

Planning of the UK's National Health Service

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INTRODUCTION

William, Lord Beveridge (1879-1963) is widely recognized for his multi-faceted efforts to improve the health, education and social well-being of society. His career led to the establishment of the National Health Service (NHS) in 1948. His career began with his education at Charterhouse under House Master Frederick K. Girdlestone, cousin of renowned Orthopaedic Surgeon Gathorne Robert Girdlestone, first Nuffield Professor of Orthopaedic Surgery^{1,2,3}.

In 1894 Beveridge was promoted from Junior to Senior Scholarship, becoming Head of Charterhouse¹. At



Figure 1

William Henry Beveridge (1879-1963), Oil on canvas, 90.2 cm x 69.9 cm, accession no. 50, painted 1959 by Allan Gwynne-Jones, DSO, CBE, R.A. (1892-1982). First Baron Beveridge of Tuggal, Head of the London School of Economics, 1919-1937, Vice-Chancellor, University of London, 1926-1937, Master, University College, Oxford, 1937-1944. Mathematical Scholar of Balliol, Progenitor of the National Health Service. User of the Library, later the Waller Library, at Murray House, Newcastle-upon-Tyne.

Beveridge's Mother's insistence he went up to Balliol, where he subsequently won a Minor Exhibition in Mathematics¹. His original plan was to become an astronomer, and continue his study of Mathematics, but he also returned to the study of Classics during his five years (1897-1902) at Balliol. After working in the East End of London and lobbying for social reform, in 1908 he became a Civil Servant at the Board of Trade⁴. Winston Churchill appointed and supported Beveridge's work in forming the Board of Trade, including the establishment of Labour Exchanges. By 1910 there were 214 such Labour Exchange branches to assist with employment⁵. His work in the British Ministry of Munitions and Ministry of Food during World War I enabled his food rationing system credited with ameliorating wartime food shortages⁴. In 1919 he was elected Director of the London School of Economics^{4,6} and appointed Vice Chancellor of the University of London in 1926^{4,6,7}. In 1937 he was elected Master of University College, Oxford (Fig. 1).

WORLD WAR II

In 1940, Ernest Bevin, Minister of Labour, recruited Beveridge to assist, as a temporary Civil Servant, with the Wartime Organization of British manpower. Beveridge chaired a Committee on Skilled Men in the Services which submitted reports to the War Cabinet in August and October 1941, which were discussed at a meeting on 29 January 1942⁸.

In November 1942, Beveridge published the *Report to Parliament on Social and Allied Services* known as *The Beveridge Report*⁹. In response, a Ministry of National Insurance was established at Newcastle-upon-Tyne in 1944^{4,10,11}. Beveridge's legal offices were downtown.

The future Tessa Hedley-Whyte and her mother 'Peg' Waller went to Newcastle in 1948¹² (fig.2). Peg started at Murray

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Figure 2

Portrait of Elizabeth Margery (Peg) Waller, J.P. (1916-2008). Oil on canvas, painted 1938 by Cecil Stuart Jameson (1884-1973).

Waller (née Hacking) played competitively at Wimbledon as a Junior. Chair of Trustees, Murray House Foundation and Waller Library, Newcastle-upon-Tyne. "Creating opportunities for young people to learn and reach their potential"¹³.

House, where she was later to chair the Board of Trustees and manage the Library, later the Waller Library.

ANGUS HEDLEY-WHYTE, POST MUSGRAVE PARK

After our departure from Musgrave Park, where my* father had served as Commanding Officer^{14,15}, Father served from 1942 with the rank of Brigadier, as Consultant Surgeon to Northern Command¹⁶. Father was acquainted with William Beveridge and his ongoing campaign toward establishment of the National Health Service¹⁶.

WAR CABINET 1944 AND 1945

At 3:00 p.m. on January 26th 1945 the War Cabinet chaired by Churchill met with the Chiefs of the British Armed Forces¹⁷. The Chief Agenda Item was the Allied Response to the serious threats of new revolutionary U-boats with efficient

snorkels and hydrogen peroxide propulsion systems^{18,19,20} that allowed fast and multi-day submerged cruising and sinking of Allied shipping. War Cabinet Meetings during the period October-December 1944 had endorsed Sholto Douglas's and FDR's proposed course of mitigation^{21,22}. On 27 January 1945, German submarine U-1172 was sunk in St. George's Channel by depth charges from British Frigates HMS Tyler, HMS Keats and HMS Bligh²³. The War Cabinet Minutes of Monday 29 January 1945 reported the incident: "U-boat activity continued in the Irish Sea. One U-boat had been sunk and another possibly sunk"²⁴. Before VE Day due to the Allied In-Shore Response, another 14 were sunk chiefly by collision²⁵.

ALLIED LEADERS

Both Sholto Douglas and FDR had Scottish Grandmothers who were friendly with one another and with their grandsons. Sholto Douglas and FDR met alone in Cairo, Tehran and Washington, DC, with British and American guards outside the meeting room^{21,26}. FDR by force of experience and US Governance controlled the placement and roles of "My Bombers", including the long-range US manufactured Liberators^{21,27}. After U.S. entry into the war FDR mandated increased U.S. production of these aircraft to one every hour; 18,482 Liberators were built between 1941 and 1945^{21,27}.

FDR and Sholto Douglas, in 1944, proposed that all Anglo-American training flights should include passages over bays and harbours on both sides of the Atlantic. Sholto Douglas has described meeting alone with FDR; FDR's charm and competence and follow-up were impressive^{21,26}.

STALIN AND TEDDER

The British Cabinet with FDR's endorsement sent Eisenhower's deputy and Commander of the Western Alliance Tactical Air Force, Arthur W. Tedder (Fig. 3), to Moscow to approach Stalin about Allied aircraft landing arrangements. In Cairo, Tedder's plane started leaking aviation fuel onto the tarmac. This recognition of presumed sabotage before takeoff for Russia probably saved the lives of Tedder and his crew. Bad weather in Russia caused Tedder to complete his trip to Moscow by train^{28,29}. Stalin asked Tedder for advice about air evacuation of wounded both in Russia and potentially in the Far East.²⁸

The meeting alone with Stalin in the Kremlin was successful. British and American Bombers would be based on Soviet territory and be focused against German U-boats, their fuels, their transportation by German roads, rails and canals, their manufacture and their German ports. Medical and surgical cooperation between the Western Allies and the Soviets was intensified. Air transportation of the seriously wounded was emphasized¹⁶.

At the celebratory Kremlin Dinner Tedder's speech was in fluent Russian: a language he later occasionally used to make a point as Chancellor of the University of Cambridge: "Nyet—end of debate!"²⁸.

*This and other first person references are to the first author.





Figure 3

Arthur William Tedder, GCB, 1st Baron Tedder, 1890-1967.

Deputy Supreme Commander to Dwight D. Eisenhower at Headquarters of Allied Expeditionary Force 1943-45. Chief of RAF 1946-50, Chancellor of Cambridge University, 1950-67. Prince Philip subsequently served as Chancellor, 1976-2011. Oil-on-canvas by Henry Carr, R.A. (1894-1970), painted 1949, 74.5 x 61.5 cm, College Portrait 120. Reproduced by permission of the University and of the Master and Fellows of Magdalene College, Cambridge, solely for this Medical History.

1945: SUPERVISION AND IMPLEMENTATION

Diversion of RAF Coastal Command and US Navy flights and training and combat flights to maximize time over Northern Ireland and the rest of Great Britain were coordinated by UK and US radar and sonar chains³⁰.

ATTEMPTED SIEGE OF UK

George Stanley Waller (Fig. 4) was charged with implementation of this change in venue of air training to bays, harbours and coasts^{31,32}. The sonar screening of the North Sea was of inestimable value to the Allies. The system of sound-wave detection, later known as “sonar”, developed in secret during World War I by Lord Rutherford at Victoria University of Manchester was replicated and deployed³³. U.S. Admirals questioned the British control of the Allied flight paths. The White House reminded them of “My Navy”. FDR had been de facto Commander of the U.S. Navy and its Flying Boats in WWI²¹.

George Stanley Waller, reading for an Honours Law degree at Cambridge University in 1932, joined the Cambridge RAF Air Squadron. Soon after being called to the Bar, Waller as a Junior accused a senior British Judge of Judicial Misconduct. Waller won his case after addressing the House



Figure 4

George Stanley Waller (1911-1999). Photographic portrait of the Rt Hon Sir George Stanley Waller, QC, OBE(M), 1964.

Whitley Pilot and Captain for RAF 502 (Ulster) Squadron. Lord Justice of Appeal, Treasurer of Gray's Inn, 1978-1979. Recipient of Dagger Money for “Successful Conduct of Assize in Newcastle-upon-Tyne and Carlisle and safe journeys to and fro.”

of Lords. The Senior Judge had suggested in open court that the wife who tried to enter her own house “should be horse-whipped”. In Waller’s opinion, and later that of the House of Lords, the Senior Judge’s opinion was entirely unjustified³².

Having played as a Wing-Forward, sometimes, Second Row, for Blackheath and the Barbarians, World All-Stars, Waller was on the winning team for the English Sevens for the RAF in the spring of 1941.

Waller was assigned to Pilot and Captain Whitley Bombers from Aldergrove and Limavady for RAF Ulster 502 Squadron. Two years and the sinking of the *Bismarck* later, and the loss of fifty percent of their Whitleys, Waller was transferred to Plymouth to assure close cooperation between the RAF and the US Navy Air Arm. After the *Bismarck* sinking Waller from his Whitley warned the Captain of the Royal Navy’s Battleship *King George Vth*, “German bombers are about to counter-attack.” The bombers retreated³².

Waller crashed his boss and himself into a Plymouth oak tree. The pair of them then descended the oak, scratched but otherwise unharmed. On return to their original air base Peg Waller (Fig. 2) was not told of their return. She and her co-workers thought the crash must have killed their boss Air Vice-Marshal Geoffrey Rhodes Bromet, later Lt. Governor of the Isle of Man (1945-1952)³⁴ and Peg’s husband Waller.

RESPONSIBILITY FOR TRAINING: RAF COASTAL COMMAND AND US NAVY AIR ARM

Waller was thereafter transferred to RAF Coastal Command Headquarters near both Northholt, and Northwood Park. There he was joined by wife Peg and daughter Tessa^{12,32}.

From there organization of air transportation of sick and wounded was aided and supplemented.

AMELIORATION OF SNORKELING

For his inspection tours of UK air bases and defenses, Waller determined to always pilot his own plane; he preferred not to carry bombs or depth charges on the training inspection flights. The British War Cabinet had wished to know from Sholto Douglas how many Anglo-American training flights carried bombs or depth charges.

ULSTER SEQUELAE

On August 7, 1945, my father awakened me in my room at Bamburgh, Northumberland, with news of Hiroshima³⁵. Father said, “Smedal at Musgrave Park, in 1942, was pretty accurate¹⁵. W. R. ‘Ronnie’ Watts is operating on your sister and will stay for lunch³⁶. I will assist with the anaesthetic for drainage and excision of your sister’s neck glands. This is from the Belfast Blitz’s tubercular bovine milk...^{37,38,39}. You are to dine for lunch at Tughall Hall with Uncle Frank^{16,40} who is flying his Spitfire there to meet Beveridge (Fig. 1) who is staying with the Hoults.” Lord Beveridge leased Tughall Hall from 1944⁴¹.

Because of weather the lunch with the Beveridges was postponed for a few days. Waller’s boss, now Sholto Douglas²⁶, ordered Nettleton to continue his stay with his sister, my mother—“the meeting with Beveridge is very important. The chief topic will be the transport of sick patients.” And so it came to pass.

WILLIAM BEVERIDGE AND HIS NATIONAL HEALTH SERVICE

“The UK NHS is being crafted”, my father explained to me. For Ulster the sophisticated assessment of transport of patients was to prove valuable.

Tughall Hall changed names to Tuggall after having the name Tughall since the late 17th Century⁴¹. Beveridge, about to become a first peer, chose as his title Lord Beveridge of Tuggall⁴².

LUNCHEON AT TUGHALL

Beveridge knew that as a combat Spitfire pilot since May 1940, my Uncle Frank Nettleton had a one-in-twenty-five chance of survival^{16,40}. Beveridge wanted to know every detail of Allied Air Evacuation worldwide. The leading role of Dr. Bertie Trevor-Roper in Alnwick Medical Affairs was most helpful to Beveridge’s Healthcare plans. Much improvement was due to advances in transportation. Northern Ireland connections with Glasgow, Edinburgh, Oxford and Newcastle-upon-Tyne were markedly improved⁴³. Beveridge wanted even further improvement in air, rail and road transportation for safe and efficient patient transfer. Beveridge, furthermore, wanted to know all about the training and responsibilities of Nightingales in the RAF, the US Army Air Force, the U.S. Navy and the Russian forces^{44,45,46}.

After the Tughall Beveridge luncheon, Uncle Frank Nettleton and I arrived at our house on The Wynding, Bamburgh. My sister, pointing to her right neck bandage, said to Uncle Frank, “Ulster cows did this to me.” The telephone then rang. It was Dr. Bertie Trevor-Roper. His son Hugh was going to Berlin to investigate the reported death of Hitler⁴⁷. It is now known that Hugh Trevor-Roper lunched at i Tatti¹ with Bernard Berenson on the 30th of July 1945 before proceeding to Berlin^{47,48}. The Russians, especially Commissar for Foreign Relations, Andrei Vyshinsky⁴⁷, claimed that Hitler might still be alive, hiding in the Charité. Dr. Bertie “T-R” knew that my father had worked in the Charité during my parents’ honeymoon⁴⁹.

Son, Hugh Trevor-Roper, in 1979, became the first Lord Dacre of Glanton, in the County of Northumberland. Dacre had been a distinguished counter-intelligence officer for the Allies in World War II before achieving literary fame, and fortune from book sales and film rights. He became a close friend of Bernard Berenson^{41,47,50}.

THE NATIONAL HEALTH SERVICE AND MEDICAL EDUCATION IN NORTHERN IRELAND

Toward the close of his long career, Pathologist and QUB Medical School Dean Sir John Henry Biggart spoke of the “Interdependence between postgraduate medical education and training and the National Health Service commitment to the Public”⁵¹. Sir John Henry has been credited with the concept of the Joint Appointment System between the Health Department and the University from the outset of the NHS in 1948⁵². As a QUB graduate, he was awarded a Commonwealth Scholarship to Johns Hopkins which he held from 1931-1933, when he accepted a Lectureship in Neuropathology at Edinburgh. He held this post until his return to Belfast in 1937, after being pathologist to the Scottish Asylums Board, neuropathologist to the Edinburgh Royal Infirmary and a close associate of Prof. Norman Dott¹⁶. Before his departure from Edinburgh, he published a textbook on Neuropathology based on his lectures^{52,53}. During World War II he ran the Emergency Blood Transfusion Service in Northern Ireland⁵⁴.

With knowledge and experience from both sides of St. George’s Channel, Biggart chaired the Standing Medical Advisory Committee of the Ministry of Health for Northern Ireland from 1967-73, and represented QUB on Northern Ireland’s General Medical Council from 1951 until his death in 1979^{52,55}. Building on this legacy, Northern Ireland’s NHS through a series of reorganizations, continues progress toward the quality and equity of care envisioned by Lord Beveridge.

Lord Beveridge was a regular patron of the (Peg) Waller Library during his stays in Tughall and his work in the Newcastle-upon-Tyne area.

1. The Villa i Tatti, known as i Tatti, was bequeathed to Harvard University by Bernard Berenson (Class of 1887) upon his death in 1959. Harvard later acquired its Archives and Library. This estate in the Settignano Foothills east of Florence currently houses the Harvard University Center for Italian Renaissance Studies⁴⁸.



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REFERENCES

- William Henry Beveridge (1879-1963, Girdlestoneites 1892-1897). Obituary. *The Carthusian*. June 1963;**23(15)**:1-3.
- Beveridge W. Reminiscence. A blessing on Duckites (1892-1897). *Duckite Scrapbook* compiled by C. Ryder c.1960. Charterhouse School Archives, ChArc.67/24. Godalming, Surrey: Charterhouse.
- Hedley-Whyte J, Milamed DR. Orthopaedic surgery in World War II. Military and medical role of Northern Ireland. *Ulster Med J*. 2016;**85(3)**:196-202.
- Harris J. *William Beveridge: A biography*. 2nd ed. Oxford: Clarendon Press;1997.
- Roberts A. *Churchill: Walking with Destiny*. New York: Viking; 2018. p.129.
- Reed H. A Vice Chancellor's portrait – Sir William Beveridge in the Shaw Library. London School of Economics. LSE History. Oct. 30th, 2017. [cited 2021 Sept 19]. Available from: <https://blogs.lse.ac.uk/lsehistory/2017/10/30/a-vice-chancellors-portrait-sir-william-beveridge-in-the-shaw-library/> [Last accessed Jan 2022].
- Beveridge W. *Insurance for all and everything*. "The New Way" Series, No.7.
- War Cabinet Minutes. The Committee on Skilled Men in the Services (The Beveridge Committee). W.P.(42)44. 29th January 1942. p.113-23. [cited 2021 Sept 19]. Available from: <http://filestore.nationalarchives.gov.uk/pdfs/small/cab-66-21-wp-42-44-24.pdf> [Last accessed Jan 2022].
- Beveridge W. *Social Insurance and Allied Services*. Report by Sir William Beveridge. Presented to Parliament by Command of His Majesty, November 1942. London: HMSO; 1942.
- Ministry of National Insurance (Office, Newcastle-on-Tyne). House of Commons Debate 23 February 1945, vol. 48, cc 1200-6. [cited 2021 Mar 4]. Available from: <https://api.parliament.uk/historic-hansard/commons/1945/feb/23/ministry-of-national-insurance-office> [Last accessed Jan 2022].
- Mendelsohn R. Ministry of National Insurance: Central Offices, Newcastle-on-Tyne. *Soc Sci Rev*. 1951;**25(2)**:210-6.
- Hedley-Whyte ET. Autobiography series: A half century of Neuropathology. *J Neuropathol Exp Neurol*. 2020;**79(12)**:1385-1403.
- Lascelles J. Newcastle: our journey. Newcastle: Newcastle United Foundation; 2021.[cited 2021 Feb 22]. Available from: <https://nufoundation.org.uk/about-us/teamup/> [Last accessed Jan 2022].
- Hedley-Whyte J. Epidemic jaundice: Harvard's 5th General Hospital at Musgrave Park in World War II. *Ulster Med J*. 2005;**74(2)**:122-5.
- Hedley-Whyte J, Milamed DR. American Surgeons at Musgrave Park Hospital in World War II: Surgical Giants. *Ulster Med J*. 2016;**85(2)**:107-12.
- Hedley-Whyte J, Milamed DR. War Neurosurgery: Triumphs and Transportation. *Ulster Med J*. 2020;**89(2)**:103-10.
- War Cabinet Minutes. WM 11(45). Conclusions of a Meeting of the War Cabinet held in the Cabinet War Room on Friday, 26th January, 1945, at 3:00 p.m. p. 65-7. [cited 2021 Sept 19]. Available from: <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-65-49.pdf> [Last accessed Jan 2022].
- Davis NS, Keefe JH. Concentrated hydrogen peroxide as a propellant. *Indus Eng Chem*. 1956;**48(4)**:745-8.
- Wernimont E, Ventura M, Garboden G, Mullens P. Past and present uses of rocket grade hydrogen peroxide. General Kinetics, LLC Aliso Viejo, CA. 1999 Nov 7;92656. [cited 2021 Sept 19]. Available from: http://www.hydrogen-peroxide.us/history-US-General-Kinetics/H2O2_Conf_1999-Past_Present_Uses_of_Rocket_Grade_Hydrogen_Peroxide.pdf [Last accessed Jan 2022].
- McDaniel JT. The Walter Submarine Turbine Propulsion System. [Monograph on the Internet]. Dublin, Ohio: J.T. McDaniel Official Site. [cited 2021 Sept 19]. Available from: https://www.jtmcdaniel.com/walter_turbine.html [Last accessed Jan 2022].
- Hedley-Whyte J, Milamed DR. FDR and American Military Deployment: "My" Armed Forces and their health. *Ulster Med J*. 2018;**87(1)**:39-45.
- Keegan J. U.S. Chief of Naval Operations to FDR, November 1940. In: Keegan J. *The Price of Admiralty: The Evolution of Naval Warfare*. New York: Penguin Books USA; 1988. p.201-2.
- Bishop C, Ross D. *Submarines: World War I to the Present*. New York: Chartwell Books; 2016. p.211.
- War Cabinet Minutes. WM 12(45). Conclusions of a Meeting of the War Cabinet held in the Cabinet War Room on Monday, 29th January, 1945, at 5:30 p.m. p.71. [cited 2021 Sept 19]. Available from: <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-65-49.pdf> [Last accessed Jan 2022].
- Gray E. *Disasters of the Deep: A comprehensive survey of submarine accidents and disasters*. Annapolis, MD: Naval Institute Press; 2007.
- Sholto Douglas W, Wright R. *Years of Command. The Second Volume of the Autobiography of Sholto Douglas, Marshal of the Royal Air Force, Lord Douglas of Kirtleside, G.C.B., M.C., D.F.C.* London: Collins; 1966.
- Bowman M. Chapter 1. America's Liberator: Development history. In: *Bowman M. B-24 Liberator: Combat Legend*. Shrewsbury, UK: Airline Publishing; 2003; p5-16.
- Tedder A. *With Prejudice: The War Memoirs of Marshal of the Royal Air Force Lord Tedder G.C.B.* North-West Europe: December 1943-May 1945. London: Cassell; 1966.p. 491-686.
- Orange V. Tedder, Arthur William, first Baron Tedder (1890-1967) Air Force Officer. *Oxford Dictionary of National Biography*. Oxford: Oxford University Press, 2004-2016. [cited 2021 Mar 3]. Available from: <http://www.oxforddnb.com.ezp-prod1.hul.harvard.edu/view/printable/36446> [Last accessed Jan 2022].
- Hendrie AW. *The Cinderella Service: Coastal Command 1939-1945*. Barnsley: Pen and Sword Aviation; 2006.
- Waller G. Five years in Coastal Command. In: Fopp M ed. *High Flyers. 30 Reminiscences to Celebrate the 75th Anniversary of the Royal Air Force*. London: Greenhill Books in Association with the Royal Air Force Museum; 1993. p.217-23.
- Waller GS. *World War II Memoir* (unpublished manuscript in Waller family records).
- Rutherford E. *On methods of collection of sounds from water and the determination of the direction of sound*, 1915 [monograph on the Internet]. Manchester: University of Manchester; 2014 Nov [cited 2021 Feb 25]. Available from: <http://www.manchester.ac.uk/discover/news/article/?id=13224> [Last accessed Jan 2022].
- Stoneman E. Air of Authority—A history of RAF organisation. Air Vice-Marshal Sir Geoffrey Bromet. [monograph on the Internet]. London:



- M.B. Barrass. [cited 2021 Mar 12]. Available from: <http://www.rafweb.org/Biographies/Bromet.htm> [Last accessed Jan 2022].
35. Shallett S. First atomic bomb hits Japan. Explosion equal to 20,000 tons of T.N.T. Anglo-U.S. War secret of four years' research. "Rain of Ruin" from the air. *The Times (London)*. 1945 Aug 7 p. 1 [cited 2021 Mar 12]. .
 36. Watts WR. President's Address. Progress of medicine and surgery in Newcastle upon Tyne. *Br Med J*. 1957; **2(5037)**:117-24.
 37. Hedley-Whyte J, Milamed DR. Tuberculous scrofula: Belfast experience. *Ulster Med J*. 2011; **80(2)**:97-103.
 38. Calwell HG, Craig DH. The White Plague in Ulster. A short history of tuberculosis in Northern Ireland. *Ulster Med J*. 1989; **58 (Suppl)**.
 39. Breathnach CS, Moynihan JB. Brice Clarke (1895-1975) and the control of tuberculosis in Northern Ireland *Ulster Med J*. 2009; **78(3)**:179-84.
 40. Nettleton FE. Pilot's Flight Logbook. Royal Air Force Form 414. May 1940-May 1945. Posted to Spitfire, March 1941; posted to 123 Fighter Squadron (Spitfires), May 1941; posted to Photographic Reconnaissance Unit (Spitfires) November 1941; crashed at Benson, February 1942; thereafter treated by Cairns and Calvert (see ref. 16); January 1943-May 1945, RAF Test Pilot for new and repaired Spitfires.
 41. Trevor-Roper H. *The Wartime Journals*. Davenport-Hines R, editor. London: I.B. Tauris; 2012. p.230 (Footnote 25).
 42. William Beveridge. Baron Beveridge, created 1946, Baron Beveridge of Tuggal. Kidd C, Williamson D, Collins L, editors. *Debrett's Peerage and Baronetage* 146th ed. London: Palgrave, MacMillan; 2000. p.1153.
 43. Calvert CA. The development of neuro-surgery. Address at the opening of the Winter Session 1946-47, Royal Victoria Hospital, Belfast. *Ulster Med J*. 1946; **15(2)**:123-40.
 44. Tomblin BB. *G.I. Nightingales. The Army Nurse Corps in World War II*. Lexington, KY: University of Kentucky Press; 1996.
 45. Mackie M. *Wards in the Sky: The RAF's Remarkable Nursing Service*. Stroud, Gloucestershire; The History Press; 2014.
 46. Hedley-Whyte J, Milamed DR. Battle of the Atlantic: Military and medical role of Northern Ireland (After Pearl Harbor). *Ulster Med J*. 2015; **84(3)**:182-7.
 47. Trevor-Roper H. *Letters from Oxford: Hugh Trevor-Roper to Bernard Berenson*. Davenport-Hines R, editor. London: Weidenfeld and Nicolson; 2006. p.xvii-xix; 47,50,51.
 48. The Berensons. Florence, Italy: Villa I Tatti, The Harvard University Center for Italian Renaissance Studies. [cited 2021 Mar 15]. Available from: <http://itatti.harvard.edu/berensons> [Last accessed Jan 2022].
 49. Hedley-Whyte J, Milamed DR. Surgical travellers: Tapestry to Bayeux. *Ulster Med J*. 2014; **83(3)**:171-7.
 50. Hugh Trevor-Roper, Lord Dacre of Glanton in the County of Northumberland. Created 1979. Kidd C, Williamson D, Collins L, editors. *Debrett's Peerage and Baronetage* 146th ed. London: Palgrave, MacMillan; 2000. p.428.
 51. Biggart J, Kernohan RJ. Postgraduate Medical Education Centres in Northern Ireland. *Ulster Med J*. 1974; **43(1)**:71-3.
 52. Weaver JA. John Henry Biggart 1905-1979 – A portrait in respect and affection. *Ulster Med J* 1985; **54(1)**:1-19.
 53. Biggart JH. *Pathology of the Nervous System: A student's introduction*. 1st ed. London: E & S Livingstone; 1936.
 54. Hedley-Whyte J, Milamed DR. Treatment and supervision: D-Day to victory: Europe. *Ulster Med J*. 2019; **88(3)**:174-8.
 55. Biggart D. *John Henry Biggart: Pathologist, Professor and Dean of Medical Faculty*, Queen's University Belfast. Belfast: Ulster Historical Foundation; 2012.

