

## **Robert Burns and the Medical Profession: Part II**

(or what did Burns die of?)

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*During September 10<sup>th</sup>-12<sup>th</sup> 2009, the Gamma Medical Club of 1959 held our Golden Anniversary Re-union at the Glasgow Hilton Grosvenor Hotel to mark the 50<sup>th</sup> anniversary of our graduation from the Faculty of Medicine, the University of Glasgow. On Friday, September 11<sup>th</sup>, in recognition of Homecoming Scotland 2009 and the 250<sup>th</sup> anniversary of the birth of Robert Burns, the club made a trip to Alloway and, in the Tam o' Shanter Experience Theatre, I presented a PowerPoint-based talk on this subject. At the suggestion of our guides, Mr. John and Mrs Margaret Skilling of the Alloway Burns Club, I have developed this article from that presentation. I had previously presented Robert Burns and the Medical Profession: Part I at our reunion in Victoria, BC Canada in 2007 and at the Halton/ Peel Burns Club in Ontario, a club to which my wife and I belong.*

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The present article discusses some of the health problems of Robert Burns, two Guelph connections with them and looks at some of his doctors with a wee bit about medical practice in the 18th century

Hugh Trevor-Roper (2008) the eminent historian writes *"I believe that the whole history of Scotland has been coloured by myth; and that myth, in Scotland, is never driven out by reality, or by reason, but lingers on until another myth has been discovered or elaborated, to replace it."*

This is certainly true with regard to the life of Robert Burns; there are many myths and legends about this remarkable genius, some of which may be true, some of which are certainly false. This applies particularly to his health problems. While he wrote *"Facts are chiels that winna ding"*, it is almost impossible to reach back over more than two centuries to ascertain the true facts of his illnesses. It is perhaps not surprising that there are myths and legends about them.

The University City of Guelph, Ontario lies about 50 miles west of Toronto. It was founded by a Scotsman, John Galt (1779 – 1839).

Galt is the author of over 80 books, but is best known for his initiative in forming "The Canada Company" that purchased Crown land in Ontario, Canada (then called Upper Canada) and sold it to settlers. Galt was the first Superintendent of the Company and founded the City of Guelph on April 23, 1827.

Above all, he was an Ayrshire man, born and brought up in Irvine, Scotland. And this is the first Guelph connection with Burns.

Galt was all of two years of age when the Bard came to his home town in July 1781 where he stayed for several months. While there is no evidence that Galt ever met Burns, he was a life long admirer of the Bard's works.

In Irvine, Burns lived in an attic room on Glasgow Vennel and it was there that he fell severely ill in November 1781, so ill that, as he wrote, in a letter to his father, William

Burness,( December 27 1781), he was convinced he was going to die.

The nature of this illness is unknown but it is the subject of much speculation. What we do know is that Dr. Charles Fleeming of Irvine attended him. This we learn from the doctor's daybook, now in the library of the Irvine Burns Club (confirmed by my former classmate, Dr. Ian Wood, a member of the Irvine Burns Club).

Dr. Fleeming visited his patient 5 times over a period of 8 days beginning November 14: he was obviously very worried about his young patient. He first treated Burns with ipecacuanha and sacred elixir (powdered rhubarb & aloes), standard treatment at that time for any acute illness in order to induce vomiting and purging to get rid of "excess humours". Next day, he gave the patient an opiate and then treated him with extract of cinchona (sacred bark). The active ingredient of this is quinine and this has led to the conclusion that Burns was suffering from a severe febrile illness.

Dr. Fleeming did not document his diagnosis but several authors have speculated on the nature of this illness. Some suggest it was typhoid fever. However, that illness has a natural history of about 14-21 days (if the patient survives). According to the record of Dr. Fleeming, Burns seems to have been getting better after 8 days; this makes typhoid an unlikely diagnosis.

Others suggest the possibility of malaria. Certainly, this was endemic at that time in Scotland but mainly in the marshy areas of the estuaries and coast of the south-east (Brotherston 1952, Duncan 1993), with few if any cases in Ayrshire. This diagnosis, again, is unlikely.

Some suggest it may have been smallpox. However, while this disease was also endemic in Scotland with the occasional outbreak of epidemics, neither Burns, nor his friends nor acquaintances mention that he had such an illness. No one mentions that he had the pock-marked facial scarring so typical of patients who survive the disease. While, again, this diagnosis is unlikely, in another context, Burns did mention this condition in several of his letters, for example:

To Mrs. Dunlop on his birthday (January 25<sup>th</sup> 1790) he writes: *-I am every day expecting the doctor to give your little godson the smallpox*

To his brother, William (10th February 1790): *--Poor little Frank is this morning at the height in the Small-pox---I got him inoculated & I hope he is in a good way---*

To Maria Riddell (February 1792): *--Apropos has little Mademoiselle been inoculated with the Smallpox yet? ---*

To Mrs. Dunlop (October 29 1794): *---a week ago I gave my little James the smallpox & he is just beginning to sicken---*

Most assume that Burns was referring to vaccination of the children with cowpox. But the timing is not correct; Edward Jenner (who incidentally was a student of the well known John Hunter, the father of British surgery from East Kilbride) did not introduce vaccination until 1796. Burns was referring to inoculation with infectious material from a mild case of smallpox. This practice was first introduced into Britain by Lady Mary

Wortley Montague, the wife of the ambassador to Turkey, in 1721. By 1733, it was practised in Dumfriesshire and it was common practice by 1765.

This was not an innocuous procedure; deaths could occur. But a look at statistics tells us why this was common practice. Up to 94% deaths from smallpox occurred in children at that time: the mortality rate from smallpox in children was 50% and, in infants two years or younger, was as high as 80% to 98% (Brotherston, 1952). The death rate from inoculation was less than 1%; the odds greatly favoured inoculation! It is possible, but not recorded, that Burns himself had been inoculated as a child.

Returning to Burns's Irvine illness, there is another possibility (Murray 2007, Crawford 2009, Purdie 2009)

Burns went to Irvine to learn "flax dressing" in a bid to increase the family income. He and his brother, Gilbert, grew flax on the family farm of Lochlea, the stalks of which were processed elsewhere to produce linen. This involved "heckling" the dried stalks in a special shed.

These heckling sheds had a very dust environment and it is known that such dust could cause explosive fires. That this was the case in Irvine is suggested in Burns' letter to Dr. Moore (2<sup>nd</sup> August 1787) when he wrote *to finish the whole, while we were given (sic) a welcome carousal to the New Year, our shop, by the drunken carelessness of my Partner's wife, took fire and was burnt to ashes.*

Now, it is known that flax dust can cause organic dust toxic syndrome which workers exposed to the dusts of cotton and certain other fibres can experience. The condition is characterised by fever and respiratory problems and is a form of hypersensitivity pneumonitis. This may have been the basis of Burns' illness.

But some have looked closely at what the Bard himself suggested was the cause of this illness: his "hypochondriac condition", a problem he mentions later in several of his letters. Burns was not referring to what we now understand by "hypochondriac". He was referring to "hypochondriasis".

This latter term was derived from the "hypochondrium", a term dating back to the time of Hippocrates. This is that portion of the abdomen lying below and behind the rib cage containing the liver, gall bladder and spleen. These organs were believed by ancient Greeks, Galen and later physicians to be the source of the humour, black bile. It was further believed that excess of this humour caused melancholia (the condition of having an excess of black bile, from *melan-* black and *chole-*bile).

By the 18th Century, this was a well recognised disease and several Scottish physicians wrote about it, including William Cullen (1710-1790), Professor of Medicine in Glasgow and later Edinburgh and his student, James Currie (1756-1805), first official biographer and editor of Robert Burns. The symptoms of this condition are of interest: "*Digestive problems with wind and rumblings, stomach and belly pains with vehement grippings and cramps, palpitations with violent and irregular movements of the heart, headaches and general wandering pains, flushing of blood, formication and night sweats, depression of spirits and apprehension of danger.*" Burns mentions most of these complaints at one time or another in his letters.

Cullen believed that the condition was caused by a disturbance of nerves and coined the term neural pathology while Currie believed it to be the male counterpart of hysteria. The disease was believed to progress through 3 stages-abdominal disease, then involvement

of the chest and head and finally of the brain with chronic inflammation of most of the other organs.

The treatment consisted of emesis, purging and cinchona, the latter '*strengthening the tone of the stomach and being useful in the cure of periodic head-achs, hysteric and hypochondriac fits, and other disorders.*' (quoted by Crawford 2009), just as Dr. Fleeming treated Burns.

Thus, some authors (see, for example, Mackay 1998, Crawford 2009) suggest that Burns, in Irvine, had a severe mental breakdown. Others suggest that he had a bipolar disposition with episodes of depression followed by periods of high creative activity. If we accept this, then we could speculate further.

In 2004, Dr. Alice Weaver Flaherty, a New York psychiatrist, published a book entitled *The Midnight Disease*. She described her own experience with severe post-partum depression and recounted that, as she was recovering, she had an overwhelming compulsion to write about everything and anything. She described as *hypergraphia* and suggested this to be a complication of depression. She suggested that many literary figures had this problem including Byron, Dante, Dostoevsky, Poe and, in the visual art field, Van Gogh. We could then ask the question, did Burns suffer from hypergraphia following depression?

Most other writers regard the "Irvine illness" as a severe recurrent attack of rheumatic fever, the disease that had probably attacked Burns intermittently since his Mount Oliphant days (see below). This interpretation appears to me to be the most likely diagnosis.

The Second Guelph Connection is found in Woodlawn Cemetery in Guelph where there is a grave marked with a plaque that reads *Here lies Isabella Ferguson Brown, died May 8, 1870 aged 10 years, the great grand-daughter of Scotland's National Poet Robert Burns.*

This little girl was the grand-daughter of the Bard's first born son, Robert Burns the Second. The cause of her death is listed as disease of the heart.

This tragically untimely death reminded me of an article I read many years ago but unfortunately have lost its reference (*I would be grateful to have any help on this*). The writer indicated that Burns had at least 12 or perhaps 13 children. His wife, Jean Armour, was the mother of 9 of them; only 3 survived into adulthood, living into their seventies. The other 6 died in infancy or childhood, the oldest of these dying at the age of 14. The other 3 (or 4) children all had different mothers; all survived well into their seventies. On this basis, writer suggested that Robert and Jean were carriers of the recessive gene causing cystic fibrosis and that this disease might have killed these 6 children. We may further speculate that his great grand-daughter may also have suffered from this illness which damages the lungs and this, in turn, can lead to the heart condition of cor pulmonale.

Considering now his final illness and death, this occurred in Dumfries in July 1796. He died on July 21 1796 and his funeral was held on July 25 1796, the very day that Jean gave birth to his last son, Maxwell Burns, the wee boy who died when he was only 3 years of age.

Burns's final illness was in the early summer of 1796 and he attributed this to "flying gout and melancholia". He was attended by Dr. William Maxwell (1760-1834)-the doctor after whom Jean named their last son, as well as Dr. Alexander Brown and Dr. James Mundell. It is said that Burns was advised to go to Brow Well and bathe in the sea. Some modern commentators have accused Maxwell of incompetence or even of malpractice because he advocated such treatment for a very ill patient. However, four points have to be emphasised.

1. We do not know if Maxwell alone advised such treatment: two other doctors were involved in Burns's care.
2. Currie (1800), suggests that sea bathing may have been Burns' own idea, writing, "*About the latter end of June he was advised to go into the country, and impatient of medical advice, as well as of every species of control, he determined for himself to try the effects of bathing in the sea. For this purpose he took up his residence at Brow*".
3. In the late 18<sup>th</sup> century, the medical establishment extolled the great benefits of sea bathing. Currie was a strong advocate for this form of "hydrotherapy."
4. We cannot, in all fairness, judge the medical practice of over 200 years ago by the standards and practices of today.

My belief is that Maxwell has been falsely vilified.

Soon after Burns' death, the persistent myth arose that Burns died of the combined effects of alcoholism and venereal disease. This idea was first perpetrated by his local enemies and reinforced in the obituaries of George Thomson (1796) and Robert Heron (1797) and in the biographies of Dr. Currie (1800), Lockhart (1828), Cunningham (1834) and Gilfillan (1856).

The myth that Burns was a besotted whore-chaser persisted despite strong denials from his wife, Jean Armour, his brother, Gilbert, and his close friends in Dumfries, including Maria Riddell, Alexander Findlater his immediate supervisor in the Excise, and the Reverend James Gray, the headmaster of Dumfries Academy.

Another who challenged this myth was James Hogg, the Ettrick Shepherd who wrote in the mid-1800s, "*Burns has been accused of inveterate dissipation and drunkenness. Nonsense! Burns was no more a drunkard than I am; nay, I would bet that on average I drink double what he did; and yet I am acknowledged both in Scotland and England as a most temperate and cautious man, and so I am.*"

This is rather ironic because Hogg is known to have been was fond of his dram and did, on occasion, overindulge!

Dr. John Thomson, in 1844, wrote a treatise entitled *Education, Man's Salvation from Crime, Disease and Starvation* with an appendix "vindicating Burns". In this, he refuted the myth of alcoholism but produced his own. He claimed that Burns's attending physician (Maxwell) believed Burns's liver was diseased and treated him with mercury and wrote "*From personal knowledge, I proclaim that Robert Burns died the doctor's*

*martyr*”, implying that Burns had died of mercury poisoning. However, Thomson was only 16, without any medical knowledge, at the time of Burns' death and there is no other independent record that Burns was treated with mercury. Maxwell died in 1834, ten years before, and could neither confirm nor refute Thomson's statement.

This myth was examined by Dr. JMA Lenihan of Glasgow who reported (1971) that he had performed activation analysis of a lock of Burns's hair and found its mercury content twice the “normal” level as found in 1971 but much less than that found in dental workers. No one knows the “normal” level of mercury in the hair of individuals in the 18<sup>th</sup> century. Burns may have had that “normal” level. While he may have been treated with mercury, it did not amount to a lethal dose.

Nevertheless, like other myths, the idea of mercury poisoning persisted even after Lenihan's report. The short-lived and historically spurious movie *Red Rose* depicts, among other myths, Dr. Maxwell as a double agent against France who was compelled by the British Secret Service to poison Burns with mercury (see Letter to Editor, *Burns Chronicle*, Spring 2005).

It was not until well into the 20<sup>th</sup> century that other medical writers debunked the myth that Burns was an alcoholic. A doctor from Dumfries, Sir James Crichton-Browne (1925), from Dumfries, in his book *Burns from a New Point of View* denied that possibility and concluded

*"Burns died of Endocarditis, a disease of the substance and lining-membrane of the heart."*

Dr. Harry Bertram Anderson of Toronto (1928) stated “(Burns') *case was an ordinary one of rheumatism with heart complications and with bacterial endocarditis as a terminal infection*”

In 1946 Dr. P. Fleming Gow, an obstetrician stated: “*Burns died of rheumatic or of infective endocarditis*” and, in the *Burns Chronicle* of the same year, Dr. S. Watson Smith of Bournemouth states “*he suffered and died from subacute infective endocarditis*”

The late Dr. W. Watson Buchanan, a Glasgow graduate, Professor of Medicine at McMaster University in Ontario, a colleague and fellow member of the Halton-Peel Burns Club in Ontario, wrote two articles refuting the myth of alcoholism (*Scot. Med. J.* 1982 27 75-88 and *Burns Chronicle* 1996 237-243), concluding that “*Burns was a sober man in a drunk age*”. He indicated that, in the absence of an autopsy, we will never really know the cause of Burns's illness and death and, while agreeing that it may have been chronic rheumatic endocarditis with terminal subacute bacterial endocarditis, he suggested that the cause of his terminal illness and death may have been brucellosis, an infection derived from his close contact with farm animals.

In addition, in his 1982 paper, Watson Buchanan destroyed the idea that Burns had venereal disease. Nevertheless, this particular myth appears to be alive and well. In *The Canongate Burns*, edited by Andrew Noble and Patrick Scott Hogg in 2003, on page 121 we read: *from as yet unpublished sources, Burns does seem to have suffered the venereal self-disgust of the so inflicted.*”, somewhat indirectly stating that he did have venereal disease. These “sources” await publication for scrutiny.

As recently as 2009, in a Letter to Editor in the *Burns Chronicle* entitled “On reading a scurrilous report in the *Scottish Banner*” tells us of a poem published in that publication in February 2009 by a Jeremy Bell of Boston, USA entitled ‘Address to the Tin of Haggis’. This rather humorous poem contains a verse the veracity of which is totally false

*Warm reeking, rich" – these words did jot  
Wasn't the only thing Burns liked hot!  
Gonorrhoea he finally caught  
And that's a fact.  
May auld acquaintance be forgot  
'Till tests come back!*

No tests were ever done, and if they had been done, they would certainly have been negative.

There is yet another recent speculation. In the 2008 Spring Edition of *Burns Chronicle*, Mr. Roy Scott (a retired consultant urologist) and Dick Duncan authored an article entitled *Burns and the Medical Profession* in which they suggest that Burns may have had latent (subclinical) scurvy which, in turn, may have caused his death or, at least, contributed to it. They indicate that the symptoms of this condition, including depression and lassitude, generalised weakness, joint and muscle pain and abdominal discomfort and pain, were all experienced by Burns. They point out that scurvy is caused by a dietary deficiency of vitamin C. So far, their reasoning is entirely correct. However, in discussing Burns's diet, I believe it breaks down.

They quote Gilbert Burns telling Dr. Currie that at Lochlea, “*Butcher meat was a stranger in our house*”. It is the case that meat does contain significant amounts of vitamin C. However, the vitamin is almost completely destroyed by Western-style cooking. The only people who get adequate amounts of vitamin C from meat are the Inuit of the High Arctic who, in their traditional diet, eat it raw or boiled only for a short period of time. It is of interest that these people, with little or no access to fresh fruit and vegetables, do not develop scurvy. (Geraci and Smith, 1979). Thus, in Burns' case, the reported absence of dietary butcher meat was of no consequence in regard to vitamin C deficiency.

Scott and Duncan also state that Burns had no access to a very important source of vitamin C, potatoes, because these were to be found only in the gardens and homes of the gentry. While this was indeed the case in the first half of the 18<sup>th</sup> century, they were widely available by mid 18th century. (Brotherston, 1952, Smout, 1969).

In 1786, Burns wrote *The Brigs of Ayr* and the 27<sup>th</sup> line reads:

*Potatoe-bings are snugged up frae skaith*

again indicating that potatoes were a common crop.

From James Mackay's biography of Burns (1992) we learn that Patrick Miller, Burns' landlord in Ellisland introduced the feeding of cattle on steamed potatoes and that Burns fed these to his cattle During his time at Ellisland (1788-91)

Again, there was a report in 1794 that Dr. Maxwell attended a young Dumfries girl who fell into the Nith while washing her family's potatoes (Thornton 1979).

Apples are a source of vitamin C and we know from a letter to his wife, Jean (dated Tuesday 14<sup>th</sup> October 1788) that apples were available on Ellisland and apples are

specifically mentioned in *Hallowe'en* (line 111), indicating that they were well known in Ayrshire in 1785 when the poem was written.

Turnips were an established field crop by 1770s and kale was widely available: both are excellent sources for vitamin C (Brotherston 1952).

Burns would have had access to all these rich sources of vitamin C.

Finally, while he was growing up, none of his 6 siblings had health problems suggestive of latent scurvy nor, later, had his wife, Jean. They all presumably ate the same diet as Burns.

Accordingly, while Scott and Duncan raise an interesting possibility, I do not think that this idea is plausible; Burns did not have scurvy, latent or otherwise.

In conclusion, I agree with the received wisdom that Burns died of chronic rheumatic endocarditis with terminal subacute bacterial endocarditis. It is fascinating that there remains a continuing interest in the illnesses of Robert Burns; the memory of this man, his life and works are truly immortal.

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