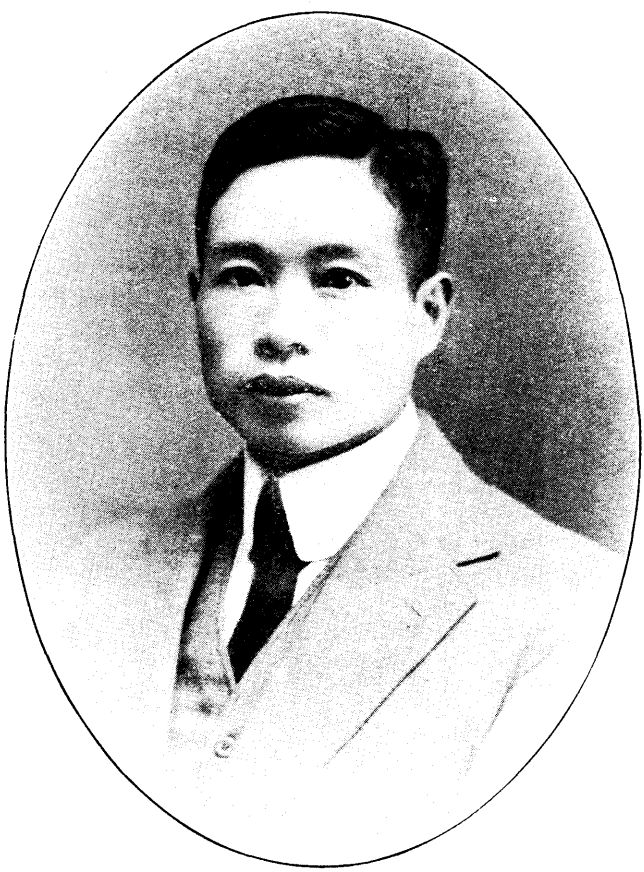


交通次長徐端甫先生


交通部上海工業專門學校

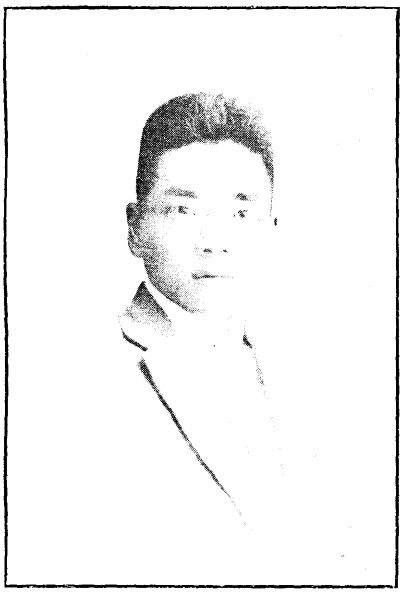
校長唐蔚芝先生

President Tang Wen Tche.



徐長科科理管經郭先生

S. C. Hsu, M.A. (Pennsylvania), Dean of Railway Administration Department and Professor of Banking.



徐廣德先生
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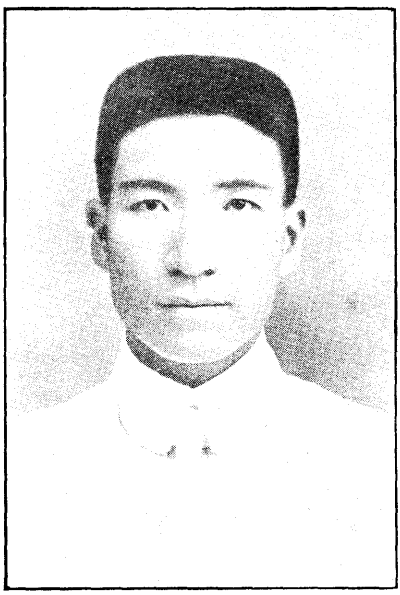
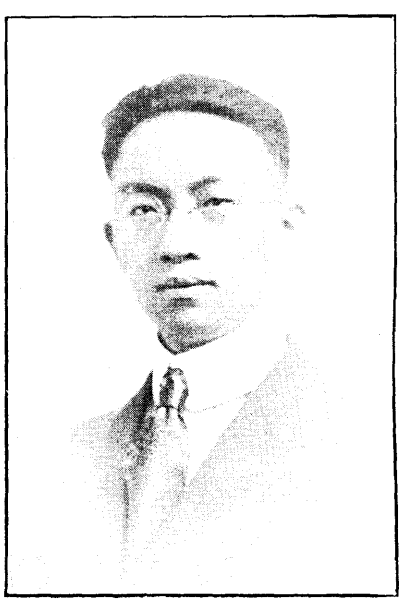
Accounting and Railway Administration.

李偉伯先生
S. Waipeh Lee, A.B. (Wabash), Jurisprudence.



李松涛先生
S. D. Lee, M.A. (Columbia), English Literature.



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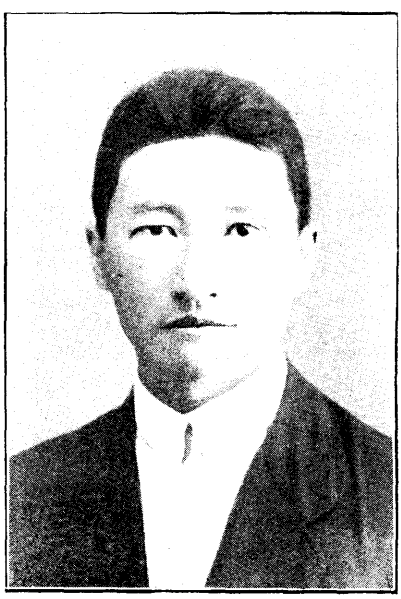
T. Y. Yu B.A. (Wisconsin), Industrial Management.

朱三貢先生
W. S. Tsu, B.A. (Wisconsin), Mathematics.

李松泉先生
Sung Chung Li, M.E.E. (Harvard), Mechanical and Electrical Engineering.

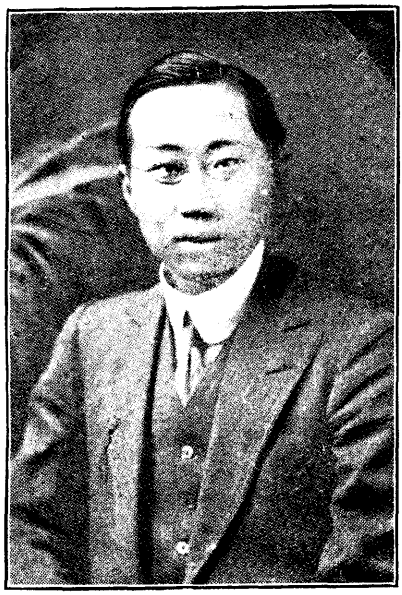
瞿季長先生

H. C. Chu, M A. (Pennsylvania), Transportation.



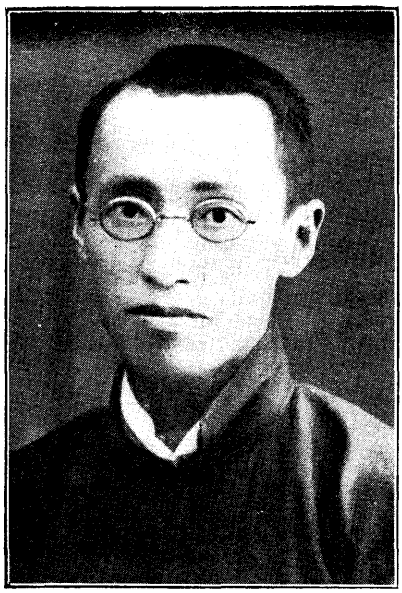
程克競先生

V. C. Chen, C.E. (Ohio Northern University), Railroad Engineering.



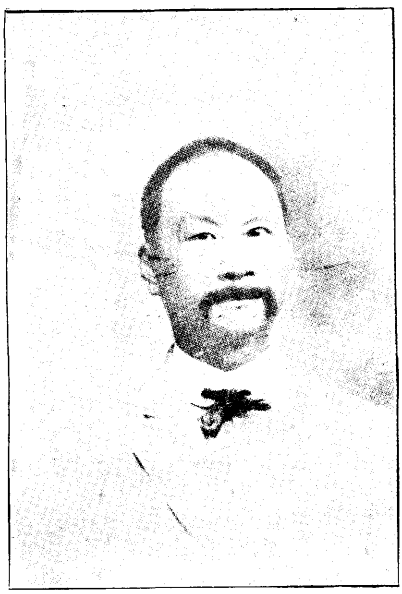
胡春台先生
Sze Shee Woo, B.S. (Glasgow), Railway Engineering.

樸爾佛先生
H. E. Pulver, C.E. (Wisconsin), Railway Statistics.

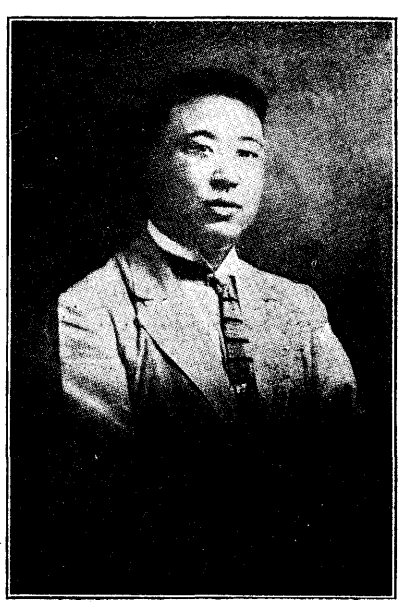


吳采臣先生
T. C. Woo, Chinese Secretarial Work.

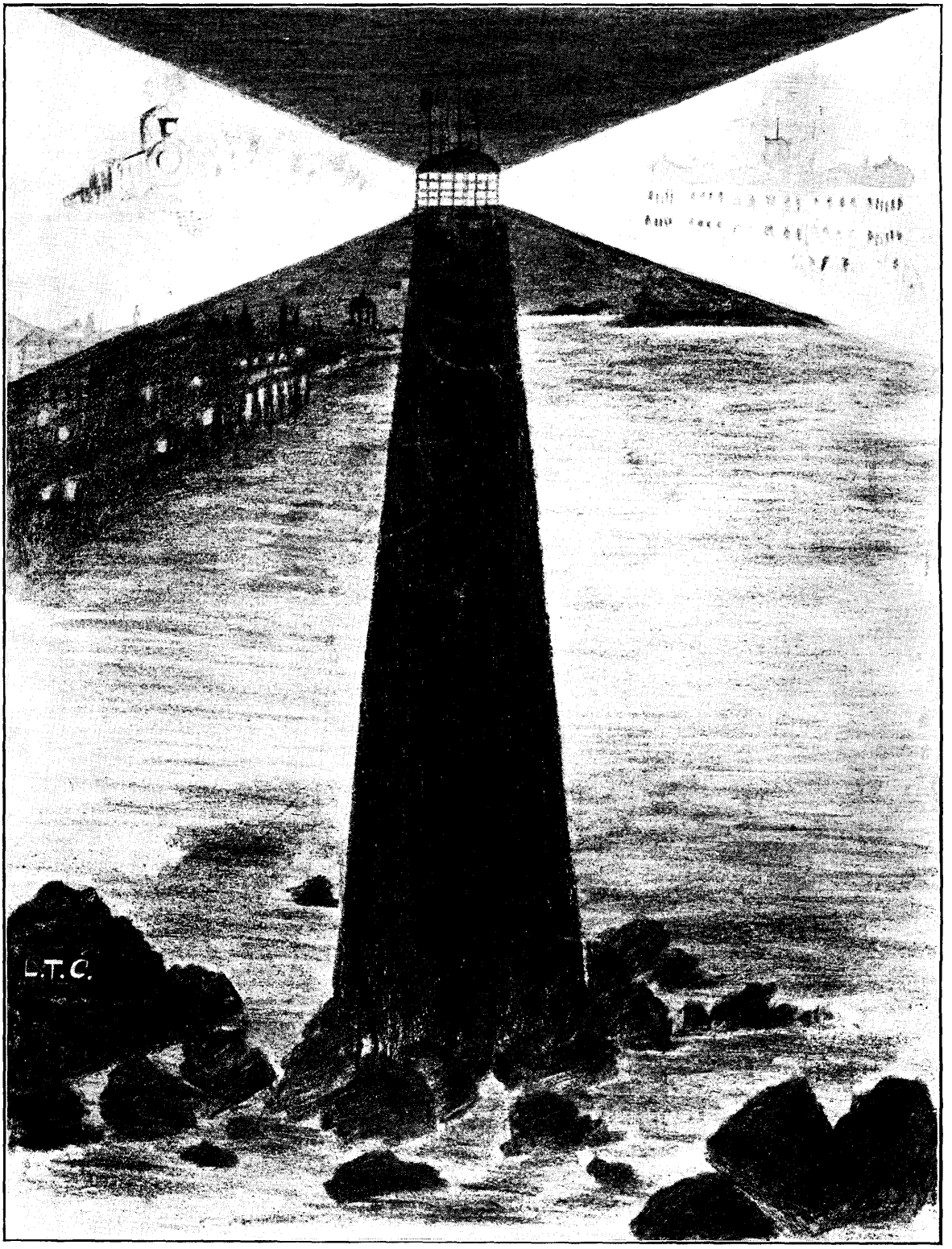
古德先生
J. K. Gold, B.A. (Wisconsin), Physical Education.

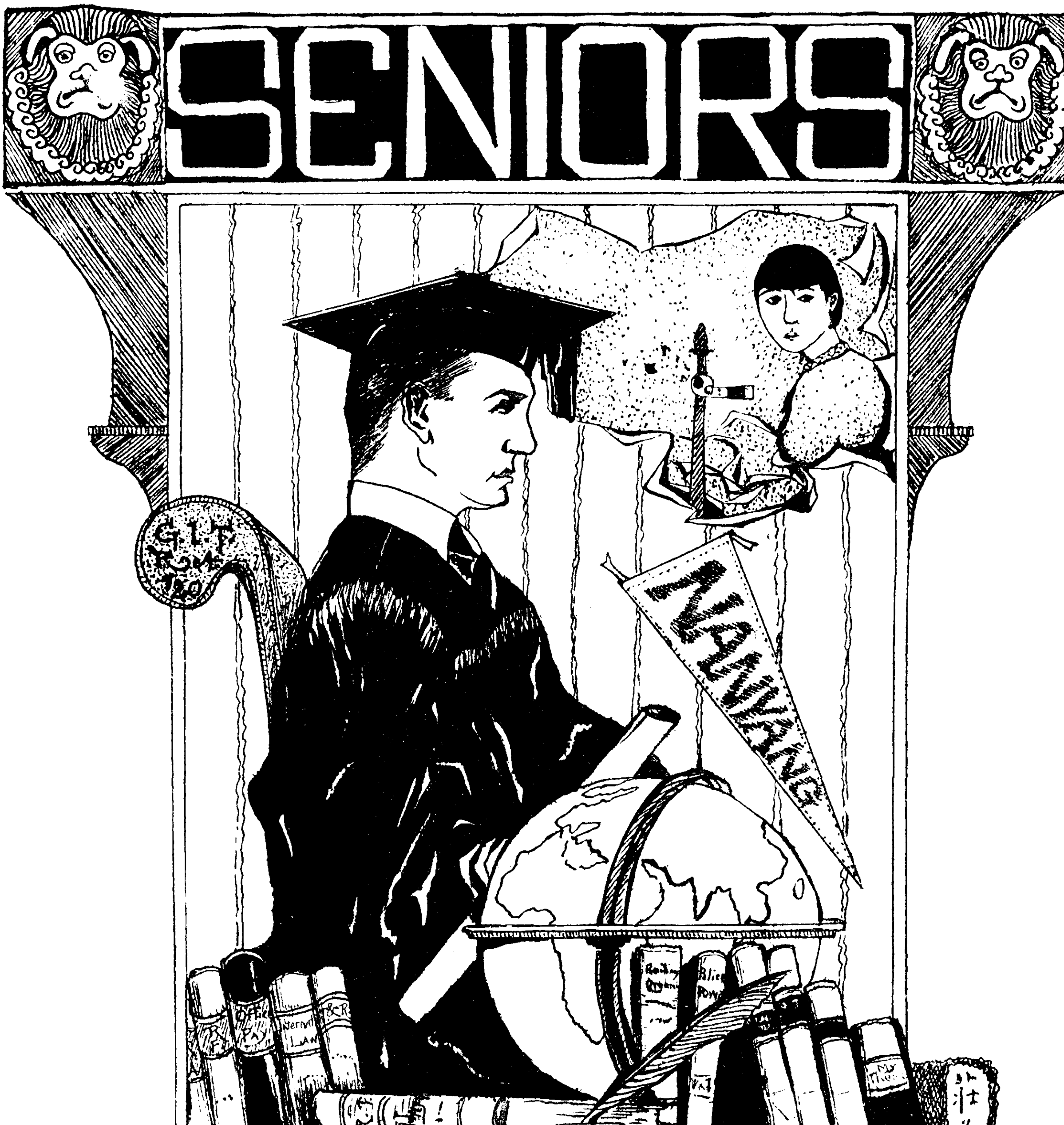


李聯珪先生
L. Q. Li, Chinese Literature.



莊敏菴先生
Marcellin Tsoong, French.


L.T.C.


SENIORS
NANYANG

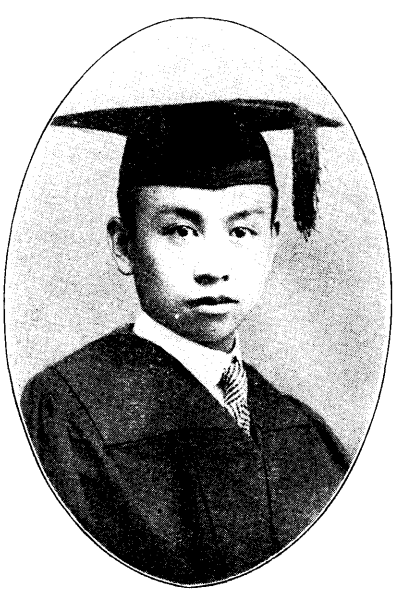
陳仁愔
字伯琴浙江鎮海人年二十七歲
本校中學畢業
民國九年鐵路管理科畢業
通訊處　杭州孝女路一號

楊天擇
字演庵江蘇上海人年二十九歲
商船專門學校畢業
民國九年鐵路管理科畢業
通訊處　上海法華鎮南首楊宅

李樹本
字子勵廣東番禺人年二十七歲
本校中學畢業
民國九年鐵路管理科畢業
通訊處　南京鳳儀門永康里四號轉

張駿良
字雄志江蘇武進人年二十七歲
本校中學畢業
民國九年鐵路管理科畢業
通訊處　常州青果巷眞武廟間壁

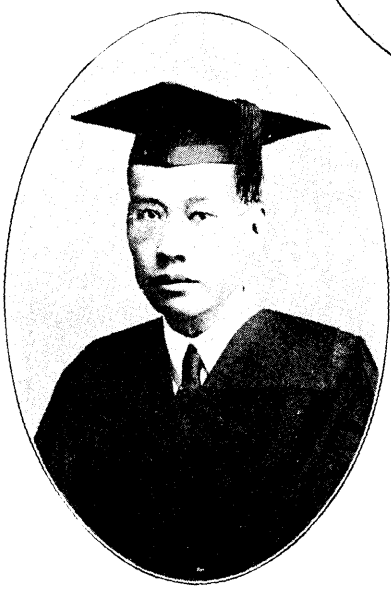
程善身
字立盦浙江海寧人年二十六歲
本校中學畢業
民國九年鐵路管理科畢業
通訊處　浙江海寧多福巷誠益藥局



顧光實
字篤生江蘇南通人年二十六歲
本校中學畢業
民國九年鐵路管理科畢業
通訊處　南通平潮市

戴錫紳
字笏城安徽盱眙人年二十五歲
本校中學畢業
民國九年鐵路管理科畢業
通訊處　天津河北新車站綏和里二十四號

王輔功
字可權江蘇上海人年二十五歲
本校中學畢業
民國九年鐵路管理科畢業
通訊處　上海浦東陸宇渡沈家衖

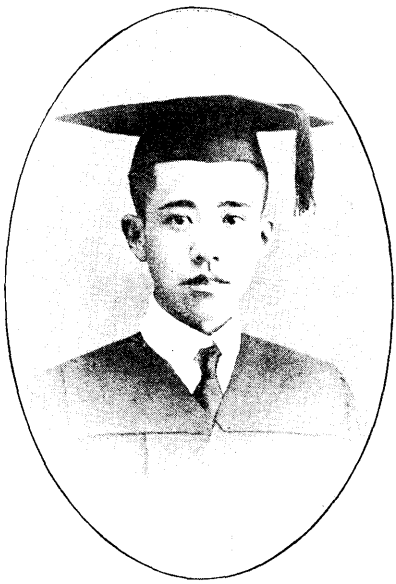


王元漢
字振聲江蘇泰縣人年二十五歲
本校中學畢業
民國九年鐵路管理科畢業
通訊處　江蘇泰縣胡家集鎮

武書常
字孟申浙江定海人年二十五歲
本校中學畢業
民國九年鐵路管理科畢業
通訊處　上海塘山路七百七十四號

徐承燠
字仲宣度東番禺人年二十五歲
本校中學畢業
民國九年鐵路管理科畢業
通訊處　杭州火藥局街二十四號

王鎮
字益初江蘇江陰人年二十五歲
本校中學畢業
民國九年鐵路管理科畢業
通訊處　江陰北門城內縣灣里



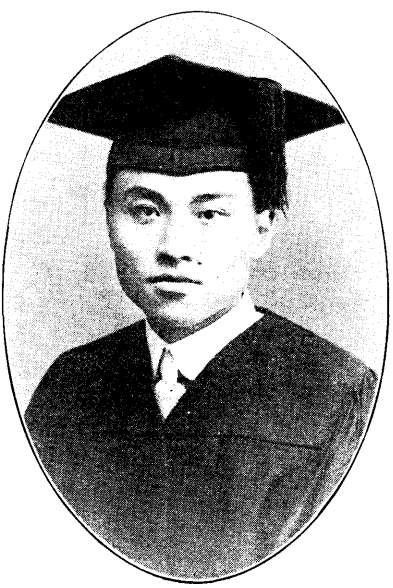
榮士德
字秉懿江蘇無錫人年二十四歲
本校中學畢業
民國九年鐵路管理科畢業
通訊處　無錫榮巷

郭祖壽
字福先浙江諸暨人年二十四歲
浙江第一中學畢業
民國九年鐵路管理科畢業
通訊處　浙江諸暨上江東

夏孫鴻
字鳴遠江蘇江陰人年二十四歲
本校中學畢業
民國九年鐵路管理科畢業
通訊處　浦口港務處轉交

杜榮棠
字耀庭直隸灤縣人年二十四歲
北京匯文大學預科畢業
民國九年鐵路管理科畢業
通訊處　天津俄界福慶棧

張令綵
字頡孫浙江吳興人年二十四歲
本校中學畢業
民國九年鐵路管理科畢業
通訊處　上海浙江路華興坊八百八十一號



俞松濤
字長青江蘇無錫人年二十四歲
本校中學畢業
民國九年鐵路管理科畢業
通訊處　無錫北鄉東北塘鎮

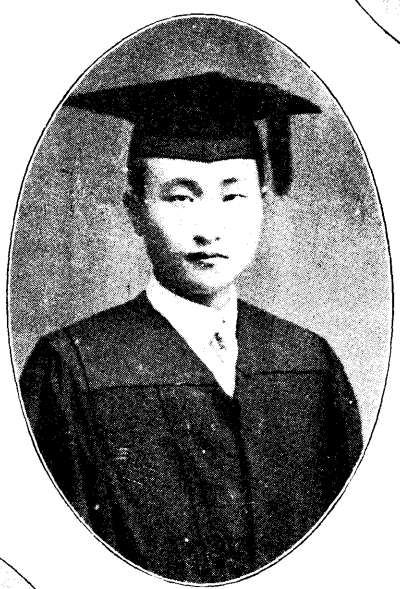
奚逸

字組桐江蘇南滙人年二十四歲

本校中學畢業

民國九年鐵路管理科畢業

通訊處　上海浦東召家樓鎮



沈乃莊

字臨之江蘇青浦人年二十四歲

本校中學畢業

民國九年鐵路管理科畢業

通訊處　上海虹口東有恆路六三六號

姚章樾

字蔭吾江蘇青浦人年二十三歲

本校中學畢業

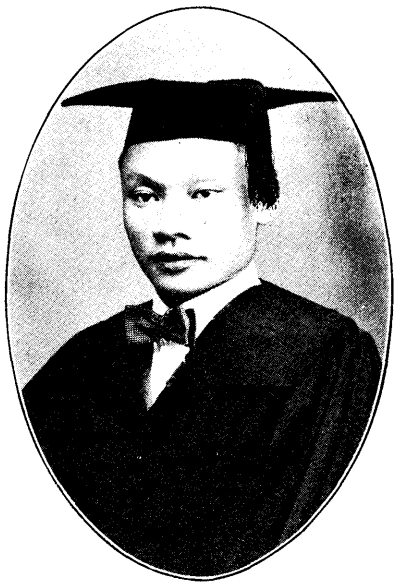
民國九年鐵路管理科畢業

通訊處　楓涇聖堂浜

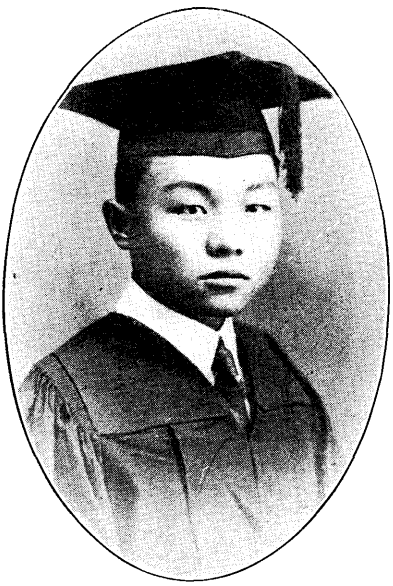
厲始學
字仲道浙江定海人年二十三歲
本校中學畢業
民國九年鐵路管理科畢業
通訊處　定海城內立生號轉

張倫
字錫疇江蘇無錫人年二十三歲
本校中學畢業
民國九年鐵路管理科畢業
通訊處　無錫城內西河里底

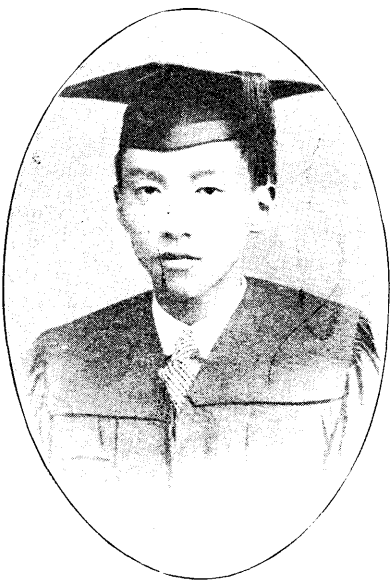
黃守鄴
字守鄴江蘇嘉定人年二十二歲
本校中學畢業
民國九年鐵路管理科畢業
通訊處　嘉定城內



火貴樟
字豫材江蘇上海人年二十二歲
本校中學畢業
民國九年鐵路管理科畢業
通訊處　上海浦東三林塘鎮



陳汝閎
字毅有安徽石埭人年二十二歲
天津南開中學畢業
民國九年鐵路管理科畢業
通訊處　南通濠南別業張孝若君轉



馮寶泰
字季新江蘇武進人年二十二歲
本校中學畢業
民國九年鐵路管理科畢業
通訊處　上海白克路五百六十七號馮轉

曹良棟
字仲泉江蘇吳縣人年二十一歲
本校中學畢業
民國九年鐵路管理科畢業
通訊處　上海城內三牌樓敦紀里

徐植仁
字濟寰江蘇嘉定人年二十二歲
上海復旦公學畢業
民國九年鐵路管理科畢業
通訊處　嘉定城內

張元燾
字桐孫江蘇無錫人年二十一歲
本校中學畢業
民國九年鐵路管理科畢業
通訊處　無錫城內東大街二十八號

鐵路管理科庚申級級史概略

民國七年春交通部上海工業專門學校除原有土木工程電機工程二專科外復創辦一鐵路管理專科庚申級卽爲該科之第一班先是校中職教員及各級學生代表僉議本校應添設管理科大致謂中國鐵路電機事業日益發展本校土木電機二科創辦近二十載成績丕著惟管理人才在中國今日之所最需要者則尙不可多得本校亟應添設管理科以資造就且學生中性情有近管理方面而不宜於工程者甚多本校卓立滬濱得風氣之先東南學子負笈來校者直如歸市彼旣於性情相格苦不能入却之復失培植之意是用呈請交通部在本校內添設路電管理專科以期造就鐵路電機管理人才後奉部令改路電管理科爲鐵路管理科而庚申級遂因之產生焉

鐵路管理科旣奉部准校長遂聘定碩士徐守五先生爲本科科長學生共三十八人有自土木電機三年級轉入者有自初二年級轉入者程度較高功課亦佳校長科長乃議決本級以三學年卒業本校專科概以四年卒業此其創例也

七年三月八日開始上課每週功課有三十四時之多如經濟法律財政銀行商業簿記種種無不完備（另詳科目表）主教爲徐廣德先生李偉伯先生教授法律辜淸臣先生教授英文李頌韓先生教授國文莊劬盦先生教授法文教授旣循循善誘學生復孜孜向學咸以功課完美得能日知所亡故讀之皆津津有味益復好學不倦

下學期請李松濤先生教授英文俞行修先生教授銀行學朱貢三先生教授捷算法程克競先生教授土木工程同級中離校者有張信孚何信道二君素以體育稱固不僅同級少去二位同學實爲全校缺去兩員體育健將聞何君任亞細亞火油公司稽查張君至南京高等師範任體育教授云

同級中類皆品行純正學問優良其擅長文學者如張駿良之於國文大會王元漢之於英文大會均於是年秋得金製獎章戴錫紳亦得英文大會銀製獎章其有幹才盡力校務者如本校體育會會長張信孚副會長徐承燠徐君於足球管理事尤著奇功書記王元漢棒球管理戴錫紳皆爲本級之出色人才

我校體育素著執東南之牛耳而體育健將大半薈萃於鐵路管理科之庚申級在足球部者凡九如李樹本（部長）顧光實何景崇何信道張信孚楊天擇杜榮棠黃韻三陳汝閎網球部者凡四李樹本何信道顧光實杜榮棠籃球部者凡六杜榮棠陳汝閎何信道何景崇張信孚黃韻三田徑賽部凡六杜榮棠（部長）張信孚何信道張倫黃韻三何景崇棒球部凡五何信道（部長）李樹本何景崇黃韻三杜榮棠是年本校運動會錦標爲吾級所得此爲吾級體育全盛之時代亦卽爲我校體育全盛之時代

同級有入技擊部者如張令綵（部長）徐植仁黃守鄴王鎭入軍樂隊者如夏孫鴻沈乃莊入野外賽跑隊者如馮寶泰等各以興之所

至而入唱詩班者或練習攝影遊藝種種尤不乏其人

八年上學期卽庚申級之第三學期功課尤形繁多學理漸趨精邃每週三十四小時尤多課外自修迄無暇晷自鐵路管理科言之功課當以此學年爲最難上學期益請瞿季長先生教授辦事室管理學焉

本年英文大會得獎者有二人爲郭祖壽(金牌)火貴樟(銀牌)同級離校者爲許蘭亭梁鼎新陳肇坤何景崇查濬文

本年在體育會被舉爲職員者爲李樹本(副會長)王元漢(書記)戴錫紳(網球管理)黃韻三(棒球管理)黃君繼卽辭去在足球部者顧光實(部長)李樹本杜榮棠陳汝閎籃球部陳汝閎(部長)杜榮棠黃韻三田徑賽部杜榮棠張倫陳汝閎是年春杜榮棠黃韻三張倫赴菲列賓與遠東運動會三君係中國遠東六大學運動會之選手杜君于五項運動得第二之獎品擲鐵餅得第二名張君于替換賽跑亦得有獎章云

九年功課無異於前惟下學期稍減鐘點每週僅二十七時然於實習考察則甚注重本年加請美人柏爾弗先生教授鐵路統計法及吳采人先生教授公文程式黃韻三君自費赴美留學同級遂祇餘三十人矣

吾級級會成立於民國七年特以吾級同學盡力校務如在體育會及各部者甚多勢難兼顧乃未以全力注此是年春乃更舉級會職員會長徐承燠副會長王元漢書記張駿良會計武書常幹事戴錫紳郭祖壽夏孫鴻張令綵自經此次舉定後遂實行級會一切事務

四月十三日同級全體赴滬寧津浦兩路實地考察同行者尙有鐵路管理科壬戌級及教授徐廣德先生瞿季長先生爲指導所經車站滬寧鐵路如蘇州鎭江南京津浦鐵路如浦口浦鎭蚌埠徐州泰安濟南天津均按站停留詳加考察故不獨增廣學識亦且於身心有益其詳情另載滬寧津浦兩路考察記

我校每年有一種紀念册發行以紀載每屆畢業學生及校況本年土木電機科畢業固有紀念册發行特以本級爲鐵路管理科第一班又在年假畢業僉議本級應卽另行刊印以誌紀念舉定張駿良爲中文編輯長陳仁愔爲中文副編輯長王元漢爲西文編輯長曹良棟楊天擇張倫郭祖壽夏孫鴻奚逸李樹本顧光實等爲幹事管理廣告印刷攝影事務

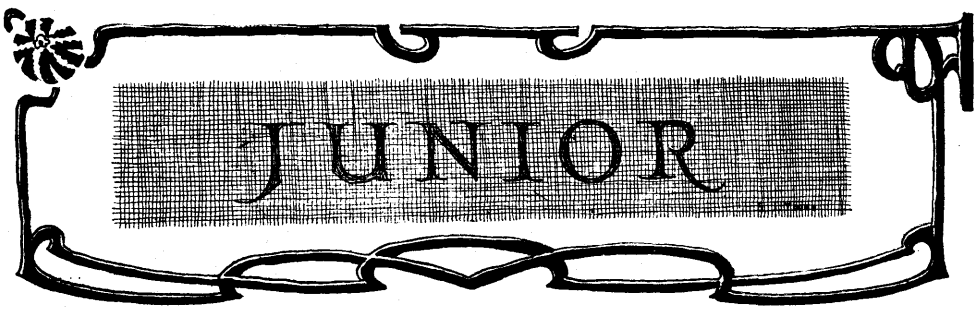
九年十二月二十八號鐵路管理科庚申級行畢業禮畢業者三十人而鐵路管理科庚申級之級史亦隨之以告終此其大略情形也

鐵路管理科科目表

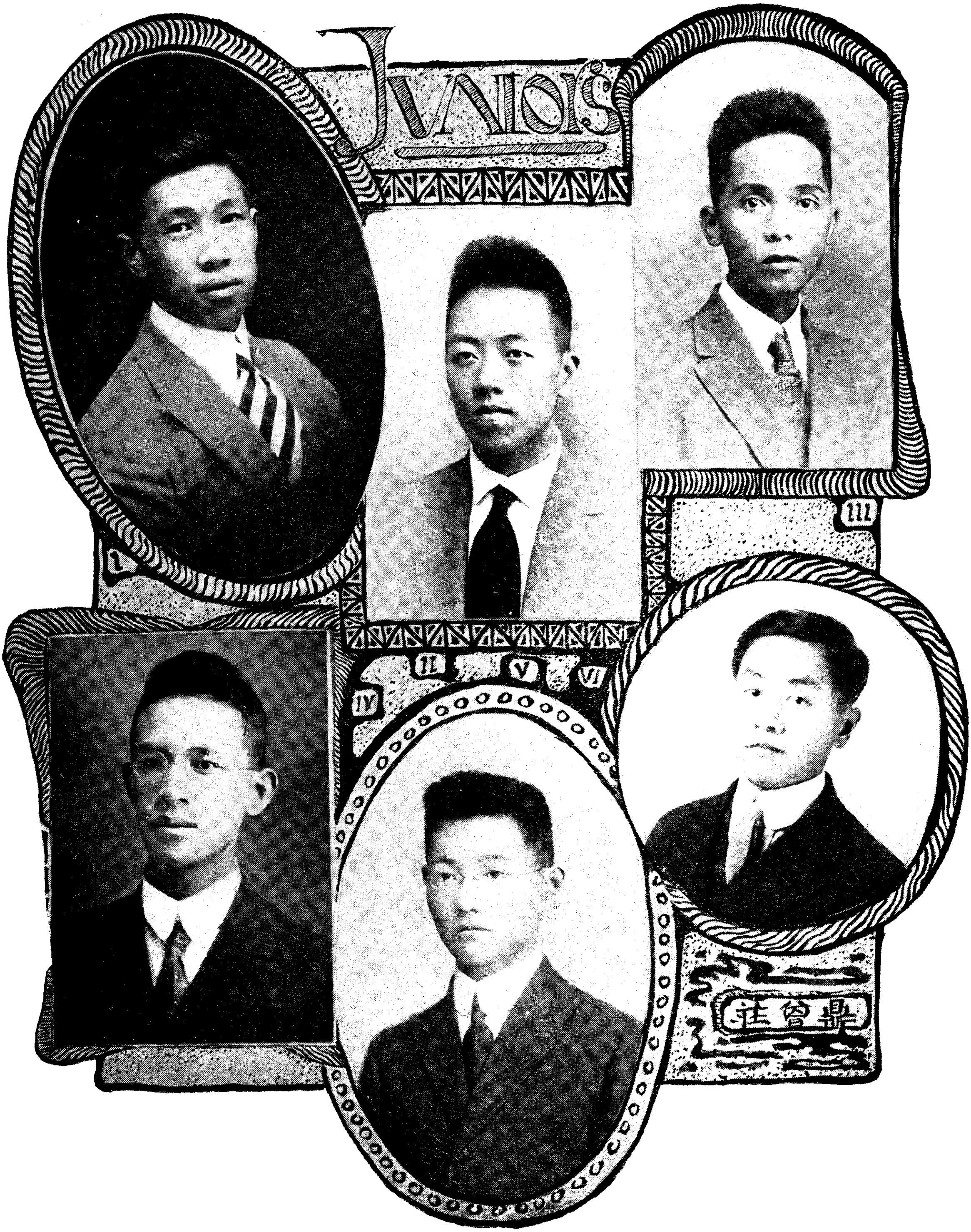
國文	商業算學
英文	捷算法
法文	簿記學
倫理學	會計學
商業倫理學	高等會計學
公文程式	鐵路會計學
英文書記職務學	查賬學
政治學	統計學
商業地理	鐵路統計學
政治經濟學	水道運輸學
經濟史	鐵路運輸學
鐵路經濟學	鐵路管理學
商業經濟學	工廠管理法
貨幣學	辦事室管理法
銀行學	釐訂運費學
公司財政學	鐵路行政學
國家財政學	機械畫
商法	機械工程學
民法	電機工程學
萬國公法	鐵路工程學
置產法	電機鐵路學
破產法	電話學
警律	電報學
鐵路法律	測量學
保險學	

（註）除國文法文公文程式外其餘科目悉用英文課本

鐵路管理科庚申級初以三十八人始卒業者三十人其間中途離校者如何景崇梁鼎新許蘭亭張信孚查濬文何信道陳肇坤黃韻三等何君景崇現任職滬寧鐵路管理局梁君鼎新任職滬海關許君蘭亭任職漢口隆茂洋行張君信孚已卒業於金陵大學文科並任南京高等師範學校體育教授查君濬文任職山東鹽務署何君信道任職濟南美孚洋行陳君肇坤任職上海郵務管理局黃君韻三則於今夏赴美入哈佛大學之商業管理大學院讀碩士學位云


JUNIOR


Juniors


JUNIORS
I
II
III
IV
V
VI
鼎會社

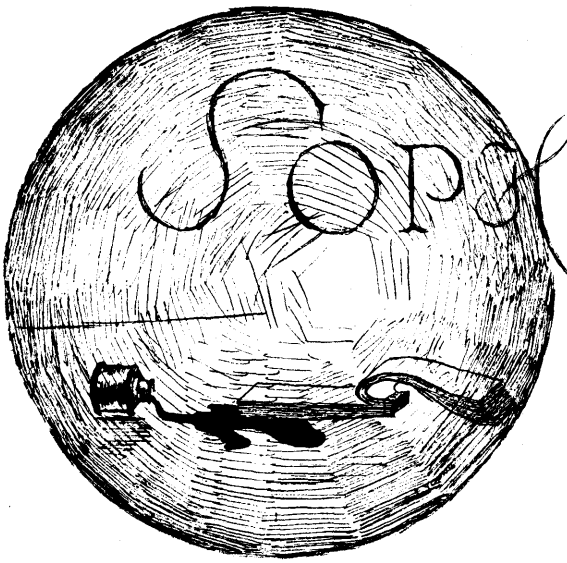
鐵路管理科壬戌級

第一頁　莊曾鼎　方定墀　朱保邦　張紹元　蔡灝

徐謝康　葉舒瑤

第二頁　梁建業　龔有新　余吉　王遵夔　張知先

范承達



SOPHOMORE

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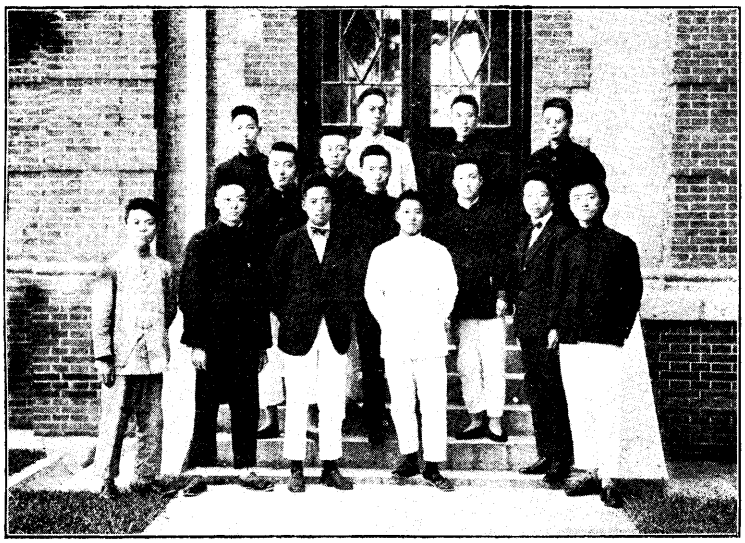


鐵路管理科癸亥級

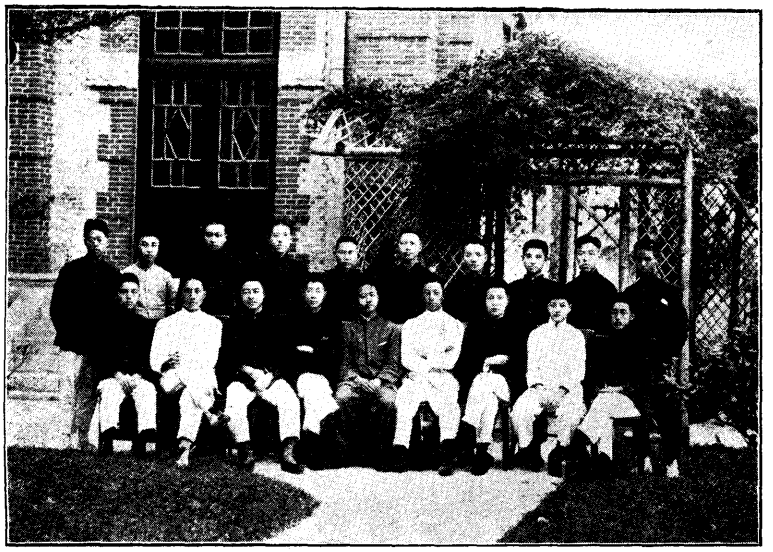
程殿楠　楊　鈞　許樹銘　許景遠

邵　鎔　韋國珍　張景輿　萬長頤

李承祜　夏　玄　朱　翹　徐　相

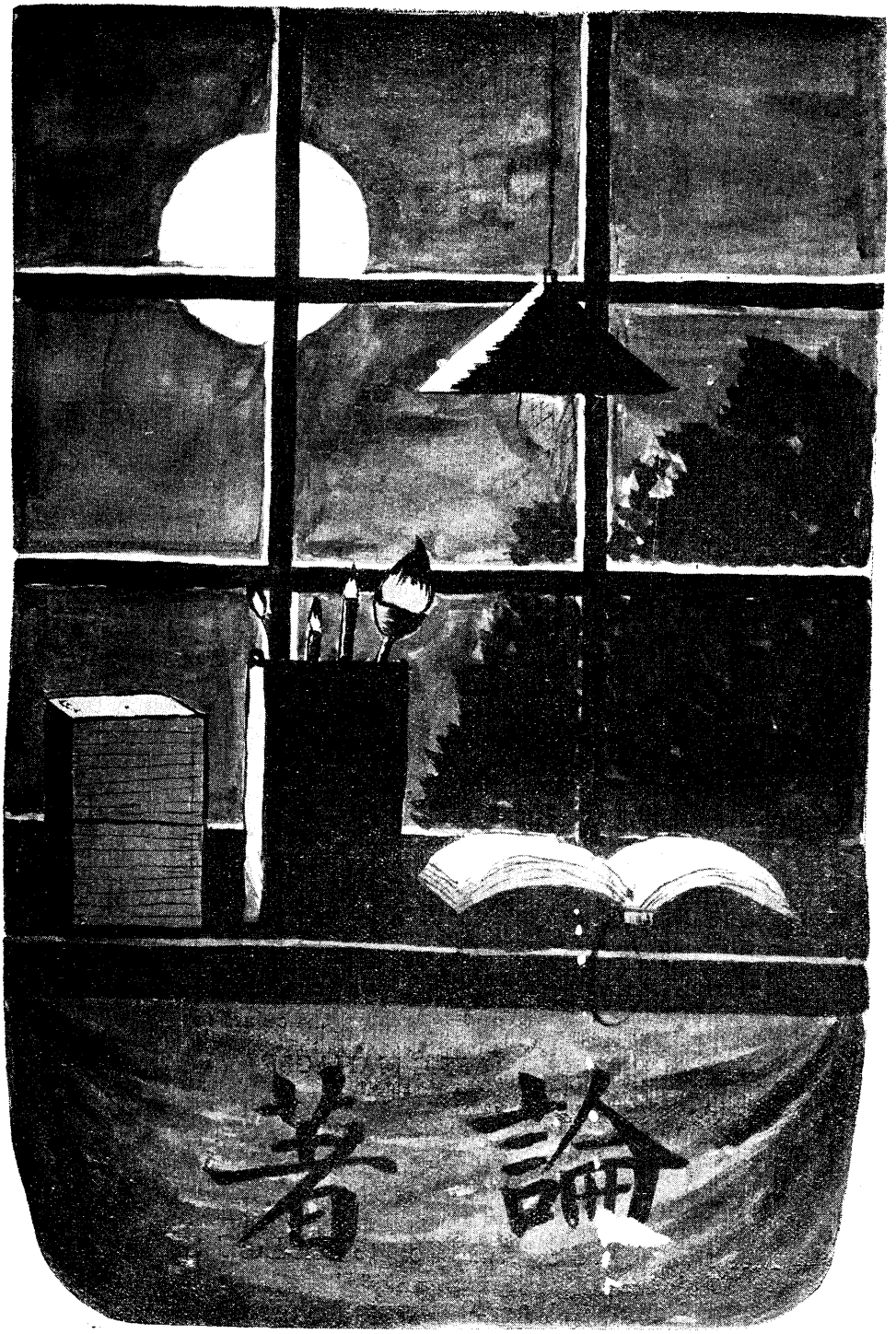
王汝璠　卓景崧　陸鼎煌　胡廣訓

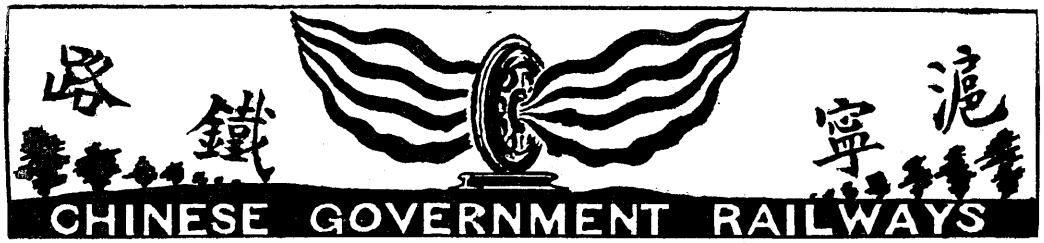

FRESHMEN



鐵路管理科甲子級

高　塽	金德藩	梅自新	達思儉
錢慰曾	周　庚	鄭汝驤	華世忠
黃亞倫	林仲英	鄒亮熙	李庭三
曹麗順	甯樹藩	邱人祚	王光鼎
顧毓會	錢德坤	王本代	金保賢
許葆誠	張寅旭	張錫榮	


著論



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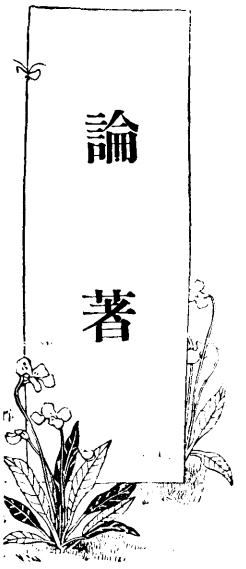

論著

鐵路與中國之關係

我國地居亞洲東部、氣候温和、地質肥饒、面積遼闊、幾二倍於美、人口衆多、尤爲世界各國之冠、東南濱海、海岸線沿長數千里、饒於魚鹽之利、中部平坦、河道縱橫、富於農產蠶桑、西北隣陸、地勢較高、萬山綿亘、森林蔽天、鑛產豐富、尤爲無盡之寶藏、宜若可以稱雄世界、執東半球之牛耳矣、然統轄不便、省自爲政、中央權力不及、雖有政令、不能行之四方、兵連禍結、民力凋疲、元氣挫喪、達於極點、此其故雖曰人民知識未能普遍、實業科學未能昌明、而其大弊、乃在交通之不便、誠以交通者、猶人身之血行、血行不靈、人焉得不病、交通不便、國焉得不弱、今試披覽世界地圖、國無大小、其鐵路縱橫如蛛網者必強、反視我國、則寥寥無幾、而此寥寥者、亦多以外人欲攫我土地礦產、刼我主權商業、而設計輸款、以興築之者、嗚呼、鐵路之關係於國家、既若是其大、固安可忽乎哉、茲將鐵路關係於我國諸要點、分述於左、

鐵路與教育之關係　今人莫不知教育爲立國之大本、尤爲一國元氣之所寄託、舉凡國中農工商業之發達、科學之昌明、風俗之改良、莫不有待於教育、試觀德國國民教育幾已普及、故其科學深奧、實業發達、爲各國冠、日本國人民、下至車夫走卒、都能讀報、故能稱雄東亞、戰勝強俄、極盛一時、反視我國情形、誠有天壤之別、通都大邑、識字者十之四五、若至內地閉塞之處、欲求一三家村之塾師而不可得、教育如是、何能與列強相頡頏、推原其故、多由於交迪之不便所致、蓋窮鄉僻壤之人、耕以得食、織以得衣、終日營營、蟄居一隅、自生至死、從未一覩其首區繁華之景象、而增進其普通知識、故欲教育之振興、不可不利便其交通、交通既便、各種書報雜誌、能於極短之時間內、遍行各地、使鄉間父老、讀之足以長進其新知識、改換其舊觀念、略知世界大勢、以激發其愛國之良心、且使頑固之父老、

亦可於空暇之間藉交通之便利至城邑中遊覽觀其繁華富庶之現象而生羨慕欽仰之心乃思遣其子弟從事求學鐵路既通遠出斯便且各地之不良風俗漸以改化轉移簡陋而爲文雅進步之速必可倍於今日此所以列建築鐵路藉以振興教育爲第一要義也

鐵路與工業之關係　我國地大物博極富天然之利東三省之森林未經斫伐連亘數百里樹大枝密天日爲蔽日中行走須備燈火若伐而用之全國木材可以無缺山西之煤足供全世界四十年之用尤爲外人所覬覦他若山東湖北等省莫不產煤豐富陝西之煤油質地精良與舶來品不相上下東三省之金礦雲南之銅鑛湖北之鐵鑛以及其他各省之金銀銅錫鉛銻等鑛均爲我國之寶藏天產既如是之富而國人日日言貧何也試考其故貧弱之原實以實業不發達故而實業之不發達實以交通阻塞使然各行省如雲南陝西東三省遠在邊隅山路崎嶇人跡罕至人雖知其大利所在往往以行旅不便視爲畏途即已組織公司而欲興辦者亦以巨大之機器不能運往遂亦中止更有計算既採之後所出貨物必運至他處消售交通既不便利運費勢必增多所出之貨成本重大價乃昂貴以之與舶來品相較人每捨此而就彼其結果必致失敗無疑此其所以已知森林礦業可以富國而不能發達之大原因也非特鑛產森林爲然即各種工廠之不能發達亦爲同一之原因蓋工廠之設立不能聚於一地如一地之工廠過多則工人不足分配以有限之工人供無限之要求勢必演成罷工及高抬工價諸事爲工業之一大妨礙即如採用原料消售貨物亦以運費之增加而高其售價價格既高即不能與外貨相爭競今若廣築鐵路減低運費則採辦鑛產森林者成本較輕易於脫售設立工廠者更以交通利便立廠不限於一地或擇工價低賤之區或擇原料出產之處雖去市場稍遠而不爲病市上需要即能供給則工業之發達可操左券他如交通便利之後國中實業家資本家藉遊歷之便可考察各地出產品之多寡及需要業之緩急以促發其創業之心決無以前之畏盜匪猛獸而行旅有戒心也此所以列鐵路與工業之關係爲第二要義也

鐵路與商業之關係　商業之發達在乎消路之廣闊與夫輸運之便利我國古時商人販運貨物遍至四方求售其輸運之不便光陰之耗費視爲常事苟不幸而行經窮鄉僻壤之處匪徒出沒無常偶一不慎死即隨之其危險爲如何也因是在乙地視爲極普通之物品及運至甲地其價超過原價數倍亦有遭損壞而難於脫售者此商業之不易發達蓋亦交通不便之所致設或交通便利則運費低減時間節省非特盜匪之危險可免資本之利息可輕而輸運迅速銷路日廣商業且隨之以發達矣此所以列鐵路與商業之關係爲第三要義也

鐵路與農業之關係　邇來米貴病民、常人咸以禁運爲唯一救濟方法、其意欲使甲地之產、足供甲地之用、目光如豆、充其量、非盡復數千百年前閉關自守主義不可、此豈有識之士所宜然哉、我國地大物博、荒蕪不耕之田、不可以計算、人口雖衆、而密聚於交通已便之地、先覺之士、不思利便其交通、獎勵移民、使貧民樂於遷徙、以耕此幾千萬方里未墾之地、但斤斤於禁運、使都會之區、價值昂貴、鄉僻之處、穀賤農病、不能通盤籌劃、使國內供給、過於需要、移民墾荒、以裕民食者、豈不可怪乎、竊嘗思之、國內交通既便、則人民求食者、與其稠處都會之區、毋寧擇居鄉僻之地、假令以一人之耕、而能供給三人之食、取其盈餘、貿易國外、則綜其收入、數當非細、農產既熟、農人出其所餘、工人有輸運之酬報、商人有販賣之利益、國家從而徵收關稅、是一舉而國家與人民咸蒙其利、又何至以米貴而舉國不安、有如今日者、此所以列鐵路與農業之關係爲第四要義也、

鐵路與軍事之關係　我國執政者、莫不患政費之無出、辦事棘手、然試一計國家之收入、不止數千萬、其數不可謂少、而復考其歲之所出、最大則莫若軍費、數恆超過收入之半、今以巨大之款、而養此無數之軍士、爲財政計、已非上策、加以此等軍士、日無所事、散處四方、其無紀律者、日施其奸淫殺掠之行爲、甚或勾通土匪、爲民之大害、一旦遇有戰事、反多委棄而走、軍隊本以利國、而今反以病民、故激者乃創裁兵之說、使其說而能行、則減去國人之負擔、固屬得計、然在我國、而積遼闊、各處盜匪充斥、四境強鄰虎視、爲治安計、爲衞國計、誠又不能無此也、欲謀兩全之道、舍廣築鐵路、利便交通外、別無良法矣、蓋交通既便、千里之遙、可以早發而夕至、使甲地有警、而乙地之軍隊、即出而防禦、於極短時間中、移東以擊西、行動靈便、國家祇須留少數精壯之軍、以防禦遼闊之面積、實非難事、若今日各地雖大軍常駐、而財力消耗、民生疾苦、論其收效、恐尚不及也、即如此次歐戰、德人恃其鐵路之便利、以一支軍隊、而可以攻擊四境聯軍、使聯軍不知其軍隊之究有多少、此其最明顯之證、而我國可以決然取法、不容疑慮者也、且以裁下之軍費、即可從事於築路、或興辦其他實業、昔日之兵士、使轉而從事於農工商各業、國家隱受其利、寧有涯乎、此所以列建築鐵路、藉以減少武備、爲第五要義也、

鐵路與財政之關係　我國政府、處於今日、日以借債度日、可謂貧窮極矣、此雖曰執政者處理失當、實亦收支相差懸殊、巧婦難爲無米之炊、今欲籌補救之法、非廣築鐵路不爲功、然國庫如洗、何來如許巨資、以供築數十萬里鐵路之用、是非舉借外債不可、蓋借債而築鐵路、與辦實業、此則盡屬生利、有所憑藉、他日債務清理、而路早已告成、實業早已發達、是在執政者之熱心任事而已、我國之鐵路仿取德國國有辦法、則國家於鐵路、有專利之權、一年之收入、爲數當不在少、以之償還息金、尚有餘款、且如上所述種種之關係、交通

既便之後、軍隊可以裁減、森林鑛產、可以次第開採、工廠可以次第設立、商業可以漸次發達、國家對於關稅、營業稅、所得稅、以及其他電報、郵政、印花稅等之收入、必突然加增、以增加之收入、及裁下之軍費、用以還債、不出二十年、而猶不能轉貧弱爲富強者、未之信也、此所以列鐵路與財政之關係、爲第六要義也、

鐵路與行政之關係　統觀國內、盜賊遍野、匪徒充斥、閭閻驚擾、行旅戒心、法律不能施、兵力不爲用、治安二字、幾不能言、此何故也、試考國民生計、則知生利者少、分利者多、爲經濟界之蟊賊、嗟彼匪徒、同爲國民、何甘自陷法網、以事此下等生活、苟非喪心病狂、豈願出此、蓋實以年來兵禍相乘、民力凋疲、農工商業、蹶而不振、人民失業者漸多、甚至橫遭匪盜、家計蕭條、故強有力者、聚而爲匪、心智巧者、習爲欺詐、在上者既不能使其有生活之路、又不能繩之法律、遂使社會上常有不安之現象、如能廣築鐵路、則此輩皆可作工、利用此種無業之人、以興築數十萬里之鐵路、誠無難事、一俟築路已成、交通稱便、農工商各業、相繼興起、此種工人、餬口有方、盜匪漸卽滅跡、人民相安於無事矣、此所以列鐵路與行政之關係、爲第七要義也、

作者臚列鐵路與教育農工商軍事財政行政諸要端之關係既畢、自慚學識淺陋、言不成文、未能詳盡、今茲不過言其大者耳、要知交通爲國家之血脈、萬物由之而流行、百業賴之以發展、國基之所繫託、民命之所懸寄、今世各國國勢之強弱、民族之盛衰、未嘗不視交通爲轉移也、我國在有清同光以前、交通機關、惟賴驛路軍台、近應世變、而鐵路輪船電報郵政諸要端雖次第更興、然迄今五十年間、計共所成之鐵路、不過一萬數千里、覈諸全國面積、不過三千數百分之一、以我國二十七倍於日本之地、而鐵路線延長、不及其多、一念及之、未有不惕然以驚者也、今者中國鐵路幼稚極矣、當軸者苟能分別興築接通延長各路、積極進行、則挽回國運其在斯乎、

中國鐵路貨運改良譚

我國物產之富、冠絕環球、號稱天府之國、誠非虛譽、徒以數千年積習相沿、未加發展、遂致海禁開後、百物仰給外人、國人復相習偷安、不明大體、變法三十餘年、竟無絲毫成績、言之實足痛心、迺者歐戰雖停、然西方各國財力耗盡、原料缺乏、市場上已現極大之恐慌、及至羅掘俱窮、遂不得不注其眼光於東方之天府、於是我國遂爲衆矢之的、國人卽不自發展其實業、外人固亦將借箸代謀矣、日來我國振興實業之聲、甚囂塵上、或者國人亦已見及此乎、

雖然、實業之興、端賴鐵路、實業之與鐵路、其關係最爲密切、不能相離而獨立、實業倚鐵路爲流通運輸之具、而鐵路則全恃實業爲養命之源、故二者互相維繫、不可刻離、苟今日而言發達實業、則同時非大改良鐵路之設備、及擴張交通之範圍不可、否則將來百貨屯集、而無流通之具、則譬猶埋金於地、其爲無用一也、他日中國鐵道之擴張、自無待言、卽擴張矣、然鐵路貨運一道、十年後必爲中國鐵路上最大最難之問題、歐美各先進國、已先嘗此種困苦、卽我國亦在必不免之列、及今而圖、或尙未晚、設復遷延廢弛、不亟研求、則將來交通實業兩界所受之痛苦、當匪言可喻、故特以一得之知、作芻蕘之獻、其中錯誤之處、亦必甚多、尙望閱者糾正之、則幸甚、

我國建築鐵路、已卅餘載、然合全國鐵路計之、其長尙不及六千英里、此六千英里之鐵路、其設備亦甚不完全、客商行旅、每感種種不便、此無可諱言者也、然此感覺不靈之鐵路、乃能支持許久、不至破產、且年獲餘利者、則全恃貨運之多、足以維持營業故耳、蓋此種貨物、捨由鐵路轉運外、無他法、故雖感受種種痛苦、亦不得不稍爲遷就也、雖然、辦鐵路者切不可視爲已足、不加改良、以爲客商捨此無他途、則鐵路之運貨雖若何不便、固無影響於收入、殊不知將來交通發達、必發生水道與鐵路之競爭、或甲路與乙路之競爭、客商但求便利、或不惜迂道以求全、則鐵路營業之損失、當不可以道里計、以美國鐵路之發達、設備之完全、而尙遑遑然日不暇給、以求貨運之進步、則吾人當若何急起直追、日求改良、以冀收跬步千里之效哉、茲特將現時貨運缺點之尤大者、稍加論列如下、

一鐵路與實業界須直接聯絡、而招徠之道、亦須加意研求、方足以發展鐵路之營業、現時我國各路、每置貨運於無足輕重之間、鐵路人員、不特對於本路及附近一帶之商務實業情形、毫無所知、抑且不屑稍事研究、而對於商人、則一意漠視、令其却足不前、而津浦滬寧滬杭數路、則鐵路且不與商人直接、而一委之於轉運公司、商人對於鐵路知識既淺、而轉運公司遂得上下其手、甚且合鐵路人員以朋比牟利、形同市儈、是豈辦鐵路者之初心哉、外國鐵路之對於貨運也、類皆特設專司、日與實業界接近、務求所以便利貨商之道、而對於商人之要求、莫不悉心研究、以求便利、於是交通實業兩界、均獲互助之利、而鐵路營業之發達、自無待言矣、今我國鐵路之辦法、乃適背道而馳、其間無形之損失、當不可問、欲祛此弊、必先使鐵路與商人能有互相了解互相協助之精神、始克有濟、而此種精神、斷非徒恃一二篇文告所能收效、必也鐵路人員去其自高自大渺視商人之心理、而從事於聯絡、務求所以便利運輸之道、則商人昔之所視爲畏途者、亦將翻然改觀、視爲捷徑矣、於是則路商兩界、自有一種協助之精神、而兩界所蒙之利益、當匪言可喻、固不特鐵路營業上獲益已也、

一車站設備之完全與否、對於營業實有莫大之關係、我國現時車站規模、尙覺狹小、而以貨棧爲尤甚、目前少數貨物、尙覺不能敷用、將來鐵路發達、事務愈繁、貨物愈多、其勢不得不改弦更張、故卽須愼爲研究、如北京天津上海漢口等商務繁盛之區、百貨雲集、更當急謀改良設備便利客商之道、卽如車站地點之合宜與否、卽爲現時鐵路界之大問題、蓋車站與全城交通、及其他海道河道各碼頭、及各貨棧、均須有互相聯絡、及最簡便之交通、方足以應全城之要求、其他如月台貨棧、及起卸貨物之道、在在均與營業上有莫大之關係、而大站則更須多設支路、以達於本城較遠之地、藉以補救起卸之不便、凡此種種問題、均屬目前切要之圖、乃國人今之言鐵路者、多舍此不求、而放言高論、爲種種之大計畫、殊不知鐵路一道、非實事求是不可、而更須加以精確之調查、愼密之籌畫、多年之經驗、然後能有裨於路政、絕非徒事理想、空言揣測、所能有濟者也、

一車輛之增加、已爲目前刻不可緩之事、而亦貨運改良中最要之一事、我國建築各路時、類皆仰給外貲、而收入之贏餘、卽須提還債務、故對於改良本路之設備、均力有不逮、歐戰數年來交通斷絕、更無地可購、車輛遂更形缺乏、而各路所受之損失、當亦以此爲最重大、每至商人欲得一車、竟須坐候匝月、蓋需求日增、而車輛有限、遂至此爭彼奪、車務處難爲無米之炊、亦惟有束手無策、黠者則更籍此爲牟利之道、每裝一車、或索賄百數十元不等、商人本小利微、不能久待、亦不得不唯唯應命、此種弊端、均由車輛不敷所致、故爲急行補救計、非加購多數之車輛不可、而車輛之分配更須得專門人材以經理之、蓋車輛分配之法、初非能應付商人需求之車輛、卽爲已足、要必設法減少空車哩數及各車之空閒時間、使全路車輛、均得其用、更須研求沿路各處將來之需求、預知何地何時爲某種貨物騰集之期、而預爲之備、何時車輛之需求較少、而可藉以修理壞車、此種智識、斷非車務處中一二書記所能勝任、更非於路務無經驗者所能揣度、故目前各路對於此種人材、務須加意培植、勿使將來有多數之車輛、而仍受無形損失也、

雖然、此僅就各路自身而論、他日聯運發達、各路車輛、必多散布環繞於他路、每致本路需車孔亟、而他路延不交車、此種情形、在美國已不數見、甚至因此引起訴訟、我國鐵路同屬國有、固未必發生此種現象、然將來各路車輛之混集、管理上受各種困難、則有必至之理、愚意以爲我國鐵路全屬國有、則宜利用此種性質、以解決此難題、蓋各路之中、其貨物繁盛之時期、每不相同、或此春而彼夏、或此秋而彼冬、因各路所經行之地、及所運之貨物不同而各異、在此路貨物繁盛之時、車輛極形忙碌、每不敷用、而他路則車輛空置而不用、苟以此之有餘、以補彼之不足、則種種難題、迎刃而解、故宜擇一二適中地點、設一大車廠、凡此數十或十數路之車輛、均隸於此廠、

而直接受此車廠之支配、值甲路貨多之時、則車廠可將大部分之車輛、分配於甲路、而給較少之車輛於其他各路、設甲路貨物漸少、而乙路漸形踴擠、則仍可將車輛調至乙路、以資接濟、如此則各路貨多時、不致有缺車之虞、貨少時、不致受無形之損失、互相調劑、各得其益、即聯運加多之時、車輛既同受車廠之分配、則核計預算、均極便利、更無此求彼拒之弊、即使同時有三數路需多數之車輛、然車廠所包含之範圍既廣、亦必可以應付裕如、此統一車輛之法、實覺利多而弊少也、雖然、我國鐵路均有外人勢力範圍之關係、欲求各國之和衷共濟、合成此統一之舉、必屬甚難、且舉辦之初、無可師法、更無從得此專門人材、實行之難、當可想見、言之非艱、行之惟艱、其斯之謂矣、

一目今鐵路貨運之遲緩、固盡人而知爲車輛缺乏之故矣、然細考厥因、實亦不止此、蓋車輛雖少、然苟能起運、自離站之時始、刻期以達彼站、則坐候之時雖多、然轉運之際、即亦無阻遏事實有大不然者、貨物每經行一卡局、即停留候其查驗、報稅訖然後得再行、設所經之地相距數千里者、則停留亦在七八次以上、於是一二日之路程、遂竟有十數日始得達者、夫貨物轉運之遲速、與商人營業之盈虧、實最密切、今乃以完報釐金之故、使之逗留不得逕行、商人之損失、當在幾何、此則征收當局所當負責者也、我國商人能力薄弱、對於此等重大之損失、而竟漠然不一抗議、殊屬可怪、設此離奇之政而行於歐美者、吾知其必將引起絕大風潮矣、在我當局之意、以爲釐金爲國家命脈、裁釐加稅、一時既未能實行、則卡局在必不可廢、彼商人之損失固在所不計矣、雖然、釐金一時不能裁、亦人所共知、國家之稅源雖重、而商業發達與否、與國家亦有痛癢相關之勢、無可奈何之中、何妨變通辦理、將抽釐之權付諸路局、使轉運貨物之釐金、由起站一次抽足、設今有貨物由甲站以抵乙站、其間經行釐卡三處、則甲站可先將此三卡之釐金一次代爲收訖、如此則貨物可暢行無阻、商路兩界、均蒙莫大之益、而國稅固未少絲毫也、設以此法爲繁瑣、則最簡捷者、莫如就鐵路轉運費內加收一二成、爲釐金之賠償費、商人既免留難之苦、則對於加收運費、當然不致反對矣、吾望商人其急起圖之、更望財政當局能虛衷下聽、以便利數千萬無告之商人也、

釐金卡局之病轉運貨物也、固如上論矣、然蒙其害者、不僅商人、即鐵路受此影響、亦遂不能完全行使其職權、夫經行卡局、須受查驗、於是凡運貨物者、類須有一人隨車照料、以備經行卡局之盤查、路局既不任代報查驗之責、則貨物在火車轉運之時、其完全保管之責、仍須商人自負、此種情形、實與鐵路運貨負責原理、大相逕庭、商人既感受不便、而路局於裝載貨物後、仍不能行使保管之權、遂致

遣失錯誤、百弊叢生、商人以此詬鐵路、鐵路固不任受、然亦覺應付俱窮矣、且貨物裝載之後、而仍須沿途啓封查驗、則貨物之安全、鐵路必不能負責、卽此一端、其影響於鐵路保險一道、又豈鮮淺哉、總之凡貨物裝載上車後、路局卽須有完全管理之權、管理之責、否則路局與商人均蒙損失、此等情形、財政當局其知之耶、其不知也、卽商人不敢言鐵路管理者、固負此交涉之責者也、

一貨物經運到目的地之後、照例路局須通知貨物承受人、自通知書到承受人之時始、至貨物搬出之時止、其間有一限制之時間、爲商人預備搬運之期、過此卽須加收延車費、因貨物堆積車上、阻礙裝載他貨、且免商人藉端以貨車爲堆棧故也、我國鐵路所限制之時間、最多大約爲六小時至二十四小時之間、過此卽須收堆棧費、（因我國鐵路辦法不同、凡貨物到站後、卽由路局代爲起卸至貨棧、商人絕無自雇脚夫起運之舉、故並非延車費也、）現在貨多車少之時、固不能不稍爲從嚴取締、然他日實業發達、貨物愈多、起卸須時、則此限制時間、似屬過短、在商人稍一遲誤、卽須多出一日之堆棧費、而商人需車之時、苟局無以應命、則無賠償之代價、於理亦屬不公、美國刻下有反延車費之議、卽爲路局不能應商人要求之賠償、我國目前固斷不能行、然限制之時間、似宜展長至二十四小時、使商人得從容搬運其貨物、歐美各國所限制延車時間、或四十八小時、或三十六小時、至少亦二十四小時、以外人運輸交通之便、尙須如許時間、則我國之限制時間、其爲太促、可斷言矣、

一運費之釐定、實爲貨運中最繁最難之事、在在須根據經學之原理、其所依以爲標準者、類爲貨物之價值、轉運之效果、路程之遠近、各地經濟狀況、本路收入情形、及人民擔負力之強弱各種、至實業上時有各商埠之競爭、及國外商務之競爭、其影響鐵路運費者亦最大、我國國內外交通均不發達、故商業上競爭之影響於鐵路者、亦不甚顯著、然究之運費與實業之關係、實不可忽視、我國現時運費、與外國各路之運費、不相上下、然細考我國經濟狀況、及人民擔負能力、均不及外人遠甚、而鐵路維持費用、則所省實多、故在表面觀之、運費似不過鉅、然考其實、則不但非人民之所能擔負、抑且有阻止實業發展之勢、因目前鐵路爲唯一之交通具、故運費雖高、不受若何影響、然將來交通發達、則路局將自受其害、且大失其本來之責任、蓋鐵路對於社會經濟實業文化、均負有絕大之責、且爲一種公有性質、在商辦固稍有營業之意味、然旣屬國有、則絕對不能以之牟利、且現時我國鐵路、亦斷不能獲利、蓋所應擴張及改良之處、實多不勝計、此種款項、爲數絕巨、以鐵路收入盈餘、全數作抵、尙覺不敷、更何從而獲利、我國士夫類多以鐵路爲牟利之道、實則大誤、殊不知鐵路爲國家交通之具、負有發達實業、發展經濟、促進文化、謀公共幸福、種種責任、苟其措置有乖乎此旨、則雖獲利若何鉅

大、均不可行、卽有盈餘、亦當用爲擴張及改良本路之舉、取之於民者、還以用之爲公共謀幸福、亦理所當然、尙望辦鐵路者能本乎此旨、不爲牟利之謬見所惑、則幸甚矣、

以上數條、均就鐵路方面而言、然鐵路爲公共性質、則端賴全國合力協助、方可見效、斷非辦鐵路者一方面所能竟其功者也、民國締造、已經九載、政變時乘、南北分裂、國人之眼光、羣注於政治一途、對於鐵路、多漠然視之、又安能望其協助、且歷年來軍事頻仍、鐵路既爲唯一交通具、遂爲軍事所必爭、一有兵事、卽須運輸軍隊、遷延時日、長者竟須匝月、短者亦及旬餘、際此時間、客運貨運、均行停滯、卽不停止、而客商亦皆裹足不前、損失之大、當可想見、其甚者則毀鐵路以爲拒敵之資、或更佔鐵路以固負隅之勢、乃使一切路政、均行停止、凡此種種、破壞路政之罪、固非鐵路當局所應負責者也、夫以公共之業、國人不能協助、已爲缺點、今又從而破壞之、此則無論何國、無論鐵路如何發達之區、均不能任受、而謂我國鐵路萌芽時代所能受乎、馴至路政紊亂、營業低落、而以此責辦路者、則更失公允、而況爲辦路者所不應負責者乎、故對於鐵路之改革、鐵路人員固當負大部分之責任、而一般社會、亦應引爲己任、勿事摧殘、方能有濟、否則相背而馳、永無成功之日矣、國人其亦省之乎、

貨物運輸與鐵路負責之關係

鐵路之營業範圍、所包甚廣、其主要者則不外客運及貨運二種、乘客之上下車輛、與其在車中之行動、悉能出於自動、其趨安避危之心理、自能使其入於安全之途、固無容鐵路公司（以下簡稱謂公司）爲之置慮、然公司尙設種種規則以範圍之、警告之、期免於不測、至於貨物、其價值雖不可與生命並論、但因其爲無機之物、故在在需人搬運管理、自寄貨者交貨以後、迄於收貨者領貨之時爲止、公司無時不負責任、所不同者、貨物於運輸時與屯積貨棧時、鐵路所負之責任、因之有大小之別耳、

鐵路爲公共運輸（Common carrier）之一種、故其職務在接收運輸時及送達時、無論何種物件、不違背公司定章者、皆須擔保途中之安全、與交貨之無誤、此種職務、公司對於各寄運者均應行使、無容歧視、但有時貨運擁擠、公司所有車輛不敷分配、則後來之貨物及貨品之不易腐敗者、祇可暫貯貨棧、以待續運、或貨物既運至目的地、通知書已送達收貨人若干時後、而彼仍延不取貨、而公司惟有存之貨棧、以待領取、凡於此兩時期內、公司僅負貨棧看管人（Warehousemen）之責、而不負運輸者之責、此則凡爲運商之所

不可不知者、抑有進者、公司既與運商立於相對地位、則公司方面常設種種規定、以減輕其擔負之責、而運商方面、則惟恐公司之卸其責、有種種要求、故欲求兩方了解、必先明瞭公司何時立於運輸者之地位、何時立於貨棧看管人之地位、然後兩方負責確定、不至起無謂之爭執、如食品水菓菜蔬之類、均係易於腐爛不能耐久之品、寄貨者自必要求立即運送、若公司既已應允於前、而又以他故暫爲擱置、致遭損失、則公司當負其責、不得諉爲運貨擁擠車輛不敷之咎、若貨物能稍經久、或無需急用者、則鐵路方面自可先運積貨、將新貨貯存以減輕其擔負、蓋鐵路雖以便利客貨運貨爲要務、而其主旨總不出營業範圍以外、營業之慣例爲優待大顧客、而忽視小顧客、鐵路亦何能越此慣例、故凡轉運公司之資本充裕、或與鐵路人員有利害關係者、必多方設法爲之先運、反是而任意延誤、甚有擱置經月者、凡此弊端、雖在歐美諸國、無能或免、但彼則路線重複、競爭甚烈、兼以國家制定鐵路法律、以規定鐵路之負擔、故其弊尚淺、不若我國鐵路既爲陸運唯一之專利機關、又無法律以保護商賈之利益、故徒見有不良員役、藉貨運之遲速、恃爲利藪也、是所望於主其事者之能時加改革、而尤望有鐵路法律之制定、以爲根本之圖也、

吾人既知鐵路公司對於運商、可立於運輸者或貨棧看管人之地位、當進而求此兩種地位所負之責任、茲試分別言之、公司對於運貨負責之始、在貨物交運及收受以後、交運時、應向公司或其正式代理處行之、且貨物須在公司完全管轄之下、方生效力、如運貨目的地、須經數路聯運方能達到者、公司得限制其擔負至本路終點爲止、若自願運至終點、則公司負全途安寧之責、其聯運各路、均視爲公司之代理者、

公司收貨以後、即負立即運輸並途中安寧之責、鐵路法律曾規定公司立於運輸者之地位時、對於貨物固不論何種原因所受之損失、(天災、敵國之損害行動、貨物之有腐敗性質者、牲畜之有傳染病而遭拘留者、以及損害之由於寄貨人之過者等、均屬例外)均須負責、及貨物既達終點以後、公司欲解除其責任、必(一)貨物須處於與接收時同樣良好之地位、(二)送達通知書至收貨人處、令彼於一定時間內到站取貨、過期不取、則公司可暫貯之於貨棧、而其責任遂由於運輸者一變而爲貨棧看管人之地位、(按英國路制則係直接送貨至收貨人門外者、)

鐵路公司立於貨棧看管人之地位時、其擔負較之爲運輸者時爲輕、因此時其負責與普通委託事務(Bailment)相同、受委託者僅須行使合度之注意、對於疏忽與曠職(Negligence and default)所致之損害負責而已、故公司苟能免此二過、則所有意外危

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故站中特備椅凳、其意無非爲旅客候車時休息用也、乃歷觀各車站、對於此事、俱未十分注意、往往擁擠之時、椅凳寥寥、尙不及旅客之半、旅客或直立站中、或就地而坐、男子無論已、彼婦女稚子、體質較弱、鵠立人羣、進退維谷、其局促情形、有非片言所能盡述者、鐵路原理爲謀公衆之便利、而婦女稚子、尤當受法律上之保護、路局苟能多添椅凳、實便利旅客之一法也、

一延長賣票時間也、我國鐵路定章、賣票時間、大站規定開車前一小時、小站則半小時、夫鐵路營業、原欲求其發達、今乃限制賣票時間、抑何奇也、嘗考各車站、其營業冷落者、本無須半小時之賣票時間、其營業發達者、往往一小時前、旅客已鵠立賣票房前、及票門一開、此擁彼擠、此攘彼奪、無須臾之鬆動、到站稍遲者、至無所措手足、及循序漸進、如願以償、而開車之時已屆、行李稍多者、至不能成行、祇得再候下次車、以寶貴光陰、消耗於無形、誰之咎也、美國鐵路公司賣票時間、自早迄晚、無時停止、復廣託各處代售、其爲公衆謀便利、與我國何相左也、路局苟能多設辦事人員、將賣票時間、實行延長、亦便利旅客之一法也、

一延長用票時間、及償還未用車票票價也、旅客出費乘車、實係一種合同、旅客買票後、雖即爲合同成立之時、但就理論而言、旅客乘車、始有出費之義務、旅客不乘車、即無出費之必要、故旅客苟未乘車、票雖購就、亦可隨時由旅客繳還車票、再由路局償還票價、蓋此種設施、初不損路局營業、而便利旅客、實非淺鮮、故美國鐵路公司、對於此種未用之票、苟無假冒欺詐等情、隨時得繳票還價也、我國鐵路定章、客票效用僅規定一日、過期苟無特別重大理由、即行作廢、抑若路局賣票得款之後、即已完全盡其職務、增加進款、減省手續、特其本分事、初未計及旅客之便利與否、路局苟能力圖改良、對於延長用票時間及償還票價二事、得以實行、亦便利旅客之一法也、

一劃一幣制也、我國幣制不良已極、重七錢二分之大銀幣、重七分二釐之小銀幣、以及當十之銅幣、規定以十進者、被錢儈操縱、任意升降、大銀幣則升至七錢三四分、小銀幣則抑爲六錢四五分、銅幣則須十二枚或一百三十餘枚、方可換小銀幣一枚或大銀幣一枚、火車票價、因銀價之升降不定、核算非易、不得不規定一定之貼水、永久不變、然不能十分平允、例如大洋一角之車票、只貼水銅幣一枚、而同時購票兩張、則須小銀幣兩枚銅幣三枚矣、行旅往來、每遭額外損失、且近日新式小銀幣及銅幣、早已頒行、京津一帶、已通行多日、行旅稱便、惟南中錢儈、因幣制十進、不能取利、橫加阻礙、路局爲中央直接機關、苟能持以毅力、廣爲提倡、並規定若干月後、購票一律須用新式小銀幣及銅幣、則不獨國家幣制得就改良、亦便利旅客之一法也、

一減輕票價也、我國客票價目之釐訂、極爲昂貴、每英里約須洋四分、(以頭等車價計)而美國鐵路、每英里取價僅洋三分、夫我民生活程度、低於美人、不啻倍蓰、一切工值物料亦較輕、車中布置亦較簡陋、價反較昂、何也、且年來我國民窮財盡、人民之生計日艱、每因價目昂貴之故、改由水道、國家鐵路之收入、實受無形之損失也、路局苟能酌減車價、則不獨鐵路之勢力、得日普及、收入得日增加、且得減輕人民之擔負、亦便利旅客之一法也、

以上五端、俱爲便利旅客之要事、苟能逐漸改良、力謀實行、行旅往來、受賜非尠矣、願我明達之當事者、亟起圖之、

儲蓄銀行之原意 節譯 J. P. Holdsworth 原著

概論及性質　儲蓄銀行之性質、與商業銀行不同、蓋商業銀行之設、爲商人活動金融、流通市面、以及往來滙款而已、至於儲蓄銀行則不然、專爲一種進款微小之工人、求一穩妥生利之地也、蓋普通工人之進款、既屬微小、不足直接購買各種證券、以及不動產抵押等、俾之生息、況此等工人知識淺弱、於放款毫無經驗、欲其自擇一穩妥生利之地、實屬非易、自儲蓄銀行出、而收集多數小款、彙成大數、代爲存儲於穩妥生利之地、修養工人之儉德、將靡費之金錢、作振興實業之用矣、儲蓄銀行可大別爲互存與合股二種、互存式在英美各國古時卽已盛行、行中各事、由董事會主持、其人皆盡義務、不取薪水、爲義務性質、既無股本、又無股東、故除開支外、其淨利皆均分之於各儲戶、合股式盛行於西方各省、由股東出資倡立公司、然後招人儲蓄、故各儲戶僅得官利、餘利皆歸股東、是其目的似不在求儲戶之利益、而在求股東之利益、惟設有損失、股東亦須擔保、合股式幷營商業銀行事業、且有不以儲蓄爲主要事業者、他若擔保儲蓄銀行者、大半在紐約及安白省、其式居互存合股二者之間、雖無股東及商款往來、而有特別儲款、與股本無異、除開支及普通儲款之官利外、皆歸特別儲款之儲戶、故於註册時法律規定特別儲款祇須佔普通儲款之一成、以保各儲戶之意外損失、

組織　儲蓄銀行之組織及管理法、與商業銀行略同、總權操之董事會、而各董事之資格、選擇甚苛、在互存式以才力富裕品性誠正爲準、董事會苟有缺額、由其餘董事公舉補充、合股式中其資格須股東選擇公舉、苟有缺額、再由股東公舉補充、董事會有任用辦事員、存出儲款、規定儲金利率之權、在繁盛商埠之大儲蓄銀行、其辦事員有總經理一人、副經理三人、司庫一人、書記一人、辯護士一人、以及其他必需之助理人員、其在鄉鎮小行中、則有以一人兼總理書記司庫之事、而總理一切者、普通司庫爲管理儲款、處置存款、簽

寫支票管理利金、商議押款等重要職務、書記司董事會之文牘、兼檢查帳目、及管理簿記等惟收支帳則有收支員專管、

儲款　儲戶當認股時、先將姓名籍貫住址等登簿、以備取款時對證、然後由行中給以存摺、內註姓名及號數、儲款時先將儲款數目書之儲蓄票上、交收款人、然後由收款人登之存摺上、有時儲戶不自書儲蓄票、可由收款人代書、大半儲金皆爲現款、至於銀票息票、銀行支票等、皆可儲入、惟須自收得現款後方始登帳、近今儲蓄銀行、大都採法郵寄、故儲款亦可連同存摺郵寄行中、收款人收到後、即將此款登之存摺、仍由郵局將存摺及收據一併寄之儲戶、儲蓄銀行之進款、既專持存款之利息、自不能多積現金、以減進款、故富家儲款、殊不歡迎、以富人存款既大、一時提款、則行中時有不敷之患、是以美國定有限止之數、即一戶不能儲過千金、在此等限止、亦少效力、以儲款人可分儲故也、

提款　儲戶提款時、先將存摺至支款處告以欲提之數、則支款處給以空白一紙、請其填好、如係不能寫字者、可由支款處代填、命其簽押、然後向簿上對准、將日期及款數注之存摺上、而後付款、亦有付款與帳目歸二人管理者、則先由一人將數目發帳、及注之存摺、然後又一人呼儲戶之名、詢以提取之數、再行付款、一俟儲金取完後、此摺即當繳還銀行、儲蓄銀行不能日備多數現金以備提取、前已詳言之矣、故對提款法律、亦加以限止、以維持銀行於提款之前、必先通知銀行、定期往取、俾行中得以籌辦、否則銀行可以不付、其期之長短、自十日至三日二日不等、視提款之巨細而定、惟細微之數、亦可不必通知、

利息　儲蓄銀行之帳目與普通銀行同、惟於結算利息則異、有一日一結者、有一季一結者、有半年一結者、一俟董事會宣布利率後、即將各戶利息核算、以備應付普通生息之款、必於生息期間、不有出入爲率、凡起利日後存入者、與結利日前提取者、皆不得算利、須自存入後之月初起利、無論在發息之後五日十日者、均於存入後之下一月起利、每至結算後、則用紅墨水登入謄清帳簿、以備付出、其不支取者、則加入存本生息、倘存摺來取利時、則亦用紅墨水登記、普通儲蓄銀行章程規定對於儲款利息提款三項、必須印之存摺上、

郵政儲蓄銀行　近世各國皆有郵政儲蓄銀行之設、實則此非儲蓄銀行、僅一國家銀行之代表、由各郵政局吸收現款、購賣國債票、而給以普通利息、亦國家借債之一法也、美國自一千九百十一年始有此種銀行之設、中經數年之討論、而後定奪、其管理機關爲理事部、部中主要人物、爲總郵政司、財政部秘書法律代表、其初定每省一所、後以漸漸發達、逐年增加、至一千九百十六年、已有八千所、

而儲戶有六十萬戶、儲款之數、已達八千萬以上、其儲款之資格、凡兒童在十歲以上、錢數在一元以外、均可儲入、惟每人每月儲數不得過百元、總數亦不能逾五百元、然在一千九百十年修改章程之後、每月儲金之數、以千元爲止、此外可再儲、惟無息、利息二釐、每年結利一次、款可隨時提取、各郵政局收到儲金後、可存之本地省立及國立銀行生息、利率爲二釐又四分之一、惟中央儲蓄銀行有優先權、他銀行收儲金者、必購通行債券以爲擔保、又必將五分之一之現金存之財政部、以備急需、各儲戶祇得官利二釐、其有餘利、則繳之財政部、

按中國向無儲蓄銀行、近十年來、始稍見萌芽、以中國物產之富、人民之衆、將來工業之發展、自必日盛一日、而儲蓄銀行之進行、全視工人之多寡爲準則、其前途豈可限量、然近今社會上之儲蓄銀行、其宗旨與性質、不無偏見、常此因循、或不免爲進化之阻力、嘗考西人之往法、專爲培植工人之儉德、故其性質亦僅爲工人謀利而已、而近今之儲蓄銀行、大半私人所辦、爲謀利之計、抽獎之法、雖迹近鼓勵、然充其流弊、似與博彩無異、蓋儲戶之來、目的均在獎金、故安分之工人、反裹足不前、此其流弊一也、況以區區存利、既去開支、又去獎金、則儲款利息、自不能厚、此其流弊二也、提取須待滿期、而期又遠、（大半在十年以上）設有急需、不能移用、必待獎金及滿期提款、是猶決西江之水、以活鮒魚、若云求諸富裕之人、而富裕者自能存出、又無須經儲蓄銀行之過度、事不滿於人意、業必難於行遠、此其流弊三也、竊謂苟能將抽獎廢去、酌加利率、准其隨時提取、則三弊除而發達可待也、

鐵路釐訂運費之研究

鐵路事業之發展、關係於國家之強弱甚重且大、蓋以一國工商業之盛衰、全視乎鐵路營業之大小爲轉移、而鐵路營業進款之多寡、尤爲國家財政收入之斗衡、故其鐵路營業而發達也、工商業亦必盛、而國家以強、其鐵路營業而窳敗也、工商業亦必衰、而國家以弱、惟是鐵路營業之與工商業、既如脣齒之相關、而釐訂運費之與鐵路營業、復若輔車之相依、何則、苟其運費率過高、則於商人成本有關、而其物品每不易暢銷、苟其運費率過低、則於鐵路營業資本有虧、當非勝算、故鐵路之釐訂運費、須求其公正平允、誠爲最困難而最重大之問題、緣是與鐵路營業之發達、工商業之盛衰、國家之強弱、幾莫不息息相關、而認爲切要之圖也、

運費分客運貨運兩種、客運事簡、因人類特具一種自動機能、鐵路祇須能供給客人之需求足矣、貨運事務稍繁、凡貨物運輸種種供

給、種種設備、均須籍鐵路之扶助、貨運每較客運爲多、而鐵路亦以此爲收入之大宗、特鐵路之釐訂運費、無論客運貨運、其原理則一以適合於商人及鐵路營業爲主、茲將鐵路釐訂運費之原理數則、分別詳述之如下、

一鐵路建築之資本　建築鐵路、動須鉅款、或募集公債、或發行股票、（按國有鐵路發行鐵路公債票、商辦鐵路發行鐵路股票、中國國有鐵路、大都借外債以建築者）此種債券、按期均須付以官息活利、故釐訂運費、必須審愼詳察、此路之營業如何、於原定運費之收入、能否應付市上之官息、及確當之活利、有時發行之公債票及股票、超過常額、則其釐訂之運費、自必較高、以求應付其息利、然亦不能過高、以鐵路運費之最高率、當爲法律所限制、鐵路爲公共運輸機關、謀人民之福利、工商業之發達、不獨爲謀利已也、債票股票在開始發售時、折扣甚大、且有每幾何股外贈送幾股、作爲酬報者、或在路辦事員役、有贈送股票作爲薪資者、辦理茲事者、斷不可徇情餽送、果此項發出之債票股票、逸出範圍、鐵路營業又未甚發達、則釐訂運費、當然不能以此類資本爲準、此層原理、確與商人營業性質相似、緣其運費之高低、視乎資本之大小爲定也、

一鐵路營業之費用　營業費用、解釋者頗不一致、有謂此費卽如股本之息利、保險費、維持費、員役之薪資、以及一切車務費用、均當歸入此項、或簡言卽種種車務營業之費用、或將設備維持費、及擴充營業費、亦歸併在內、最平允之說、則如將運費收入之十分之三、充營業資本之息利、及稅十分之七、作爲營業維持費、此層原理、較諸僅以資本之大小而釐訂運費者爲勝、惟鐵路之費用、大都爲維持全路之營業、至爲繁瑣、不易細爲分析、故核算殊覺困難、卽能精確核算、其中尙有阻礙、蓋所謂鐵路營業之費用、決不能公平攤派於所運之貨物及乘客者也、設如煤鐵糧食棉紗木料種種所運之大件貨物、與貴重珠寶等所運之貨物、公平攤派、則運費必非公允可斷言也、更如貨運之多寡、有以時季而別者、倘此季貨運驟少、而鐵路營業之費用未可驟減、鐵路營業勢將大受折耗矣、故釐訂運費於核算營業費用之外、尙須審察其營業之價值何若、與夫貨物分量之輕重、及裝貨路程之遠近、方爲完密、

一營業之價值與物價之貴賤　鐵路之職務、在能運輸各方之貨物、以應人民之需求、而其營業之價值、亦卽在此、其價值乃指乘客之樂於乘坐與貨物之樂於運輸而言、譬如甲地之米、每石值洋十元、乙地則每石值洋八元、倘由甲地而運至乙地、則其價可增原價百分之二十、此卽鐵路營業之價值、爲百分之二十、最爲顯明、然其運費至多不得過二元、使有餘利可圖、否則商人將不樂爲運輸也、此亦卽以兩地物價之貴賤、計其果能抽出幾何運費、而釐訂適當公允之運費、以謀營業之發達、至如乘客方面、對於鐵路營業之價

值、甚難臆測、蓋各人之生計不同、而各人之需求亦異、然亦可以營業之大小證之、倘平日乘客無多、然一遇運費稍減、而乘客之總數驟增、則原定之運費太高、爲不能滿乘客之意、必無疑義、故營業之價值、與物價之貴賤、關係於釐訂運費、其效最爲明著、

一貨物分量之輕重與裝貨路程之遠近　貨物分量之輕重、大都以噸爲量數、苟分量較輕而佔位置者、以車輛受載噸數計之、每車能受載若干噸數、均註明車上、如任載貨物於一車之上、至不能載爲止、其分量卽較輕於車輛、受載之噸數、亦以此數計算、裝運路程之遠近、大都以英哩計之、亦有以區或帶計算者、如甲地至乙地爲五十哩內之區或帶乙地至丙地爲百哩內之區或帶、運費率如每噸每哩幾何、每五十噸、每百噸、或每五十哩、每百哩、依次遞減、貨物分量之輕重、與裝運路程之遠近、皆與營業費用有密切關係、而以之爲釐訂運費率、亦甚確切、普通之運費率、如以每客每哩每噸每哩計算、然分量或路程之增加、不必使營業費用有同度之增加、因貨物之輕重、與裝運之遠近、與營業費用之大小適成反比例、多量之貨物、其運費應較廉於少量、長程之貨物、其運費當較低於短程、是在參考營業之價值、與營業之費用、審愼釐訂、而適合於客貨運費耳、有時爲營業競爭起見、將運費減至最低率、以能保持營業、及能應付營業之費用爲止、

一客車之等級與貨物之類別　乘客搭車、不僅爲由某地至某地有圖舒暢精美迅速以遂其願望者、如甲客寧償數倍之運費、而求安逸迅速者、乙客則反是、寧舍安逸迅速而不出高昂之運費、故鐵路須特備飯車睡車快車慢車頭等二等三等種種、以供乘客之需求、此種運費、可計核營業費用之若何、而特增減其運費率、貨物之類別、約分三種、甲貴重物品、如珠寶飾物等、乙危險物品、如玻璨菓類、易於損壞之物等、丙普通物品、如煤鐵棉紗、及他種原料等、釐訂此項運費、乃因其物價之貴賤、及計核營業費用之大小而定、甲種物品、其運費當高於乙種、乙種運費、當高於丙種、例如以百分率計算、近礦之煤每噸值洋二元、在船埠每噸值洋二元五角、其運費每噸可得原價百分之二十五、在出口處之絲繭、每石值洋百元、在出產地、每石值洋九十元、其運費每石可得原價百分之十、由此而觀、則煤價運費、其百分率反高出於絲繭運費之百分率、豈得謂之公允、故貴重物品之運費、應高於普通物品、以其物價之貴、確能付

納較高之運費、初非以其營業之費用、大於普通物品也、

一工商業之競爭及他路之競爭　凡出產物品、端賴鐵路爲之輸運、以謀發展、故有時鐵路亦將運費率減至極低、以資贊助、如有同等出產品、由出產地而運至各商埠者、或工廠林立之地、貨物孔多、須鐵路爲之轉運者、或海外貿易、須由出產地而運至出口處者、此種運費、均須減低、與以扶助、以謀他日營業之發達、至若有雙軌或同向鐵路營業之競爭、或鐵路與水道之競爭、則釐訂運費、尤感困難、例如由某處至某處有同向甲乙二鐵路、乙路之路程、須繞道他處、較甲路爲遠、而其運費率、却與甲路相同、以與甲路競爭營業、鐵路苟與水道相並、則其運費率不能釐訂過高、以自減少其營業、美國撥拉買運河開後、自紐約至舊金山之鐵路運輸、卽爲減色不少、此其證例也、

以上綜述鐵路釐訂運費之大要、至其細目、未能備述、要亦釐訂運費之原理、不外乎此數則、而凡釐訂運費者、悉依此爲根據也、按中國運貨率、較諸歐美各國、相差無幾、而營業之比例、其贏餘淨款、則超過歐美各國、此其故非他、誠以中國人民之生活程度甚低、員役之薪資特賤、人民衆多、貨物富足、鐵路爲國有之運輸機關、無商辦鐵路足與競爭、故其營業進款、遠出於其營業費用之上、自表面觀之、其運費率似與歐美相等、而實則高於歐美諸邦也、揆諸原理、中國運費率、確宜減低、方爲平允、矧以營業之價值、而論其運費率平允、則其營業愈形發達、苟中國鐵路能將釐訂運費、再加以詳密之考查、審愼之研究、斟酌損益、則其營業之發達、工商業之進步、自必蒸蒸日上、而其營業進款、尤當較諸今日爲多也、

鐵路統計法略談

統計學爲料量經紀撙節出納之事、爲經世致富之術、蓋鐵道財政租稅鈔幣銀行貿易等之利弊、經營事業之良否、可於圖表中一一表現、使執事人得以改革焉、卽以鐵道而論、於統計中(一)可以覘各路營業之比較、(二)可以觀工商事業之盛衰、(三)可以知各地出產之豐富與否、(四)可以測文化之進步與否、此數條例中、可使當局有計劃提倡之方針、改革之手續、故統計之關於經世、已屬可

貴、至若鐵道營業上之關切、尤可不言而喻、此法於十五世紀時始發現於歐洲、至十七世紀、英人 Gottfried Achenwall 以此種學識有關於個人之營業、及國家理財之機能、始竭力研究、盛行於歐美各國、次及亞洲、其法約分二大種、(一)用表計算、(二)用圖計算、表能精細核算、其內容至於比較上或有難以分辨處、圖則於微細之處、或有難以核算者、而於比較上可瞭然區別之、然用圖之法不一、或用曲直線、或用面積、(卽方圓長形等)或用容積、(卽圓球立方積錐體等)以上諸法中、曲直線及面積最易使閱者明悉、茲將民國七年國有鐵路各路客貨車及支出入款項比較圖表等錄之如下、

(表一)民國七年國有鐵路營業用款總數表、

(圖一)各項營業用款比較圖、

此圖用圓形分析法、比較各項營業之用款、此法較諸他法易於觀閱、而其比例亦較諸他法爲準確、但微細處亦有難於核算者、

(表二)民國七年各路營業款項出入表、

(圖二)各路營業款項比較圖、

此圖以直線法比較各路之進出款項、及客運貨運之營業進出款項之比較、可於圖中一目了然、如滬寧滬杭甬廣九樟廈等路、其客運進款、多於貨運、京漢京奉京綏正太道清吉長株萍等路、則貨運較客運爲多、津浦及汴洛等路、客運貨運不相上下、由是而知北方鐵道之營業進款、以貨運爲主體、而南方鐵道則以客運爲主體也、

(圖三)各路營業收支及營業比例之比較圖、

此圖用直線法比較路線之長短、與每啓羅邁特之營業收支、則進款與路線之長短、適成正比例、用款與路線之長短、無甚關係、營業比例與路線之長短、適成反比例、此項比較、蓋舍用此直線法外、確無他法可以顯然表示也、

民國七年國有鐵路營業用款總數表（表一）

用款類別		用款合計	每啓羅邁特之費用	百分率
總務費	管理	三·三八五·八八七元	六一九元	九·九
	特別	二·九〇〇·八六二	五三〇	八·四
車務費		四·三〇二·八六〇	七八五	一二·五
運務費	機車	六·八〇五·二九四	一二四五	一九·九
	客貨車	三九三·〇五二	七二	一·一
	車務	七九八·六五七	一四六	二·三
	渡船	二七一·二四一	四九	〇·八
設備品維持費	機車處	六·八八六·七三〇	一二五九	二〇·一
	渡船處	三〇·四一二	五	〇·一
工務維持費	養路工程處	七·七七九·四二〇	一四二三	二二·七
	他處	四八三·四八九	八八	一·四
互用車輛		二八四·七六〇	五二	〇·八
總計		三四·三二二·六一五	六二七四	一〇〇

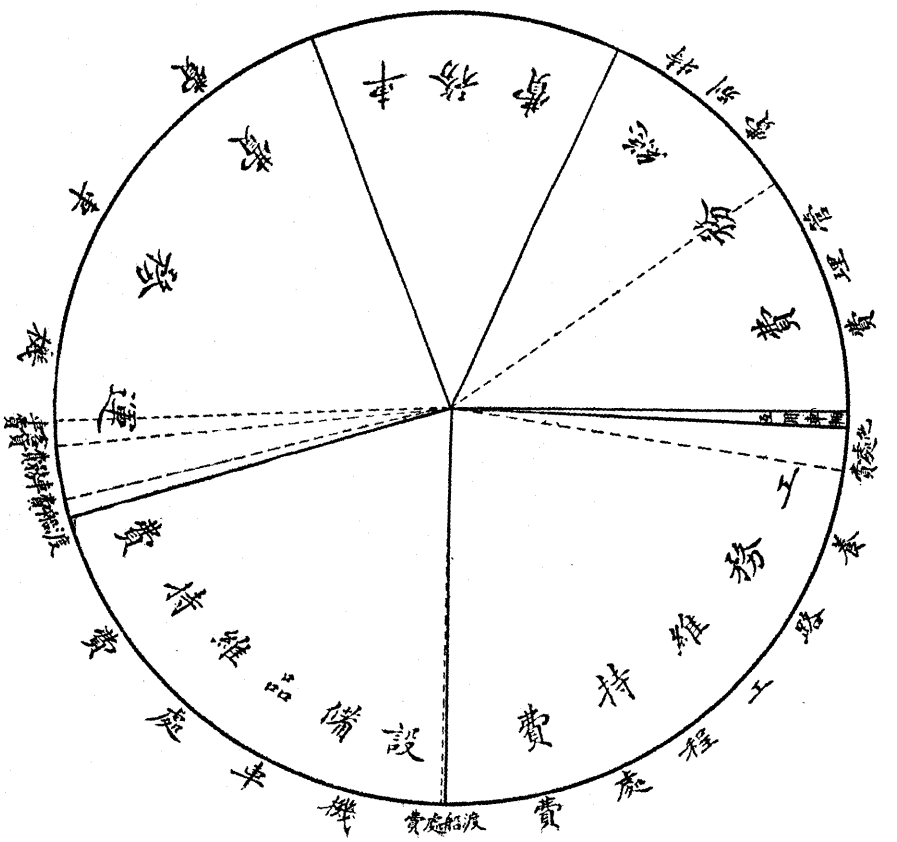
民國七年各路營業款項出入表（每啓羅邁當計算）（表二）

路名	款項類別	客運進款	貨運進款	各項收入總數	營業用款	營業收支比例（百分數）	路程（啓羅邁特）
京漢		五一二〇元	一二五一六元	一八一四五元	六〇七六元	三三·五	一三一·三
京奉		八五八〇	一一七六〇	二一三九二	七〇八一	三三·一	九七五
津浦		五〇三〇	五三七四	一一三八六	五四七四	四八·二	一一〇七
滬寧		九〇五〇	四六二七	一四八六八	九〇七七	六一·一	三二七
滬杭甬		五六五〇	二三六五	八三七一	七二一六	八六·二	二八六
京綏		一八七〇	六二八九	八八七六	五七七七	六五·一	四九五
正太		二一三〇	九七七五	一三二一四	五五〇五	四一·七	二四三
道清		九二〇	五〇二四	六二二五	二七九八	四四·九	一五二
汴洛		三四九〇	二九四九	六八六六	三八〇三	五五·四	一八五
吉長		四一四一	八五七三	一三六七二	八二七七	六〇·五	一三〇
株萍		九七〇	四二七七	六一一五	六〇九五	九九·六	九一
廣九		五二七〇	九一三	六三五九	七一八一	一一二·九	一四三
樟廈		九五二	五五	一六四九	三〇九〇	一八七·五	二八
平均		五二七五	八一二〇	一四一九五	六二七四	四四·二	五四七五

中華國有鐵路

各項營業用款比較圖

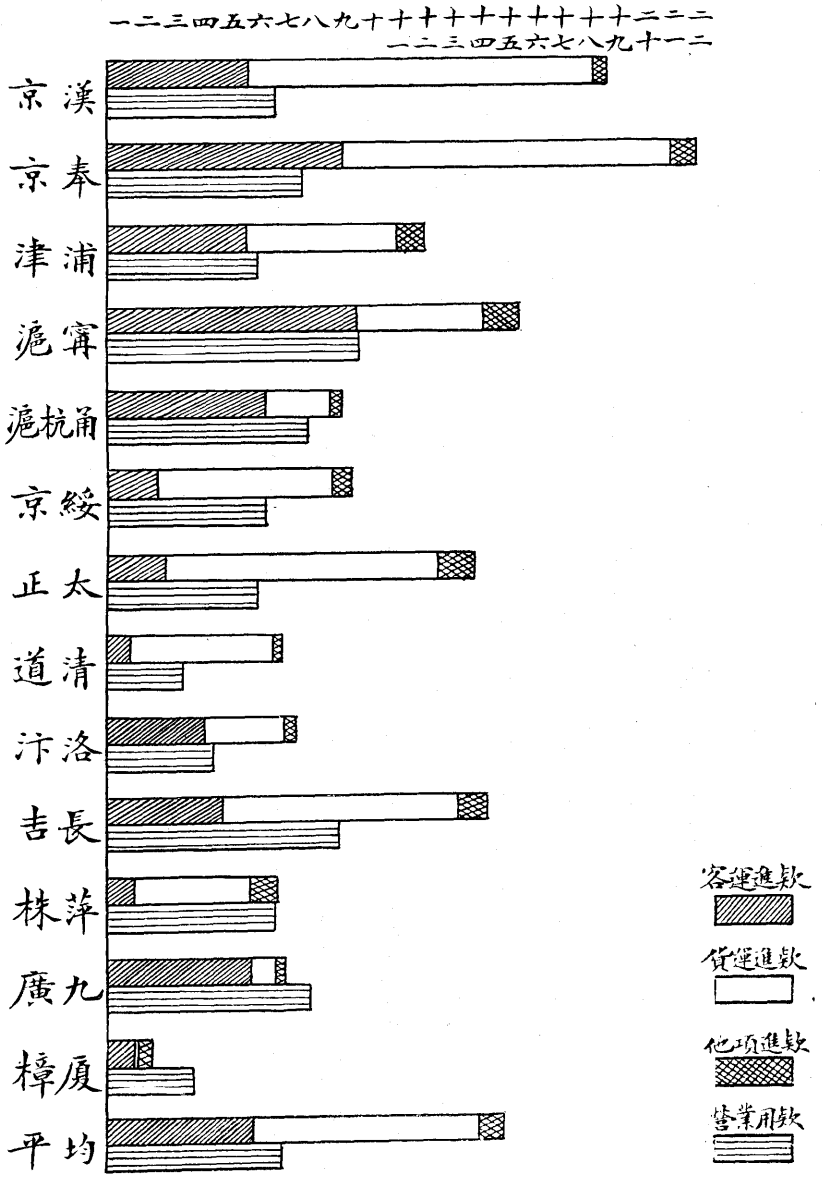
（圖一）



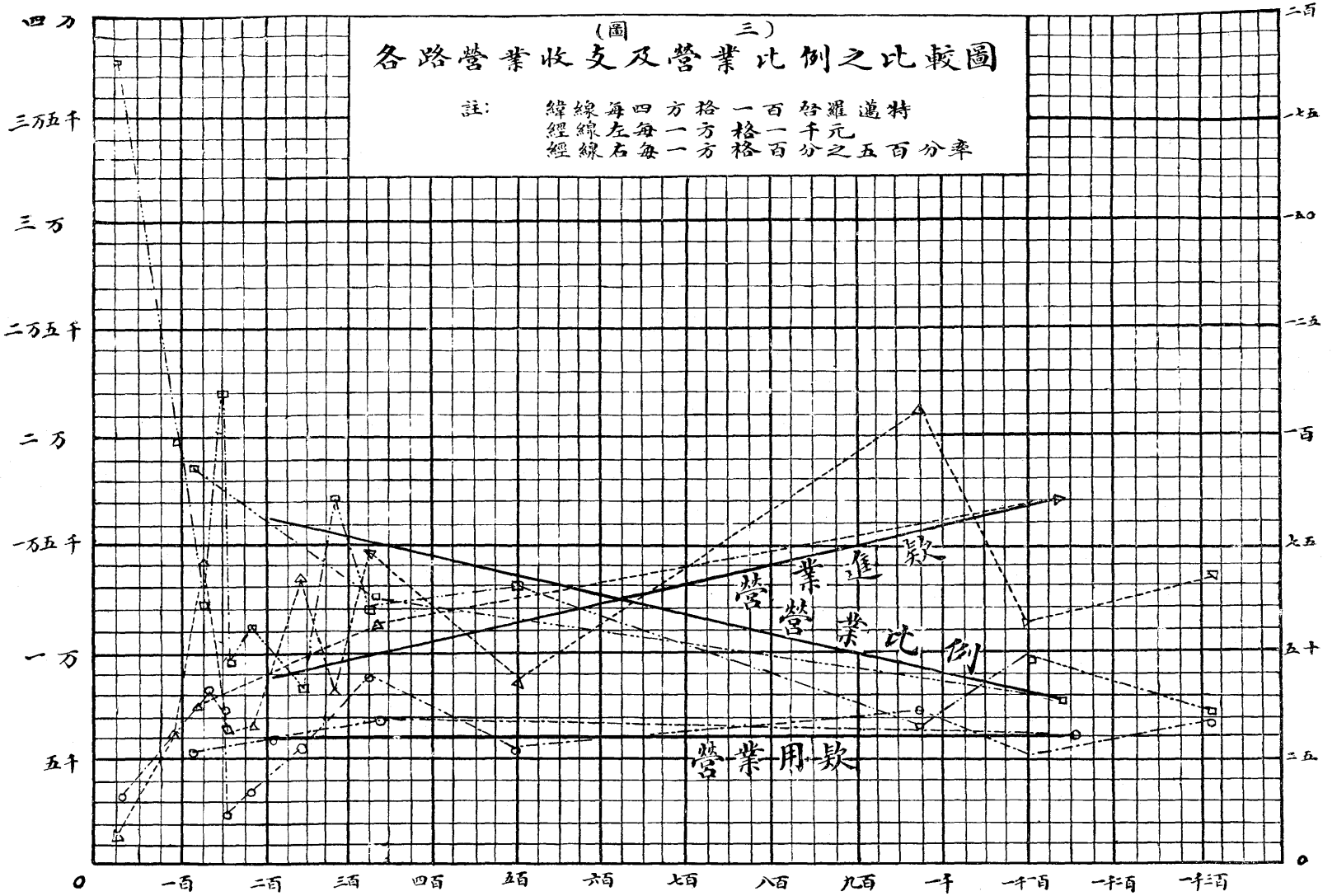
（圖　二）

各路營業款項出入比較圖

（每哩邁羅特計算）



註　每方格一千元


(圖 三)
各路營業收支及營業比例之比較圖
註：緯線每四方格一百哩羅遙特
經線左每一方格一千元
經線右每一方格百分之五百分率
四万
三万五千
三万
二万五千
二万
一万五千
一万
五千
0
一百
二百
三百
四百
五百
六百
七百
八百
九百
一千
一千一百
一千二百
一千三百
二百
一七五
一五〇
一二五
一百
九五
五十
二五
0
營業收入
營業支出
營業比例

鐵路建築經濟計畫之一斑

縱觀世界各國、自有鐵路以來、其路政之發達者、其實業文化軍事財政之進步、亦必一日千里、日本彈爾小島、美國版圖民衆遠遜於我、其鐵路至在六千英里、或二十五萬英里以上、而其國以富以強、居世界重要地位、足證鐵路之於國家、關係甚大、不僅便利交通已也、中國今日全境鐵道之已通行者、尙不及七千英里、近年來、交通部雖有規定之路線、或在建築中、或在籌畫中、乃限於財力之窘迫、外債之艱難、延宕迄今、殊少建設、國內資本家固不乏其人、又因政府對於國民信用完全喪失、不肯奮勇投資、是在主其事者、規定專章、獎勵經營鐵路事業之資本家建築家等、務使互相策勵、和衷共濟、羣致其全力於鐵路之一途、則中國前途、庶有豸乎、至於鐵路建築之計畫、歐美各國有所謂鐵路建築公司者、其組織經營、性質雖屬商業、然於國家鐵路前途、實多臂助、因亟述之、以供採擇、

鐵路建築公司者、卽平常營造公司之一種也、以其旨在接受股票債票、及代築路線、故名、夫於鐵路未築之初、而欲人民應募公債、務於債票之外、加以股票、作例外之酬報、以資勸誘、然此項股票酬報品、因與股本有關、照理不得無故贈與外人、此建築公司之所以設立、俾路局得以斯項擔保品、作工程及產業之代價也、建築公司接受此項擔保品後、乃規定價額、分售於公衆、或抵押銀行、籌商借款、以充工程進行之資本、顧銀行家多不願接受此未曾開辦鐵路之擔保品者、故建築公司必預備資本、先行開工、以固信用、且此等籌款建路之法、亦全恃雙方互相利用其信實而已、蓋其始也、路局未有財產、故亦無所謂信實、繼而因建築公司之資本、而遂有鐵路之財產、此財產乃爲一種有實力之擔保品、於是而建築公司乃可藉以籌借款焉、至於路局與建築公司之間、自有合同、規定其建築之路由、工程、材料、及營業上所需一切供給之品、並隨時隨地得由路局總工程司監理、至於其他一切完成鐵路工程事宜及用品上所需之合同、當由建築公司自理之、路局則於其逐段工程告竣時、准照每英里若干元之定價、付以本局完全有效之股票代價、惟於交付前、受託公司須得有該局總工程司之憑單、以證其完成之里數、迨全路竣工、而路局所有之股票債票、除成立時所募作開辦費之股本外、乃盡爲建築公司所有、而彼或可行銷與公衆矣、

建築公司實際上之經營如下、譬之今有人合股組織一鐵路建築公司、其資本爲二百萬元、時政府適欲發展某處礦業、因倩該公司代築一路線、以股票債票作酬報及代價、於是立約興工建築、其路程假定二百英里、每一英里准發股票債票各一萬六千五百元

作代價、而公司於每英里工程上及一切布置所需約值一萬八千元、則全路工程共計當值三百六十萬元、依契約所定、當工程進行若干里、該公司即可得路局總工程司之憑單、領取股票債票之相當代價、今以每英里價值一萬八千元計、則該公司之資本足以敷設鐵路一百十英里、而其應得之債票、計值一百八十一萬五千元、而公司現款、亦於斯且告罄矣、乃須以此所入之債票作抵、向金融機關籌商借款、假定其債票以六折計、抵得現銀一百零八萬九千元、約敷繼續六十英里之建築費、當此段工程完成之時、公司又可向路局領取債票九十九萬元、茲欲完成其所餘之三十英里、尚需現款五十四萬元、仍以債票六折作抵、當需債票九十萬元、其餘九萬元、加以此三十英里完工時所應得之四十九萬五千元、合計五十八萬五千元之債票、及每次與債票同時收入之股票三百三十萬元、二者遂爲公司當時之盈餘、

鐵路工程既已告竣、乃開始營業矣、設其收支相較、尚有盈利足付債票之利息、於是票價乃因之逐漸增漲、其時或有銀行團者出、而以九成收買之、則前此作抵之債票二百七十一萬五千元、可售現二百四十四萬三千五百元、償還借款之本利外、約得餘存八十萬元、公司所存債票五十八萬五千元、售之當得五十二萬六千五百元、合計債票售現後所得爲一百三十二萬六千五百元、股票之估價與票面對折、應值現款一百六十五萬元、是以營業結果、建築公司乃得盈利九十七萬六千五百元、其清單如下、

經營二百英里鐵路清單

資產		欠項	
路局股票：三三〇〇〇〇〇元	五折	一六五〇〇〇〇	股本 二〇〇〇〇〇〇
路局債票：一八一五〇〇〇元	九折	一六三五〇〇	借款 一〇八九〇〇〇
路局債票：九九〇〇〇〇元	九折	八九一〇〇〇	借款 五四〇〇〇〇
路局債票：四九五〇〇〇元	九折	四四五五〇〇	利息 一四五〇〇
			淨餘 九七六五〇〇
		四六二〇〇〇〇	四六二〇〇〇〇

銀市與遠東商務之關係　譯遠東共和報

今世之言銀市者、必論及遠東、良以世界各國、均次第改爲金單本位、而我遠東之中國、以商業輸出輸入額之鉅、乃仍儕於用銀國之列、故銀價時有漲落、非特中國商人受有密切之影響、卽外人之與東方有商務關係及投資中國者、莫不視銀市之轉移、而定其營業之方針、至於印度、雖久已採用國際匯兌金本位制、但此僅爲維持對外金銀比價之衡而設、至其人民貯銀舊習、實未嘗稍減、觀於歐戰期內印度吸銀額之鉅、可以想見、至就銀價之影響於商業者而言、價漲則東方之出口商勢極不利、（如自休戰後以迄於去歲十一月間之時期是）價跌則東方進口商頓遭折越、（如今歲夏季滬上洋貨商等多以銀價驟跌致遭損失是）故遠東商人、對於銀市之漲落、實有不可忽視者、今年遠東共和報七月號、曾載有「銀市與遠東商務之關係」一篇、其所論載、頗與遠東商業有關、爰迻譯之、以爲留心遠東經濟者告焉、

銀價之驟漲　溯自歐戰以來、銀價騰漲、出人意外、方歐戰開始之二年、銀價尙甚低廉、在一千九百十五年、倫敦之價、僅二十三又十六分之一辨士、紐約僅五・二八九角而已、及至翌年、而倫敦價始漲至三十一十六分之五辨士、紐約則漲至六・八六五角、由是而後、銀價之高漲、若潮流之難遏、至今年正月、紐約市價、竟越至一元三角九分、此五十年來所未有者也、

考銀價之漲、既如是其速、而爲期又如是其短、昔則金銀價格之比爲十五與一、時經五六十年、至一九一五年、其價始跌至三十九與三十八之比、就料於近三年中、其價乃仍至舊例耶、銀價之跌漲如此倏忽、世界經濟潮流、遂極其變、則銀價將來之驟跌、亦正在指顧間耳、

紐約一九一三年以來銀價比較表

每年平均價	
年份	價格
一九一三	·六〇四五八元
一九一四	·五五三一二元

一九一五	·五一八九二元
一九一六	·六八六四七元
一九一七	·八九五二五元
一九一八	·九八四四六元

一九一九年每月平均價

月份	價格
正月	一·〇一五五八元
三月	一·〇一四七五元
六月	一·一一四〇二元
九月	一·一五六三六元
十二月	一·三三〇七二元

一九一九年每半月結價

日期	價格
正月十五	一·三四七五元
正月卅一	一·三三〇〇元
二月十六	一·三〇〇〇元
三月一日	一·三一七五元
三月十五	一·一七五〇元
三月卅一	一·二六五〇元
四月十五	一·一八〇〇元

四月三十　一·一一五〇元
五月十五　·九九七五元
六月一日　·九九五〇元
六月九日　·八七〇〇元

由上表觀之、銀價三月以來、其跌落率乃殊速、在紐約市上、一盎斯(ounce)跌去五角、倫敦亦然、此後銀市之趨向、於此可見一斑矣、

近年銀價奇昂之眞假　銀價雖已逐漸跌落、然較歐戰前尙高、試問此銀價之昂貴爲眞乎、抑徒爲名義上之高漲而已乎、換言之、卽銀之價格既高、其價值(value)是否亦同時增加、此種問題、甚爲重要、苟其價值與價格同時增加、則東方之商務、勢將一敗塗地、蓋以銀爲東方物價唯一之標準也、

要之吾人苟細察金與銀之關係、則銀價之奇高、似爲眞實、觀於一盎斯之銀可換得之金、較之四年前爲多而知、苟以銀與他種物品之關係論、則未必然、以銀之買力(Purchasing Power)曾未增加也、

銀之買力、在歐戰以前與現時、欲得一準確之比較、殊爲困難、茲姑就銀與各物之指數(Index Number)於歐戰前後比較之、

(按銀之指數、係自每年平均價計算、各物之指數、則係美國勞工統計部根於三百二十八種物品計算者、)

每年平均		
年份	各物指數	銀之指數
一九一三	一〇〇	一〇〇
一九一四	一〇〇	九一
一九一五	一〇一	八六
一九一六	一二四	一一二
一九一七	一七四	一四八
一九一八	一九七	一六三

每月平均

月份	各物指數	銀之指數
正月	二〇三	一六八
六月	二〇七	一八四
十二月	二三八	二二〇

由上二表觀之、銀之指數、並非較高於各物之指數、苟此表而準確、則吾人可決曰、銀之買力、雖當價格極貴之時、並無絲毫增加、否則其指數必較大於各物之指數、此言是否確當、頗難斷定、以此表內數目或有差誤也、然無論如何、吾人卽不以銀之買力爲減跌、亦可決其爲全不變動、卽無增進之徵象、觀此則銀價之高、徒爲名義上或表面上之現象而已、

銀價昂貴之原因　銀價昂貴之原因、不勝枚舉、其重要者有三、

【一】供給之缺少　銀旣爲貨物之一種、依經濟學言之、其供給與其價格、自具有密切之關係、溯自歐戰伊始、銀之供給日少、爰考其故、厥有數因、(一)銀出產額之銳減　銀於歐戰四年前、其產額每年平均爲二億四十二萬盎斯、自此以後、則逐漸減少、至歐戰期內、其產率適與二十年前相等、亦足異矣、(二)銀之藏貯　當歐戰劇烈之際、遠東出口貨之運往歐洲者甚夥、商務賴以發達、而銀之收入亦富、內中以印度吸銀最鉅、因印度旣於戰期中輸出獨盛、而其人民又富有藏銀之習慣、故銀一入彼地、卽被深藏、不能流行於市、卽在他國之通行紙幣者、其人民亦以銀根緊急、多藏現銀以備用、有此數因、而銀之供給、遂日漸缺少矣、

【二】需求之增加　銀需求之廣、其主因有三、(一)歐戰以還、印度及其他東方用銀各國、輸出超過輸入甚鉅、而其相差之額、則必以銀付之、(二)聯邦各國、及受戰爭影響各國、均須用銀鑄成輔幣、以彼政府旣發出多量之紙幣、不得不多鑄輔幣、以資流通也、(三)歐戰以來、聯邦各國、以欲維持其紙幣信用之故、多收貯銀貨、以爲準備金、此亦需求銀貨之一大原因也、

【三】金價之低廉　此金價之低廉、係包含金幣與金貨兩者而言、其原因亦有三、(一)紙幣流行額之特鉅　歐戰迄今、全世界通行紙幣額、已增至六倍於戰初、去年十二月、其數已至五萬兆元、此外尙有俄過激政府所發之三萬四千兆元、合計之、其數亦殊可驚人矣、(二)各國政府公債、如公債券及國庫證券、於歐戰前後之擴張、(三)各國銀行所發行之紙幣及證券爲數大增、去

年英國銀行發行之債券紙幣數、幾較一九一三年高至三倍、法國銀行則七倍之、美國之情形、與英法二國較、亦大同小異焉、

銀價再跌之將來　銀價於三月以來、大見跌落、吾人固知之矣、但或問銀價尙欲低跌至若何之程度、則吾人可答曰、自停戰以來、凡協約各國銀行家經濟學家、皆擬力減紙幣之流通、終必使紙幣缺少、金價漸高、而銀價漸跌、但銀價能否跌至歐戰前之價與否、則非吾人所能預料也、

銀價漲落靡定與遠東商務之關係　遠東各國、既完全或一部分用銀貨爲物價之標準、故銀價之漲落、於東方各國所生影響最鉅、因銀價不定、貨價亦隨之而變也、若限於國內之商務、初未嘗因之生若何影響、因銀價之漲落、係指與金貨之比價而言、至於其自身之買力、初未嘗有所變更、故貨價之不隨銀價而變動、蓋甚明瞭、若國外貿易則不然、用金國與用銀國互相賣買之貨、其付值須由金價改至銀價、銀價稍有變動、則貨價亦受變動、總之銀價有絲毫之上落、卽與東方商人有密切之利害關係也、用金各國、自銀價日漲、遂從事輸運出口貨於東方各國之事業、因彼所得之銀、其價值較四年前實大至倍蓰也、故銀價之高、實足鼓勵東方之進口商務、美國進貨於中國之奇多、亦職是故耳、但自其他一方面觀之、則銀價之高、足使東方出口貨減少、以前在美國行銷能值一元美金之貨、合計中國出口商可得銀元二元以上、今則僅一元餘矣、彼若欲增漲其價格、則其貨物之需求必減、蓋亦非善策也、

凡經商者、莫不以獲利爲前提、其所難者、爲不能預知貨價之漲落耳、倘彼能預定何時進貨、何時銷貨、賣價幾何、獲利幾何、則營業發達、可操左券、而銀價之靡定、亦不受其影響、今則既不能預料貨價之趨勢、加之銀價高低倏忽、使商業成一極險之事業、而東方國外商務、未免因之受一挫折、斯乃可憂耳、

吾人對此應如何救濟之　吾人既不能使銀價無漲落、吾人所能爲者、惟竭力抑制銀市、使其價不致急漲急落、而使之成逐漸跌落之勢耳、然此事非常人所能爲、吾人所屬望者、惟有富強冠全球之美國而已、吾人須知美國於銀市上、已盡一極大之義務、當一八一九年銀價飛漲之時、美政府曾捐二億盎斯之銀於市、今春銀價大跌時、美國國庫又竭力收買之、銀價之尙無極大之上落者、良以此也、但當今美之銀行家、尤須注意於此問題、因銀價之漲落、渠等受有直接利害關係、彼等須禁止投機事業、並竭其智能、使銀價不有急漲急下之勢、如是則東方商務、不致危殆、世界商業、得日以振興、此固不僅東方各國之幸、美國之幸、抑亦全世界之福也、

遠東鐵路問題　譯日本 Yoshio Kinoshita 原著

鐵路之有關於歐戰勝敗、將無人否認之矣、德國鐵路完備、故於宣戰後數日之內、能用迅雷不及掩耳之策、運兵入法、一路無阻、法京巴黎、鐵路網置、故霞弗爾將軍於賣爾納戰役、得轉敗爲勝、而免聯軍於蹂躪、俄則以路政不善、終致分崩、美則以交通便利、故能於倉卒之間轉送大批軍糧赴歐、觀此謂歐戰聯軍之勝、勝於路政、亦無不可也、今後歐戰各國之宜求助於鐵路、以圖經濟之恢復、固屬無疑、但遠東運輸問題之有關於今後世界之改造、亦頗重要、查現在中國與西伯利亞等處、無充足鐵道、以供開採天然利源、其已設者、亦未臻盡善、是一大憾事也、日係三島、運輸重水道而輕鐵路、然鐵路資本、恆數倍於水道、且貨品之由鐵路運輸者、亦常較水道爲多、故路政極爲發達、溯自日俄戰後、日本幾爲國際聯盟事業之中心點、凡爲日人、不得不及時講求海外運輸、藉謀經濟發展、其中尤以中國及西伯利亞之鐵路問題最爲重要、而有密切關係、蓋日人之營業於該地者、實繁有徒焉、

日本於五十年前、當大蓋渡鐵路建築之時、全國人民、莫不反對、近路居民、並阻設站、此種可噱事實、恰與中國鐵路史上之淞滬路相似、查該路於一八七六年由英人建築、當時中國人民、以從未見此怪事、羣起詰責、終致此路撤運至台灣而後已、然此種無理反對、不久即行消除、當道者、亦漸知泰西工業之發達、端由運輸之便利、而鐵路實居奇功、一八八一年、直隸總督李鴻章得美國工程師墾道之贊助、敷設唐山煤礦至北通河口一路、繼此而借外債築成者、有京漢正太道清津浦等路、正當中國路政崛起之際、中國人民忽有「中國鐵路事業應歸中國自辦」之議、大有舉借內國公債以收回鐵路權利之勢、但阻礙叢生、無有良果、故中國政府於一九一一年、仍採借款築路政策、

中國鐵路之由外資建築者、東清南滿膠濟滇越等是也、首先三路、人無不知、不必贅述、滇越路起自勞開、迄於雲南、長約三百餘哩、該路建築權、乃中政府贈與法蘭西、以爲彼於中日戰後代抱不平之酬報者也、其地僻處極南、與日本運輸上、無甚直接關係、故吾人亦可不必過事研究、中國鐵路、雖都從借債築成、而管轄權仍屬中政府、(外資建築者不在內)茲將中國重要幹路之概況述之如下、

(一)京奉鐵路　此路於一八八一年開始建築、長五七二哩、爲中國北部最要幹路、亦爲中日聯運之幹路、因此路與安奉及朝鮮諸路均相銜接、聯貫開平北京天津諸大都會、故營業甚爲發達、堪稱中國鐵路營業進款最多之路、

(二)京漢鐵路　此路與京奉路相逢於北京、縱貫直隸河南湖北諸省、當此路建築之始、(一八九六年)款項本擬向比國銀公司商訂、而以俄國爲後盾、後歸英法日三國承借、(日款一〇·〇〇〇·〇〇〇圓)長七五五哩、爲中國鐵路中之最長者、異日武昌至廣州一路築成、此路將成爲南北之重要幹路矣、

(三)津浦鐵路　此路與京漢並峙、起自天津、迄於浦口、經直隸山東安徽江蘇四省、長六七〇哩、分南北兩段、南段借英債建築、北段則借德款敷設、貨運以糧食爲大宗、

(四)滬寧滬杭甬鐵路　二路皆借英款建築、共長三八三哩、營業頗發達、重要職司、多屬英人、

(五)京綏鐵路　此路起自北京、經張家口大同府而迄於綏遠、長二八二哩、完全係中國資本、(京奉路餘利)由中國著名鐵路工程司詹天佑督造、是乃中國人民足以自豪者也、

(六)隴海鐵路　此路爲中國東西幹路、今尙在建築中、共長一〇九七哩、其中一部已經營業者、不過三六〇哩耳、建築費係向比國銀公司商借、

(七)川廣鐵路　此路從廣西到四川之成都、爲中國內部幹路之一、茲正在建築中、尙未開始營業、

(八)粵漢鐵路　此路起自武昌(漢口對岸)經長沙而至廣州、分三部建築、均未竣工、

此外尙有數路、不及備述、惟讀者得此、亦可知其大概矣、今中國鐵路問題之最宜注意者、爲如何可收鐵路營業之效果、查中國有七千哩之鐵路、每年運客二六·〇〇〇·〇〇〇位、貨一五·〇〇〇·〇〇〇噸、日本有鐵路六千哩、每年運客二八〇·〇〇〇·〇〇〇位、貨五三·〇〇〇·〇〇〇噸、兩相比較、中國客運不及日本十分之一、貨運則不及三分之一、故中國對於現有鐵路、倘能竭力整頓、則營業必能再求發達、而收入亦必增加矣、

今日中國最大缺點、莫過於交通不便、故中國不謀振興則已、果欲勵精圖治、非先改良路政不可、厥因有四、茲分述之、

(一)處今日而欲救中國於危殆、當先使國人意見統一、無彼疆此界之分、欲達此的、則當刊發足以代表國民公意之雜誌書報、而欲使此種印刷品流行廣速、則非交通便利不可、是欲統一中國人民意見、不得不改良路政也、

(二)設中國路政而發達、則南方之農產品、可於短時間內運往北方市場、而北方之製造品、亦可供南方之需求、是欲振興中國實

業、不得不改良路政也、

(三)中國富於物產、乃以交通阻滯、終致棄財於地、坐而待斃、殊屬可惜、是欲闢中國利源、不得不改良路政也、

(四)振興中國鐵路、卽所以維持中國治安、蓋交通而便利、則軍事之設施敏捷、而內亂之撲滅基易、是欲增進中國治安、不得不改良路政也、

中國路政固宜改良矣、然改良果將如何入手乎、茲更言之、

(一)中國應速訂鐵路擴充計畫、某處至某處當築路否、應將建築費之多少與夫營業之盛衰、權量計劃、以定去取、

(二)計畫既定、奪建築卽當進行、建築費可借外債、蓋借債而不與外人以特殊權利、固與國權無損也、

(三)中國鐵路當局、當竭力謀收鐵路之最高效能、一切車輛與設備品、應從速增購、以應需求、蓋中國鐵路營業之所以不能發達者、車輛缺少、亦其一大原因也、

(四)釐訂運費、愈低愈好、以不虧本利爲度、查中國鐵路運費率極高、營業以是不能發達、故減少運費、亦爲改良路政之一端也、

(五)中國政府、應有統一之鐵路管理權、欲達此的、端賴各債權國之和衷共濟、望各國人士之投資於中國鐵路者、常以「振興交通是謀人民幸福」爲念也可、

建築滿蒙回藏鐵路之必要

滿蒙回藏、中國之邊地也、面積大於十八省、幅員遼闊、土地豐腴、礦產富饒、畜牧繁殖、而荒漠萬里、交通阻塞、未經開墾之區、寶藏深埋、貨棄於地、徒啓外人覬覦之心、國人反多視若棄壤、不知利用、長此以往、安足圖存、然欲此數千萬方里富於天產物之地、爲我人用、則當急起經營、移內地之民以墾殖、取礦產運之製造之場、裁農產牲畜於消費之市、凡此種種、皆賴交通轉運之靈便、是則建築長途鐵道自內部諸省通滿蒙回藏、實爲必要之圖矣、

我國內則生計困窮、政治混亂、外則強鄰虎視、時思侵奪、欲挽此危局、則建設事業、實爲今日救國之要策、而鐵路尤爲根本之建設事業、蓋有交通運輸之便利、然後可資以開發未闢之富源、富源旣闢、人民生計寬裕、國家財富增加、無業遊民均從事於生產而無擾亂

之行爲、外人亦將以我自行開闢富源故、絕其覬覦之心、昔美國經革命大戰後、民生困疲、政治混亂、其政府乃於西部未經開闢之區、建築長途鐵道、直達太平洋、鼓勵其人民至西方墾田開礦、於是失業之民咸從事生產、礦源盡闢、農產增加、生計饒裕、國以鼎盛、使非有當時之建設事業、曷克臻此、我國今日政治窳敗、民生凋疲、百倍於美洲當日、是則取法美國、圖根本之建設、謀將來之發展、建築鐵路於各邊省、以開闢巨大之富源、實不可一日緩矣、此建築滿蒙回藏鐵路之關係於發展國計民生也、

我國五族幷合、幅員遼闊、苟交通不便、則異地人民智識不易交換、軫喊之見不克化除、凡文化之灌輸、教育之推廣、均難期普遍、而統治更形不便、今本部有鐵路水道之互通、交通尙稱便利、獨在西北邊境、則交通阻塞、人民多尙未開化、且強鄰復時有幷呑之謀、一有事變、鞭長莫及、應付幾窮、倘交通便利、則何至若此、故建築滿蒙回藏鐵路在建國統治上殊關重要也、

更以利益言之、此種鐵路所經雖多爲荒僻之境、但以鐵路兩端經濟狀況懸殊之故、新開土地有多量之天產物原料品須輸入於繁盛區域、而繁盛區域可輸運一切應用之貨物於新開土地、以供其需求、則兩方貿易必發達、而鐵路運輸乃大受其利、觀京漢京奉兩路之比較、京漢路長八百餘咪、所經多戶口稠密之處、京奉路長六百咪、由人口稠密之處、開至人口較少之處、而二路每年贏利、則京奉多於京漢三四百萬、是卽鐵路兩端經濟情形不同之路獲益較大之明證、此建築滿蒙回藏鐵路之利益也、

由內部省分通邊省之鐵路、未建築而在計畫中者、有京綏延長至庫倫之線、川漢延長至拉薩之線、隴海延長之伊新線、滿州之愛琿線等、是篇擇其重要而急須興築者、舉而出之、

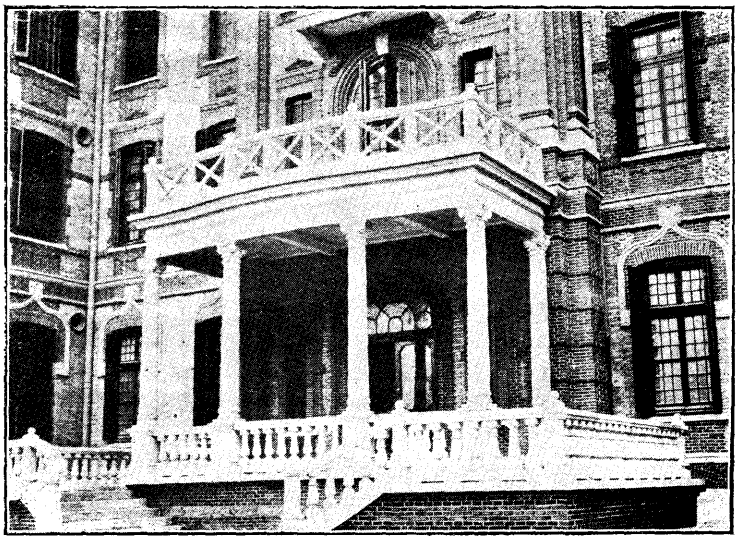
其第一線爲由奉天之錦州達中東鐵路之齊齊哈爾、　東三省之森林礦產、夙以饒富著於世、其土地亦以豐腴稱、實天然之大富源也、而該地實業之開闢、大半屬之日俄、國人坐視利權喪失、終鮮挽救之方、推厥原由、日俄之得握東省實業、實賴彼國中東南滿二鐵路、橫貫滿洲、不啻已握三省之命脈、凡運輸一切、既有壟斷之權、我國人雖欲起而經營、其道末由、今則中東已收回、東省命脈應有一線生機矣、然尙未也、蓋鐵路之靈滯、全視其有出海之尾閭與否爲斷、中東鐵路出海之路、受制於日之南滿鐵路、通海參崴雙城子之一段、既不能運用、且與內部路線不相聯接、農產礦產之輸出、勢必仰日人鼻息、彼得遂其壟斷之謀、而東省經濟權必盡操諸其手、是故欲開東省之利源、爭東省之存亡、必使中東路與內地鐵路相聯接、錦齊線築則中東路與京奉路可呵成一氣、且錦州南之葫蘆島、久有開爲商港之議、前途未可限量也、此路將來營業發達、則可延長至黑邊之瑷琿、

第二線爲延長京綏鐵路至庫倫、再自庫倫西達新疆之迪化伊犂、　蒙古新疆畜牧繁殖、土地豐腴、苟有運輸之便、其利甚多、內地之民可移殖於邊地、以資開發此富有之地、使荒漠闢爲農田、世界上將增多數之糧食、不僅有益於中國、且利世界商業於無窮、其利一也、蒙古有極多之牲畜、有鐵路則可運至內地消費之市、此線可直接或間接以達海口及東南諸省、而張家口更可爲肉食打包之中心點、其利二也、西北邊境時多擾亂、以交通不便之故、應付時多掣肘、有鐵路則無鞭長莫及之患、且交通便則書報之轉遞易、而文化能逐漸發展、以啓迪邊地智識幼稚之民、其利三也、此路所經之地均爲平原、抵抗至少、其建築較經於有高山大河之區域者易、其利四也、

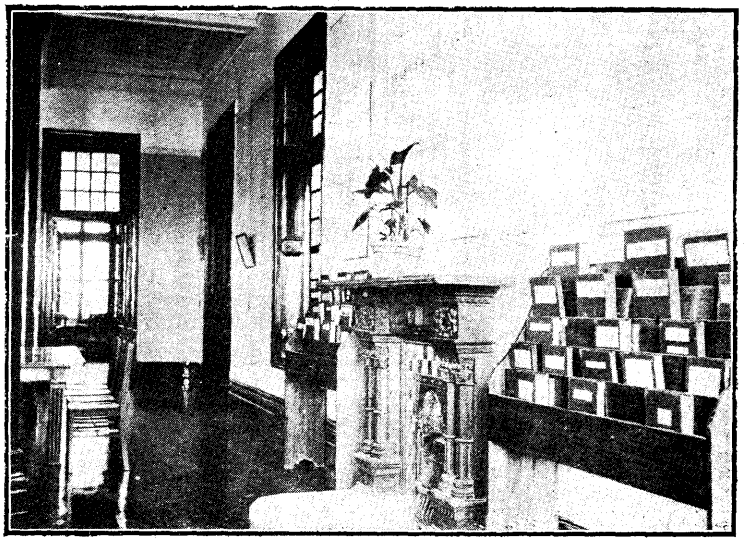
第三線爲延長川漢鐵路經打箭爐至拉薩、　西藏亦爲饒畜牧可耕種之地、且多金鑛、而交通之阻塞則尤甚於蒙古新疆、近則藏番騷擾川邊、中英西藏交涉未了、鐵路建築後、不但可開發富源、且易於聯絡西藏、使變爲我國一部分固有之疆域、其價值不蓁大乎、然川漢鐵路有四國合同而未建築、故同時必期其從速開始興造也、

關於資本之募集、則有內國公債及外債二種、以利害論、則內國公債遠勝於外債、外債減少一分、卽害處減少一分、故資本須儘先募集內國公債、內國公債之募集、須設法以誘掖人民投資、蓋人民對於鐵路信用甚少、故必有償還本利之擔保、幷令債主得舉代表監督財政之支配、以堅其信用、苟辦之有成效、方可得巨額之資、惟內國公債難期足額、而借外資乃爲勢所不能免、但無論向何國舉債、條約中務須防制其政治侵略之野心、而純粹納於商業性質、庶免主權喪失之危、而路權仍操諸我國也、

滿蒙回藏鐵路之重要與利益旣如此、則宜從速建築也明矣、且近今將實行裁兵、遣散之兵無從安插、而北部諸省又有多數之災民、流離失業、苟建築鐵路則災民與被裁之兵可作路工、路成後可移住邊地以墾殖、誠一舉兩得之事、尚望政府與國民共急起圖之、



本校圖書館（一）



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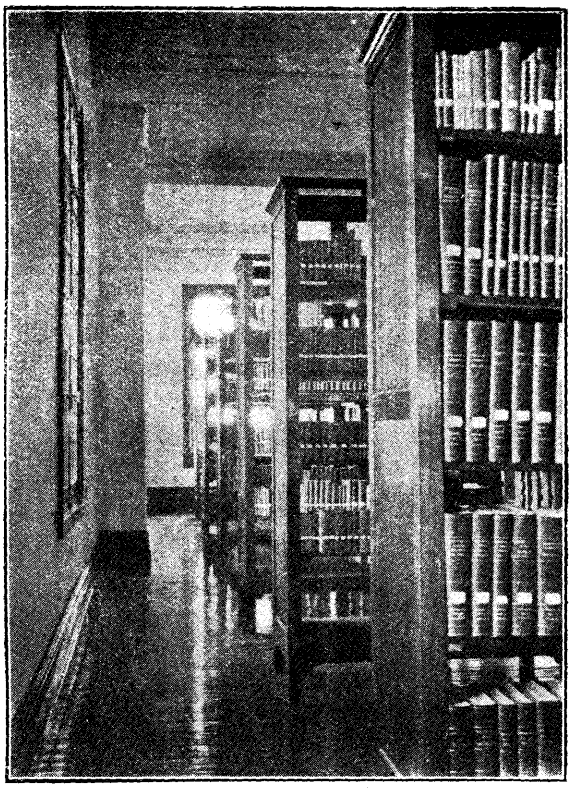

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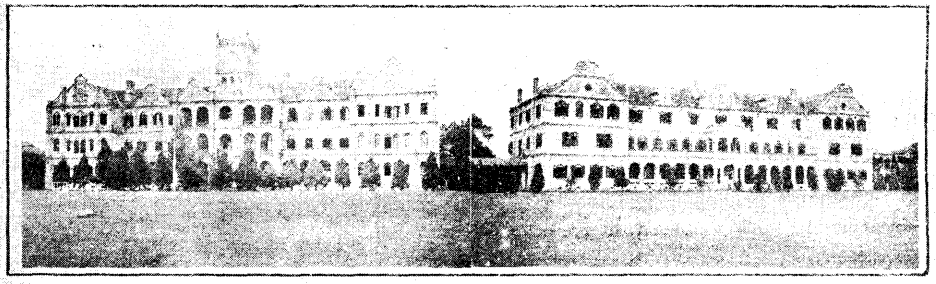
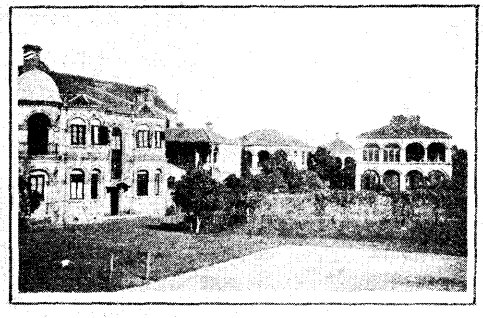
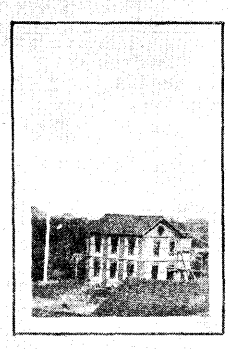
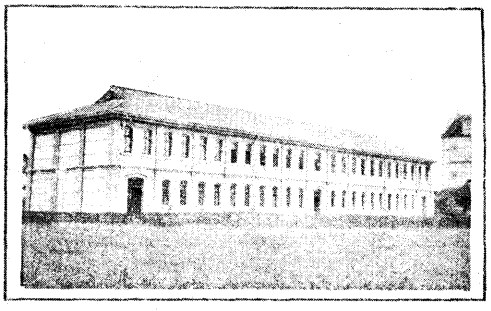
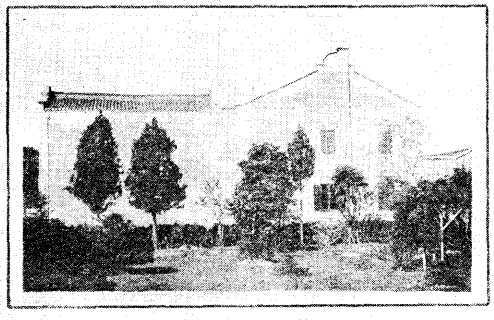


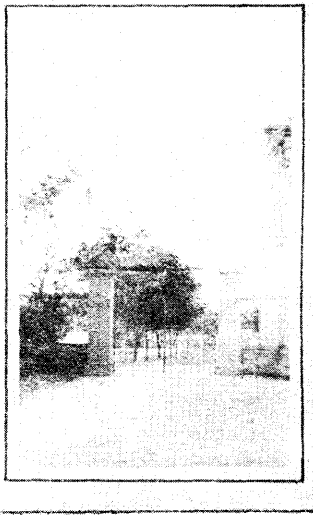


南洋 NANYANG VIEWS









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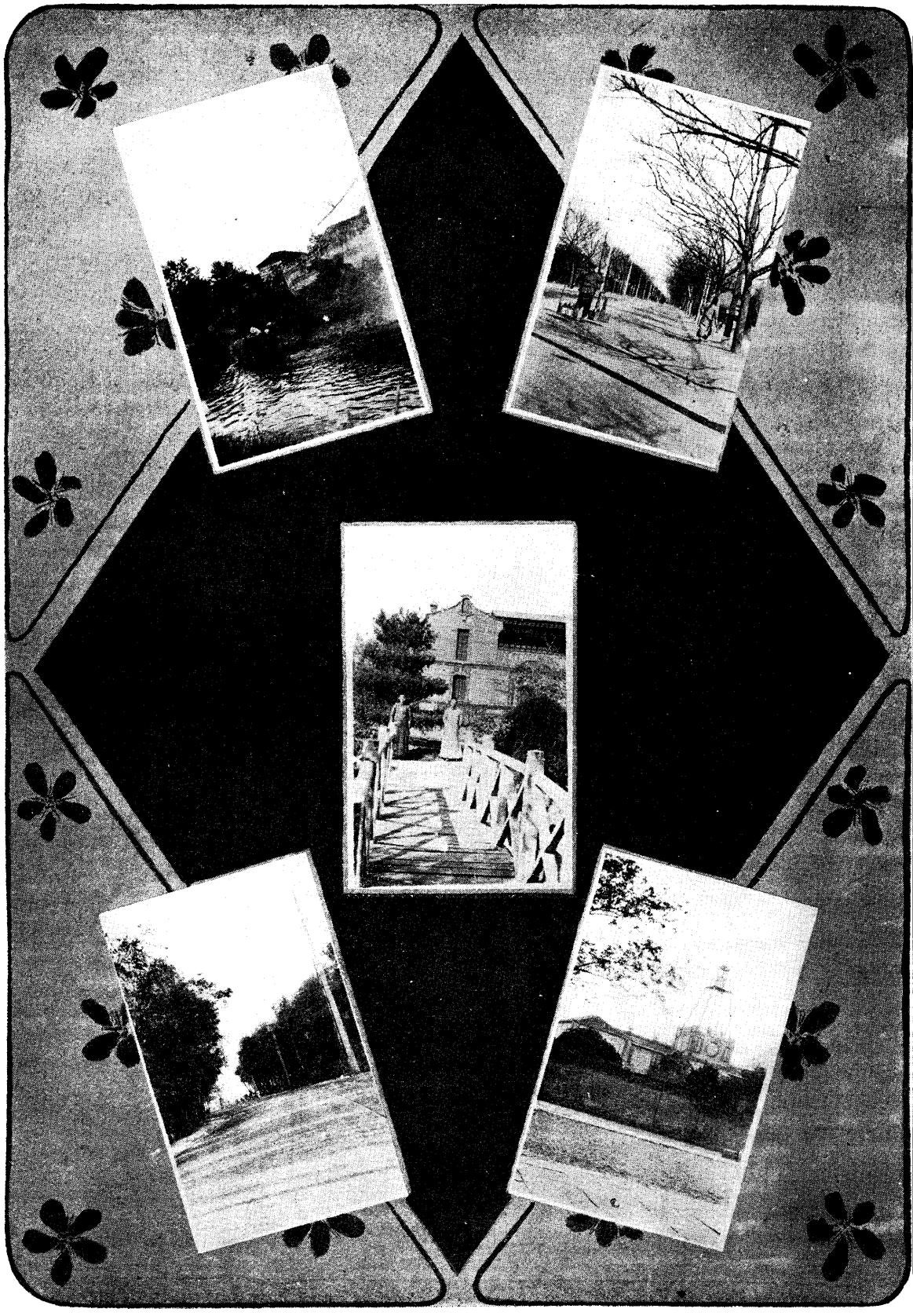

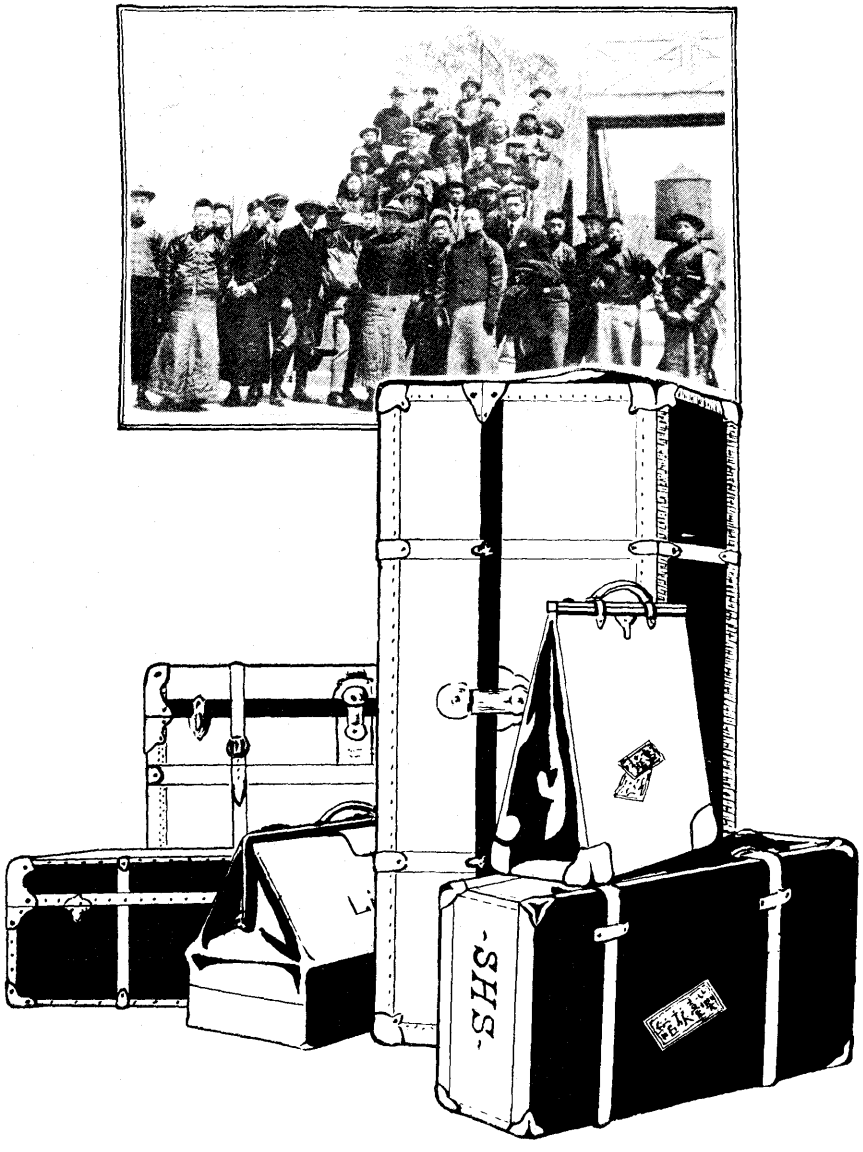
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庚申年本級赴滬寧津浦兩路考察記

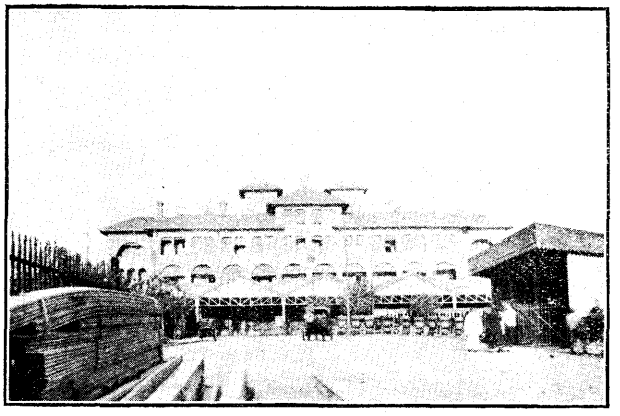
本校鐵路管理科之設、原爲應鐵路上行政之需用、於中國鐵路情形、自當詳加考察、故今春本級暨二年級兩班、有赴滬寧津浦兩路考察之舉、先是　校長唐蔚之先生、會商　科長徐守五先生電　部請給乘車免票、並轉飭各站站長、妥爲招料、奉　部照准、准給津浦免票、而滬寧路因在外人權力之下、僅得照團體乘車例、減收半費、乃由徐師廣德瞿師季長率同兩班學生四十一人、於四月十三日下午由申啓行、抵蘇州後、卽往參觀一切、並詳詢信號（Signal）之設置及用法、參觀畢、已五時矣、當晚由徐瞿二師召集全體、討論進行程序、並舉定戴君錫紳方君定墀黃君韻三爲幹事、陳君仁愔戴君麟書爲書記、復分全部爲五隊、每隊舉隊長一人、凡傳遞消息之事、由隊長擔任之、次日早車啟行、十二時抵鎭江、參觀該處山洞畢、卽乘是日六時二十分車行、於下午八時到寧、十五日因天忽陰雨、不能出外參觀、晚蒙瞿聯慶君（瞿師胞兄現任烏衣材料處處長）設宴全體、席間由瞿先生演說津浦南段情形、略謂該段設總工程師分工程師段工程師、並分賬務處、專管客貨票債務及簿記、機務處、專管修理事務、港務處專司輪渡、車務處、專司客貨車輛之佈置、及規定時刻、及醫務處云、繼由中華捷運公司經理王勝蕙君演說中國轉運事業之情形、略謂現在轉運公司、共二十七家、其中如中華捷運公司及同益等五六大公司、共同連合、經營滬寧滬杭津浦等路聯運事業、運費俱有規定章程、其餘小公司、則專營一路或兩路事業云、並謂滬寧滬杭對於運輸事業、全由路局擔負完全責任、津浦則完全將責任卸於轉運公司、且無一定規則、往往浦口運往天津之貨車、半途卸下、改掛他站運往之貨車、故浦口離天津僅二日程、甚有遲至十日外方始運到、營轉運業者、深感痛苦云、十六日早赴滬寧下關、及江口分站參觀、下午往浦口貨站及材料處參觀、當晚舊同學張君松堂徐君乃光公宴全體、十七日赴浦鎭參觀機務工廠、十八日早由浦口北上、由路局特備客車一輛、附掛普通快車行、下午二時抵蚌埠、往觀淮河鐵橋及貨站、卽掛當晚七時半貨車行、次早抵泰安、參觀車站後、於是日下午四時復行、七時抵濟南、二十一日往觀車站、翌日參觀機務工廠、當晚乘九時貨車行、次晨抵津、時四月二十三日也、抵津後、寄寓舊同學穆穆齋君設立之浙江旅津公學、下午參觀天津總站、此行也、計行十二日、始抵天津、長途跋涉、頗形勞頓、二十五日乘早車作京都之旅行、到京後、承葉譽虎先生在中央公園開茶話會、款待全體、並致勉勵之詞、至五時許賓主始盡歡而散、二十九日、全體乘早車返津、次晨復乘早車南下、於五月二日抵校、此此次考察滬寧津浦兩路之大略情形

也、其各站參觀之詳情、再詳列於下、

(甲)滬寧路

一　蘇州車站

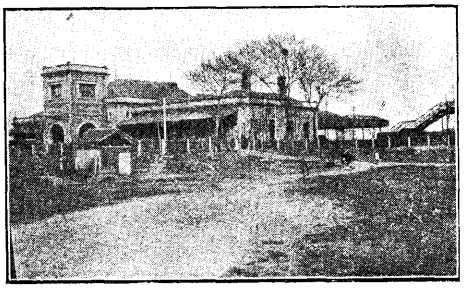
蘇州爲滬寧路重要車站、每日往來乘客、異常擁擠、平均約在一萬人左右、貨則較稀少、車站布置整齊、設掛橋及地道各一、乘客上下、各由其徑、月臺前設鐵柵、俟來客下車後、始開柵任乘客上車、無傾軋之虞、法至善也、旋由站長率往參觀信號(Signal)之設置及用法、據云、信號本分遠方信號(Distant Signal)及站內信號(Inner Home Signal)兩種、站內信號、由站長擔負完全責任、遠方信號則否、近則已將遠方信號改爲站外信號(Outer Home Signal)亦歸站長擔負完全責任云、站中分幹路及支路兩種、站內信號、分尖圓兩種記號、尖者指幹路、圓者指支路、站外信號、以一能上下移動之牌板爲號、牌板橫設、一端伸出、若平形式、卽言前途危險、若垂下至四十五度、則表明平安無事也、橫木共三具、中者指幹路、旁者一指支路、一指信號之有無錯誤、夜間則於杆上設燈火、牌平形則見紅燈、若牌下垂則見綠燈云、



上海滬寧車站

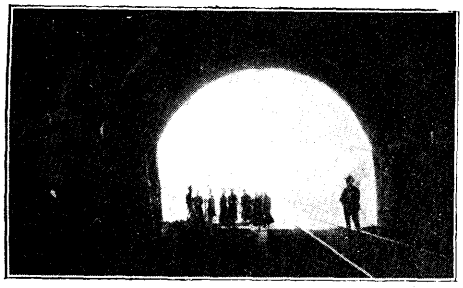
二　鎮江車站

該站客貨俱甚充斥、全路之重要車站也、站前開山爲洞以行車、工程浩大、爲全路所未有、洞建於一千九百零五年、成於一千九百零八年、中置枕木五百十六枝、步行須五分鐘、車行僅四十二秒而已、洞外設小信號、距離數十步、復有一信號、蓋因由站中外望、爲洞口所限、信號不能過巨、而洞外軌道成彎形、小信號不能見於彎外、故復設一信號也、信號之用法、稍異尋常、站內只能搬動洞外之小信號、而數十步外之信號、則須由人力隨小信號



蘇州車站

鎮江隧道（一）

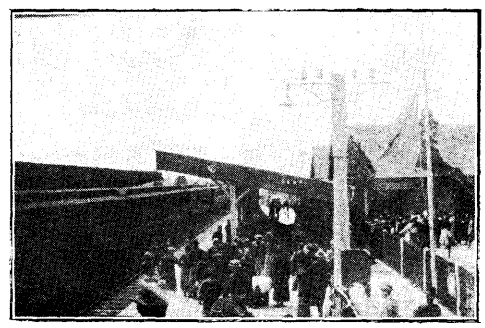


鎮江隧道（二）

而搬動之也、

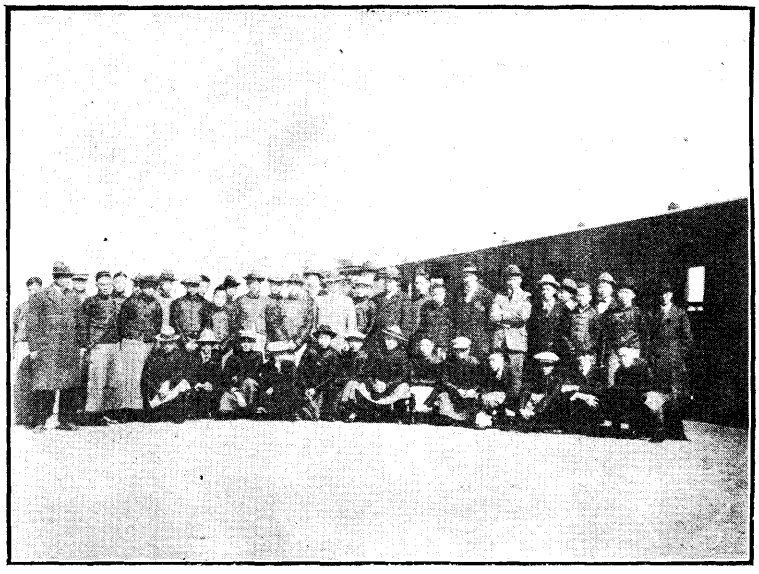
三　南京下關車站及江口車站

下關車站、爲滬寧全路之終點、與津浦相連接、故規模宏大、先由站長率往參觀停車頭場、該處地位寬大、可容車十三輛、專備拋棄車頭之煤屑及洗刷車身之用、繼參觀貨棧、棧僅一所、而容積甚大、中設磚房一所、專儲重要貨物、頗形嚴密、爲他處所不多覯、棧中貨物、堆積特多、大半係五穀芝蔴之類、堆積不甚整齊、聞已爲他處冠矣、繼由江口站長率往參觀江邊船塢、該處爲滬寧津浦運貨渡江之處、碼頭四周、俱係貨棧及煤棧、貨物雲集、滿坑滿谷、塢內檣桅林立、岸上人煙稠密、頗蒸蒸日上之勢、聞船塢全歸津浦之港務處節制、夜間有巡船四處巡察、以杜盜竊之發生、凡每運貨物一船、則由船戶繳運價百分之三十、以資補助云、繼復詢及轉運近情、據云、全路轉運事業、全操諸轉運公司、若直接委託路局轉運者、百無一焉、路局僅擔任上貨下貨之責任、如遇貨物遺失、則由夫頭及收籌人負責、站中貨物多而車輛少、故運貨之車、係由各轉運公司攤分云、滬寧車頭、共分二種、B種者拖車二十四輛、C種拖車二十輛、貨車分六種、OP者載重三十五噸、Y者載重十五噸至十八噸、CG者載重二十五噸、EM者載重二十一噸、Y者載重二十五噸、廠車則載重三十五噸云、旋回至下關車站參觀路



鎮江車站

鎮江車站旁



浦口車站全體攝影

簽之用法、該路路簽、本用鐵條四根、銅條一根、置一櫥內、用時取出、惟往往有遺忘錯誤之弊、現則改用電路簽、每站設電路簽機一件、藏路簽二十枚至四十枚、取時須得他站之允許、不然、終不能取出、故不至有絲毫錯誤、法盡善盡美矣、

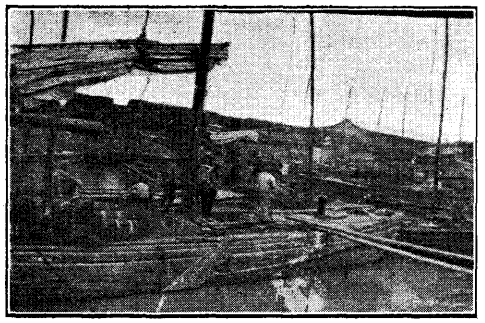
(乙)津浦路

一　浦口車站

浦口車站建築甚宏大、地位尤寬敞、站中不設信號、信號俱設置於浦鎮車站、蓋浦鎮距浦口甚近、車到浦鎮、猶如已入浦口車站也、江口有港務處、專司渡江客票及布置船隻事宜、沿江向下、貨棧林立、可十餘所、中興實汪煤礦分棧及美孚製造洋鐵箱廠俱在焉、棧中貨物充斥、至棧前之月台、亦堆置無隙地、全國貨物最盛之要路也、棧中布置似稍遜寧、然站中其他各處、俱布置有序、清潔無塵、頗足多也、繼往觀材料處、津浦全路、計有材料處三所、總處在濟南、天津浦口、其分處也、浦口材料處、專供南段之用、大約每月僅修理橋梁枕木之料、已達十餘萬左右矣、該處辦公室、簡而小、左爲儲貨房、建築稱是、木料儲存最多、

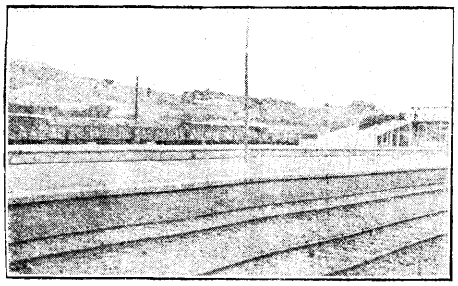
二　浦鎮機務工廠

該廠容積甚大、凡製造零星鐵件、修理車頭車身及軌道、及製造模型等、俱由該廠自造、工人可四



津浦路南京運貨碼頭

浦口車站



徐州車站

百餘人、工資係按日計算、約自一元二角至三角之譜、該路車頭係購自外國、英式德式美式、雜列其間、客車貨車、則上部車身由廠自造、下部車輪、則先由製圖部繪成圖樣、往外國定製者、歐戰前、客車一輛、約洋萬二千元、今則已不敷遠甚矣、該路車頭計四十二輛、其中四輛、係借自隴海、每日租金三十元云、繼復往參觀材料儲藏室、凡車頭客貨車及種種需用材料、靡不具備、各物均繫以硬片、註明大小及價值等、異常清楚、室分A B C D E F 六部、俱井井有序云、

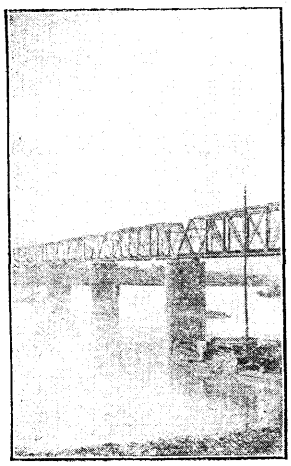
三　蚌埠車站

蚌埠爲新闢之要埠、人煙稠密、商務繁盛、每日運出貨物、約六百噸、貨物以豆米麥油牛羊皮爲大宗、淮河鐵橋在站之附近、工程頗浩大、淮河沿岸、貨棧在焉、貨物堆積如山、甚形發達、附近一帶、煤礦分公司甚多、

四　徐州車站

徐州貨棧前

徐州車站爲津浦隴海銜接之處、全路中之要站也、隴海路亦附設車站於此、以便客商、貨物之由他處運來者、以米豆及木料爲大宗、由隴海運來者、以花生及豆爲大宗、從站中運出者、以花生及豆爲大宗、每日來去貨物、約三四千噸、乘客約一千人兩路車輛不敷時往往互相借用、若聯運貨物、則竟省去卸貨改裝之手續、直



淮河鐵橋

泰安車站

接將原車運去云、其租車費、第一日每噸收費一角、第二日每噸二角、依次遞加、站中掛橋無階級、僅用斜坡、亦工程中之特色也、

五　泰安車站

泰安車站爲此次北上最先所遇之德國式車站、建築堅固、形式美觀、令人眉目爲之一醒、於此得觀德國工業進步之速矣、

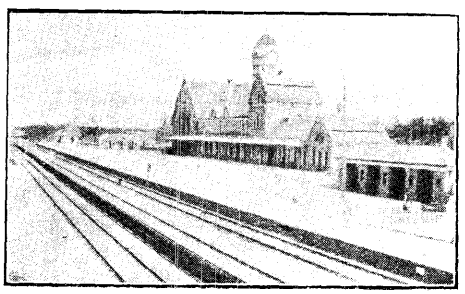
六　濟南車站

全國鐵路車站之建設、首推德國式、而德國式工程之最巨者、厥惟濟南、故其光線空氣及各種布置、俱遠勝他處、站外之掛橋、係用三和土建築、迥異他處之僅用木料者、貨物及貨棧、與浦口不相上下、堆貨棧亦甚擁擠、該站買票處、除平常客貨票房外、較他站多減成票及運靈柩牲口器具車輛等票房、

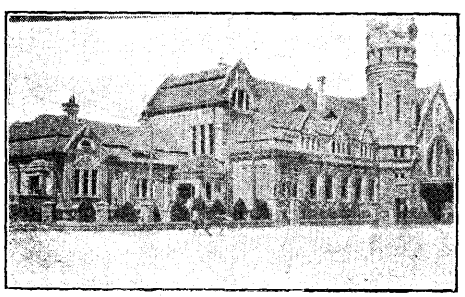
濟南機務工廠

七　濟南機務工廠

濟南廠大略與浦鎮相同、惟規模較大、工人較多、廠中所用器具、均係新式、較浦鎮爲佳、其最特別者、莫若練枕木之長圓形鍋三具、鍋高七八尺、長可六七丈、鍋中設輕便鐵道、枕木可用車推入、較用人工費半功倍也、惟儲藏室內陳列之物件、上不繫紙片、不及浦口之清楚易資參考云、

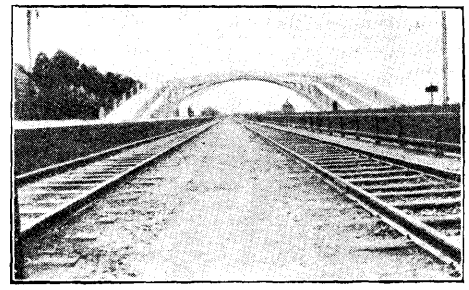


濟南車站（一）



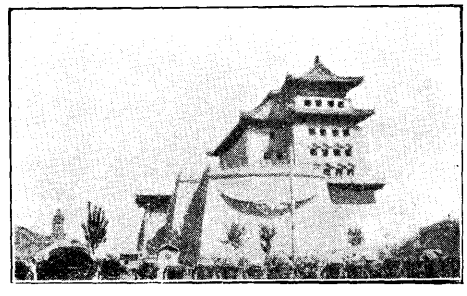
濟南車站（二）

八　天津車站



濟南天橋

天津街道



北京正陽門

到該站後、卽由徐瞿二師及王元漢方定堉兩君、先謁當事者、述明來意、請其布置一切、以便參觀、得其允許、乃於下午全體到站、不意彼時竟未布置、僅臨時由站長率往總站參觀一周而已、其管理之情形、貨棧之布置、及東西二站之情形、均未寓目、至今猶以爲憾也、

京滬遊記

由滬至都、緣滬寧津浦兩路而上、歷蘇皖魯燕四省、其間名山勝景、風土人情、足資參考而遊觀者、無處無之、特吾人以境遇所縛、願未能遂、心甚憾焉、會今春有考察滬寧津浦兩路之舉、歷程數千里、爲時數十日、每至一處、考察鐵路情形之餘、卽縱覽其勝、察社會之趨尙、風土人情之不同、而後知天地之廣、登泰嶽之高、視京都之宮闕、而後知天下之瑰偉富麗也、凡此之類、在在足以開拓胸襟、發揚志氣、以爲獲益之巨、非淺鮮也、愔述兩路考察記旣竣、因復就耳目所及、拉雜書之、作京滬遊記、

蘇州人煙稠密、市廛繁盛、素稱富庶、車站在城外、通馬路、頗爲便利、吾儕到蘇在下午、而參觀車站畢、已屆五時、旣不能策驢出游、又不耐枯坐斗室、乃偕三五朋儔、散步四處、閶門外馬路寬敞、空曠少人居、城內則街道窄小、行人旣多、乘轎者騎驢者、又復此來彼往、絡繹不絕、故步行奇苦、入夜則除繁盛之處外、路燈熒熒、幾如鬼火、不可留戀、遂相率返、次早起較早、往遊留園、園址甚大、爲盛氏產、疊石成山、掘地成池、建築宏大、布置整齊、並畜孔雀猿猴等、以娛游人、洵可樂也、惜限於時刻、未能詳細賞玩、僅周遊一轉、小坐片刻而已、

鎭江車站山洞、爲全路之巨築、洞上爲寶蓋山、山路崎嶇、而風景宜人、金焦北固、鼎足而三、長江如帶、帆檣林立、由申起程以來、此蓋第一妙景也、參觀車站畢、卽謀入城午餐、而站離市廛絕遠、遂乘轎往、轎取價甚廉、但南中轎價素昂、同人等旣未前知、至有不敢冒昧問津者、同行計轎四十餘乘、連緜亘續、長達里餘、加以路狹人稠、道旁過者、至驚奇詫愕、不可名狀、同人等相顧樂之、飯後往遊金山寺、寺就山勢而築、依次漸高、殿旁有塔七層、尙完好、惜周圍甚小、塔旁有法海洞、幽暗深邃、俗傳可通四川、蓋測度之詞也、塔左拾級而登、達山巔、巔築一亭、有淸乾隆御題江天一覽四字、地勢甚佳、遠望長江、舳艫輻輳、暮煙四起、至足令人心曠神怡也、

南京爲帝王故都、又爲滬寧津浦銜接之處、市面頗爲發達、同人等在寧、因分往參觀下關車站、江口分站、浦口車站及浦鎭機務工廠等、故寄寓可三日、得稍窺其名勝、至幸也、城中地勢廣闊、自下關入城、可乘火車、其名勝如明故宮、明陵、雨花台、夫子廟、淸涼山、莫愁湖等、大都距離甚遠、因偕數友、駕車往遊、先至明故宮、卽古物陳列所、內藏方孝孺血蹟碑、及各種古錢名人遺像等、頗足一廣眼界、次至明陵、地址空曠、惜已頹敗、最後爲陵墓、景緻尙幽雅、次至雨花台、台在山頂、僅築石爲圓形、一無所有、甚爲簡陋、山腰有江南第二泉、水尙淸冽、該處以產石子名、故山之四周、羅掘咸成深坑、沿途設攤買石子者至多、類皆粗鄙不堪、間有一二晶瑩透徹者、索價至巨、說者

謂亦係僞造、非眞鼎也、次至夫子廟、廟爲寧地繁盛之處、諸凡茶館酒樓遊戲之所俱在焉、廟前爲秦淮河、河道汚穢異常、兩岸多娼寮、河內船隻縱橫、管弦聲、骨牌聲、喧嘩嘈雜、至不可耐、聞警廳曾頒禁賭令、並設巡船四處巡察、但因省中達官、趨之若鶩、挾其勢力、故違禁令、無可奈何、已漸成具文矣、時已暮色蒼茫、乃驅車返、淸涼山莫愁湖諸名勝、祇得俟諸異日云、

南京下關爲全城繁盛之處、兼以供職津浦路員、咸寄寓於此、故娼寮除秦淮河外、咸散布該處、下關旅館不下數十家、至無處不有若輩蹤跡、亦可駭矣、旅館既借以招徠客商、而警廳又不加禁阻、有礙風化、莫此爲甚、近路局人員、有白十字會之組織、專以摒絕嫖賭爲的、維持路局人員之身分、改良社會惡習之先導、至足欽佩也、

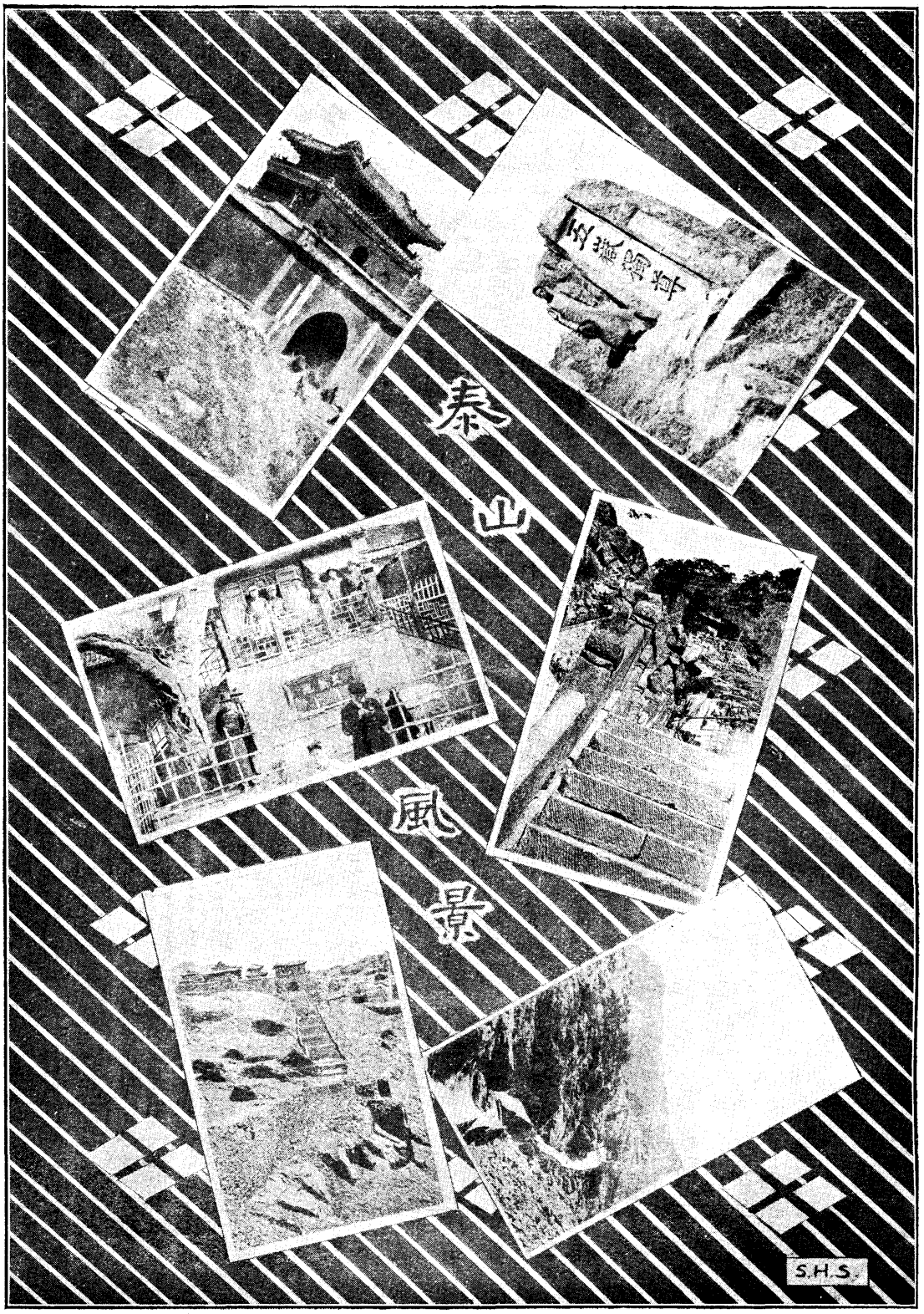
點將台爲韓世忠破金兀朮於黃天蕩故址、在浦鎭機務工廠附近、台築於浦子山頂、地勢絕佳、惜革命時爲軍人盤據、蹂躪殆盡、中有石碑、字跡亦殘毀不可復識、

瞿師季長胞兄聯慶先生、本津浦路路員、自浦信路勘定後、擢任爲烏衣材料處處長、先生學問經驗、俱臻絕詣、而和藹尤爲可親、此次在寧、諸凡布置接洽等事、俱賴先生躬任其難、吏出其所得、教誨後輩、循循善誘、古道熱腸、深可感佩、而浦口港務處主任夏應庚先生、浦鎭材料處處長張松堂先生、及徐乃光先生、均不辭勞瘁、竭意招待、同人等尤爲感激、當銘諸心次、以爲畢生紀念也、

蚌埠爲津浦路新成立之要埠、人煙稠密、商務興盛、督軍署及重要機關均設於此、銀行旅館亦甚多、各種建築物之宏大、尤出人意表、鐵路之足以輸文化興市面、此實證也、惜軍人勢力太大、路政方面每多掣肘、甚至越俎代謀、站中諸事、須受其指揮、行旅稍感不便耳、

徐州爲津浦隴海銜接之處、商務極盛、惟北地多風、至此已覺塵沙蔽日、浮土如棉、諸多不適、到後僅躭擱數小時、未能遊其名勝、加以連日風塵僕僕、亟謀稍事休息、旋覓一茶肆、略資駐足、並購番薯食之、佐以熱茶、覺甘如醴飴、數日來未有之樂也、

泰岱爲五嶽之首、在泰安城北、高矗雲天、嵯峨百里、實津浦路中第一聖景也、同人等抵泰安、在上午五時、盥洗畢、卽促站中代雇山轎、於六時動身、而馮君寶泰等八人、竟毅然作徒步之遊、亦足豪矣、由站出發、沿途多種小麥、圓形石子甚多、堆積四處、想係山水冲激所成者、行可六七里、抵岱宗坊、坊建築頗大、創於明隆慶間、重建於淸雍正時、蓋登岱之初步也、由岱宗坊前行、至玉皇閣、建築不甚宏敞、而樹木槎枒、陰森蔽日、其旁有仙人洞、洞內有孫眞人肉身、聞已經五百年、土人呼爲扈老道、再上爲關帝廟、山西會館在焉、內有漢時古柏、大可十抱、復上經一天門、孔子登臨處、紅門宮、萬仙樓、而至斗母宮、宮內有池曰天然池、旁有古槐一株、土人謂係唐時物、復上行

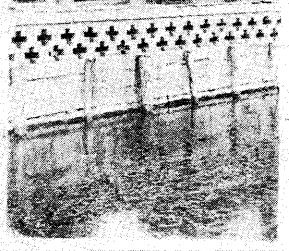

泰山風景
S.H.S.

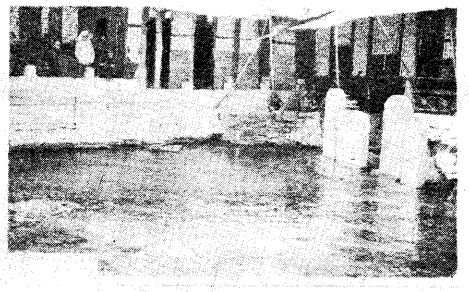
經馬下驛、柏洞、禹王廟、而至迴馬嶺、沿途古柏古槐、排列無數、有所謂趕山柏四槐樹過街槐者、迴馬嶺山勢稍陡、清乾隆登山、在此迴轡、故以名、再上爲中天門、暴風驟作、猛烈異常、俯視足下、塵霧迷漫、不禁有慄然危懼之概、由中天門再上、風勢頓息、而山迴路轉、地忽平坦、旁有山澗、攀緣而下、仰觀高處、森森古木、平張如傘、而兩旁水聲汩汩、川流不息、頗似南中山景、蓋泰山中最秀媚處也、再上爲對松山、松樹排列兩旁、遙遙相對、秦始皇所封之五大夫松在焉、至此已見南天門、巍然在上、山勢之陡、幾成削壁、石級兩旁、繫以鐵索、粗如腕臂、以備行人攀緣之用、卽俗所謂南天門十八盤路也、南天門上爲碧霞宮、穿宮而過、有五嶽獨尊碑、至是路轉平坦、已無石級、再上至玉皇觀、觀門外有秦始皇沒字碑、殿前有石數塊、圍以石欄、題曰泰山絕頂、時觀中正建水陸道場、鐃鈸之聲、清脆可耳、南中所不常聞也、斯遊也、登山計行五小時、下時稍易、約三小時、石級可五千七百餘級、土人謂山脚至絕頂、約四十五里、沿途古樹參天、瑰麗奇偉、瑤鬱石笋、森列無際、眞宇內之巨觀也、山下人煙不多、中天門上平坦之處、茅屋比連、丐如鯽矣、再上風俗益形閉塞、除銅幣外、大小銀元至不易通用、與塵世若相隔離、殆世外桃源也、

濟南爲魯省省會、素稱繁庶、自鐵路通行以來、發達尤速、入其境、馬路廣闊、商店林立、而民情朴實無華、以爲津滬之文明、直惡濁世界矣、無怪日人之野心勃勃、念念不忘也、所產草帽手杖絲紋玻璃等物質精良、而取價絕廉、名勝之處、如大名湖趵突泉均著名、大明湖廣數十頃、徧植蒹蒲荷柳之屬、湖中有古歷亭、景色甚優、趵突泉共泉眼三、濆溢如珠、汩汩有聲、泉上有四面亭、爲遊人休息之處、嘈雜喧嘩、殊乏雅趣、城內有西人設立之廣智院、陳列各種動植物之標本、及英國議院黃河鐵橋等巨大建築之模型、任人觀覽、啓人智慧、廣人見聞、頗足爲文明進化之臂助、全國所絕無僅有也、

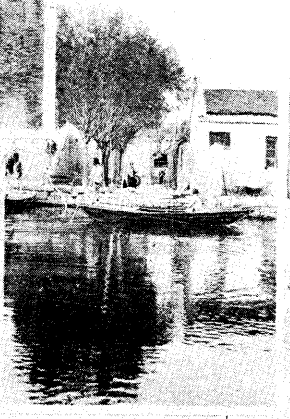
天津爲北部大都會、庚子拳匪之亂、八國聯軍入京後、開爲商埠、並毀大沽炮台、訂不許駐兵之約、故境內只有警察、城極小、已拆去、城北有兩河並行、河之間有街、曰大胡同、貫以兩橋、商市稱盛、再北則爲河北、天津總站在焉、河之東爲河東、有意奧俄三國租界、城南爲三不管、酒館娼寮及種種遊戲之場、皆集於此、三不管之東爲日租界、則各租界中之最繁盛者也、再南爲英德租界、美租界疑在英德之間、今已不復存、德奧二租界、自對德絕交後、已收回改爲特別區矣、

天津大約情形、與滬上不相上下、而其地人民尤較滬刁滑、往往新履其地者、每每受欺、甚爲可恨、食物店以羊肉館最著名、余曾往一試、物雖清潔、取價甚昂、而旅津久者、咸極稱其價廉物美、意者言語不肖津人、亦受其欺乎、

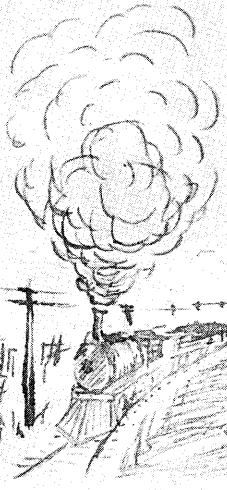




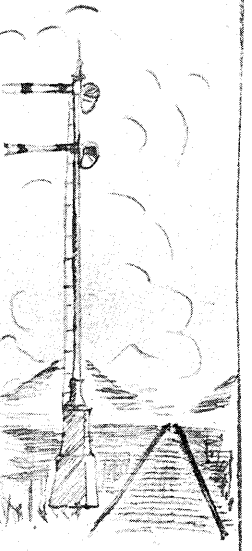
濟南的泉水之三

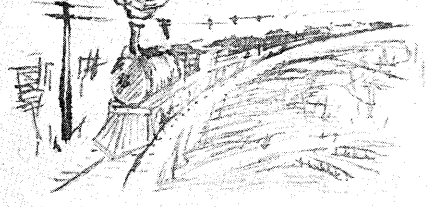


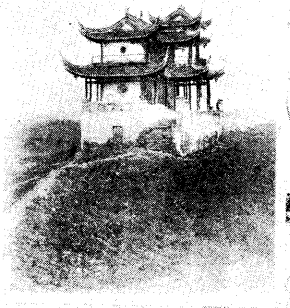
大明湖之一



浦鎮鐵橋







蘇州留園

莫愁湖濱

天津電車、開行異常遲緩、而車中又復汚穢不堪、遠遜滬上、車計分黃藍紅綠白五路、黃牌自北大關至海關、藍牌自北大關至東車站、紅牌自北大關經河東至東車站、綠牌自海光寺至東車站、(此路約每小時開行一次)白牌係圍城電車、車資則除白牌車繞城半匝取價銅元二枚外、餘均取價三枚、路之遠近、車價均同、不若滬上之以遠近計也、

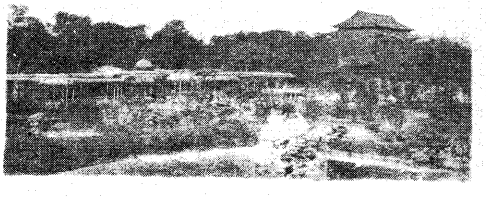
清室入關以來、卽建都北京、極意經營、垂二百餘年、故其建築之莊嚴富麗、全國中實無倫比、近數十年、西學東漸、各地城垣、相繼拆毀、而巨大建築、舍西式房屋外、南居久者、幾至不復他見、舊日規模、一掃殆盡、此次旅京、覩城垣之整齊、宮闕之嵯峨、覺耳目爲之一醒、如在他鄉、忽遇故友、心中愉快、莫可名狀、固不待周遊勝景、始識其趣也、

中央公園在西華門、地址廣闊、爲絕妙遊息之所、其中古柏參天、馬路整齊、尤爲特色、故自早至暮、無時不遊人麕集、蓋全城最便利最清潔之處也、園內花木亦甚多、並蓄金魚數缸、頗大異常、各種奇種、無不俱備、尤爲難能可貴、園之前門、有新築和平戰勝紀念牌坊、頗極堂皇富麗、園旁爲武英殿、卽古物陳列所、其中珍寶陳列甚多、皆人世所不經見者、

三貝子花園、卽農事試驗場、舊名萬牲園、凡動植物品、輒羅致其中、佐以池臺亭榭之勝、風景之佳、甲於京師、其中分動物園、則凡珍禽奇獸、若斑馬、羚羊、虎豹、獅象、孔雀、班鳩、沈香、珍珠、猿猴、駝鳥、鴛鴦、仙鶴、俱列焉、動物標本室、則分門別類、凡禽類、雉類、爬蟲類、哺乳類、皆列焉、農產品陳列所、則各種農產品標本俱列焉、蠶料試驗所、則繅絲室、紡織室、育蠶室、標本室、俱列焉、其餘各種植物、如稻麥桃李之屬、俱闢地植之、阡陌連野、青翠無比、雜花生樹、爛若雲錦、各種花木、俱陳列溫室中、羣芳競豔、香徹心脾、種類繁多、莫得記憶、其時牡丹盛開、紅藍黑白紫黃綠等色、靡不俱備、花大如盆、更非南人所能夢見、動物標本室之南、有宏大之建築、則暢觀樓也、樓擅全園之勝、其中陳設、俱係歐式、纖屑無塵、而帷簾鏡奩、莫不極盡精巧、蓋有清慈禧后之行宮也、復登樓四眺、全園景象、歷歷在目、尤稱絕妙、斯遊也、自早至暮、凡歷一日、昔日所未見、且所未聞、心境所未及料者、咸得把玩遊觀、印諸腦海、允稱幸事、

京中市面最繁盛者、首推東安市場及香廠、東安市場在東安門內丁字街、其中商店鱗比、百貨雲集、而戲館飯店茶社球房、亦莫不應有盡有、居京者多樂就之、惜地狹人稠、太形雜亂、今春三月間、已被焚成焦土矣、惜哉、香廠爲新推廣之繁盛區、東方飯店、城南遊藝園、新世界等游宴之所、俱在斯處、故號召游客之勢力甚大、每當夕陽西下、游人摩肩接踵、雜以車水馬龍、繁華氣象、殆冠全城、

中國幣制、不良已極、大小洋之進出、損失尤巨、京中獨能稍事統一、規定每大洋一元、得兌換新式小銀元十枚、而普通小銀元、作銅元



十枚、財政部官錢局、復發行大小數目之銅元票、流通市上、使人隨時取攜、得免銅元之笨重、尤爲便利、但南中向無此種鈔票、同人中致有誤取銀元票作爲銅元票以給車資者、則反不及銅元之易於檢點矣、一笑、

京都各商店夥友、極重禮貌、謙和絕倫、與滬上之滿面傲氣者、迥不相同、往往索購一物、夥友必盡出所藏、任客選擇、甚或此物不洽客意、另出他物、藉資迎合、客卽一物不購、長揚而去、夥友仍和顏悅色、從容整理、一無怨懟意、其營業精神、至足景仰、

北地多風、塵沙蔽目、甚爲可厭、京中馬路、因恐載重物之大車壓毀、故於馬路兩旁、另築土路、備其通行、大風一起、塵沙之來、半由於斯、而馬路灑水、不用車輛、僅用人工、每每水尚未灑及半街、塵沙又復陡起、京師爲全國首都、路政方面、亟宜力加改良也、

留浦見聞錄

孫鴻今夏暑假休業、赴京訪戚、道出浦口、適值皖直搆兵、交通中斷、乃小作勾留、得稍窺該地情形、竊以謂浦口地當南北之孔道、爲長江下遊之門戶、苟能戮力經營、闢爲商埠、較之滬漢、實無多讓、茲就管見所及、拉雜記之、文之工拙、所不計也、

（一）浦口之地位及交通上之關係

浦口鎭屬蘇之江浦縣、位於大江之北、其西北與安徽接壤、隔江爲金陵之下關商埠、西接湘鄂、東通於海、津浦鐵路起點於天津、與京奉路相銜接、經直隸山東安徽而入於蘇、復與隴海鐵路連接於徐州府、而止於浦口、故西北諸省貨產之南來者、莫不雲集於此、隔江爲滬寧鐵路之江口車站、站之東、爲煤炭港貨站、北上貨物、又復大多在此裝卸、卽皖南兩湖川黔之貨、藉江輪載運者、亦以此爲屯積轉運之點、誠四達之區也、

（二）浦口之現狀及設備

浦口濱江之地、檣帆林立、貨物山積、然街道市廛、規模絕小、僅敷居民飲食之需而已、自津浦通車後、關於便利客貨之種種設備、Terminal Facilities 尙稱完具、茲將其大略分述於下、

（甲）建築物　津浦鐵路分南北二段、以蘇魯間之韓莊爲分界、北段係借德債所築、南段則出自英國債款、在昔南北二段、管理上殊不統一、自民國五年對德絕交後、北段歸華人管理、始無掣肘之患、浦口車站、卽前之南段總局、車站建築形式粗笨、既無美術觀念、又不合用、聞當時建築費、則頗不貲、站共三層、下層爲車務段長辦公室、站長辦公室、電報房、行李房、賣票房、頭等客廳等、買票房居全站之中、四周爲三等客待車處、地址頗寬大、惟不甚整潔、上一層爲南段總工程師及工務員司之辦公室、西首爲津浦鐵路事務所職員辦公室、再上一層、現封閉不用、月臺計四所、每所可容客車十七八輛、特遮陽 Shed 似嫌太短、設遇陰雨、旅客殊感不便、車站之南有浮水碼頭九座、各長二百英尺、固定碼頭一座、約長三百英尺、所有浮水碼頭及固定碼頭、排列江邊、自東南而至西南、每座相距約二百英尺、凡停泊船隻處、夏間水深自五十至六十英尺、冬間至淺亦有二十五英尺、港務辦公室、卽設於此、俾就近督察也、車站東北有材料處、專儲路用材料、如枕木鋼軌之類、距浦口約二英里許爲浦鎭、該路機務工廠設焉、廠規模雖較濟南廠稍遜、而一切機件稱是、

凡平時修理車頭車身、以及零星器具等、工作頗忙、聞路局行將購地儲材、以備擴充云、沿江東行、爲賈汪、中興、普益、烈山等公司煤棧、及美孚亞細亞公司油塔、均係租借路局地產所建築、沿江東西、路軌兩旁、路局地產、可數百方畝、間亦有租與鄉人耕耘者、

(乙)管理　浦口車站、昔係南段總局、局中職員與津局差等、以求勢力之均衡也、及後南局歸併、浦口設津浦事務員一員、承辦鐵路與外界交涉事件、並傳達總局消息、又南段總工程師一員、幫工程師及練習生數員、管理南段工務諸事、總段長分段長機務段長各一員、管理各該段車務、港務主任一員、管理碼頭貨棧、以及輪渡駁運裝卸貨物等事、材料處處長一員、管理購辦各種應用材料、其外分屬於各該機關之員司、亦稱是、

(三)浦口未易振興之遠因近果

按浦口今日情形、事物雖甚殷繁、然實一承轉屯積之區、不足以稱商業之樞紐也、各貨之來此者、不過視爲一種裝卸轉運機關、待運赴最後之目的地點、始開盤貿易、故資本家多捨此就彼、而金陵自光復以來、屢經兵燹、焚掠殆盡、每遇戰端、卽爲兩軍必爭之地、寧浦一江之隔、脣齒攸關、商民恐無辜受累、惴惴自危、莫敢投資、加以國庫空虛、經濟竭蹶、官民復因循成性、缺乏自動能力、貪功委過、外強中餒、莫肯用全力經營者、聞民國五年、當局曾借得外債千萬法郎、籌備興築商埠、後忽移作別用、又成泡影、近聞復有委派專員辦理振興該處商埠之說、幸而得人、則數年後之浦口、不難與滬漢爭衡也、

(四)浦口路局計劃中之大建築

自車站至公渡碼頭、約百餘武、若遇陰雨、泥水滑流、旅客深感不便、聞路局已呈准交通部、擬建一遮陽、自車站達碼頭、如此則輪軌一室、旅客受惠實多、現正計劃開工之期、當不遠也、

津浦滬寧有長江之隔、聯運殊感非易、以長江之遼闊、計劃一橋、就國家目前經濟狀況觀之、殊難籌措、故有用汽渡 Steam Boat 裝載車頭車輛渡江之建議也、此種汽渡、每隻約重千餘噸、能直接將津浦滬寧兩路車輛互換、得免在浦口及煤炭港兩處、裝貨卸貨之種種手續、且遇缺乏車輛時、兩路得互相借用、節時省費、便利運輸、實全策也、現因江口尙無合用地點、建設是種碼頭、故尙在計劃中、

(五)發展浦口商埠之要點

(甲)工廠　美國本薛佛尼大學教授約翰生博士有言曰、運輸機關者、實業之僕役也、是以運輸機關、須受實業之支配、而工廠實爲

實業之胚胎、浦口地位、四通八達、開設工廠、最爲相宜、在交通上既操必勝之權、人工又復易於招集、地面遼濶、廠址又能隨意選擇、雖云江水多含粗泥、不合汽鍋之用、然以沙漏機、預先漏過、手續亦復非難、工廠一多、既可供公衆之需要、又可減少遊民、發展國家富源、非徒牟利已也、

(乙)金融機關　金融爲商業之命脈、稍具商業智識者、類能知之、今日世界商業之中心點、首推英京倫敦、舉凡金融市況、視倫敦商業市況之報告爲標準、無他、以其金融機關、最爲完善也、故欲商業之發達、須具有規模宏大、資本充裕之銀行不可、有殷實之銀行、然後金融得恃以流通、市面得恃以活動、而商務自蒸蒸日上矣、

(丙)廣購民地興築地方公共事業　按商法、地方政府對於地方公共事業、有強制購買民地之權、Eminent Domain 如鐵路電車自來水煤氣電氣各公司、以及公園公共會所、皆所謂公共事業也、浦口以路局原有之土地、決不敷商埠之應用、宜以相當之價值、廣購民地、建築馬路、及其他公共房屋、並許民人租地、自行建屋、以爲增加人口張本、公共事業日益發達、居戶日益增加、則浦口商埠之發展、可計日待也、

天下無雙補血健腦之聖品

福州鄭奮揚中醫玉照　上海丁福保醫士玉照　湖南崔治平軍醫玉照

請觀各處名醫稱頌韋廉士大醫生紅色補丸之功效

韋廉士大醫生紅色補丸有治疾健身使身體復原得再造之奇功爲各國醫家所公認且亦爲中國名醫逐日臨症開方之用亦有名醫親自服用爲自己家中之良藥者均不可勝計茲特摘錄數則以供台覽

上海名醫丁福保君係中西醫學報主筆

其聲名廣播於歐洲及中華各埠其來書云數年前余得悉著名大英醫士韋廉士所創製之紅色補丸爰即細心研究大爲滿意因知是丸洵爲最完全補血健腦之聖藥也余自試驗之後確證是丸並無損害之雜質實有特別之奇功能助初脫鴉片烟癮之人而得極大之益從此每日行醫常用是丸以治疾病凡由血液軟弱不潔或腦筋衰殘所致之各症一服是丸咸獲奇效焉

湖南桃源陸軍軍醫官崔治平君來書云我軍人吃此藥者不少均願代爲證明介紹云彼等皆由余囑服韋廉士大醫生紅色補丸者也且崔君自己於數年前曾患血薄氣衰服用紅色補丸轉弱爲強彼之公子身力薄弱亦服此丸成爲強健之幼孩矣

福州七十一叟鄭奮揚老先生係神州醫學會設建分會正會長也其來示云韋廉士紅色補丸能轉弱爲強不論男女老幼凡患血氣薄弱腦筋衰殘瘋滋骨痛咳嗽氣喘服之無不靈驗若有少年婦女經水不調或初斷煙癮及病後元氣未復者以之培補奏效如神也

天下馳名之韋廉士大醫生紅色補丸行世已歷三十餘年之久因其有補血健腦之奇功故療治各症如響斯應也無分男女老幼均可服用功力相同凡經售西藥者均有出售或直向上海四川路九十六號韋廉士醫生藥局函購每一瓶英洋一元五角每六瓶英洋八元郵力在內

閣下之嬰孩所値若干耶

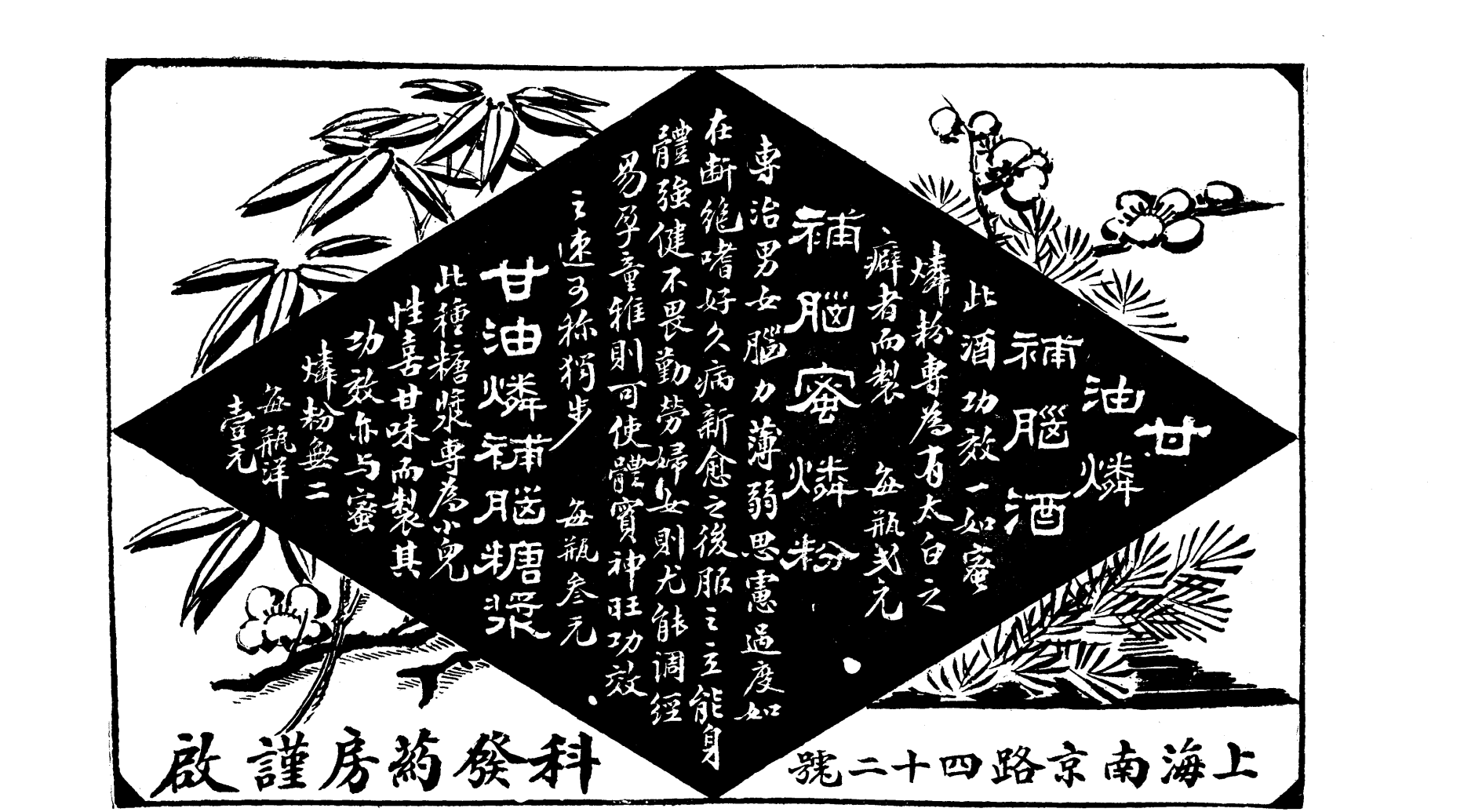
閣下如若眞正愛惜自己之嬰孩必將答之曰吾之嬰孩寶貝較之天下所有銀洋尤甚是以閣下定必樂聞有一種良藥能助嬰孩出牙若有蟲積能除蛔蟲能使小兒安睡暢適消化有序能使嬰兒肥美健壯循序成人長大此藥之名譽已播揚於中國各省矣卽嬰孩自己藥片是也請觀四川中江縣石筍場福音堂胡春發先生之證書云小兒乾元年甫一歲零初時健壯豐美可愛因拙荊乏乳喂以飯食久之漸覺發熱口渴身體

不舒胃不消化肚痛腹瀉夜不能眠惟有哭泣而已且面白如紙枯瘦難看遍覓醫藥服均無效余甚憂之閱諸報章得見韋廉士大醫生嬰孩自己藥片之奇功余卽函購二瓶與子食之方服一瓶小兒身體日見強壯大便有序現已平安喜樂非常且身廣體胖不如從前之瘦怯矣因此藥片之功力如此神速對於小兒極易服用較勝於水藥萬倍實屬奇妙靈藥也如尊處無從購買嬰孩自己藥片祈卽寄郵票大洋六角至上海四川路九十六號韋廉士醫生藥局原班郵奉一瓶可也

宜購紅色清導丸也

有現成靈效馳名之潤腸藥丸可買而勿服專購粗劣有損之瀉藥服用此誠虛擲金錢於無用之地其愚實可憫也因霸烈之瀉藥服之有損腸胃只能暫時取效且一經成爲習慣非服瀉藥不能自便其大便秘結之患更甚於前矣紅色清導丸近來暢銷市上乃是藥性和平有天然潤導之功力服後毫無肚腹絞痛不舒之虞臨睡之時服用夜間睡眠時藥力運行次日早晨卽能使大便暢適矣

直隸慶雲徐德明君來函云鄙人昔日因患胃不消化肝火上升頭痛之疾久矣自友人介紹購服清導丸二瓶之後大便通利諸恙悉平特修數語以表謝忱紅色清導藥丸非但可治大便祕結功能平肝凡肝火上升疾病頭痛面起紅瘰皮膚瘡癤舌起黃苔口氣穢濁等症均可療治且治痔瘡痛苦並免痢疾腹瀉之患凡經售西藥者均有出售或直寄郵票大洋六角至上海四川路九十六號韋廉士醫生藥局原班郵奉一瓶可也



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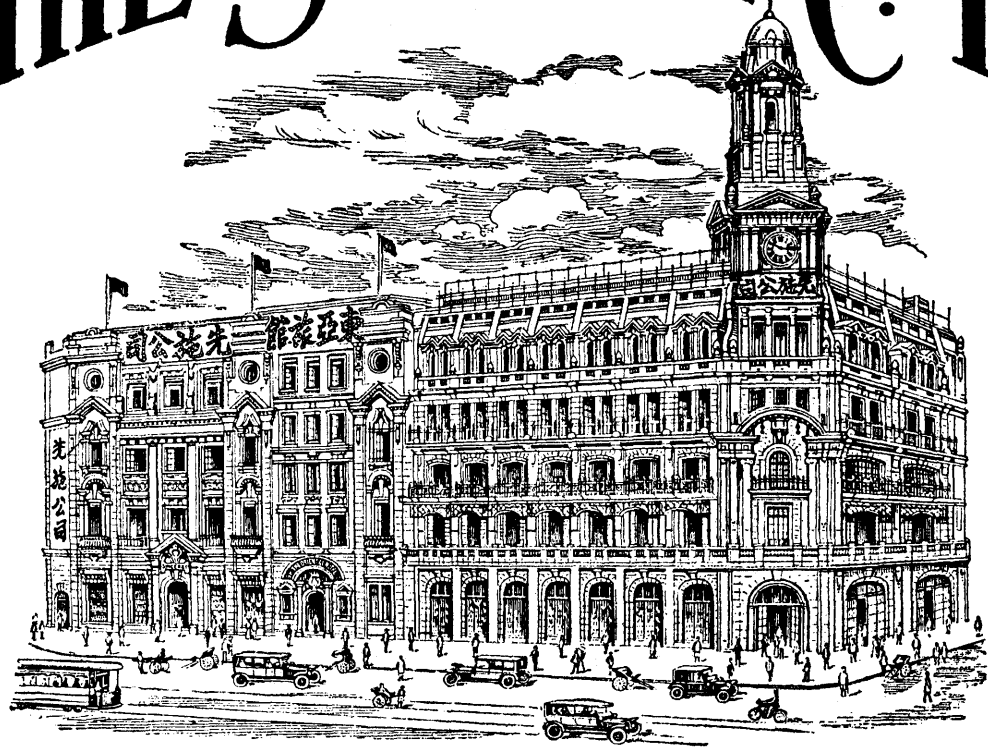

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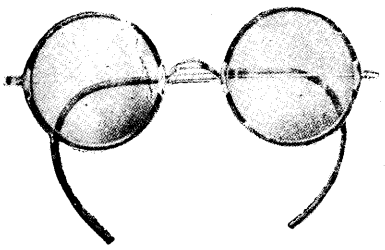

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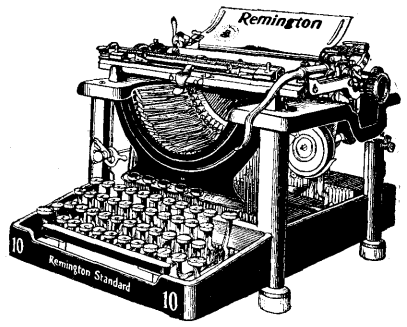

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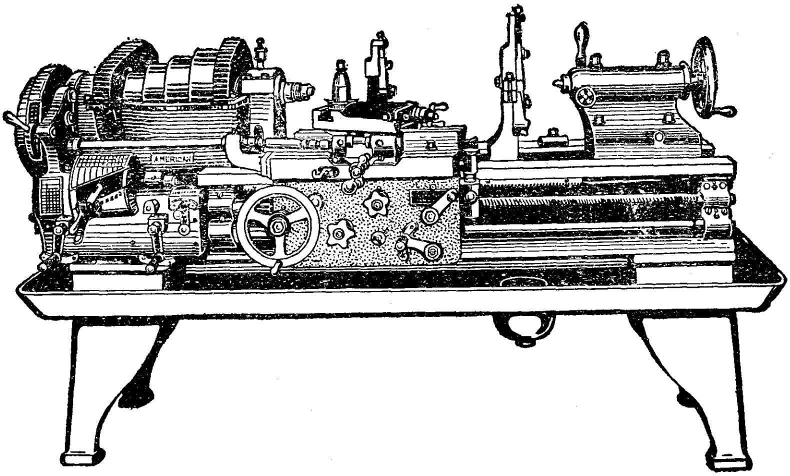

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The
Railway Administration
1920 Class Book

Government Institute of Technology
Shanghai, China

TO

K. T. IRVING ZEE, ESQ.,

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IN CONNECTION WITH THIS DEPARTMENT

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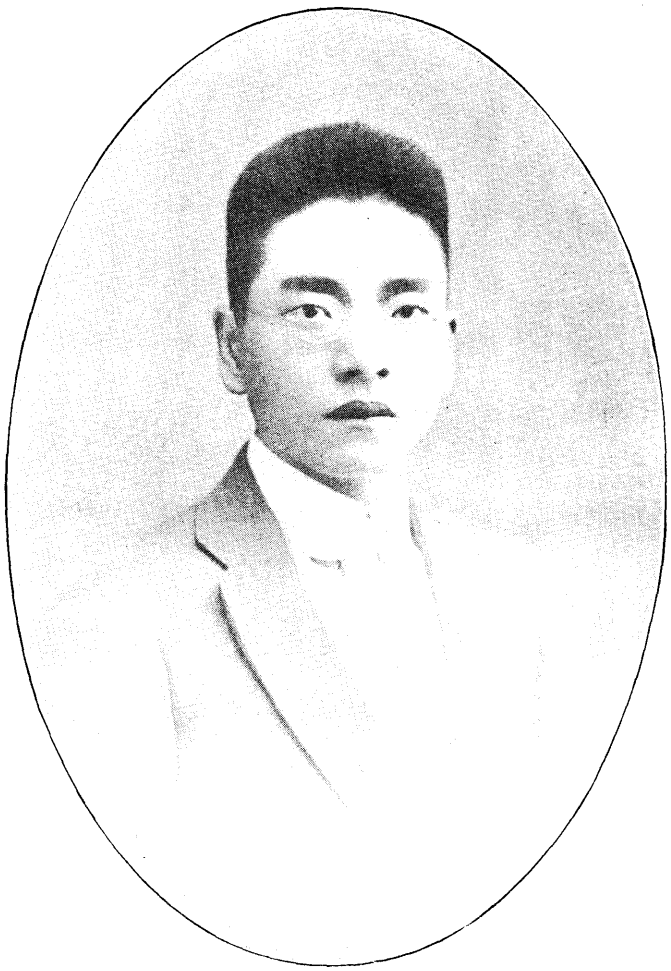
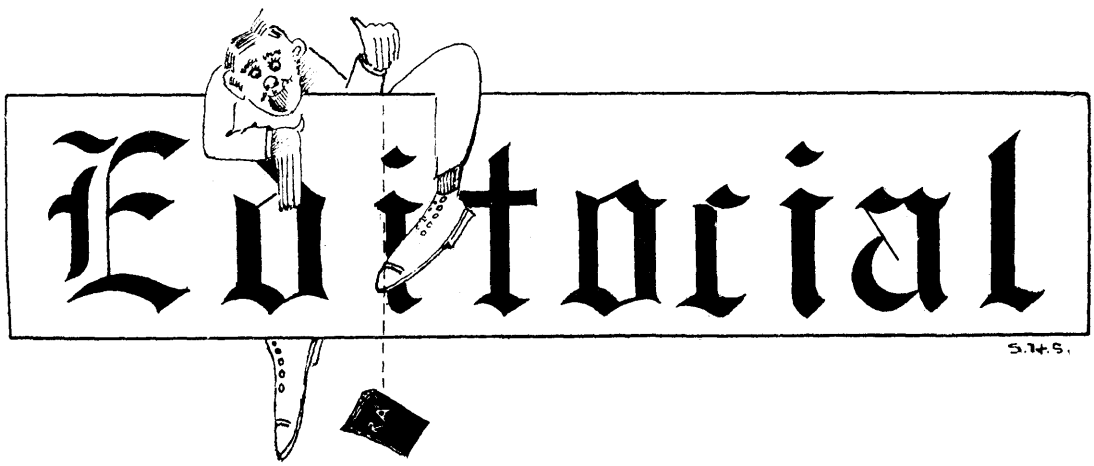
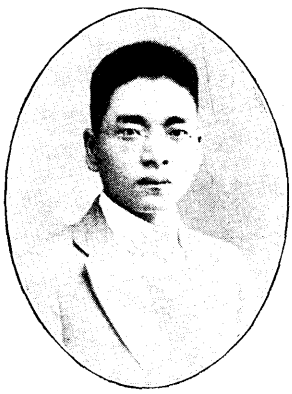
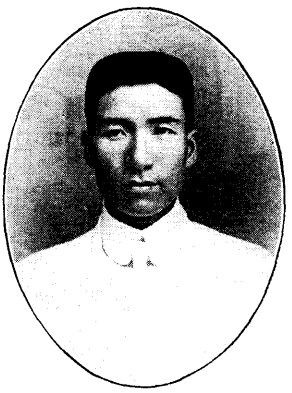




Railway Administration is comparatively a new course in Western universities, and is absolutely so in Chinese institutions. Having finished this course, we deem it quite our duty to try our best to show the public what the Railway Administration Course exactly deals with. Such being our primary purpose in publishing this book, no attempt has been made to record the workings in the other departments of this Institute, and the materials it contains are, therefore, mainly in connection with the Railway Administration Department, though they must needs be subject to the limitations of our very limited knowledge.

It is sincerely hoped that this book will gain the attention of all railway men as well as the general public, and will prove of some interest and assistance to them.





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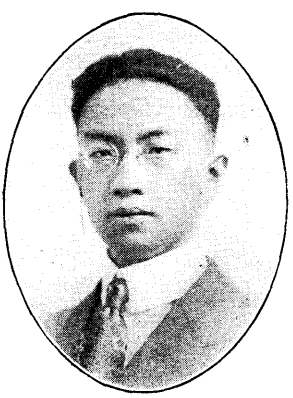

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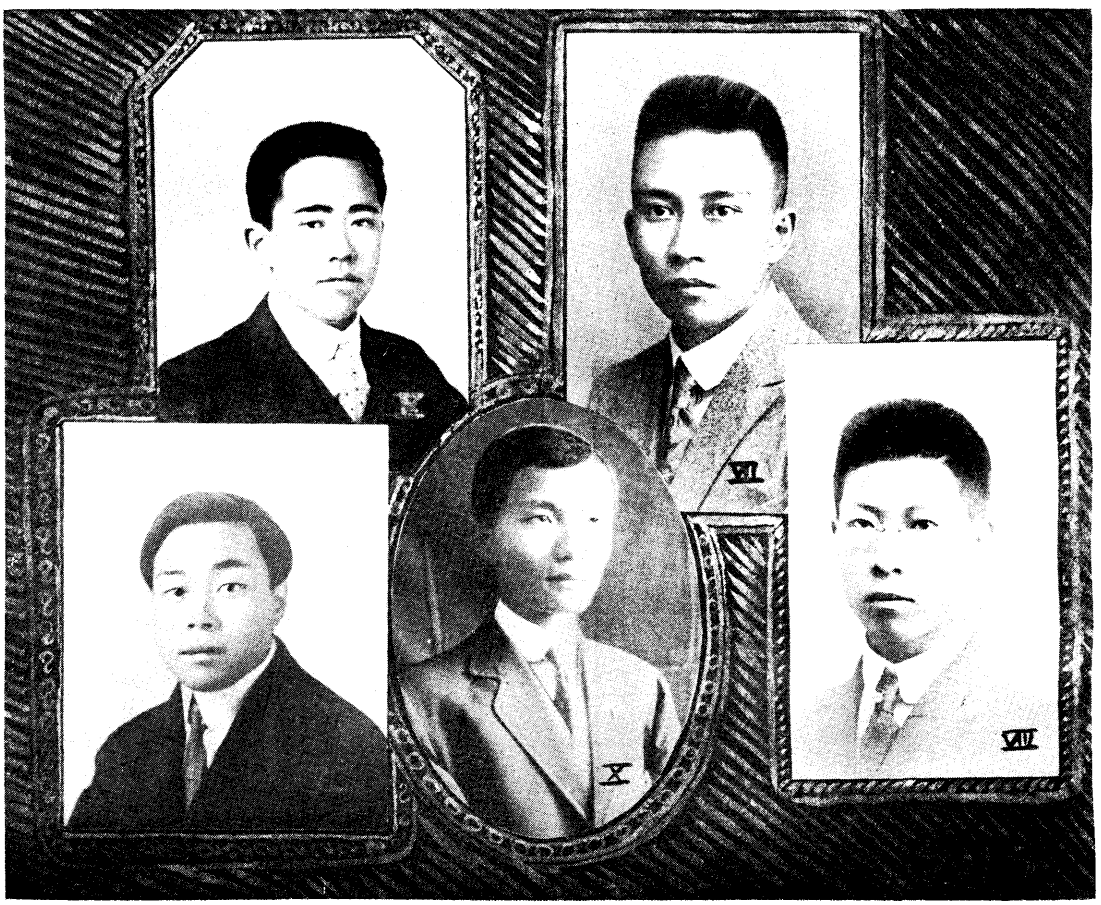

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CLASS HISTORY

S.H.S.

The Railway Administration

Class of 1920

The course in Railway Administration was organized in February, 1918. Before this course was offered, numerous students finding themselves not fitted for the work in civil or electrical engineering, left the Institute without completing their studies. Of these students who thus left the college, many met with much difficulty in finding other halls of learning which could suit them well; while a large number of others, after having made fruitless endeavors, were compelled to give up the pursuit of their studies. In view of these deplorable facts the authorities of the Institute have conceived for a long time the necessity of developing a new course of Railway Administration. Due to many unavoidable difficulties, it was not until February, 1918, that the course was formally organized.

Our class is the first class of the new course with thirty-eight members at the beginning of our class work. Half of them came from the freshman classes, others from both the sophomore and junior classes of the engineering courses. Because of the comparatively high standard of the members of the class, we got the privilege from our President Tang to finish the course in three years.

Immediately after the course was organized, Mr. Sirwu C. Hsu was appointed by the president as its dean. For the first month of the first term, our dean himself took the entire charge of the class; afterwards for the first school year Professor Irving K. T. Zee, B.S. in Economics of the Wharton School, was the leading professor of our class. He was in charge of five subjects, viz: Political Economy, Business Law, Corporation Finance, Accounting, and Funds and Their Uses. Messrs. T. C. Kuo, Marcellan Tsoon, L. K. Li were professors of English, French, and Chinese respectively. In the meantime, our Class Association was organized.

For the second term there was an addition to the teaching staff. Messrs. S. D. Lee, W. S. Chu, H. C. Yu, K. C. Chen, and W. B. Lee were professors of English, Business Mathematics, Money and Banking, Railway Engineering, and Jurisprudence respectively. In this term, two of our famous athletes, James Ho and Joseph Chang quitted our class. We had two medalists in this term, Mr. C. L. Chang won the gold medal of the Chinese Essay Competition while Mr. Young H. Wang won the gold medal as a reward of his good English essay in the English Essay Contest.

Not only our class members were active in performing the services within the class, they were quite busy in joining other activities of the college. Messrs. C. Y. Hsu Young H. Wang, S. S. Tai were prominent officials of the Varsity Athletic Association. Besides, we contributed many athletic stars to the various varsity teams,— we had six in the football eleven, two in the basket-ball team, one in tennis, and five in the track team.

Our class members decreased to thirty-four in the first term of the second school year. Three of our football stars, Messrs. Robert S. Koo, Lisbon Li, and Castle Ho went to Japan and coöperated with the Chinese Students' Football Club in defeating the British football team. In the Far Eastern Olympic Games held at Manila our famous weighter J. T. Tu, sprinter L. Chang, and high-jumper Y. S. Hwang were among the Chinese delegates. Tu won the second place in the pentathlon and the discus.

There was not much change in the teaching staff. Mr. S. C. Li had the charge of the engineering courses and the English Secretarial Work.

In the second term of the same year, Professor H. C. Chu came to take charge of Office Management and Traffic and Rates. Mr. T. Z. Kuo won the gold medal of the English E-say Competition and Mr. Q. C. Huo won the silver one. The election of the Varsity Athletic Association this year resulted still in favor to our class. Mr. Lisbon Li was elected as the Vice President. Mr. Young H. Wang as the Secretary, Mr. S. S. Tai as the Tennis Manager, and Mr. Y. S. Hwang as the Basket-ball Manager. Besides, we had many captains in the varsity teams. Mr. Robert S. Koo was the Football Captain and Mr. Johnney Cheyne was the Captain of the Basket-ball Team.

Professor H. E. Pulver was invited to teach us Railway Statistics in the first term of our class year. Through his lectures we learned the practical merit of the statistical methods. Mr. C. Z. Woo was another new professor who came to conduct the Chinese Secretarial Works.

We started our inspection trip on April 13, 1920, accompanied by Professors Irving K. T. Zee and H. C. Chu. The Railway Administration junior class joined our trip. The aim of our trip was to inspect the Shanghai-Nanking and the Tientsin-Pukow lines. We broke up our journey at Soochow, Chinkiang, along the Shanghai-Nanking line and Pukow, Pengpu, Hsuchow, Taianfu, and Tsinanfu along the Tientsin-Pukow line. We returned to college on May 3.

Owing to the importance of our class works we had paid very little attention toward the affairs of our Class Association for the first two years. We began to work more energetically from the fall term of 1920. C. Y. Hsu was elected as the President, Young H. Wang the Vice President, C. L. Chang the Secretary, Soodzon Voo the Treasurer, and S. S. Tai, T. Z. Kuo, S. H. Shar, and Lingtsin Chang as other members of the Executive Committee. The Editorial Board of this class book was also elected at the same time. Messrs. C. L. Chang and Z. Y. Chen were editors for the Chinese language, Young H. Wang for the English language, and Messrs. Leontes Tsao, Yale T. Young, L. Chang, T. Z. Kuo, S. H. Shar, Y. Yee, Lisbon Li, and Robert S. Koo were art editors and business managers.

Our class members' life was reduced to thirty in the last term. There was practically no alteration in the teaching staff. The class hours this term were fewer than the previous terms, and we took this chance to publish this class book.

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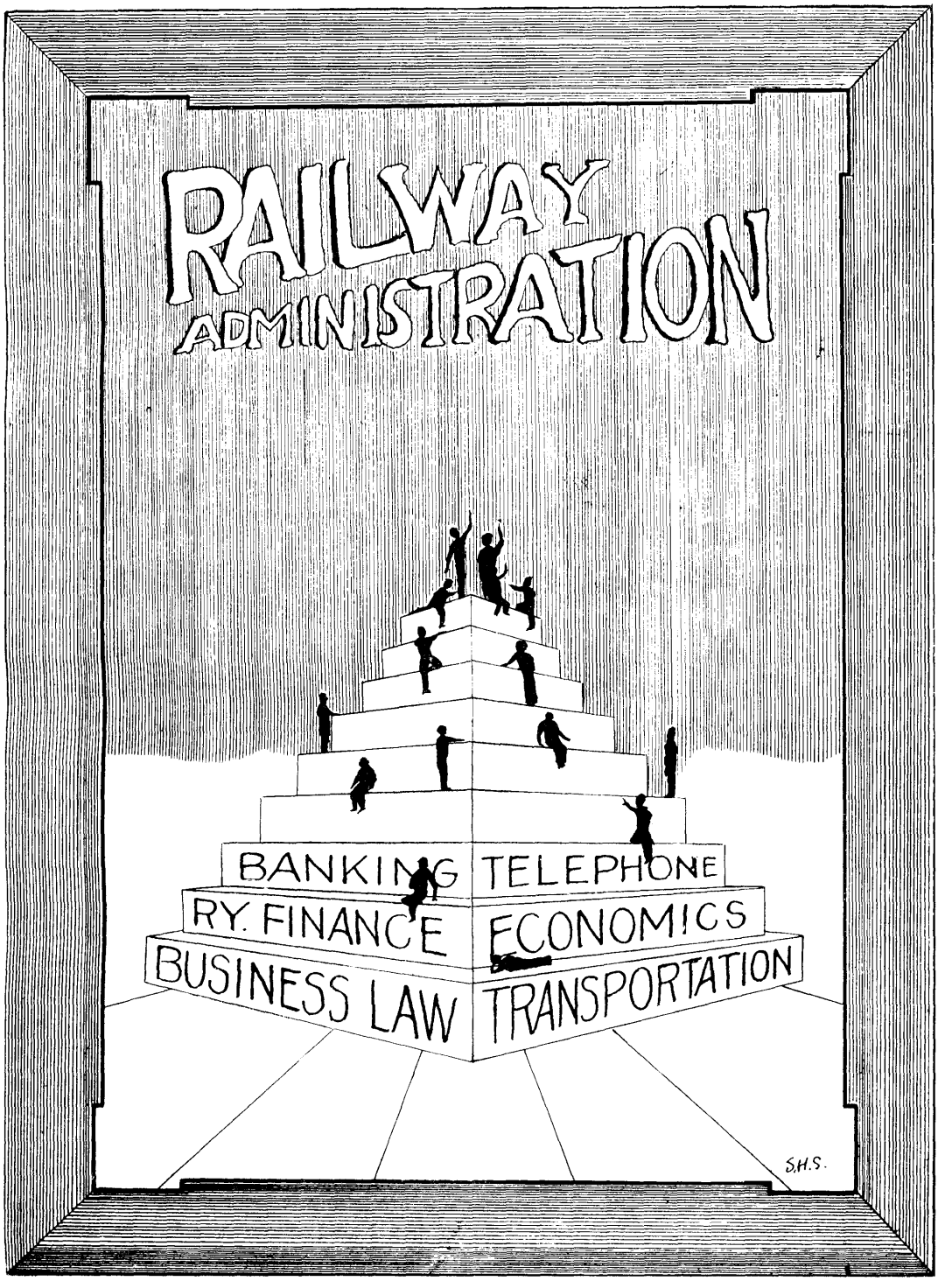
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Contributed Articles

A Word of Advice to the Graduating Class of 1920

DEAN SIRWU C. HSU, M.A. (*Pennsylvania*)

Fellow Students: You have now completed your special course of studies in the Department of Railway Administration; and you are going to launch your new career as practical railway men. Your task is very big, and your responsibility is exceedingly great. As a natural consequence, you have a number of problems which deserve your careful consideration. The first point before you is the scope your work covers. Obviously, you must be well informed of the climatic, geographical, and geological conditions of this country; you must have a fair knowledge of the volume, nature, and sources of the Chinese railway traffic; you must have a clear conception of the stage this country has reached in economic and social development; you must be aware of the business habits of the people whom you have to deal with; you have to find out the kind of equipment which suits the public best; and you must be able to shape the traffic policies and solve the traffic problems. In brief, you must fully comprehend that your work as a passenger agent deals with the train service rather than with the customers, while your work as a freight agent deals with the customers rather than with the train service.

Now the second point is, What will be your aim as railway men? Most certainly you have no difficulty in making this clear to yourselves. As the railway is one of the public utilities, you are expected to conduct the railway business as a public servant. Your authority should be exercised with an eye single to the public interest, for your activities are in vital touch with life and welfare of the people. In view of this, it is absolutely necessary that you should give ample protection to life and property and continually promote the industrial efficiency, the economic welfare, and the general well-being of the nation as a whole. Accordingly you may try to furnish working-men with transportation facilities as cheap as possible and to make a special rate for schoolboys, if you see fit. Thus nobody can say that your duty has been faithfully discharged in case you only attempt to make large profits for the railway but at the same time neglect to improve our economic and industrial life.

Here the third point needs to be taken into account: as railway men, you are required not only to hold but also to create traffic. New lines must be laid out, wherever there is promise of traffic; and new construction must be pushed on as rapidly as

possible. In the meantime you may issue handsome pamphlets or booklets showing the resources and advantages of the districts where the proposed lines are to be built. When these booklets are distributed throughout the country, the farmers may be strongly moved to migrate to those regions, where they can grow better crops than at home. By this means you can surely influence an enormous amount of business.

The fourth point is, How the railway services may be performed in a most economical way. In order to accomplish this, you must try your best to bring about increasing density of traffic, for this alone will make it possible for the railways to charge lower rates and at the same time to work at a profit. Then you must always endeavor to extend existing lines into new regions, as circumstances permit; for the longer a haul of freight and passengers is, the more economical it will be. Besides, you must do your utmost to carry the railway traffic to the height of efficiency, for this will result in reducing expenses for operation.

The fifth point claiming your attention is the fact that there are many grievances of the traveling public, which are peculiar to this country. For instance, at some intermediate station like Sungkiang on the Shanghai-Hangchow-Ningpo line, it is scarcely an exaggeration to say that a train may sometimes be over-due for one or two hours. In case you book a through ticket, you can hardly catch the train at the junction point in consequence of the delay; if you have an engagement at your destination, you will not be in a position to meet it; and if you happen to have a limited amount of money in your pocket, you will surely meet with financial difficulty. However, if you take proper measures to stop such a state of affairs, the grievance in question may be easily remedied.

Aside from this, complaint is often heard of our booking method. The window of the booking office is not open to the public until the train is to depart within a very short time—usually not exceeding one quarter of an hour. During that time you can never fail to find yourselves most uncomfortably crowded at the window in order to book your tickets. This is certainly a nuisance; but it can be done away with, if the booking clerk is required to be on duty a little bit earlier.

Then another source of grievance comes from the fact that the supply of passenger cars is generally inelastic. Whenever the number of passengers is increased so that it is justified to have an additional car attached to the train, the traffic manager very often closes his eyes to it but forces the passengers to throng both on the floor and on the platform. If a passenger is to travel over a great distance, you can easily imagine how much he has to suffer. Of course, the grievance of this nature may also be relieved, if the officer in charge performs his duty with proper care.

The sixth point is that the freight traffic on the Chinese railways has not been carried in a high degree of efficiency. If you transport goods which are durable, of course, no harm will be done to them with the slow service; but, if you transport commodities which are easily perishable, imagine how much damage will be brought

about. One of the fundamental defects of such slow freight service may be attributed to the fact that there are only few railway handlers available at each station on every line; and so, if there is an enormous amount of goods at each station, the delay in the service not infrequently turns out to be terrible. But if you make improvement in conducting the business of this kind, the defect in question can be eliminated without much difficulty.

With all these points in view, you may be convinced that your duty as railway men requires you to serve the masses of the people and to bring about economic and industrial progress of this country with your whole heart and to the best of your judgment. You must always keep in mind that the Chinese railways are built for the Chinese and that they should be run solely for the benefit of the Chinese. Indeed, you can never over-estimate the tremendous value of a well-developed railway system; and you must do everything in your power to encourage the establishment of new industries, which will not only help you to create traffic but also supply a plentiful revenue for the people at large. Thus the larger ends of social welfare will be accomplished.

Some Essential Problems of the Railways of China

Professor Irving K. T. Zee, B.S. (*Pennsylvania*)

Among the new enterprises that have taken place in China during the last twenty years, railway work has played an important rôle. Its far reaching effect has made itself felt in the field of politics, economics, industry, as well as foreign affairs. Inter-communication is the keynote of modern civilization. There is nothing so important in the improvement of communication facilities as railway construction. The writer attempts to present in these pages a brief account of the railway problems which may be of value to the knowledge of every citizen of China.

The Chinese railways may be divided into two classes: (1) the railways in operation, and (2) the railways under construction or being projected for construction. Let us consider each according to the order given below.

(1) The Railways in Operation.—There are government railways, provincial and private railways, and the so-called "concessional railways" as classified according to their nature of operation. And each of them deserves separate mention although the space only allows us a very brief account.

a. Government Railways.

All government railways are directly subject to the control of the Ministry of Communications. There are altogether fourteen lines; namely, Peking-Mukden, Peking-Suiyuan, Peking-Hankow, Tientsin-Pukow, Kirin-Changchun, Shanghai-Nanking, Shanghai-Hangchow-Ningpo, Tsungting-Tayuanfu, Toakuo-Tsinghwa, Kaifeng-Honan, Chuchow-Pinghsian, Canton-Kowloon, Canton-Samsui, and Changchow-Amoy. Except those stated otherwise, the power to appoint officials is vested in the Ministry of Communications. In a word, the control over the government railways by the Ministry of Communications appears in the following: (1) appointment of officers, (2) auditing receipts and expenditures, (3) unification of accounts, (4) prescription and preservation of statistical records, and (5) making extensions and reforms in railway transportation in general.

b. Provincial and Private Railways.

Since the establishment of the Republic, all the railways built on commercial basis have been purchased by the Government and under the latter's control. Suffice it to say, short lines such as the Kiukiang-Nanchang, Chawchow-Swatow, and Sungling lines are the only lines still left to the private ownership. Also there are a few light rails as laid by several mining concerns such as the Kailau Light Rail and others. They only serve the purpose of carrying their own products from the mine to the market and therefore they are not regarded as important in the field of railway transportation.

c. Concessional Railways.

There are four altogether; namely, the Chinese Eastern, the South Manchurian, the Tsingtao Line, and the Yunnan Railway. The first one above-mentioned was built by Russia; the second one financed by Japan; the third and fourth by Germany and France respectively. Besides, the southern section of the Canton-Kowloon was built by England and is under the latter's management. In this point the reader's attention is called to the fact that all the so-called "concessional railways" are generally under the exclusive control of the nations financing the construction with the possible exception of both the Chinese Eastern and the Tsingtao Line, whose present status is not yet certain as a result of the European War. Regarding the administration and ownership of these concessional lines, practically we have no rights over them until the expiration of the lease for each concession. This is one of the reasons why we are so anxious about the recovery of the Chinese Eastern and the Tsingtao Line.

(2) The Railways Under Construction.—Considering both the railways under construction and being projected for construction, there are approximately 12,000

miles of lines. This figure includes the construction of trunk lines as well as extensions to the existing lines. In view of the fact that construction funds are largely borrowed from foreign countries, railway securities cannot be so easily sold on the foreign market as it was the case before the European War. To what extent will the construction work covering all these contemplated lines proceed in the near future? It can hardly be told in advance. Each lending nation has her own policy to make changes. Those lines enumerated below merely indicate the urgent necessity of completion.

(a) The Hankow-Chengtu Line.—This line covers a distance of 1,000 miles. According to the experts' opinion, there are two possible routes reaching Szechuan: one is to follow the course of the Yangtze River and then turn westward connecting Chungchen, thence pursuing a northwest direction as far as the terminal Chengtu. The total length is 939 miles. The other route may be projected from Sinyangchow, along the Peking-Hankow, turning westward in following the course of the Yellow River, crossing Shensi province and terminating at Chengtu. The length of this line consists of 895 miles. This route is said to be shorter and less difficult from the viewpoint of construction. The defect lies, however, in the scarcity of products as compared with the Yangtze Route.

(b) The Canton-Hankow Line.—Work in the northern section originating at Wuchang has been completed as far as Chuchow with funds from England. In the southern part the construction work has reached Suichow with a distance of approximately 340 miles uncompleted.

(c) The Nanking-Changsha Line.—This line originates from Changsha, Hunan province, crossing the rich fields of coal mines through the Chuchow-Pinghsian Line, and connecting the important city of Nanchang, thence reaching Nanking by way of Kiukiang. This line has an aggregate length of 1,000 miles.

(d) The Lanchow-Haichow Line.—The length of this line is 1,097 miles originating from Lanchow in the province of Kansu, crossing Shansi and Honan, terminating at Haichow, Kiangsu province. The section between Hsuchowfu and Kwanyingtang including the Pienlo Railway has been completed, covering a distance of 360 miles. This line will traverse one of the richest regions of China as regards natural resources, and it will be destined to be one of the greatest trans-continental lines in Asia.

The Problem of Railway Finance

With regard to the financial side of the railways of China, it is safe to say that more than 90 per cent of the construction funds come from abroad. All the so-called "concessional railways" were built entirely with foreign capital. Even the construction of the government railways usually depends upon the borrowed funds with the exceptions of both the Peking-Suiyuan and the Chuchow-Pinghsian line. Under the

heading of the lines under construction, again we find the presence of foreign loans. Among the most important ones are the Lunghai Railway Loan and the loans for the Canton-Hankow and the Hankow-Chengtu line. The former is taken up jointly by the Belgian and the Dutch interest; whereas the latter is being considered separately by the New Banking Consortium. If our government does not take any active measure in laying out certain constructive programs in the immediate future, there will be more likely a state of international ownership of railways existing in this country in a short course of time.

The policy of constructing railways with foreign funds is not necessary unsound if wisely conducted. Nevertheless, our present delicate situation reveals certain serious weaknesses in the case of railway loans. The unstable political situation of to-day gives foreign countries opportunity for political achievements. Up to the present, foreign investment have been made mostly with a view of political gains rather than investment returns. The mere fact that railway loans should be controlled by banking syndicates consisting of representatives of several nations explain the situation by itself. The result is that almost every line built with foreign funds is subject to the control of the creditor nation to some extent. Consequently, the so-called "sphere of influence" has made itself felt most deeply in the field of railway construction as evidenced by various contractual rights and privileges.

In addition, it is rather lamentable that the funds so raised have not always been utilized to the full extent. In view of this situation, the lending powers come to the conclusion that railway loan contracts henceforth will be signed only under the most strict terms in order to eliminate any possible manipulation by the officials in charge. In the Peace Conference of 1919, special sessions devoted to the finance of the railways of China were held with a view to settling all sorts of disputes among the several Powers. Thus, the railways of China have actually become one of the international problems, the solution of which requires unusual ability, incisive foresight, and the support of every citizen of China.

How Railroads Will Benefit China

PROFESSOR S. D. LEE, A. M. (*Columbia*)

(Reprinted from the *St. John's Echo*, November, 1909)

The value of railroads to China cannot be overrated. Just imagine a vast empire having a dominion of one twelfth of the land surface of the earth, fertile in soil and abundant in mineral deposits; its population, constituting one-third of total

humanity, at once industrious and persevering, thrifty and saving, intelligent and skillful; extended over sixty degrees of longitude and forty degrees of latitude, its varied agricultural products able to supply and support the whole world. China, in racial as well as geographical and geological points of view, should be a place where the people have plenty to eat and enough to wear, and where the civilization of the world culminates; her wealth should be inestimable and her power invincible. But without further discussing what she should be, let us see what she has been.

The three great internal calamities of the country have been: famine, provincial autonomy, and rebellion.

On account of locusts, rats, and mice, or unseasonable drought and rain and snow, the crops of a whole province may be destroyed, thus bringing starvation and its accompanying horrors to millions. With a view to show its disastrous effects and the possible means of averting them in days to come, a brief review of the famine of 1878 in Shansi and large portions of Chihli, Shensi, Shantung, and Honan, I hope, will not be out of place here. "In Shansi it was at its worst. The people there were hemmed in by a belt of famine-stricken country, which it took weeks to cross. The poor peasantry clung to their homes until their last cash was spent, praying each day for rain that never came and vainly awaiting the government relief. At last, penniless and weakened by starvation, they started—some with wives and children, but generally abandoning these—on their march to reach the food districts. Few succeeded. The wolves attacked not only children but adults in broad daylight and in the village streets. Even the consumption of human flesh became a practice among the villagers themselves. Thousands upon thousands thus perished from want." Now, it must be remembered that due to the climatic and geographical peculiarities of China, though there may be famine in one place, at the same time there may be abundance in neighboring places. It was exactly such a state of affairs then. But the cost of cart transport of grain from the Chihli plain to Shansi, a distance of some fifty miles, over narrow, uneven, and crooked roads, was officially stated to be $100 Mex. per ton! It was mainly the enormous cost and difficulty in transporting that made relief impossible and caused the terrible loss of life.

By the want of easy communication the sympathetic system of the nation has been impaired. People in one province can hardly know anything of their fellow countrymen in another; if news is perchance brought from one province to another, it ceases to be "news," but is a story of long ago, and sympathy is too late. Each province, as if it were shut in by thick walls, has its own dialect, maintains its own traditions and looks after its own interests. Coöperation among the people at large becomes a matter of impossibility. In the progress of the China-Japan war, the people in the north fought vigorously for causes immediately connected with their own locality, while their brothers in the south ate and drank and knew not and cared not what indirectly concerned them as well. Patriotism was drowned in "provincialism,"

which was itself undermined by the same selfish and fatal policy of other provinces. The results could be predicted. China was defeated, territories were ceded and indemnities paid. She lost at once honor and prestige, wealth and power, land and people.

In such a vast empire, which it takes months, almost years, to cross from one extremity to the other, the influence and control of the Peking government are naturally exhausted and shaken, especially in the southern and western provinces. Absence of communication makes the government unable to exercise its power, enforce its laws, and control affairs. Rebellions in these distant places are frequent, but never successful. A government force, after immense expenditure of money and food, so long as it reaches there, is always by its fire and sword efficient enough to hunt down the rebels and lay waste the land. But peace and order cannot be preserved by force alone, which even China has not sufficient means to maintain. For the nation to enjoy true quiet and prosperity, her entire people have got to have close relation and sympathy with the government.

The necessity of railroads for relieving the nation of its internal calamities is indeed tremendous. Their importance in guarding it against foreign aggression is no less great. The strategic lines built rapidly and persistently by Germany, Austria, Russia, and the Indian government, in spite of grave financial difficulties, are a strong proof of the confidence felt in their value. Had China built railroads connecting different parts of her vast populous domain, thus facilitating the conveyance of troops and ammunitions, the Japanese would surely have been overwhelmed in number before they could exert any force in the struggle of 1894.

China, moreover, is a place suited to industry and manufacture. Nature has been specially kind towards her in the supply of raw materials. Besides the most essential products of tea and grain, and cotton and silk, there are coal and iron mines in the north, south, and center; gold and silver deposits in the north, south, and west; and copper, tin, mercury, and lead in many parts. Of all races of mankind, her people is the only one capable of great and lasting activity in the hottest places as well as the coldest. Their labor is cheap, but their work fine.

With tea and silk the Chinese alone have furnished and commanded the markets of the world for centuries. It is evident that if her hoarded treasures are unlocked and made use of, her wealth will be greatly augmented. With wealth comes power. The only possible way of bringing about this wealth and power is self-evident. To carry mineral ores on men's backs, by caravans of mules or ponies, by the rudest of carts and wheelbarrows, over terribly defective roads, is entirely too slow and costly. Railways alone can carry out this all-important and long-cherished purpose.

In spite of abundant agricultural and manufactured products, without railroads the prices of commodities transferred to any conceivable distance will not pay for

their cost of carriage. Farmers, manufacturers, merchants, and traders will allow their products and wares to decay rather than suffer greater loss in transference. Labor and capital are thereby wasted. Also there are certain food materials, like fish, game, and fresh fruit, which require rapid conveyance. When there are railways, these obstacles can all be surmounted. Villages, towns, and cities, already the scene of industry and peddling trade, will soon be transformed into centers of bustle and business. Trade is developed, and naturally the people become more affluent.

By constant contact with people from other parts of the empire, the ignorant get experience and the wise become more prudent. All people will understand much better the conditions of their country, and reforms will be easy. With her peculiar advantages, China may act the leader in the future civilization of the world.

So much for the advantages of railroads to China. Now let us ask, Are there any disadvantages concomitant with them, especially when they are built with borrowed capital, as at present?

Egypt and India forfeited their liberty because they considered such advantages. The railroads, due to the use of loans, are controlled by foreigners. If these people, after having seized the best opportunity, should then bind even the eastern "sickman" and spoil his house, what resistance can China give? or if the debt, like that of England, only foreign instead of domestic, and therefore more serious, should grow from a few millions to hundreds of millions and become permanent, with what and when shall she repay them? As regards these questions, the writer partly admits their truth, but in general denies their validity and soundness.

It is true that with the employment of foreign capital, we were deprived of a certain portion of our income. But it is also necessary and reasonable that foreigners should receive compensation and reward for their risk and good intention for the cause of China. England's loan was wasted in war and therefore unproductive; if we employ it in utilitarian construction, to my idea, it will not be irredeemable. With the fear of God in their minds and the honor of high civilization before their faces, the Western people can never be so base as to resort to underhand treachery, ruin, and robbery of their professed friend of the Far East. The payment of interest sufficiently satisfies them.

If the mechanical and engineering capacity of our own people be well developed, and I believe it will be, I can see no reason why they should insist on supervising the building and making of railroads here. I doubt not but they will gladly and willingly—glad because their good intention in the cause of China has been realized and willing because they have no other aim save to help China—cede that right to its legal master.

Egypt and India lost their liberty not because the Englishmen robbed them of it, but because the Egyptians and the Hindus were oppressed by their own miserable conditions of living and were willing to change their master for one who could relieve them from sufferings and give them comfort and pleasure. Their indolent, thoughtless, and careless nature then is by no means similar to the diligent and far-searching nature of us Chinese at present. Therefore with precise and fair contrast, even railroads built with loaned capital will engender no harm, but the above-mentioned benefits.

In conclusion, then, the advantages of railroads in China are infinite and innumerable. Whether built with her own capital or not, briefly they will serve to reduce famines, foster patriotism, and put an end to rebellions; they will protect the nation more securely and develop her internal trade and industrial manufactures largely; they will enrich the people and civilize the nation and finally bring about true peace and order, prosperity and progress in China and settle the destiny of the Far East.

Some Class Findings

A Brief History of Railway Development in China

Broadly speaking, the history of railway development in China falls into three stages: The first is that of foreign attempts to persuade us to allow the introduction of railways; the second a progressive movement emanating from ourselves; lastly the era of concessions of which the dominant feature is foreign control.

The first attempt to introduce railways into our country was made in the autumn of 1863, when a petition was presented by several foreign firms in Shanghai to Li Hung Chang, Imperial Commissioner and Governor of the province of Kiangsu, for the sole concession of the right to establish a line of railway between Shanghai and Soochow. Unfortunately Li was unable to concur in this expression of view.

During the following year Sir MacDonald Stephenson, a distinguished engineer, came to China and widely proclaimed the urgent demand for railways. As the Chinese were not yet prepared for the reception of foreign ideas, he encountered great difficulties in embarking on his self-imposed task. Not only did he not wholly succeed in his contrivance but in the years immediately following the hostile feeling against foreigners became intensified. In short, his scheme, like that of the foreign firms, was premature.

The idea of a railway system for our country was not allowed to die with the departure of Sir MacDonald Stephenson. On the contrary, it was quietly developed by some of the leading men in Shanghai, who determined by way of experiment to connect the port with Woosung by a line of rail. Accordingly a contract was made with the foreign builders; rails were hastily laid; and on the first of July, 1876, the line was opened for traffic and won high favor of the public. But scarcely one month had elapsed when a man was struck by the train and killed. Then the Taotai all in a rage tore up the track and laid the station building in a level.

In the meantime a forward movement was quietly taking place in the north. The pioneers in this case were Tong King Sing and Li Hung Chang, Viceroy of Chihli. Tong King Sing was the proprietor of the Chinese Engineering and Mining Company for the exploitation of the Kaiping coal field. In order to facilitate transportation for the coal a railway seemed to be indispensable. Accordingly Imperial sanction for a

railway from the mines to Peh Tang was sought and later obtained, whereupon C. W. Kinder was appointed engineer to undertake the construction of the railway. He built a locomotive of extraordinary design, which was christened the "Rocket of China." No sooner had the railway been built than its usefulness became manifest.

The next move was made in the year 1886. At this time the government was anxiously discussing possible reforms calculated to enable China to cope more effectively with foreign powers, and railway enterprise began to get under way. The Kaiping Railway Company was formed, with Wu Ting Fang as president. The name was later changed to the China Railway Company. A prospectus was issued on the 12th of April, 1887, inviting subscriptions from the public. Money was readily obtained and the work proceeded with great rapidity. In August the line was actually built to Tientsin.

In the year 1891 the government began to take an active part in the plans of railway administration. The Chinese Imperial Railway Administration was then formed. In 1894 the line was extended to Fengtai, south of Peking. Meanwhile surveys were run northward and reconnaissances were made almost to Vladivostok. The Hanyang Iron Works was erected for the sole purpose of rolling steel rails. While the Imperial Railway Administration was making preparations to build southward from Peking toward Hankow, and the construction northward had reached Chunghouse, then took place the Chino-Japanese War which has contributed to delay railway construction ever since.

As a result of the war numerous concessions were given to Japan as well as to other Powers. Russia secured the privilege of building the Chinese Eastern Railway; France got permission for railway construction in the southern provinces; and Japan obtained the right of constructing the South Manchurian Railway. There were further exchanges of notes between China and other powers as to the alienation of privileges in other provinces. Indeed, China was on the verge of actual dismemberment.

We have traced two of the three stages into which the history of railway development falls, and have now reached the third one. This followed, and was indeed directly consequent on, the Chino-Japanese War. The war had ended for China in humiliating disaster. But it had left behind it strong progressive tendencies in the breasts of many patriotic Chinese. Among them was Chang Chih Tung who planned a national trunk line system. In the latter part of 1896 Shen Hsun Hwai was appointed Director General of the projected railway between Lukouchiao and Hankow. A Belgium Syndicate undertook the work of construction, which, though delayed a little by the Boxer Outbreak, was actually completed immediately after it. The railway serves a thickly populated country of splendid possibilities and is capable of earning a large profit.

The construction of a railway from Canton through the Hunan province to Wuchang was first advocated by Sir MacDonald Stephenson. In the autumn of 1902 the extension from Canton by way of Fatshan to Samshui was commenced. The engineers engaged upon this undertaking were Americans. In September of 1904 Samshui was reached, and before long the whole line from Canton to Hankow will be completed.

During the "Battle of Concessions" in 1896–97 and 1898, a large number of lines were agreed upon provisionally. It was just at this time that the "local movement" arose. Throughout the country an outcry for building railroads out of local funds was prevalent. A company was formed within each province to undertake the building of the section within its own borders. Lines between Tientsin and Pukow, Shanghai and Ningpo, Hankow and Szechuen were thus determined upon. Funds were provided in some cases by levying provincial taxes and in others by subscriptions from the local gentry.

But provincial opposition was so strong that it delayed until 1907 the final signing of a loan contract for the Canton-Kowloon line, until 1908 for the Tientsin-Pukow and Shanghai-Hangchow-Ningpo line, and until 1911 for the Hankow-Szechuen line. As to itself it was not able to get any real construction done. Finally China attained the position of an untrammelled borrower for railway purposes.

The struggle in the provinces for absolute Chinese control of the railways had so emboldened the radical elements in the provinces that they worked for the overthrow of the Manchu dynasty. The government's attempt to construct the line from Hankow to Szechuen was first frustrated and at last the outbreak at Wuchang took place and caused the abdication of the Manchus.

With the passing of the Manchus, no opposition was raised to the building of the above-mentioned lines by means of foreign loans. About a year later the President advocated the construction of 50,000 miles of trunk lines within the following ten years by means of foreign loans. That same year numerous agreements were made with English, French, and Belgian interests for the extension or building of lines. Altogether these projected lines called for about 7,000 miles. This is not a bad beginning for the program.

Nothing could express our sorrow at the outbreak of the European War just after these contracts were signed. No financial help could be secured from England, Belgium, or France. The Lunghai project was completed to Hsuchoufu, and there it never proceeded. All these were due not to our conservatism or stupidity but to world conditions which we cannot modify.

Recently an American company came to help us. Its advances were welcomed and an agreement was made for the construction of 15,000 miles, but unfortunately

the rate of exchange from gold to silver and the prices of construction materials became so unfavorable that the Americans suspended their operations. Meanwhile the cunning Japanese were watching closely for an opportunity. They availed themselves of this chance to step into our country and made railway contracts with us. These contracts bring the total up to 10,000 miles. It is indeed deplorable to see our beloved country in such a wretched condition.

At present each line forms a unit by itself. In general the organization, system of accounts, and equipment of our railways are considered the best in the world, though most of the lines are under foreign control. Several annual reports of the financial and physical results of the operation of the government lines have been issued.

Of the future it is wisest not to prophesy. But it may at least be remarked that the tendency at the moment is toward the elimination of foreign control.

Railroads and China

As the railroad has to do with transportation—travel, traffic, and communication—so it has a close relation with the country. (1) It promotes general civilization. (2) It stimulates commerce and industry. (3) It affords a sound investment. (4) It insures economic efficiency. (5) It renders immigration practicable. (6) It makes national solidarity.

General Civilization

When transportation facilities are developed to such an extent that the intelligence of one place is easily conveyed to another, and the people of one village, town, or city may go to another village, town, or city very easily, their mutual intercourse promotes general civilization. Professor Protheroe, author of "Railways of the World" says, "There is no more interesting and powerful agent in promoting civilization and orderly and kindly fellowship between man and man, than facility of intercourse; and intercourse by pen and paper ranks second only to intercourse by word. Consequently one of the potent forces in promoting the moral and intellectual progress of the nation is the iron road and the snorting iron horse that unceasingly traverses it." Another instance I may say is that before the construction of the Tientsin-Pukow line, the civilization along its course was not so advanced as it is now. I may prove it by taking the district of Chuchow for example. Since the road was set in operation, many families of that district have sent their boys and girls out to schools while formerly it had only a rural method of teaching. This is a revolution in their education. Again most of its

merchants were perfectly satisfied with their local trade during the former times, but now many a merchant has transported his merchandise to Shanghai for marketing. All these show a general rise of the civilization.

This is only done with a district of Anhwei; how about other districts, provinces of the vast Rupublic? Most of the people are ignorant of what education is! They have neglected their education. They could not get their modern education by going out to those places where modern education predominates, if they had such a dream. The news of Shanghai never reaches them. How can their civilization be advanced? It is only through the building of railroads.

Commerce and Industry

Commerce is exchange of commodities between different sections. The means by which exchange is accomplished is railroad transportation. Professor Emory R. Johnson says: "The production of wealth has been greatly enhanced by the enlargement of commerce and the extension of commerce has been possible mainly because of the improvements that have been made in the agency by which the various transportation services are performed." As soon as commerce expands, surely industry will be quickened. In a big commercial center, there are always many large capitalists who will naturally carry on industrial works. There are also banking institutions to give the industrial capitalists their needed facilities. Take the province of Szechwan for instance. If we could introduce some steam railroad into that province, what will become of her commerce and industry? Supposing that we could build a railroad connecting Szechwan and Hankow by way of Kweichowfu, i.e., by way of the proposed Hu-Kuang Route (湖廣鐵路) or a line connecting Szechwan and Hankow through Tungkiang and Laohokow, i.e., by the Szechwan and Hankow Route (川漢鐵路) and from Hankow with the Tientsin-Pukow Line by way of Singyangchow (信陽州) and then with the Shanghai-Nanking and Shanghai-Hangchow-Ningpo Railways, we would surely revolutionize the whole province of Szechwan. When the market of that province is changed, it will, of course, change the markets of other provinces by transporting its goods to other places, and I may say that the merchandise of Szechwan may even affect the market of the whole world at large. "In the fall of 1917 when the supply of wheat was short all over the world, this cereal was sold for $2.50 to $3.00 per bushel in Shanghai, while at the same time in Szechwan it was sold for only ten cents per bushel." "During the year 1916, there were imported into China cereals to the value of over $48,000,000; yet China is an agricultural country and Szechwan is said to be one of the most productive, most intensively farmed agricultural sections in the world. Its agricultural products alone for the 1914 amounted to over 16,000,000 tons valued at $1,177,364,136." "Or if we take coal for example: during the 1914 China purchased from Japan more than 1,650,000 tons of coal valued at over $11,850,000

of which Hankow and Shanghai consumed about one and one-quarter million tons while all this coal and more could have been furnished by Szechwan if only transportation facilities had been available so that the vast coal deposits of the province could have been developed and worked and the coal shipped to the other provinces in urgent need of it."

These are concrete examples of the drawbacks of our transportation facilities. If we only took into consideration all these conditions, we would surely say that the railroad construction of China is beyond the shadow of doubt necessary and indispensable. This is only one province but there are many other provinces like Szechwan, and they too need the transportation facilities very badly.

A Sound Investment

When any capital is put into a business, and that business will in return give you not only all of the capital itself but also some profit, it is called a sound investment. A railroad business is a sound investment in China at the present day. What do I mean? I mean that at the present day, China needs transportation facilities very badly. If we put money in this kind of business as an investment, surely there will be a return of both capital and profit. "The density and wealth of the population and the great resources of the country to be served would seem amply to justify this expenditure and would warrant the opinion that the railroad construction of the lines would pay." Furthermore the construction will not have any duplicate lines. Hence it is a kind of monopolistic business. If it were properly managed, developed, and administrated, it would surely prove a sound investment.

Economic Efficiency

If we had built our railroads some years earlier, there would not be such a starvation in some of the northern provinces; for Szechwan alone can supply them with food in a couple of days if the railroad facilities had been available. But what is the present situation? Szechwan cannot supply food in a couple of days; it takes months and months for Szechwan to supply them with food. It is what the Chinese proverb says: "A far distant water cannot extinguish the nearest fire." That is to say when the food is transported to the northern states, all would have been starved to death.

Immigration

Mr. G. M. Walker, writing on "What the United States Can Do for China" in the *Millard's Review*, said: "The railroads that brought prosperity to the middle and western state of America—which opened them up and which made possible the flow of immigration into unoccupied lands and created an immediate market for the products of the first settlers—were built at a first cost that never exceeded $15,000 a mile,

and frequently did not exceed $8,000 a mile. If the original railroad construction of China had been built along similar lines, railroad construction and operation in China would have been so extremely profitable from the very first that it would have encouraged railroad building everywhere." Now, if China could build some lines in Sinkiang, surely the poor people along the Yangtze Valley which is so crowded, will be profited by immigration to that place. They will start a new market for the products of their home towns. The large track of land in Sinkiang will be fully utilized. In Ili alone, the mines of gold, silver, copper, lead, coal, and iron could be immediately opened. Just imagine how much China's wealth stock will be increased!

National Solidarity

If China had built her railways all over the country, there would not be such an internal strife as exists to-day. Now one party is in Szechwan, another in Yünnan, and a third in Kwangsi. Why don't they obey the commands of the central government? It is because they think that the central government could not dispatch troops to those places. Had there been built railroads into these farthest places, all these parties would have been crushed to pieces so already.

Conclusion

In the early part of the nineteenth century, Professor John Anderson of Glassgow, wrote an eloquent plea for the adoption of railways, and there is no doubt that it made a marked impression upon public opinion. "If you can only diminish a single farthing in the cost of transportation and personal intercommunication," he wrote, "you at once widen the circle of intercourse; you form as it were a new creation—not only of stone or earth, of trees and plants, but of men also, and what is of far greater consequence, you promote industry, happiness and joy. The cost of all human consumption would be reduced, the facilities of agriculture promoted, time and distance would be almost annihilated; the country would be brought nearer the town; the number of horses to carry on traffic would be diminished; mines and manufactures would appear in neighborhood hitherto considered almost isolated by distance; villages, towns and even cities would spring up all through the country, and spots now as silent as the grave would be enlivened by the busy hum of human voices, the sound of the hammer and the clatter of the machinery; the whole country would be revolutionized with life and activity, and general prosperity would be the result to commerce and industry."

What transportation facilities has China? She has but 6,000 miles. "The growing railway and steamship lines of China have not yet driven out the donkey train. The little beasts packed ready for a journey into remote provinces with their Mongolian drivers towering above them are still a common sight in Peking. But most of the goods in China are transported by human labor. Boats drawn by men, wheelbarrows pushed by men, poles with great baskets at either end, balanced on the shoulders of

men—these are the common means of transportation in China. Freight rates are comparatively cheap, for human labor is cheap—a coolie will carry merchandise on his shoulders at the rate of fifteen cents a ton a mile, and freight by the men-drawn boats costs three cents a ton a mile. But in the long run, China pays dear for using her men as beasts of burden. From fifteen to twenty per cent of Chinese labor is diverted from production to transportation while the United Kingdom, the common carrier of the world, employs only six or eight per cent of its man power in transportation, and Belgium and Austria use only two or three per cent. Steam and electricity to take the burden off the shoulders of the Chinese coolies and release numbers of them for the great and necessary work of production are necessary for the comfort and happiness of China's weakening people."

Let us heed Professor John Anderson's plea of RAILROAD CONSTRUCTION. It will be very foolish if we let the golden opportunity slip away. I dare say that IF WE DO NOT START NOW, PROBABLY SOME OF THE OTHER NATIONS WILL COME TO START FOR US. Now let us start right away and let not time wait for us. Therefore let us act NOW and never wait until to-morrow, for to-morrow is another day. "Always remember that TO-MORROW is just as far off now as it was from the beginning of time. To put a thing off until to-morrow is one of the most detrimental of all weak excuses for not doing a thing when it should be done." So let me say if the GOVERNMENT CAN'T DO THE CONSTRUCTION WORK OR CANNOT AFFORD TO DO IT, let us, THE PEOPLE, DO IT. We must remember that our country is a REPUBLIC which means a country "OF THE PEOPLE, BY THE PEOPLE, and FOR THE PEOPLE." Then why should not we do the construction ourselves?

Railway Revenue in China

To every railway man or any person interested in the railway business the operating ratio of a railway is his first point of observation in determining its value or prosperity. For, however complex a railway's financial condition may be, it cannot go beyond the relation between revenue and expense, and so their ratio usually reveals a general financial standing of the line. But as the prosperity of a railway depends upon its revenue rather than its running expenses, we therefore propose to confine the scope of this article to the revenue side of the Chinese railways.

SOURCES OF CHINESE RAILWAY REVENUES

Like the railroads of the United States the Chinese railways have derived their revenues mainly from the freight, passenger, mail and express services. Aside from these there are other earnings such as receipts for the rental of cars and terminal

facilities of various forms, interest on loan investments, etc.; but as Chinese railways have neither made any loan to the outsiders, nor own a great amount of securities, their main source of revenue is the operating revenue. The operating revenue may be derived from two sources—from "rail operation" and from "auxiliary operation.' The former includes the revenue derived from the transportation of freight, passengers, mail, and express articles, while the latter includes the revenue made up of the receipts from boat lines, ferries, and storage plants, etc., which amount is usually considerably less than the former.

Now, before we proceed any further, it is necessary to state the general financial condition, especially the revenue side, of the Chinese Government railways as a whole for the recent few years, and then enter into an investigation of the causes of the increasing or decreasing traffic and the remedies therefor.

A Normal and Natural Increase in Revenue

China is a country having a vast territory, a large population, and a variety of products, and during such a decade when all branches of enterprise, whether industrial or commercial, are rapidly developing, who can doubt that her railway revenue will not increase with her age? As far back as the year 1915, the statistical data show that 1919 is the biggest year in Chinese railway history, and that confidence can be placed in what is believed to be a normal and natural increase in Chinese railway traffic. The record of gross operating revenue for the five years beginning from 1915 to 1919 is as follows:

1915	$57,062,359
1916	62,761,720
1917	63,873,704
1918	77,652,153
1919	83,047,390

From the data given above we see that there is but a slight increase in the revenue of 1917 and a sudden increase in that of 1918, which indicates that while 1917 did not represent the normal possibilities of the year, there was a handsome increase of revenue in 1918. During the autumn of 1917 and the last summer flood inundated a large area served by the two largest lines, the Peking-Hankow and the Tientsin-Pukow, and this catastrophe reduced thousands of families in these districts to destitution. During the last few days of the year the dreadful pneumonic plague prevailed in the north. As a result, the business of one line was wound up entirely for a time, and travel and commerce were restricted for some weeks. There were many other causes that contributed to the depressing revenue of that year, such as the sad scene of the civil war, the interruption of traffic by banditry, and the decrease of

the value of the Chinese government currency. But even under such unfavorable conditions the Chinese government railways as a whole had an operating ratio of 46.6%. Indeed, this year of trial shows the fundamental strength of China's railways.

Bumper Crops But Military Curse in 1918

The year of 1918 had the fortune of being compensated with bumper crops for the calamities of last year. Rain began in the spring and continued regularly during the summer, thus making two of the largest harvests in recent years. But on the other hand, civil war, as usual, caused great loss to the railway. On one line, for example, the profitable Canton-Samshui was seized by Southern authority, and its tidy monthly earnings were appropriated. The revenues of the Chuchow-Pinghsiang and Changchow-Amoy also dropped to a negligible amount, the latter receiving a revenue of only $47,000 for the whole year.

On the Tientsin-Pukow, the Peking-Mukden, and the Peking-Hankow lines, there was the usual shameful abuse of equipment by the military officials. Special trains run without taking notice of the disruption of regular train schedule and the increase of empty car mileage! Soldiers without tickets forced paying passengers to crowd at the aisles and on the platforms! And what is the worst of all to the revenues of railways, goods wagons were occupied as living quarters for months at a time. Taking it for granted that a box car of ordinary size has a revenue value to the railway of fifteen dollars per day, it has already been hard to estimate how much the revenues of these lines were reduced by such appropriation of equipment. Alas! Might is right, but the railway has suffered immensely.

The Biggest Year in Chinese Railway History

Owing to the temporary armistice between the North and the South during 1919, this year has been the biggest year in revenue as revealed in Chinese railway history. The whole railway system brought in a total operating revenue of $81,885,-000, which represents an increase of $4,234,000 over 1918 or nearly 6%. Comparing with 1917, it will be an increase of over 17,000,000, or about 26%; with 1915, an increase of over $24,820,000, or about 43%. At such a rate of progress, the volume of the business of Chinese railways will double every ten years or even more.

At this juncture, we must not fail to assert that the civil war, as well as floods, are the main causes that have contributed to the depression of the railway revenue during the recent few years. But they are only factors common and visible to everybody; there are other factors of vital importance which influence the railway revenue a great deal, and yet the public seems not to pay much attention to them. Of these,

it may be well to mention the question of the depreciated currency, the equipment problem, the question of interchanging rolling stock, and the agricultural demonstration train, which we shall discuss in order.

The Question of Depreciated Currency

This question bears more direct and closer relation with the railway revenue than any other factor, because a large portion of Chinese railway revenues consists of the depreciated paper notes. Four principal lines, the Peking-Mukden, the Peking-Hankow, the Tientsin-Pukow, and the Peking-Suiyuan, receive a considerable portion of their revenues in Peking notes of the Bank of China and the Bank of Communications. Creditors of the railways will not accept these notes at face value. Hence when the notes are used, millions of dollars of loss appear under the item nominated Discount on Depreciated Currency every year. In 1917, $2,155,000 were recorded under this item, and in 1918, $965,745. It was only in the middle of last year, namely, 1919, that Chinese railways ceased to accept the depreciated notes. Had the sound currency been the only legal tender in the past years, the traffic for 1918 would have brought an actual profit of $33,500,000 which is equivalent to eight per cent upon the entire property, over and above all interest charges. This shows that we have good reason for optimism in the revenue of the Chinese railways, when the day of sound money system comes.

The Equipment Problem

With reference to the equipment problem, it is advisable for one to notice the striking difference between the Chinese railways and the railways in the United States. In America the railroads are mostly of private ownership. They compete with each other for securing traffic and so in some districts there are more cars than needed for available traffic. But how about the railways in China? They are monopolistic; they need not secure traffic from the shippers, instead, the shippers are doing their utmost to secure cars from the railway companies. Under such conditions one can easily imagine how much revenue would be earned by the railway if cars were available for more traffic.

Again, the subject of power is just as important as that of cars. For instance, the lines like the Peking-Hankow, the Tientsin-Pukow, and the Shanghai-Nanking are so short of locomotives that they are running engines fifty per cent farther each year than do lines in the United States. We know that every year the Chinese railway sent a big sum of surplus to the Ministry of Communications, but in return we fail to know any material improvement or new construction made out of this fund, or any increase in the carrying capacity, namely, cars and locomotives.

The Question of Interchanging Rolling Stock

The interchanging of rolling stock between connecting lines is another factor that will indirectly increase the revenue figure of the railways. For when this plan is accomplished, delay and expense are greatly reduced for transferring loads from wagons of originating line to those of the destination line, and thus more carrying capacity of the wagons are available for traffic. However, as there are many lines in China completely under the foreign control, they sustain the doubt of robbing their cars, and consider it impracticable. This is the reason why in 1918 only $80,000 were received for the interchange of rolling stock, or one per cent of the total revenue. Nevertheless, we trust some day this item will amount to a significant figure in the field of railway revenue.

The Agricultural Demonstration Train

Still less important for the time being is the adoption of agricultural demonstration train, which had its first appearance in China on the Peking-Hankow line early in the autumn, 1918. It carries samples of improved seeds, modern implements of cultivation, and other educational matters. It is accompanied by trained lecturers who explain the principles of modern method of farming to farmers who are attracted to the train by the brass band. The results of propaganda of this sort are by no means immediate, but if persisted on, it will cause a great increase of tonnage in agricultural products and also of revenues.

So far we have discussed the various means by which the increase of railway revenue may be effected. In conclusion, we may say that there is a good promise for the increase of revenue in Chinese railways. Even under the most disastrous circumstances they bring in yearly a handsome increase of revenue. This shows that the force of the development of natural resources in China will more than offset the force that hinders the progress of her railways, and in time when China is under a better political control and her material civilization further advances, her railways will become the most prosperous and profitable ones in the world.

The Shanghai-Nanking Railway

The Shanghai-Nanking Railway is said to be the first link of the railway chain connecting the East World with the West by way of the great trans-Siberian route. It connects Shanghai, the most important trading center in China, and Nanking, the capital of Kiangsu province, extending about 193 miles along the south bank of the Yangtze River. There is a branch of ten and a half miles from Shanghai to the port of Woosung where the Yangtze and the Whangpoo River flow into the sea.

General History

The birth of the Shanghai-Woosung line dates back to 1865, when the railway was a "strange new monster" to the Chinese people. It was laid by British interests and was completed by extending from Kiangwan to Woosung in 1876. Its traffic, then, consisted mainly of mails and passengers.

But such was the superstition and feeling against the "strange new monster" that it was necessary the following year to remove it, equipments, rails and all, to Formosa on the ground that a man was killed by a train.

However, the value of railways by degrees came to be appreciated both by the government and the people. So in 1898 the Imperial Government approved the proposal made by Mr. Shen, then director general of the Chinese Imperial Railway Administration, to rebuild the Shanghai-Woosung line and to extend it to Nanking.

The preliminary agreement for the Shanghai-Nanking Railway was signed in May, 1898, between Mr. Shen and the British and Chinese Corporation for which concern the Shanghai-Hongkong Banking Corporation and the Jardine, Matheson and Company acted as representatives. In December, 1899, the Shanghai-Woosung line was again put in operation. On account of the Boxer trouble the final agreement was not concluded until July, 1903, and the construction was thus begun by dividing the whole line into four sections—Shanghai-Soochow the first section, Soochow-Changchow the second, Changchow-Chinkiang the third, and Chinkiang-Nanking the fourth. It was completed one section after another and was put in service in March, 1908.

Construction

This line was well and substantially built, with commodious and ornate stations, at a cost of about $150,000 per mile of line. The construction work was carried out departmentally, supervised by an executive engineer with assistant engineers in charge of subdivisions. It was, for a large part, let to Chinese contractors at stipulated rates; and the bridges were erected entirely with Chinese labor under foreign supervision. To secure directness for the sake of reducing the first cost of construction and future cost of maintenance and operation, the road was laid out as straight as possible. So the curves between Shanghai and Nanking are only fifty-nine in number with an aggregate length of but 19.8 miles. Generally speaking, not much difficulty was presented by earthwork except at mile 60 where the embankment had to be laid across a marsh continually under water, and at Nanking where the site prior to the advent of the railway was low, swampy ground subject to annual inundation, and a great deal of filling had to be done. Tunnels are usually objectional to engineers. The Shanghai-Nanking line was fortunate enough to have had one and only one

tunnel at Chinkiang, which is 1,320 feet long and in which space has been reserved for double track. It had been much discussed to avoid a tunnel altogether, but it was decided at last that it was impossible to otherwise reach the city of Chinkiang, except on a back shunt, the additional cost of which would more than have exceeded the cost of the tunnel.

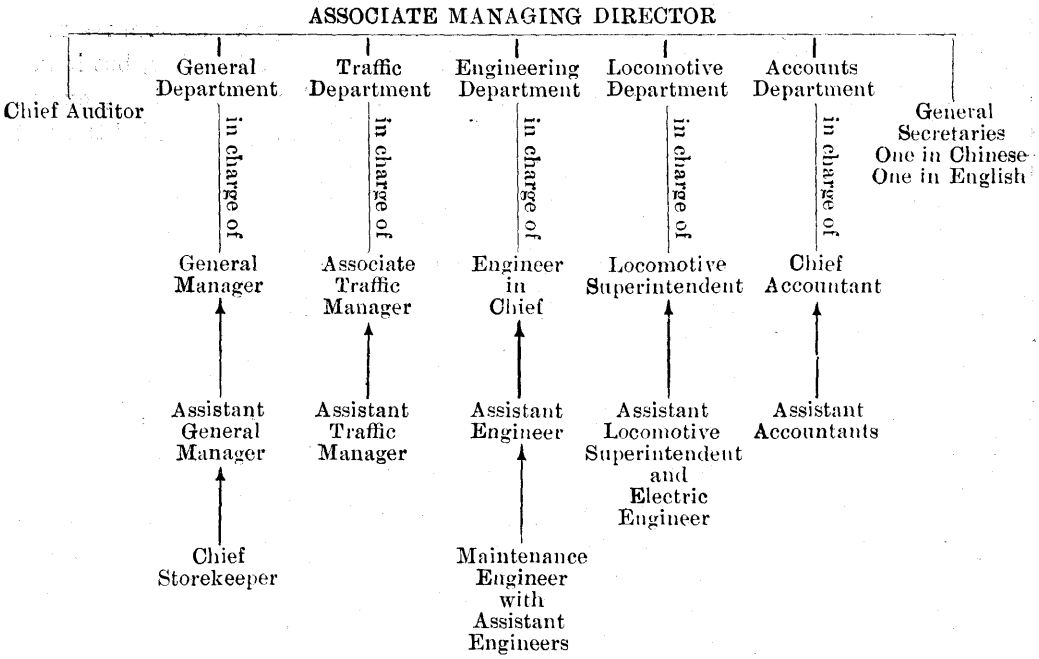
Loans

The amount of loans, which was secured by the Chinese Imperial Bonds with the railway as the first mortgage security, was not to exceed £3,250,000 to be issued at ninety, bearing an interest of five per cent. The issue amounting to £2,250,000 was made in 1904 and a second issue of £650,000 was made in 1907 but at ninety-five and half. Both are to mature in 1954 and are redeemable at 102½ from 1917 to 1923, inclusive, and for the remaining twenty-five years at par. In connection with a special clause in the agreement concerning land purchases, another issue of £150,000 at ninety-two paying six per cent interest, was made in December, 1913, which will mature in November, 1923. There is, however, no provision for yearly amortization, the only provision being the redemption arrangement just mentioned. Almost all the mortgage bonds are in British hands through the British and Chinese Corporation. The following table presents a clear account:

Particulars	Terms		Total Amount of Bonds	Equivalent in Local Currency	Rate of Issue	Rate of Interest
	Date of Issue	Date of Maturity				
			£	$		
First issue . .	16/7/1904	15/7/1954	2,250,000	19,839,268.23	90	5%
Second issue.	17/1/1907	,,	650,000	5,858,628.29	95½	5%
Third issue .	1/12/1913	30/11/1923	150,000	1,635,028.62	92	6%

Organization

The organization of this line is somewhat of the departmental type, conforming more or less to the arrangement called for by the order of the Ministry of Communications. The actual executive authority is in the hands of British officials. The general staff of this line is diagrammatically shown below.



TRAFFIC

The growing passenger traffic of this line is unquestionably accountable to the densely populated region through which it runs; and the greater portion of goods traffic in fact emanates from the districts served by the Tientsin-Pukow Railway. But it is not too much to say that the agricultural products and the growing industrial development surrounding this line have offered not a small share of the total freight business. This line is really a passenger rather than a goods road; for a glance at the following table will show that the revenue derived from passenger traffic is two or three times as great as that earned from freight traffic, although it can well be expected that the latter will some day be at par with the former or may even exceed it, because its statistics show that the freight business for some years past has been growing faster than the passenger business.

TRAFFIC	1915	1916	1917	1918
	$	$	$	$
Passenger . . .	2,407,000	2,739,499	2,923,234	3,102,255
Freight	879,046	1,011,811	1,177,868	1,665,038

It is worth while to go a little into details of the passenger and the freight traffic by studying the percentages of each class in their respective total amounts of earnings as indicated in the following tables.

I

PASSENGER

CLASS	*First*	*Second*	*Third*	*Fourth*	*etc.*	*etc.*
Revenue %	5.07	9.06	62.30	15.05	etc.	etc.

II

GOODS

CLASS	*Agricultural*	*Animal*	*Mineral*	*Forest*	*Manu-factured*	*etc.*
Revenue %	57.27	10.16	3.38	2.17	15.34	etc.

Table I shows that the third-class passenger revenue occupies the largest portion which can still be increased if the service is more adequately rendered, for the economic condition of the Chinese people in general will never fail to compensate the additional cost of the third-class passenger service. From table II we see that the item "agricultural products" gives the largest amount of freight earnings. This proves that this line owes much to its favorable location for its revenues. As the territory along the line is all fertile land, good crops can certainly be expected every year; and with the presence of the network of tributaries of the Yangtze River and of favorable climate, industries of various kinds are bound to be greatly developed. What will be the future business of this line if it can take measure to encourage and arrange with the public so that the competitive waterway transportation will lose its share?

ROLLING STOCK

All the rolling stock of this line is of British design and manufacture with but one exception. With the increase of business, the stock is being worked to the absolute limit of its capacity. Below is shown a list of the rolling stock.

I. *Locomotives.*

a.	Passenger	
	"C" class	12
	"D" class	4
	"E" class	4
	"F" class	2
	American	1
b.	Goods	
	"B" class	10
c.	Shunting	
	"A" class	2
	"Bagnall"	2
		37

II. *Carriages*

1st-class day and sleeping cars	2
1st-class sleeping cars	2
1st-class cars, with coupés and kitchen	5
2nd-class cars (ordinary)	13
3rd-class cars (ordinary)	33
Coolie class cars	16
Composite cars	29
Brake and baggage vans	1
	101

III. *Goods Wagons.*

Covered wagons bogie	308
Open wagons	83
Wagons for special purposes	49
Oil tank bogie	1
	441

With such limited number of equipments on so prosperous a line, we cannot see why no steps have yet been taken toward making additions.

Terminal Facilities

As the terminal facilities in every city must consist of yards, stations, team tracks, industrial tracks or sidings, and in the case of sea, river or lake ports, water terminals, it is gratifying to say that the Shanghai-Nanking Railway has fairly answered such requirements. A brief description of each of them seems desirable.

I. *Yards.*—Warehouses, platforms for loading and unloading goods are the main features of a yard. Their scope of construction varies with the volume of traffic which the particular terminal handles. At the Shanghai North, Woosung, Markham Road, and Nanking stations the godowns with a maximum capacity of 144,-30-ton wagon loads each are the biggest ones on the line; at all other stations they are ranked as third- or fourth-class warehouses capable of accommodating not more than 1,000 tons. The main platform of the Shanghai station is the longest one having a length of 1,450 feet, and Soochow has two platforms with 850 feet each in length; all others are 650 feet by 20 feet each.

II. *Stations.*—The station buildings are in like manner different with different cities. The most elaborate one is the Shanghai-North Station. Including the General Office, it has four floors with a good booking office which is the only one on this line following the British style, waiting rooms for passengers of different classes, restaurant

rooms, inquiry office, and other offices. The Soochow, Wusih, Changchow, Chinkiang, and Nanking stations are all fairly built; the rest are constructed with little accommodation.

III. *Team tracks and sidings.*—Along this line there are only few miles of sidings or "loops" for industrial purposes as well as yard uses. The total mileage is but 43.12; 42.17 on the main line and 0.95 on the branch.

IV. *Water terminals.*—Since this line extends from Shanghai eastward to the port of Woosung and in a northwesterly direction terminates at the bank of the Yangtze River, water terminals are surely indispensable. There are three wharves along the Woosung port, which have recently been put to use. At Nanking besides the wharves there is a small harbor excavated for loading and unloading bulky commodities to and from the Tientsin-Pukow Railway.

V. *Coaling and water stations.*—There are three coaling stations situated at Shanghai, Changchow, and Nanking respectively. The head station is at Woosung. As to water stations, they are twenty-six in number, properly distributed on the line.

The connection of this line with the Shanghai-Hangchow-Ningpo Railway was completed in 1916. Since the latter line also passes through a rich agricultural district where considerable industrial development can be anticipated to take place, it may be said without hesitation that the Shanghai-Nanking Railway, having a fruitful feeder in addition to its own favorable situation, will earn an increasing profit as years go by.

Sources of Traffic of Chinese Railways

Long after the Western countries fully utilized the railway as a means of transportation, China began to lay the first rail on her territory in the year 1876. At that time, our people, being ignorant and superstitious, raised strong objections to the laying of railways and tried every means to check the movement. This ridiculous obstacle, however, was removed after fifteen odd years had been elapsed. People, as well as the Government, began to appreciate the value of the railway service. Large amount of loan was raised and construction works were started by foreign engineers. Railway, as it is said, found a permanent resting place in China since that time. But, unfortunately, this advancing movement has been retarded and stopped, now and then, partly due to the lack of adequate funds and partly due to constant conflicts in the country. So up to the present time, China has a total mileage of only 6,000 miles of which many are built with foreign loans and under foreign control.

Comparing with the United States of America, China has an area twice as big and a population ten times as much as the United States of America. As to natural resources and financial conditions, China is on the same footing as the United States. Besides, the Chinese, as it is known to the world, are industrious people—hardy, patient, and thrifty. But the United States has a total railway mileage of 250,000 miles, while China has only 6,000 miles. The former, in forty years succeeding the Civil War, built 200,000 miles of line—5,000 a year. Why China cannot do the same as her sister on the other side of the Pacific? So it is hoped that we, Chinese, should solve the question by ourselves and go ahead to accomplish the aim with the same stride in the near future.

As to the real function of railways, it is not only to serve as a means of transportation but also to create and develop industry along various lines. On the other hand, the development of the railways is, unquestionably, depending upon the large and constant supply of freight traffic (of course also upon passenger traffic). In other words, the development of industry and that of railway has close connection with one another. No industry will be improved and becomes prosperous without the service of railway transportation. And it is likewise true that railways would not be developed and perhaps could not exist without the help of industries. Therefore, when projecting a line, we must have a thorough knowledge of different industries at different localities so that we may secure enough freight traffic in the future. If it is a standing line, we still should have clear conception of the sources of traffic so that we may be able to create industry along different lines and thus indirectly to enlarge the volume of our business.

Now we are going to look into the future prospect of the Chinese railways. As it is mentioned above, we must, first of all, take her industries into consideration. But we are sorry to say that our industries are not well developed and that no adequate statistics concerning our national wealth could be secured. Though China has been renowned as the country abundant in natural resources and valuable minerals, we do not have any definite knowledge of their whereabouts and their exact quantities. In general, agriculture has been carried on in every part of the country though with the same old method as employed thousand years ago. Forestry has been thoroughly neglected and mining has not been greatly encouraged. Manufacturing is in a very infant stage and occupies only a very insignificant place in this country's industry. Nearly all manufactured goods are imported from foreign countries.

Such is the real condition of Chinese industries. But we are not altogether disappointed and discouraged by this fact, for it is not too late yet to start our enterprises at this moment. With true zeal and effort, we are sure that, in one or two decades, China may become one of the most industrious and leading manufacturing countries in the world. Railway enterprise will naturally become prosperous hand in

hand with the growing industries. As a patriotic citizen of the Republic and an earnest student of the Railway Administration Course, one must try one's best to find what kind of industry can be created and developed so as to become the sources of traffic for our future railway enterprise. As we are handicapped in securing any authoritative statistics we are not in a position to exhibit our industrial condition in a detailed and exact manner.

Now for the sake of simplicity and clearness we divide the Chinese territory into four sections. The Northern Section is composed of Chihli, Shantung, Honan, Shansi, Shensi, and Kansu. The provinces of Szechwan, Hupeh, Hunan, Kiangsi, Anhwei, Kiangsu, and Chekiang form the Central Section. Yünnan, Kweichow, Kwangsi, Kwangtung, and Fukien belong to the Southern Section. Besides the provinces, Manchuria, Sinkiang, Mongolia, and Tibet are classified as the Outer Territories.

The Northern Section lies on the high plateau of Yangtze River. Climate and soil are especially suitable to agricultural plantations. Recently scientific methods of cultivation have been introduced and encouraged by the Government. The chief agricultural productions of this section are wheat, koaling, millet, beans, groundnuts, maize, and cotton. A part of them is exported every year. These productions are of no small volume and they are largely carried on by means of the old method and on a small scale. So this industry has not been developed to its fullest extent.

Minerals are still more prominent in this section than in any other provinces. The coal fields in Shansi are supposed to be the most extensive in the world, and even exceed the coal district of Pennsylvania in area. Those of other provinces are also of not less in amount and inferior in valuation. But most of these treasuries have not been touched and those mines which are in the course of operation are generally opened by old and crude methods. So annual outputs are very much limited and a large amount of useful minerals is still imported every year from foreign countries. The reasons for this are easily to be accounted for. First, the mines are not operated scientifically and extensively. Secondly, there is no adequate transportation facilities to carry the minerals to different consuming centers at the least possible cost. Railway construction, therefore, is urgently needed in these provinces if we do want to develop our mining industry. As to other kinds of minerals, we may mention the following: iron, gold, lead, kaolin, sandstone, and cement. With a single glance of the above list, one will see how an immense supply of freight traffic could be secured by the railroad in the future.

Manufactures, as a whole, are in a very primitive stage. Goods are seldom manufactured by machines. Handicraft prevails in this section as well as in other provinces. The muscular energy of man is the only form of power used in manufacturing. As a result, we export every year a large amount of raw materials and in

return, we import from other countries various articles in their finished form. For instance, the straw braid of the best quality is produced in Weihsien, Shantung, and is exported through Tsingtau as a half-finished products.

Cattle raising is only of a little importance in this district and many of them are shipped to Vladivostok from Shantung via Tsingtau. Eggs are also produced in a large volume and few factories have been organized to manufacture them with our own capital.

The Central section of China, lying on both sides of the Yangtze River, is the most fertile and progressive district in the whole country. The world-known industries, silk and tea, are produced in this section. Chekiang and Kiangsu are places where the finest silk in the world is produced. Nearly one third of the population of these two provinces are engaged in silk business. Silk industry is very prosperous along the Shanghai-Nanking and Shanghai-Hangchow-Ningpo lines. Best tea is produced in Anhwei and Chekiang. Its market is centered at Hankow, Hupeh. The exportation of tea has been reduced in recent years and it is hoped that this trade will return to its old record before long.

The agricultural products are very abundant and fine. Rice is produced in Anhwei, Kiangsi, Kiangsu, and Hunan which are noted for its superior quality and large quantity. Wheat is more extensively raised in Szechwan which is known as one of China's granaries. The flour produced there is of excellent quality. Cotton crops are abundant in Kiangsu, Chekiang, and Anhwei. Recently, this industry has been greatly developed. Many factories have been opened along the Yangtze Valley. Other agricultural products such as rape in Anhwei, beans, hemp, groundnuts, and the like are also ranked as important articles. Medicine is largely produced in Szechwan. Its yearly outputs are worth from Tls. 1,400,000 to Tls. 1,800,000.

Mineral productions in this section also occupy an important place. Coal mines are located in various districts. Siangki (Hupeh) coal is of excellent quality—400 tons per month. Ningkwofu of Anhwei and Kaihsien of Szechwan are other places famous in coal production. Iron mines may be found at Tayah of Kiangsi, Fanchang of Anhwei, and many other places. Besides, antimony is produced in Hunan in a large quantity. This is by far the most important mineral of China. China is one of the world's chief producers of this mineral. Alum is the important product of Chekiang. Kiangsi porcelain is famous in China as well as in the world. Chintuhchen produces best chinawares, but as a result of poor transportation facilities, the products cannot be sold at lowest possible price at remote markets. From this fact, we can see that a railway has great to do with the development of industry.

Szechwan is the richest province in China. Between Tzeluitsing and Kiatingfu there are from 8,000 to 10,000 of petroleum and brine wells. Natural gas wells are also located in this district. Tzeluitsing is the chief center of this industry in

Szechwan, there are about 3,000 wells from 1,700 to 3,000 feet deep, producing in aggregate 400 tons of brine and 100 tons of oil. The most valuable mineral, the alluvial gold, is found at the upper part of Yangtze River. From the Chunchang valley through which flows the Anning River on the east, to Tibetan frontier on the west, and from Tatsienlu on the north to the Chin Sha Kiang on the south, there is a stretch of country having an area of 40,000 square miles. Szechwan is really richer in mineral wealth than any other part of China, and is one of the most highly mineralized spots in the whole world. Iron of high grade is found in Yachow and quicksilver in the southwestern part of Szechwan, especially in those portions near Yalung drainage.

Productions in Southern Section are comparatively inferior to those found in the Central Section. Agricultural products are tobacco, rice, cotton, and sugar. Fukien produces best sugar and tea. The latter is exported in large quantity every year. Different kinds of fruits are cultivated in both Kwangtung and Fukien. Banana, litchi, sugar cane, etc., of Kwangtung and orange of Fukien are the best fruits that any soil can produce. Fruit trade, however, is not nation-wide at all. With adequate transportation facilities, it is sure that our fruit industry will become as famous as that of California of the United States.

Yünnan and Kweichow are very rich in mineral products. Nearly every kind of minerals can be found in these provinces. But these mines have not yet been exploited at all. As there are only few short and discontinued lines in the Southern Section, no important industries are found there. If a railway system in the South should be completed, various industries there will surely come into existence and become more prosperous than in any other part of this great Republic.

The Outer Territories have, also, a considerable amount of products which deserve mention. Of these territories, Manchuria is the most promising agricultural region in the world. Beans produced there are extraordinarily abundant, and large amount has been exported annually in the form of bean cakes. Fruit can be found in every part of this district. The lumbering industry is very prosperous in Manchuria, but it is, in most part, wholly under Japanese control.

Manchuria has a large extent of pasturage, so the cattles, particularly goats, are very numerous. Cereals and wheat are raised extensively in the north part. Besides, there is a vast coal field in Fushun, Manchuria. It is unparalleled in the world for thickness and volume ef seam. The belt of coal is calculated to contain 800,000,000 tons.

Sinkiang has an immense desert surrounded by mountains and is for the greater part barren and sandy. Its agricultural resources are not great. Owing to its inaccessibility, the mineral wealth of Sinkiang has been but little exploited. Jade,

gold, sulphur, copper, and some others can be found in some spots. If a railway line be constructed to connect this district with other densely settled provinces, a vast army of farmers and laborers may be migrated to this locality to open the numerous hidden treasuries.

As the population of Mongolia is chiefly nomadic, agricultural pursuits are largely neglected. The exports from this district are almost entirely pastoral. They include live stock, horses, large horned cattle, sheep, camels, and goats. Besides, there are fat, wool, hides, furs, sheepskins, camels' hair, horsehair, timber, dried mushrooms, and deer horns for medical purposes. Mineral is very little known. Agriculture in Inner Mongolia has recently been introduced by the Chinese immigrants.

In regard to Tibet, a great part of this district is desert, but the valleys in the south and west are fertile; and vegetation is luxuriant in these sections. Cereals raised are not sufficient to feed its own people, so a large amount of them is required to be imported from other provinces. As to domestic animals, there are tame yaks, asses, horses, goats, and sheep. Wool is also exported from there. Although Tibet is said to be rich in minerals, little is known as to its actual outputs. With adequate transportation facilities, however, we may create industries and secure sufficient traffic from this land.

Now let us turn to the information given by the "Railway Statistics for 1918" (published by the Ministry of Communications), we find that goods revenue for 1918 for Chinese Government Railways is very great. They may be mentioned as follows:

Class of Goods	*Total Tons Carried*	*Goods Revenue*
Agricultural products	... 4,028,907	$17,420,560.49
Animal products	... 417,626	2,408,757.74
Mineral products	... 8,946,683	12,867,368.27
Forest products...	... 417,925	1,091,852.56
Manufactured products	... 2,061,271	8,311,348.62
Material for other railways	... 215,332	336,937.75
Service stores	... 2,463,940	1,533,176.37
Total	...18,551,684	44,490,537.89

From the above statement, we may conclude that if different sections of this Republic could be linked together with close railway nets, our industries, as sure as sunshines, will spring up one after to the other and surprise the whole world. On the other hand, our railways will, unquestionably, secure large and constant supply of freight traffic. Large profits will be reaped. So if we want to make our Republic rich and strong, we must carry on our railway enterprise in order to create and develop our promising industries.

Some Improvements Regarding the Chinese Railroad Through Traffic

Inter-railway arrangements for handling through passenger or freight traffic were even in the United States but little developed during the first twenty-five years of railway construction. In China as the railroads are widely scattered, and most of them are built on loans of foreign nations, and therefore differently managed, it will be ever more difficult to initiate the same. But frequent transfers were a deterrent to travel and a much more serious hindrance to freight traffic; so China inspite of the numerous obstacles, is under the necessity to build up through traffic. It was first established in April of 1914 among few railroads in Northern China. Although the service rendered is considerable, we should not be satisfied with that. As civilization advances and the through traffic is daily increasing, it is necessary that we should develop and improve it in order to benefit the traveling public as well as the railways. Viewing the past records and contemplating for the future, I am going to suggest some urgent reforms and improvements as regards the through traffic. They are: 1. Improvement of the through freight traffic; 2. Improvement of the through passenger service regarding the baggage examination; 3. Improvement of the through passenger service regarding changing cars; 4. Inducements given to tourists; 5. Interchange of rolling stocks; 6. Organization of a clearing house for the accounts; 7. Training up of experts in accounting and other officials in charge of transportation.

1. Improvement of Through Freight Traffic

Frequent handling of freight en route consumes time, increases the liability of damage in transit, and raises the cost of transportation so high as to restrict long-distance shipments mainly to non-perishable commodities of relatively high value. But these obstacles can be removed by means of the express companies and fast freight lines. We already have the express companies but we lack fast freight lines by which the rapid handling of through traffic can be accomplished. They are the separate and independent car companies. They make contracts with the railroads so as to provide a through routing of their own cars.

The "likin" system is another barrier to through freight traffic. Serious detentions are caused by different "likin" systems of different provinces. The only way to remedy this is to eliminate "likin" and increase the tariff rates. Although in so doing the revenue of the government may be for the moment greatly reduced but it can be made up by levying a percentage on freight rates from the railroads.

Another thing to which we ought to pay special attention is the building of ferryboats with rails on. For instance, the goods wagon of the Shanghai-Nanking Railway at Nanking can be shipped over to the Tientsin-Pukow Railway and vice versa, thus avoiding the delay or damages resulting from the transshipment.

Lastly, additional supply of goods wagons and more storerooms are also of importance.

2. Improvement of Through Passenger Traffic Regarding the Baggage Examination

Although there are special rules for conveyance of baggages within the country but complaints have been made from time to time by foreigners who have been annoyed by repeated examinations by the Customs Houses. For instance, a traveler from Japan coming to China via Shanghai or Antung must subject his baggage to the customs examination. Then on reaching Tientsin his baggage must again be examined by the Tientsin Customs House. The same procedure is to be repeated at the Chienmen Inspection Bureau, if he visits the Capital. The once-enough examination at his first entering place is considered reasonable. The repetitions made afterwards are not only an ineffective undertaking but are really a serious annoyance to the traveler. Besides, the regulations of the Customs Houses are quite different from one another, though within the same country. It frequently happens that sanction given by this Customs House may be disapproved by another. What a serious obstacle it is to transportation! No doubt, frequent complaints have been sent in by foreigners to the railroad authorities. Therefore, in order to improve the through service and facilitate transportation, reforms are badly needed and should be promptly carried out. There will be only one reasonable examination of the baggages of people coming to China at the first station of entry and of people bound to foreign countries at the last station of departure. This not only eliminates the disturbance to travelers but also unifies the administration of the railways.

3. Improvement of the Through Passenger Service Regarding Changing Cars

Though the through service for passenger traffic has been in no small degree improved in recent years by different railroads, yet necessity of changing cars by passengers from one line to another is still unavoidable. For instance, in case of the passenger through traffic between Tientsin-Pukow and Peking-Mukden and Shanghai-Nanking and Shanghai-Hangchow-Ningpo lines, transfers at Tientsin and Shanghai are indispensable. Some time ago it was proposed by the Peking-Hankow line to provide through cars; however, on account of the fact that the through traffic is still in its infancy in China, that passengers are yet scarce and that loss will probably accrue to

the company, where special cars provided, the proposal was temporarily abandoned. Recent reports show that passengers, being very much facilitated by the through service, are gradually diverted from the Shanghai-Tientsin steamship lines to the rails. It is advocated that further facilities be extended to passengers at the junction of two roads. It may be difficult at the outset to interchange cars and fix schedules, yet by thorough examination and careful arrangement they can certainly be effected, not only in which will result better service to the passengers, but also an increase in revenue to the railways.

4. Inducements Given to Tourists

As the people of Western countries are fond of traveling, their railroads try to offer as many inducements to them as possible. Switzerland with her world-famous natural scenery receives annually millions upon millions of dollars from the railroad passenger revenue. China is not inferior to Switzerland in her natural beauties. Tourist traffic is sure to be prosperous, provided attractive inducements be given by railroads. This can be accomplished either by reducing the fare or improving the service. On some American railroads there are personally conducted tours, excursions, and advertising bureaus organized for the purpose. Elaborate tours to distant places of interest are arranged, and special agent personally conducts them. Different forms of excursions are arranged and round-trip tickets sold at considerably less than the regular fare. Favorable relations with hotels, transfer companies, and steamship lines are also established. And as tourists act as an effective propagandists we can thereby convince the Westerners of the misconceptions of their countrymen about the real conditions in China. And on our part it is of importance that at those places of interest we should organize police power and have public roads paved in order to encourage travel and protect the tourists. For the Chino-Japanese through traffic there has been published a pamphlet giving the schedules, fares, and instructive advice en route. But booklets, post cards, and leaflets picturing and explaining the places of natural beauty and historical value are yet wanting. This is really an evidence that our advertising is still in its infancy.

5. Interchange of Rolling Stocks

In our railroads there are now frequent disputes arising from the interchange of cars. Of course, unequal interchange and car shortage must be the cause. To remedy the first, there should be rules provided to control the undertaking, such as the American railroads do, to regulate the manner in which foreign cars are to be used and returned. As to the car shortage, it can be at least in part, if not wholly, avoided by organizing a common source of car supply to which each railroad as a member is liable to contribute a portion of its own equipment. So in time of car shortage, each railroad can demand cars readily from the car supplier, and the latter in order to have fair distribution of cars and to anticipate future demands for cars, must

be well informed of, and in close contact with, the conditions of every division of each railroad. As a result, disputes subside; delays are diminished; and above all, through traffic may thereby be developed to the fullest extent.

6. Organization of a Clearing House for the Accounts

Through traffic involves the joint undertaking of all railroads and becomes a more complicated system. The methods of accounting are liable to be different when the business is handled jointly by all railroads. This necessitates the establishment of a clearing house. It serves to clear car accounts between railroads subscribing to the car supplier; to keep records of the interchange of cars for the benefit of each railroad; to arrange for an equal interchange of cars; to arrange for a fair distribution of cars; to distribute the earnings of through traffic to each railroad; to gather reports from each road to make statistics of through traffic; and, in a general way, to promote the efficiency of cars. At the same time auditors from different railroads should be invited to audit the accounts.

7. Training Up of Experts in Accounting and Other Officials in Charge of Transportation

It is already forty years since railroad has been in existence in China. But she is still very barren in railway experts. The officials now on the railroad service are mostly foreigners. Schools of railway administration have been established only several years ago, and graduates are just novice and beginners who have not had any experience. As the service of the through traffic becomes more and more complex it needs ever urgently experts to perform it. The best method to obtain men qualified to fulfill such tasks is to send railway employees and railway school graduates to foreign railroad companies to practice. Otherwise, it is hard to carry out with any efficiency the service of our future traffic, and the railroad transportation as a whole will be a failure.

It is our earnest hope that the above-mentioned improvements should receive the attention of the railroad authorities, and thus special efforts can be exerted to attain the aim. In Western countries there are through traffic associations in charge of the undertaking, so it is of pressing need that we should follow their example. In this way our hope for the development of the through traffic can be realized and there will be a bright future for China and the Chinese.

The War and Railway

China is rich in natural resources. Her foodstuffs are numerous, her territory boundless, and her population large. If every one would use his brain and energy to develop industry and commerce, there will be plenty of room for more people of every

class to live upon. But most of the Chinese have devoted their whole time to the literature and politics, in order to get into the official circle, instead of inventing and developing the industries which may be beneficial to China in the very near future. One of the most important elements of industries that should be developed is the railway system in China, and so it is worth while to discuss the question of the railway system of to-day in China.

At present China has a considerable number of technical institutions located in the different parts of the country to give the people a proper education for the purpose of enabling them to develop her industry. In all probability the institutions in China customarily keep the students in school to dig into the books instead of giving them a practical knowledge. We all realize that the theoretical knowledge is less important than the practical. No matter how well can you study, you will have an urgent need of practice when you leave your school. So all the institutions, at least, some of them, now offer the students a trip or camp in order to have a practical experience before they commence their business in the community. Most of such offers will be made seasonably either in the spring or in the course of summer vacation which period is the most suitable time for practice. Accordingly we, the students of Railway Administration of Nanyang College, fortunately had an inspection trip to the Pukow Station and the Tientsin Station of the Tientsin-Pukow Railway by way of Shanghai-Nanking Railway, and we started from Shanghai in April 13, 1920.

Though we are interested in all Chinese railways and services, we must confine our discussion to the two aforesaid lines only. During this investigation of railways we stopped at every big or first-class station belonging to these two lines and at each of them we spent at least two days for the purpose of inspecting the buildings and godowns, bridge and tunnel, signals and switches, machine shop and locomotive department, and almost every thing concerning railways. Nothing had drawn more attention than the freight yard, machine shop, and the locomotive and car department of the first-class station of the Shanghai-Nanking Railway. We all observed that the space of the godown was exceedingly big but that it was not fully occupied by the freight simply due to the diminution of freight traffic which was caused entirely by the lack of importation of finished goods. As regards the machine shop and the department of the maintenance of locomotives and cars they were also spacious; but the mechanists there did not seem to be very busy on account of the shortage of locomotives and cars. As a matter of fact, the same was true of the Tientsin-Pukow Railway. All this was solely due to the World War which seriously affected industry of every description.

The aforesaid was beneficial to China, for it gave her an excellent opportunity of bringing forward railway men. However it was not so. Indeed, industry in China is still in her infancy, and the business of railroad is by no means an exception. Furthermore, the foreign nations state that China should use the equipments imported

from the country which made to her for the purpose of constructing the railroad. So in the war time England and France took the active part, which kept them busily engaged in defending themselves all the time. All the leading nations in Europe were devoted to the production of the military equipments instead of the industrial. So we keenly felt the lack of our railway equipments. Indeed this was the only chance for China to develop her industry and thus to enlarge the volume of traffic for the railways, but she let this excellent opportunity slip away. As a result, the condition of her industry is by no means improved and the management of her railways are still with the "sphere of foreign influence." True, we have read the timely top of the "REDEMPTION" of the Peking-Mukden Railway in the *Millard's Review* but that has never been carried into effect.

England and France are China's creditors. About one third of the railways have been constructed with the English capital so they are under the influence of the English authority, some of the uncompleted lines still need the financial help of England. From the viewpoint of statistics of 1917 we can trace the service rendered with less efficiency on both passenger and freight traffic simply on account of the war. In most probability material civilization will be greatly advanced after the war because raw materials will be quickly increased, mines opened, industry developed, and railroads extended in order to satisfy the world's wants.

As has been said, the business of the Chinese railways were seriously affected by the European War on account of no importation of the equipments but it was also interrupted by the Civil War.

During the course of the civil war the traffic was disastrous. The Canton-Samshui Railway was one of the most profitable southern lines but it was seized by the southern authority; and the Chuchow-Pinghsiang and Changchow-Amoy railways met with the similar fate. On the other hand, the Tientsin-Pukow Railway, Peking-Hankow Railway, and Peking-Mukden Railway were also obliged to render service only for the military forces, which employed the professional skill of the railway officials in accomplishing the task as efficiently as possible. The trains which ran over a long distance from Peking-Mukden Railway to Peking-Hankow Railway often returned with empty cars and the time schedule was utterly disregarded. The soldiers entered the cars without tickets. With these facts in view one can safely assert that the condition of the traffic was desperate beyond all expression.

But in year, 1918, there was a considerable increase in revenue. The following diagram clearly shows the operating revenue and operating expenses of the Chinese railways in 1915, 1916, 1917, and 1918.

TABLE I

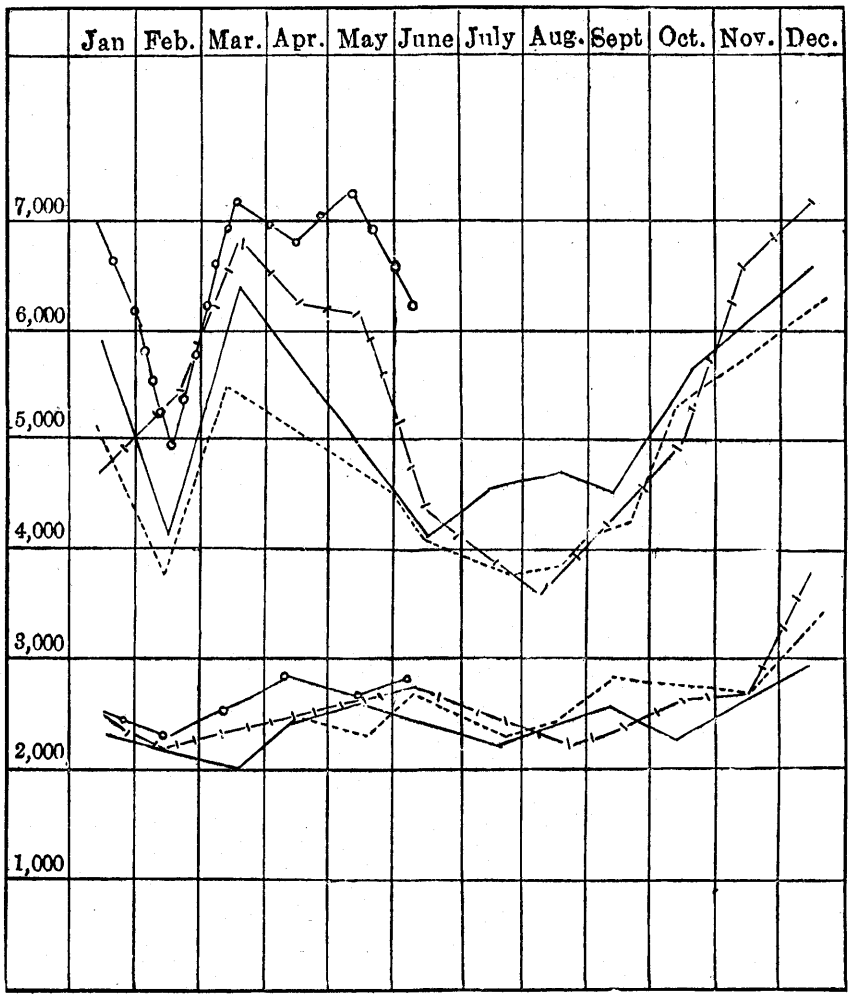
Operating Revenues

Year	Total Rev. for the year	First Six Months	
		Revenue	% of Total for the year
	$	$	
1915	57,062,359	28,045,620	49.1
1916	62,761,720	31,732,784	50.5
2 years	119,824,079	59,778,404	49.9
1917	64,821,969	33,820,880	52.1
1918	79,000,000	39,583,248	50.0

TABLE II

Operating Expenses

Year	Total Exp. for the year	First Six Months	
		Expenses	% of Total for the year
	$	$	
1915	30,258,532	14,179,825	46.8
1916	28,842,278	13,980,549	48.5
2 years	59,100,810	28,160,347	47.6
1917	30,238,017	14,709,497	48.6
1918	33,500,000	16,023,590	48.0



000 omitted in the first column.

1916 ——————

1915 ----------

1918 —o—o—o—o—o—

1917 —|—|—|—|—|—

Diagram of Operating Revenues and Operating Expenses of Chinese Government Railways.

China can overcome the difficulties between the North and the South by means of the unification through the railway service. In supporting this assertion the following may be quoted: "First, if it is viewed from the military standpoint, improvement of the Chinese railways has a most important bearing upon the maintenance of the internal peace and order. It is not a rare occurrence that months elapse before battles between the North and the South are decided, and although strong reasons are assignable, defective transportation is undoubtedly a chief one. Therefore when the Chinese railways are widely extended and enabled to render exceedingly efficient service, the issue of war can be rapidly decided, and disturbance can soon be put down.

"A common source of nearly all the evils of China lies in her defective means of communication, particularly her railways. It is, therefore, almost beyond hope for China to improve her internal affairs and acquire wealth and power, without radical reforms in the railway status of the country. As regards the unification of ideas, it may be well to resort to the wide and rapid circulation of such newspapers, magazines, and books as lend the public opinion to settle the conflict between the military conservatism of the North and the idealistic radicalism of the South and bring them nearer to each other in order to prevent each other from having any different opinions."

Here it must be borne in mind that China needs more railways, not because they can render their valuable services to war but because she is not sufficiently supplied with them for the satisfactory development of her natural resources.

Another question which claims special attention is how to fully utilize the lines already completed. The total mileage of railways in China is said to be about 7,000 miles, and it carries 26,000,000 passengers and 15,000,000 tons of freight a year. But Japan has 6,000 miles of railway with an annual traffic of 280,000,000 passengers and 53,000,000 tons of freight. Thus the Chinese railways only handle one tenth and one third as much of the traffic, as the Japanese railroads do with the same mileage. We all clearly know the Chinese railways have so poor a result on account of civil war, flood, and undeveloped industry.

If railways are increased, the products of the South can be carried over a great distance and brought to the market in the North in a short time, and the manufactured articles of the North will, in turn, be readily placed at the disposal of the South. By means of the railway service, business between the North and the South can be transacted without much difficulty. Furthermore there will be ample opportunities to bring together the two contending factions.

As a matter of fact, nothing can help China to develop her natural resources better than railways. China has herself a large population, boundless territory, trackless forests and other natural resources. The coal deposits in China are estimated at a wonderful quantity of 950,000,000,000 tons, which can supply the world's use for a

number of years. With these favorable factors industry should have been developed much more by this time, and the people should have been enriched, but imperfect railway service and lack of sufficient capital are accountable for tardy progress.

In conclusion, it may be said that the wars both in Europe and in this country seriously affected the railway traffic in China. They handicapped the railway service and hindered the unification between the North and the South. When the civil war comes to an end and when a strong central government is established the people will have more confidence in the government, and they may be willing to make loans to it for the purpose of building more railways. For China must complete her railway system, give her people the high degree of efficiency of rendering service, and make the rate as low as possible. When all these are set in motion the Chinese industries will be developed, material civilization will advance, and China will be raised from a position of comparative insignificance to the foremost place among the Powers of the world.

An Outline of Cost Accountancy for a Manufacturing Concern

This outline is intended to illustrate a system of accounts which is suitable for recording the transactions of a manufacturing concern. Though the number of accounts undoubtedly varies with the volume of business done by a concern, yet the general accounting principles and the classification of accounts are practically the same in any case. There are seven books and four ledgers usually used; namely, journal, cashbook, voucher payable book, sales book, requisition journal, transfer-inward journal, finished goods journal, store ledger, stock ledger, general ledger, and sales ledger.

Recording of Transactions in Cost Accounting

At the commencement of a company which takes possession of the physical assets of a partnership per sales, the bookkeeper makes entries, item by item, on the journal; and by agreement the value of the property is credited under different names of the partners as capital and stocks are issued to them. Upon the payment of capital the secretary makes proper entry in the cashbook and issues certificates of stocks to each stockholder, which are filled by the assistant secretary and signed by the secretary.

Upon receiving a bill of materials purchased the store clerk opens accounts in the store ledger with each item shown on the bill and enters its weight, number, price, and value in the "received" side; then the bookkeeper issues a voucher for it. If it

is paid a check is written for its payment. When the materials bought are found to be defective and returned to the selling company, entry in the journal must be made by debiting the selling company and crediting the "material" account.

When an order is received a cost clerk fills in a "production order envelope" the name and address of the customer, the order number, the date wanted, customers' order date, contract price, and the specified conditions. In this envelope the cost sheet, requisition orders, time tickets, and all other papers relating to this production order are put. In the head of a cost sheet are entered the same information on the outside of the envelope.

When a requisition order is handed to the storekeeper asking for materials required in the factory, the store clerk enters the numbers and value of the materials taken out from the stores under their proper headings in the store ledger on the "delivered" side and calculates the balance remaining in the store. Then the order is passed to the cost clerk who enters the total of the materials to both the cost sheet of the production order and requisition journal with the indication of production order number. If the requisite materials are found to be defective or not required, it must be returned to the store, in this case the cost clerk enters the amount in the transfer-inward journal and also in the cost sheet under "materials returned."

After the closing hour of a day the time tickets are collected, then the time-keeper finds: (1) each operative's time of the day, which is entered into the "pay-roll" sheet under different operative's name and the proper date; (2) the productive time of each factor of the day, which is entered into the "weekly summary of production factor time" sheet; (3) the wages chargeable to each production order for the day, which is entered into the "productive labor" column in the cost sheet of each production order; and (4) the production factor time chargeable to each production order for the day, which is entered into the "manufacturing expense production factor hours" column in the cost sheet under the factor number.

At the end of a week, when the pay-roll sheet is completed, the time clerk calculates the total time and wages of different operatives in the week; extends the amount of wages of productive operatives to the column of "productive labor," that of nonproductive operatives to the column of "manufacturing expense," and the salary of the superintendent to the "general and administration expense" column; and writes a voucher for it. The bookkeeper writes a check for its payment upon the presentation of that voucher. The times of different factors in the "weekly summary of production factor time" sheet are also totaled, and by comparing with full time the idle or over-time is shown, which is multiplied by the estimated rates and the product is divided by total production hours, thus the supplementary rate is obtained.

When a production order is completed, the cost clerk foots the columns of cost of material, cost of productive labor, and number of production factor hours; then

transfers the footings of factor hour columns to the summary, multiplied by the rate of estimated manufacturing expenses of each factor, and their sum is found. Again the cost clerk takes the total hours on this order for the week, and times the supplementary rate, of which the product is added to the manufacturing expense to form the total manufacturing expenses in the summary. He then enters the cost of material, cost of productive labor, and manufacturing expenses in their proper places in the summary, and finds the total factory cost. According to the specified conditions, twenty per cent or twenty-five per cent of factory cost as profit and five per cent of selling price as selling expense will be added in order to get the selling price. After this sheet is completed the bookkeeper makes entry in the finished goods journal with factory cost, material cost, productive labor cost and manufacturing expenses under their proper columns. If the production order is for stock, accounts must be opened and entry be made in the stock ledger under the "received" side with the indication of the number of machine and factory cost as the price.

Whenever a sale is made or an order is shipped, an entry is made in the sales book with the indication of cost and selling price. If it is from stock, the entry in the "delivered" side of the stock ledger is made. When the customers pay their accounts by cash, entries are made in the "receipts" side of cashbook; they are credited in "sales ledger" column and debited in "cash" column. If there is a discount it will be written under the "sales discount" column. When a customer pays his account by promissory note, the bookkeeper will make an entry in the journal by debiting "notes receivable" and crediting the customer. After the note is paid, cash is debited in the cashbook and notes receivable is written under "accounts" column which shows the credit of notes receivable.

In any kind of payment a check is necessary. If it is within the scope of the factory a voucher is issued before checking it, otherwise, such as the payment of freight for the customer, no voucher will be issued. Whenever a voucher is issued entry must be made to the voucher payable book by debiting the proper accounts and crediting "voucher payable." If it is a minor account and there is no special column for it, it is entered by debiting the "sundry accounts" with the name of the account as the indication. Whenever a check is issued entry must be made in the "disbursement" side of the cashbook by crediting in voucher payable column and debiting in cash column.

Any transaction or account which cannot be recorded in the other books will be recorded in the journal, such as the receiving of the physical property from the partnership for capital, the returning of defective materials to the selling company, accepting notes of customers for payment, settlement of bad accounts, replacement of machinery, etc. Both adjusting and closing entries are also made in journal.

All the expenses which have not properly treated before or not incurred during the period should be distributed proportionately over the month to each proper normal

accounts. For examples, insurance is paid yearly, but the expired premium value of insurance on plant, machinery, etc., should be charged to "building and lot expense" and credited to "insurance" accounts; rent of the portion of the building occupied by the company should be charged to "factory expense" and credited to "general and administration expense" by the amount specially fixed; taxes are usually assessed yearly, but no matter whether they are paid or not, the charge on building and lot, machinery, etc., must be made to "building and lot expense" and "factory expense" etc., respectively; overhead expenses are included in "general and administration expense," and should be charged to "factory expense" by estimated proportion; depreciation on plant is one per cent for each month by estimation, and should be charged to "factory expense" and credited to "reserve for plant depreciation" for its future replacement; manufacturing expense must be debited with the estimated amount and credited to "factory expense"; any interest accrued in notes receivable should be charged to "accrued interest on notes receivable" and credited to interest in order to show it as an asset; and any accrued wage and expenses should be credited to "accrued pay roll" in order to show it as a liability of the company.

At the end of a fiscal period every account must be posted into the ledgers. This begins with the cashbook. Post the footing of "sales ledger credit" column to the credit of "accounts receivable" account and that of "sales ledger debit" column to the debit of "accounts receivable" account; the footing of "voucher payable debit" column to the debit of that account in the ledger; the footings of both the "purchase discount credit" and "sales discount" columns to the debit and credit of those accounts respectively. All the accounts in the "receipts" side of the cashbook should be posted to the different accounts in the ledger. The footing of each column in the voucher payable book should be posted to the debit side of the account named except the "vouchers payable" column itself, posting to the credit side of that account in the ledger, and all the accounts under the column of "sundry accounts" should be posted individually to the debit side of those accounts named. Finished goods journal should be posted with the footings of all columns to the accounts named. In the sales book the footing of "cost" column should be posted to both the debit of "cost of sales" and the credit of "finished goods" accounts in the ledger, and the footing of "selling price" column to the debit of "accounts receivable" and the credit of "sales" accounts in the ledger. All items in the "selling price" column should also be posted to the debit of sales ledger under the names of different customers, which may be done immediately after each entry having been made. In the journal all items should be posted and the footings of the "credit" and "debit" of the "sales ledger" column have also to be posted to the credit and debit side of the "accounts receivable" account in the ledger. The footing of the requisition journal is posted to the debit of "material in process" and the credit of "material" accounts, but the footing of transfer inward journal is just in reverse order.

Preparation of Statements

Before closing the set of books a checking or proof must be made. Granting that all are correct I shall go on with the preparation of trial balance. A trial balance consists of all accounts as kept in the ledger and is arranged in their proper order. If the total of the credit and debit columns are in balance, this would be a correct one. From that, with the aid of inventories, all the statements can be prepared.

In the manufacturing statement the prime cost and production cost are shown in two parts of a full sheet of journal paper. In the "debit" side of the prime cost section are the inventory of materials at the beginning of the fiscal period, the materials purchased for the month less materials returned, and the productive labor which is taken from the debit of the "productive labor" account; in the "credit" side are the prime cost of goods manufactured during the month which in the sum of credit footings of "materials in process" less materials returned and the "productive labor" accounts, and the inventory of materials, materials in process and productive labor in process are the balances of those accounts. In the "debit" side of the production cost section are the prime cost of goods manufactured which is brought down from the prime cost part; the manufacturing expenses of preceding period which is the balance of that account in the last fiscal period, and the manufacturing expense for the month which equals to one twelfth of each item in the "estimated manufacturing expenses" sheet. In the "credit" side are the manufacturing expenses applicable to partly manufactured goods which is the balance of "manufacturing expenses" account in the ledger or in the trial balance sheet, and the production cost of goods manufactured during the month, which is the balance of the two sides of the production cost part and should be equal to the footing of the "factory cost" column in the finished goods journal.

The trading, profit and loss statement is composed of the "trading" section, the profit and loss section and the "distribution of profit" section. In the first section on the "debit" side the inventory of manufactured goods at the beginning of this fiscal period which is shown in the debit side of "finished goods" account at the beginning of the period, and the production cost of goods manufactured during this period which is brought down from the manufacturing statement, forms the total cost of manufactured products. This account should be equal to the debit footing of the "finished goods" accounts. From that minus the inventory of manufactured goods on hand, we find the cost of goods sold which should be equal to the debit side of the "sales" account. On the "credit" side of this part the sales for the month are shown by the credit entry at the closing period in the "sales" account. The balance between the two sides is the gross trading profit which will be carried down to the next section.

In the second section are the sales expense which is taken down from the debit side of the "sales" account, the general and administration expense which consists of all the expenses debited to that account in the original voucher folder and journal less credit for overhead adjustment, and equals to the debit balance of that account in the ledger. And the building and lot expense which is equal to the debit side of that account in the ledger and the items in which it will be ascertained by referring to the original entries. On the credit side of that section are the gross trading profit carried down from last section, the purchase discount, and the building and lot income which is the credit of that account in the ledger, the explanation of each items will be referred to the original entries. The balance of this section is the net profit for the period and will be carried down to the next section. In the third section the distribution of profits, whose proportion must be determined by the board of directors, consist of reserve for uncollectable accounts, dividend on capital stock, surplus and undivided profits and net profits for the month available for reserve, dividend, surplus, etc.

In the statement of assets and liabilities all the accounts are financial accounts taken from the trial balance, except the items of reserves for bad debts, dividend, surplus, and undivided profits which are taken down from profit and loss statement, and reserve for depreciation which is taken down from ledger account, and the factory expense for deferred charges to manufacturing expense in the factory expense account in the trial balance.

All those accounts in the ledger which contribute to find the gross trading profit and net profit should be closed by journal entries as sales, purchase discount, and building and lot income by credit entries; and administration expense, building and lot expense, reserve for uncollectable accounts, dividend, surplus, and undivided profit by debit entries.

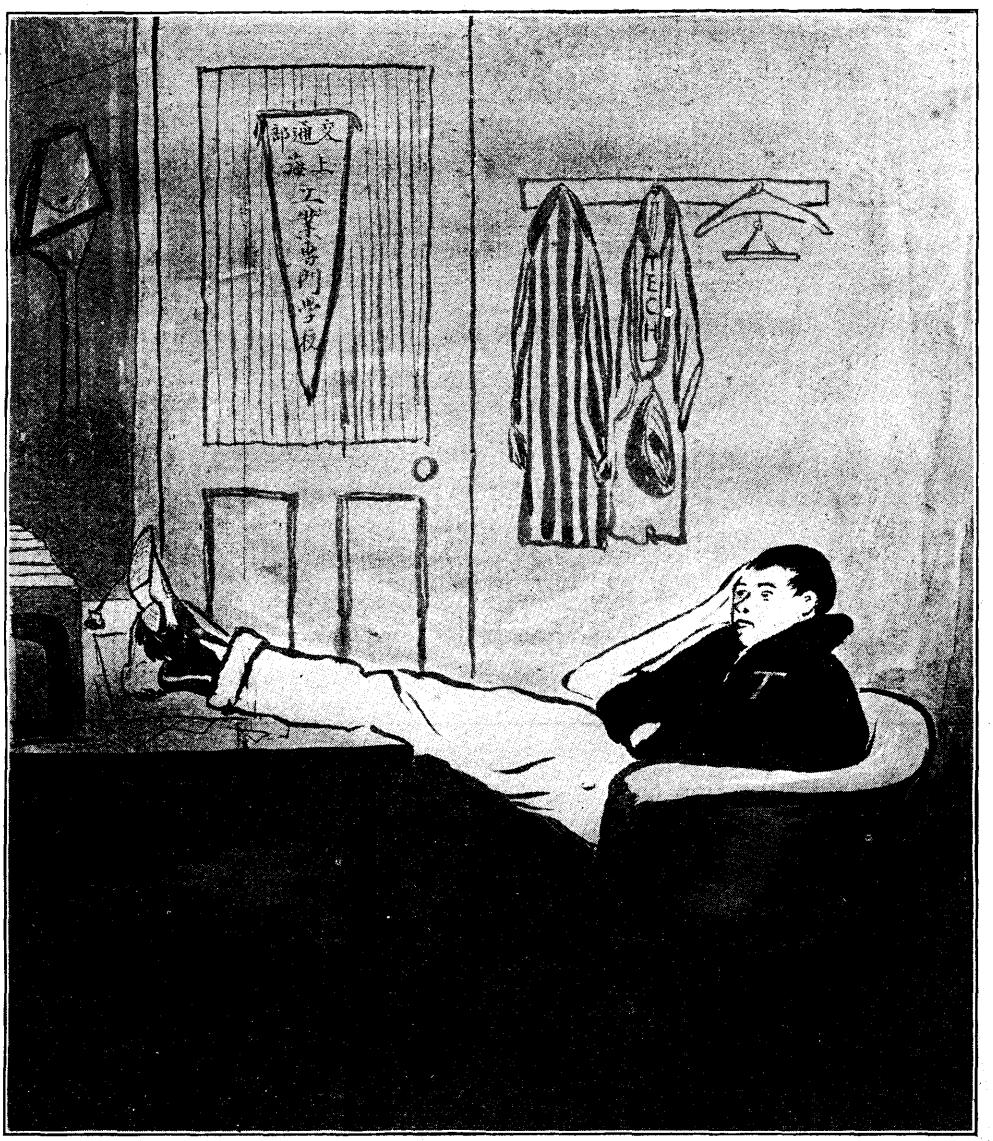
Distribution of Estimated Manufacturing Expenses

Distribution of manufacturing expenses over different production factors is one of the most difficult problems in the cost accounting to be solved. It requires a great deal of scientific knowledge and actual experience of the special conditions of a factory to determine because it is different with different conditions. For this reason the only thing that I can do is to state the general idea with an illustration in the following. In distributing the floor space as occupied by each factor in the controlling factor expenses such as rent, light, and heat, and taxes are distributed according to the space, others are distributed by special allotment with the exception of power, which is done according to powers directly consumed by each factor and the depreciation rate on plant is according to hours employed.

Illustration.

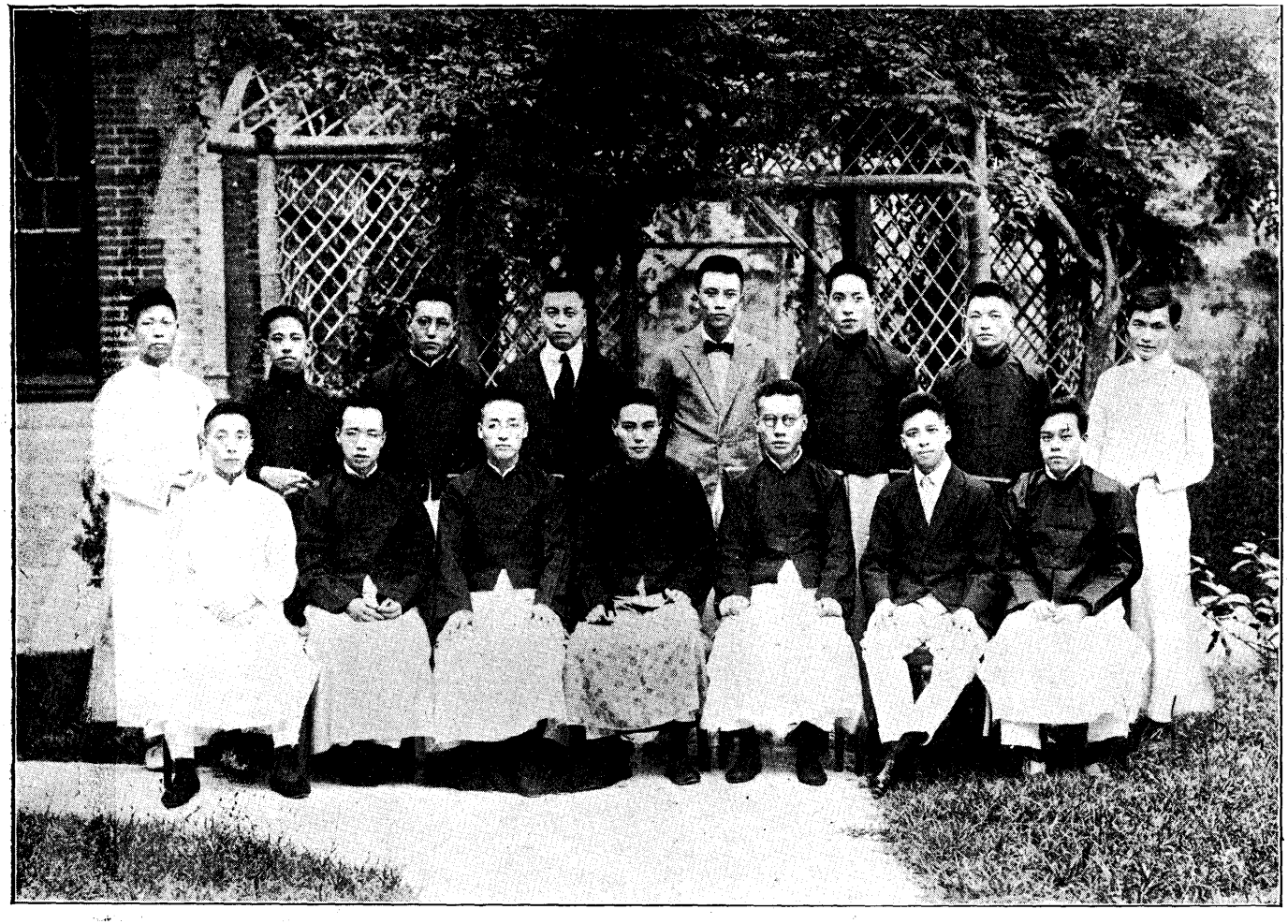
Distribution of Estimated Manufacturing Expenses. Showing Operating Cost of each Production Factor for the Period

Items	Productive Factors							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7
	Total	150 s.f.	140 s.f.	160 s.f.	100 s.f.	100 s.f.	200 s.f.	2000 s.f.
Rent of factory, 2,850 sq. ft.	1200.	63.16	58.94	67.37	42.11	42.11	84.21	842.10
Light and heat (by floor space)	144.	7.58	7.07	8 08	5.05	5.05	10.11	101.06
Power (by proportion of power)	600.	120.	120.	150.	60.	60.		90.
Taxes (by floor space)	81.	4.26	3.98	4.55	2.84	2.84	5.68	56.85
Insurance (by special allotment)	66.	11.	11.	11.	11.	11.		11.
Repairs and renewals (by special allotment)	360.	80.	60.	120.	40.	40.		20.
Supplies, oils, etc. (by special allotment) ...	60.	12.	10.	15.	6.	6.	2.	9.
Depreciation on plant (hrs. employed) ...	1158.	230.	230.	205.	80.	75.	105.	233.
Superintendence (special allotment)	1200.	200.	200.	300.	50.	50.	25.	375.
Indirect labor (special allotment)	480.	41.11	38.36	43.84	27.40	27.40	27.40	274.49
Overhead (special allotment)	600.	100.	100.	100.	100.	100.		100.
Total cost per year	5949.	869.11	839.35	1024.84	424.40	419.40	259.40	2112.50
Total cost per month	495.75	72.43	69.95	85.40	35.37	34.95	21.62	176.04
Hourly cost, 225 hrs. per month... ...	2.20	.32	.31	.38	.16	.16	.09	.78



S M. Voo

ACTIVITIES

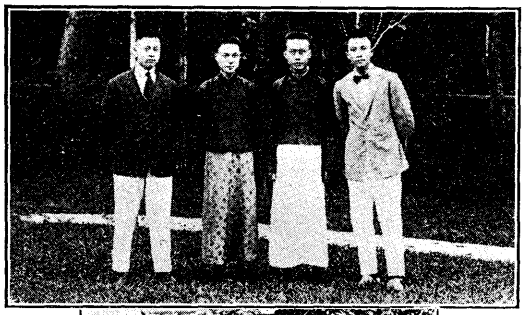


Officials of R. A. 1920 Class Association

Front row: M. S. Voo Z. Y. Chen T. L. Chang C. Y. Hsü Y. H. Wang S. H. Shar L. Chang
Back row: Y. Yee T. Z. Kuo K. S. Koo S. S. Tai S. B. Li L. T. Chang T. Z. Yang L. T. Tsao

G. I. T. A. A. Officers

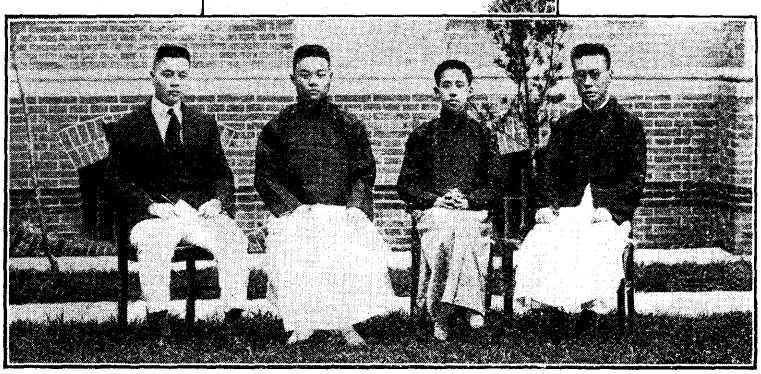
S. S. Tai
C. Y. Hsü



Y. H. Wang
S. B. Li

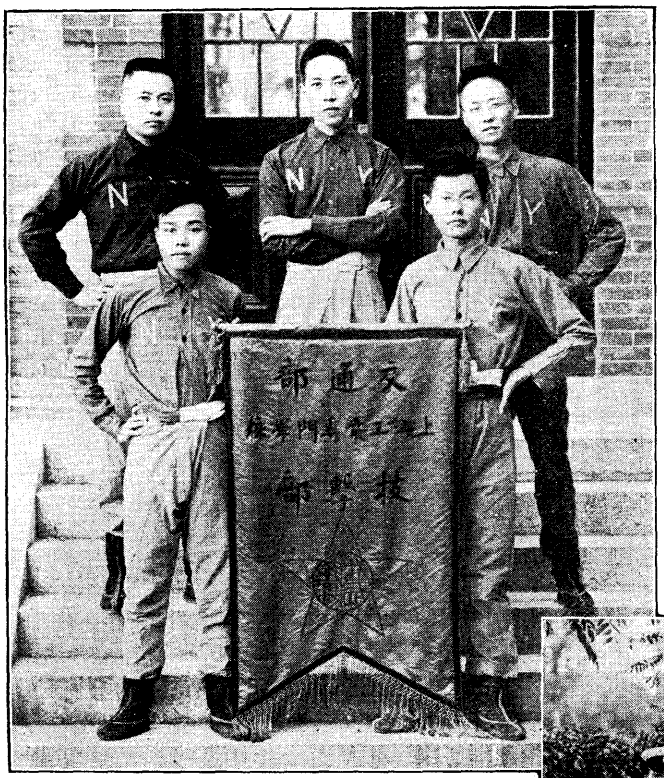
Winners of Chinese Literary Contest

Left: T. L. Chang
Right: Y. H. Wang



Winners of English Literary Contest

S. S. Tai Q. C. Huo T. Z. Kuo Y. H. Wang

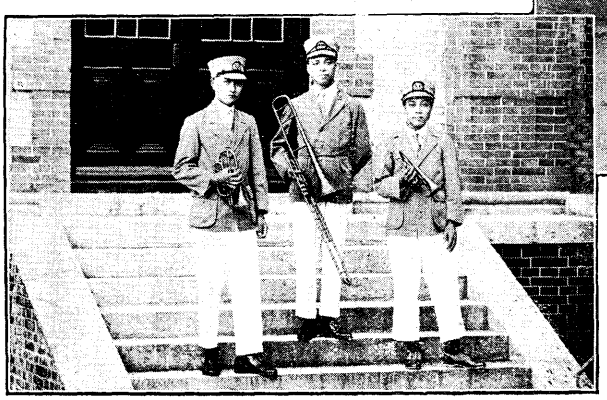


Boxing Team

S. S. Tai
L. T. Chang
C. Wong
L. Chang
T. Z. Zee

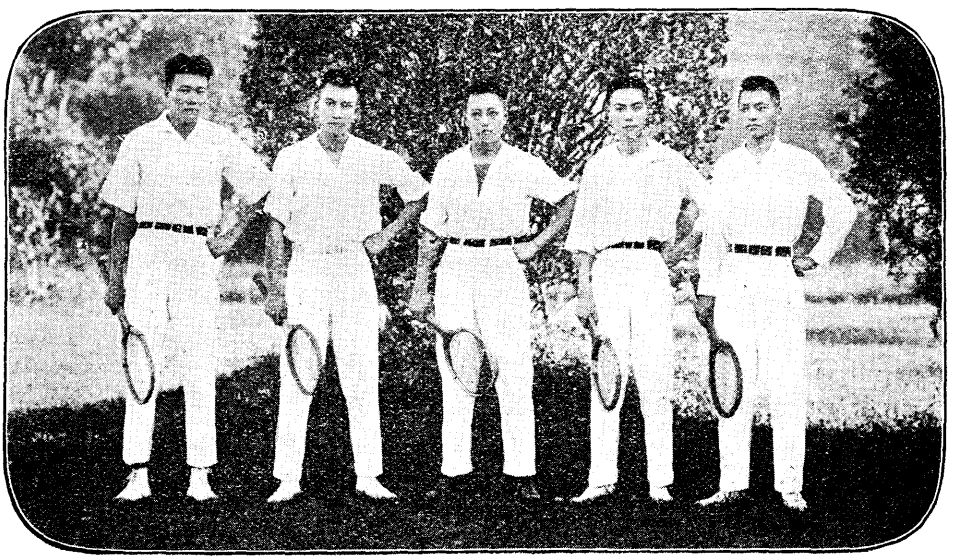
Military Officers

S. B. Li Y. T. Yang K. S. Koo



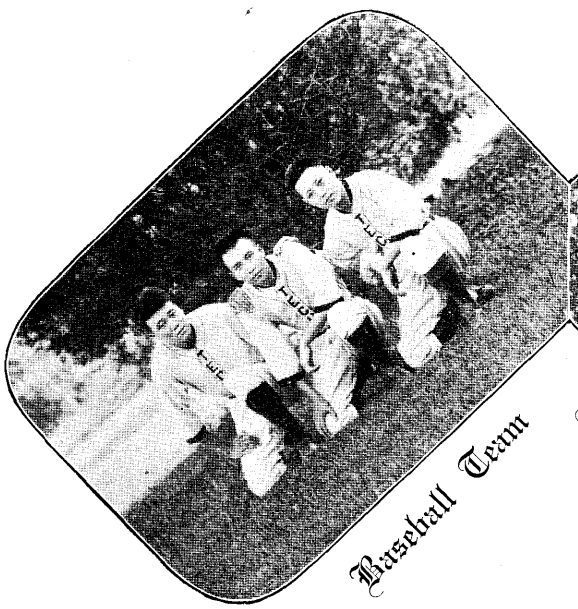
College Band

N. T. Sung
S. H. Shar
L. Chang



Tennis Team

Y. T. Tu Lisbon Li K. S. Koo C. Y. Hsü Y. T. Yang



Baseball Team

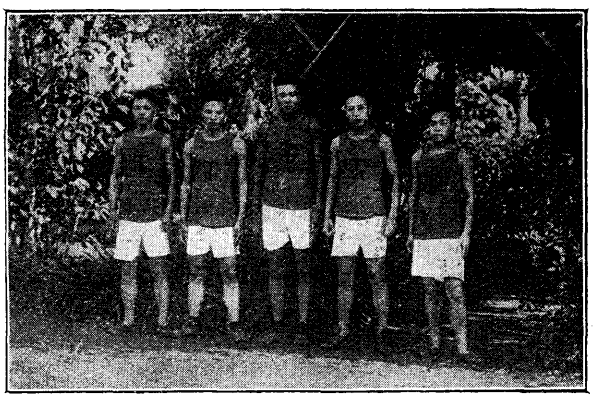
Y. T. Tu Lisbon Li K. S. Koo

Basket Ball Team

Y. T. Tu Lisbon Li J. H. Chen

Football Champions

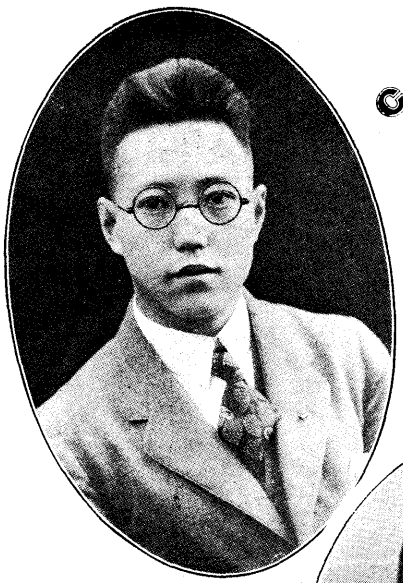
Lisbon Li
Yale T. Yang
J. H. Chen
Robert Koo
Y. T. Tu



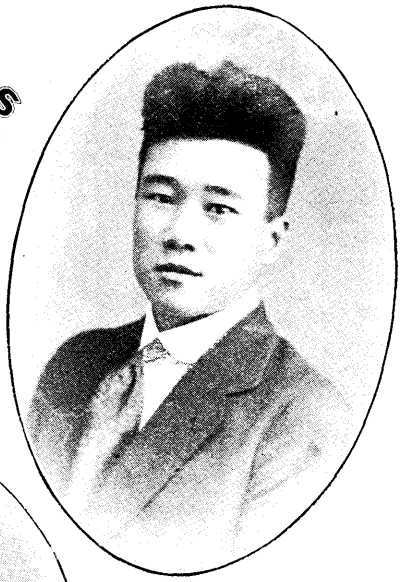
Track Team

L. Chang
K. S. Koo
Y. T. Tu
J. H. Chen
Y. T. Yang

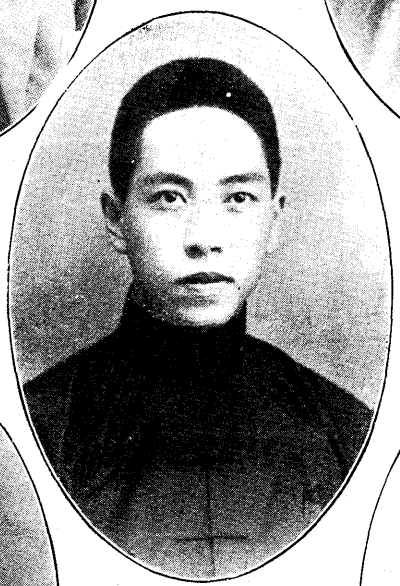
CAPTAINS



K. S. Koo
Football Team
(1919–1920)

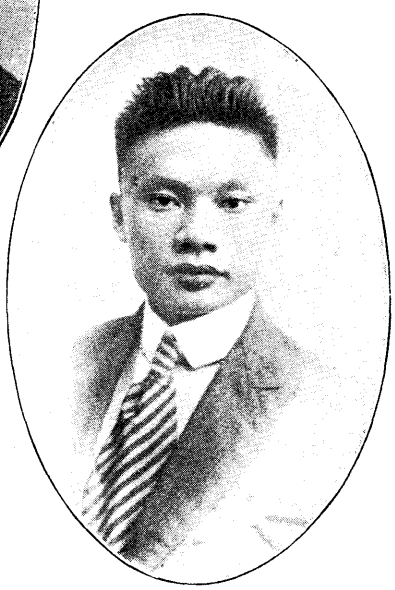


Y. T. Tu
Track Team



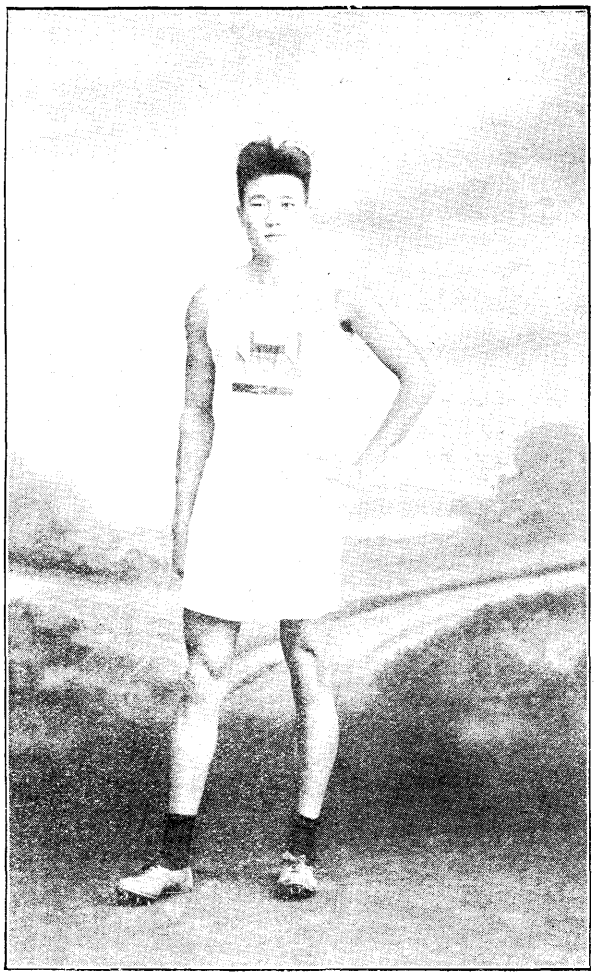
L. T. Chang
Boxing Team

Lisbon Li
Football Team
(1918–1919)
Tennis Team
(1915)

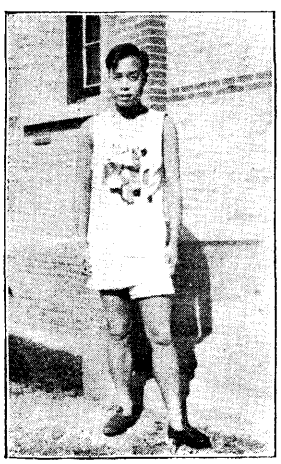


J. H. Chen
Basket Ball Team
(1919–1920)

Delegates to the Far Eastern Olympic Games



Y. T. Tu



L. Chang

S. F. Chang

A List of Winners of Literary Contests

張駿良　Chinese—Gold metal—'17
王元漢　Chinese—Silver metal—'17; English—Gold metal—'18
戴錫紳　English—Silver metal—'18
郭祖壽　English—Gold metal—'19
火貴樟　English—Silver metal—'19

Members of Various Activities

I. Officers of Atheletic Association

張信孚　President '17–'18
徐承燠　Vice President '18–'19; Football manager '16–'18
李樹本　Vice President '19–'20
王元漢　Secretary '18–'20
戴錫紳　Baseball manager '17–'18; Tennis manager '19–'20
黃韻山　Baseball manager '19–20

II. Captains of Different Teams

何信道　Baseball '18–'19
張信孚　Track and Field '18
何景崇　Football '16–'17
李樹本　Tennis '15; Foot-ball '18–'19
顧光實　Football '19–'20
陳汝園　Basket ball '19–'20
杜榮棠　Track and Field '20
張令綵　Boxing

III. Members of Different Teams

楊天擇　Football '14–'18; Tennis '15; Track and Field '14–'16
李樹本　Football '14–'20; Tennis '15–'19; Basket ball '19; Baseball '15–'19.
顧光實　Football '14–'20; Tennis '15–'19; Base-ball '16–'17; Track and Field '14–'16
杜榮棠　Football '18–'20; Tennis '19–'20; Basket ball '18–'20; Baseball '18–'19; Track and Field '18–'20
陳汝園　Football '19–'20; Baseball '18–'20; Track and Field '19–'20
何信道　Football '17–'18; Tennis '18; Basket ball '18; Baseball '18; Track and Field '18
張信孚　Football '15–'18; Basket ball '18; Track and Field '16–'18; Baseball '16–'18,
何景崇　Football '14–'19; Basket ball '18–'19; Baseball '15–'19; Track and Field '15–'19
黃韻三　Football '18–'19; Basket ball '18–'20; Baseball '18–'19; Track and Field '18–'19

張　倫	Track and Field '15–'20; Band '14–'15
徐承懊	Tennis '17–'18
夏孫鴻	Band '13–20; Track and Field '14–'16
沈乃莊	Band '13–'20; Bicycle Race, 2nd place '15
馮賓泰	Cross country team '18–'19;
張令綵	Boxing team
王　鎮	,,　,,
徐植仁	,,　,,
黃守鄴	,,　,,

IV. Captains of Military Drill

楊天擇	–'14
顧光實	–'14
李樹本	–'14

V. Delegates to the Eastern Olympic Games

杜榮棠	Japan '17, 2nd Pentathlon; ½ mile and one mile Chinese Relay Team; Manila '19, 2nd Pentathlon;
張信孚	Japan '17, 2nd High Hurdles
張　倫	Manila '19, ½ mile Chinese Relay Team
何信道	Japan '19
黃韻三	Manila '19

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THE RAILWAY ADMINISTRATION

1920 CLASS BOOK

GOVERNMENT INSTITUTE OF TECHNOLOGY
SHANGHAI, CHINA