

Who has been hiding in your tonsillectomy tray? Eponymous instruments in tonsillectomy surgery

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Abstract

Background: Surgeons regularly use eponymous instruments when performing tonsillectomies, yet the stories behind each are not commonly known.

Method and results: This paper presents the instruments within the tonsillectomy tray, providing a brief biography of their respective surgeon namesakes. The list captures over two centuries of surgical history, and spans the disciplines of ENT, general surgery, gynaecology, anaesthetics and paediatric surgery.

Conclusion: This is the first publication to undertake a historical study of the ensemble of surgeon inventors responsible for the instruments in the tonsillectomy tray as it is today. In furthering knowledge of our forbearer surgeon inventors, who have shaped the tonsillectomy procedure as it is safely performed today, we enrich our understanding of the history of our profession and build appreciation for the instruments employed daily. We may even be inspired to continue the tradition of evolving the craft.

Key words: Otolaryngology; Eponyms; Tonsillectomy; Surgical Instruments; History of Medicine

Introduction

In order to properly honour the important work of surgical instrument design that has culminated in safe tonsillectomy technique, we need to consider the question of where we would otherwise be were these instruments never invented for use. Celsus (25BC–AD50), a Roman aristocrat who has described the tonsillectomy in his time, may have the answer:

They ought to be disengaged all round by the finger and removed. If they are not separated by this method, it is necessary to take them up with a blunt hook and separate them with a scalpel; then to wash them with vinegar and anoint the wound with a styptic application.¹

The eponymous contents of the tonsillectomy tray offer an insight into a group of surgeon inventors that represents an intriguing and, at times, surprising surgical history of endeavour, innovation and sacrifice towards the betterment of surgical procedures. This fact ought to be honoured by all who benefit from their contributions. What follows is a short biography of each surgeon inventor.

Tonsillectomy tray instruments

The contents of the standard tonsillectomy tray are demonstrated in [Figure 1](#), and a summary of the

tonsillectomy tray instrument inventors is provided in [Table I](#).

Toothed and non-toothed Waugh forceps

Mr Alexander Waugh (1840–1906) was known as ‘The Brute’ because of his habit of beating his dog and bullying those close to him. Perhaps the kindest notation regarding his lifetime contributions was his invention of ‘Waugh’s Long Fine Dissecting Forceps’.²

Mr Waugh is the fount of one of the most celebrated literary families in England. His grandson was the great Evelyn Waugh (1903–1966) acclaimed as one of the finest novelists of the English language, and author of ‘Brideshead Revisited’. However, in a recent family autobiography, surviving relative Alexander Waugh Jr describes Alexander Waugh Sr as the fount also for a talent for sadism.^{2,3} The latter’s great, great grandson Bron is said to have ‘made so many enemies, that his obituary in *The Guardian* newspaper was illustrated with a drawing of his corpse being washed down a lavatory pan’.²

Straight Birkett forceps

Mr John Birkett (1815–1904) was an English surgeon who specialised in breast disease, and was an early advocate of histology.⁴

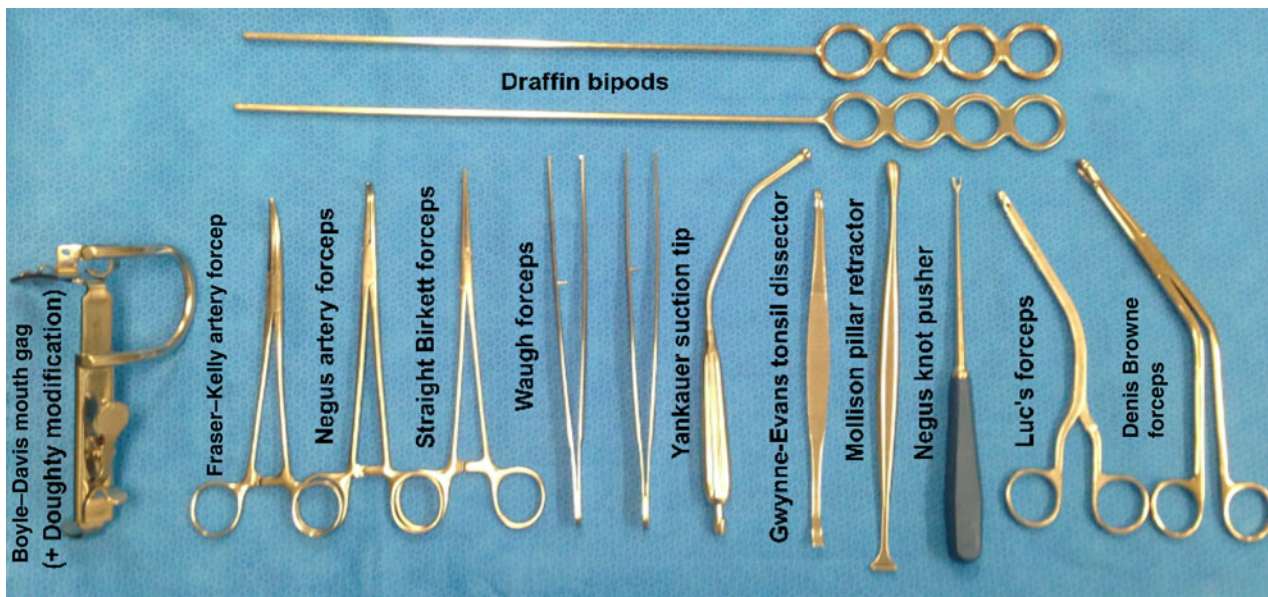


FIG. 1
The tonsillectomy tray instruments.

He was an only child, and started as an apprentice to Bransby Cooper, surgeon at Guy’s Hospital, London, at the age of 16 years. He commenced his medical studies the following year, obtaining his Fellowship of the Royal College of Surgeons qualification in 1844.⁴

For his dissertation on ‘Diseases of the Breast and their Treatment’, he was awarded the Jacksonian Prize by the Royal College of Surgeons in 1848. He maintained a close relationship with the Royal College of Surgeons; he was a council member from 1867, Hunterian Professor of Pathology and Surgery,

vice president and finally, president of the Royal College of Surgeons in 1877.⁴

With regard to his personal life, Birkett married Lucy Matilda in 1845 and they went on to have a family of seven sons (two of which became distinguished rugby players) and three daughters.⁴

TABLE I SUMMARY OF THE TONSILLECTOMY TRAY INSTRUMENT INVENTORS			
Born–died	Surgeon/inventor name	Birth place	Specialty
1815–1904	John Birkett	England	Breast surgeon
1840–1906	Alexander Waugh	England	General surgeon
1855–1925	Henri Luc	France	Otolaryngologist
1858–1943	Howard Atwood Kelly	USA	Gynaecologist
1872–1932	Sidney Yankauer	USA	Otolaryngologist
1875–1941	Henry Edmund Gaskin Boyle	Barbados	Anaesthetist
1878–1967	William Mayhew Mollison	England	Otolaryngologist
1887–1974	Victor Ewings Negus	England	Otolaryngologist
1892–1967	Denis John Wolko Browne	Australia	Paediatric surgeon
1904–1989	Eric Gwynne-Evans		Otolaryngologist
1917–1965	David Alexander Draffin	Ireland	Surgeon



FIG. 2
Professor Howard Atwood Kelly (1858–1943). Reproduced with permission of the University of Pennsylvania Archives.⁶

Fraser–Kelly artery forceps

Professor Howard Atwood Kelly (1858–1943) (Figure 2) was an American gynaecologist. He was known to many as one of the ‘Big Four’: he was one of the four founding professors at the John Hopkins Hospital in Baltimore (in the company of Osler, Halsted and Welch).⁵

Born in New Jersey to a prosperous sugar broker, Kelly was educated at the University of Pennsylvania. He graduated with a Bachelor of Arts degree in 1877 and qualified as a Doctor of Medicine in 1882.⁶ He spent his early medical life in Philadelphia, before being invited by William Osler, the chairmen of medicine of the newly founded John Hopkins University in Baltimore, to take up the position of Professor of Gynaecology and Obstetrics in 1889 (at the age of 31 years). It was in this year that Kelly married Laetitia Bredow, with whom he had nine children.^{5–7}

Kelly’s contributions included new surgical approaches to women’s diseases, development of the cystoscope, and pioneering cocaine as a local anaesthetic and radium to treat cancer.^{5–7} He founded the Kelly clinic, which was once one of the country’s leading centres for gynaecological radiation therapy.⁶ Kelly was president of the Southern Surgical and Gynecological Society (1907), president of the American Gynecological Society (1912) and a founding member of the American College of Surgeons (1913). He published over 500 scholarly pieces in his field of expertise, as well as in medical biography,



FIG. 3

Sir Victor Ewings Negus (1887–1974). Copyright The Royal College of Surgeons England. Reproduced with permission.¹⁰

botany and the natural sciences.^{5–7} His name has also taken a number of other eponymous forms: Kelly’s sign, the Kelly speculum and the Kelly stitch.⁸

Kelly, the man, has been recalled as being a reptile collector and fundamentalist evangelical Christian.^{5–7} These characteristics drew him to the attention of Baltimore columnist HL Mencken, who described him at the age of 63 years as follows:

Before cock-crow in the morning, he has got out of bed, held a song and praise service, read two or three chapters in his Greek Old Testament, sung a couple of hymns, cut off six or eight legs, pulled out a pint of tonsils and eyeballs, relieved a dozen patients of their appendices, filled the gall-stone keg in the corner, pronounced the benediction, washed up, filled his pockets with tracts, got into a high-speed automobile with the Rev. W. W. Davis and started off at 50 miles an hour to raid a gambling house and close the red light district...⁷ Original source: Mencken HL (under pseudonym). *Mirrors of Maryland*, September 30, 1921.

Negus artery forceps and Negus knot pusher

Sir Victor Ewings Negus (1887–1974) (Figure 3) was, for many years, consultant surgeon at the ENT department at King’s College Hospital, London.^{9–11}

After serving with the Royal Army Medical Corps in France in 1914, Negus became a Fellow of the Royal College of Surgeons, in 1921. He rose to staff status as an ENT surgeon after undertaking important original research in the field of comparative anatomy of the larynx. This work was awarded the Master of Surgery gold medal and, later, the John Hunter medal, and culminated in the publication ‘The Mechanisms of the Larynx’ in 1929. It was also in 1929 that Negus married his wife, Gladys (Eve) Rennie, who would assist her husband as a medical illustrator for several of his books. Victor and Eve went on to have two sons.^{9–11}

Negus’s credits included the development of new surgical techniques and the improvement of panendoscopy instrumentation.¹¹ He published a number of textbooks, the most notable of which is ‘Disease of the Nose and Throat’, written in collaboration with St Clair Thomson, which stood for many years as the authoritative textbook on the subject. Negus also made a great contribution to his profession outside of his clinical work. He was the curator of the Ferens Institute of the Middlesex Hospital Medical School, served the Royal College of Surgeons as a representative of otolaryngology on the council between 1947 and 1952, and played a central role in founding the final examination in otolaryngology.

Negus received numerous highly esteemed awards and was the honorary member of multiple otolaryngology societies around the world. He was president of the 4th International Congress of Otolaryngology in London, president of the Thoracic Society, president of the laryngology sector of the Royal Society of

Medicine and president of the British Association of Otolaryngologists, the latter of which proved to be fundamental in ensuring that otolaryngology was accepted as a major specialty in the National Health Service.^{10,11}

As a man, Negus was described in his obituary, published in *The Lancet* in 1974, as having a very full social life:

He played tennis regularly until he was 70, and then concentrated on golf, which had always been his regular winter game. He was a great competitor and always very hard to beat.¹¹

Yankauer suction tip

Dr Sidney Yankauer (1872–1932) (Figure 4) was an American ENT surgeon, who was based at New York's Mount Sinai Hospital for much of his career.^{12,13}

Yankauer was born the son of German Jewish immigrants from Bavaria; he was one of six children. He graduated from the City College of New York in 1890, the first free public institution for higher education in the USA. He went on to study at the College of Physicians and Surgeons in New York (later part of Columbia University), completing his medical degree in 1893. He undertook his internship at Mount Sinai Hospital, where he went on to specialise in ENT surgery and be appointed Attending Laryngologist in 1917. Yankauer served in the World

War I effort as a major in the US Army Base Hospital based in Vauclair, which treated some 9000 casualties.¹³

By this time, Yankauer had married Grace Greenwood Prior; she had qualified from the Women's Medical Dispensary in New York and would too specialise in ENT.¹³ However, a tragic fall ended her life at the age of 40 years. Yankauer went on to marry Margaret Kearns and they had his only daughter together.¹³

Dr Yankauer contributed more than 100 papers to the surgical literature, with topics ranging from leeches in the trachea, to ground-breaking bronchoscopic treatment of lung abscesses and the application of radium to carcinoma of the oesophagus.¹³ The Yankauer sucker, which was designed to keep the surgical field clear during tonsillectomy, was developed around 1907. He also developed the Yankauer ether and chloroform mask (circa 1904), and the Yankauer suction and pressure anaesthesia pump (circa 1920). He was an active member of many learned societies.¹³

Driffin bipods

The story of Mr David Alexander Driffin (1917–1965) (Figure 5) was recently retold by Bennett and Young, in 1992.¹⁴



FIG. 4

Dr Sidney Yankauer (1872–1932). Copyright [1932, John Wiley & Sons Inc.]. This material is reproduced with permission of John Wiley & Sons, Inc.¹²



FIG. 5

David Alexander Driffin (1917–1965). Reproduced with permission.¹⁴

Draffin was born in Ballybay, Ireland in 1917. He studied medicine at Queen's University, where his early sporting and athletic prowess was legendary. At the tender age of 22 years, newly qualified, Draffin volunteered himself for the army and served as a regimental medical officer in the British Expeditionary Force (the youngest person to do so). In this role, Mr Draffin cheated death, which was the fate of 26 members of his regiment, in the massacre at Le Paradis, although he did not escape capture.¹⁴

Mr Draffin was a defiant captive; he saved the lives of 90 prisoners of war, only to be wounded and recaptured. He served six terms in solitary confinement because of his repeated escape attempts. Finally, he escaped successfully, by swimming across the Elbe.¹⁴

As a consequence of his wartime experiences, Mr Draffin is said to have found it difficult to adjust to post-war normalcy. His Fellowship of the Royal College of Surgeons qualification was never finished.¹⁴ He occupied the interim period between his return from war and demise with property dealings and experiences in ENT surgery, which provided enough recompense to support the purchase of two Rolls Royce cars.

A NEW TONSIL DISSECTOR

THE dissector, here illustrated, designed for the enucleation of tonsils, has certain advantages, and has demonstrated its usefulness in routine hospital practice during the last year. The smooth tapered end is orthodox, being slightly curved, with semi-sharp edges, used solely for the purpose of incising the reflected mucous membrane of the tonsil, freeing the anterior pillar, the upper pole, and the posterior pillar in turn, preserving the pillars intact, and displaying the capsule. The reversed end is flattened and also slightly curved, terminating in a straight row of very fine serrations, the sides being smooth and semi-sharp. The serrated edge rests on, and is kept close to the tonsil, using it to separate the tonsillar bed gently away from the tonsil. Trauma and subsequent after-pain is reduced to a minimum, as it is impossible to injure the bed of the tonsil, and each movement that is made accomplishes its object, especially avoiding as far as possible repeated attempts to overcome the tough fibrous tissue in adults, who have had several attacks of inflammation, or quinsies. Also, incidentally, the length of anaesthesia is shortened. Haemorrhage rapidly ceases, in most cases without ligaturing, and a smooth tonsillar bed remains. The dissection of tonsils in children is rapid and easy, with freedom from shock and post-operative bleeding.

Messrs. Mayer and Phelps, of New Cavendish-street, W., have kindly made this dissector for me.

E. GWYNNE-EVANS, M.B., B.S. Lond.

FIG. 6

Gwynne-Evans' tonsils dissector publication. Reprinted from *The Lancet*, 226, Gwynne-Evans E, A new tonsil dissector, 556., Copyright (1935), with permission from Elsevier.¹⁵



However, 6 days after being called to a final hearing with the General Medical Council for a drink driving charge (which he failed to attend citing he was 'too busy reading about the fall of the Roman Empire'), Mr Draffin was found dead in his apartment from a myocardial infarct.¹⁴

Gwynne-Evans tonsil dissector

Mr Eric 'Taffy' Gwynne-Evans (1904–1989) first reported on his new tonsil dissector in *The Lancet* in 1935 (Figure 6), when he was 31 years old.¹⁵ He was a consultant ENT surgeon at St George's Hospital, having previously worked at the Miller General Hospital and in the Victoria Hospital, London.

Gwynne-Evans would be remembered for his years of work in the field of speech and linguistics, for research undertaken analysing the relationships between orofacial structures, muscle behaviour and orthodontic patterns. The culmination of his research work was several scientific papers, and an appointment as honorary fellow of the College of Speech Therapists.¹⁶

Gwynne-Evans was described as being a conservative surgeon and a talented cinematographer. This led to his assisting Sir Terence Cawthorne in the illustration of the technique of labyrinthectomy at the 4th International Congress of Otolaryngology in 1949.¹⁶ He married Betty McDonald King in 1932 and was survived by a son and daughter.

Mollison pillar retractor

Mr William Mayhew Mollison (1878–1967) was a British ENT surgeon at Guy's Hospital.¹⁷ He also spent time assisting Walter Howarth in his editorship of *The Journal of Laryngology & Otology*.¹⁸

He was born in Cambridge in 1878, the son of William Loudon Mollison, the latter of whom had risen from humble beginnings to become a leading mathematician and master of Clare College, Cambridge.¹⁷ Mollison Jr married Beatrice Marjory Walker in 1908, with whom he shared six children. One of his children was Professor Patrick Mollison, a pioneer in blood transfusion in World War II, who performed the first exchange transfusion on a British newborn with blood poisoning from rhesus incompatibility.¹⁹

Luc's forceps

Dr Henri Luc (1855–1925) is considered the father of French otorhinology.²⁰ His practice examined the relationship between inflammation of the nose and ear, and was devoted to the treatment of frontal and maxillary sinus disease. He gave the first description of his operation on the maxillary sinus in 1897 (independently described by the American physician, George Walter Caldwell).²⁰

Dr Luc was born in Saint-Omer in 1855. He was a successful student at Lille, and was appointed prosector at the age of 20 years. He undertook medical studies in

Paris, and completed his doctorate in 1884. His specialisation in otolaryngology evolved in Vienna, under the traineeship of Adam Politzer (the otology pioneer) and Leopold von Schrotter.²⁰

Denis Browne forceps

Whichever of his various talents he was exploiting – playing tennis at Wimbledon, lecturing students at home or pundits abroad, coping with a baby's cleft lip or club foot – he gave everything he had, with towering energy.²¹

Sir Denis John Wolko Browne (1892–1967) (Figure 7) was an Australian paediatric surgeon and a founder of the British Association of Paediatric Surgeons.^{22,23}

He was born in Toorak, Melbourne to his native-born parents of high social standing. He was educated privately and completed his medical studies at The University of Sydney, gaining his Bachelor of Medicine degree in 1914.

Perhaps his sporting prowess was heralded by his towering frame; he was given the Aboriginal name 'Wolko' meaning 'big man' at birth as he was 'extra-long'. He won 'Blue' awards (for competition at the highest level) in shooting and tennis, and excelled at billiards, golf and horsemanship.²³



FIG. 7

Sir Denis John Wolko Browne (1892–1967). Reproduced from [Sir Denis Browne (1892–1967) and congenital deformities of mechanical origin, Dunn PM, 90, F88–91, 2005] with permission from BMJ Publishing Group Ltd.²²

At the age of 23 years, Browne was appointed captain in the Australian Army Medical Corps as part of the Australian Imperial Force. His assignments included regimental medical officer with the 13th Light Horse Brigade at Gallipoli, 12th Field Ambulance in France and 3rd Australian Auxillary Hospital in England (as a major).²³

It was in England where Browne's surgical ability became noticed, and he was permitted leave to gain experience under the orthopaedic surgeon Sir Robert Jones at the Royal Southern Hospital in Liverpool. He later resigned from the Australian Imperial Force to work in Middlesex and London hospitals.²³

In 1922, Browne completed his Fellowship of the Royal College of Surgeons qualification and took up employment as resident medical superintendent at The Hospital for Sick Children, Great Ormond Street, London.²³ In 1927, he married the Australian novelist Helen de Guerry Simpson. Helen died in 1940 leaving their one daughter, Clemence. Browne later married Lady Moyra Ponsonby, a trained nurse.²³

In 1928, Browne rose to the role of consultant surgeon at Great Ormond Street where his original thinking flourished. Here, he developed a technique for cleft palate and hare lip repair, recommended 'controlled movement' for treating talipes and congenital hip dislocation, and better defined imperforate anus and undescended testes.²³ He was regarded as a pioneer of neonatal surgery, and advocated specialised skills, techniques and instruments for operating on the young.

Browne travelled widely to lecture, and was awarded multiple honorary memberships. He was awarded the Hunter professorship four times. Among his many accolades, Browne was appointed as Knight Commander of the Royal Victorian Order by Queen Elizabeth II and the Légion d'honneur (Legion of Honour) by the French government. He was made an honorary fellow of the Royal Australasian College of Surgeons in 1965, and in 1967 he served as president of the International College of Surgeons.²³

Boyle–Davis mouth gag

Dr Henry Edmund Gaskin Boyle OBE (1875–1941) was a pioneer anaesthetist, credited with the early development of anaesthetic machines.^{24,25}

He was born in Barbados, before moving to England to complete his medical qualification. In 1901, he completed the Membership of the Royal College of Surgeons Licentiate of the Royal College of Physicians ('MRCS LRCP') qualification at St Bartholomew's Hospital, where he was appointed as junior anaesthetist, and subsequently as a visiting consultant.^{24,25}

During the World War I effort, Boyle employed his nitrous oxide, oxygen and ether anaesthetic method in his work for the Royal Army Medical Corps in London. He was awarded the Officer of the Order of the British Empire title for his work.^{24,25}

Dr Boyle's innovation led to the development of his own continuous-flow machine. His left-handedness led to machines the world over being left-handed until being revised in the 1950s.^{24,25} Dr Boyle served as president in the anaesthetics section of the Royal Society of Medicine (1923), was a founding member of the Association of Anaesthetists of Great Britain and Ireland, and was an examiner for the Diploma of Anaesthesia.^{24,25}

In 2000, Boyle was honoured at St Bartholomew's Hospital, which renamed their department the 'Boyle Department of Anaesthesia'.^{24,25}

Conclusion

In an endeavour to uncover the hidden historical context of our tonsillectomy tray, what is revealed is an esteemed and highly diverse group of surgeon inventors. Their stories span two centuries of medicine, featuring England, the USA, France and Australia, and joining together the specialties of general surgery, otolaryngology, gynaecology, paediatric surgery and anaesthetics. It is hoped that the next time the reader selects an eponymous instrument from their own instrument tray, they may look upon it with heightened appreciation and curiosity of the story behind it.

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