

## Section of Anæsthetics

President—B. L. S. MURTAGH, M.B., F.F.A. R.C.S.

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MEETING TO COMMEMORATE THE CENTENARY OF THE DEATH OF JOHN SNOW

### John Snow's London Associations

By GEORGE EDWARDS, L.R.C.P., M.R.C.S.

*London*

THE year 1958 is the centenary of John Snow's death and we pay tribute to the memory of one who has rightly been called the first specialist anæsthetist. He died at the age of 45, a short life by our standards. Nevertheless, in his limited time, John Snow proved himself to have been an anæsthetist without equal, and also a brilliant epidemiologist. He carried out an investigation into the causation of a cholera epidemic which was not only an invaluable contribution towards the control of that scourge but was also a classical example of how such researches should be made [1, 2].

There are many ways in which the task of recounting Snow's great qualities could be approached and I propose first to consider the various societies and establishments to which Snow belonged and then to enumerate the memorials which remain to his honour.

John Snow arrived in London in the autumn of 1836 having travelled from his home in York by a surprising route: he went first to Liverpool and then proceeded on foot through North and South Wales and Bath. In London he enrolled at the famous Hunterian School in Great Windmill Street. A year later he became a student at the Westminster Hospital, recently installed in its new building in the Broad Sanctuary, across the road from the West Door of the Abbey.

On May 2, 1838, Snow satisfied the examiners and was enrolled as a Member of the Royal College of Surgeons. He looked for a house-appointment at his Hospital but discovered that there was a regulation requiring candidates to have "passed Apothecaries' Hall", as the phrase went. He took this examination but by the time this had been done it was October and all the house-offices were filled. He therefore went straight into practice and put up his plate at 54 Frith Street, Soho, a short distance from his student lodgings at 11 Bateman's Buildings.

At first, not unexpectedly, he had much time to spare, and he occupied part of it as a clinical assistant at the neighbouring Charing Cross Hospital. He also took the opportunity to read in the library of the College of Surgeons where it was later said of him that he had been "a quiet man who read slowly and was not too proud to ask for a translation when an original bothered him". The reading he was able to do was put to good purpose; for in 1843 he took the M.B., B.S. of the new University of London and in 1844 his name appeared in the First Division of the M.D.

Such then was the metropolitan scholastic career of John Snow, remarkable for its wide extent—the Hunterian School, the Westminster Hospital, the College of Surgeons, the Society of Apothecaries, Charing Cross Hospital, and the University of London. We must also

recall the basis on which this achievement was founded—the apprenticeship to Mr. Hardcastle of the Newcastle Infirmary (where Snow's name appears in the first list of students in the new Medical School) and the work as general assistant first to Mr. Watson of Burnopfield and later to Mr. Warburton of Pateley Bridge.

As a young doctor with ideas Snow, of course, needed a forum in which to expound them: and this he found in the Westminster Medical Society. Richardson [3], Snow's friend and immediate biographer, tells us that "at first he was very timid and although he always spoke to the point he found it difficult to obtain favourable notice. At first nobody replied to what he had said. After a while some grave counsellor condescended to refer to him as the 'last speaker'. Then someone bolder still 'concurred with Mr. Snow'". All this sounds very natural and to it must be added Snow's own later view that "upon this early connexion with the Westminster Medical depended his continuance in London and all his succeeding scientific success".

In 1849 the Medical Society of London was re-organized to include the Westminster Medical Society. In 1852 Snow was the Orator of the new joint Society; he spoke on "Continuous Molecular Changes more particularly in Relation to Epidemic Disease" [4]. In March 1855 he was inducted as President and visitors to the Society's rooms in Chandos Street may find his name in the list of Presidents which adorns the pilasters of the meeting-room.

Other learned bodies which had the honour of numbering Snow among their members were the Epidemiological Society, the Pathological Society, The British Medical Association, and the Royal Medical and Chirurgical Society, forerunner of the Royal Society of Medicine. Those to which he was most closely attached, however, appear to have been the Medical Society of London and the Epidemiological Society.

Snow's earliest anæsthetic administrations were to the Dental Out-patients at St. George's Hospital and they were so successful that he was almost immediately asked to anæsthetize for major surgery. His first in-patient case was one of ulceration of the cartilage of the ankle-joint and the operation took place on January 14, 1847.

Very shortly afterwards he was invited to demonstrate his methods at University College Hospital, where in December 1846, Liston had performed the famous thigh amputation under ether anæsthesia. Liston was at this time in the last months of his life and it is said that he was very much pleased by Snow's manner, by his methods and by their success.

Snow's work at these two hospitals is recorded in his book "On the Inhalation of the Vapour of Ether in Surgical Operations" [5], which he published in September 1847, less than a year after the introduction of ether at Boston.

Probably the most successful and certainly one of the most active surgeons in London in the 1850s was Mr. (later Sir) William Fergusson. Snow became his anæsthetist both in private and at King's College Hospital, then situated in the Aldwych. We read in his case reports that he was also called in upon occasion to Charing Cross Hospital, St. Mark's Hospital, the Orthopædic Hospital and St. James' Infirmary: an almost unrivalled list. In addition he also worked for a period of twenty months at the Brompton Hospital, London, observing the effects of various drugs when given by inhalation. The drugs he tried included morphia, stramonium, hydrocyanic acid and "conia" and his findings were reported at a meeting of the Medical Society of London in 1851 and published in the *London Journal of Medicine* [6].

In the year 1845 Snow had been ill with signs of renal disorder. On his return from a holiday in the Isle of Wight he was appointed Lecturer in Forensic Medicine at the Aldersgate Street School of Medicine. This establishment had been opened with the idea of attracting the students of St. Bartholomew's Hospital, but its relations with that hospital seem to have been neither very close nor very happy. The School collapsed in 1849 and Snow with the other teachers was held responsible for the financial deficit which appeared.

It is of interest to note that the hospitals at which Snow was taught were those of Newcastle, Westminster and Charing Cross. Those at which he was regular anæsthetist were St. George's, University College and King's College.

Of the memorials that still remain to us of John Snow the most important are his two masterpieces—"On the Mode of Communication of Cholera" and "On Chloroform and Other Anæsthetics". The "Cholera" was published in its full form in 1855 being largely made up from a pamphlet of 1849 with various subsequent papers. The proof of its quality is to be seen in its re-publication in 1936 by the Commonwealth Fund of America followed by a second re-publication in 1949. The "Chloroform" and the sad story of its all-but-completion by Snow's hand are familiar to all.

Other memorials record his last resting place, and the various places where he lived

and worked. Snow's tombstone is in the Brompton Cemetery, and successive inscriptions recount its history:

TO JOHN SNOW, M.D.  
 BORN AT YORK  
 MARCH 15th, 1813  
 DIED IN LONDON  
 JUNE 16th, 1858.  
 IN REMEMBRANCE OF  
 HIS GREAT LABOURS IN SCIENCE  
 AND OF THE EXCELLENCE  
 OF HIS PRIVATE LIFE AND CHARACTER  
 THIS MONUMENT  
 (WITH THE ASSENT OF  
 MR. WILLIAM SNOW)  
 HAS BEEN ERECTED OVER  
 HIS GRAVE  
 BY HIS PROFESSIONAL BRETHREN  
 AND FRIENDS.  
 RESTORED IN 1895  
 BY SIR BENJAMIN W. RICHARDSON, F.R.S.  
 AND A FEW SURVIVING FRIENDS.

In 1937 a distinguished American anæsthetist was in London and requested Professor Sir Robert Macintosh to take him to see the grave. They found the stone somewhat dilapidated. A small fund was at once organized for its repair, and the following words added:

INSCRIPTION RESTORED IN 1938 BY MEMBERS OF  
 THE SECTION OF ANÆSTHETICS OF THE ROYAL  
 SOCIETY OF MEDICINE AND ANÆSTHETISTS IN  
 THE UNITED STATES OF AMERICA.

In April 1941 a bomb fell very close to the tombstone, which was not a very solid structure, and the explosion caused its almost complete disintegration. Ten years later the Association of Anæsthetists raised a fund and replaced the original by a solid block of Portland stone made in as exact a replica as possible. This new stone with a further appropriate inscription on its base was unveiled by Miss Una Snow on September 6, 1951.

In 1946 the centenary of ether anæsthesia was celebrated, and a commemorative plaque was then installed at the Royal College of Surgeons, bearing on it the names of the four British pioneers of the art and science of anæsthetics—Hickman, Simpson, Snow and Clover.

In his later years Snow lived at 18 Sackville Street, a house now given over to commercial use, and on which, in 1949, the London County Council put up a commemorative plaque. A letter written by Snow from that address to the Secretary of the Royal Institution still exists. It reads—"Dear Sir, I am sorry that you are an invalid and require to undergo an operation, but I shall have much pleasure in calling on you at two o'clock on Friday next in order to administer chloroform and prevent you from having the pain of the operation. Yours very truly, John Snow". This letter found its way back from Albemarle Street to Sackville Street to the shop of Sotheran the bookseller, and is now in the Library of the Medical School of St. George's Hospital at Hyde Park Corner.

Next we come to a somewhat less happy memorial. The site of the famous Broad Street Pump is now occupied by a tavern, known for many years as the "Newcastle-on-Tyne". In 1954, the centenary of the famous cholera epidemic, it was suggested to the L.C.C. that a plaque should be erected. The Council pointed out that such a memorial had already been erected in Sackville Street. The owners of the hostelry came forward, however, and decided to re-name it the "Doctor John Snow" and at the next Brewster sessions this was done. The Snow family, however, were far from pleased at this and considered that it was casting a slur on the great man's memory, for he had maintained a life-long devotion to the cause of temperance. Unfortunately, the protest came too late and the inn in Broadwick Street (as Broad Street is now called) is the "Doctor John Snow" complete with painted sign.

Finally, there is the Snow Medal instituted by the Association of Anæsthetists and awarded to those who by their personal distinction have brought honour to the specialty.

John Snow's bookplate carried his motto—"Vive, ut vivas!" He lived a hundred years ago: his fame is higher and more widespread to-day than it has ever been: and his name will be revered as long as there is a science of Public Health and as long as there is an art of anæsthetic administration.

## REFERENCES

- 1 SNOW, JOHN (1849) On the Mode of Communication of Cholera. London.
- 2 — (1855) On the Mode of Communication of Cholera. 2nd edit., much enlarged. London.
- 3 — (1858) On Chloroform and Other Anæsthetics: Their Action and Administration. Edited, with a Memoir of the Author by Benjamin W. Richardson. London.
- 4 — (1853) On the Continuous Molecular Changes, More Particularly in Their Relation to Epidemic Diseases. Being the Oration delivered at the 80th Anniversary of the Medical Society of London. London.
- 5 — (1847) On the Inhalation of the Vapour of Ether in Surgical Operations; Containing a Description of the Various Stages of Etherization, and a Statement of the Result of Nearly 80 Operations in which Ether has been employed in St. George's and University College Hospitals. London.
- 6 — (1851) On the Inhalation of Various Medicinal Substances. London. *London Journal of Medicine*, 3, 122.

## John Snow and the Enlightenment

By M. H. ARMSTRONG DAVISON, M.B.E., T.D., M.D.

*Newcastle upon Tyne*

AT the centenary of John Snow's death, we realize that his achievement is recognizably great, even when placed beside the vast knowledge of medicine which has since accumulated: it appears even greater when placed in its true setting—the work and ideas of the era in which he lived.

Snow, born in 1813, was a child of the period which is called the "Enlightenment", which may be considered to have begun in 1754 with the presentation, by Joseph Black, of his doctoral thesis, "On Magnesia Alba and Other Alkaline Substances"; and which came to an end on October 16, 1846, when Morton demonstrated that anæsthesia with ether was a practical reality.

The advances of the "Enlightenment" were not often obvious medical improvements. The work of Priestley, Lavoisier, Auenbrugger and Laennec did little at the time to improve the lot of the patient, while the discovery of vaccination, important as it was, did not lead to any understanding of the processes of disease. At the time of Snow's birth, the only specific curative drugs known were quinine (malaria), ipecacuanha (dysentery) and mercury (syphilis). The many other drugs in the pharmacopœia were of symptomatic benefit only, or of no use at all.

The doctors were ignorant of the cause of disease. Fracastoro, in 1546, had laid down the basis of contagion and infection, and Kircher, in 1658, had attributed plague to an invasion of the body by micro-organisms, but all this had been forgotten. With the overthrow of the classical ideas by such men as Galileo and Newton, the humoral theory of disease was also discarded, but there was nothing to put in its place.

The doctors of John Snow's period were too materialistic to lay the blame for disease upon God, and they were forced, therefore, to admit their ignorance. Consequently, the patients lost faith in their doctors, and the doctors lost faith in themselves. Nor were the doctors in a position to investigate the cause of disease scientifically, for each branch of learning was cut off from its fellows by an almost complete lack of societies and scientific journals. With communications depending on the horse and the sailing-ship, the doctor was separated by an immense gulf from advances, not only in general science, but also in his own particular subject. The doctor, therefore, had to look for the cause of disease within the small horizon which his own eye commanded, and, in this, he was often misled by his ignorance of statistics. These were first successfully employed in the cause of medicine by Louis, when, in 1835, he demolished the theory of Broussais, that bleeding was a suitable remedy for pneumonia.

Naturally, therefore, many doctors constructed for themselves their own systems of medicine, such as Broussais, who decided that gastro-enteritis was the cause of all disease, Cruveilhier, who blamed phlebitis, and Cullen with his theory of nervous irritation. John