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Rab and his Friends

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Abstract

It is not unreasonable to see why medical textbooks come and go. The eternal truths found in anatomy can well be translated from edition to edition, hence the popularity and survival of Cunningham's and Jamieson's textbooks. It is not unexpected that the great textbooks of past such as Thomson and Myles Operative Surgery or Bennett's Textbook of Physiology should have fallen by the way.

A few writings from the past, however, are rarely read and this is to be regretted. One such is John Brown's *Horae Subsecivae*. Much of the work provides somewhat ponderous reading for modern readers who have turned away from Scott to Hemingway to Le Carré. Such readers are hardly likely to relish verbose Victorian writers. However, within his writings John Brown had a masterpiece, namely 'Rab and his Friends', which came in the second series. In a gentle way it describes John Brown's hero, James Syme.

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RAB AND HIS FRIENDS

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Edinburgh has been famous in a variety of ways, not least of which for its surgeons. It is difficult to say who is the greatest of Edinburgh's surgeons but in any discussion it would be impossible to dismiss Syme from the final analysis. It is curious that the greatest accolade that could be given to him was 'the Napoleon of surgery'. It is improbable that any modern surgeon would like his accolade to be 'the Hitler of surgery'.

James Syme was born at 56 Princes Street in 1799. As a boy much of his spare time was spent with Robert Christison working at chemical experiments. Robert Christison subsequently became the Professor of *Materia Medica*. Christison was a notable discoverer of pharmacologically important extracts, e.g. conine, the active principle of hemlock and the therapeutic use of digitalis. Syme, Christison and others founded a Chemical Society which met once a week. As a young man Syme discovered a solvent for india rubber and a process so that cloth could be impregnated with the substance and so

become waterproof. He published his discovery but Mackintosh, a manufacturing chemist of Glasgow, read of the discovery, patented it and made his fortune as well as an eponym. Syme trained in Edinburgh in Medicine and in 1818 he joined the great Liston as a demonstrator and later assistant. Later in 1823, when Liston gave up teaching anatomy, Syme took over the class. In common with others, Syme visited Paris to attend the clinics of Dupuytren and also attended a course of operative surgery. On returning to Edinburgh one of his earliest major operations was an amputation of the hip joint, the first occasion that this operation had been performed in Scotland. The operation was made possible by the assistance of Liston who had incredibly strong hands and who, by pressure, controlled the bleeding. This operation established Syme's reputation as a surgeon. In 1826 he excised the head of the humerus for tuberculosis and 2 years later published a case wherein he excised the lower jaw for sarcoma. This was a remarkable operation, the tumour was an enormous size and the operation lasted 24 minutes. This took place at the time when anaesthesia and asepsis were unknown. Yet, 5 weeks later the patient was well and thinking of resuming his occupation.

A distinct feature of Edinburgh surgery has been of surgical giants dissipating their energy with petty quarrels. About the year 1823 Liston and Syme, who had taught together, worked together, suddenly quarrelled. Differences proceeded to such a degree and with so much acrimony amongst their various friends, that when Syme applied for a surgeonship at the Royal Infirmary, the Managers decided not to appoint him. The managers were concerned that Liston and Syme should openly quarrel in the hospital. Syme was faced with the dilemma of where to operate. Most of his operations were carried out in the home of patients, obviously the most unsuitable of surgical surroundings. He then

decided to establish a surgical hospital for himself and such a surgical hospital was opened by him in Minto House, an old mansion which stood on what is now the north side of Chambers Street. In the first three months 70 patients were admitted and this required that the surgical hospital be extended. His reputation was such as to rival that of the Royal Infirmary.

One of the great points in Syme's career was the publication in 1831 of his Treatise on the Excision of Diseased Joints. He also brought out his Principles of Surgery. In 1833 Professor Russell, Professor of Clinical Surgery, retired and there was a contest between Liston and Syme. Syme was appointed as Regius Professor and became one of the surgeons of the Royal Infirmary. Liston shortly afterwards was offered the Chair of Clinical Surgery at University College, London, which he accepted. Liston remained in London for the remainder of his days and conducted the first major operation under an anaesthetic at University College Hospital in 1846.

Syme introduced a new method of teaching clinical surgery. His method was to bring the cases one by one into a room where the students were comfortably seated. The patient, preferably, had not been seen by the surgeon and the surgeon took the history and worked out the nature of the disease in front of the students. This form of teaching became very popular in Edinburgh. The teacher, either in the presence or the absence of the patient, went on to explain the principles of treatment, his reasons for choosing the method preferred and the last patient would be operated on in front of the class. Such an operation would be done without anaesthetic or aseptic techniques. Syme temporarily went to University College, London, in 1847, but returned to Edinburgh after 6 months.

During the 36 years that Syme held the Chair of Clinical Surgery he was easily the finest of the surgeons in Edinburgh and many of his operations and other contributions to surgical practice are classics in the development of surgery. Half of this period belonged to the days before anaesthetics. His amputation of the ankle joint which goes by his name, was carried out in 1842. He also wrote on the power of the periosteum to form new bone in 1837. It is sad that during his life his career was full of acrimonious quarrels with Liston, his

fellow surgeons and his fellow Professor, James Miller. In 1869 he had an epileptic seizure which was the first of a series of strokes which plagued him until his death in the following year. He was succeeded in the Chair by his son-in-law, Joseph Lister, the man who introduced antiseptic procedures in surgery.

Several people wrote about Syme, Dr. Joseph Bell wrote about him extensively as he worked in his outpatient clinic. But perhaps the best description was given by John Brown (1810-1882). John Brown was a student under Syme at Minto House and later practiced in Edinburgh. Though his practice was not large, he later became famous for essays collected under the title *Horae Subsecivae* amongst which 'Rab and his Friends' is to be found.

"More than 30 years ago Bob Ainslie and I were coming up Infirmary Street from the High Street, our heads together and our arms intertwisted. When we got to the top of the street and turned North we espied a crowd at the Tron Church. "A dog fight," shouted Bob and was off and so was I, both of us all but praying that it might not be over before we got up. Dogs like fighting; Old Isaacs said they "delight" in it and for the best of all reasons; and boys are not cruel because they like to see the fight. Well Bob and I are up and find it is not over. A small thoroughbred white bull-terrier is busily throttling a large shepherd's dog, unaccustomed to war but not to be trifled with." The story describes how the triumphant, victorious bull-terrier next takes on a large muzzled bull-mastiff. "Bob and I remove the mastiff's muzzle and the mastiff kills the terrier. The mastiff belongs to the Howgate Carrier, who carted from the Howgate Inn to Edinburgh. Bob and John frequently met and became firm friends of the mastiff, whose name was Rab. The Carrier's horse was called Jess."

"Six years had passed, a long time for a man, a boy and a dog. Bob Ainslie is off to the wars, I am a medical student and a clerk at Minto House Hospital."

"Rab I saw almost every week on the Wednesday and a much pleasant intimacy developed. His master I occasionally saw, he used to call me Maister John."

"One fine October afternoon I was leaving the Hospital and saw the large gates open and in

walked Rab with that great and easy saunter of his. After him came Jess, now white from age, with her cart and in it a woman carefully wrapped up, the Carrier leading the horse anxiously and looking back. When he saw me, James, (for his name was James Noble), he made a curt and grotesque bow, and said, "Maister John, this is the mistress; she has got a trouble in her breest — some kind of income we are thinking."

"By this time I saw the woman's face; she was sitting on a sack filled with straw with her husband's plaid round her and had his big coat with its large white metal buttons over her feet."

"I never saw a more unforgettable face — pale, serious, lonely, delicate, sweet without being at all what we call fine. She looked sixty and had on a mutch, white as snow with its black ribbon; her silvery smooth hair setting off her dark grey eyes, eyes such as one sees only twice or thrice in a life time, full of suffering, full also of the overcoming of it. She smiled and made a movement but said nothing, but prepared to come down, putting her plaid aside and rising. Had Solomon in all his glory could have been handing down the Queen of Sheba at his palace gate, he would not have done it more daintily than did James the Howgate Carrier when he had lifted down Ailie, his wife."

"Rab led the way into the consulting room, grim and comic, willing to be happy and confidential, Ailie sat down, undid her open gown and her lawn handkerchief round her neck and without a word showed me her right breast. I looked at and examined it carefully. What could I say? There it was, hard as stone, a centre of horrid pain. I got her away to bed. "May Rab and me bide?" said James. "You may; and Rab if he will behave himself." I wish you could have seen Rab. There are no such dogs now. He belonged to a lost tribe. He must have been ninety pounds weight at the least. He had a large blunt head, his muzzle black as night, his mouth blacker than any night. His hide was scarred with the records of old wounds. One eye out, one ear cocked as close as was Archbishop Leighton's father's. Rab had the dignity and simplicity of great size and having fought his way all along the road to absolute supremacy was as mighty in his own line as Julius Caesar or the Duke of Wellington and had the gravity of all great fighters.

I never looked at Rab without thinking of the great Baptist preacher, Andrew Fuller. The same large heavy, menacing, combative, sombre, honest countenance. The same deep inevitable eye, the same look as of sunder sleep, ready, neither man nor dog to be trifled with."

"Next day my master, the surgeon, examined Ailie. There was no doubt it must kill her soon. It could be removed. It might never return. It could give her speedy relief. She should have it done. She curtsied, looked at James and said, "When?" "Tomorrow", said the kind surgeon, a man of few words. She and James and Rab and I retired. I noticed that he and she spoke little, but seemed to anticipate everything in each other. The following day at noon the students came in hurrying up the great stair. At the first landing place on the small well known blackboard was a piece of paper fastened by waifers and many remains of old waifers beside it. On the paper were the words, "An operation today, J.B. Clerk."

"The operating theatre is crowded. Much talk and fun and all the cordiality and stir of youth. The surgeon with his staff of assistants is there. In comes Ailie. One look at her quiets and abates the eager students. That beautiful old woman is too much for them. They sit down and are dumb and gaze at her. She walks in quickly but without haste; dressed in her mutch and her neckerchief, her white dimity short gown, her black bombazine petticoat showing her white worsted stockings and her carpet shoes. Behind her was James with Rab. James sat down at a distance and took the huge noble head between his knees."

"Ailie stepped up on a seat and laid herself down on the table as her friend the surgeon told her. Arranged herself, gave a rapid look at James, shut her eyes, rested herself on me and she took my hand. The operation was at once begun. It was necessarily slow and chloroform was then unknown. The surgeon did his work. The pale face showed its pain and was still and silent."

"It is over; she is dressed, steps gently and decently down from the table, looks for James and then turning to the surgeons and the students, she curtsies and in a low clear voice begs their pardon if she behaves ill. We put her to bed. James took off his heavy shoes, crowned with tackets, heel cap and toe capped and put them carefully under the table."

"For some days Ailie did well. The wound healed 'By the first intention', where James said, "Oor Ailie's skin is ower clean to beil." The students came in quiet and anxious and surrounded her bed. She said she liked to see their young honest faces. The surgeon dressed her and spoke to her in his own short kind way, pitying her through his eyes."

"So far well; but four days after the operation my friend had a sudden long shivering, 'a groosin' as she called it. I saw her soon after; her eyes were too bright, her cheeks coloured; she was restless and ashamed of being so. The balance was lost. Mischief had begun. On looking at the wound, a blush of red told the secret. Her pulse was rapid, her breathing anxious and quick. She wasn't herself as she said and was vexed at her restlessness. We tried what we could. James did everything, was everywhere and never in the way and never out of sight; Rab subsided under the table into a dark corner and was motionless, all but his eye which followed everyone. Ailie got worse, began to wander in her mind. Gently was more demonstrative in her ways to James, rapid in her questions and sharp at times. Her brain gave way. She sang bits of old Psalms, stopping suddenly, mingling the Psalms of David with homely odds and ends and scraps of ballads. One night she had fallen quiet and we hoped asleep. Her eyes were shut. We put down the gas and we sat watching her. Suddenly she sat up in bed, taking her bedgown which was lying on it, rolled up. She held it eagerly to her breast. This was the close. She sank rapidly, the delirium left her and as she whispered she was clean silly, there was a lightening before the final darkness. James returned to Howgate and returned with Jess and the cart. He had an armful of blankets and was streaming with perspiration. He spread out on the floor two pairs of clean old blankets, having at their corners AG, 1794, in large letters in red. These were the initials of Alison Graham."

"I stood till they passed through the long shadow of the College and turned up Nicholson Street. I heard the solitary cart sound through the streets and die away and come again; I returned, thinking of that company going up Liberton Brae and along Roslin Muir, the morning light touching the Pentlands and making them like onlooking ghosts then down the hill through Auchendinny

Woods, past Woodhouselee and as daybreak came sweeping up the bleak Lammermuirs and fell on his own door the company would stop. James would take the key and lift Ailie up again, laying her on her own bed, having put Jess up would return with Rab and shut the door."

Syme appeared to all but his personal friends as somewhat harsh, uncompromising and quarrelsome. Syme expressed his feelings with the utmost candour.

The hostility which he excited in a few was greatly outweighed by the friendship he inspired in many. Syme lacked tact and probably he lacked a sense of humour. Syme was outstanding in a period of unparalleled progress in surgery, and he was seen by his contemporaries as the guiding force, announcing judgement on all that was new and holding fast to old doctrines which he believed well proven. His work on joint disease and aneurysms and his original method of amputation at the ankle joint were accepted by his fellows as his most important contribution to surgery. His textbooks and unique method of clinical teaching were held to be of even more importance, for all his teaching had great influence far beyond the Edinburgh Medical School. Syme entered his career when the repertoire of the surgeon was restricted and when surgery had no scientific background. When he died the field had widened remarkably and with the benefits of general anaesthesia and with the understanding of wound infection, the surgeon was no longer a crude technician. His operations are not used very much at the present time. His ingenious amputation at the ankle joint is now rarely employed. His excision of major joints for tuberculosis are now seldom required and his stricture of the urethra operation is of no importance. But all such operations and his radical approach to tumours and aneurysms were important at their time and from them was built up much of the modern surgical technique. He exerted an influence at least equal to that of Liston, Fergusson, Brodie and other surgical giants of his time. It was his ambition to be a leading surgeon and this undoubtedly he achieved.

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COMPUTED TOMOGRAPHY: A BRIEF HISTORICAL PERSPECTIVE

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Radiology, diagnostic imaging, organ imaging, call it what you will, logically may be regarded as part of the physical examination of a patient. It is a more extreme example of the process that started with the invention of the stethoscope, the process of augmentation of our senses. This process may be extended beyond our normal senses so we may now appreciate the electrical activity of the brain or the heart, using the electro-encephalogram or electro-cardiogram. The very complexity of the technical processes involved, however, tends to make us see them as remote from the diagnostic relationship of patient and doctor.

The diagnosis of diseases of the brain provides us with a unique example of the role of these "augmented senses". The inaccessibility and delicate nature of the brain restrict the diagnostic tools we may use. The presence of a rigid bony box, the skull, protecting the brain prevents us from using our senses directly to examine the organ. Indeed, if we could examine it in our usual manner, the brain tissue might be destroyed by the use of percussion or palpation. The relative opaqueness of bone to X-rays limits the use of almost all plain radiographs. It is this very limitation that has provided an incentive to devise

techniques to demonstrate the brain without damaging the brain tissue.

The purpose of this article will be to document briefly the pursuit of effective "non-invasive imaging methods", to use the current jargon, that has led to computed tomography (Table 1).

TABLE 1: Methods of Visualising the Brain

Method	Image
(1) History and examination of the patient	Imaginary picture of anatomical location of the lesion.
(2) Electroencephalography	Surface electrical activity of the brain.
(3) Skull radiography	Distribution of calcium in the head.
(4) Pneumoencephalography	Position of the cerebrospinal fluid compartment.
(5) Cerebral angiogram	Anatomy of the cerebral blood vessels.
(6) Radio-isotope scan	Distribution of the blood brain barrier.
(7) Echoencephalogram	Position of 3rd ventricle.
(8) Computerised Tomography	Distribution of the radio-density of tissues in the head.