



British Horology Times

2020 Spring/Summer

Number 78

British Horology Chapter 159 of the National Association of Watch and Clock Collectors, Inc

William Graham: a London clockmaker who relocated to Philadelphia

Ann McBroom

I became interested in William Graham (1692-1758) when we purchased a longcase clock by him (Figure 1a & 1b). We quickly learned that William moved to Philadelphia in the early 1730s but have so far found no evidence that he made any watches or clocks in America. There is a handsome colonial tall clock in the Philadelphia Museum of Art prized for the case made by John Head (1688-1754). It houses a brass arched dial and movement signed Wm. Graham LONDON. The museum notes 'it is believed that the London clockmaker made it while in Philadelphia, where he worked around 1733.'¹ It seems equally probable, however, that the movement was made by William Graham in London and brought to Philadelphia. J.R. Stiefel's recent meticulous analysis of the workshop records of John Head unearthed no order from William Graham.²

Research tools

I recently completed a more comprehensive paper on the clockmakers William and George Graham,³ and will focus here on the new information discovered and the sources used. William was a 'nephew' of the famous clockmaker George Graham, and so I was able to build on earlier research into George's roots.⁴ William⁵ was raised a Quaker and this proved a major advantage because the London Quaker vital records for this period are far more detailed than many provincial Quaker records and contemporary London Parish Records.



Figure 1a: Dial signed William Graham London

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British Horology Times

Is a newsletter of British Horology Chapter 159 of the National Association of Watch and Clock Collectors, Inc. Correspondence and manuscripts should be sent to: britishhorology@gmail.com

Applications for membership and payment of dues should be sent to the Treasurer (see address above). Annual membership costs \$5.00 Worldwide. See website for details.

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Chapter 159

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Star Fellow Lu Sadowski Receiving Special Recognition for her 2018 & 2019 National Convention Leadership from the Board of Directors at the Mid-Winter Regional. Great job Lu!



President's Message – Spring 2020

As I write this message, we, and the world at large are in the midst of a situation that is unprecedented in our lifetimes. A “state of emergency” has been declared in many cities, states, and countries which has dramatically altered the way we go about our daily lives and is likely to have an effect for years to come. As we face the challenges before us we might reflect that around 350 years ago, British clockmakers, particularly those in London were dramatically affected by both the Great Plague and the Fire of London. These events were particularly harsh on the watch and clockmakers but they, and the craft, recovered to produce the artifacts we so prize today.

We are very fortunate that at our Florida Regional meeting in late January, Ken Rockwell talked on his restoration of an early eighteenth century timepiece. Thank you, Ken.

In this issue is a very fine article by Ann McBroom. The article is extremely well researched and serves as a connection with British clockmaking and Colonial America. Well done, Ann and thank you.



Ken Rockwell fielding questions at our meeting in January

The measures that people have been requested to follow in order to prevent the spread of the disease have also caused the cancellation of several NAWCC Regionals and the National Convention. This means that we will not be able to hold two of our scheduled three meetings this year. I fervently hope that we will be able to enjoy the presentations which were scheduled for this year at meetings to be held when the opportunity arises.

I hope, as well, that on the positive side of our current crisis, with the extra time that we have found by cancelling other activities, we can enjoy our horological pursuits. Whether these pursuits be research, repair or simply appreciating our collection, I wish that each of you are able to be safe from harm.

I look forward to seeing you at one of our future meetings. Until we are able to meet again, keep well.

Cheerio

Bob

(Continued from page 1)

Quaker Birth and Death records are held at the Kew National Archives, and they are available on-line by subscription. ⁶ Marriage records can include residence and occupation data for the couple, information about parents and a list of both family and Friends witnessing the marriage. Birth records can include home address and father's occupation, and sometimes name the midwives and women attending the birth. Death records can identify residence, cause of death and occupation. Quaker Meeting records can be consulted at the Library of the Society of Friends in London. William appears not to have joined a Meeting in the US, but his wife and children did so after his death. They are mentioned in archives held at Swathmore College Library in Pennsylvania. William's eldest son became a respected lawyer, judge and philanthropist; but the family histories written about him and his descendants offer no clues as to what William did after he arrived in PA. The information we found was in County and University Archives in Delaware, Pennsylvania and New York.



Figure 1b - Burl Walnut Graham Tall Case clock

The Graham family in Cumberland and London

George Graham was born in the Kirkclinton area of Cumberland in the far North West of England. Penfold concluded that George's father had married twice, and that George⁵ was born to the second wife (Isabel) in 1673/1674.⁴ George's father died in 1679 when George was a young boy, and Penfold speculated that George thereafter lived with his eldest half-brother William Graham (born 1646) who was already married and living at Sikeside. Two other half-siblings, closer in age to George, were William's father Richard (born in 1658) and Mary (born in 1662).⁴ Richard and Mary were living in London in the early 1690s,⁶ but how long they had been there is not known. Mary married Henry Hale in 1690 at the Peel Meeting House. Within a year, Richard married Henry's sister Alice Hale at the Bull and Mouth Meeting House.

We still do not know where George Graham attended school or when he first arrived in London. George's mother died in 1710 and was survived by George and his younger sister Isabel (born in 1677).⁴ Amongst those attending Mary's marriage were an Isabel and a George Graham. It is certainly possible that Richard and Mary had been caring for their younger half-siblings in London for some time; or perhaps all four had lived with Isabel Sr.

William was born on April 25 1692 in the parish of St. Andrew's Holborn.⁶ The only other of Richard and Alice's children who is known to have survived into adulthood is Ann. Ann lived into her late seventies and was a major beneficiary in George Graham's will.⁴

Richard died of consumption on 21 July 1708⁶ when William was sixteen years old. That same month, William began his apprenticeship with Richard Bell of the Longbow stringmakers' Company ⁷(Figure 2).

Although not officially apprenticed to a clockmaker, there is no doubt that these were the skills that William was acquiring. Jeremy Evans lists William as an Associate of the workshop of Thomas Tompion and George Graham.^{8,9} It was not unheard of for apprentices to be formally attached to one master but learning from another, in part because the number of apprentices a master could take was strictly limited. When William began his apprenticeship, George was already married to Thomas Tompion's niece, Elizabeth, and well-established.⁴



Figure 2: Apprenticeship paper of William Graham (1708)

Richard Bell's father, Archibald, and William Graham (George's eldest half-brother) were founding members of the Kirklington Quaker Meeting House.¹⁰ A Richard, George and Isabel Graham attended Richard Bell's marriage in London in 1693.⁶ These could well have been William's father Richard, George the clockmaker (who began his apprenticeship in London with Henry Aske in 1688),⁴ and George's sister or mother.

William's working years in London

William Graham 'Citizen and Clockmaker of London' married his first wife, Anne Bradford, on 4 February 1720 at the Bull and Mouth Quaker Meeting House.¹⁰ Anne was born in George's Yard, off Lombard Street, it seems that William and Anne lived with or near her parents throughout their marriage. Anne gave birth to seven children and died in December 1727.⁶ Within the space of a few months, William lost his wife, two sons and his uncle Henry Hale.¹¹ The only child of William and Anne still alive in 1729 was Hannah. Thomas Tompion died in 1713 and George assumed control of the business. In 1720, he moved to new premises in Fleet Street - the *Dial and One Crown*.^{8,9,12} During the 1720s, William Graham operated as a clock and watchmaker at the *Dial*, variously described as being in Lombard Street (Figure 3) or Birchin Lane, his shop stood next to the 'Pensylvania Coffee House.'¹³

Day	Januar	Febr.	March	April	May	June	July	Aug.	Sept.	Octob.	Nov.	Dec.
	min. sec.	min. sec.	min. sec.	min. sec.	min. sec.	min. sec.	min. sec.	min. sec.	min. sec.	min. sec.	min. sec.	min. sec.
1	8 59	14 48	10 08	0 49	0 29	4 09	1 20	4 43	3 30	3 48	13 14	15 23
2	9 21	14 47	9 51	0 26	4 11	0 33	4 51	4 20	4 09	13 28	15 15	5 13
3	9 43	14 45	9 34	0 16	4 12	0 40	4 58	4 10	4 29	13 42	15 05	4 45
4	10 05	14 43	9 17	0 04	4 13	0 28	4 57	4 03	4 50	13 56	14 53	4 16
5	10 26	14 48	8 59	0 14	4 12	0 16	5 12	3 49	5 18	14 08	14 44	3 47
6	10 45	14 38	8 41	0 29	4 11	0 03	5 17	3 37	5 31	14 20	14 32	3 17
7	11 03	14 28	8 24	0 44	4 10	0 10	5 23	3 24	5 51	14 31	14 20	2 47
8	11 24	14 23	8 05	0 58	4 08	0 23	5 28	3 11	6 12	14 44	14 06	2 17
9	11 40	14 14	7 47	1 12	4 06	0 36	5 34	2 58	6 33	14 51	13 52	1 47
10	11 57	14 09	7 29	1 26	4 04	0 49	5 35	2 44	6 53	15 02	13 38	1 18
11	12 14	14 01	7 10	1 38	4 01	1 01	5 38	2 30	7 14	15 11	13 21	0 48
12	12 30	13 52	6 52	1 51	3 57	1 14	5 41	2 16	7 34	15 20	11 03	0 18
13	12 44	13 43	6 33	2 03	3 52	1 27	5 42	2 02	7 54	15 26	10 27	0 12
14	12 58	13 34	6 15	2 14	3 47	1 40	5 45	1 46	8 14	15 32	9 28	0 42
15	13 12	13 24	5 56	2 24	3 41	1 53	5 46	1 30	8 33	15 38	8 22	0 12
16	13 24	13 13	5 37	2 35	3 35	2 05	5 46	1 13	8 53	15 44	7 10	0 42
17	13 35	13 00	5 18	2 46	3 29	2 17	5 45	0 56	9 13	15 49	6 00	0 11
18	13 46	12 50	5 00	2 56	3 23	2 29	5 44	0 39	9 33	15 54	4 48	0 18
19	13 56	12 37	4 41	3 04	3 18	2 41	5 43	0 21	9 52	15 59	3 36	0 29
20	14 05	12 25	4 22	3 12	3 07	2 53	5 40	0 03	10 11	15 57	2 25	0 38
21	14 13	12 12	4 03	3 20	2 58	3 04	5 38	0 14	10 30	15 59	1 14	0 21
22	14 20	12 01	3 44	3 28	2 50	3 16	5 35	0 10	10 48	16 01	0 01	0 38
23	14 27	11 48	3 26	3 35	2 41	3 27	5 31	0 00	11 06	16 00	0 00	0 14
24	14 32	11 28	3 08	3 42	2 31	3 38	5 27	0 09	11 24	15 59	8 49	0 29
25	14 37	11 13	2 49	3 47	2 21	3 48	5 23	1 29	11 41	15 57	7 35	0 37
26	14 41	11 08	2 31	3 52	2 13	3 59	5 16	1 20	11 59	15 55	6 22	0 26
27	14 44	11 02	2 13	3 56	2 04	4 09	5 10	1 07	12 16	15 52	5 09	0 10
28	14 47	11 00	1 55	4 00	1 51	4 18	5 03	0 27	12 33	15 48	3 56	0 16
29	14 48		1 38	4 01	1 40	4 27	4 56	0 47	12 49	15 43	2 43	0 29
30	14 49		1 21	4 06	1 28	4 35	4 48	0 53	13 00	15 37	1 30	0 36
31	14 49		1 05	4 11	1 17	4 39	4 38		13 11	15 31	0 18	0 29

Figure 3: An Equation of Time Table printed for William Graham, circa 1725

When William's wife Anne died, his daughter Hannah was just five, his half-sister Mary Hall was about fourteen and an orphan, his sister Ann was unmarried and in her early thirties, his aunt Mary Hale was a widow in her mid-sixties. Mary Hale's will, which holds the promise of clarifying the wider family's situation, has yet to be located. ¹⁴

On December 31, 1729, William married Eleanor Wyatt, a Quaker.⁶ Eleanor gave birth to two children in London: Henry Hale Graham (born 1 July 1731 in Birchin Lane) and Dorothy Graham (born 4 February 1733 in Grace-church Street).⁶

It is not known precisely when William left for America. On 3 October 1732, William transferred Charles Hobbs, his apprentice since April 1730, to Robert Sarjant, Citizen and Clockmaker - this may be the best clue we have that William's leaving was imminent; if so, William would have landed in America close to the start of 1733.¹⁵ On 26 September 1733, Eleanor obtained a removal paper from her Meeting to join her husband in Philadelphia.¹⁶

William's daughter Hannah was about ten when her father and then her stepmother left for America. She did not go, but she stayed in England with her maternal grandparents (Patience and Thomas Bradford) who made generous provisions for Hannah in their wills. Hannah married John Stone, a cabinetmaker, and they became members of the Westminster Meeting House. They chose not to name any of their sons 'William'.

Clocks and Watches by William Graham of London (1715-1733)

Only a part of what William Graham produced still survives (updated detailed list³), but it includes classic London longcases (Figures 1a & 1b and 4a & 4b) and very high-quality watches (Figure 5a-5d).

The lure of America

The area of London where William lived and worked was close to the Bank of England and the Stock Exchange, it was a major hub of world trade. Many London Coffee Houses served as specialist trading centers. Lloyd's of London had its origins in Lloyd's Coffee House on Lombard Street, close to Birchin Lane. 'In its formative years, Lloyd's made much of its money insuring ships in the slave trade. More than a 1000 slave ships were lost at sea during the 18th century and the trade would not have been profitable without the protection of insurance.' ^{17 p.60}



Figure 4a: Close-up of arch-dial of William Graham longcase clock



Figure 4b: William Graham, London. A walnut, caddy top, arch-dial 8-day longcase clock

The Pennsylvania Coffee House, beside William’s shop, specialized in trade with the Eastern Ports of America and the West Indies. It was a favorite haunt of Benjamin Franklin who went there ‘to write letters, pick up his mail and generally network...’^{17p.59} Benjamin Franklin first travelled to London in 1724 and spent a couple of years there working as a printer. He became friends with a wealthy Quaker merchant, Mr. Denham, from Philadelphia. Denman had left Bristol, England, in debt only to return a few years later with a considerable fortune. Benjamin left London to train with Mr. Denham expecting that the mercantile business would ‘establish me handsomely.’¹⁸ A few years later, Benjamin Franklin changed course and seized the chance to purchase *The Philadelphia Gazette* from his old boss. His printing shop was on Market Street, where William lived a few years later.

It is tempting to think of William and Benjamin in The Pennsylvania Coffee House discussing their dreams of becoming Merchants. Certainly, the Birchin Lane area hummed with talk of fortunes made and lost through international trade. There were other reasons why William might be attracted to Philadelphia. Founded by Quaker William Penn, Pennsylvania was considered *A Holy Experiment*: an opportunity for Quakers to establish a society free of the limitations imposed on nonconformists in England. Henry Hale and clockmaker Daniel Quare were two of the many English Quakers who had invested in the Pennsylvania Land Company.

William in America

The first unambiguous record we have of William in America (Figure 6) comes from William Moraley’s autobiography *The Infortunate* published in 1743.¹⁹ Moraley’s father William Moraley Sr. was an apprentice of Thomas Tompion and worked in London until 1723. William Moraley Sr. would have known George Graham and maybe William. William Moraley Jr. spent five years in America as an indentured servant before returning to England in 1734. A year or so before leaving, he was in Philadelphia and visited William looking for work. ‘I... liv’d with Mr. Graham, a Watch-maker, newly arrived, and Nephew to the famous Mr Graham in Fleet-street. With him I continued ten Weeks, at Ten Shillings per Week Wages, and my Board found me; but he designing to settle in Antegoa, I left him.’^{19 p.74} This was our first clue that William planned to travel to the West Indies. Of the four clockmakers William Moraley contacted in Philadelphia - Peter Stretch, John Wood, Edmund Lewis and William Graham - two (Lewis and Graham) had plans to leave. Was it that hard to make a living? There is evidence indicating that it was,^{3, 19} and William may always have planned to become a merchant.



Figure 5a: William Graham, London. A gold pair cased quarter repeating verge watch with repousse scene by Augustin Heckel 1724, No. 66



Figure 5b: Close-up of William Graham, London. No. 66 movement back-plate

An advertisement from late 1733 places William on the upper end of Chestnut Street (Figure 7). Later, he seems to have moved to the house of the late Henry Hodge and is no longer advertising his watchmaking skills (Figure 8). Hodge was a Quaker who promoted trade between Antigua and Pennsylvania. His house was situated on the north side of Market Street ²⁰ within walking distance of Benjamin Franklin's printing office.

A series of letters in the Archives of the Historical Society of Pennsylvania were written by Philadelphia Quaker merchant Robert Ellis to his agent William Graham in Antigua.²¹ If this is indeed our William Graham, it seems he left on his first trading trip very soon after arriving in Philadelphia, just as Moraley reported. A note appended to the March 1733 letter states 'I had forgot to tell you that I have sent your watch by Captain Neal to Mr Wm Graham Merchant in Antegoe on the Sloop Lydia.' The manuscripts are not fully legible, but they do provide a glimpse into the challenges facing the neophyte merchant. Ellis is sending out shipments of hogshead staves, flour, hay, tobacco, soap and corn for William to sell; Ellis's wife is sending out kegs of tongues and lard on her own account. Ellis ships out a chaise which he has had specially made for a Mr. Benn on Antigua, at Graham's request; on his own initiative, Ellis adds a six year old stallion for Mr. Benn's consideration. Mr. Benn was not satisfied with the carriage, and so William is left with the task of disposing of both it and the horse.

Ellis requests William to purchase 'good rum in good cask' and 'young negroes if to be had anything near the prices I bought at last year.' Ellis demands a fast turnaround so that he can beat the competition and secure the best prices. In his July letter, Ellis commends William for the fast dispatch of the cargo which arrived 'in very good order.' At this time, Ellis was becoming much more active in the slave trade.²² Ellis mentions selling a negro boy, named *London*, owned by William: 'He has been very ill for 5 months and we had much ado to save him.' Ellis apologizes for the low price paid for *London* and having to take Indian Corn in part-payment. These letters provide some insight into the vagaries of trading.

William Graham bought property in Darby (near Philadelphia), and his son Zedekiah Wyatt Graham was born there on 21 October 1737.²³ p.166

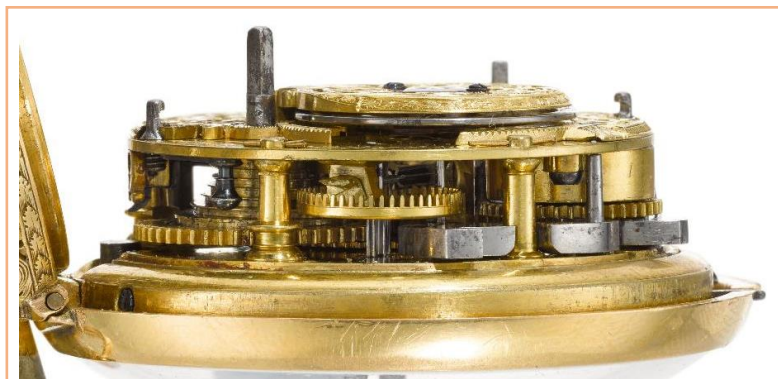


Figure 5c: Close-up of William Graham, London. No. 66 movement



Figure 5d: Close-up of William Graham, London. No. 66 case



Figure 6: Cityscape of Philadelphia as seen by passengers arriving by sea ca. 1730

In Antigua

A letter preserved in the Beinecke Lesser Antilles Special Collection at Hamilton College in New York (Figure 9) provides incontrovertible evidence that William became a Merchant. It was penned in Antigua on 29 May 1738 and sent to his cousin William Graham at Sikeside in Kirkclinton. The writer names his two sons as Henry Hale and Zedikiah. He writes with pride of his eldest son Henry Hale ‘as a fine youth’ who ‘can already write as good a hand as I can though not yet eight years.’ Henry Hale Graham later became famous for his penmanship of legal documents - ‘Henry Hale Graham wrote a peculiarly bold and even hand, which is well known to those who frequent the county offices.’²⁴ p.373

How William’s letter came to be preserved is not known, but it is almost certainly because he documented the Antigua Slave Rebellion, when slaves were accused of plotting to blow up all the white inhabitants attending the 1736 King’s Birthday Ball. William writes that about sixty slaves were killed: ‘Some by being broken alive on the whole others burnt and 4 hung up alive in Chains one of which lived nine days in y^e Torment without any sustenance.’

William writes that he is selling goods on consignment from ‘our Honourable proprietor Thomas Penn Esq y^e Son of Wm Penn and Some others in Philadelphia y^e are my friends.’ William is clearly working with the highest levels of Pennsylvania society and within a network of Quaker merchants. On this trip, William is selling bread and flour in return for sugar, rum and Spanish Gold. His letter states that he ‘left Philadelphia y^e Latter end of November Last.’ - that is 1737 - and expects to stay in Antigua until March or April of 1739, which would make it an eighteen month trip; ‘& then if it pleases God to bring me safe to my Family hope never to Come any more to these scorching Country.’ Perhaps William foresaw enough profit to finance his retirement, maybe he was losing all zest for the pursuit.

William asks that any reply be sent ‘in a cover to Robert Bell in London’ who would then convey it to him in Antigua. Robert Bell is clearly someone his cousin knows because no address is given. Amongst the Kirkclinton Quaker birth records for 1707/8 is a Robert Bell son of Reynold Bell.⁶ In 1742, the same Robert Bell, now of Gracechurch Street London, ‘Hosier, Citizen and Longbow stringmaker’ married the wealthy

heiress Margaret Falconer.^{6, 25} Margaret Falconer was a granddaughter of the clockmaker Daniel Quare, and her father was a member of the Barclay banking family. It was only a short distance from Gracechurch Street to the Pennsylvania Coffee House where letters could be placed in ships' pouches bound for Philadelphia and Antigua.

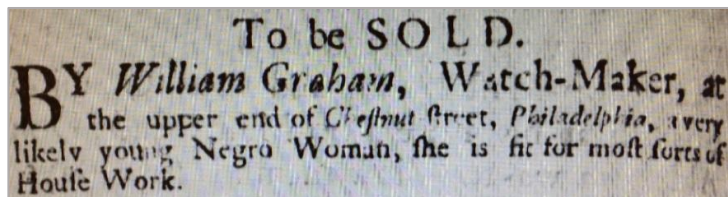


Figure 7: Newspaper advertisement placed by William Graham, November 1733

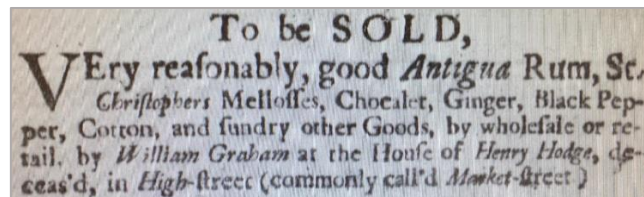


Figure 8: Newspaper advertisement placed by William Graham, February 1735.

Later years

William's son Henry Hale Graham became a prominent judge, and his descendants include famous lawyers, academics, writers and philanthropists. There are a number of published histories dealing with the extended William Graham family;^{23,26,27,28} but they shed absolutely no light on how William earned a living after moving to America. They record that the family moved from Derby to Chester sometime before 1740 and that William died there in 1758. A tombstone recorded in the Friends Graveyard in Chester in 1897²⁹ bore the inscription: In Memory of William Graham who departed this Life the 6th day of August Ann Dom. 1758 Aged 67 years. We have yet to locate a death record or will for William.

Overview

In many ways, William emerges as a man of his times, shaped by the places he inhabited. George served some of the wealthiest and most famous clients in London, but reputedly remained unaffected. Perhaps William was less of a mechanic than his uncle, or just more worldly. For whatever reasons, William appears to have abandoned clock and watchmaking in America and been brought face-to-face with the discomforts and brutality of trading and slavery. His letter from Antigua makes clear that he is wanting to stop; and it seems that he did. William's involvement in the slave trade was not unusual at the time, and as others have noted 'nothing is more unfair than to judge the men of the past by the ideas of the present.'^{30p.129} Benjamin Franklin is remembered as an Abolitionist, but he owned slaves into the 1750s and his newspapers regularly advertised slave sales and notices of run-away slaves.^{31pp. 291, 292} The Philadelphia Yearly Meeting of the Society of Friends did not ban its members from owning slaves until 1776, and it was not until 1780 that Pennsylvania enacted the first, albeit partial, legislative Emancipation in history.³² Thirty years after William's death, his son and grandson were active members of *The Pennsylvania Society for promoting the Abolition of Slavery*, under the presidency of Benjamin Franklin, working to effect a complete and sustainable Emancipation.^{33 p.425} Neither lived to see it happen. It is pure speculation, but perhaps William set in motion Henry Hale's commitment to Abolition by leveling with him about the injustices and inhumanity he had witnessed.

There is still much that is not known about William and George Graham. Each month, more archival data is released on-line, and doubtless more information will emerge. And there is still a role for researchers willing to sift through paper records in Pennsylvania, Delaware, London and Cumbria. I very much consider this to be a work in progress and would be delighted to share with others who are interested.

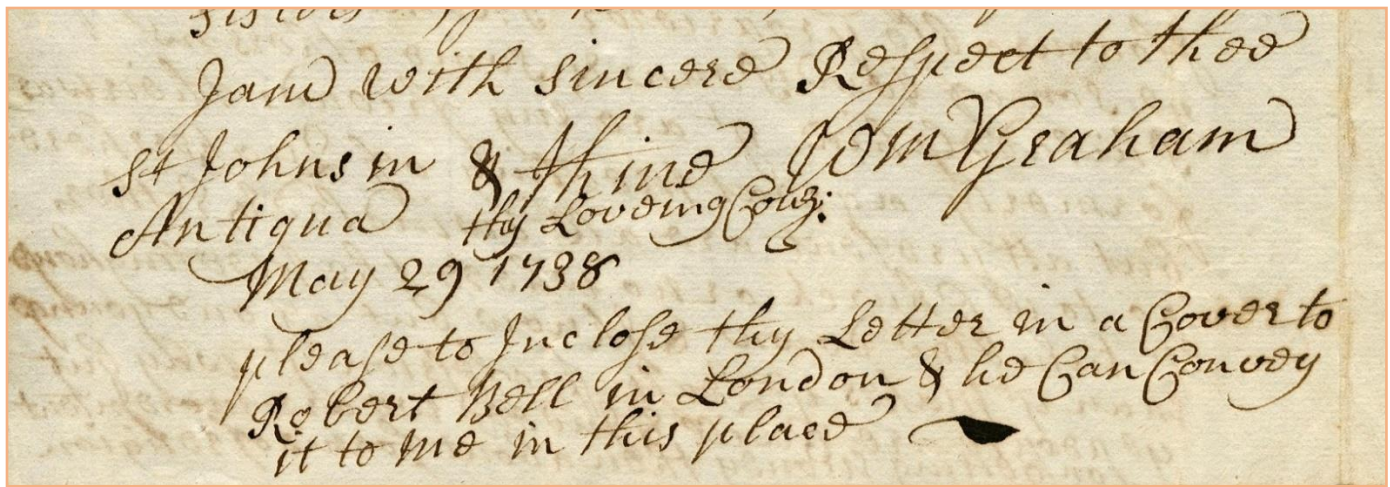


Figure 9. Fragment of a letter written by William Graham from Antigua, May 1738

About the Author

Dr. Ann Harrison McBroom is a retired neuropsychologist, and a later graduate of the Center for Justice and Peacebuilding at Eastern Mennonite University in Virginia. She and her husband, Dr. Jack McBroom, share an interest in early English clocks. They are members of AHS and NAWCC, and live in Williamsburg, Virginia. Email: ahmcroom@gmail.com.

Footnotes

1. <http://www.philamuseum.org/collections/permanent/44589.html?mulR=484814692|4>
2. J.R. Stiefel, *The Cabinetmaker's Account: John Head's Record of Craft and Commerce in Colonial Philadelphia, 1718-1753*. (Philadelphia: American Philosophical Society, 2108). History of the clock with the Wm. Graham movement pp. 214-216. Stiefel's research indicates that William Graham was 'unnamed'^{p.214} in John Head's account book.
3. A. McBroom, 'William Graham: clockmaker and man of his times', *Antiquarian Horology*, 40 (September 2019), 320-342.
4. J. Penfold, 'The Cumbrian Background of George Graham Clockmaker', *Antiquarian Horology*, 8 (March 1974), 600-613.
5. For simplicity, unless otherwise stated, William and George refer to the London clockmakers of these names.
6. England and Wales, Quaker Birth, Marriage, and Death Registers, 1578-1837 [database on-line]. Provo, UT, USA: Ancestry.com Operations, Inc., 2013. Original data: General Register Office: Society of Friends' Registers, Notes and Certificates of Births, Marriages and Burials. Records of the General Register Office, Government Social Survey Department, and Office of Population Censuses and Surveys, RG 6, The National Archives, Kew. If necessary, these were converted from the Quaker to the Gregorian date.
7. *London, England, Freedom of the City Admission Papers, 1681-1930* [database on-line]. Provo, UT, USA: Ancestry.com Operations, Inc., 2010. Original data: Freedom admissions papers, 1681 – 1930. London, London Metropolitan Archives. COL/CHD/FR/02.
8. J. Evans, *Thomas Tompion at the Dial and Three Crowns* (London: The Antiquarian Horological Society, 2006).
9. J. Evans, J. Carter, B. Wright, *Thomas Tompion 300 years* (Stroud: Water Lane Publishing, 2013)
10. J. Besse, *A brief account of many of the prosecutions of the people call'd Quakers: in the Exchequer, Ecclesiastical, and other courts, for demands recoverable by the acts made in the 7th and 8th years of the reign of King William the Third, for the more easie recovery of tithes, church-rates, &c.* (London : 1736). Printed and sold by J. Sowle at The Bible in George Yard, Lombard Street. George Yard is where William's first wife Anne was born.
11. The National Archives, Kew. Prerogative Court of Canterbury and Related Probate Jurisdictions: Will Registers. Series PROB 11, 1723-1729. Will of Henrici Hale, Probate December 1727. Henry left his entire estate to his wife Mary no children are mentioned.

12. D. Wetherfield, *Old English Clocks The Wetherfield Collection* (London : Lawrence and Jellicoe, 1907). Page 108 quotes notifications placed in the *London Gazette* in 1713 and 1720.
13. Two newspaper advertisements from 1728:
 - a) To let a glove-sellers shop that had been occupied and operated by the same person, now deceased, for above 37 years. Likely the shop of Henry Hale. 'Enquire of William Graham, watchmaker, next to the Pensilvania Coffee House in Birchin Lane, Cornhill. *Daily Post* (London, England) Wednesday January 10 1728.
 - b) 'Lost plain gold minute pendulum watch, the makers name William Graham, No 54. Five guineas reward to anyone bringing it or sending it to William Graham at the Dial in Birchin Lane next to the Pensilvania Coffee House.' *Daily Journal* (London, England) Thursday April 25, 1728.
14. Clear reference is made to a Will in an Indenture in Chester County Pennsylvania Record Office, Deed Book M, Vol. 12. The Indenture records a gift of shares from George Graham to Henry Hale Graham in 1749. The shares were left to George by Mary Hale in her last Will and Testament bearing date on or about the Tenth day of January Anno Domini 1728, 'the said Will Proved and Registered as the Law directs.'
15. *Register of Duties Paid for Apprentices' Indentures, 1710-1811*[database on-line]. Provo, UT, USA: Ancestry.com Operations, Inc. Original data: Board of Stamps, Apprenticeship Books, Series IR 1, The National Archives, Kew. This was the idea of Jeremy Evans (personal communication, 2018). It took 6-12 weeks to sail from England to Philadelphia.
16. *The Literary Era*, 6 (1899), 156. 'Eleanor Graham, wife of William Graham, late of London, watchmaker, dated 7 mo. 26, 1733 from Monthly Meeting at the Peel in London, England. She "is lately gone for Pennsylvania, where her said husband now resides."'
17. J. Volo, *The Boston Tea Party: The Foundations of Revolution*. (Santa Barbara: Praeger, 2012).
18. B. Franklin, *Autobiography of Benjamin Franklin* (New York : Henry Holt and Co.,1916), p. 50.
19. W. Moraley, *The Infortunate* Second edition. Edited by S. Klepp and B. Smith (University Park: Pennsylvania State University Press, 2005).
20. Location of Henry Hodge House provides in sales notice in *The Pennsylvania Gazette*, Philadelphia, Pennsylvania, June 12, 1740.
21. Miscellaneous Correspondence (1711-1736), Hildeburn Papers, Historical Society of Pennsylvania, Ellis to Wm. Graham 28 March 1733, Ellis to Wm. Graham 8 May 1733, Ellis to Wm. Graham 4 July 1733.
22. D. Wax, Robert Ellis Philadelphia Merchant and Slave Trader, *Philadelphia Magazine of History and Biography* 8 (1964), 52-69.
23. J. Martin, *Chester (and its vicinity), Delaware County, in Pennsylvania*. (Philadelphia: WH Pile, 1877).
24. J. Smith Futhey and G. Cope, *History of Chester County Pennsylvania* (Philadelphia: Lois H. Everts, 1881).
25. *The Journal of the Friends' Historical Society*, 10 (1913), p. 50. Copy of a 1743 notice. 'Thursday was married at the Quakers-Meeting in Gracechurch Street, Mr. Bell, a wealthy hosier in the same Street, to Miss Falkener of Wapping, Daughter of Mr. Falkener, late an eminent Merchant of this City, an agreeable Lady with a Fortune of 6000 l.'
26. H. Ashmead, *Historical Sketch of Chester on Delaware* (Chester, PA: Republican Steam Printing House, 1883).
27. W. Ashbridge, *The Ashbridge Book relating to past and present Ashbridge families in America* (Toronto : The Copp Clark Company Ltd, 1912).
28. C. Browning, *Americans of Royal Descent* (Philadelphia: Porter and Coates, 1883).
29. Some inscriptions from Friends' Graveyard, Chester, PA, *The Literary Era* 4, (November 1897), 380.
30. D. A. Winstanley, *Lord Chatham and the Whig Opposition*. (Cambridge and London: Cambridge University Press, 1912).
31. N. Bunker, *Young Benjamin Franklin : the birth of ingenuity* (New York : Alfred A. Knopf, 2018).
32. J. Gigantino, *Slavery and the Slave trade*. <http://philadelphiaencyclopedia.org/archive/slavery-and-the-slave-trade/>
33. *Centennial anniversary of the Pennsylvania society for promoting the abolition of slavery, the relief of free negroes unlawfully held in bondage: and for improving the condition of the African race*. (Philadelphia: Grant, Faires & Rogers, printers, 1876).