 International Journal of Epidemiology 2001;**30**:226–230

Benjamin Guy Babington: Founding President of the London Epidemiological Society

Alun Evans

In 1986 Geoffrey Rose wrote[1] 'If the origin of epidemiology as a branch of medical science were to be given a date it would be 1850. That year saw the first recorded use in English of the new term, which was taken as the title of the "London Epidemiological Society".' Rose went on to list the founder members as including William Farr, William Budd, Thomas Addison and John Snow. It is surprising that he omits the name of the Society's first President, Benjamin Guy Babington, because: 'When in 1850, on the cessation of the second European visitation of cholera, the Epidemiological Society was first projected, the name of Babington was at once thought of as that of the most fit and efficient leader of the movement.'[2] The Epidemiological Society may have grown out of the Statistical Society of London which was formed in 1834[3] as the two societies had members in common. The Society met first in March 1850 and subsequently in July, under the Chairmanship of Lord Ashley, when Babington was elected President.

Benjamin Guy Babington was one of several sons of William Babington who was born in 1755 in Portglenone, Co Antrim where his father, Humphrey, was a Church of Ireland minister.[4] A famous ancestor was Anthony, the Architect of the Babington Plot to murder Queen Elizabeth I which was the instrument which brought Mary Queen of Scots to the block. For his part in the Plot, Babington was hung, drawn and quartered in even more than usually barbarous circumstances.[5] Another ancestor fought at the Battle of the Boyne. William Babington became Physician to Guy's Hospital and leader of the profession in London.[6] One source states that his son Benjamin was born in Guy's Hospital in 1794 (hence his middle name) although it seems that William was not appointed there until 1795.[7] Benjamin was educated at Charterhouse and then entered the Royal Navy serving at Copenhagen and Walcheren in 1809. After further education he joined the Indian Civil Service where he soon became an accomplished Oriental scholar, translating into English the Tamul (the Dravidian language)—Latin grammar of C J Beschius[7] 'before he had completed his twentieth year'.[2] After about 10 years in India his health broke down and he returned to England, already a widower with a family.[5] He took up Medicine taking the degree of MB at Pembroke College, Cambridge in 1825 and the full degree of MD in 1830. 'On the first appearance of epidemic cholera in 1832, he devoted much attention to the investigation of the disease and the following year published a translation from the German of Hecker's work on the Black Death and other epidemics of the middle ages.'[2] In 1837 he was elected Assistant Physician to Guy's Hospital in preference to Dr Thomas Hodgkin,[8] who was later to describe Hodgkin's disease. In 1840 Babington became a full Physician.[7]

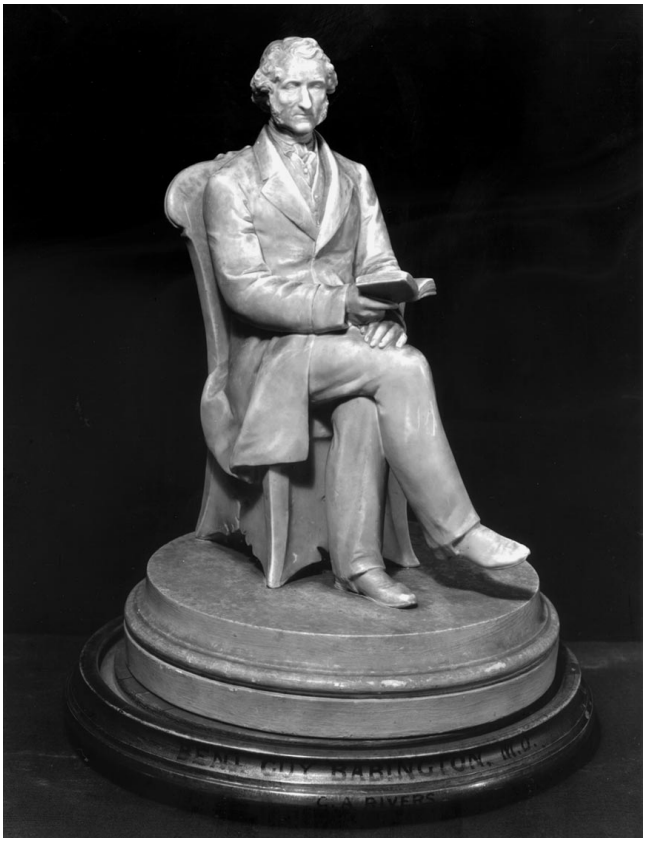

Figure 1 Wax statuette (based on a death mask) 11½ inches high (including round plaster base), by C A Rivers, 1867

Babington delivered his inaugural address to the Epidemiological Society on 2 December 1850 in the presence of about 100 members and visitors.[9] He described how the Honorary Secretary, Mr Tucker, under the pseudonym 'Pater' had written to the Lancet to float the idea of such a Society. The address is masterful, 'The object of this Society I take to be to endeavour, by the light of modern science, to review all those causes which result in the manifestation and spread of epidemic diseases—to discover causes at present unknown, and investigate those which are ill understood—to collect together facts, on which scientific researches may be securely based—to remove errors which impede their progress—and thus, so far as we are able, having made ourselves thoroughly acquainted with the strongholds of our enemies, and their modes of attack, to suggest

Department of Epidemiology and Public Health, The Queen's University of Belfast, UK.

those means by which their invasion may either be prevented, or if, in spite of our existence, they may have broken in upon us, to seek how they may be most effectually combated and expelled.' Babington chooses his words carefully and stops short of promising too much.

He goes on to draw on various strands of medical science, but he is perhaps at his most effective when he steps outside his own discipline. He expects much from meteorology and 'Statistics too, which have supplied us with a new and powerful means of testing medical truth, and we learn from the labours of the accurate Louis how appropriately they may be brought to bear upon the subject of epidemic diseases; …'. He praises the multidisciplinary approach but perhaps, his best examples are drawn from the world of geology and ornithology which both illustrate a fine grasp of epidemiological concepts. He observes, 'In the infancy of geology, first studied in this country, (Babington's father was co-founder of the Geological Society)[6] many phenomena observed in the arrangement of the earth's crust, as it is found in this island, were supposed to furnish fixed laws; and this gave rise, among our philosophers, to diverse ingenious generalisations. But when the same philosophers had, from the establishment of universal peace, the opportunity of taking a wider range, and of studying the earth's structure, not in this country alone, but over the whole surface of the globe, they discovered in many instances that what they had supposed to be general laws were, after all, only exceptional cases'. Conversely, William Babington would have known the Giant's Causeway in County Antrim (made up of hexagonal basalt columns formed by lava cooling underground) which for long was supposed to be totally unique (together with Fingal's cave in Scotland) until, later, the familiar columns turned up all over the world. Babington continues 'We require, therefore, in the study of epidemic diseases, as of geology, a wide field, in order that we may found theories on a sufficiently broad basis to avoid the risk of coming to partial and erroneous conclusions.' Babington, as a Physician, is making the point that a picture of disease acquired from a single viewpoint leads to a biased view of the whole spectrum.

He continues, 'When the phenomenon of the migration of birds first attracted attention, how ridiculous were the notions of it entertained by philosophers. We have a paper in the *Philosophical Transactions*, written to refute a belief, confidently stated by a Dutch writer of less than a century ago, that swallows lie immersed at the bottom of the ocean, and other waters, during the winter season. This is no bad illustration of the effects of partial observation and of the absurdities to which it may lead'. Babington's use of the word 'we' in this context is an illustration of the truth in Simone Weil's dictum 'All sentences that begin with "we" are lies'.[10] Babington is, in fact, referring to an article by Edward Jenner, published posthumously, 26 years earlier.[11] In his article Jenner went to considerable lengths to pour cold water on this theory. He carried out experiments on swifts by taking two claws from the foot of twelve and found several of the marked birds the following year. If they really did go underwater 'At such a time, what can be the inducement to them and their young ones, which have just begun to enjoy the motion of their wings, and play among the sunbeams, to take this dreary plunge … And how is the office of respiration to be performed during the nine months watery residence?'.

Certainly, bizarre theories to account for the seasonal disappearance of certain birds (see Box I) were the effect of 'partial observation',[9] but this is also a good example of the difficulty in getting rid of erroneous theories once they have become enshrined in the popular imagination. Babington would have been well aware, as we are constantly being reminded today, that old medical remedies, of unproven efficacy, tend to linger for too long.

The Epidemiological Society was organized into a number of Committees, including Small-pox and Vaccination, Cholera, Epizootic, Hospital and Continued Fever.[12] The Society's Reports 'On the State of Small-pox and Compulsory Vaccination' during the 1850s were highly influential with the Government. In the first instance the Committee had elicited the views of 2000 Medical men in the United Kingdom and the British Empire. The Compulsory Vaccination Act of 1853 was, in large part, based upon the Society's advice.[3]

The work of the Cholera Committee was equally assiduous. The Committee carried out a survey in relation to Asiatic cholera explaining[13] that 'there yet has remained a source of information freer from the contamination of preconceived notions and prejudices, and furnishing therefore, more reliable data than most others for studying the disease, from its first outbreak to its final disappearance.' Babington is alluding[14] to 'information supplied by our brethren on board her Majesty's fleets in the Black Sea and in the Baltic, where cholera was prevalent and destructive during the autumn of the year 1854 … In a fleet, every individual ship is, as it were, a separate town; and these instances of first cases, accurately noted, are as numerous as are the ships in which cholera has occurred. We know in what work or occupation every soul on board has been engaged; we know to what vicissitudes of climate they have all been exposed; we know precisely what has been their diet and beverage, what the space which has been allotted to each during the hours of sleep; in short, we know more about them than we can ever hope to know of the inhabitants of any place on shore, and how diligently soever medical house to house visitation—so strongly recommended in times of pestilence—may have been carried out'.

There follows an in-depth description of the cholera outbreaks in the Black Sea (35 ships) and the Baltic (7 ships) although the answers to '*predisposing*' as opposed to '*exciting*' causes were answered by less than half of the medical correspondents. The chief recommendations for prevention were 'cleanliness, ventilation, good clothes and diet (fresh provisions), temperance, moderation in exertion and amusement'. The most striking fact, however, Babington observed was, 'the great disproportion between the liability to cholera of the officers than of the men under their command. Out of 884 officers in the Black Sea, on board the ships mentioned in this report, there were but five who took the disease. … This gives a proportion of 1–177: while in the case of the men who, exclusive of officers, amounted to 11,488 there were 705 attacks, or 1 in about 16.29 (note the irrelevant accuracy). There were no cases of cholera in the officers in the Baltic and the corresponding rate in the men was 1 in 37.57.' The major factor identified, related to alcohol consumption, 'Whether the spirit drinking of the men may predispose to the disease more than the wine drinking of the officers, is a question worthy of further investigation. There ought to be some discoverable

cause for so vast a difference.' He also noted a higher mortality in the officers but 'scarcely any reliable conclusion can be drawn from numbers so small' (he was aware of small number effects). 'As to preventive measures, by far the most valuable was that which recommended a shifting of locality' and 'those who consider the exciting cause of cholera to exist in the atmosphere, will regard this as a circumstance strongly favouring their belief.'

One other pertinent epidemiological truth emerges from this work. The Committee intended to gather such information from the entire Medical Profession in the United Kingdom and across the British Empire,[14] but it was only for the Armed Services and in particular the Black Sea and Baltic fleets, that the returns were sufficiently complete to be considered valid; here Babington's naval background may have helped, but the Committee regretted to state 'that the number of returns from the profession at home and in the colonies has fallen very short of affording a sufficient basis of a report on cholera'. Many Medical researchers attempting to carry out questionnaire surveys on their colleagues have had their naïve expectations of an adequate response sadly shattered. Babington noted the strict system of discipline Her Majesty's Naval Medical Service was under at the time and this is borne out by Florence Nightingale, who wrote[15] in 1855 about the doctors in the Crimea, 'Their heads are so flattened between the boards of Army discipline that they remain old children all their lives.'

In suggesting that wine consumption was healthier than that of spirits, Babington may have raised a hare which has been coursed ever since. Two English graduates of St Bartholomew's Medical School, Drs Penfold and Lindeman were born in 1811 and in the 1840s both emigrated to Australia where they became independent wine makers.[16] Each was to promote their wine for its health benefits in the second half of the nineteenth century. Dr Lindeman, in particular, advertised his table wine as a healthier alternative to rum, the main alcoholic beverage of the Colony and a legacy of Transportation.

In 1863, Babington along with his two Secretaries, Drs Milroy and Radcliffe, were calling[17] for the comprehensive collection of morbidity data within the Workhouse system. From 1862, a count had been kept of the number of insane and idiot paupers but there was no other form of morbidity surveillance. The Epidemiological Society proposed a simple scheme by which the desired information could be easily obtained by the Poor Law Board through the voluntary co-operation of the parochial medical officers, at no extra cost. They identified maladies of the skin and of the eyes as 'a not infrequent cause of protracted disablement; and as both these groups are largely dependent on wholesomeness of the dwellings, poverty or unsuitableness of diet, neglect of personal cleanliness, etc., it is obvious that they might be easily prevented to a great extent.' He continues, 'If it be true, as has been stated on respectable authority, that three-fourths of all the actual paupers in the kingdom have become paupers, directly or indirectly, by disease, the large extent of the field for the labour of enlightenment is strikingly apparent.'

The benefit of surveillance of the whole community was extolled: 'In no way could this be so easily or so effectually done as through the returns—were these duly tabulated and arranged—of the medical officers who attend upon the poor and sick; for none know so well as these gentlemen the evils that sap the health of the labourer and which so often issue in pauperism and mendicancy. All agree that much of the illness and mortality in humble life is due to circumstances not inevitable or inseparable from mere poverty, but which are superadded to it either from ignorance or wilful neglect, or from causes over which the poor themselves have no control, however capable the evils may be of easy correction or removal.' These statements reveal an understanding of the problem which was not faced up to until the introduction of the Liberal Reforms early in the 20th century. They continue 'The general death-rate in our workhouses is not known; but that it is very high may be inferred from the fact that, in some years, one in every eleven deaths in London occurs in the metropolitan workhouses.' They finally recommended their scheme as a scientific instrument, which would do for Hygienic research what the Board of Trade had done for Meteorological enquiries.

In 1865, a year before his death, Babington reviewed the problem of the limitation of venereal diseases among the civil population.[18] For this advocacy he was to brave hostile public opinion.[19] In 1864, an Act had been passed which aimed to control the spread of the disease at certain naval and military stations. Babington commented 'Among the preventable diseases, … there is none which is more preventable than the venereal disease; …'. He reviewed the registration and examination system adopted in France, where no fines were levied as the Government considered it immoral to receive the earnings of crime. Prostitutes in Paris, therefore, were exempt from tax and were punished by imprisonment. Conversely, in the Prussian system women had to pay the Government a fixed sum each month, with fines for all transgressions of the elaborate regulations.

In dissecting the problem, Babington exposes the nettle which has never been fully grasped in these Islands. Babington says that, 'The great objection of carrying out the French system … seems to be the aversion of our legislators and of the public which appear not only arbitrary as interfering with the liberty of the subject, but also morally wrong as sanctioning by implication the profession of prostitution in the very fact of controlling its exercise.' He does not go so far as to suggest that regulating prostitution would be inimical to the Sacred Cow of Free Trade: sometimes the English have deployed gunboats in defence of this particular Cow. He makes the point that illicit intercourse among the unmarried is unquestionably immoral, but it is tolerated because it is impossible to prevent and also because there is some greater evil in putting a stop to it. However, he admits 'that we are not prepared to follow the example of our enlightened neighbours'. He, therefore, proposes that 'medical men should be appointed in numerous districts to attend gratis, either at their own houses or at appointed houses of recovery according to the severity of the case, women who are the subjects of venereal disease, and that these medical men should be remunerated in the same manner as public vaccinators.'

He was inclined to think that 'it would not be desirable to allow the police to have anything to do with the carrying out of such a plan. … There is always a natural aversion to come into contact with the police' and 'with respect to the prudence of those who effect to make objection to the cure of prostitutes, on the grounds that it is an encouragement to vice, it is not worth considering; as well might we object to the relief of destitution, on the ground that it is an encouragement to idleness'—it should be pointed out that this philosophy has persisted in some minds to this day. He proposed a new society 'The Health Union

for the Diminution of Preventable Contagious Disease' but, needless to say, the Union's membership would have been limited to males. To put his arguments in perspective he observes 'We are raising millions to provide for the spiritual wants of the people. Is it not next in importance to this to get rid of a disease which counts its victims by myriads, and descends from generation to generation?' Babington wrote with a frankness and clarity which would be unusual even today.

By Babington's own reckoning[17] at least, this year marks the sesquicentenary of the institution of the Epidemiological Society. Babington relinquished his Presidency of the Society in 1864 and his place was taken by Gavin Milroy. It is, perhaps, fitting then that when Babington died on April 8th 1866 from disease of 'the urinary organs', a memoir of him appeared in the Transactions written by his successor as President. Milroy, paints[2] a lovely picture of Babington: 'He had in addition to extraordinary physical activity … a remarkable facility of manipulation, there was scarcely any operation with the hand … which he could not accomplish, and that well too. He was, in sportsman's phrase, a good shot, a skilful billiard player, and no mean modeller (sculptor). Nor were the higher gifts of poetry and music unknown to him. He published, in 1855, Passing Thoughts in Sonnet Stanzas, with other poems, original and translated, and he translated from French, German, Italian and Spanish … But it was by the attributes of the heart, even more than by the endowments of the head, that Dr Babington won and kept the admiration of all who knew him … In this selfish world he deserves a memorial if it were for nothing else than his kindness of heart.'

Why then did Rose omit[1] him in his description of the Epidemiological Society and include clinicians such as Addison and Bright (Babington's brother-in-law)? Babington was no mean clinician himself, having been first to describe hereditary telangiectasia in 1865,[20] and was the inventor of the laryngoscope in 1829[3,19,21] and also a new hygrometer, a curved stethoscope and many other ingenious contrivances.[2] Babington has had some recognition last century for his contribution to the Epidemiological Society[3,19,22] and in the present one.[23] In 1907 the Epidemiological Society joined with others to form the Royal Society of Medicine.[24]

One of the nicest tributes has come[5] from T G Wilson of Dublin who married a descendant of Babington's. Wilson praises him

Box I

Swallows Underwater

Even the great English Naturalist, Gilbert White, flirted with this bizarre theory for the seasonal disappearance of birds. An 1862 edition of 'The Natural History of Selborne' carries[i] this lovely Editor's note 'Swallows are always found near to rivers in considerable numbers, attracted by the abundance of insects which they capture on the wing. The conjecture of the Swedish Naturalist is a proof of how easily men's minds get wedded to theories, which they sometimes prostitute their talents to support'. According to Thomas Pennant, the author of *British Zoology*,[ii] 'The first to broach this opinion was Olaus Magnus, Archbishop of Upsal [Uppsala, Sweden], who very gravely informs us, that these birds are often found in clustered masses at the bottom of the Northern Lakes, mouth to mouth, wing to wing, foot to foot; and that they creep from the reeds in autumn, to their sub-aqueous retreats'. He concluded scathingly 'That the good Archbishop did not want credulity, in other instances, appears from this, that after having stocked the bottoms of the lakes with birds, he stores the clouds with mice, which sometimes fall in plentiful showers on *Norway* and neighboring [sic] countries.' Olaus Magnus described swallows going under water in 1555.[iii] The theory was even promoted by the great Linnaeus: 'The Calendar of Flora', written in 1755 by Berger, a member of the Linnaean school in Uppsala, carries this entry for September, 'SWALLOW goes under water'.[iv] Pennant was not the first to criticise Olaus' theory. Catesby, in 1747 thought[v] 'The Reports of their lying torpid in caverns and hollow trees, and their resting in the same state at the bottom of deep waters are so ill attested, and absurd in themselves, that the bare mention of them is more than they deserve'. Lack proposed[vi] that the birds were dippers.

The most ingenious experiment to test the theory was carried out by Johann Frisch, who, in the middle of the 18th Century, tied red threads around the legs of swallows. If, he argued, they went beneath the water for the winter, the red dye would come out of the threads. In fact, when the swallows returned the next year, the threads were still red, so he concluded that the birds did not submerge.[vi] There were other silly theories around, such as hibernation, transpeciation, and even migration to the moon,[vii] a round trip which, it was conjectured, took 60 days.

References to Box 1

i. Editor's Note. In: *The Natural History of Selborne* Gilbert White. London: Bell and Daldy, 186 Fleet Street, 1862, p.54.
ii. Pennant T. Of the disappearance of swallows. In: *British Zoology*, Wilkie and Robinson (etc). London 1812, Vol I, pp.553–65.
iii. Magnus O. *History of the Northern People*. Uppsala, 1555.
iv. Berger AM. The Calendar of Flora. In: *Miscellaneous extracts relating to natural history, husbandry, and physick*. Stillingfleet T. 3rd edn. London: Dodsley J, 1775.
v. Catesby M. Of the birds of passage. *Phil Trans Roy Soc* 1747;**44:**435–44.
vi. Lack D. Winter sleep. In: *Swifts in a tower*. London: Chapman and Hall, 1973, pp.137–43.
vii. By a person of learning and piety. An essay toward the probable solution of this question: whence come the stork and the turtle, and the crane and the swallow, when they know and observe the appointed time of their coming—or where those birds do probably make their recess and abode, which are absent from our climate at some certain times and seasons of the year. Crouch S, London, 1703, pp.1–50.

most for the invention of the laryngoscope and in passing mentions that he was a pioneer in epidemiology. He does ask the vital question 'Why, then is his name almost forgotten today? Bright, Hodgkin, Addison—all are names to conjure with while Babington, whose achievement is not much less than theirs, is comparatively unknown. The principal reasons are two. One is Babington's innate modesty, upon which all his contemporaries are agreed, the other is the great versatility of his productive brain, which led him to study widely varying subjects at different times of his life. He may, in consequence, have been regarded as a "jack of all trades" by the less intelligent of his contemporaries.' The sheer range of Babington's intellect raised him far above those doctors whom Coleridge dismissed as '*shallow* animals, having always employed their minds about Body and Gut, they imagine that in the whole system of things, there is nothing but Gut and Body.'[25]

Acknowledgements

I wish to thank the Royal College of Physicians of London for permission to reproduce the photograph of the wax statuette of Babington. Special thanks are due to Joe Clint for his indefatigable tracking down of References. I am indebted to Kjell Asplund for his guidance on Olaus Magnus.

References

[1] Rose G. Epidemiology. In: *The Oxford Companion to Medicine,* Walton J, Beeson PB and Scott RB (eds). Oxford University Press, 1986, Vol. 1, pp.351–58.

[2] Milroy G. *Memoir of Benjamin Guy Babington MD, FRS, etc.* Transactions of the Epidemiological Society of London Vol II. London, Robert Hardwicke, 1867 (Sessions 1865/66) pp.471–76.

[3] Lilienfeld DE. The greening of Epidemiology. Sanitary Physicians and the London Epidemiological Society (1830–1870). *Bull Hist Med* 1979; **52:**503–28.

[4] Leslie JB. *The clergy of Connor.* Ulster Historical Foundation, and The Library Committee of the Dioceses of Down, Connor and Dromore, 1993 p.206.

[5] Wilson TG. Benjamin Guy Babington: they are honouring the wrong man. *Arch Otolaryn* 1966;**83:**98–102.

[6] Munk W. *The Roll of the Royal College of Physicians of London, Vol II 1701–1800.* Harrison and Sons, 59 Pall Mall, London, 1878, pp.451–55.

[7] *Dictionary of National Biography.* Stephen L (ed.). London: Smith Elder, 1885, pp.311–12.

[8] Rosenfeld L. Thomas Hodgkin and Benjamin Guy Babington: Friendly rivals and career parallels. *Bull NY Acad Med* 1986;**62:**910–17.

[9] Babington BJ. Introductory Address to the Epidemiological Society. *Lancet* 1850;**2:**639–42.

[10] Smith R. Personal Communication. February, 2000.

[11] Jenner E. Some observations on the migration of birds. *Phil Trans Roy Soc* 1824;**Part 1:**11–44.

[12] *The Commemoration Volume.* The Epidemiological Society of London: founded 1830. London: Shaw and Sons, 1901, pp.3–16.

[13] Babington BG. Report on the cholera which visited Her Majesty's Black Sea Fleet in the autumn of 1854. *Transactions of the Epidemiological Society of London (Session 1856). Vol II* 1857, pp.89–115.

[14] Cholera Committee Report. *Transactions of the Epidemiological Society of London (Session 1855), London, Vol II,*1856, p.9.

[15] Woodham-Smith C. *Florence Nightingale: 1820–1910.* London: Constable, 1998, p.157.

[16] Norrie P. *Penfold: Time-honoured.* Sydney: Apollo Books, 1994, pp.11–17, 64–81.

[17] Babington BG, Milroy G, Radcliffe JM. The statistics of disease among the pauper population of England and Wales. *Transactions of the Epidemiological Society of London (Sessions 1863–4), Vol II,* 1865, pp.1–7.

[18] Babington B. On the limitation of venereal diseases among the civilian population. *Transactions of the Epidemiological Society of London, Vol II, London (Session 1865), Vol II,* 1867, pp.278–85.

[19] Wells WA. Benjamin Guy Babington—Inventor of the Laryngoscope. *Laryngoscope* 1946;**8:**443–54.

[20] Babington BJ. Hereditary epistaxis. *Lancet* 1865;**2:**362–63.

[21] Harrison D. Benjamin Guy Babington and his Mirror. *J Laryngology and Otology* 1998;**112:**243–47.

[22] Evans A. Let's not forget about B G Babington (Commentary). *Lancet* 2000;**356:**1870.

[23] Davey Smith G, Ebrahim S. Epidemiology—is it time to call it a day? *Int J Epidemiol* 2001;**30:**1–11.

[24] Davidson M. *The Royal Society of Medicine: the realization of an ideal, 1905–1955.* London: Royal Society of Medicine, 1955.

[25] Porter R. *The greatest benefit to mankind: a medical history of humanity from antiquity to the present.* HarperCollins, 1997, Frontispiece.