To the Graduate Council:

I am submitting herewith a thesis written by James Michael Huberty entitled "Robert Bennet Forbes (1804-1889): A China Trader Between Two Worlds." I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of History.

Yen-p'ing Hao, Major Professor

We have read this thesis and recommend its acceptance:

Accepted for the Council:

Associate Vice Chancellor
and Dean of The Graduate School

ROBERT BENNET FORBES (1804-1889):

A CHINA TRADER BETWEEN TWO WORLDS

A Thesis Presented for the Master of Arts Degree

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When I needed a friend, Joe Distretti was at the other end of the land line, *semper fidelis*.

ABSTRACT

This thesis examines a portion of the professional career of Robert Bennet Forbes, an American China trader, in the American-Chinese trade from 1817 through 1845. Using primarily the writings of Forbes and the Forbes Papers, this thesis discusses Forbes' family background, his role in the transition from sail to steam, and his general historical setting in China and the United States. This thesis sheds new light on Chinese-American economic relations during a critically important time when America's economic role in China greatly increased and when modern maritime technology was introduced to American-Chinese trade. The central theme of this thesis is Forbes' important role in the two temporal worlds of tradition and modernity as well as in the two geographical worlds of China and the United States.

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CHAPTER 1. INTRODUCTION

On July 1, 1997, the treaty port of Hong Kong and the New Territories surrounding it will revert to the People's Republic of China, ending one of the last formal vestiges of a thriving nineteenth century colonial empire. In this thesis, I will explore part of that empire, with an emphasis on Robert Bennet Forbes, a rising American shipping magnate, whose commercial career spanned China's transition from a closed economic system to a fully integrated world trading partner.

Forbes was born in 1804, the twilight of pre-industrial America. When he died in 1889, industrialization was a world-wide phenomenon. Forbes' participation in the burgeoning international commercial shipping trade with China aided China's transition into the modern world. This thesis will focus on the role Forbes and his fellow American traders played, rather than on a "China-centered" approach or a discussion of international political influences on the development of the China trade.[1]

To say that Forbes played a part in China's modern history raises many conceptual and historical questions. For example, if Forbes was active during China's early modern period, when did China's late traditional period end? What was the historical context of those two periods? Was it like Japan's Meiji Restoration, a conscious and deliberate break with tradition? Or, was it halting and indecisive? Few accounts seem to have been written of the early period of China's transition to modernization.

As a general rule, the Opium War (1839-1842) between China and Great Britain has been considered to be a watershed event in Chinese history and has served as a convenient stopping point for China's traditional history and a starting point for China's modern history. Did the Opium War really mark a fundamental change in Chinese history? If it can be argued that sustained contact with the Western world began in the last half of the eighteenth century, where then, did Forbes and his American contemporaries who flourished during the first half of the nineteenth century fit into China's broader historical setting?[2] When did China's modern history begin?

Since the 1960s several historiographical approaches have been used to interpret modern Chinese history. Authors in both China (Hu Sheng) and the United States (Frances Moulder) have focused on "imperialism."[3] Generally, those studies concentrate on events which occurred after the Opium War. Other scholars like William T. Rowe have concentrated on a "China centered" approach with the aim of expanding Western knowledge of the vast corpus of Chinese history which exists almost exclusive of any Western influence. Both approaches adopt a "before and after" scheme of analysis. Specific historical periods are chosen for examination; consequently, readings in Chinese history seem "compartmentalized" and are viewed as separate historical units. Few attempts have been made to bridge the gap between China's many different historical periods. Still fewer attempts have been made to mark the most fundamental transition since China's genesis, the transition between tradition and modernity.

This thesis contributes to historical scholarship in several ways. First, it takes advantage of a little used but voluminous private collection, the microform edition of the Forbes Papers. Housed in the archives of the Massachusetts Historical Society, the original documents of the Forbes Papers contain valuable source material on the early days of Sino-American trade. The collection is comprised of many different types of documents, such as bills of lading, contracts, drawings, letter books, memoirs, private correspondence, ships' logs and manifests. The collection represents a useful addition to the slim body of knowledge available on the China trade and is all the more valuable because it illuminates the earliest American participation in the China trade prior to the Opium War.

Second, this study sheds new light on an important but generally neglected period of Chinese history. Because many historians regard the Opium War as the beginning of China's modern period, little attention has been devoted to the history of the first half of the nineteenth century. This study, however, examines the period from approximately 1800 to 1845 to help account for China's partial transition from tradition to modernity. Indeed, Forbes' career is particularly illustrative of the time because in just 28 years, from 1817 to 1845, Forbes made several remarkable passages in his personal and professional development. Beginning first as a cabin boy who moved up through the ranks to the captain's cabin and beyond, Forbes became a businessman, senior partner and maritime innovator at a crucial period in Chinese history.

Third, this inquiry tries to bridge the gap between historical surveys and monographical studies of recent Chinese history. This study should be seen as a supplement to standard studies of imperialism because it helps to explain America's role in the China trade immediately prior to the Opium War. Further, this piece also complements a "China centered" approach to historical analysis by emphasizing the economic importance of the China trade at Canton. This study represents an addition to China's littoral history.

Finally, this inquiry documents important advances in nineteenth century shipping technology which altered the China trade. This study of technology sheds new light on Chinese economic history. Technology, and especially innovations in the shipping trade during the nineteenth century, was driven in part by Americans' desire to succeed in the China trade. Robert Bennet Forbes' innovations in shipping technology represented a transition from a traditional "shipping trade" to a modern maritime industry which dramatically influenced the growth of Sino-American economic relations.

When Forbes began his commercial career in the China trade as a cabin boy in 1817, business transactions were conducted informally between China and the United States without the benefit of a commercial or a political treaty. The trade was sanctioned only by local custom and the Chinese "tribute system."[4] Forbes' activities, along with those of his fellow entrepreneurs, created a hybrid commercial environment at Canton consisting of Americans, Chinese, Europeans and Indo-Aryan Parsees from India. Together, they helped escort China into the modern world of business.

The Forbes Papers shows Forbes as a dashing, sunburnt American sea captain whose daring exploits brought Chinese goods to American households: chinaware, opium, silk, and tea.[5] Although his popular reputation has been all but forgotten, his accomplishments merit study for several reasons based upon his genealogy and professional career in the China trade. His colonial heritage served as a natural foundation for his entry into the modern world in the budding international trade at Canton. Further, Forbes was born into an extended family with extensive business relationships. Outside the extended family, Forbes and his kin operated within a still greater network of Boston and New England financial houses engaged in the China trade. Those trading relationships girdled the world.

Forbes and his contemporaries applied certain advances of the Industrial Revolution to the traditional shipping trade. They produced sailing ships which were augmented by the power of steam. Not only was the time needed to traverse the long shipping routes reduced by steaming during times of calm weather, the time needed to put to sea or reach snug harbor was shortened. Those auxiliary powered craft provided a transition to the modern world of shipping. Forbes' career, which spanned important economic and technological changes, provides a prism through which China's transition into the modern world might be viewed. Just as surely as Forbes helped to physically link China and the United States in the emerging world order of economic nationalism with his maritime innovations, Forbes provided a historical link between China's traditional world order and subsequent drive to modernity.

Chapter One places Robert Bennet Forbes within the historical setting of his day. Chapter Two briefly outlines Forbes' financial genealogy. Chapter Three outlines Forbes' participation in the China trade. Chapter Four evaluates Forbes' maritime career. The Conclusion contains an assessment of Forbes' activities in the China trade.

CHAPTER 2. THE AMERICAN WORLD OF ROBERT BENNET FORBES

When Robert Bennet Forbes was born on September 18, 1804, America was paying the price for its successful revolution. Despite the Colonies' significant English heritage and their once lucrative trade with England, the Crown was not forgiving. The traditional, highly profitable trading routes Americans enjoyed before the Revolution, especially to the Caribbean, were seriously curtailed. However, Americans could not just look inward to the western frontier to recoup the temporary loss of the Caribbean trade. The new nation and especially New England needed solutions to the immediate problems presented by their ouster from England's traditional world of international trade. If that were not enough, English and French bellicosity flared dramatically with Napoleon's rise to power in the Mediterranean. The net effect was to further confound America's important New England shipping trade. New markets had to be found. China offered hope.

THE AMERICAN PERSPECTIVE. Originally, colonial New England mercantilism operated as a closed economic system and was also a practical philosophy for a successful personal life and the survival of the extended family. Wealth was tangible and could be accumulated. Land, gold and silver were obvious examples of such wealth. Coupled with the material existence of wealth was the notion of balance and the idea of national wealth.

The concept of balance within a mercantile scheme concerned the direct relationship between a nation's balance of payments and its balance of trade. Ideally, mercantilism involved a partnership between a state, its citizens and a protected overseas market which also provided raw materials. The relationship was symbiotic. For example, England's colonies, North America among them, were originally seen as resource centers and markets for finished goods. For the colonies, England was the sole source of manufactured or finished goods whether they came from England or other

European countries. Raw materials were taken from the colonies to England to be converted into finished products which were then shipped back overseas, to everyone's benefit. The international trade amassed from that mercantile system was an important measure of a nation's well-being.

The idea of the closed system was important to the successful operation of a mercantile system. The mercantile relationship which once existed between England and Colonial America could not tolerate outside interference. Any interference from within or from outside the system upset the balance of trade by disrupting the normal operation of the closed system. Further, any net decrease in the physical assets of one country meant some other country was profiting at the other's expense.

In order to survive, Americans had to establish new trading relationships with countries other than England. Europe was the traditional answer. However, European trade was subject to massive fluctuations as a result of the Napoleonic Wars. The blockades and counter-blockades erected during the wars made the shipping trade highly speculative and dangerous even when highly profitable. Therefore, while attempts were made to reestablish old trading networks, Americans recognized the need to establish new shipping routes with other countries. As early as 1784, Americans probed the Pacific as far as Canton in search of just such trade.

In Forbes' day the roles of maritime traders were much more flexible and opportunistic. In war, ships' captains and their crews became privateers with letters of marque or reprisal. In peace those same ships reverted to their original commercial duties and either maintained the economic interests of their country or attempted to improve their nation's market share. All ships served to keep economic and political lines of communication open.

AMERICA'S MARITIME POLICY. There were trade-offs which had to be made between the economic goals of a shipper and the national goals of political leadership.[6]

Shippers strove for cheap and efficient operation of ships, quick voyages and realistic rate structures. Americans had to be free traders since they had cut their economic ties with the English mercantile system. In the American view, all markets should be open, especially to them, and especially in China. This idea figured prominently in Forbes political activities at Canton. Governmental involvement was limited to advancing fair competition, minimal regulation, and perhaps subsidizing the routes which had the potential for high profit. Forbes was an untiring advocate of those goals especially with regard to the safety of ships at sea and the promotion of lucrative trading routes.

Nevertheless, national goals often conflicted with the economic goals of a shipper. The hands-off, free-trade approach advocated by Forbes and other Americans could be dangerous. It offered less security than a large nationally subsidized maritime trade of a closed mercantile system like the Honorable East India Company. Also, it reduced the government's ability to train naval officers and mobilize ships quickly in case of war.

Although America did not have a comprehensive maritime policy like England, United States shipping did remarkably well based upon a more informal, ad hoc, stance. United States leadership was well aware of the importance of the shipping trade. America's retaliatory "reciprocity" policy was a response to European protectionism and was the most well-known example of specific measures taken to protect American shipping.

Another lesser known measure protected America's coastal trade. No foreign flagged ships were allowed to participate in the vital intercoastal trade. This was so because the eastern coastal routes were the early nineteenth century's equivalent to modern highways and railroads and were used for both interstate trade and international commerce.

THE FORBES FAMILY IN HISTORICAL CONTEXT. The most important figures in Forbes' early life were his father, several uncles and a cousin. His uncle James Grant

Forbes played an important part in the early history of Florida. He was a U.S. government official during Florida's transition from Spanish to U.S. control at the end of the War of 1812, Marshal for the Florida territory, and Mayor of St. Augustine for 14 months. He even wrote a Florida travelogue.

John Murray Forbes, Forbes' other paternal uncle, rose to an even more prominent position in American government. As a result of his friendship with his Harvard school mate, John Quincy Adams, John Murray Forbes enjoyed a long and distinguished career as an American Consul who was posted to Hamburg and then to Copenhagen. At that time, consuls were usually chosen to serve the United States because they had already established themselves in business at a foreign port.[7] John Murray Forbes sailed for Europe in the late 1790s. There he oversaw the commercial interests of Americans citizens. Almost twenty years later, Secretary of State John Quincy Adams asked Forbes to travel to Argentina during its "Revolutionary Period" to act on America's behalf. While at Buenos Aries, John Murray Forbes resolved the weighty matter of the Monroe Doctrine as it applied to two warring South American states.[8] Robert Bennet Forbes was present in Argentina at that time and probably received training in diplomacy from his uncle.

Ralph Bennet Forbes did not follow his brothers into government service. Instead, he went to sea and operated primarily in the Mediterranean trading with France and along the coast of Africa, east to Alexandria. Running the blockade and counter-blockade of the "Continental System" of the Napoleonic Wars was profitable but dangerous. On January 10, 1808 Forbes and his crew were captured. His ship was confiscated and he lost the entire cargo of coffee and cotton which was valued at $50,000. Forbes' father never really recovered his fortune or his reputation and later his trading career was ended by a stroke when he was in his mid-forties.[9] John P. Cushing, one of Robert Bennet Forbes' mentors and for years the senior partner on the scene at Canton for Perkins & Co. during its formative years, said as much in his letterbook noting, "Poor Forbes' almost broke up, but his wife bears up with wonderful elasticity," and that his son Robert Bennet showed promise.[10]

John P. Cushing, a Forbes relative and third cousin to Caleb Cushing, deserves special mention because he was one of America's earliest success stories in the China trade.[11] He was sent out as a clerk at age 16 by Thomas H. Perkins and soon took over the business at Canton.[12] He had his own "factory," a building something like a modern warehouse with the lower floors for storage and trade and the upper floors for dining and private chambers. Other wealthy merchants on both sides of the Atlantic sent Cushing requests for cargos on commission, sight unseen. At the time, because business was based upon information which was often six months old, Cushing had to speculate upon the future supply, demand, and prices of goods available. For example, when prices were low, he might purchase not only the cargo but the ship as well and hold both until prices rose. If prices did not rise soon enough, Cushing might order the ship and its cargo to a new destination where prices might be better.

In 1828, Cushing attempted to retire with a fortune of $600,000. He left the business in the hands of a younger cousin, Thomas Tunno Forbes, Robert Bennet Forbes' older brother. Thomas was well trained and had even made inroads into the Philippine market in competition with the Chinese at Manila. Cushing left $200,000 with Thomas Tunno as the initial capitalization of a new financial house at Canton. But when Thomas Tunno Forbes drowned during a typhoon in 1828, Cushing returned to Canton and resumed his trade based on the three principles which had provided the foundation for his fortune. First, he made investments based only upon the personal knowledge of his friend and banker William Sturgis, of Bryant & Sturgis. Like Cushing, the bankers represented a part of the greater cohort of American businesses active in the China trade. Second, Cushing made investments in going concerns based upon potential earnings and not upon speculative profits. Finally, Cushing diversified his investments. It was sound logic suitable for any locale and in any age.[13] As were other members of his extended family, Robert Bennet Forbes was able to draw strength and wisdom from Cushing's expertise.

Forbes was fortunate to have Thomas Handasyd Perkins as one of his many uncles. Perkins, who later became the President of the Boston Branch of the United States Bank and a Massachusetts state senator, took an active interest in Forbes. Perhaps it was because Perkins also lost his father when he was young.[14] Perkins also probably felt the same sense of responsibility which his mother, Mr. Elizabeth Perkins (as she was addressed in some of her later business correspondence), had instilled in her children since assuming control upon the death of her husband.[15]

With the professional tutelage of John P. Cushing and the financial backing of Thomas Handasyd Perkins, Forbes' future in the China trade looked bright because several of Forbes' maternal relatives were at one time or another partners in the firm first created by James and Thomas H. Perkins, J. & T.H. Perkins Co. Upon attaining his majority, elder brother James went first to Santo Domingo to ply his trade as merchant. Thomas followed and they were successful. Not long after, their younger brother, Samuel G. Perkins, replaced Thomas Handasyd in Haiti. Then in 1789, when the firm was feeling the pinch of English circumscription of American trade in the Caribbean, Thomas Handasyd Perkins, as the supercargo of the *Astrea,* ranged as far as Batavia, Indonesia, and Canton. While in Canton, Perkins probably met Howqua, the chief Hong merchant, and laid the foundation of his firm's future business dealings in the China trade.[16]

In sum, Forbes was born into an extended family of versatile businessmen. Successful adaptation in times of crisis lent the family confidence and flexibility in their business dealings. The Forbes family confronted the same historical challenges their country faced to make the transition into the new world. Their success in business during those transitions opened the doors to state and national government.

America's successful revolution unexpectedly drove the Forbes family from their once lucrative European and West Indian trade. With Old World profits no longer easily accessible, Forbes and his family ventured further afield. In search of new markets in order to expand their trade, their search took them to China and the Pacific rim. That seminal American contact came at a pivotal time in Chinese history. Forbes' economic and political family connections, coupled with fundamental transitions in maritime technology which were taking place world-wide, put him in a position to enhance the trade with China, not only for his own benefit but, for his family and his nation. His activities helped mark, once and for all, China's integration into the modern world order.

CHAPTER 3. FROM BOSTON TO CANTON: THE TWO WORLDS OF A CHINA TRADER

Robert Bennet Forbes started his commercial career in 1817 when Hong Kong was just a deserted island outside the Pearl River estuary. Trade was conducted at Canton, at the mouth of the river basin, where it was safe from typhoons. Merchants from all over the world traded at Canton, connecting Imperial China's maritime frontier with frontier America, Europe, and the other markets of the world.

This chapter places Forbes' activities as a ship captain trading at Canton within China's traditional historical context and notes Forbes' business activities and the increasing importance of his firm's interests in the China trade. The economic aspects of China's tribute system and the "Hoppo" or Superintendent of Maritime Trade are examined. Further, the mechanics of the China trade are explored as well as the role of Howqua and the thirteen "Hong" merchants the Hoppo supervised.

THE CHINESE TRIBUTE SYSTEM. The tribute system was a suzerain-vassal relationship which utilized the lure of trade to incorporate the various peoples within the greater Chinese sphere of control and influence.[17] Ideally, the system acted as a buffer to protect the greater Confucian world order against foreign encroachment. Cajolery, intimidation, outright subsidies and the lure of even greater economic trade concessions acted as encouragement to these peoples to enter into a state of vassalage with the Chinese court. Originally, the system, like the Great Wall, served as a shield against attack. With barbarian acknowledgment of the superiority of the Chinese world order the tribute system could then function as a diplomatic device for the Chinese throne to use to communicate with its satellite kingdoms. In this way, China's traditional world order was preserved.

The "Hoppo" was appointed by the imperial household to maintain the Middle Kingdom's hegemony along the South China coast. Under the supervision of the Hoppo, around a dozen merchant houses called the "Co-hong" or simply the "Hong" held the monopoly on maritime trade. Although state mechanisms for controlling maritime trade stretched back to the T'ang dynasty and the Arab merchants who then traded at Canton, the Hoppo was organized in 1685. The Hoppo's authority came from the governor and governor-general of Kwangtung. Under ideal conditions, the Hoppo would assess something less than a 30 percent tariff on all goods brought by merchants from the Philippines and points south. But, given the taxing structure and the cost of assuming the post, there was an incentive for the Hoppo to assess more and a consequent incentive for conspiracy among merchants to circumvent assessments. Given those difficulties, the hapless official who purchased his one-time three year appointment was under great pressure. According to H.B. Morse, the net profit from taxes of the first year went to pay the debt incurred to obtain the office. The proceeds of the second year went into various palms to maintain the office. Even in the third and final year of the Hoppo's appointment, exit monies had to be paid.[18] Therefore, bribery and the "squeeze" represented important sources of income if the Hoppo hoped to retire with gentry status.

Like the Hoppo, the Hong had a long, diverse lineage but it was not until 1720 that the Hong was organized as a commercial body charged with providing leadership and supervision of the maritime trade at Canton. In fact, in light of the growing restrictions decreed by Peking, in 1745, with the institution of the security or guaranty system, the Hong merchants became the nexus of international relations with the west. Where once Hong merchants were responsible for only the actual international trade in silks and teas at Canton, now the merchants assumed responsibility for virtually all aspects of the trade with the West. The thirteen members of the Hong, too, faced problems with unending "flooding" in China's interior. To satisfy bribery demands, the Hong gave generously every year even if there were no floods. Western merchants complained of insolvencies suffered by the Hong because of the unremitting shakedowns conducted by various officials within the greater political hierarchy.

In addition to the supervision of western trade, the Hong was largely responsible for the maintenance of the municipal government of the trading communities. The Hong provided for schools and the militia. The Hong also ran "native banks."[19] By delegating most of the Hoppo's responsibilities to the Hong, Chinese officials did not actively participate in the day-to-day supervision of the trade at Canton. Like Forbes, Howqua, the wealthy chief Hong merchant, traded at the edge of two worlds.[20]

Initially, China's self-sufficiency inhibited the establishment of a favorable balance of trade for Western nations since the Chinese had little desire for Western goods. The growing American thirst for tea had no Chinese counterpart. From 1790 to about 1835, the American tea trade grew from 2.5 million pounds of tea annually to around 7 million pounds of tea.[21] Because Americans had very little to barter or trade, they paid in silver.

In an effort to slow the specie drain and restore a profitable trade balance, American traders followed a circuitous route to obtain goods which might be of value in China. They took ginseng and furs from the American Northwest. At the Sandwich Islands (Hawaii), sailors obtained aromatic sandalwood. They took opium from Turkey, mocha coffee from Africa and "birds' nests" and pepper from Java. In the south seas, sailors obtained "Beche de Mer" (sea slug) and sharks' fin from islanders and rice from the Philippines. Therefore, when they landed at Canton with their exotic cargos, the Americans were able to barter their goods to conserve their silver reserves.

ROBERT BENNET FORBES AND THE CHINA TRADE. On October 8, 1824, just three days after the death of his father, Forbes sailed for Canton commanding the brig *Levant*.[22] It was a long voyage complicated by navigational and economic challenges. The voyage from Boston to Canton via Batavia (modern Djakarta, Indonesia) took him just over four months. It was a fast passage for the time and was due in part to his growing confidence as a ship 's captain with a good crew and in part to his constant reference to his charts and his "Bowditch" which contained astronomical tables to aid in charting his course.[23]

At Canton, Forbes and his entire crew transferred to the *Nile*, a brig, which was being prepared for a voyage to the west coast of the Americas.[24] They sailed to Hawaii where Forbes corrected an error in his Bowditch.[25] He visited the Russian settlement of Bodega located 50 miles north of San Francisco Bay and then sailed south, trading at isolated settlements along the California and Mexican coasts. At Mazatlan, Forbes and his crew penetrated the Spanish Empire's "closed" economic system and engaged in smuggling under the blind eye and outstretched hand of Mexican officials.[26] Voyaging south they rested, provisioned and traded along the coast from Ecuador to Peru and then returned to Canton to obtain a cargo and to prepare for sea with orders to return to Boston.

Forbes' homeward bound cargo, worth $109,172, was meant for the trade at Buenos Aires, where his uncle, U.S. Consul John Murray Forbes, resided. Forbes and his crew suffered a lengthy delay because of Argentine-Brazilian hostilities but managed to dispose of the cargo with the help of the firm of Messrs. Zimmerman & Co.[27] While there, he observed his uncle mediating the Argentine-Brazilian dispute and must have learned much about diplomacy. He may even have helped his uncle negotiate the matter. It was training which would stand Forbes in good stead when he faced the crisis of the Opium War. Forbes finally reached Boston on October 14, 1827. A seasoned captain, he shipped out on the *Danube* six months later on March 8, 1828, bound for Canton via Turkey.

Forbes' second voyage to Canton is instructive for more than one reason. First, the voyage shows Forbes' professionalism as a seaman. Second, the voyage exemplified the workings of a growing American international shipping concern. Third, it demonstrates just how important it was to be a sharp but flexible trader with a keen eye for profit. Finally, it illuminates Forbes' position (and by extension that of his American compatriots) in the evolving international trade which linked Boston, Canton and London.

Forbes was ordered to Turkey by the officers of his firm, Russell & Co., to pick up the season's opium for sale at Canton. Turkish opium was generally considered by Chinese users to be inferior to the opium from Bengal.[28] Nevertheless, it was the one commodity that helped establish a profitable trade balance for American trade with China.[29] The *Danube* sailed to Gibraltar to obtain ship's papers. The crew was well drilled on the way to Smyrna via Malta in anticipation of the upcoming Pacific monsoons and any surprise attack by Chinese or Mediterranean pirates.[30] Upon arriving at Smyrna, the cargo was "secured" (unloaded and stored) with the help of Mr. Langdon, the American agent who had been notified by Baring Brothers & Co. in London that the cargo was on its way.[31]

According to his instructions, Forbes was to barter, if he could, the coffee and yellow nankeen cloth he had brought from America at no less than 80 cents and hopefully more than 90 cents on the Spanish dollar. In case of emergency, such as the death of the agent or a glutted market, Forbes could buy opium with the $20,000 in specie he had on board. He also had a hefty £60,000 line of credit supplied by the English trading house of Baring Brothers.[32] He even had 400 Spanish dollars to invest in a case of opium for resale at Canton for James H. Perkins, Forbes' cousin, who knew nothing of the trade but "believed it to be the most profitable article where only a small sum [was] employed."[33]

Cushing's instructions made Forbes' a quick study in the opium trade. Opium sold for about $3.00 per pound in Turkey at the time of Forbes' voyage.[34] Forbes knew opium was derived from the sap of the poppy plant (*Papaver somniferum*).[35] Poppies were planted in October or November and usually matured in May or June. At maturity, when the petals fell off leaving only the poppy head, workers made incisions in the head to allow the sap to ooze to the surface.[36] After harvesting, the sap was left to dry for six to eight hours. Once becoming a sticky, yellow-brown paste it was balled up or "bricked." Opium "of good quality [was] moderately soft or pliable."[37]

At its freshest, Turkish opium or simply "Turkey" as it was called, had a shelf life of just over a year. The knowledge was crucial to Forbes and other the Americans. They knew that if the opium was stored in ship's hold for longer than a year because of a long, hard voyage or depressed prices at Canton, the opium had to be of the best quality if it was to be sold at all.[38] Further, Forbes was competing with the Honorable East India Company.

The Honorable East India Company held the monopoly on the best opium, the Patna, Malwa and Benares opium from the Bengal region of India. The Turkey had to be free of impurities such as leaves or anything else which might adulterate the product either in weight or effect. Based on the indemnities exacted from the Chinese government by the British in 1843, the wholesale price of a 133 1/3 pound chest full of Patna opium was approximately £66, Malwa opium £64, Benares opium £61 and Turkish opium £43.[39] Any adulterated Turkey was worth far less and could not compete with the thriving British "country trade."

The "country trade" was an East Asian answer to the Atlantic "triangle trade" of a generation earlier. English, Indian, and Scottish traders operated their ships "privately" under the charter of the British East India Company. In India, the Company sold opium at auction receiving bills of exchange held by the traders. Originally, the opium was then shipped from Calcutta to China. Later, Malwa opium was shipped also from Bombay. Upon arrival at Canton, the opium was "secured" (in this case by reweighing and repacking) and then resold to Cantonese in order to purchase the season's teas which came in from the Chinese interior in early October of every year. Once the teas were loaded, the ships then completed the second leg of the triangle by sailing to England and Europe. In tune with the season, the ships returned to India on the final leg of the triangle. They unloaded their English manufactured goods and prepared to take the next season's opium to China.

Forbes and Langdon practiced their own version of the trade. By combining the use of insurance and the trans-shipment of goods to avoid port duties, they took full advantage of the influx of substantial amounts of English capital. They bought all the "Turkey" they could and as quietly as they could so as not to inflate prices. Forbes then returned to Gibraltar to await "operations on a larger scale."[40] Forbes "convoyed" back to Gibraltar with a U.S. Navy vessel, the *Porpoise*, Captain Bell commanding.[41] Arriving early, the *Danube* waited for "sundry shipments of drug, and the arrival of the ship *Bashaw*," Captain Charles Pearson commanding.[42] There, the two crews transferred the cargo of the *Danube* to the *Bashaw*. The two ships' companies then exchanged places. Forbes with his original crew and single passenger, Samuel Sturgis, continued on to China aboard the *Bashaw*. Captain Pearson and his crew returned to Boston aboard the *Danube*.

Forbes' new ship, the *Bashaw*, was insured by the expanding English financial house of Baring Brothers & Co.[43] The English firm was the emerging leader of a coterie of merchant banks called "American houses" in London and had been in a process of shifting its trade and financial activities from the Baltic and northwest Europe to America. The London house even acted as a financial agent for the Department of State during the administration of John Quincy Adams. In fact, Henry Clay directed Barings to provide a bank draft of a year's salary for Forbes' uncle, John Murray Forbes, who had been appointed the United States Commercial Agent and Chargé d'affaires at Buenos Aires.[44]

Insuring the *Bashaw* marked a significant increase in the Barings' activities in the China trade.[45] As a corporate investor, Baring Brothers facilitated the growth of American entrepreneurs such as Forbes and the greater circle of Boston merchants. With British capital provided by Baring Brothers for the outward bound leg, and Chinese sponsorship provided by Howqua for the homeward bound leg, Forbes and others like him were responsible for the all important transit between the Atlantic and the Pacific Oceans. Just as the London house secured Boston's vessels on their way out to China, Howqua secured those vessels on the trip home to America.[46] A new, truly global "triangle trade" had emerged between Boston, Canton and London.

Forbes' success in the China trade was based upon Howqua's good offices. Howqua was called the "horse godfather" by Americans at Canton because of the great flowing, horseshoe shaped cuffs on the sleeves of his robes.[47] Forbes knew much of his firm's history and his place in the growth of the firm. He also knew how Howqua kept the firm from failing almost before the firm had a chance to thrive. To understand how Forbes succeeded in the complex arena of the China trade, the history of the firm that sponsored him should be briefly noted.

THE RISE OF RUSSELL & CO. The year before Forbes was born, the Chinese arm of Perkins & Company was founded at Canton under the corporate title of Ephraim Bumstead & Co.[48] Unfortunately, Bumstead's health failed leaving his clerk, John P. Cushing, aged 16, as the sole representative of the firm. Alarmed, Cushing's uncle, Thomas Handasyd Perkins, prepared to go to Canton. The preparation was unnecessary because Howqua befriended young Cushing.[49] That friendship started Cushing on his long and prosperous career at Canton and ensured the firm's survival.[50]

In 1824, the year Forbes was given his first command, the firm was reorganized under the name of Samuel Russell & Co. with Samuel Russell and Philip Ammidon as its senior partners. John P. Cushing was still in charge of the American house at Canton. The reorganized Canton subsidiary represented a significant expansion of the Forbes family's original West Indies trade and replaced the once thriving Northwest fur trade. Forbes' firm and the other American houses at Canton became the new focus of Boston's shipping trade.

In 1828, an abortive effort was made to reorganize the firm under the leadership of Thomas Tunno Forbes so Cushing might retire. Unfortunately, Thomas Tunno's untimely death prevented the reorganization. It was not until 1834 that the firm was again reorganized as Russell & Co. under the leadership of Augustine Heard, who served as the senior partner of the house at Canton until 1836. Under Heard's direction and until shortly after his retirement, William Henry Low, John Murray Forbes, Joseph Coolidge, Abiel Abbott Low, William C. Hunter, Edward King and many others all served first as clerks and then partners in the firm in the days leading up to the Opium War. John C. Green, the managing partner who took Heard's place gradually distanced the firm from the opium trade. The American tea trade at Canton was evolving and supplanting the opium trade. When Green retired, Forbes took over on January 1, 1839, only 22 years had passed since his first voyage with the firm.

Forbes' experience as a mariner, negotiator, trader and diplomat prepared him well for the firm's top administrative role at Canton. He was a diligent student and learned quickly from his superiors at sea or in port. During an extended visit at Canton during Forbes' second voyage, his cousin John P. Cushing taught him the duties of a clerk in the financial house. Among many other things, great and small, Forbes learned to pack silks and weigh teas.

As Forbes learned various skills, the firm grew. With Howqua's guidance the firm weathered its first crisis. Although Howqua's position guaranteed the firm would receive Chinese goods, the rest was up to the Americans. Each time the firm underwent a reorganization it indicated growth or the successful response to a crisis. When Samuel Russell and Philip Ammidon took the greater Boston firm, the reorganization represented growth. When Thomas Tunno died, the reorganization that followed involved a necessary realignment in the firm's staffing. Further, as the members of the firm matured and gained more competence, it started to make improvements in the carrying trade to Canton. During this time Forbes came into his own as one of America's most savvy ship's captains.

Coupled with the firm's internal problems, external challenges such as international competition or Chinese government regulation had to be surmounted. Usually this was done by smuggling goods into China or by searching out new markets to expand their market share. For example, Forbes did not take the *Bashaw* directly to the factory anchorage at Whampoa (near Canton). Because Forbes' cargo contained opium he utilized his skills as a smuggler who had taken a cargo of opium directly into Canton at his uncle's direction, nearly two years earlier. In April of 1825, Forbes had sailed for the Philippines with 29 chests of opium. The purpose of the voyage was to obtain a cargo of rice and paddy (an East Asian type of fodder). With a simple ruse used until the end of the Ch'ing period, the opium was stowed in such a way as to make the brig appear to be "perfectly full of rice and paddy when it arrived at Whampoa."[51] Upon anchoring, the opium was quickly unloaded.[52]

Sometimes a ship probed northward along the Chinese coast to circumvent Chinese edicts in an effort to develop trade. In 1827, Forbes conveyed George Beale and Thomas Dent north along the coast of China searching for new markets.[53] This trip was important for several reasons. First, it violated imperial edicts. Second, the two men were English country traders. Third, it seemed that the Chinese they met wanted to trade but feared punishment for violating the edicts. Clearly, the imperial edicts scared Chinese traders more than the Westerners. In time, deference to imperial edicts was reduced by the increasing demand for Western goods. Nevertheless, while the edicts were ill-conceived and ill-executed in the regulation of trade, they carried the threat of severe punishment

Because of the Terranovia affair in 1821, the *Bashaw* and other vessels like it generally remained at the Lintin station for a time to take advantage of a perfected smuggling system. The system was remarkably similar to the method used by Boston merchants during President Jefferson's counter-productive Embargo Act of December 22, 1807.[54] At Lintin, an island anchorage in the Pearl River estuary, crews transferred opium to "receiving ships" (round, mastless barges or floating hulks). The cargos were subject to the "cumsha" and then measurement charges.[55] The first charge, the cumsha, was usually excessive and amounted to a "present" or toll for the privilege of entering the port. The second charge was more moderate and could be compared to tonnage duties on the size and type of ship and its cargo.

Orders for opium, or "foreign mud" as the Chinese called it, came from armed "smug boats" which were powered by oars, a large mainsail and foresail and manned by 60 or 70 men.[56] The traders weighed the opium, repacked it, and marked it with the new owner's seal.[57] As all sales were cash-only, the specie underwent a process called "shroffing." The shroffing process authenticated, cleaned, and weighed the coin and bulk specie. The smug boats, sometimes also called "fast-crabs" or "scrambling dragons" because of the visual effect achieved by the rowing oarsmen and the ships' brightly painted prows, then took the opium to village distribution points on creeks throughout the estuary.[58]

Once the opium transfer was complete, ships at Lintin then took their legal cargos of general freight, rice and paddy to the anchorage at Whampoa. The cumsha and tonnage duties could be reduced by obtaining such cargos. During times of famine in China's interior, the duties might be reduced or dispensed with altogether if the ships carried rice.[59] After the products were sold, the resident foreign merchants, who were always restricted to their "factories", with their linguists and compradors, went about the business of preparing the season's goods for shipment.

TRADING ACTIVITIES AT CANTON. If a ship had never been to Canton before, the captain and his crew had to obtain a guarantor. Howqua usually acted as guarantor for Forbes and his crew. The process of "securing" Forbes' cargo started immediately and decided quickly on the cumsha and tonnage duties. The cumsha amounted to something over $2,200 without rice and $1,200 if rice were in the hold.[60] Tonnage duties depended on a vessel's size and ranged from $650 to $3,000.

A linguist and comprador had to be found. The term "linguist" was a misnomer; the Chinese who bore the title was really a runner for the foreign merchant, the Hong merchant, and the Hoppo's office. In Forbes' estimation, "He was the sub-scape-goat of the three contending interests named, ... the consequence of these contending interests and liabilities made the linguists by necessity, the greatest rogues in the empire."[61]

In contrast to the 'linguist', the comprador was a highly trusted participant in the business transaction between the Hong merchant and his western counterpart. Once a bargain was struck, the comprador assumed responsibility for everything, at least until 1828 when J.P. Cushing began to restrict the flow of monies through their hands.[62] Should something go awry such as the insolvency of a Hong merchant or a default by a comprador, there was, in addition to the original security provided by the Hong merchant, the "consoo fund" which was used to pay off debts.[63] Not only did the consoo fund help cover legitimate debts, the consoo fund helped the Hong merchants to pay off the "squeeze"—institutionalized bribery exacted by mandarin officials staffing the Hoppo or "collector of customs."[64]

The seemingly uniform corruption displayed by Chinese government officials did not affect the Americans as much as it did the Hong merchants. Despite Forbes' brother's death in 1828 and Cushing's attempt to retire that same year, the firm posted impressive returns. A trial balance sheet dated March, 1831, noted that Russell & Co. was worth some $2,280,033.[65] At the time, Forbes anticipated $30,000 in yearly profit from operating the Lintin Station.[66] When Forbes received his first command as captain of the *Levant*, he was paid $600 a year.[67] Nevertheless, the American desire for tea created a serious specie drain. To correct the imbalance, opium was used as an expedient answer. For a time, China continued to profit from the trade imbalance with the United States; however, that favorable balance of trade was shrinking just as the nature of the trade was changing.[68]

The China trade was becoming more specialized and more competitive in terms of finance, purchasing and marketing. Originally, Americans purchased teas and silk almost exclusively with silver. Early attempts to trade ginseng proved to be a weak substitute. For a time, furs from the American Northwest and sandalwood from Hawaii were used effectively to conserve American supplies of silver. Over-trapping and over-cutting ended that option.

The trade at Canton was truly international. By the 1830s commercial paper in the form of bills of lading, invoices and secured credit accounted for half of the American trade.[69] In the years from 1827 to 1833 almost 9 million dollars in English bills were used to pay off American debts.[70] American use and dependence upon English bills continued into the 1890s and completed the last leg of the new triangle trade. Americans sold bills to Chinese who immediately vested themselves in overseas ventures. Howqua was a case in point. Through the firm of Russell & Company and John Murray Forbes (who organized the Chicago, Burlington, and Quincy Railroad) Howqua or members of his family invested in one of America's important railroad lines. In fact, Howqua's family continued to receive dividends well after his death in 1843.[71]

American business methods changed over time. When Americans first entered the China trade, the practice of using "supercargos" was followed. A supercargo was charged with overseeing a ship's cargo just as the ship's captain was in sole control of his vessel. A ship's captain could also act as the supercargo but that practice was not usually followed. If the captain and supercargo did not work well together, friction might occur. Forbes had experienced such friction when he sailed to the west coast of the Americas. He felt that a resident agent at Canton would work better than a supercargo. The resident agent would have better information and a better grasp of changing market conditions at Canton. By 1837 Forbes advised against using supercargos at all.

The methods of purchasing tea were changing also. Originally, American ships filled their holds with teas purchased from their Hong security merchant. As Howqua or other members of his family were Russell & Co. guarantors, the Americans could be assured the teas were of the finest quality. When the Hong monopoly ended, Americans were able to purchase tea several ways. First, they purchased on the open market tea which was of dubious quality and necessitated the use of tea tasters. Russell & Co. developed a reputation for quality and marketed teas with exotic names like "Bohea," "Gunpowder" and "Souchong," to evoke the "mystery of China." Quality was maintained by careful inspection and record keeping, as well as making cash advances to Chinese scouts who went to the tea plantations to make special purchases.

Second, the American merchants purchased tea through their compradors who cut out superfluous layers of middle men.[72] After the treaty port opened at Foochow, a Russell house comprador traveled inland from Foochow northwest up the Min River to purchase teas directly from the growers, reducing both cost and travel expenses. Teas were originally shipped either from Canton or Shanghai. The overland route into the heart of the tea growing districts was hundreds of miles long and almost equally distant from either Canton or Shanghai. The Min River went directly into the heart of the district. About four hundred miles southwest of Shanghai and about 400 miles north of Canton, Foochow was hundreds of miles closer to the tea plantations. Clearly, the firm was staffed by entrepreneurs.

"RETIREMENT" AND THE OPIUM WAR. Forbes retired to Boston a young man and the toast of the town. However, his business dealings in Boston were not as astute as his dealings in China. He invested in questionable ventures and speculated in bonds that supposedly financed canals, roads and land deals. When the Panic of 1837 hit, Forbes lost about $20,000 in the commercial paper he held and $100,000 in a nail factory.[73] Outstanding letters of credit (which might have brought Forbes hundreds of times his original investment) became worthless overnight owing to the bankruptcy of his debtors. Forbes had to go back to work.

Forbes intended to recoup his losses quickly in China and then return home to his wife and newborn child. He took letters of credit and references with him to China. Josiah Bradlee furnished Forbes with substantial credit. His brother, John Murray Forbes (hereafter J.M. Forbes), gave Forbes his brother's power of attorney. John P. Cushing provided letters of recommendation. He even had a letter from Howqua stating that he would "be glad to promote [Forbes'] interests by throwing commissions in [Forbes'] way, whenever it [could] be done without deranging [Howqua's] plans of a general nature."[74]

Forbes' younger brother, J.M. Forbes, became Howqua's personal secretary at age 18.[75] J.M. Forbes (namesake of his uncle, the U.S. Consul posted to Argentina) was clearly the financial wizard of the Forbes family. Howqua thought highly of J.M. Forbes and had him oversee the process of landing vessels, unloading, storing and taking on cargo, and re-provisioning and preparing vessels for sea. American trade in China was doing well and Russell House thrived. The United States still ran a deficit of about four to one in China's favor.[76] But the balance of trade would change dramatically with the Opium War and its aftermath.

When Robert Bennet Forbes returned to the China trade and became senior partner on January 1, 1839, he figured he could make about $40,000 in the first year and double that amount in the second year and then return home to his wife and child.[77] Had Forbes planned to stay longer, he, like John C. Green, might return with $500,000.[78] The Opium War proved Forbes wrong. When the war started, Forbes, the elderly U.S. Consul, the rest of Russell house, and a few others were placed under house arrest by Chinese authorities. While the Americans could no longer employ the servants who normally ran the house, Howqua made sure they received a steady supply of fresh provisions and he insured the hostages' safety throughout the length of their incarceration.

When the Americans were released, Forbes expected to do a very brisk business. The costs of freight had skyrocketed because of the war. Although there were other American traders at the port, Forbes and Russell House had the ships available and the proven track record of success in adverse conditions. At one point, Forbes, in a letter to his wife, figured the firm would gain $80,000 in just two months. It is clear that as Forbes closed out various accounts on the quickly-completed trades at Canton, he and the firm were going to earn far more than just the $80,000.

By April 1839, Forbes anticipated a British evacuation. As he saw it, the British traders expected the Crown to reimburse or otherwise indemnify them for the loss of 20,000 chests of opium. Besides, England already had an entire season's teas on hand so there would be no shortage. Therefore, the British could cite national honor as the reason for departure and even hope the Chinese might see the error of their way in light of the curtailed trade at Canton. About 30 Americans remained after the British evacuation to Hong Kong on June 28, 1839. Forbes and the others staffing Russell House knew shortages in tea in America would develop quickly. Fortunately, the Americans were not combatants and national honor was not at stake. Further, the loss of $25,000 in opium the house had on consignment could easily be recouped.[79] In fact, as the firm had already begun to end their activities in the opium trade it was far better to be rid of the opium because the loss was not signifcant and ought to be considered as a one-time cost of doing business under adverse conditions at Canton.

The Chinese did not change their policies and British traders started to feel the pinch of their self-imposed embargo immediately after their evacuation. Through it all, Forbes and the other Americans traded without much trouble. Some British traders flagged their ships again under American colors to get to Canton, but otherwise British trade was nearly at a standstill. Chinese cargos did not go to Britain and points west and British goods did not go into China and points east. When Forbes met with James Matheson, of Jardine & Matheson (England's most important house at Canton), who approached Forbes to send their goods through Russell House, the American's financial coup was complete.[80] Within a short time after the start of the first Anglo-Chinese war, Forbes and the other Americans cornered the entire trade at Canton. It was a rare feat, worthy of historical note.

After the first shots were fired, the race was on to beat the blockade. Forbes had just a week or until September 17, 1839 to transfer as much cargo as possible between Canton and the outer anchorages before Captain Elliot, the senior English naval officer and England's plenipotentiary to China, blockaded the port. Based upon Forbes' original estimate, he expected to return home after two years with about $80,000. During his incarceration the firm gained $30,000, his share was $7,500. By May, the firm had posted another $20,000 gain. At the end of July, the firm earned $40,000 more.

Forbes' share was $18,000. Based upon a revised estimate, Forbes expected the firm to earn about $130,000. His share would be $25,000. By year's end, the firm made over $200,000. Forbes' estimate of his own earnings was right on track. Based on his brother's initial capitalization in the firm of $25,000 on Forbes behalf, Forbes brought in $41,000. During Forbes' six-week incarceration he earned $7,500. By the end of the year he had earned five times that amount.[81]

Forbes' career mirrored the growth of the American trade at Canton. At first, Canton represented a new trading opportunity when America and the Boston houses needed it most. As the trade grew, commercial activities matured and prospered. Forbes and his associates matured with it. Further, in just a few years, the once-important American trade in opium was ending. The legitimate trade in silks and teas was expanding by incorporating the use of commercial paper, insurance, and other modern business techniques. Building upon those techniques, modern international business relationships were being created. Although the Chinese Imperial Court did not realize it, Howqua and other Chinese like him were a new type of entrepreneurial elite or business class in China. Howqua and his European and American associates were equal partners in an international business relationship which linked China with Europe and the Americas. It was a highly profitable triangle of trade. Despite Anglo-Chinese hostilities, demand for China's goods steadily increased. That meant that competition between the world's shipping firms increased also. In turn, that competition led to the development of the great clipper ships and the last great days of sail.

CHAPTER 4. FROM SAIL TO STEAM: THE TWO WORLDS OF A MARITIME INNOVATOR

In the 1700s, ten months marked a good passage from Boston to Canton. A bad passage might require an additional four months. Sometimes, ships "went missing" and newspapers across the world reserved a section for the notices of the ships overdue. By 1817, a four month voyage to Canton was considered a good passage but ships still went missing because of pirates or the sea. When Forbes began his career, the great age of sail was passing. During those final days, Forbes helped inaugurate the dynamic age of steam at sea.

THE EARLY DAYS OF STEAM AND THE CHINA TRADE. Although the use of steam has a long history, centuries passed before basic innovation in steam technology appeared first in Europe, then in America, and ultimately in East Asia.[82] Following closely behind the experiments conducted on both sides of the Atlantic Ocean, experiments with steamboats were carried out in South Asia. In 1829, a sidewheeled, steam tug-boat, the *Forbes*, was launched for use in the China trade.[83] The craft was named after James Forbes who sailed from England in 1765 to win his fortune in India.[84] James Forbes might be a relative of Charles Forbes, one of England's governors at Bombay. Charles Forbes was Robert Bennet Forbes' great grand uncle and brother of the Rev. John Forbes, the progenitor of the American line of the Forbes family.[85] The vessel attempted to tow a sailing ship loaded with a cargo of opium from India to China against the monsoon.[86] It was a near disaster and showed how difficult it was to conquer the sea by sailing against the monsoon with or without steam. Although the experiment failed, it did not deter others; it was representative of the mistakes that would be made during the experimental stages of development of steam at sea.

Traditionally, British East Indiamen made just one voyage a year from India to Canton because of weather conditions. While handsome, the lumbering three masted, square rigged vessels with their large crews could not sail close against the wind. In the summer, during the southwest monsoon, the great ships could sail directly from Calcutta to Anjer (the Sunda Strait between Java and Sumatra) and on up almost due north through the China Sea to Canton. At Canton, the ships took on the season's freshly picked teas and then waited for a ten-day long gale early in October which usually preceded the southeast monsoon.[87] With the monsoon the Honorable East India Company's ships traveled back to India through the numerous passages found in the Celebes, Java, Philippine and Sulu Seas. American vessels did the same or sailed across the Pacific, around the Horn of South America then north to the eastern seaboard. By 1838, Americans were even sailing to London from China.

In 1830, innovation in sailing began to make its mark on the China trade. In an effort to sail against adverse winds, an Englishman, Captain William Clifton, proposed to take the Honorable East India Company's opium not once but three times yearly to Canton by using a smaller craft, the *Red Rover.* The craft was a copy of the American privateer, *Prince de Neufchatel*, which was able to sail much closer to the wind.[88] The English craft, like its American counterparts (brigs, barks and other comparably sized vessels which were already on the scene), was much more effective than the much larger East Indiamen. Clifton realized what the Americans already knew. The China trade demanded a smaller vessel which could not only sail close to the wind but a vessel which was suitable for the types of seas encountered during a voyage to China. Captain Clifton delivered goods to Canton three times that year just as he predicted and earned his reputation as an innovator.[89] His innovation, probably more than anything else, hastened the end of the Honorable East India Company's charter which was nearly up for extension or expiration. The advent of free trade and the emerging maritime technology of the nineteenth century superseded the ponderous East Indiamen and the traditional English mercantile system of the seventeenth and eighteenth centuries.

With the exception of Captain Clifton's innovation, the Americans still held an important advantage in the growing China trade. In contrast to the salaried British seamen whose careers saw a more limited opportunity for dramatic economic gain, American ship owners allowed their captains and crews "privilege and adventure" to further their maritime profession and their immediate pecuniary success. The professional attitudes of American ship owners resulted in a compliment from Charles Grant, Esq., one of the Honorable East India Company's directors. He stated American crews "possessed superior technical skills and greater knowledge and were better behaved. Such 'superior' characteristics were widely recognized."[90]

While Captain Clifton studied the "speed to length ratios" of a ship's hull, Forbes developed a new sail plan, pondered the use of steam, and prepared to "retire."[91] In 1832 he "retired" from the China trade a rich man. As a result he was able to cultivate his professional interest in sailing and the development of new sail plans. Forbes certainly remembered Clifton's success in expanding British interests in the opium trade. Forbes also understood the unrealized potential of steam at sea but remained pragmatic because although the "outside Walkee" steamer (a paddle wheeler) *Forbes* managed finally to reach Canton, it did so only after many coal refuelings.[92] Forbes built sailing ships either for his own account or for others. At Boston he launched ships for the China trade: the *Sylph* (1833) *Hooghly* (1834), *Levant* (1836), *Luconia* (1836), *Canton Packet* (1836) *Anglona* (1841) and *Ariel* (1842). He also built ships for use in other parts of the world.

SAIL, STEAM AND THE CHINA TRADE. Forbes experimented with sail and steam at the critical juncture between the two great eras of maritime history. Forbes helped give traditional sailing ships a last lease on life by creating new sail plans for the sailing ships he loved so much. He also experimented with combinations of sail and steam to help provide a transition into the age of steam in the China trade. Forbes created his new sail plan, the "Forbes rig," after his return to Boston in 1841.[93] Frederick Howes was later given the "credit" because of the patent he took out in 1854.[94] The advantages of using the new rig combined safety with speed. The time it took to furl, shorten, or unfurl the sails was reduced. That meant the ship could flee from pirates or a storm more quickly. It also meant the ship could be more responsive to changing weather conditions and could as a result shave precious time from the length of a long voyage.

The system had obvious commercial advantages in the China trade and created a three-fold savings. First, only the watch on deck was usually needed to change the sails. Second, most of the work could be done from the safety of the ship's deck thus requiring fewer sailors to go aloft. Forbes must have remembered watching a sailor fall to his death when he was a cabin boy on his first voyage. Third, because the masts of the new rig could telescope like a radio antenna, the masts and the trapezoid shaped sail could be quickly adjusted according to changing weather conditions.

Forbes' sail plan and articulating masts were final refinements in sailing technology of the nineteenth century and the only practical solution to the depletion of tall timber. Traditionally, masts and yards had been lowered or raised either to drill a new crew or to salute a port upon arrival or departure. However, once the great trees in both America and Northwest Europe were cut down, a single mast or "stick" as it was called was no longer possible. The solution was to create a composite mast of thick posts bound and lashed together by chains, hemp, and iron hoops. In emergencies, entire sections of the mast could be lowered or raised. While tradition limited raising and lowering masts and yards for the sake of appearance at port or as a training activity, Forbes' rig could easily perform the same function at sea thus aiding in navigation when changes occurred. A Forbes rigged vessel could also overtake a blockade runner or just as easily run a blockade. In commerce, a Forbes rigged vessel would be extremely useful during the monsoon season in the China trade.

Forbes experimented with vessels by combining sail and steam to shorten the time it took to enter or leave a harbor. The *Midas,* one of Forbes' experiments, was constructed by Samuel Hall and had twin screws powered by a Hogg & Delamater engine designed by John Ericsson. John Ericsson (1803-1889) obtained the first United States patent for the propeller in 1838. The *Midas,* the first vessel rigged with Forbes' double topsail sail plan, was sent to China. However, the captain of the *Midas* did not appreciate the corrosive effects of the sea on the fragile engine because by the time it reached China, the engine was hopelessly clogged with brine and completely useless. Despite the "failure," Forbes had "purchased some experience in steam."[95] His next attempt, the *Edith,* named after his daughter, was a propeller bark with a single removable screw. She was sent to China to compete with the English opium clippers. Although the captain and crew made some mistakes, the *Edith* reached Bombay in 100 days and Hong Kong in just another 25 days. By running under steam during calm weather, the *Edith* shaved a full ten days off the normal voyage from India to Canton. She almost caught the *Antelope*, skippered by Forbes' most able captain, Philip Dumaresq. Clearly, the *Edith's* potential was a portent of the new age of steam in the China trade.

In 1838, when Forbes came out of "retirement" to re-enter the China trade, he began to rethink the humble tug boat.[96] When Forbes' tug, the *R.B. Forbes,* was launched in 1845 it incorporated most, if not all, of the attributes normally seen in ships today.[97] It was all metal, it was powered entirely by steam, it had two propellers, and it worked. Although meant for harbor work, it was capable of making an ocean voyage.[98] "Tugs" had been used before, but the ships were not usually designed just to tow ships. Like Jonathan Hulls' unexploited English patent of 1736, the highly specialized *R.B. Forbes* had no other purpose than to aid other ships entering or leaving a harbor.[99] In a successful repeat of the feat the British first attempted in the China trade, the *R.B. Forbes* towed the *Staghound* from Boston to New York where she took on a cargo for the China trade.[100] The *R.B. Forbes* relied completely on steam, thus marking a significant advance in the transition of a traditional shipping trade into a modern world-wide shipping industry.

Forbes was involved in developing shipping lanes and navigational aids to facilitate passages to East Asia. Matthew Fontaine Maury, a Southern advocate of Sino-American trade, took his friend Forbes' lead to work out a system of shipping lanes with complete explanations for merchants, owners and underwriters.[101] Maury used charts, journals and other resources provided by Forbes and others to develop accurate navigational charts which noted prevailing winds and currents at sea. Given the extended distances of the China trade those charts which provided a broad outline of the new shipping lanes could shorten a voyage by as much as 25 percent.

Based upon his memory of the coastal operations the *Nemesis* and her sister craft conducted during the Opium War, Forbes realized the potential of using steam warships to protect America's position in the China trade.[102] In May 1846, Forbes wrote George Bancroft, the Secretary of the Navy, to ask for funding for his commercial experiments in sail and steam to further protect the China trade. Forbes submitted a bid to build two U.S. Navy warships at a cost of $200,000 per ship. These American ships would be much larger than the armed British steamers Forbes saw in action at Canton. They would retain the full complement of guns arranged broadside in the traditional manner, facing outboard, running the length of the deck. The traditional wooden vessels were to be armor plated and copper bottomed with copper fasteners throughout. Departing from Navy tradition, there would be no carved and gilded work adorning the bow and stern of his ships. They were a waste of money. Forbes' ships were made for "service and not for show."[103]

Capitalizing upon the skills he gained from sailing in the China trade, Forbes understood the complexities and logistics of building and maintaining a sailing ship and envisioned a harmonious blend of sail and steam. He proposed to rig the iron plated vessels so as to "compete under canvas with the best sailing vessels and to have their propeller [out] of the water in ten minutes so that they may have nothing to retard them under sail."[104] For example, during times of calm in the South China Sea or upon entering or leaving port at Whampoa, Forbes imagined the vessels would be able to make nine statute miles per hour under steam. Forbes' idea of a steam powered "outboard motor" was not impossible. The technology necessary to accomplish the feat was available.[105] In fact, the British navy used an elevator-like mechanism to raise and lower the propeller.[106]

Forbes proposed to rely upon steam only for auxiliary power when sailing to far off East Asian ports. It was part of Forbes' overall concept of logistics. He knew from the experience of the *Midas'* cruise to China that if the "wrong" type of coal were used, such as high grade anthracite, the heat produced could literally melt the engine grates in the fire box. Therefore, low grade coal filled with impurities had to be used, which demanded many refuelings and refueling stations throughout the world. To cut down on the refuelings necessary to reach port, Forbes proposed to use the engine not more than "one day in five."[107] With forty days fuel, those ships could remain at sea for 200 days. There would be no need for constant refuelings. In fact, not only would steam power the vessel, steam would provide the drinking water, too. By taking advantage of the surface condenser made by Samuel Hall in 1834, Forbes could reduce the need for storing potable water. More importantly, the corrosive effects of sea water would be greatly reduced inside the steam engine.[108] Extra cargo or additional coal bunkers could be placed where the water was once stored. The Americans would not have to depend on foreign ports for logistical support. With the auxiliary steam plant, the reach of America's small ship navy was extended just as Boston's competitive edge in the China trade was materially enhanced. It was a design used for the rest of the century.

CONTRIBUTIONS TO THE CHINA TRADE AT MID-CENTURY. Secretary of the Navy James C. Dobbin defined the U.S. Navy's mission in Asia as early as 1855. Dobbin outlined his ideas to Captain James Armstrong, the new commander of the American squadron in East Asia, stating the reasons for "maintaining a Naval Force in the East India and China Seas are, the protection of our valuable trade with China and the Isles of India, and our Whale fisheries."[109] Dobbin might have read Forbes' letter to Bancroft because Forbes, in his concluding remarks to Bancroft, stated that the two vessels he proposed to design and build would be

> especially adapted to the protection of our commerce in the Gulf of Mexico and other Canton latitudes. I must respectfully suggest in conclusion that our valuable China & South American trade & our whaling trade [should be protected during] the present belligerent aspect of affairs ... I particularly recommend the *Massachusetts* with a light armament for this special and important service, or for the protection of our trade coming through the Gulf of Florida.[110]

Forbes' ship, the *Massachusetts* never went to Canton because the war with Mexico started the next year. The *Massachusetts*, under contract with the government, transported American troops and served as the flagship for General Winfield Scott during the Mexican-American War. The vessel fit neatly within the traditional class of multiple use ships.

Forbes continued to experiment with his ships, this time in the use of new weapons and ordinance with Lieutenant John A. Dahlgren of the Ordinance Department at the U.S. Navy Yard in Washington. Previously, Dahlgren placed his 32 pounder "shell gun" which used a "proportional charge" mounted upon a "light Pivot Carriage" on the small U.S. steamers *Vixen* and *Waterwitch*.[111] Forbes wanted a similar gun placed on one of his fast China traders, the *Antelope*, which had nearly been bested by the *Edith* when she went into the trade.[112] Forbes provided double-ended ship plans, tailored especially for the *Antelope,* for Dalghren's use. Although the massive discharge of the shell gun caused problems, the experiment was a success and needed just a four man crew instead of a traditional 12-13 man gun crew. The new deck gun was perfect for the small crew of a China trader. Modern methods of making war at sea had emerged and Forbes was quick to use the new weaponry in defense of his trade in China.

In 1854, at the request of cousin Paul Siemen Forbes, Baring Brothers contacted England's preeminent ship building firm of William Denny & Brothers Ltd. to build a ship based upon Forbes' idea for Russell & Co. for use in the China trade. Christened the *Min* by Denny & Brothers, the vessel was classed as an "ss screw clipper (auxiliary steamer/sailing ship)."[113] The *Min* was completed in 1856 with most of the sailing attributes Forbes imagined. The craft was fully rigged for sail. Screw propelled, the ship used a vertical trunk to lower the propeller into the water. The auxiliary steam plant was capable of making 11 knots in calm weather. The *Min* was renamed the *Fuo-Chow* by Russell & Co. and sent immediately into the China trade. The vessel was equipped with a "circle" mounted on the forecastle to cradle a 24 pounder brass gun capable of firing both shell and solid shot.[114]

Basically, there were three types of ships at sea when Forbes flourished during the transition from sail to steam. First, there were the cargo ships which could never enter a naval battle. Second, there were ships which could serve as commerce raiders, troop ships and/or supply ships. Third, there were the battle ships of the line. Forbes provided a fourth because the *R.B. Forbes* was a new kind of vessel. Highly specialized, his dependable and sturdy tug attended to all the other craft found in the world's harbors.

The nearly universal appeal of Forbes "intermediate" class of ships gave the new shipping industry time to invest in the research and experimental development necessary to create a modern commercial fleet. Experiments had to blend the use of wood and steam together to build a practical, money-making ocean going craft. Given the distances involved, Forbes' auxiliary powered ships were the only reasonable solution.

On short hauls, a steamboat was the best and quickest answer. On longer hauls, the fuel demands of steam reduced its cost effectiveness dramatically. Forbes' *Massachusetts* and *Min* were a practical application of emerging technology for use on intermediate and long hauls. With the implementation of the "Forbes rig," the graceful clipper ship design of the 1840s and 1850s reached the apex of the age of sail. The mature design of the sharply raked bows and clouds of canvas made the fast clippers suitable for only the longest voyages. The unpretentious tug, *R.B. Forbes*, was even more important in the modernization of the world's shipping industry because of its highly specialized design. Like Forbes' other innovations, the tug became indispensable as soon as the craft was launched. Where once sailors built and piloted their craft "b' guess and b' God," Forbes and his contemporaries trusted the emerging science of the sea.[115]

CHAPTER 5. CONCLUSION: ROBERT BENNET FORBES BETWEEN TWO WORLDS

Robert Bennet Forbes lived in a remarkable time—during the transition when adventurous Americans traveled to East Asia to establish their place in the emerging modern global trading community. When Forbes and his contemporaries sought out new international markets they did so by capitalizing upon traditional avenues to wealth and by taking advantage of innovations in technology to help secure their place in commerce. China was an example of that drive and the Forbes Papers provide a record of transition.

The advent of China's modern history was contemporaneous with China's late traditional period and may be defined as a rather short period from about 1800 to around 1845. These years were also the crucial years of Sino-American contact. During that time, China's coastal provinces, especially Kwangtung Province, underwent a fundamental transition. Seasonal commercial contact primarily with American and English seafarers developed into a hybrid "treaty port" environment with continuous economic and technological exchange. The advent of modernity is most easily seen in the twenty years immediately before the Opium War. Forbes flourished during that time.

Forbes rose to the level of entrepreneurial achievement by combining innovative shipping techniques with modern business methods. He gained his fame and fortune both as a businessman and as a seafaring innovator when traditional methods of conducting business in China were undergoing fundamental change. No longer isolated, the trade at Canton gave way from barter to the sophisticated methods and techniques used today in the international business arena. The growing sophistication of business in the China trade could be seen in the use of commercial paper, insurance, and the general expansion of the China trade. Americans and Chinese grew wealthy and international business relationships adjusted to the new world order of economic nationalism. Forbes flourished when rudimentary trading relationships of the mercantile era became international in scope and were replaced, once and for all, by modern business techniques.

He thrived first as a "proprietor" of a floating "hardware/dry goods store," the Lintin station. The Lintin anchorage serviced the weather-worn ships arriving from or returning to America, Europe and India. Forbes, like other captains, simply oversaw the growth of the traditional day-to-day operations at the Lintin station, the major distribution point for the illegal opium trade into China and final point of departure for the season's teas to Europe and the Americas.[116] Forbes earned his reputation as an innovator for two complementary reasons. First, Forbes introduced new techniques of sailing and new technology into America's traditional shipping trade. Second, he combined advances in commerce made by others in the China trade with his technological advances in shipping. The combination of sail and emerging maritime technology was profound, for China and for international trade.

Forbes played a major role in the increasing importance of the China trade. With his fertile imagination fed and teased by accelerating technological advances made by his contemporaries, Forbes produced significant maritime innovations. When he went to sea in 1817, the China trade was ruled by tradition. In the early 1830s, faster ships and greater demand for exotic products further developed international trade with China. The pace of change picked up with the practical application of steam technology at sea. By 1845, the modern shipping industry had emerged in China and change occurred even faster.

The general expansion of the China trade was enhanced by Forbes' maritime innovations—the "Forbes rig" and three of his ships (the *Massachusetts,* the *Min* and the *R.B. Forbes*). Forbes' telescoping rig with its trapezoid shaped sail plan was immediately adopted by the world's shipping community and his legacy can still be seen in the sail plan of several of the "Tall Ships" which gather annually at various ports throughout the world. The *Massachusetts* was an intermediate stage which took advantage of both sail and steam. Originally meant for commerce, the *Massachusetts,* like the *Min* which was never pressed into military service, still retained the undifferentiated qualities of traditional sailing ships. Nevertheless, the ship could be used for auxiliary purposes such as war. With the *Massachusetts* and the *Min*, Forbes leant luster to the last days of the great age of sail. But with the *R.B. Forbes*, he helped show the way to the subsequent dominance of steam powered vessels.

Capitalizing upon the material found in the Forbes Papers, this study serves as a supplement to China's littoral history in several ways. First, the genesis of Sino-American commercial relations and the transition to sophisticated commercial capitalism is better documented. Second, by incorporating little-used source material found in the Forbes Papers, America's role in the development of the China trade comes into better focus. Use of the collection is all the more important because of the scarcity of material about a crucial period in China's history between 1800 and 1845. Third, through an examination of China's commerce at Canton and the illegal opium trade along China's coast, this thesis sheds light on the China-centered paradigm of historical study as well as on the standard studies of imperialism. Finally, this thesis adds to China's littoral history by incorporating the study of technology and its effect upon Sino-American business relationships.

Robert Bennet Forbes was a man of two worlds. First, Forbes' American world provided him with the financial resources and cultural setting to embrace the dramatic advances of the industrial revolution. Both were necessary to succeed in the China trade. He started his career in the "traditional world" as a China trader when conventional sailing craft carried him to Canton, China where business was conducted in a traditional way—sometimes even through barter. Second, when he matured as an innovator-businessman, he found himself in a considerably different, even "modern" world.

During his flourishing career, the pace of modern commercial capitalism quickened in the Sino-American trade as a result of much-improved vessels, many of them powered by steam. Finally, that transition occurred in the period from 1800 through 1845—a period when the United States became "modern" in terms of maritime technology (from sail to steam) and China became "modern" in terms of foreign relations (from the tribute system to the treaty system). Forbes played an important role in bringing about these changes in both the American and the Chinese world. In short, Robert Bennet Forbes' career is historically significant because he was an American China trader between two worlds.

NOTES

NOTES

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VITA

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