History of Medicine

George Warwick Bampfylde Daniell
M.R.C.S. (Eng.), L.R.C.P. (Lond.), 1864 - 1937

N. P. PARBHOO

Summary

In 1907 Dr G. W. Bampfylde Daniell was the first doctor to be appointed an anaesthetist in a South African hospital. Little is known about his work but due acknowledgement must be made to his pioneering efforts to place anaesthesia on a sound scientific basis, and to his various contributions towards making the specialty safe and comfortable. During his career in South Africa, he played an active role in the then Cape of Good Hope, Western Branch, of the British Medical Association.

Dr George Warwick Bampfylde Daniell was born in 1864, 18 years after Morton’s successful demonstration of ether anaesthesia. His father was the Reverend G. W. Daniell of Kenbury, Devon, England. He received his medical education at St. George’s Hospital, London, and qualified M.R.C.S. (Eng.), L.R.C.P. (Lond.) in 1888. The following year he came to the Cape, joining the British Medical Association in 1892 and settling in Caledon as a general practitioner. He married the daughter of Mr J. B. Evans of Rietfontein, Cape, remained in Caledon till 1897 and during this period took a particular interest in the Caledon Baths. While Medical Superintendent to the Caledon Mineral Baths Sanatorium and Medical Officer of Health to the Caledon Municipality, he wrote The Climate and Mineral Waters of Caledon, South Africa, an excellent history of the inception of the Caledon Baths Sanatorium and the work done there. This book was published by John Bale, Sons & Daniellson, Ltd of Oxford Street, London, in 1902. In the foreword Daniell stated: ‘I am confident that the medical value of the waters as a curative agent in some of the many diseases is not too widely known. The fact of the Caledon waters being ferruginous and at the same time thermal is undoubtedly of vast importance.’

Daniell was a great proponent of balneotherapeutics and thermotherapeutics and recommended both drinking and bathing in the Caledon spring waters which he considered invaluable for: (i) anaemia, chlorosis, malarial cachexia, convalescence from acute diseases of any kind; (ii) scrofula; (iii) rheumatism; (iv) gout and rheumatic gout; (v) neuralgia, sciatica, chorea and hysteria; (vi) Bright’s disease; (vii) diseases of women; (viii) chronic diarrhoea; (ix) skin diseases; (x) certain diseases of the respiratory tract; (xi) liver diseases; and (xii) surgical diseases.

He also mentions that in the period 1895 - 1896 the number of bathers was 95935, a staggering number of visitors for one year. However, he was careful to mention that it would be a mistake to imagine that the water would cure all and every complaint. To those who were ill because of indulgence in the pleasures of the table or excessive use of alcohol and tobacco, he advised strict discipline.

In addition, Daniell published for private circulation a paper ‘The mineral waters of Caledon’ written for the Medical Congress in Cape Town 1897. This was an amplification of a paper published in the Journal of Balneology and Climatology in October 1901, and written in Caledon in December 1900.

As a result of his enthusiastic interest in this subject, Daniell was elected a member of the British Balneological and Climatological Society as well as a Fellow of the Royal Society of Medicine (Fig. 1).
Specialising in Britain

During the Anglo-Boer War (1899 - 1902), Daniell took up a post as Civil Surgeon, but when the war ended he returned to England to devote his time to anaesthesia. He held several appointments there which he listed in his personal Anaesthetic Register at present in the Africana Section of the University of Cape Town Medical School Library. An extract from page 241 of his register reads: 'At the following London hospitals I have worked and acted as anaesthetist: St. George’s as a student, 1886 - 1888; St Mark’s, 1902; West London, 1902 officially; Tottenham Hospital, 1902 - 1903 officially — gave chloroform of ethyl, administered in that hospital for the first time; Evelina, 1903 — gave chloroform of ethyl for the first time administered in that hospital; Edinburgh. Practised as anaesthetist in Edinburgh from July 1st, 1903 to December 31st 1904 in partnership with Dr T. D. Luke. Lecturer in anaesthetics to the Royal Infirmary Surgical Ward; Administrator in anaesthetics to the special dental department where I gave chloroform of ethyl and nitrous oxide gas for the first time in that department and several other mixtures, a number of which are recorded; Deaconess Hospital. Anaesthetist and instructor. Have given anaesthetics for a number of surgeons in 15 nursing homes; Demonstrated ethyl chloride, Somnoform, etc. at Scottish branch of British Dental Association at Dental Hospital, Edinburgh.'

Daniell’s Anaesthetic Register is a meticulous record of his problematic cases while in England. Among the entries are the following: laryngeal spasm under chloroform; dilated pupils under chloroform; administration of ethyl chloride to lunate; Cheyne-Stokes respiration under chloroform; surgical shock under chloroform ether mixture; reflex movements under deep ether anaesthesia; ether given in advanced strangulated hernia; and symptoms of circulatory failure after Somnoform.

A few of the surgeons for whom he acted as anaesthetist were J. M. Cotteril, C. W. Cathcart, Arthur E. Giles, D. Guy, Logan Turner, Alexis Thomson, Harold J. Stiles, Girdwood and S. Paget.

He recorded unabashedly in his Register: 'Failure to produce satisfactory anaesthesia under nitrous oxide and oxygen. West London Hospital 1902. Strong muscular young man. No satisfactory depth of anaesthesia. Strong type of patient for this mixture. Changed to ether and all went well!'

Another entry: 'Vomiting when deeply under ether. West London Hospital. Operator: Mr S. Edwards F.R.C.S. Operation: nephrectomy R kidney. Patient: M, aged 23. Nitrous oxide and ether, going on all through with ether. Patient placed on his right side well over, almost completely on his abdomen causing impairment to his respirations and a little dizziness. Rather more mucus than usual. Kept mouth open with Mason’s gag and jaw pushed forward. Tongue rather swollen and was sucked back on inspiration. Considerable shock with dilated pupils due to manipulation of kidney. When HS pushed the kidney towards the wound from the abdomen, the contents of the stomach were evacuated through the mouth and nose, the patient being deeply under at the time. Lightened anaesthesia towards the end of the operation with good results on pulse. General condition — good recovery and no vomiting after.'

Anaesthetic equipment and vehicles

Daniell’s keen interest in anaesthesia started early in his career. He was interested not only in the use of agents other than ether and chloroform, but in developing and modifying existing anaesthetic equipment to make administration of the newer agents safer and simpler. In one of his first publications in 1903, he introduced his improved bag-mount modification of Dr F. W. Hewitt’s large-bore ether inhaler of the clover pattern. This was for the administration of nitrous oxide or ethyl chloride with ether. If it was decided to give ethyl chloride instead of nitrous oxide, all that was necessary was to remove the rubber gas tubing from the metal plug terminal and replace it by a small graduated glass phial to which was attached a short piece of rubber tubing. By gradually tipping up the phial, the ethyl chloride entered the inhaler slowly so that the vapour was presented at first much diluted, thus making the anaesthesia less unpleasant to the patient and quite satisfactory to the administrators since coughing, holding the breath and struggling were avoided. The apparatus was made by Messrs G. Barth & Co of London and was sold complete for £11.0.

Subsequently there appeared several articles advocating the use of ethyl chloride as a general anaesthetic. With his personal experience numbering over 1000 administrations, he was convinced ‘that if properly administered and to suitable cases, it will be found, for short operations at least, one of the safest and most convenient anaesthetics we possess’.

Daniell was well aware of the dangers of vomiting and suggested that the patient should abstain from food for 3 or 4 hours before administration of anaesthesia. ‘It should not be given soon after a heavy meal.’ He found ethyl chloride to be a pleasant agent for children and often anaesthetised by spraying the agent on a towel or handkerchief made into the form of a cone. In 1906, after the reports of 2 fatalities, he concluded that the drug was by no means as free from risks as was at one time thought. However, he was undeterred and stressed that, as he had mentioned 3 years before, he would strongly recommend intending administrators to see it given by an experienced anaesthetist first, and to administer it under guidance several times and to several types of patients, before attempting to give it to their own patients.

Return to Cape Town

Daniell returned to Cape Town in 1906 and started practice as an anaesthetist at 44 Mansion House Chambers, Adderley Street. A year later, he made history by being the first anaesthetist to be appointed as such to a hospital in South Africa. The hospital was Johannesburg General, situated near the centre of a gold reef that contributed nearly half of the world’s gold output. This date is significant, for although surgical anaesthesia, one of the most humane discoveries in history, was introduced in 1846 its potential was not truly exploited in the USA until the first decade of the twentieth century.

Daniell was gifted with an enquiring mind and great foresight. While anaesthesia was still in its infancy, he was absorbed with the various theories, chemistry and physiology of general anaesthesia. In a paper read before the Transvaal Medical Society in 1908, he delved to great depths on this subject. Many of his observations are still valid today. He stressed the importance of alleviating the anxiety of patients about to undergo operations. He discussed at length the need for admitting patients a few days before operation, ‘so that they may become used to their surroundings, as well as providing adequate time for the anaesthetist to visit and examine him and prescribe morphia or a dose of opium the night before’. Extremely kind, he recommended that anaesthetising rooms should be devoid of anything at all likely to cause alarm and that absolute quiet should be maintained.

For reasons unknown, Daniell’s appointment to Johannesburg Hospital was held for only a short period before he returned to Cape Town in 1908 to acquire the practice of the late Dr Arderne Wilson. While in general practice, he continued
to work in anaesthesia. The post he had vacated at Johannesburg Hospital was filled by Dr Frank Burnand Mudd.

Among Daniell's correspondence, I came across a letter dated 12 June 1909 stating that he had been elected an Honorary Member of the Transvaal Medical Society in accordance with Regulation 24: 'It shall be competent for the Society to elect, as Honorary Members, men eminent in medicine or the kindred sciences, or former members of the Society who have left the country and whose the Society shall deem worthy of honour.'

That Daniell was a professional, there is no doubt. He was also an insatiable 'gadgeteer.' Some of his earlier modifications of apparatus and original designs were displayed at the Collection of Exhibits in the Anaesthetics Museum of the British Medical Association 1910 London Meeting, then under the presidency of Dr Frederic W. Hewitt.

In a paper published in October 1913, Daniell covered the field of dental anaesthesia. He considered the extraction of a large number of teeth a serious affair and held that it was wiser to approach the matter more on the lines of a major surgical operation. In considering types of patients he mentions: 'I do not mind the alcoholic by any means so much as the excessive smoker. A large proportion of the most troublesome cases I have had to deal with have been heavy smokers. In dental work in such cases jaw spasm is the chief trouble. Possibly the continual holding of a pipe develops the masseters and other jaw muscles. I like to put in a. small prop from the first. Remember the best way to open a jaw with a Ferguson's gag is to do it with a jerk, i.e. take the muscles by surprise as it were.' Further: 'I only mention chloroform in connection with dental surgery in order to condemn its use.'

In 1918, he described his improved apparatus for the administration of warmed ether vapour. The air from the bellows, instead of passing directly through the ether, was first heated by being passed through a loop of copper tubing placed within a spiral coil immersed in hot water contained in a large thermos flask. This increased the evaporation of the ether, thereby producing a high percentage of ether vapour, and at a steady and uniform strength. This apparatus was made by Messrs Mayer, Meltzer & Co., medical instrument manufacturers of Cape Town.

Over the next 14 years, Daniell continued his contributions to the anaesthetic literature, on subjects as varying as 'Impurities and decomposition of chloroform', 'The influence of high altitude on general anaesthesia' and 'The use of nitrous oxide and oxygen in anaesthesia' and his interest in the development of anaesthetic apparatus continued.

Back to specialist practice

In 1919 Daniell was once again appointed a specialist anaesthetist, this time to New Somerset Hospital. He was appointed Lecturer in Anaesthetics at the University of Cape Town in 1921. The anaesthetic staff at New Somerset Hospital had grown and in 1920 included Drs G. W. B. Daniell, A. Gordon Forbes, P. W. J. Keet, J. Mitchell and J. F. Wicht. It must be recalled that the Medical Faculty of the University of Cape Town was able to offer the full course for the degrees of M.B. and B.Ch.B. only from 1920 onwards. In 1919 proposals had been made that appointments for clinical lecturers for the University of Cape Town be made from the staff of New Somerset Hospital. Specialisation started appearing in 1922 when the Departments of ENT and Ophthalmology were 'recognised' by the University of Cape Town. In the same year, anaesthesia, venereal diseases and vaccination were introduced as new subjects.

One must surmise that Daniell played a major role in having anaesthesia taught as a subject; he instituted a course of 12 lectures on the theory and practice of general surgical anaesthetics. This included the following subjects: Properties and impurities of the chief agents employed; their physiological action; the preparation of the patient; the administration of nitrous oxide alone; with air and with oxygen; various methods. The administration of ether; chloroform; ethyl chloride; anaesthetic mixture; sequences and alterations. (Apparatus will be shown in connection with the above and may be examined by the students.) The selection of anaesthetics, sequences and methods, in ordinary routine cases; the selection, etc. in particular cases. The state of the patient; the nature of the operation; the use of morphia and other alkaloids in conjunction with anaesthesia; difficulties and dangers in administration; their causation; prevention and treatment; shock in its relation to anaesthesia; the recovery and after condition of the patient. Practical instruction will be given in the operating theatre of the Somerset Hospital every Tuesday from 12 - 4, also in the dental department by arrangement.

Daniell often gave lectures at home. These frequently ended as social gatherings with students being entertained to tea —or something stronger.

In 1923 Daniell retired from New Somerset Hospital.

BMA activities

As a member of the British Medical Association (BMA), Cape of Good Hope, Western Branch, Daniell contributed regularly to its activities by reading several papers on the subject of anaesthesia, as well as demonstrating anaesthetic equipment. This was done at the library of the University buildings, Queen Victoria Street, Cape Town, and at the new premises at 35 Wale Street. In 1919 he was elected a member of the Ethical Committee and in 1921, a member of the Science Committee.

In November 1923, Daniell was elected Vice-President of the Cape of Good Hope (Western Branch) of the BMA. The Committee then consisted of: President — Dr Jones-Phillipson; Vice-Presidents — Drs Sandes, Kruger, Bamfylde Daniell; Secretary — Dr A. Keith Fraser; Treasurer — Dr Du Toit; Council — Drs Elliot, Saint, Drennan and Higgins. Total membership in that year was 169. The clock in the present boardroom of the Medical Association of South Africa, Cape Western Branch, was presented in his memory by his wife.

Before retiring, Daniell acted as representative of the Branch at the Annual Representative Meeting of the BMA in Portsmouth in 1923, Dr C. M. Murray being Branch President at that time.

In 1932, while resident at the Marine Hotel, Hermanus, Daniell was invited to become a Vice-President of the section of anaesthetics (including psycho-anaesthesia) at the BMA Centenary meeting; he accepted and attended the meeting in London in July 1932.

Dr Royden Muir, who in 1923 joined Dr Daniell in partnership and succeeded him at Somerset Hospital, wrote in 1934: 'In those days chloroform was practically the only anaesthetic and surgeons for some time were inclined to resent its being substituted by other drugs. With much perseverance Dr Daniell persuaded the profession that ether, skillfully given, gave better results and was infinitely safer, that nitrous oxide and ethyl chloride were valuable anaesthetic agents, that oxygen in cylinders contributed to the safety and comfort of every anaesthetist and should always be available, and that a man who devoted his time solely to anaesthetic work produced much better anaesthetic results. And so our specialty came into being in South Africa.'

Little is known about his retirement except that he settled at 'St Leonards', 5 Harrismith Street, Grahamstown, in about 1935. On 16 January 1937, while on his way to Cape Town
with his wife, with the intention of making the journey in easy stages, he died at the Hotel Elizabeth in Port Elizabeth, presumably from heart failure, at the age of 73. His health over the past few months had not been good. Dr Daniell left a wife and two sisters who were in England. The funeral on 20 January 1937 was conducted in Grahamstown Cathedral and in the new Cemetery by the Reverend Hyde Smith (personal communication — the Very Reverend Dean R. T. Barker of the Cathedral of St Michael and St George, Grahamstown, and Cory Librarian).

Obituaries appeared in the British Medical Journal, the Eastern Province Herald, the South African Medical Journal, The Lancet and the Cape Argus. Two are worth quoting. Dr D. P. Marais wrote: ‘George Warwick Bampfylde Daniell has died. In the recollection of thousands of his patients he remains as an inspiring pillar of strength in their hour of need. To his colleagues he showed a personality of great charm, of high culture and great understanding. … The profession has lost an outstanding exponent of all that was best in the art of medicine in the conquest of pain. To see Daniell give an anaesthetic to a nervous and fear stricken case was a fine demonstration in applied psychology. … His long training as an anaesthetist in the early days before the development of complex apparatus made him an artist of rare skill and a reliable partner in the surgeon’s work.’

Dr Jones-Phillipson, who served with him on the same Committee of the local BMA Branch in 1923, wrote: ‘All those who were privileged to come into close contact with the late Dr G. W. Bampfylde Daniell will feel deeply grieved at his death, marking as it does the passing of a great gentleman, a skilled anaesthetist and a staunch friend. He was a master of his art, cool headed, able to exercise remarkable control and never ruffled in the operating theatre, where he treated everyone with courtesy, tact and consideration. … His work was for safety and thoroughness. He was not one who thought that everything new in anaesthetic work was good because it was new, but at the same time he was constantly advancing in his methods. His anaesthetics always gave one the idea of simplicity because he was so calm and deliberate. … His memory will long remain an inspiring example to those who follow, and he will be missed and mourned by those who loved him and worked with him.’

I wish to thank Professors A. B. Bull and G. G. Harrison and Dr J. Ozinsky for reviewing the manuscript and Miss J. Garschagen for typing.

Appendix

G. W. B. Daniell — list of publications
2. A simple method of administering chloride of ethyl and Somnoform alone or in conjunction with nitrous oxide or ether; and a new method for their administration. Br Med J, 23 April 1904.
6. Records of 100 administrations each of chloride of ethyl and of somnoform alone and in mixture with nitrous oxide. Lancet, 21 October 1905.
12. Chloride of ethyl as a general anaesthetic in dental surgery (a paper read before the Dental Society of the Cape of Good Hope). S Afr Med Record, 10 March 1907.
14. The routine examination of the heart previous to the administration of chloroform or any general anaesthetic. S Afr Med Record, 25 February 1909.

BIBLIOGRAPHY