

# Gowers and Osler: good friends ‘all through’

CJ Boes

Professor of Neurology, Mayo Clinic, Rochester, MN, USA

**ABSTRACT** William Gowers and William Osler first met in 1878, and Osler visited Gowers often when in London. Osler dedicated his book *On Chorea and Choreiform Affections* to Gowers in 1894, addressing himself as Gowers’ sincere friend. Two warm letters between Osler and Gowers exist in the Osler Library Archives, highlighting their strong friendship, and Gowers’ son Ernest wrote Osler a letter after the death of his father. Referring to the relationship between William Osler and William Gowers, he noted that Osler had indeed been a good friend to him all through. Osler wrote and edited the first edition of his textbook from 1890 through early 1892, and was influenced by Gowers’ *Manual of Diseases of the Nervous System*. In 1913, Osler commented that Gowers had ataxic paraplegia. Macdonald Critchley disagreed, and felt that Gowers had generalised cerebrovascular degeneration. Osler and Gowers were close friends, and this friendship was mutually beneficial.

**Correspondence to CJ Boes**  
Mayo Clinic Department of  
Neurology  
200 First Street SW  
Rochester  
MN 55905  
USA

**e-mail** boes.christopher@mayo.edu

**KEYWORDS** history of neurology, William Gowers, William Osler

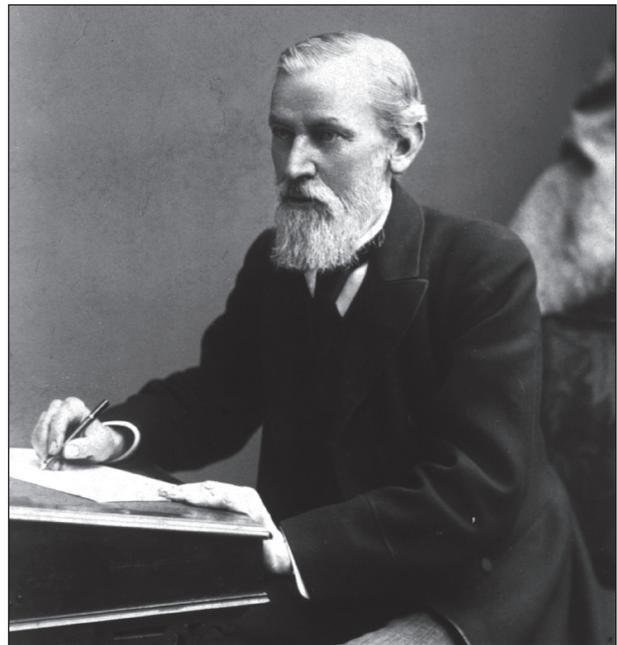
**DECLARATION OF INTERESTS** No conflict of interest declared

## INTRODUCTION

British neurologist William Gowers (1845–1915) stated that, from 1870 to 1890, he ‘did not make a single new friend—working always another medical mine.’<sup>1</sup> Just over 100 years since his death, this paper will highlight an exception to this general statement from Gowers about making lasting friendships during the first 20 years of his neurologic career. It will summarise the evidence supporting the friendship of William Gowers and internist William Osler (1849–1919), outline how their friendship was mutually beneficial, discuss the influence of Gowers on Osler’s neurological writings, and review Osler’s neurological diagnosis of Gowers.

## BIOGRAPHY OF WILLIAM GOWERS

William Gowers (Figure 1) was born in Hackney, England in 1845. He attended Christ Church College School at Oxford on a scholarship, and aged 16, was apprenticed to a country practitioner for two years.<sup>1</sup> Gowers was fascinated by natural history, like many Victorians, and especially enjoyed botany. He began his formal training at University College London (UCL) medical school in 1863. Gowers was raised a strict Congregationalist which was one of the reasons he went to UCL.<sup>1</sup> UCL was established largely as a university for Dissenters, who were excluded from being awarded degrees by Oxford or Cambridge.<sup>1</sup> His teachers at UCL included William Jenner, John Russell Reynolds, and Charlton Bastian. Gowers did well in medical school, and his first postgraduate position was as house physician to William Jenner, who was at that time President of the Royal



**FIGURE 1** William Gowers. Courtesy of the National Library of Medicine.

College of Physicians and physician to Queen Victoria. He was also Jenner’s secretary-assistant, having received the post partly because of his shorthand ability.<sup>2</sup> Gowers commented that ‘the daily intercourse with that intellect was...a privilege inestimable.’<sup>2</sup> He qualified with an MD in 1870.

William Gowers became the first medical registrar at the National Hospital for the Paralysed and Epileptic (the National Hospital) at Queen Square in 1870, and was appointed to the active staff in 1872. He received

accolades for his skill with the ophthalmoscope after he published *A Manual and Atlas of Medical Ophthalmoscopy* in 1879.<sup>3</sup> He also published *Pseudo-hypertrophic Muscular Paralysis* in 1879.<sup>4</sup> In that book, he described and illustrated the peculiar way that patients with Duchenne muscular dystrophy rise from the floor, which was later termed 'Gowers' sign'.<sup>1</sup> In 1880 he published *The Diagnosis of Diseases of the Spinal Cord*.<sup>5</sup> This book illustrated for the first time Gowers' tract (the anterior spinocerebellar tract), and the relationship of the spinal segments to the vertebral bodies.<sup>5</sup> The second edition of this book introduced the term 'knee-jerk'.<sup>6</sup>

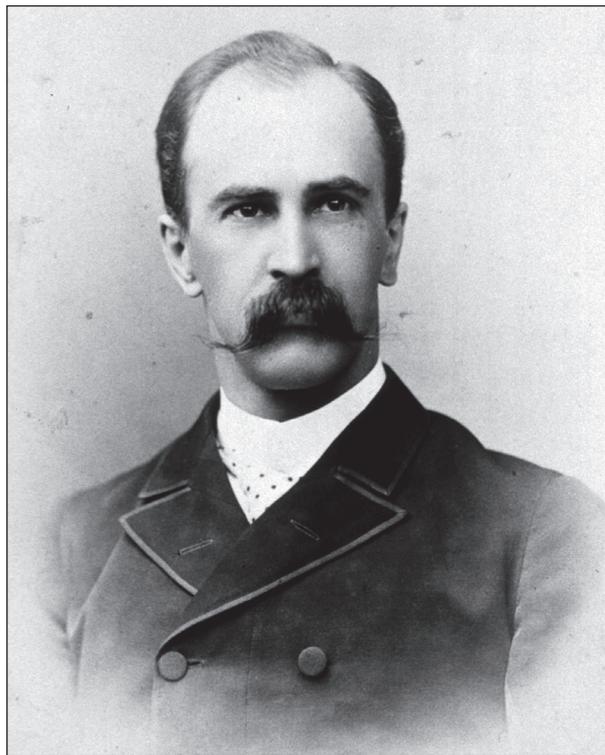
Gowers published volume one of his *A Manual of Diseases of the Nervous System* in 1886, followed by volume two in 1888.<sup>7,8</sup> This work was referred to as the 'Bible of Neurology'.<sup>9,10</sup> It was an exhaustive summary of his experience with neurological disorders. Gowers' mastery of shorthand allowed him to keep detailed notes on patients and these notes informed this book and his neurologic research. The *Manual* was illustrated with Gowers' own drawings. Macdonald Critchley wrote that 'anyone who thinks he has stumbled upon something new or obscure should not neglect to search the *Manual* before claiming originality'.<sup>10</sup>

Based on Gowers' diagnosis, Victor Horsley was the first to surgically remove a spinal cord tumour in 1887.<sup>11</sup> Gowers was knighted in 1897, resigned from the active staff of the National Hospital in 1910, and died in 1915. He was described by Macdonald Critchley as the greatest clinical neurologist of all time.<sup>9</sup> One of his obituary writers commented:

In a previous generation, when neurology was more feared than studied in England, if a man knew this subject well, and especially if he carried an ophthalmoscope ready for use in his pockets, he was probably an old student at Queen Square, and if, in addition, he could write shorthand, almost certainly one of Gowers's house physicians there.<sup>12</sup>

## BIOGRAPHY OF WILLIAM OSLER

William Osler (Figure 2) was born in Bond Head, Ontario, Canada in 1849.<sup>13</sup> He was a student of natural history, and early on learned to explore nature through the microscope. He attended Trinity College in Toronto, graduated from McGill Medical College in Montreal in 1872, and then studied in Europe for two years. From 1874 to 1884, Osler was Lecturer and subsequently Professor at McGill, and served as physician and pathologist at the Montreal General Hospital. He became Professor of Clinical Medicine at the University of Pennsylvania in 1884. In 1889, Osler moved to Johns Hopkins Hospital and became Physician-in-Chief. He emphasised the teaching of clinical medicine at the bedside.



**FIGURE 2** William Osler. Courtesy of the National Library of Medicine.

Osler published *The Principles and Practice of Medicine* in 1892, and it became the dominant medical text in the English-speaking world.<sup>14</sup> He married Grace Gross, the great granddaughter of Paul Revere, that year as well. She had refused to marry Osler before he finished his book. Once he did so, he presented the tome to her and said 'there, take the darn thing; now what are you going to do with the man?'<sup>15</sup> Osler became quite burnt out from his excessive practice demands, and feared for his own health, so in 1904 he accepted the invitation to become the Regius Professor of Medicine at Oxford University, beginning in 1905.<sup>16</sup> Prior to accepting the offer, he sought the advice of his wife, who stated that it was 'better go in a steamer than go in a pine-box'.<sup>13</sup> She felt it was wiser for Osler to take a ship from America to Britain, where his professional pace could decrease a bit, than a coffin from America to the afterlife. Osler was created baronet in 1911, and died in 1919 from complications of pneumonia.

After his death, the idea was advanced that William Osler was perhaps the greatest physician in the history of the world.<sup>13</sup> He was an outstanding clinician, bedside teacher, author, speaker, humanist, historian of medicine, and bibliophile who emphasised that the profession of medicine was a calling and not a business.<sup>17</sup> Although he did important research, Osler was primarily an educator and organiser.<sup>18</sup> Osler proposed his epitaph be 'he taught medicine in the wards'.<sup>17</sup>

## GOWERS AND OSLER: 1870–1890

William Osler first met William Gowers in 1878 when the former was studying in London for the Membership of the Royal Colleges of Physicians examination:

The day of the election [to full physician at Montreal General Hospital] I left...for London to take my Membership of the College of Physicians and to work at clinical medicine. For three months we had a delightful experience...We rarely missed a visit with Bastian and Ringer, and at Queen Square I began a long friendship with that brilliant ornament of British Medicine, Gowers...I mention these trivial details to indicate that before beginning work as clinic teacher I had at least seen some of the best men of the day.<sup>15</sup>

Both men attended the 7th International Medical Congress in London in August 1881. They were pictured, along with 682 other attendees, in a composite photograph by Herbert Barraud.<sup>19</sup> This photograph, together with a key, was published by Bailliere, Tindall, and Cox (Gowers was number 438 and Osler was number 514).<sup>20,21</sup> Osler's photo for this picture was taken in Montreal, and then pasted into the composite along with that of Gowers.<sup>22</sup> It has long been known that William Osler appears in a painting commemorating a garden party held by Baroness Burdett-Coutts during the congress.<sup>20</sup> The author examined this painting in person at the Wellcome Trust in London in November 2015, and can confidently state that William Gowers is also in this painting (back row, second to the left of the large tree, in a top hat, looking straight ahead).<sup>23</sup>

In 1884, Gowers wrote Osler a letter of recommendation when Osler was being considered for a job at the University of Pennsylvania:

There is, perhaps, no English physician of the same standing who has achieved a wider or higher reputation than Professor Osler of Montreal. His work at scientific and practical medicine is of highest character, exhibiting a rare combination of the power of exact observation, of estimating the value of evidence, and of critical judgment...he is a clear thinker...As regards Dr Osler's personal character, I know him well, and know no one whom I should regard as a more agreeable colleague, or in every respect, a more desirable acquisition to an important medical school.<sup>24</sup>

In 1885, Osler had a chance to return the favour by writing a book review of the third edition of Gowers' monograph on spinal cord disease, and stated that 'the admirable manual of Dr Gowers...has done much to stimulate the intelligent study of diseases of the cord.'<sup>25</sup> Osler also wrote a book review of Gowers' *Manual* in 1888:

The recently completed work of Gowers on the *Diseases of the Nervous System* is the most solid contribution to systematic neurology produced by the British school, and as a text book on the subject stands unrivaled in any language. We need not read between the lines to see the untiring industry, the powers of patient observation and the clear, strong judgment which have made this work possible, and have made the author, at a comparatively early age, among the highest living authorities on all matters relating to diseases of the nervous system.<sup>26</sup>

Osler, who wrote and edited the first edition of his textbook from 1890 through early 1892, was probably influenced by Gowers' *Manual of Diseases of the Nervous System*. It is possible that it was one of the books piled before Osler when he dictated his classic text. Osler's nervous system section mostly followed the outline of Gowers' book.<sup>27</sup> Gowers' name was mentioned more often than any other author in the first edition of Osler's textbook.<sup>17</sup> Osler copied, with acknowledgment, three tables and one figure from Gowers' textbook (tables on vocal cord paralysis, Brown-Sequard syndrome, and spells/seizures; figure of pyramidal tract) (Osler 1892 pages 807, 854, 893, 954; Gowers 1886/1888 vol. 2 pg. 265, vol. 1 pg. 158, vol. 2 pg. 25, vol. 2 pg. 702).<sup>7,8,28</sup> William Gowers' son Ernest wrote that both Gowers and Osler 'wrote textbooks that are still read, not only for their matter but also for their manner.'<sup>29</sup>

In 1888, Osler wrote to a former student that he was busy doing research on cerebral palsy:

I am very busy at the cerebral palsies of children, working up the Infirmary material. Shall give three lectures this spring. Gowers has rather got ahead of me in his chapters which are the only ones of importance in the language. Curious that the subject should have been so much neglected.<sup>15</sup>

The 'chapters' mentioned referred to the sections of Gowers' *Manual* that dealt with this topic. Osler eventually published these lectures in an 1889 monograph entitled *The Cerebral Palsies of Children*.<sup>30</sup>

## GOWERS AND OSLER: 1890–1910

Osler visited Gowers often when in London, and they vacationed together. In July 1892 Osler wrote that he was going 'to Gowers for a few days by the sea.'<sup>15</sup> In July 1894, Osler commented that 'I have been at Gowers' for several evenings...He is much better tho still a little excitable,' implying that Gowers was recovering from an illness of some sort.<sup>15</sup> In 1894, Gowers put Osler's name forward for temporary 'honorary' membership of the Athenaeum Club when Osler was visiting London.<sup>1</sup>

Two letters sent by William Gowers to William Osler survive in the Osler Library Archives.<sup>31,32</sup> In the earliest letter, dated 18 September 1894, Gowers stated that ‘the dedication of your little book to me will be one of the pleasant things of life.’<sup>31</sup> Osler dedicated his book *On Chorea and Choreiform Affections* to Gowers in 1894:

Dear Gowers,

To the profession of the United States and Canada you stand as the most brilliant British exponent of the complex science of neurology. Please accept the dedication of this little volume as an earnest of the gratitude felt towards you by thousands of your kinsmen across the water, and as an expression of the personal attachment of

Your sincere friend,

The Author<sup>33</sup>

In his biography of Osler, Harvey Cushing mistakenly stated that the English edition was dedicated to Gowers and the American one to Silas Weir Mitchell.<sup>15</sup> Both English and American editions of *On Chorea* were dedicated to Gowers. Cushing may have been confused by the preface of *On Chorea*, where Osler thanked Weir Mitchell, or perhaps he was thinking of *The Cerebral Palsies of Children*, which was dedicated to Weir Mitchell.<sup>30,33</sup>

In the September 1894 letter to Osler, Gowers also commented on shorthand:

How many things I have to say to you. Ah. Here is a grand idea. If I write to you in what they call in the U.S.A. the ‘Isaac Pitman’ shorthand, can’t your amanuensetical angel read it to you? I wd. write very plain. The difference or proportion of time and labour is from 1/6 to 1/10.<sup>31</sup>

Osler noted in the mid-1890s that ‘it has always been a regret to me that I had not learned stenography, which Dr Gowers has found so serviceable, and the use of which in medical work he has advocated so warmly.’<sup>34</sup> Gowers strongly promoted the use of shorthand by physicians. He founded the Society of Medical Phonographers in December 1894, was elected president in 1895, and held the post until 1899. Gowers helped establish the Society’s journal, *The Phonographic Record of Clinical Teaching and Medical Science*, and printed the first two issues himself in the summer of 1894.<sup>35</sup> Despite not being able to read the shorthand that the journal was printed in, William Osler had a subscription, and his set is now in the library of the College of Physicians of Philadelphia.<sup>36</sup> Gowers advocated for shorthand for non-physicians as well. British judge Edward Fry wrote to Gowers in 1895:

My friend Sir James Paget happening to be here I showed him the little volume that you had kindly sent me and he mentioned to me your interest in short hand. I am not sure that I am so eager for its diffusion as you are. My observation has led me to

the conclusion that the facility of writing like that of speaking may be too great for the substance. The mechanical difficulty of writing is a perpetual incentive to brevity and comprehension and so I think in some decisions beneficial. Many persons who compose thru short hand have seemed to me to make up for the brevity of the hand by their proximity of their sentences. But this is only perhaps an unfortunate individual confession.<sup>37</sup>

Some authors focused on Gowers as a fanatic about shorthand,<sup>38</sup> but there were clear benefits to utilising this tool in the clinic. In 1908 Osler felt the need to ‘remind the younger physicians in the audience that some of the most brilliant reputations in the profession in this country have been built up on the solid foundation of notes taken in out-patient departments...Sir William Gowers will tell you that from this source his reputation was derived.’<sup>39</sup> Dr Frank W. Langdon, an American student of Gowers’, commented that Gowers mastered the art of shorthand to facilitate his personal records of medical observations.<sup>40</sup> When Langdon visited Gowers’ home, his mentor pointed to a cabinet and stated ‘there are my personal notes in ‘short-hand’ on more than twenty thousand cases of nervous diseases...A human lifetime would scarcely be long enough to allow them to be taken in ordinary writing.’<sup>40</sup> Langdon stated that the shorthand notes furnished ‘one explanation of the confidence with which his statistical and other exact statements [were] received.’<sup>40</sup> Gowers used shorthand as a powerful research tool.<sup>41</sup>

William Gowers was an accomplished artist, and his sketch *Anchor boat at Walberswick* hung in the Royal Academy in 1897.<sup>1</sup> Gowers had ‘fresh prints’ of this work made in 1901 and sent one to Osler.<sup>1</sup> Gowers also gifted Osler a different sketch entitled *Glen Lyn*.<sup>1</sup>

Gowers’ health was never robust. One of his biographers, neurologist Macdonald Critchley, wrote:

After a particularly painful bout of sciatica he suffered a breakdown in 1894 [actually 1898] to recover from which he went on a voyage to South Africa and back. Tradition relates that though enjoined to a regime of the strictest rest, he returned from this cruise with the second edition of his Manual re-written, corrected and ready for press [actually the third edition of volume one]. The illness left indelible marks on him, however, and he began to look older than his years. There was no trace of ageing in his intellect, however, though his personality probably became less accommodating.<sup>1,9</sup>

His friend Rudyard Kipling suggested the round trip to South Africa.<sup>1</sup> Osler was Kipling’s physician-friend as well.<sup>13</sup> Gowers’ health would deteriorate over the next few years.

Robert Foster Kennedy was a resident medical officer at the National Hospital from 1906–1910. He sent his wife a letter on October 13, 1908:

I saw Dr [David] Ferrier [1843–1928] today. He's as fit and as alive as ever—he came up for tea. He is wonderfully young compared with Gowers who I think has aged very much in the last few months, and shows it especially by the way he is beginning to lose grip of his cases.<sup>42</sup>

In another letter concerning Gowers, Foster Kennedy stated that 'I see a great change in the old man...He's breaking up badly and hardly thinks about his cases at all. It's a monstrous position for a man of his ability.'<sup>42</sup> Compston thought that Foster Kennedy was implying that the injudicious use of opiates by Gowers was perhaps to blame for his declining powers.<sup>43</sup> Gowers did recommend morphia and hypodermic injections of cocaine for sciatica in his *Manual*.<sup>7</sup> His biographers noted: 'Rumours still persist at Queen Square about Gowers and possible substance abuse. He was certainly not a teetotaler, and it is possible that he resorted to cocaine and opium to relieve his excruciating backache.'<sup>1</sup>

The relationship between Foster Kennedy and Gowers was somewhat strained, and this is important to remember when interpreting Foster Kennedy's comments. James Purdon Martin, a Queen Square neurologist, wrote:

In my time there was a legend that Foster Kennedy had written in the notes of a tabetic patient that the knee jerks were present, but when Gowers came round he could not obtain them and told the class that this patient had no knee jerks, Mr Kennedy having got the last ones. Coming from anyone else this might have passed as a harmless quip but it was said that Kennedy deeply resented Gowers's rudeness in ridiculing him in front of the class.<sup>44</sup>

Purdon Martin also noted, 'I find it most remarkable that in four years at Queen Square Foster Kennedy never took the membership examination of the Royal College of Physicians...I wonder whether he tried and failed or whether he postponed it because of his lack of experience in general medicine.'<sup>44</sup>

The humorous yet biting comment about Foster Kennedy's examination skills invites commentary on Gowers' personality, and comparison to that of Osler. Osler's students loved him, and they perpetuated his memory. One wrote 'we all worship him and if it would give Dr Osler any pleasure to walk over me, I would lie on the ground and let him do it.'<sup>13</sup> Osler enjoyed practical jokes. As a child, he would tell a new visitor to the home that his father was hard of hearing, and privately would tell his father that the guest was hard of hearing. He took great enjoyment in watching the two shout at each other, and repeated this prank as an

adult.<sup>45</sup> Patients adored him, and he had a great bedside manner. When Osler became a baronet, a little girl with diabetes he was treating said 'Oh dear...They should have made him King.'<sup>13</sup>

In comparison, Critchley wrote that Gowers 'did not suffer fools gladly.'<sup>9</sup> Gordon Holmes told Charles Symonds that 'Gowers was authoritative and sarcastic, and would publicly reprove his residents when he found cause for disagreeing with their observations...They were afraid of him.'<sup>46</sup> His son Ernest Gowers stated:

My father was always a stickler for plain words; his bluntness in using them and his intolerance of woolly thinking were sometimes a source of embarrassment to his family, and, I suspect, occasionally of discomfiture to his housemen and even his patients. One of these, an old Methodist minister, told me years ago about an experience of that sort. My father asked him whether he had a pain somewhere or other. The old gentleman, whose calling had no doubt bred in him scrupulous care in telling the exact truth, reflected a short while and then replied: 'No, Sir William, not exactly a pain but a sensation equivalent to pain.' He told me the sharpness of my father's reaction to that well-meant reply was positively alarming.<sup>29</sup>

Critchley noted that 'the legend of Gowers' unattractive personality must not be allowed to survive without pointing out that this was largely a facade which concealed a sensitive kindness towards those who knew him better, and thereby understood him.'<sup>9</sup> Gowers' 1895 letter to Reverend Canon John James Raven, Vicar of Fressingfield with Withersdale and Honorary Canon of Norwich Cathedral, highlights his thoughtfulness:

I am delighted to hear that you are able to persevere with work. You have had a narrow escape and suffer quite enough to induce you to have your church well warmed next winter. If you don't you deserve—I won't say what beyond a very poor congregation...I am glad you enjoy the Spectator. It is to Edith [Gowers' daughter] that you are indebted for its dispatch...This number raises the question which I dare say you have long settled. Do you at the Creed turn towards Jerusalem or towards the place where the sun rises? In either case you must rest on enough symbolism to avoid floundering.<sup>47</sup>

Gowers' personality was also likely influenced by his medical illnesses and chronic pain.<sup>1</sup> Critchley stated that Gowers was 'already a very sick man' in 1909.<sup>9</sup>

## GOWERS AND OSLER: 1910–1915

During 1910, Gowers' last three articles were 'penned with considerable difficulty.'<sup>9</sup> The second letter in the Osler Library Archives was sent from William Gowers to William Osler on 18 July 1912.<sup>32</sup> Gowers' handwriting

Copied 1948 for CRITCHLEY (biographer)

Copy

50, QUEEN ANNE ST,  
CAVENDISH SQUARE,  
LONDON, W.

18 9 94

Dear Osler

The dedication of your little book to me will be one of the pleasant things of life.

I am sorry, very, you have not seen Mrs Cardew of the Clinical Journal. You would have loved her & your wife would <sup>have</sup> approved your love, thoroughly, if she had seen the little Eastress of 23, widow two children, and the Clin. Journal.

**FIGURE 3A** Letter from William Gowers to William Osler dated 18 September 1894

had clearly deteriorated since 1894 (Figure 3). Gowers commented in the letter:

I am sorry to have missed you on your last visit but I must thank you for the lovely roses you brought—which are living well on the table, I learn they were from your own garden, that part seems to suggest that Lady Osler had a share in sending them. If so, I would beg you to give her my love and thanks. I always think of her as such a good woman. Your boy I suppose is getting quite a man. I hope you and he will have much enjoyment in Scotland and catch plenty of fish.<sup>32</sup>

In March 1913, Osler wrote to Silas Weir Mitchell: 'You will be sorry to hear that Gowers is very ill—his own disease, ataxic paraplegia, it looks like, & ascending, so that now there are bulbar symptoms.'<sup>15</sup> Gowers described ataxic paraplegia in 1886.<sup>48</sup> He noted that 'the term ataxic paraplegia seems the most accurate clinical designation for a disease of the spinal cord which presents a combination of the symptoms of paraplegia and ataxy, and consists in combined disease of the posterior and lateral columns.'<sup>49</sup> The disorder usually began between the ages of 30 and 40, a history of syphilis was 'as rare as it [was] frequent in pure

1912.

50, QUEEN ANNE ST,  
CAVENDISH SQUARE,  
LONDON, W.

July 18

My dear Osler

I am sorry to have missed you on your last visit but I must thank you for the lovely roses you brought, which are living well on the table, I learn that they were from your own garden that part seems to suggest that Lady Osler had a share in sending them. If so, I would beg you to give her my love & thanks. I always think of her as such a good woman, your

**FIGURE 3B** Letter from William Gowers to William Osler dated 18 July 1912. Note the deterioration in Gowers' handwriting. Letters reproduced by permission of the Osler Library of the History of Medicine, McGill University

tabes,' and there was no family history of a similar affliction.<sup>49</sup> The disease was typically chronic and progressive, rarely being subacute in onset. Patients developed spastic paraplegia with ataxic unsteadiness, the latter being the most prominent symptom early in the disease course. The upper extremities could also be involved.<sup>49</sup> The lightning pains of tabes were almost always absent. Dull pain in the sacral region or spine was common, and the sphincters could be impaired. The mental state was either normal, or there was 'merely slight failure of memory,' and mild impairment of articulation was common.<sup>49</sup> Nystagmus was often present when checking extraocular movements. The pupillary light reflex was usually normal, and the cranial nerves were generally unaffected. Weakness of the lower extremities in an upper motor neuron pattern was present, which was frequently asymmetric. Spasticity was present. The knee jerks were increased, unlike the situation in tabes dorsalis where they were absent. Ankle clonus was often present. Gowers commented that as a rule there was no loss of pain sensation on the legs or trunk.<sup>49</sup> Joint position and vibration sense examination were not part of Gowers'

routine exam of patients with ataxic paraplegia in 1899.<sup>49,50</sup> The gait was unsteady, and the patient reeled on turning, but only rarely was the high-stepping and foot slapping typical of tabes observed.<sup>49</sup> Romberg sign was found on exam. Patients might have 'conspicuous ataxy of the hands, and a tendency to cramp-like spasm on an attempt to use them.'<sup>49</sup> As the disease progressed, spastic paraplegia was the most prominent feature, with the gait ataxia sinking 'into the background as the paralysis [increased].'<sup>49</sup> On rare occasions, sensation of the legs was impaired, and the knee jerks lost, but Gowers thought that these were probably patients with 'true tabes with lateral sclerosis added.'<sup>49</sup> Ataxic paraplegia had little tendency to cause death, although he did show spinal cord sections from a patient with the disorder who died two years after onset. Mental changes resembling those of generalised paralysis of the insane could occur as a complication of the disease. Pathologically, typical cases of ataxic paraplegia showed sclerosis of both posterior and lateral columns of the spinal cord. In the third edition of his *Manual*, Gowers included a separate section on sclerosis of the cord from other toxic blood-states, including pernicious anaemia.<sup>49</sup> He stated in 1899:

[Ataxic paraplegia] closely resembles that met with as a result of toxic influence probably, in conditions of anaemia... There is little doubt that some of the cases hitherto described as ataxic paraplegia were of this nature. In the majority of cases the closest resemblance is to ataxic paraplegia. Indeed, but for the longer course of the disease in ataxic paraplegia, and the absence of the cachectic condition, and of the strong tendency to death, the conditions would be almost identical, and it may be that future observation may prove them to be so.<sup>49</sup>

Queen Square neurologists J.S. Risien Russell, Frederick Batten, and James Collier published a seminal paper on subacute combined degeneration of the spinal cord in 1900.<sup>51</sup> They stated that 'it is...obvious that under such a title might legitimately be included a variety of different affections... Examples of such affections are to be found in the 'Ataxic Paraplegia' of Gowers, if there be such an affection distinct from the class of case with which we are more immediately concerned in our present paper.'<sup>51</sup> They noted three stages of the disease:

- (i) A stage of slight spastic paraplegia with slight ataxy and marked subjective sensations in the lower limbs.
- (ii) A stage of severe spastic paraplegia with marked anaesthesia of legs and trunk.
- (iii) A stage of complete flaccid paraplegia; absent knee-jerks; absolute anaesthesia; rapid wasting...in the muscles of the paraplegic region; increase of superficial reflex excitability; absolute incontinence of both sphincters and oedema of the lower extremities and trunk.<sup>51</sup>

In this paper, case II was Gowers' patient.<sup>51</sup> This 54-year-old woman noted paresthesias of all four extremities, weakness of the legs, and unsteadiness. The numbness spread upwards, and she had a tight girdle feeling at the level of the umbilicus. She was pale, and had upper extremity incoordination with tabetic athetosis when the hands were held out and the eyes shut. Upper extremity strength was normal, but the lower extremities were weak and there was marked ataxia. There was diminution of sensibility to all forms below the xiphoid process, and in the hands and ulnar border of the forearms. There was complete loss of passive position in the lower extremities and marked loss in the hands. Knee jerks were increased with ankle clonus, and the plantar responses were extensor. The red blood cell count was 4,300,000 per centimetre, and the haemoglobin was 80%. The case was not verified pathologically. Russell, Batten, and Collier listed Gowers' 1886 article on ataxic paraplegia in the bibliography of their paper, under the heading 'combined degeneration of the cord.'<sup>51</sup>

In the 1912 eighth edition of William Osler's *Principles and Practice*, there was a chapter on combined system diseases.<sup>52</sup> Osler paraphrased Gowers' book chapter on ataxic paraparesis, and then described the work of Russell, Batten, and Collier in a separate section entitled 'primary combined sclerosis.'<sup>52</sup> In addition, he discussed pernicious anaemia as a cause in a section entitled 'toxic combined sclerosis.'<sup>52</sup> In the 1920 ninth edition, there was a chapter on combined postero-lateral sclerosis.<sup>53</sup> Included under this heading was 'Ataxic Paraplegia (Gowers); Subacute Ataxic Paraplegia (Russell, Batten, and Collier); Primary Combined Sclerosis (J.J. Putnam) [later in the chapter he called the cases reported by Putnam secondary combined sclerosis]; [and] Toxic Combined Sclerosis.'<sup>53</sup> He thought syphilis was the cause of many of the cases previously called ataxic paraplegia in men, and multiple sclerosis was the cause in many of the females previously diagnosed with ataxic paraplegia. He divided combined postero-lateral sclerosis into 'a rare and doubtful' primary combined sclerosis (likely referring to Gowers' ataxic paraplegia, unlike his nomenclature in the eighth edition), and secondary combined sclerosis associated with chronic ill-health, anaemia, toxæmia, and cachexia.<sup>53</sup> In primary combined sclerosis, patients had ataxia and spastic paraplegia, without lues or other obvious cause. Under symptomatology, Osler directly paraphrased Gowers' chapter on ataxic paraplegia.<sup>53</sup> When discussing clinical findings in the secondary variety, he mentioned many of the signs described in the paper by Russell, Batten, and Collier.<sup>53</sup>

The neurologic historian Lawrence McHenry wrote that 'although these cases [of ataxic paraplegia] may have included several spinal [cord] disorders, the most prominent would be what we call today subacute combined degeneration of the spinal cord.'<sup>54</sup> Macdonald

Critchley, Gowers' first biographer, thought that most of the cases of ataxic paraplegia represented subacute combined degeneration, although some might have been examples of multiple sclerosis or tabes dorsalis.<sup>9</sup> On the other hand, Scott, Eadie, and Lees argue that ataxic paraplegia is 'not an identifiable neurological disease today,' and state that 'the various suggestions as to its nature made subsequently, e.g. that at least some instances of it may have been cases of subacute combined degeneration...do not accord particularly well with Gowers' description of the pathological appearances.'<sup>1</sup>

In a letter written to New York neurologist Moses Allen Starr, Gowers relayed that Wilhelm Erb had dubbed ataxic paraplegia 'Gowers' Disease.'<sup>55</sup> So did William Gowers suffer from Gowers' disease? He had an abnormal gait, probably chronic, as well as chronic sciatica.<sup>9</sup> His awkward gait endeared him to undergraduate mimics.<sup>9</sup> Foster Kennedy noted on one occasion that 'Gowers climbed out of his carriage, white beard waving, stumbled up to [a young man] – his gait was unsteady – clutched him by the arm.'<sup>38</sup> His former student Langdon commented that 'for a few years before his death at the age of seventy (preceded by a 'pseudo-bulbar palsy') he lived a quiet and retired life.'<sup>40</sup> Osler stated that Gowers had bulbar symptoms in 1913.<sup>15</sup> The editors of the journal *Epilepsia* remarked:

The same sad fate which befell Hughlings Jackson and [Viennese neurologist Lothar von] Frankl-Hochwart also befell Gowers. As Hughlings Jackson watched his dearest relative [his wife] die of Jacksonian epilepsy, and Frankl-Hochwart himself died of that form of brain disease, the study of which had been his magnum opus [a brain tumour], so Gowers for two years prior to his death suffered from motor and sensory paraplegia associated with cortical disease: a field in which he has earned as great and enduring laurels as in his work on epilepsy.<sup>56</sup>

In June 1911, Gowers wrote a letter to the British physiologist Edward Albert Schäfer (he later changed his last name to Sharpey-Schafer) and stated: 'I am suffering from paraplegia from lateral sclerosis left, in commencing degree, long ago by rheumatic synovitis. I hoped it was possible but a second change to the sea has failed to do good.'<sup>57</sup>

There is not enough information available today to answer the question about whether Gowers had ataxic paraplegia. That being said, Gowers thought he had a form of lateral sclerosis (also called primary spastic paraplegia or primary lateral sclerosis in the third edition of his *Manual*).<sup>49</sup> He mentioned a case where the symptoms of lateral sclerosis 'followed subacute arthritis of both knee-joints, apparently rheumatic in nature.'<sup>49</sup> This rheumatic cause was not discussed in his chapter on ataxic paraplegia.<sup>49</sup> He knew ataxic paraplegia

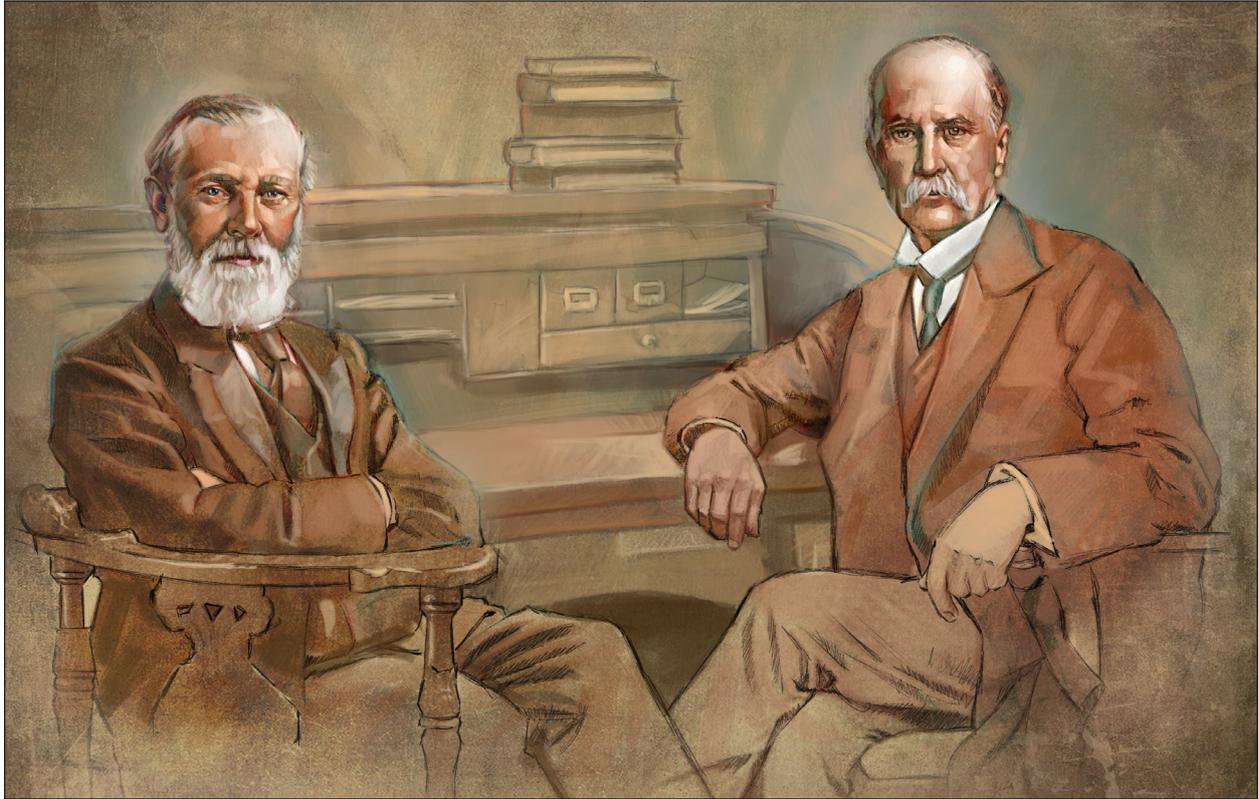
well, and did not use that term in the 1911 letter. Pseudobulbar palsy (dysarthria, dysphagia, and impaired emotional control) was not a prominent feature of ataxic paraplegia as described by Gowers,<sup>49</sup> or of subacute combined degeneration as described by Russell and colleagues.<sup>51</sup> In lateral sclerosis, he noted that 'in rare instances, difficulty of swallowing and articulation [have] existed, due to a similar palsy of the bulbar nerves,' and he commented that patients could have a positive jaw jerk.<sup>49</sup> Gowers stated that transitional forms occurred, which represented gradations between lateral sclerosis and other degenerations of the cord (like ataxic paraplegia).<sup>49</sup> It is possible that his disease manifestations could have changed between the 1911 letter to Schäfer and the 1913 letter from Osler to Weir Mitchell.

In 1949, Critchley disagreed with Osler's diagnosis of ataxic paraplegia, and felt Gowers had generalised arteriosclerosis.<sup>9</sup> He commented that 'at the age of sixty-two [Gowers] became so feeble from generalised cerebrovascular degeneration as to determine his retirement.'<sup>58</sup> Supporting Critchley's diagnosis, Raymond Adams and Maurice Victor noted in 1977 that multiple lacunar infarcts involving the corticospinal and corticobulbar tracts were the usual cause of pseudobulbar palsy.<sup>59</sup> One cannot rule out that Gowers had more than one neurological disorder.

Osler wrote to Weir Mitchell in November 1913 that 'poor Gowers is a sad wreck...I go in & have a chat with him as often as possible.'<sup>15</sup> William Gowers died on 4 May 1915. Gowers' son Ernest wrote Osler a letter the day after the death of his father:

Many thanks for your kind note. Father was unconscious for fourteen hours before the end, so I am thankful to think that it was peaceful to him, though it was not peaceful in appearance and was very distressing to those about him. I was sent for at 3 o'clock in the morning because it was thought that the end was coming, but he lived till 2.30 in the afternoon, struggling for breath all the time with gradually diminishing strength. Now all pain has gone out of his face and he is like his old self. I am so glad that you saw him and that he knew you, as I am quite sure he did. *You have indeed been a good friend to him all through* [italics added]. The funeral service is at 2.30 to-morrow (Thursday) afternoon at St. Peter's, Vere St. with cremation afterwards at Golder's Green.<sup>60</sup>

Gowers' long-term friend and colleague, Dr James Taylor, certified the cause of death as coma resulting from arteriosclerosis.<sup>1</sup> There is no evidence that an autopsy was performed.



**FIGURE 4** Artistic rendering of William Gowers and William Osler, as they might have appeared while visiting in the first decade of the 1900s. By permission of the Mayo Historical Unit, Mayo Clinic, Rochester, Minnesota

## CONCLUSIONS

Gowers and Osler were close friends (good friends 'all through') (Figure 4), and this friendship was mutually beneficial. McHenry wrote that 'as we may consider Osler the Father of Clinical Medicine, Gowers may be

considered the Father of Clinical Neurology'.<sup>61</sup> Both were great writers, and Osler's neurological works were significantly influenced by Gowers. Their personalities were quite different. Osler probably misdiagnosed Gowers with ataxic paraplegia, although diagnostic uncertainty remains as no autopsy was apparently performed.

## REFERENCES

- 1 Scott A, Eadie M, Lees A. *William Richard Gowers 1845–1915: Exploring the Victorian Brain*. Oxford: Oxford University Press; 2012.
- 2 Anonymous. Sir William Gowers and the Society of Medical Phonographers. *Brit Med J* 1897; 2: 1657–8.
- 3 Gowers WR. *A Manual and Atlas of Medical Ophthalmoscopy*. London: J. & A. Churchill; 1879.
- 4 Gowers WR. *Pseudo-hypertrophic Muscular Paralysis*. London: J. & A. Churchill; 1879.
- 5 Gowers WR. *The Diagnosis of Diseases of the Spinal Cord*. London: J. & A. Churchill; 1880.
- 6 Gowers WR. *The Diagnosis of Diseases of the Spinal Cord*. 2nd ed. London: J. & A. Churchill; 1881.
- 7 Gowers WR. *A Manual of Diseases of the Nervous System*. Vol. 1. London: J. & A. Churchill; 1886.
- 8 Gowers WR. *A Manual of Diseases of the Nervous System*. Vol. 2. London: J. & A. Churchill; 1888.
- 9 Critchley M. *Sir William Gowers 1845–1915: A Biographical Appreciation*. London: William Heinemann; 1949.
- 10 Critchley M. The 'Bible of Neurology'. In: McHenry Jr. LC, editor. *A Manual of Diseases of the Nervous System: Notes from the Editors* (booklet inserted into Classics of Medicine Library reprint of Gowers' Manual). Birmingham, AL: The Classics of Medicine Library, Division of Gryphon Editions, Ltd.; 1981. p. 7–11.
- 11 Gowers WR, Horsley V. *A Case of Tumour of the Spinal Cord. Removal; Recovery*. London: Adlard and Son; 1888.
- 12 Anonymous. Sir William Gowers, M.D., F.R.C.P. F.R.S. *Brit Med J* 1915; 1: 828–30.
- 13 Bliss M. *William Osler: A Life in Medicine*. Oxford: Oxford University Press; 1999.
- 14 Boes CJ. Osler on Migraine. *Can J Neurol Sci* 2015; 42: 144–7. <http://dx.doi.org/10.1017/cjn.2015.6>
- 15 Cushing H. *The Life of Sir William Osler*. 2 volumes. Oxford: Clarendon Press; 1925.
- 16 Fye WB. William Osler's departure from North America. *N Engl J Med* 1989; 320: 1425–31.
- 17 Golden RL. *A History of William Osler's The Principles and Practice of Medicine*. Montreal: Osler Library, American Osler Society; 2004.

- 18 Malkin HM. *William Osler: The European Connection*. Sacramento, CA: Vesalius Books; 2008.
- 19 Wellcome Images. Wellcome Library, London. Composite group portrait of members of the International Medical Congress, 1881. Photograph by Herbert R. Barraud, 1882. L0014306. Wellcome Library no. 574994i. <http://catalogue.wellcomelibrary.org/record=b1574994#> (accessed 10/10/2015).
- 20 Sakula A. Baroness Burdett-Coutts' garden party: the International Medical Congress, London, 1881. *Med Hist* 1982; 26: 183–90.
- 21 Wellcome Images. Wellcome Library, London. Key to photograph showing Members of the International Medical Congress, London, 1881. Photograph taken 25th February 1882. M0014780. [http://wellcomeimages.org/indexplus/result.html?sforn=wellcome-images&\\_IXACTION\\_=query&%24%3Dtoday=&\\_IXFIRST\\_=1&%3Did\\_ref=M0014780&\\_IXSPFX\\_=templates/t&\\_IXFPFX\\_=templates/t&\\_IXMAXHITS\\_=1](http://wellcomeimages.org/indexplus/result.html?sforn=wellcome-images&_IXACTION_=query&%24%3Dtoday=&_IXFIRST_=1&%3Did_ref=M0014780&_IXSPFX_=templates/t&_IXFPFX_=templates/t&_IXMAXHITS_=1) (accessed 10/10/2015).
- 22 The William Osler photo collection. McGill University. Full-Length Portrait of William Osler, 1881. CUS\_033-001\_P. <http://digital.library.mcgill.ca/osler/search-results.php?kw=full-length+portrait&adv=0> (accessed 10/10/2015).
- 23 Wellcome Images. Wellcome Library, London. Baroness Burdett-Coutts' garden party at Holly Lodge, Highgate, for members of the International Medical Congress, 1881. Oil painting by Archibald Preston Tilt and/or Alfred Preston Tilt and/or Arthur Preston Tilt, 1881–1882. M0009837. Wellcome Library no. 47362i. <http://catalogue.wellcomelibrary.org/record=b1465812> (accessed 24/11/2015).
- 24 W.R. Gowers to S. Weir Mitchell, 14 July 1884. Cushing Papers. Yale University Library 121: 398.
- 25 Osler W. Diagnosis of diseases of the spinal cord, by Dr. W.R. Gowers. *Am J Med Sci* 1885; 89: 218–9.
- 26 Osler W. Notes and Comments. *Canada Medical and Surgical Journal* 1888; 16: 734.
- 27 van Gijn J. Book review: the life and death of British textbooks of neurology. *Brain* 2010; 133: 2167–71.
- 28 Osler W. *The Principles and Practice of Medicine: Designed for the Use of Practitioners and Students of Medicine*. New York: D.Appleton and Company; 1892.
- 29 Ernest Gowers. Medical Jargon: The Oslerian Oration 1958. *Practitioner* 1958; 181: 338–44.
- 30 Osler W. *The Cerebral Palsies of Children*. London: H.K. Lewis; 1889.
- 31 William Gowers to William Osler, 18 Sept 1894. Osler Library, McGill University B03562. Cushing Papers, Osler Library 384.
- 32 William Gowers to William Osler, 18 July 1912. Osler Library, McGill University B02786. Cushing Papers, Osler Library 1191.
- 33 Osler W. *On Chorea and Choreiform Affections*. Philadelphia: P. Blakiston, Son and Co.; 1894.
- 34 Osler W. Ephemerides, 1895. I. Introduction. *Montreal Medical Journal* 1896; 24: 518–20.
- 35 Golden RL, Horrocks TA. William Osler's views on malignant endocarditis from an 'unknown' report. *Am J Cardiol* 1989; 63: 241–4.
- 36 Crawford DS. Medical shorthand and the Osler Library. *The Osler Library Newsletter* 2011; 115: 10.
- 37 Edward Frye to William Gowers, 6 August 1895. Letter held by Christopher Boes.
- 38 Foster Kennedy R. Sir William Richard Gowers (1845–1915). In Haymaker W, editor. *The Founders of Neurology*. Springfield: Charles Thomas; 1953. p. 292–5.
- 39 Osler W. Remarks on the functions of an out-patient department. *Brit Med J* 1908; 1: 1470–1.
- 40 Langdon FW. Sir W.R. Gowers, M.D., F.R.C.P., F.R.S.: an appreciation. *The Lancet-Clinic* 1915; 114: 142–4.
- 41 Lees AJ. The strange case of Dr. William Gowers and Mr. Sherlock Holmes. *Brain* 2015; 138: 2103–8. <http://dx.doi.org/10.1093/brain/awv144>
- 42 Kennedy RF, Kennedy Butterfield I. *The Making of a Neurologist: the Letters of Foster Kennedy M.D., F.R.S. Edin. 1884–1952 to His Wife*. Published privately. Printed at Hatfield, Hertfordshire: The Stellar Press; 1981.
- 43 Compston A. A short history of clinical neurology. In: Donaghy M, editor. *Brain's Diseases of the Nervous System*. 12th ed. Oxford: Oxford University Press; 2009. p. 3–15.
- 44 Purdon Martin J. Medicine and books: personal account of a career in neurology. *Brit Med J* 1982; 284: 1624.
- 45 Bryan CS. *Osler: Inspirations from a Great Physician*. Oxford: Oxford University Press; 1997.
- 46 Symonds C. *Studies in Neurology*. London: Oxford University Press; 1970.
- 47 William Gowers to Rev. Canon John James Raven, 9 September 1895. Letter held by Christopher Boes.
- 48 Gowers WR. Clinical lecture on ataxic paraplegia. *Lancet* 1886; 2: 1–3, 61–3.
- 49 Gowers WR. *A Manual of Diseases of the Nervous System*. Vol. 1. 3rd ed. London: J. & A. Churchill; 1899.
- 50 Spillane JD. *The Doctrine of the Nerves: Chapters in the History of Neurology*. London: Oxford University Press; 1981.
- 51 Risien Russell JS, Batten FE, Collier J. Subacute combined degeneration of the spinal cord. *Brain* 1900; 23: 39–110.
- 52 Osler W. *The Principles and Practice of Medicine: Designed for the Use of Practitioners and Students of Medicine*. 8th ed. New York: D. Appleton and Company; 1912.
- 53 Osler W, McCrae T. *The Principles and Practice of Medicine: Designed for the Use of Practitioners and Students of Medicine*. 9th ed. New York: D.Appleton and Company; 1920.
- 54 McHenry Jr, LC. Sir William Gowers and his contributions to neurology. In: McHenry Jr LC, editor. *A Manual of Diseases of the Nervous System: Notes from the Editors*. Revised ed (booklet inserted into Classics of Medicine Library reprint of Gowers' Manual). Birmingham, AL: The Classics of Medicine Library, Division of Gryphon Editions, Ltd.; 1981. p. 13–31.
- 55 William Gowers to Moses Allen Starr, 23 February 1903. Yale University Historical Library, Obit. file.
- 56 The Redaction. Sir William Gowers. *Epilepsia* 1915; 5: 335–6.
- 57 William Gowers to Edward Albert Schäfer, 30 June 1911. Wellcome Library. Sir Edward Albert Sharpey-Schafer (1850–1935) archives and manuscripts, PP/ESS/B.34.
- 58 Critchley M. *The Black Hole and Other Essays*. London: Pitman Medical Publishing Co. Ltd; 1964.
- 59 Adams RD, Victor M. *Principles of Neurology*. New York: McGraw-Hill Book Company; 1977.
- 60 Ernest Gowers to William Osler, 5 May 1915. Osler Library, McGill University B02783. Cushing Papers, Osler Library 1970.
- 61 McHenry Jr LC. Introduction. In: McHenry Jr LC, editor. *A Manual of Diseases of the Nervous System: Notes from the Editors* (booklet inserted into Classics of Medicine Library reprint of Gowers' Manual). Birmingham, AL: The Classics of Medicine Library, Division of Gryphon Editions, Ltd.; 1981. p. 3–6.