

Introduction of Soybean to North America by Samuel Bowen in 1765¹

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*This paper documents the history of the introduction of the soybean (*Glycine max*), a domesticate of China, to North America. Henry Yonge, the Surveyor-General of Georgia, planted soybeans on his farm at the request of Samuel Bowen in 1765. Mr. Bowen, a former seaman employed by the East India Company, brought soybeans to Savannah, Georgia, from China via London. From 1766, Mr. Bowen planted soybeans on his plantation "Greenwich" located at Thunderbolt, Georgia. The soybeans were used to manufacture soy sauce and vermicelli (soybean noodles). In addition, he manufactured a sago powder substitute made from sweet potatoes. The 3 products were then exported to England. Samuel Bowen received a patent for his manufacturing inventions for producing these products. Another early introduction of soybeans to North America was by Benjamin Franklin. In 1770 he sent seeds from London to John Bartram in Philadelphia.*

Soybeans [*Glycine max* (L.) Merr.] together with wheat and maize are principal field crops grown in the United States. The rise of soybeans to agricultural prominence within the last 60 yr in the U.S. is a remarkable story dealt with in detail by Probst and Judd(1973). However, little is known about the introduction of the soybean, a domesticate of China, to North America. In 1916, Piper and Morse reported that Mease in 1804 was credited with being the first person in the U.S. literature to mention the soybean. Mease (1804) stated. "The Soy-bean bears the climate of Pennsylvania very well. The bean ought therefore to be cultivated." For almost 70 yr the 1804 literature date has remained unchallenged. In this paper we will document a 1765 introduction of soybeans from China in Savannah, Georgia by Samuel Bowen. There the soybeans were used to manufacture soy sauce and vermicelli (soybean noodles), which were then exported to England.

Voyage to China

On February 8, 1758, Samuel Bowen signed on as a seaman on the *Pitt*, bound for the East India Company's trading post in Canton, China (Log of *Pitt*. 1755-1763). According to the *Pitt's Ledger for Wages*, Samuel Bowen received £32 9s 4d as salary advance. The *Pitt*, at 600 chartered tonnage, was the largest ship to make the voyage from England to China since the first ship, the *London*, sailed to Macao in 1635 (Morse. 1916-1929). The *Pitt* docked at Madras, India, on September 15, 1758 and unloaded 2 companies of soldiers (Log of *Pitt*. 1758-1763). On her journey, from Madras to Canton, the

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Pitt was accompanied by a 2-masted tender, the *Success*. The captain of the *Pitt*, William Wilson, owned the *Success*, which had a crew of 1 midshipman and 12 seamen. The *Success* was used to assist the *Pitt* through uncharted waters. From Madras to Canton, the *Pitt* sailed via Java to Madura, around the east side of the Celebes, passing between Buru and Sula Islands., proceeding north, east of the Philippines and then west to Canton (Morse. 1926-1929). The *Pitt* arrived in China on April 16, 1759 (Log of *Pitt*. 1758-1763).

On June 13, 1758, Samuel Bowen transferred to the *Success* (Log of *Pitt*, 1758-1763). The small tender sailed north to Ningpo and then on to Tientsin. On board was James Flint, an employee of the East India Company since 1736 (Stifer, 1938), who was the company's Chinese interpreter. Mr. Flint left the *Success* at Tientsin on July 29, 1759, and returned to Canton via the overland route. He arrived at Canton on September 10, 1759 (Morse, 1926-1929). The voyage of the *Success* became a *cause célèbre* both in China and England because the Emperor had prohibited the English from trading outside of Canton. Ultimately, James Flint was imprisoned by the Chinese at Macao from December, 1759 to November, 1762, and then banished forever from China by the Emperor Ch'ien Lung (Auber, 1834, Fu, 1966; Grantham. 1934; Morse, 1926-1929). The *Success* was never heard of again (Morse. 1926-1929).

The only information on Samuel Bowen in China comes from vague comments made by Bowen himself. He claimed that he was a prisoner in China for nearly 4 yr and was carried 2,000 miles from place to place through the interior of the country (Georgia Gazette, September 17, 1766).

Return To London

Samuel Bowen reappeared in London in late 1763. Most probably he returned home on one of the East India Company's trading ships from China in mid-1763. According to the *Ledger of Wages and Receipts for Wages of the Pitt*, on November 10, 1763, Samuel Bowen received £28 and 11d "being in full for Wages, Debts and all Demands, for Service performed on board the Ship *Pitt*." On November 16, 1763, he petitioned the Court of Directors of the East India Company to redress a grievance concerning his wages and imprisonment in China. The minutes read as follows: "On reading the Petitions of Samuel Bowen representing his Services and Sufferings in China in his Passage to Limpo on the *Success* Snow and otherwise and praying to be considered for the same." On March 7, 1764, the Court of Directors ordered "That Mr. Burges do pay Samuel Bowen £19 10d being for Wages due to him from the Ship *Pitt* according to special Agreement with Capt. William Wilson on the 13 June 1759" (Minutes, Court of Directors, East India Company, 1754-1767). Thus, Samuel Bowen earned about £80 in wages as a seaman for the East India Company.

James Flint, the longtime East India Company employee in China, also petitioned the Court of Directors for compensation for the time spent as a prisoner in Macao. On June 11, 1764, the Court's minutes contain the following: "On reading the Request of Mr. James Flint late a Supra Cargo for an Allowance for the time he has lost and the Misfortune he labours under of not being able to return to China on account of the Emperor's Prohibition." On December 5, 1764, the Court of Directors voted to award James Flint £2,000 "in consideration of his Services in China as a Supra Cargo, the Hardships he underwent in the Course thereof and his being banished from thence by the Emperor's Edict." In addition, from 1760-1766, James Flint earned about £6,500 in commissions as a super-cargo. Thus, while Samuel Bowen earned approximately £80 from 1758-1763, James Flint earned a minimum of £8,500 from 1760-1766.

Savannah, Georgia

In 1764 (Deed Book "0," 1762-1765), the elusive Samuel Bowen surfaced in Savannah, The Colony of Georgia, and quickly assumed the roles of family man, farmer, and entrepreneur. On March 30, 1765 he married Miss Jeanie (Jane) Spencer, daughter of William Spencer, the Collector of the Customs in Savannah (Georgia Gazette, April 4, 1765). This gained Samuel Bowen instant respectability.

On May 14, 1765 Bowen purchased a tract of land at Thunderbolt (a few miles east of Savannah) from Grey Elliott (Candler, 1907: Hartridge Collection). According to his will drawn on May 31, 1774 (Hartridge Collection: LaFar and Wilson. 1963). Samuel Bowen's residence was named "Greenwich" and consisted of 450 acres which became the center of his farming and manufacturing enterprises. In addition, according to his will (Hartridge Collection), he purchased from John Mulryn a tract of 84 acres he called Macas (Macao) Island. The tract was situated near his Thunderbolt property.

In the spring of 1765, Samuel Bowen did not have land available to sow seeds. Therefore, he asked Henry Yonge, the Surveyor-General of Georgia, to plant seed that he had brought from China. In a letter dated December 23, 1766 to Dr. Peter Templeman, Secretary to the Society for the Encouragement of Arts, Manufacturers and Commerce, London, Henry Yonge wrote the following:

This is to certify that the pease or vetch — lately introduced by Samuel Bowen in this province from China, were planted by me the last year at Mr. Bowen's request, and did yield three crops: and had the frost kept off one week longer, I should have had a fourth crop, which is a very extraordinary increase, and must, if attended to and be of great utility and advantage to this and his Majesty's other southern American provinces (Yonge, 1767).

The mystery as to the identity of the legume seed introduced from China into Georgia is clarified by Samuel Bowen:

The Chinese use these vetches for the following purposes. — From them they prepare an excellent kind of vermicelli, esteemed by some preferable to the Italian: nothing keeps better at sea, not being subject to be destroyed by the weevil.

In Canton, and other cities of China, they are used for salad, and also boiled like greens, or stewed in soup, after they have been prepared in the following manner:

They put about two quarts of the vetches into a coarse bag, or hair-cloth bag that will hold about a peck, and after steeping them in it a little time in warm water, they lay the bag on flat grating, or a wooden lattice, placed about half way down a tub, and put a cover on the tub: then every four hours they pour water on them, and in about 36 or 40 hours they will have sprouted about three inches in length: they are then taken out, and dressed with oil and vinegar, or boiled as other vegetables.

At sea, where fresh water is valuable, they place a cock in the bottom of the tub and draw off the water that drains from them to moisten them again, so that none is lost.

Mr. Flint and Mr. Bowen having found them an excellent antiscorbutic prepared in this manner, was a principal reason for his introducing them into America, as it would be a most valuable remedy to prevent or cure the scurvy amongst the seaman on board his majesty's ships.

These vetches are also of great use in warm countries where grass is scarce, as you may soon raise most excellent fodder for your cattle, which may be given them either green, or made into hay, and not thrashed. In warm climates they yield four crops a year, each crop will ripen in six weeks: they grow erect in tufts from 18 inches to two feet high (Bowen, 1767).

Bernard Romans (1775) described the crop as

A species of *Dolichos* lately introduced into Georgia from China although not properly a grass, yet it thrives to admiration there and yields four or five crops per annum. I think it not improper to recommend, as deserving cultivation for feeding cattle, the more so as all kinds are fond of it.

The above statements clearly demonstrate that Samuel Bowen brought soybeans from China to Savannah. Soybeans are not attacked by bruchid beetles, *Callobruchus* spp., are as mungbeans, *Vigna radiata* (L.) Wilczek. Soybean sprouts are normally cooked while mungbean sprouts usually are eaten raw. For use as green forage crop, soybean plants were harvested after 6 wk of growth and then replanted. Depending on the first planting date and the date of the first frost, it is possible to obtain from 3-5 soybean crops per year in the Savannah area. Romans reference to *Dolichos* was the soybean, *Dolichos soja* L. (Linnaeus, 1753). Secondly, the first crop was planted in 1765 by Henry Yonge. Thirdly, the soybeans were brought to America for the purpose of manufacturing soy sauce and other products for export to England. Lastly, Samuel Bowen and James Flint appear to be connected somehow in this enterprise. Perhaps James Flint provided the financial resources needed by Samuel Bowen. Further circumstantial evidence for the close connection between the 2 gentlemen is provided by the names of Samuel Bowen's sons. Samuel and Jane Bowen had 4 children, 2 sons named James Flint and Samuel Flint and 2 daughters, Elizabeth Ann and Mary Dinah (Hartridge Collection). In addition, in 1775. James Flint either visited or lived with the Bowen family on their plantation (Georgia Gazette. March 2. 1775).

Samuel Bowen also was interested in the manufacture of a starch powder to substitute for sago. Concerning his many observations in China, Samuel Bowen states,

I particularly took notice of a kind of powder in great esteem there, as an occasional diet, which I found to be the fine powder of Sago or China salop, prepared for the use of travelers, both by land and sea, which the Mandarines never travel without. At my return to England, I was fully persuaded, that the vegetable which produced this powder in China, with this view I went over to his Majesty's province of Georgia, where I was so lucky to find it, and have therefrom manufactured some quantity: this has been seen and approved of by several physicians and other gentlemen, as that it would be of great service in hospitals, the army, navy, in the African ships, and in all long voyages, being an excellent antiscorbatick (Georgia Gazette. September 17, 1766).

Dossie (1768-1771) reveals that Samuel Bowen used a root of a vegetable make a substitute for sago and Bonner (1964) concludes that the sago substitute was made from sweet potatoes [*Ipomoea batatas* (L.) Lam.].

Honors and Patent

Samuel Bowen traveled to London (Georgia Gazette, August 6, 1766) around April 1766 and he returned to Savannah in November of the same year (Georgia Gazette, November 19, 1766). He must have had a triumphant welcome in Savannah and most certainly his status as an entrepreneur among his fellow Georgians increased, for Samuel Bowen was awarded a gold medal from the Society of Arts, Manufacturers and Commerce and received a present of 200 guineas from King George III (Dossie, 1768-1771, Georgia Gazette, September 17, 1766, Georgia Gazette, November 19, 1766). Dr. John Fothergill, the famous English physician and botanist, revealed in a letter (Georgia Gazette, September 17, 1766) that the Society's agricultural committee had conducted experiments on the sago and vermicelli produced by Mr. Samuel Bowen and that indeed they appeared to be cheap and salutary foods that under proper encouragement could become considerable articles of commerce. It was Dr. Fothergill's opinion that the Society should award Mr. Samuel Bowen a gold medal. Samuel Bowen was introduced to King George III by Lord Dartmouth, who was the President of the Board of Trade and a Lord of the Privy Council (Georgia Gazette, November 19, 1766, Ms of Earl of Dartmouth, 1895).

On July 1, 1767, Samuel Bowen received a patent, number 878, for his "new invented method of preparing and making sago, vermicelli and soy from plants growing in America, to be equal in goodness

to those made in the East Indies.” (Woodcraft, 1854). The first 2 pages of the patent (Candler, 1937) are shown in Fig. 1.

The January 16, 1769 minutes of the American Philosophical Society for the Promotion of Useful Knowledge in Philadelphia contains the following sentence: “Sample of Chinese Vetches, six bottles of Soy and six pounds of powdered Sago, presented with a letter from S. Bowen of Georgia.” (Lesley, 1884). The chance reading of this one sentence motivated the authors to investigate (1) the possibility of soy sauce importation or manufacturing in America, (2) the identities of S. Bowen of Georgia and his Chinese vetches, and (3) the raw materials used to produce sago powder which normally is made from sago palms.

On March 3, 1769, the Communications Committee of the Philosophical Society sent a letter to S. Bowen thanking him for his account of Chinese vetches. Another committee was established to experiment on the quality of the soy and sago and to report. Samuel Bowen’s seeds were distributed to 8 farmers. On April 21, 1769, “Mr. S. Bowen of S.C.” (obviously an error) was elected to membership in the Society.

Benjamin Franklin, Rhubarb and Soybeans

Benjamin Franklin is credited with the first introduction of rhubarb (*Rheum rhaponticum* L.) to America. In 1772, he obtained rhubarb seeds from Scotland and sent them to John Bartram in Philadelphia (Woodward, 1943). We have discovered an earlier introduction of rhubarb to America. On March 12, 1770, John Ellis, the Agent for West Florida in London, sent rhubarb seeds to the Hon. James Habersham in Savannah, Georgia. The seeds were received on July 10, 1770. According to the letter written on October 18, 1770 by John Habersham to John Ellis, the former distributed the seeds to several of the best horticulturalists in the area and among them was Samuel Bowen, the inventor of and patentee for making sago powder and soy (Letters of Hon. James Habersham, 1904) In a letter dated January 11, 1770 (Smyth, 1907), Benjamin Franklin wrote the following to his friend John Bartram in Philadelphia about seeds used to produce tofu:

I send also some green dry peas, highly esteemed here as the best for making pea soup: and also some Chinese caravances, with Father Navarrete’s account of the universal use of cheese made of them in China, which so excited my curiosity, that I caused inquiry to be made of Mr. Flint, who lived many years there, in what manner the cheese was made, and I send you his answer. I have since learned, that some runnings of salt [I suppose runnet] is put into water, when the meal is in it, to turn it to curds. I think we have caravances with us, but I know not whether they are the same with these, which actually came from China. They are said to be of great increase.

TO THE KING'S MOST EXCELLENT MAJESTY.

The Humble Petition of Samuel Bowen
Of the Province of Georgia in America
Merchant.

Sheweth

THAT Your Petitioner had found out
and invented a Method of preparing & making
sago, Vermicelli, & Soy, from the Plants growing
in America, which he has now brought to such
great Perfection as to be equal in Goodness to
those made in the East Indies: That he has erected
machines for carrying on the said Manufactory, In
which Undertaking he has been encouraged to proceed
by the Lords for Trade and Plantations, the America
And African Merchants, the Society for promoting Arts,
Manufacturers, & Commerce, and by many eminent
Physicians: That in regard he is the First and
True Inventor thereof and that the same hath never been
Practiced by any other Person or Persons whatsoever.

Your Petitioner therefore most humbly
Prays Your most Sacred Majesty to
Grant unto him Your Royal Letters
Patent, under the Great Seal of
Great Britain, for the sole Benefit
And Advantage of his said invention,
Within that part of Your Majesty's Kingdom
Of Great Britain called England, Your
Dominion of Wales, and Town or Berwick
Upon Tweed, and also in all Your Majesty's Colonies and Plantations
Abroad, for the Term of Fourteen
Years, according to the Statue in that Case made and provided.

And your Petitioner shall ever
Pray & c.

Whitehall June 6th, 1767.

His Majesty is pleased to refer this Petition
To Mr. Attorney, or Mr. Solicitor General, to consider
Thereof and report his Opinion, what may be
properly done therein, whereupon His Majesty will
Declare his farther pleasure.

Shelburne.

Petition of Samuel Bowen, Merchant
For an invention.

6 June 1767.

Entd.

Fig. 1. The first 2 pages of Samuel Bowen's application for a patent (Woodcraft, 1854).

Table 1. Exports of Sago, Soy Sauce, and Vermicelli from Savannah, GA. 1766-1775

<u>Year</u>	<u>Sago powder</u> Lb	<u>Soy sauce</u> qt	<u>Vermicelli</u> lb	<u>Reference</u>
1766-1767	608			Romans, 1962
1767-1768	100			Romans, 1962
1768-1769	2,912			Romans, 1962
1769-1770	12,289			Romans, 1962
1770-1771	18,405	162		Romans, 1962, Ga. Gaz., April 25, 1770
1771-1772	12,930			Romans, 1962
1772-1773	14,435	60		Romans, 1962, Letters of Sir James Wright, 1873
1773-1774	7,001	36		Ga. Gaz., Feb. 9, 1774, <i>ibid.</i> , May 4, 1774
1774-1775	20,000	800	200	Ga. Gaz., May 25, 1774

The Father Navarrete, referred to in Franklin's letter, is Domingo Navarrete who is credited with the earliest accurate European's description for the use of soybeans as a food. In 1665, he wrote about the Chinese use of tofu (Cummins., 1962). Obviously, the Mr. Flint referred to by Benjamin Franklin was James Flint. John Bartram most probably planted the soybeans sent to him by Benjamin Franklin in his garden which was situated on the west bank of the Schuylkill River below Philadelphia (Fox, 1919).

Exports

The data available to us for Samuel Bowen's exports of sago powder, soy sauce and vermicelli are presented in Table I. The sago powder sold for 2 shillings per pound and the soy sauce at 3 shillings 6 pence per quart bottle (Georgia Gazette, November 30, 1768). The exported sago powder was not used much as a food, but rather as packing material for the export of Wedgewood china from London, to India (A. Farrington, pers. comm.). Similarly, chinaware exported from Canton to London was packed in sago powder (Pritchard, 1970). In the 17th century, soy sauce was a common item of trade from Asia to England (Hymowitz and Newell, 1981). Most probably Samuel Bowen's soy sauce was relished in London for its culinary value. Samuel Bowen also exported peanuts, sesame seed and saffras blossoms (Georgia Gazette, May 25, 1774).

Additional Comments

Samuel Bowen made 2 more trips to England. In 1769 he was a passenger on the *Friendship* to Gosport (Georgia Gazette, March 15, 1769) and in 1774 he was a passenger on the *Savannah* to Cowas (Georgia Gazette, June 22, 1774) which also carried his export cargo of sago powder, soy sauce and vermicelli (Georgia Gazette, May 25, 1774).

After 1775, little is known of the activities of Samuel Bowen. According to Brigham (1947), the *Georgia Gazette* published by James Johnston, ceased publication in February 7, 1776, due to the Revolutionary War. Another Georgia Gazette was published in 1777-1778 by William Lancaster, however, no copies have been located. Samuel Bowen's agricultural export business probably ended or was drastically reduced in 1776 because of the war.

The exact date of Samuel Bowen's death is not known, but he probably died shortly before his will was probated on September 12, 1778 (LaFar and Wilson, 1963). Jane Bowen died October 18, 1781 (Royal

Georgia Gazette, October 18, 1781). The entire estate of Samuel and Jane Bowen was sold on April 6, 1785 (Gazette of the State of Georgia, February 24, 1785). The family stayed on in Georgia. Samuel Bowen's great grandson, John Stevens Bowen, served as a Confederate General in the Civil War (Warner, 1959). James Flint returned to London. In 1787, he was actively involved in the establishment of the Carthart Embassy in China (Pritchard. 1970).

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Literature Cited

- Auber, P. 1834. China an Outline of its Government. Laws and Policy: and of the British and Foreign Embassies To. and Intercourse With That Empire. p. 167-173. Parbury. Allen. London.
- E Bonner, J. C. 1964. A History of Georgia Agriculture 1733-1860. p. 25. Univ. Georgia Press. Athens, GA.
- Bowe, S. 1767. Gentleman's Mag. 37: 253.
- Brigham, C. S. 1947. History and Bibliography of American Newspapers. 1690-1820. Vol. I. 1 21 131. Amer. Antiquarian Soc.. Worcester. MA.
- Candler, A. D. 1907. The Colonial Records of the State of Georgia. Vol. IX: p. 474-475. The Franklin-Turner Co.. Atlanta. GA.
- . 1937. The Colonial Records of the State of Georgia. Vol. 39: 247-253. Typed under direction of Louise Frederick Hays. State Historian and Director of the Department of Archives and History of the State of Georgia. Atlanta.
- Cummins, J. S. 1962. The Travels and Controversies of Friar Domingo Navarrete (1618-1686) Hakluyt Soc. Ser. 2 No. 118. Vol. II: 195-196. Cambridge. England.
- Deed Book "O" 1762-1765. Miscellaneous Bonds. Bills of Sale. Deeds Gifts, Powers of Attorney. p. 177-178. Original documents on file in the Georgia Dept. Archives and History. Atlanta, GA.
- Dossie, R. 1768-1771. Memoirs of Agriculture and Other Oeconomical Arts. Vol 1: 303 J. Nourse. London.

Fox, R. H. Fu. Lo-Shu. 1919. Dr. John Folhergill and His Friends. p. 171. Macmillan. London.

Fox, R. H. Fu. Lo-Shu. 1966. A Documentary Chronicle of Sino-Western Relations (1634-1820). p. 215-228. Univ. Arizona Press. Tucson. AZ.

Gazette of the State of Georgia. February 24, 1785. p. 2, col. 2.

Georgia Gazette, April 4, 1765. p. 3. col. I.

—. August 6, 1766. p. 3. col. 1.

—. September 17, 1766. p. 2. col. 1-2.

—. November 19, 1766. p. 3. col. 1.

—. November 30, 1768. p. 3. col. 2.

—. March 15, 1769. p. 7. col. 2.

—. April 25, 1770. p. 3. col. 1.

—. February 9, 1774. p. 2. col. 2.

—. May 4, 1774. p. 3. col. I.

—. May 25, 1774. p. 2. col 2.

—. June 22, 1773. p3. col. I.

—. March 22, 1775. p. 1. col. I.

Grantham, A. E. 1934. A Manchu Monarch. p.13. George Allen and Unwin. London.

Hanridge, Walter C. Collection. Genealogical records as well as other documents pertaining to life of Samuel Bowen. Georgia Historical Soc.. 501 Whitaker St.. Savannah. GA.

Hymowitz, T. and C. A. Newell. 198 1. Taxonomy of the genus *Glycine*. domestication and uses of soybeans. Econ. Bot. 35:~7--188.

LaFar, M. F.. and C. P. Wilson. 1963. 2nd Printing. Abstracts of Wills Charham County. Georgia 1773-1817. Will Book "B." Natl. Genealogical Soc.. Washington, DC.

Lesley, J. P.. ed. 1884. Early Proceedings of the American Philosophical Society For the Promotion of Useful Knowledge: compiled from the manuscript minutes of its meetings 1749 to 1838 Vol. I: p. 24. 25. 32. 33. 35. McCalla and Stavely, Philadelphia, PA.

Letters of Hon. James Habersham. 1904. Collections by the Georgia Historical Soc. Vol. VI: 91.

Letters of Sir James Wright. 1873. Vol. 111: 176. Collections of the Georgia Historical Soc.

Linnaeus, C. 1753. *Species Planlarum*. Vol. II: 727. Stockholm.

Log, Ledger for Wages and Receipts For Wages For the Pitt. 1758-1763. Code L/MAR/B/5251(1) and (2). British Library, India Office Library and Records. 197 Blackfriars Rd. London.

Manuscripts of the Earl of Dartmouth. 1895. Historical Manuscripts Commission. Fourteenth Report.. Appendix. Part X. Vol. II. p. v. American Papers. Printed For Her Majesty's Stationery Office, London.

Mease, J. 1804. *The Domestic Encyclopedia*. A. F. M. Willich. ed. 1st Amer. ed.. Vol. 5: 13. Philadelphia.

Minutes of the Court of Directors of the East India Company, 1754-1767. Information about Samuel Bowen and James Flint was round in B/72 to B/82. British Library (see Log of Pitt).

Morse, H. B. 1926-1929. *The Chronicles of the East India Company Trading to China 1635-1834* Vol. I and 5. Clarendon Press, Oxford.

Piper, C. V.. and W. J. Morse. 1916. The soybean with special reference to its utilization for oil cake. and orter products. *CSDA Bull.* 439: 1-20.

Prirchard, E. H. 1970 reprint. *Crucial Years of Early Anglo-Chinese Relations 1750-1800*. p. 167 M6. Octagon Books, New York.

Probst, H. and R. W Judd. 1973. Origin. U.S. History. Development and World Distribution. In *Soybeans: Improvement, Production, and Uses*. B. E. Caldwell. ed. p. 1-15. Amer. Soc. Agronomy, Madison, WI.

Romans, B. 1962. *A concise Natural History of East and West Florida (A facsimile reproduction of the 1775 edition with introduction by R. W. Patrick)*, p. 130. Univ. Florida Press, Gainesville, FL.

Royal Georgia Gazette, October 18. 1781. p. 1. col. 1.

Smyth, A.H. 1907. *Writings of Benjamin Franklin*. Vol. 5: 245-246. Macmiilan. New York.

Stifler, S.R. 1938. The language of students of the East India Company's Canton factory. *J. North China Roy. Asiat. Soc.* 69: 56-82

Warner, E.J. 1959. *Generals in Gray* p. 29-30. Louisiana Stare Univ. Press. Baton Rouge. LA.