

EDWARD STONE (1702–1768) AND EDMUND STONE (1700–1768):
CONFUSED IDENTITIES RESOLVED

by

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INTRODUCTION

On the 25 April 1763 a letter was sent from Chipping Norton in Oxfordshire to the Right Honourable George Parker, Earl of Macclesfield, then President of the Royal Society, extolling the use of willow bark in curing agues and other feverish complaints. The writer describes how about a pound of bark taken from a common white willow (*Salix alba*) was dried in a bag over a baker's oven for more than three months, pulverized and then used to alleviate the agues, 'intermitting disorders' and distempers of 50 afflicted people. The undoubted medicinal properties of bark from willow and other *Salix* species were not new. They were known to a number of pre-industrial cultures and also, in a more systematic way, to the medical philosophers of classical Greece and Rome. However, by the eighteenth century in Western Europe, they were in disuse or had been relegated to the level of folk medicine.

The letter, duly printed in *Philosophical Transactions*,¹ is often credited with having brought the anti-inflammatory, antipyretic and analgesic properties of these barks, to the attention of the emerging chemists of the late eighteenth century. Attempts to identify the active principles, and then to synthesize them, led to the discovery of salicylic acid and its derivatives, and eventually to the introduction of acetyl salicylic acid—*aspirin*—possibly the most widely used of all synthetic drugs. This history is periodically reviewed both for general² and specialist³ audiences; the seminal letter is referred to whenever there is a new monograph on these anti-inflammatory drugs, and is the subject of frequent queries to the Royal Society's library. It would seem, therefore, to be useful to remove a confusion surrounding the name of its author, who has been variously referred to as either Edward or Edmund Stone.⁴

STONE'S LETTER OF 1763

The source of the ambiguity is the published letter itself. In the introductory title, the author is referred to as the Rev Mr Edmund Stone of Chipping Norton. At the end however, he signs himself 'with the profoundest submission and respect, Your Lordship's most obedient humble Servant Edward Stone'.

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 My Lord
 Read Nov. 17. 1767

The Subject of the Enclod Papers is upon
 Cubick Equations, their Contents are entirely New and as
 far as they go are in my Opinion an Enlarge ment & Improve-
 ment of Common Algebra; Every One who is the least versed
 in these Studies must be sensible how imperfect intricate and
 obscure the whole Algebraical Art is beyond Quadratick Equations
 whatever therefore tends to illustrate & facilitate the Practice
 of any Branch of it may deserve some Attention; Should your
 Lordship upon the Perusal of this small Treatise judge it worthy
 to be communicated to the Royal Society & to have a Place in
 their Philosophical Transactions it will be a Satisfaction of
 Honour to your unknown Correspondent; & may prove an En-
 couragement for farther Perquisitions upon such Subjects.
 I have endeavour'd to write in the most perspicuous manner,
 but should any Part of it seem obscure & require Explanation
 if your Lordship will order your Secretary or any other Person
 to inform me of it he shall receive an immediate & satisfactory
 Answer: But should these Anecdotes be thought unworthy
 of farther Notice, I sincerely wish your Pardon for this Impet-
 uousness & shall be heartily sorry for the Trouble you have
 receiv'd from your most respectful
 and Devoted
 Humble servant
 Edward Stone

Chipping Norton
 Oxfordshire
 June 25, 1767

FIGURE 1. Introductory letter to Edward Stone's unpublished, algebraic manuscript of 1767.

It is likely, for many reasons, that the introduction contains the mistake, probably made by a typesetter or printer, and that because the mistaken name was plausible, it was overlooked and was propagated.

The original letter sent to the Earl of Macclesfield and dated 25 April 1763, is preserved in the Royal Society's library.⁵ It is a very crowded, two-page document written on both sides of the paper, in an emphatic, characteristically spiky handwriting. In places the black ink has diffused through the paper making reading difficult. It is signed by an abbreviated 'Edwd Stone', with the terminal 'd' elevated. Attached to the top of the first sheet is a strip of paper (approximately 13 x 4 cm), which bears, written in another hand, the words that substantially form the title and heading of the published paper. In this, Edward is spelt out fully, if not completely unambiguously. The 'r' is unmistakable, although the 'w' is less clear and the 'a' more like a 'u', so that they could be read as 'mu'; they present just enough ambiguity

to account for, but not excuse, a misreading. However, it is unlikely that the paper was intended as instructions to a, possibly careless, typesetter. It was almost certainly added during a later classification of documents; similar papers are attached to other documents in the same folio file.

The hand that wrote this note may also have been responsible for noting, on the top of the original letter, that it was read to the Royal Society on 2 June 1763. The minutes taken at this meeting, which are preserved in a Royal Society Journal Book,⁶ confirm that it was both read and discussed. They suggest that neither Stone nor the Earl was present at the meeting and ‘James Burrow Esq VP’, a vice-president, was in the chair. Stone’s letter is summarized and it is introduced, quite unambiguously, as coming from Edward Stone. Edward is spelt clearly and in full. After the reading, Mr Stone was thanked for his ‘useful Communication’.

EDWARD STONE’S SECOND LETTER TO THE ROYAL SOCIETY

The Royal Society Letters and Papers⁷ were found, unexpectedly, to contain a second letter from Edward Stone of Chipping Norton, written four years later, on 8 June 1767. More surprisingly the letter concerned an algebraic problem, the resolution of cubic equations. It was never published. Entitled ‘Of cubick equations’, it consists of seven and a half crowded pages of text with over a dozen worked examples. Its resemblance to the 1763 letter is striking. It is written in the same crowded script using similar ink, with many similar letter constructions including, for example, the letter ‘d’ and the ampersands. There is an accompanying letter signed, unabbreviatedly, by Edward Stone (figure 1). It pleads, rather fulsomely, for the President’s attention to ‘an Enlargment and Improvement of Common Algebra’ and for his letter ‘to have a Place in their Philosophical Transactions’.

The communication was also discussed at a meeting of the Royal Society held on 19 November 1767, and minutes of the meeting are again preserved in a Royal Society Journal Book.⁸ By this time the Earl of Macclesfield was dead (1764) and had been replaced by James, Lord Aberdour, the Earl of Morton, who was in the chair. Perhaps this change of Presidents explains why Stone refers to himself as ‘your unknown correspondent’. He was again probably not present. During the six months since its receipt, the letter had been sent to a Professor Waring for appraisal; Waring’s letter was read out and minuted. It describes Stone’s method of algebraic resolution, but finds it to contain much trial and error. Moreover, although his ‘Rules are told in so perspicuous a manner as to be very easily intelligible to any one versant in the Science’, they are judged to be not very novel. Waring was thanked for his report, but Stone, apparently, was not. There is no minute of the decision not to publish the paper.

Edward Stone’s interest in mathematical sciences is not entirely unexpected. A Reverend Edward Stone, ‘late Fellow of Wadham College, Oxford’, published, in 1763, a book on *The Whole Doctrine of Parallaxes, Explained and Illustrated BY AN Arithmetical and Geometrical Construction of THE TRANSIT OF VENUS over the*

SUN, June 6th, 1761. This book, of which there is an imperfectly bound copy in the Royal Society's library, predicts some of the places from which the next, 1769, transit could best be observed. A second edition of this book, enlarged to accommodate the transits of Mercury as well as Venus, appeared in 1768. It was certainly written by Edward Stone of Chipping Norton. Edward's son, who was also called Edward and educated at Wadham, published a volume of his father's sermons in 1771, after his father's death; advertising copy in this volume makes it clear that the *late* Edward Stone was the author of *The Whole Doctrine of Parallaxes* as well as *Remarks on the History of the Life of Reginald Pole*, and that both these books had been published by 'J. Fletcher of The Turle, Oxford'. Apart from this evidence, the younger Edward seems an improbable author of the astronomical work, as he was a 19-year-old college student in 1763. The *Dictionary of National Biography* (DNB),⁹ like other dictionaries, is certainly mistaken in attributing the book to the near contemporary mathematician, Edmund Stone.

BIOGRAPHICAL DETAILS OF EDWARD STONE (1702–1768)

There is a wealth of information on Edward Stone of Chipping Norton in parish and college records, although comparatively little has been published.¹⁰ Mann refers to published sources and summarizes essential details in an article in the 'Missing Persons' volume of the DNB.¹¹ Stone was born in Lacey Green near Princes Risborough, Buckinghamshire, in 1702, the only son of Edward Stone, yeoman, and his wife Elizabeth. He matriculated at Wadham College, Oxford, in 1720 and graduated BA (1724) and MA (1727). He was elected a fellow of Wadham in 1730 and retained this position for 11 years, acting, according to college records, as librarian, bursar, dean and subwarden. His signature in these college records is recognizably similar to that on the Royal Society's letters. He resigned in 1741 to marry his step-mother's niece, Elizabeth Grubb. By this time he was rector of Horsenden and soon to be appointed rector at Drayton near Banbury and made Chaplain to Sir Jonathan Cope at Bruern Abbey (Oxfordshire). He moved to Chipping Norton in 1745, and although he probably spent most of the rest of his life there, he was never its vicar. His ecclesiastical duties were probably comparatively light, so that he had time to play the expected role as Justice of the Peace, and also to be a political agent for the Whig interests as well as to attend to the local sick. Apart from his medical and mathematical letters to the Royal Society, four volumes in the library at Wadham College¹² confirm his interest in theological, historical and astronomical subjects. He died in Chipping Norton in 1768 but was buried at Horsenden.

Two aspects of Stone's activities that are relevant here are the location of the willow trees whose bark he used, and his possible connection with the Earl of Macclesfield. R. N. Mann¹⁰ speculates that the willows grew along the Chipping Norton Brook, and that they were more likely to be crack willows (*Salix fragilis*) than white willows (*Salix alba*). Stone may well have owned the land on which they grew.

On the second point, George Parker, the second Earl (1697–1764), lived in his family home, Shirburn Castle, very close to Princes Risborough, and was almost the same age as Stone. Macclesfield¹³ was mainly instrumental in altering the calendar in 1752, but his astronomical interests and his observatory at Shirburn must have been known to Stone before this. Even though there was a very wide social gulf between the two men, it is not inconceivable that they were acquainted and that this might have encouraged Stone to write to his Lordship on his experience with willow bark, and also to pursue his calculations on the transit of Venus. R. N. Mann¹⁰ also points out their political affinities; one of the Whig candidates for whom Stone acted as agent was Lord Parker, the Earl's son.

EDMUND STONE, THE MATHEMATICIAN (1700–1768)

Misprinting Stone's forename at the head of the 1763 letter may have been a partly excusable error. This error was propagated by its inclusion in the list of contents of volume 53 of *Philosophical Transactions* and in a cumulative index published in 1787. It also appeared in later scientific indexes such as, for instance, in the *Repetorium Commentateonum Litorus Editorum*, an index of eighteenth-century works printed by J. D. Reuss in Germany in 1818. It may well have contributed to the acceptance of this error, as Collier suggested,³ that there was an Edmund Stone,⁹ an almost exact contemporary, who was an F.R.S. and who had also published in *Philosophical Transactions*. He was the son of a gardener on the Inverary estate of John Campbell, the second Duke of Argyll, who taught himself mathematics, Latin and French. Supported by the Duke, he exploited all three interests and wrote mathematical treatises as well as translating them from French and Latin. He was elected F.R.S. in 1725, and published in *Philosophical Transactions* in 1740 'Concerning two species of lines of the third order not mentioned by Sir Isaac Newton nor Mr Sterling'.¹⁴ This Edmund Stone suffered from the death of his patron in 1743, and, according to the DNB⁹, lived in neglected penury until his death in 1768. Although he published on astronomical matters in 1766 ('Some reflections on the uncertainty of many astronomical and geographical positions, with regard to the figure and magnitude of the earth'), this is generally regarded as the work of a 'failing mind'.⁹

The only manuscript handwritten by Edmund Stone so far traced in the records of the Royal Society is a 21-page letter 'On Sir Isaac Newton's five diverging Parabolas',¹⁵ which was read to the Society on 17 February 1742/3.¹⁶ The handwriting is more flowing and less crowded than that of Edward Stone. The style of the introduction is relaxed and lacks the pomposity of Edward's introductions. There is no signature at the end of the manuscript. The Royal Society meeting¹⁶ thanked Stone for '... the pains he appear'd to have taken in the prosecution of this abstract Subject', but his letter, like the second letter of Edward Stone, does not appear to have been published.

An early letter in the Royal Society's archives (EL S2 70) also deals with an astronomical matter and is signed by an 'Ed. Stone'. In seven lines it describes a spot

upon the body of the sun, which was observed one hazy saturday morning in December 1730, from New Bond Street. It appears too casual a letter to come from Edmund Stone F.R.S., and is certainly not in Edward Stone's hand.

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NOTES

- 1 E. Stone, 'An account of the success of the bark of the willow in the cure of agues', *Phil. Trans. R. Soc. Lond.* **53**, 195–200 (1763).
- 2 *P. Fairley, *The Conquest of Pain* (London, Michael Joseph, 1978). B. Roueche, *The Incurable Wound, and Further Narratives of Medical Attention* (London, Victor Gollancz, 1958). *J. Vane, 'Pill of Pills', *Illustrated London News* **275** (No 7063), 42–43 (1987).
- 3 R. Alstaedter (ed.), *Aspirin, the Medicine of the Century* (Germany, Bayer AG, 1985). *H. O. J. Collier, 'Aspirin', *Scientific American* **209**, 97–109 (1963). M. Gross and L. A. Greenberg, *The Salicylates, A Critical Bibliographic Review* (New Haven, USA, Hillhouse Press, 1848). W.S. Pierpoint, 'Salicylic acid and its derivatives in plants: medicines, metabolites and messenger molecules', *Adv. Bot. Res.* **20**, 164–235 (1994). *J. Vane and R. M. Botting, 'The History of Aspirin', *Aspirin and Other Salicylates* (ed J. R. Vane and R. M. Botting), pp 3–16 (London, Chapman & Hall Medical, 1992). *G. Weissmann, 'Aspirin', *Scientific American* **264**, 58–64 (1991).
- 4 Articles marked * in notes 2 and 3 refer to Stone as Edmund or query his name.
- 5 Royal Society Letters and Papers (R.S.L.P.), Decade 4, Nos 134–180; vol. **34**, no 161 (1763).
- 6 Royal Society Journal Book (R.S.J.B.), 2 June 1763.
- 7 R.S.L.P., Decade 4, Nos 382–415; vol **40**, no 408 (1767).
- 8 R.S.J.B., 19 November 1767.
- 9 *Dictionary of National Biography*, article on Edmund Stone (1898).
- 10 Personal communication from Reverend R. N. Mann of Moreton-in-Marsh (Gloucestershire), and Dr C. Davies of Wadham College (Oxford). Some of Mann's researches are entertainingly described by P. Fairley (cited in Note 2).
- 11 *Dictionary of National Biography: Missing Persons*, article on Edward Stone (1993).
- 12 Edward Stone's four books in the library at Wadham's are: *The Reasonableness, and Excellency of Abraham's Faith in Offering up His Son*, Oxford University Sermon of 1732 (to which is added some remarks upon Mr Chubb's case of Abraham) (London, 1733); *The Whole Doctrine of Parallaxes Explained and Illustrated by an Arithmetical and Geometrical Construction of the Transits of Venus and Mercury over the Sun*, 2nd edn (Oxford and London, 1768); *Remarks upon the History of the Life of Reginald Pole*, 2nd edn (Oxford and London, 1766); *Discourses on some Important Subjects by the late Reverend Edward Stone MA*, published by his son the Reverend Edward Stone MA (Oxford, 1771).

- 13 *Dictionary of National Biography*, article on George Parker (1895).
- 14 E. Stone, 'Concerning two species of lines of the third order, not mentioned by Sir Isaac Newton, nor by Mr Stirling', *Phil. Trans R. Soc. Lond.* **41**, 318–320 (1740). Although published in 1740, the article carries a date suggesting that it was submitted on 31 July 1736, almost three years earlier.
- 15 E. Stone, 'On Sir Isaac Newtons five diverging parabolae', *R.S.L.P.*, Decade 1, Nos. 138–169. No 164 (1742/3).
- 16 *R.S.J.B.*, 17 February 1742.