Henry McEwen of Glasgow: a forgotten astronomer?

Richard McKim

Part 1: Moray Firth to Mount Florida (1864–1916)

Even half a century after his death, few details have been published concerning the life and work of the Scottish amateur astronomer Henry McEwen (1864-1955). An engineer by training, he directed the BAA Mercury and Venus Section with distinction for the unprecedented span of 60 years (1895-1955). He was at one time President of the Association's West of Scotland Branch. Living in or near Glasgow for most of his adult life, he was geographically isolated from the bulk of the Association's members. He travelled to London only rarely.

Today, McEwen is nearly forgotten by those outside BAA circles. In this paper to commemorate the 50th anniversary of his passing, a detailed sketch of McEwen's astronomical labours is given in order to seek greater recognition for his work, and many new details of his life and family background are presented. He carried out important early mapping of the planet Mercury, considering (essentially correctly) that the bright areas of the planet might correspond to lunar-like rayed craters, recorded unusual cloud features on Venus, carried out valuable micrometrical work for Venus, and even compiled a tentative map of the planet. He also contributed to knowledge of the geological history of the Moon.

It is suggested that McEwen's astronomical work should be commemorated by having a feature on the planet Mercury named after him.

Introduction and sources

My late father came from Scotland, and he became interested in the stars through watching the Northern Lights from his home in Greenock. My own interest in the subject is therefore partly due to him. Personal visits to Scotland have been all too rare over the years, but I have always been intrigued by the place and its history, and naturally, by its astronomers.

Thirty years ago I first read about the work of the Scottish astronomer Henry McEwen, who was the first Director of the Association's Mercury and Venus Section. McEwen has long remained a somewhat elusive figure from the past, though he was a prolific writer in his day, and for many years was well known to members of the Association's Glasgow-based West of Scotland Branch. There are several reasons for his modern-day obscurity. First, his isolation in Scotland rarely brought him into contact with the bulk of the BAA membership. Second – and very regrettably – most of his original work was destroyed after his death.[1] Finally, McEwen's claim to fame has not been helped when some writers deny him his proper place in history, even though his work was published contemporaneously with the classic Mercury studies of E. M. Antoniadi.

McEwen was very much an individual astronomer; he worked by himself, and wrote nearly all of his scientific papers without collaboration. Yet despite this isolation, some physical disabilities, and a lack of personal resources, he enjoyed an international correspondence and collaboration with both the amateurs and professionals of his day. The historical record shows that although McEwen was influenced successively by Percival Lowell, W. H. Pickering and E. M. Antoniadi, he had original and important ideas of his own. His planetary observations were habitually made with a fine 5-inch (12.5cm) Wray refractor.

Figure 1. **A** *(left)* Henry McEwen's parents, Rev. John McEwen (1800–1886) and Mary McEwen (*née* McIntosh, 1823–1911) in an undated photograph. **B** *(right)* Henry's brother, the Rev. John McEwen Jr. (1851–1918). (Both reproduced by kind permission of Mr Robert McEwen.)

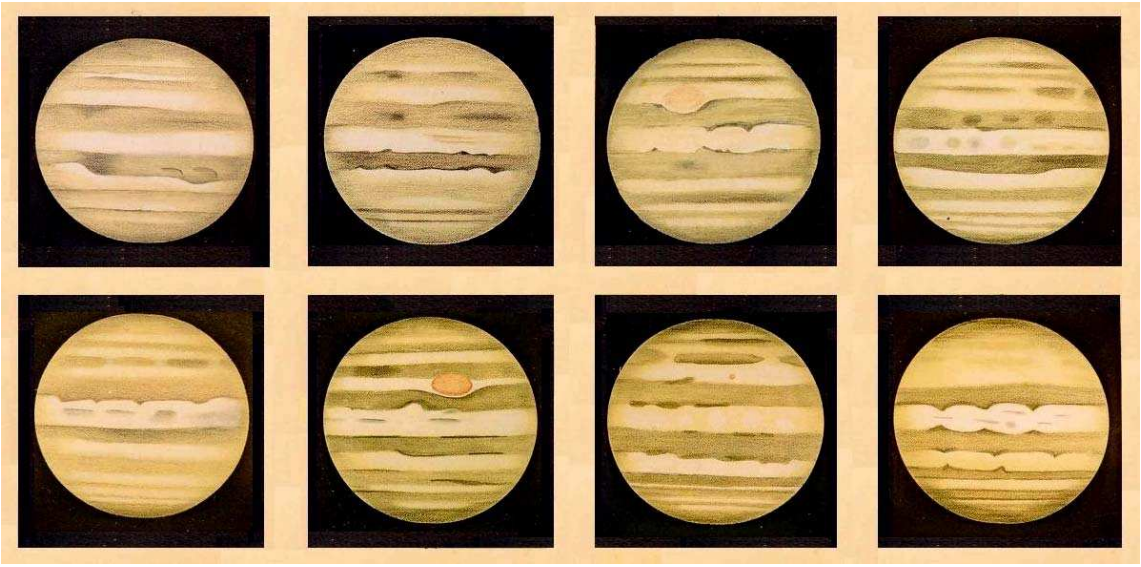


Figure 2. Jupiter in 1891, drawn by McEwen with a 5-inch [12.5cm] OG, ×90 to ×150 (BAA Jupiter Section Archives). Opposition was on September 5. *Top row, left to right:* Aug 18d 23h 50m; Sep 11d 22h 50m; Sep 12d 23h 45m; Oct 17d 19h 45m. *Bottom row, left to right:* Oct 24d 21h 00m; Oct 26d 19h 00m; Oct 30d 20h 15m; Nov 14d 18h 45m. In 1891 the GRS occupied over 30° in longitude; by 2004 it was considerably less than 20° long.

In recent years Richard Baum has published further details of some of McEwen's more noted observations, and the writer thought it appropriate to give a lecture about McEwen's life and work at the centenary celebrations of the Astronomical Society of Glasgow (formerly the BAA's West of Scotland Branch) in 1994.[2]

In compiling this biography, extensive use was made of McEwen's writings in the *Journal*, and his published observations in BAA literature generally.[3] The Jupiter Section has some of his original drawings, and the Mars Section has some documents from the 1920s. The *Journal* published a brief obituary notice.[4] Its author, the late Prof. Michael Ovenden, was a one-time BAA Secretary. But Ovenden informed me[5] that he met McEwen just once, and after forty years could recall little of that meeting. Most of McEwen's Venus notebooks have fortuitously survived.[6] Furthermore, the present owner of Henry McEwen's final place of residence actually met McEwen's son James, and was able to provide personal details from a former neighbour who had known Henry by sight.[7] The internet gave brief details about McEwen's place of birth – mostly due to the fact that his father was a clergyman – and, surprisingly, his family relations abroad.[8] The University of Strathclyde was able to provide details of McEwen's early studies at the Glasgow & West of Scotland Technical College.[9] The RAS Letters collection provided some tantalising additional information, as did other McEwen letters collected from various sources.

Finally, I tried to find as many references as I could to McEwen's work in the pages of *English Mechanic* (which began before the BAA was formed and ended in 1934), but searches of this serial are frustrated by the lack of an author index in any volume, and by the total lack of any cumulative index. To compensate for these difficulties, the growth of the internet in the last decade – and hence the availability of online genealogical databases – has made many aspects of the research a great deal easier. Thus the official website for Scottish records (http://www.scotlandspeople.gov.uk) proved to be very helpful for transcriptions of original records and census papers. But on-the-spot searching of original records in Edinburgh was needed to extract more recent family information, including details of living relatives.

McEwen had a rather extensive correspondence with W. H. Pickering (1858–1938) and E. M. Antoniadi (1870–1944) but seemingly in Pickering's case none of this has been archived,[10] and as I have suggested elsewhere,[11] Antoniadi's papers were probably lost during WW2. A collection of McEwen letters both to and from A. Stanley Williams is preserved in the latter's papers in the RAS Archives: but they are almost entirely devoid of any non-astronomical content! McEwen also had correspondence with the observers at Lowell Observatory, and this has also been examined.

Here, then, is the first reasonably comprehensive attempt – and I stress that it is only an *attempt* – at a proper biography of Henry McEwen, the longest-serving official in all the history of the BAA.

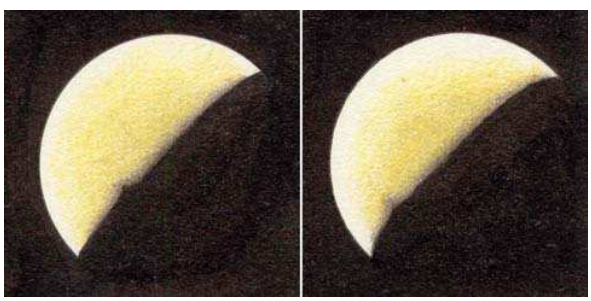


Figure 3. Two drawings of a large terminator indentation on Venus in 1913 by McEwen (5-in OG, ×144), *(left)* February 15d 18h 15m, and *(right)* February 19d 18h 20m. (Reproduced from the originals in the BAA Mercury & Venus Section Archives.)

Setting the scene: Great Britain in the 1860s

No-one now living can recall the decade of the 1860s. It is hard to imagine such a far-off age. In Britain the Victorian era was well under way, and the Sun truly never set on the British Empire. Yet it was still an undemocratic era: of the adult population of our islands, only a fraction had the right to vote. The year 1864 was significant in that Mr Gladstone, then Chancellor of the Exchequer, voiced his support for a principle that would eventually crystallise into the Reform Bill of 1867.[12] Electoral power was shifting to the masses. America was in the midst of a bitter Civil War (1861–65).

Technologically, steam power was transforming every corner of England with railways and labour-saving devices. And 1864 was also the year in which James Clerk Maxwell predicted the existence of electromagnetic waves and described them mathematically: highly significant for our subject, who by profession became an electrical engineer. In the world of astronomy, William Huggins was studying the spectra of the 'nebulae'. Of contemporary literature, 1859 had seen the publication of Darwin's *Origin of Species*, whilst 1865 would see Jules Verne's *From the Earth to the Moon* in print. Into this solid Victorian world of steam and clockwork came Henry McEwen in the late summer of 1864.

Figure 4. A *(top)*. An undated photograph showing the Rev. John McEwen, Henry's father, at the door of his manse at Dyke, Forres, together with servant and family pets. (By kind permission of Mr Robert McEwen.) **B** *(below)*. The Church of Scotland in Dyke. A recent general photograph, courtesy of Christine and Uwe Schlueter.[17]

Henry McEwen's early years

According to official documents, William Henry Duncan McEwen was born on 1864 August 31 at Dyke, a village a few miles from the town of Forres, and the shores of the Moray Firth.[13] H. V. Morton described this beautiful area of the Highlands in the 1920s, in a book which would soon establish him as an outstanding travel writer: 'The hills round Moray Firth are that incredible Atlantic blue which almost breaks the heart.'[14] A picturesque Moray village just east of Brodie Castle, Dyke lies on the left bank of the Muckle Burn between the Culbin Forest and the Inverness–Aberdeen road. There is a school built in Elizabethan style in 1877.

Henry never used his other Christian names, and as a youth (and possibly even later) he was actually known as 'Harry' at home.[15] According to his obituarist,[4] Henry was 'the youngest of five children of the Rev. J. McEwen, who held the living of the parish'. This is not quite accurate; in fact, Henry was the youngest of *seven* children[15] of the Rev. John McEwen (1800–1886) and Mary McEwen (*née* McIntosh, 1823–1911) (Figure 1A). John had been born in Comrie, Perthshire, the son of Donald McEwen, a farmer, and Margaret McCowan. John was educated at St Andrews University, and after teaching for some years was ordained in 1839.[15] Mary hailed from Rosebank, Markinch, daughter of Captain Andrew McIntosh (1777–1859) of the 71st Regiment of Foot, and Marjory Gray (d. 1830).

In the early 1840s John McEwen was assistant minister at the recently built church at Milton of Balgonie, only a few hundred metres from Mary McIntosh's family home, so they doubtless met through her attending church.[16] The couple married in 1844. In 1843 (after a spell at Dunblane Cathedral) John became minister of the church at Dyke, Moray (then Elgin), where he was to spend the rest of his life. Figure 4A shows John in old age outside his family home. We also reproduce a modern-day picture showing the church and its grounds.[17] Dyke church celebrated its bicentenary in 1981. For completeness, note that the Clan Ewen, or MacEwen (in Gaelic, *MacEoghainn*) is an ancient western one, originating in the early 13th century on the shores of Loch Fyne, Argyll.

Nearby Forres (in Gaelic, *far uis*, or 'near water'), is an ancient Royal Burgh town of Elginshire. It is thought to be

the 'Varris' shown on maps made by Ptolemy almost 2,000 years ago. In 1775, Dr Samuel Johnson accompanied by James Boswell walked the road 'on which Macbeth heard the fatal prediction...' The population of the town in 1891 was 3,971. Morton described it as 'one of the snuggest towns' in the Highlands.[14] Sitting between the floodplain of the River Findhorn and the wooded slopes of Cluny and Sanquhar Hills, Forres is well known for its award-winning floral sculptures and is steeped in local history and traditions. McEwen had a lifelong interest in geology and archaeology, and may well have been attracted to their study by the displays at the town's Falconer Museum, a building containing among other exhibits several valuable fossils, which was named after Dr Hugh Falconer (1808–1865), the distinguished palaeontologist and botanist, and a native of Forres. Indeed, Henry's brother John McEwen Jr. was once the Curator. There used to be a Mechanics' Institute in the town. Forres claims the lowest rainfall in the county. In those far-off days with relatively good weather and no light pollution, and situated at a latitude favourable for seeing the aurora, the area must have been an ideal place where a mechanically-minded youth might have been attracted towards a study of astronomy. There was also plenty of astronomical information in the popular weekly paper, *English Mechanic*.

We learn from his obituarist that McEwen had a speech impediment for which he had an operation as a child; furthermore, he had an affliction of his hearing. Coupled with reminiscences of his appearance (which we shall mention in Part 2) it is certain that McEwen was born with a cleft palate, a defect more common in late pregnancies. In the 1860s this could not be completely cured by surgery, but it seems that Henry made the most of his other talents.

Family matters

From 1843 to 1876 the Rev. John McEwen remained as minister in the Established Church of Scotland in Dyke. He was very popular, and an obituary in a local newspaper refers to his sermons without notes and his rich deep voice.[18] The internet revealed many interesting facts about his children, the information originating from a book first published in 1904 which described the then leading citizens of Pocahontas County, Iowa, USA.[8] According to the book, John's oldest son Alexander (b. 1845) emigrated to the USA, becoming a landowner and a respected local man. But this cannot be correct: other data show that John's oldest son was named Donald (1845–1886),[8] and the 1881 Scottish Census declares him as a surgeon-major in the Royal Navy. The 1904 book[8] also refers to a W. D. McEwen of Iowa (another arrival from Scotland), for whom Alexander initially worked, and it seems that the book's researcher muddled up the two families: very probably Alexander was simply a nephew of the Rev. John McEwen. Nonetheless, useful information was found about John's other children.

John's second oldest child was Andrew McIntosh McEwen (born 1847). Robert Haldane McEwen (1848–1893) went to India as a trader and indigo planter. Marjory Janet McEwen (b.1849) married John Grant Smith in Hong Kong. The younger Mary McEwen (1853–1903) married the Rev. George Alexander Bissett (1852–1898) and ultimately they went to live in Edinburgh. John McEwen junior (1851–1918) (Figure 1B) was also educated at St Andrews. He joined his father as assistant minister in 1876 and later proved an able successor. He married Julia Mickle in 1888 and they had seven children. To complete the household at the manse, there were usually two or three servants. There are no known descendants of the family living in the Dyke/Forres area today,[19] but John McEwen Jr's grandson Robert Alastair McEwen lives in Edinburgh.

It is fascinating that so many of John McEwen's children decided to seek their fortune abroad. Was the lure of the great ocean beyond the Moray Firth too much to resist? But it was to be Henry, the youngest child, who made the greatest intellectual voyage.

At the 'Glasgow Tech'

The only real activity around Dyke in McEwen's day was farming. Thus it was inevitable his latent interests would compel him to leave the village of his birth. After attending a local school, young Henry was drawn towards engineering as a profession. In the census return for 1881, McEwen is listed as a scholar, aged 16, and living at home, so he was obviously still attending local school, though he would have left later that year. By the time of the next census, 1891, we find that Henry had already become a mechanical engineer, living in lodgings in Elliot Street, Glasgow, just north of the River Clyde. Glasgow, once described as the second city of the British Empire, had built its wealth upon its trade with new colonies in the19th century, especially in tobacco. Much heavy industry and engineering was located there, and of course the River Clyde has long been famous for shipbuilding.

During McEwen's apprenticeship he enrolled at what was then the Glasgow & West of Scotland Technical College (G&WSTC).[20] Like James Nasmyth,[21] he was to keep engineering for a profession and astronomy as a hobby. Entries against his name in the College registers for two successive academic years are as follows,[9] showing that he was already a working engineer as early as 1888, as were the vast majority of his fellow students:

> 1888/89 – Henry MacEwan [*sic*], address 5 Elliot Street [Glasgow], age 24, occupation Engineer
> 1889/90 – Henry MacEwan, address 5 Elliot Street, age 25, occupation Engineer

The College records show that he attended courses in Mathematics, Theoretical Mechanics, Applied Mechanics, Magnetism & Electricity, Inorganic Chemistry and Steam. The records also show that the vast majority of the students (93% in 1888/89) attended evening lectures rather than daytime ones, and indeed McEwen must have been following a profession by day for some time to have been eligible to enter into the competition now to be described.

Figure 5. An advertisement for Wray's refracting telescopes, which appeared in the BAA *Journal*, volume 6. McEwen habitually used a 5-inch altazimuth by Wray.

In those days the students could compete for a financial bursary through Whitworth Exhibitions and Scholarships, a tradition founded by Sir Joseph Whitworth, Bart. The rules were quite rigid, and candidates had to have been 'engaged in handicraft in the workshop of a mechanical engineer for at least three years, and have been at work at the vice and lathe, or the forge, or the bench, during ordinary working hours for at least six consecutive months in each of those years.' If necessary the candidate could be tested by the Department of Science and Art, 'by requiring him to make two Whitworth screw bolts, 1 in. in diameter, and 4 to 6 ins. long, with hexagonal heads and nuts, alike within .001 in.'[9] McEwen entered in 1889, gaining a Whitworth Exhibition and winning £50. This money must have been very welcome: it would be equivalent to £3,200 or more in terms of 2005 prices.[22]

It would be nice to be able to reproduce Henry's photograph from one of the annual groups of students at the G&WSTC, but few such pictures were taken before 1900, and none show McEwen. The College Register for 1890/91 does not list McEwen, but in the 1891/92 academic year, Henry McEwen returned to the College for a course in mathematics, probably an evening class. His occupation in the College Register for that academic year is given as 'Draughtsman'.

Employment

From the G&WSTC *Yearbooks* for 1890/91 to 1893/94 inclusive we learn that McEwen was employed in the role of 'Draughtsman, Glasgow Gasworks, Dawsholm'. (Glasgow Corporation's Dawsholm Gasworks were situated adjacent to the railway line running between Maryhill and Anniesland, but its Engineer's office was in John Street, Glasgow.) As we have already seen, McEwen must have been apprenticed to an engineering firm for at least three years prior to 1889, and, indeed, he may have served his apprenticeship there. McEwen then entered into employment with the Glasgow Corporation Electricity Department.

The 1904 book cited earlier[8] stated that Henry was the Superintendent of the Electric Light Plant for Glasgow, but this could not be confirmed. Perhaps more precisely he gained a series of increasingly important posts within the Corporation, as successive G&WSTC *Yearbooks* demonstrate. In 1894/95 and for a decade afterwards he was listed as 'Draughtsman, Glasgow City Electric Light Department', but by 1904/05 he had become Chief Draughtsman and later he would be promoted further. His position was unaffected when the Department was later absorbed by the Glasgow Corporation, and there he remained, 'concerned with the design and maintenance of large generating equipment' until his retirement at age 69.[4] His engineer's training was to stand him in good stead in preparing the many detailed diagrams that accompanied his later astronomical papers.

Serious observations begin

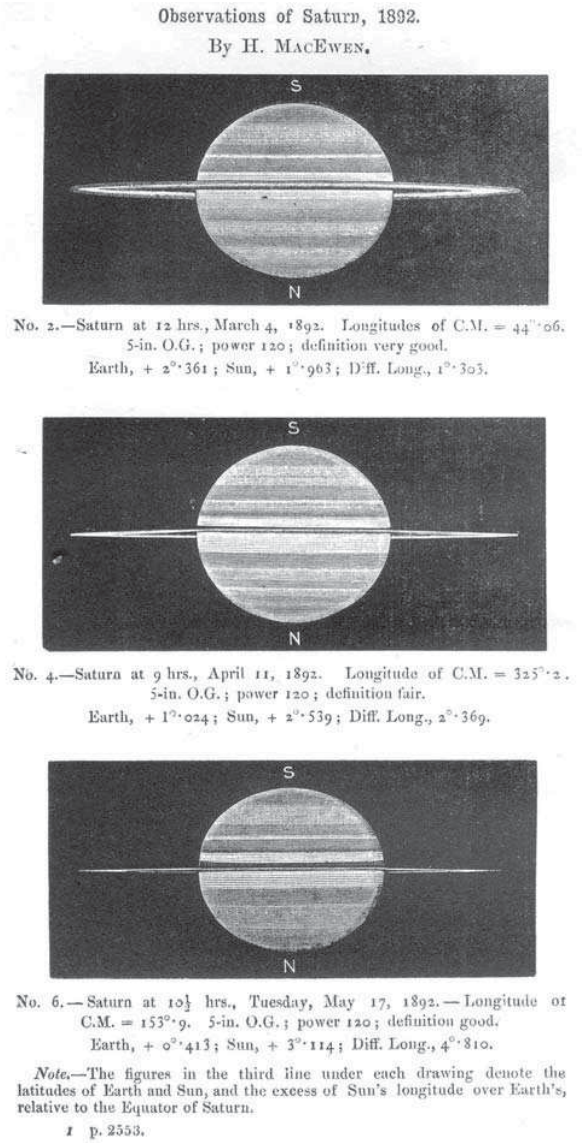
McEwen had already begun his astronomical work by 1890. Indeed, Ovenden writes that he had become interested in astronomy at an early age, and McEwen himself implies an interest at least as early as 1881, when he was still at school.[23] We know that he read the popular weekly magazine *English Mechanic*, which existed many years prior to the founding of the British Astronomical Association. One can also discover that McEwen was never a member of the important regional society that preceded the BAA, the Liverpool Astronomical Society. But a little way into the new century his name appears as an 'Associate Member' in the *Journal of the Astronomical Society of Wales* and its successor, *The Cambrian Natural Observer*. He sent occasional notes to these journals, but he was to reserve almost his entire energies for the BAA.[24]

As soon as the BAA was founded in 1890, McEwen quickly joined and was thus an 'Original Member'. He already owned a fine 5-inch Wray refractor (Figure 5) mounted on a portable tripod, and it is likely that he had recently purchased it with the Whitworth Exhibition money. This instrument he continued to use all his life. It had a 1.75-inch [4.4cm] finder, and a mahogany case.[25] The instrument was provided with Ramsden eyepieces, and in the early days single lens eyepieces were occasionally used for high powers, but he later preferred Zeiss orthoscopics and Cooke monocentrics.[26] Professor Ludwig Becker of Glasgow University Observatory pronounced it to be optically excellent. McEwen found Saturn's satellite Enceladus an easy object at its elongations with the rings nearly edgewise, but of Triton and the Uranian moons: 'I have tried for them last year with the 5 in. but failed.'[27]

Henry McEwen must have been very skilful, because he successfully employed a bifilar micrometer with this altazimuth instrument. In 1894 he commented: 'I use Slade's micrometer occasionally; but the position micrometer is far quicker and more accurate *when one has gained some experience with it*.' With his micrometer he recorded positions of

planetary markings and measured the phases of Mercury and Venus. He also employed a variable occulter by Hilger, to reduce the area of brilliantly illuminated sky surrounding Venus in daylight, so eliminating eye-strain. (It seems that very few – if any – current observers follow this practice, preferring instead to use selective colour filters.[28])

McEwen probably adopted the same plan of recording his other observations as he did with his Venus diaries.[29] The latter are small (8×20 to10×20cm), slim pocket notebooks. But today only the Venus volumes survive. The early diaries are very similar to the later ones both in appearance and in manner of execution, McEwen's handwriting (and his use of a fountain pen with purple ink) being an unvarying feature throughout his long life. He began to systematically record his observations of Venus in 1892 April, the diary being entitled 'Astronomical Observations No. 7' and subtitled 'Venus No. 1'. Any later corrections were made in red ink. With a lifetime of observing Venus, McEwen was bound to log some unusual phenomena in addition to the mundane. Thus


Observations of Saturn, 1892.

By H. MacEwen.

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No. 2.—Saturn at 12 hrs., March 4, 1892. Longitudes of C.M. = 44°·06. 5-in. O.G.; power 120; definition very good.
Earth, + 2°·361; Sun, + 1°·963; Diff. Long., 1°·303.

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No. 4.—Saturn at 9 hrs., April 11, 1892. Longitude of C.M. = 325°·2. 5-in. O.G.; power 120; definition fair.
Earth, + 1°·024; Sun, + 2°·539; Diff. Long., 2°·369.

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No. 6.—Saturn at 10½ hrs., Tuesday, May 17, 1892.—Longitude of C.M. = 153°·9. 5-in. O.G.; power 120; definition good.
Earth, + 0°·413; Sun, + 3°·114; Diff. Long., 4°·810.

Note.—The figures in the third line under each drawing denote the latitudes of Earth and Sun, and the excess of Sun's longitude over Earth's, relative to the Equator of Saturn.

1 p. 2553.

Figure 6. Woodcuts made from drawings of the nearly edgewise rings of Saturn in 1892 by Henry McEwen. (Reproduced from Ref. 31.)

the diaries record – on rare occasions – the Ashen Light, terminator deformities and unusual bright and dark markings. The most remarkable and significant of these observations we shall examine later.

McEwen was a most careful observer, even if some of his early opinions were expressed a little hastily. As his obituarist noted: 'The surface features of Venus and Mercury are, at best, elusive. In such a field... it is easy to lose the faculty of criticism of observations. McEwen retained a highly critical faculty, and what is perhaps more important, a highly self-critical faculty, throughout his long Directorship.'[4] Indeed, towards the end of his life he would again warn that: 'any touching up of drawings leads to self-deception and complete vitiation of useful results.'[30]

By 1895 McEwen had joined the BAA Solar, Jupiter, Saturn and Comet Sections. He made an extensive series of observations of the edgewise rings of Saturn in 1891, and his drawings are reproduced here (Figure 6).[31] McEwen's drawings of Jupiter were sent during the 1890s to the Section Director Rev. W. R. Waugh, and are preserved in the archives of the BAA Jupiter Section. Drawings by its members were habitually done on N. E. Green's 'erasing paper'[32] in coloured chalks or pastels, and sometimes the early *Memoirs* reproduced illustrations in colour. However those views from 1891 reproduced here (Figure 2, page 14) have never previously been reproduced in colour. (The Jupiter Section *Memoirs* reporting the apparitions of 1892 to 1896/97 reproduced several of McEwen's later coloured drawings.) In early1897 McEwen was treated to a view of Jupiter in perfect definition, and this formed the subject of a brief paper. At a magnification of ×420 he was able to see that Io appeared as a symmetrical oval, 'like a heron's egg'.

All the evidence shows that the subject of our biography had already become both a good artist and a skilled observer by 1891. Further evidence comes from the fact that McEwen won a medal for some Jupiter drawings submitted as part of the early BAA's contribution to the Chicago World's Fair of 1893,[8] an event which had drawn 27.5 million visitors over six months.

McEwen also collaborated closely with Brighton-based Jupiter expert A. Stanley Williams throughout the 1890s.[33] Williams valued his work highly: 'You evidently possess a remarkably good sight, and also a good telescope.'[34] Williams used a 6.5-inch (16cm) Newtonian for most of his life, and so was better able than most to appreciate the talent of a fellow observer equipped with a modest instrument. 'It was as well that you didn't call on me two months ago' wrote McEwen to Williams on 1898 October 2[35] 'for I was away at Windermere for holidays. I hope to see you sometime.' Geographically isolated from one another, one wonders if they ever had a further opportunity to meet.

FRAS and financial disaster

Encouraged by his friend Professor Becker[36], and seconded by the Directors of the BAA Jupiter and Saturn

Sections, McEwen was proposed as an RAS Fellow on 1893 November 10. He gave his occupation as Engineer. Elected on 1894 January 12, McEwen had to pay the entrance fee (two guineas) as well as the rather high annual subscription of one guinea. (The BAA was much cheaper, and furthermore it admitted ladies to membership, which the RAS did not at that time.) McEwen had already been subscribing to the *Monthly Notices* for two years. Most leading amateurs sought to become Fellows of the RAS: it was very much more of a status symbol in those faraway times than it is today.

Unfortunately, financial disaster lay just around the corner, and the annual files of RAS Letters tell the story. Apparently McEwen had invested much of his savings in American securities. Without the greater safeguards we enjoy in financial speculation today (and the protection given by limited companies), there was always the risk of trouble in the 19th century. In 1895 June McEwen admitted to W. H. Wesley, the RAS Secretary: 'The failure of two American firms 15 months ago has run me into a tight corner but I am clearing out of it fortunately.'[37] Despite this optimism, later letters to the RAS reveal a continuing tale of woe: in his own words, he had clearly been 'badly nipped', describing the sum as 'considerable'. He was readily given permission to pay his subscription in arrears, but after several years it is clear that he simply could not afford the payments, and in 1904 he had to give it up, and his name was removed from the list of Fellows.[38] Was this episode connected with the financial activities of any of his widely scattered relatives?

This financial setback was probably only temporary. Although McEwen's obituary records that his visits to London were more difficult after his retirement in 1933, this must have been due rather to the inadequate State pension, 'that failed to keep pace with the rising cost of living.'[4] In fact McEwen was progressively promoted at work, and his salary – at least from middle age until retirement – was actually very good, as we shall see later.

Marriage and Mount Florida

McEwen married Sarah Burgess, who was, to quote Ovenden, 'an accomplished musician from Grantown-on-Spey'.[4] Grantown is a small town in the Scottish Highlands. Sarah's parents were Gregor Burgess (1812–1898), variously described as a butcher, farmer, and later a haulage contractor, and Jesse Burgess (*née* Rose). In the 1891 census we find Sarah's profession given as a teacher in a private school in Grantown, and no doubt she taught music. Further research revealed that the school was purchased in the previous year by James Rose Burgess (1853–1902), one of Sarah's three brothers. James was also a teacher and a Cambridge M.A., his younger brother was a Dr Gregor Burgess, and the eldest brother, Duncan Burgess (1850–1917), was a professor of medicine at Sheffield University. The school building is now a local history museum.

The couple were married in Edinburgh by John McEwen Jr. – after Banns according to the Forms of the Church of Scotland – on 1894 January 9. And Henry's election as FRAS would be only three days later! Ovenden adds: 'An affliction of his hearing prevented his taking an active interest in music'.[4] Within a few years, Sarah bore her husband a son, James Rose Burgess McEwen – named after Sarah's brother – born on 1897 December 28. Young James was educated in Glasgow at Hutcheson's Boys Grammar School,[39] and it is known[7] that he was later able to translate from French for his father: probably from the volumes of planetary observations published by René Jarry–Desloges. These books McEwen borrowed from the BAA Library, and an old neighbour of Henry's recalled having seen French books in the house.[7,40] As a profession, James McEwen became a draughtsman, following to some extent in his father's footsteps – perhaps even at the same workplace.[41]

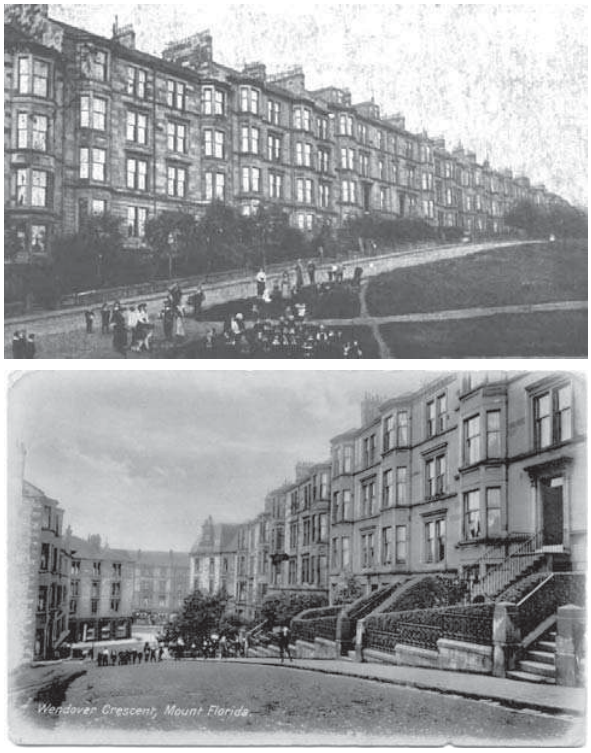

Figure 7. **A** *(top)*. An old Mount Florida postcard *ca.* 1900 giving a general view of Stanmore Road. **B** *(below)*. A similar postcard, showing Wendover Crescent in about 1900. The McEwens lived there from 1901 till 1904. (By courtesy of Mrs Jean Rafferty.)

Henry and Sarah McEwen lived successively at several different addresses in Mount Florida, in the southern suburbs of Glasgow,[42] until their move to Cambuslang in 1916. The Mount Florida area, some way from the city centre, has many apartment (or tenement) buildings constructed in local stone. A website dealing with local history[43] quotes the following: 'From the 1860s George and Alexander Eadie erected tenements in Hutchesontown, then moved southward to the new leafy suburbs of Govanhill and Mount Florida. On the south side of the City, the district of Mount Florida (previously Cathcart) was annexed in 1891... The approaching view of Mount Florida from the city is commanded by the sight of Hampden Terrace and Embankment, which outlines the contour of the hill. The Terrace and Embankment was built in the late 1860s and early 1870s

to house middle-class professional families'. It was certainly a highly respectable area in the 1890s; indeed, the Italian Consul lived in Mount Florida. The flats are three-storied; some, with dormer attics, have six rooms, kitchen and bathroom. Other Terraces would follow later, to house similar clientele. The flats were let unfurnished, the rent payable to a local landlord. Private ownership of flats was not to become a social custom for many decades. A strong community spirit prevailed in all aspects of tenement life.

From ground level in this suburb, McEwen would have had limited 'sky-room', but he would have enjoyed excellent panoramas from a top floor window. Indeed, at a meeting of the BAA West of Scotland Branch in the 1890s McEwen initiated a discussion about observing through windows, the effects of 'nipping winds', etc. Certainly in the absence of central heating, observing through an open window (as we know McEwen did[4]) would have been a perfectly reasonable option. McEwen himself extolled the virtues of Mount Florida: 'Mount Florida is a high hill standing by itself, which gives a great advantage to objects near the horizon... I have had views of Jupiter at an altitude of 10 deg. with good definition.'[44]

In fact, McEwen chose Cathkin Terrace – the very highest point of Mount Florida – for his first place of residence in the district, and it would have had a fine southern vista. Later the McEwens moved to 10 Ethel Terrace. This tenement was built a few years later than Cathkin Terrace on the opposite (southern) side of the road, and doubtless would have interfered with the previous view. Several other moves followed in rapid succession: to Wendover Crescent, to Randolph Place and then – oddly – back to 5 Cathkin Terrace. It can be seen from maps of the time[45] that the McEwens never really moved far: all these tenements were actually in Stanmore Road or round the next corner (Figure 7). An interesting aside is that one of the McEwens' neighbours would have been the young Arthur Stanley Jefferson (1890–1965) – later the Stan Laurel of 'Laurel and Hardy' fame.[46] Arthur's father had moved to Scotland to manage Glasgow's Metropole Theatre (in 1901?), and the family lived in one of the flats at 10 Ethel Terrace.

For transport there was already a local railway station – the Cathcart Circle line from Glasgow Central had reached Mt Florida by 1894 – to take McEwen to and from his place of work. The railway station at Mount Florida is the nearest one to the present-day Hampden Park (opened 1903 October), home to Queens Park Football Club. (And in those days there would have been no floodlights.) From 1901 onwards the electric tram provided an alternate means of local transport. And before that there was always the more traditional horse-bus, hampered only by the need to attach a third horse to attack the steep slopes...

1894: a watershed

In the same year as the young engineer's marriage, two foundations were laid that were destined to greatly increase his standing in the world of amateur astronomy. These were the formation of a local Branch of the BAA, and the idea to start a Mercury and Venus Section. Following correspondence between London and Mr S. Maitland B. Gemmill (1860–1911), a BAA West of Scotland Branch came into being. The inaugural meeting was held on September 6,[47] and was chaired by McEwen himself. McEwen also presided at one of the Branch meetings the following year. The early Branch was a vigorous body of over 50 members, thanks to an energetic local committee, to which McEwen (and Gemmill as its first Secretary) belonged. Furthermore, its members secured occasional use of the instruments at Glasgow Observatory and at the Coats Observatory, Paisley.

There had been some interest in the two inferior planets in the earlier volumes of the *Journal*. Why was McEwen chosen? Perhaps because he had already written of his interest in Venus work in *English Mechanic*,[48] but also because he had already become well known in BAA circles through his careful observations of Mars, Jupiter and Saturn, and through the formation of the local Branch. He would have met the Association's founder, E. W. Maunder, when the latter came up to give an inaugural lecture to the Glasgow Branch.

If McEwen's early rotation period for Venus of 23h 30m was incorrect, so too were all the other visual attempts that were ever made.[49] In fact McEwen himself, under the rather transparent pseudonym 'Arcturus', was one of those correspondents who advocated the formation of a Venus Section in the pages of *English Mechanic*.[50] 'Under a capable director something definite could be learned regarding this difficult and interesting planet.' And later that year, upon the subject of the Cytherean rotation: 'This is plainly a subject for the B.A.A. to take up – namely, a Venus section, under a capable director, backed up with observers having first-class instruments all over the world.' Very true, but McEwen might later have regretted his concluding burst of youthful enthusiasm: 'The rotation period of Venus, or something definite, would be known in a few years. Clearing up this disputed mystery would be a monument to that Association lasting to the end of civilisation.'[51]

McEwen's remarks must have been noted in London, for in the following January Council appointed him as the first Director of the new Section. News of his appointment, together with the first Programme of the Section, appeared in the *Journal* for 1895 January. His *EM* pseudonym – habitually used before that time – was quickly dropped.

The early BAA Mercury and Venus Section

Both the inferior planets are notoriously difficult telescopic subjects. Their observation has been reviewed elsewhere.[52,53] In dealing with the silvery disk of Venus, a 5-inch refractor is probably close to being an ideal instrument. It has adequate resolving power, yet does not produce an image that is too dazzlingly brilliant. In his early years McEwen had occasional

use of a local 7-inch Cooke refractor,[54] but he seems to have been well satisfied with his own instrument.

By 1895 June McEwen was again writing to *EM* about the rotation of Venus: '... the rotation period is much more than 24 hours... A number of my recent observations extend four consecutive hours, where no general turning round of the planet's body could be discerned.'[55] And he was evidently rather busy, presumably with heavy correspondence as Director: 'I have not opened an astronomical book since January.' There is also an interesting early record of the Ashen Light, 1895 July 4, where the dark side was just partly visible, and which we illustrate here (Figure 8).[56]

Figure 9. BAA Mercury & Venus Section members of the 1890s. *Top row, left to right:* Eugene Michel Antoniadi (a 1907 portrait published in the *British Chess Magazine*[70]); Scriven Bolton (by kind permission of Mr R. Emery and the Leeds AS); and Leo Brenner (1890s; from Ref. 60).
Bottom row, left to right: Henry Griffiths (1890s; RAS MSS Add 91, vol. 2, no.1); The Rev. T. H. Foulkes (1890s; RAS MSS Add 91, vol.2, no. 21); Major P. B. Molesworth (from *Mem. Brit. Astron. Assoc.,* **16**, part 4 (1910), frontispiece); and the Rev. T. E. R. Phillips (an early published portrait copied from the scrapbook of W. F. Denning (1903) in the BAA Archives). The portraits of Bolton, Foulkes and Griffiths are unlikely to have been published previously.

It had been McEwen's prime objective to ascertain the rotation period of Venus. To solve the problem he envisaged a network of BAA observers around the globe, so that if any conspicuous marking appeared the team could obtain the rotation period through mutual cooperation. Alas this noble plan could never be applied in practice: the observers did not even agree upon the character of the markings they observed – let alone their shapes. Indeed, McEwen's very first Interim Report of the new Section, published in 1897,[57] illustrates a diversity of viewpoints. At that time, several Section members imitated Percival Lowell[58] in delineating illusory narrow streaks over the planet's apparent surface. Lowell exhibited preconscious bias in both his Mars and Venus work. The wealthy Bostonian had accepted Schiaparelli's view of Mars before he had even sat down to watch the planet through the Flagstaff telescope, and he had surely decided in advance of actual observation that tidal effects must have given Venus a captured rotation. Ironically, Lowell's canal-like markings on Venus might be accounted for by the physiology of the human eye.[59] The Rev. T. H. Foulkes of Malta, and H. F. Griffiths of Streatham, London covered Venus with intricate markings, Griffiths' drawings showing linear features.

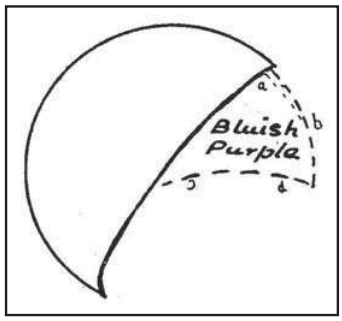

Figure 8. Venus according to McEwen, 1895 July 4, showing the Ashen Light in part: 'ab represents a bright bluish extension, gradually getting darker towards the dotted line cd, which defined the northern limit of this shading.' Quoted and reproduced from Ref. 56.

More intriguing, Spiridion Gop evik, the enigmatic Istrian observer (and former political writer) who used the pseudonym 'Leo Brenner',[60] was also a member of the new Section. He drew only diffuse shadings, but at the same time was dogmatic in maintaining that his work satisfactorily led to a rotation period of 23h 57m 36s.27728 (!). McEwen was quick to comment upon Brenner's initial announcement: 'Herr Brenner won't take it amiss if I say, if he is thinking that Venus is making a 24-hour rotation by the movement of *one* detail, he is on very treacherous grounds.'[61] Brenner also drew a very remarkable Venus map,[62] believing the dark areas to be seas. Readily published in *EM*, it would have been too much for the conservative BAA *Journal*. Such was the diverse climate of opinion of the day.

Other BAA Venus observers such as Rev. T. E. R. Phillips and Major P. B. Molesworth drew only pale, diffuse markings on the planet. Still others maintained that the planet's surface was entirely featureless at all times. How could a Section Director deal with such disparate views? In fact, McEwen never drew Lowell's straight lines, although the influence of the latter astronomer upon his early thoughts can be witnessed from the following extracts: 'The Director has frequently observed Venus with the central portion of the gibbous disk covered with detail of the most complex description'; and: 'Mr Lowell has truly said that the surface of Venus is quite different from the general impression of soft shadings';[57] and perhaps by the narrow, dark, curved features shown on some early drawings, such as one for 1892 June published in Arthur

Mee's *Observational Astronomy*.[63] McEwen was very interested in Robert Barker's 1930s re-observation of the Lowellian 'canals' of Venus. McEwen did not summarily dismiss these features, and made use of Barker's sketches in his Section Reports.[64] Throughout the first decades of its existence, the Mercury & Venus Section had few formal 'members', generally fewer than a dozen.

After some initially promising reports in the *Journal*, McEwen tended towards giving just a brief summary of the work received in his annual Reports of Council. He must have quickly realised that the accumulation of drawings was not making the question of the rotation period of Venus any easier to solve. Indeed, he seemed to withdraw from the field for several years. In the 1890s McEwen's opinion oscillated between the long and short periods. Commenting upon his early work which supported the short period, he added '...since May 1895 the Director has favoured the long period', by which he meant 224.7 days.[65] But there again in a short 1897 paper he would write that he had actually witnessed Venus turning upon its axis on 17 mornings since July 22, the new data yielding a rotation period a little under 24 hours. He promised a full account later, but never published one.[66] By the end of the 19th century, McEwen had therefore reverted to the short period. A good contemporary discussion of the problem of the rotation periods of the inner planets from the perspective of the early 20th century was given by Agnes Clerke in one of her classic books.[67]

In the Council Report for 1899–1900, McEwen deduced, apparently from micrometrical measures of the terminator shading, that the atmosphere of Venus was between 400 and 500 miles deep.[68] This of course was only an approximation, and several times too large, but his result was quoted later by others. He also affirmed his support for a short, prograde rotation period, and considered the axis to be rather inclined.

McEwen did not have very much to say about Mercury in the early years of the Section's existence. Not until the east elongation of 1909 May did he find evidence to support the long rotation period: two definite markings showed no trace of rotational movement during an hour and a quarter's scrutiny, but they did exhibit a gradual displacement over an interval of several days.[69]

Despite many avenues of enquiry, and much searching of archives, the writer regrets that he cannot produce a portrait of our subject. He wonders if any were ever taken. But this will at least be an appropriate moment to illustrate those astronomers interested in Venus with whom McEwen worked in the 1890s: E. M. Antoniadi,[70] Scriven Bolton, Leo Brenner, the Rev. T. H. Foulkes, Henry Griffiths, Major P. B. Molesworth and the Rev. T. E. R. Phillips (Figure 9). In later years – as we shall see in Part 2 – McEwen would be successively influenced by W. H. Pickering[71] and Antoniadi.[11]

The early 20th century

McEwen published many articles in the BAA *Journal* in the early 1890s: volume 5 contains three contributions, volume 6 twelve, and volume 7 seven. After that McEwen published little for a number of years. His Council Reports suggest that he had less observational success at some of the Mount Florida locations, and he seems to have done no observational work on Mars for several apparitions. (Jupiter and Saturn in the later 1890s and early 1900s were in extreme southern declination, and would have been hard to catch in favourable seeing from the latitude of Glasgow.) There were probably family pressures, too. In the 1890s Henry's widowed mother had gone to live in Edinburgh, doubtless to help her daughter Mary and her family following Mary's husband's death in 1898. But after Mary Bissett died in 1903, it seems that Mary McEwen moved to Mount Florida. Certainly she was living with Henry and his family at the time of her own death in 1911.[72]

McEwen successfully followed the Mercury transit of 1914, and re-observed (under direct vision) the faint points of light which had previously been seen against Mercury's black disk, correctly judging them to be of optical origin.[73] But the accumulation of observational material for mapping purposes was very slow. McEwen must have quickly realised that many years would pass before enough observational material might be gathered. In the early 20th century the only available charts were those by Schiaparelli[74] and Lowell.[75] Not until the 1920s would Jarry–Desloges[76] add further maps, based upon the work of P. Briault and the Fournier brothers.

In 1911 McEwen was quick to criticise Scriven Bolton's rather over-detailed drawings of Venus,[77] from which their young originator had deduced a rapid rotation of the planet. In this critique McEwen did not hesitate to summarise his own research since the 1890s. This reveals – significantly – that his ideas were shifting away from Lowell's perception of small, complex details. A large terminator indentation on Venus was witnessed during the evening elongation of 1913, having been independently discovered by McEwen and Frank Sargent.[78] The observations were insufficient to determine the planet's rotation time, but it is interesting that the two positive records of the feature (on February 15 and 19) were four days apart in time (the accepted rotation period of the atmosphere is, of course, 4.4 days). These oft-quoted records have been explored in more depth by Richard Baum on two occasions,[79,80] and two drawings of the feature are again reproduced here (Figure 3). Indentations in the terminator were also recorded during the same evening elongation by members of the Société Astronomique de France, but their drawings of February 23 do not show the feature, and it must have had only a brief existence.[81]

By the start of the First World War McEwen had still not reached a final conclusion about the rotation period of Venus, and he had not yet collected enough Mercury observations to draw a BAA chart independent of Schiaparelli. But as we shall see in the concluding part of this paper, he was to achieve a measure of success in the latter direction, as well as in early studies of comparative planetology. His most significant work was still to come.

(to be concluded; all acknowledgments will be made in Part 2).

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Notes and references

1 V. A. Firsoff's delightful book, *The Interior Planets*, Oliver and Boyd, 1968 (plate 2), was the first place where I encountered McEwen's work and learnt of its ultimate destruction.

2 This BAA Out of London Weekend, 1994 September 17–18, was reported in *J. Brit. Astron. Assoc.,* **105**(2), 92–94 (1995).

3 All of McEwen's papers for the BAA *Journal* are listed in the cumulative indices for 1890–1940 and 1940–1990.

4 For McEwen's brief obituary notice see: M. W. Ovenden, *J. Brit. Astron. Assoc.,* **65**, 363 (1955).

5 Letter from M. W. Ovenden to R. J. McKim, 1986 December 29. Ovenden visited McEwen at his home shortly after going to live in Scotland in 1953, when he (Ovenden) was still a BAA Vice-President. He told me that none of the London Council had ever met him.

6 A total of 26 Venus observational notebooks survive for the period of 1892 (his first work on the planet) up to 1948. He is known to have made further observations until 1954. The notebooks have been catalogued by Richard Baum, a past Director of the Mercury & Venus Section. The series is complete apart from two books from 1940 which are missing. (McEwen often sent original work to London for the annual Exhibition Meeting, even sending an original notebook in 1940, so there was always the chance of loss in the post especially in wartime.)

7 Letters from the current owner of 13 Holmhill Avenue, Cambuslang, Glasgow, Mr Matthew C. Nicol, to R. J. McKim, 1997 September 7 & 27.

8 Robert E. Flickinger, *The Pioneer History of Pocahontas County*, Iowa, Fonda, The Times Print, 1904. A modern reprint was published by LaCrosse, WI: Brookhaven Press, 2001 (extensively quoted online at http://www.rootsweb.com/~iabiog/pocahontas). As noted in the text, Alexander was not a son of the Rev. John McEwen, and two families must have been confused. But we give a major extract here as much of the other family information seems correct: 'McEwen, Alexander, (b. 1845), one of the pioneers of Pocahontas county and a leading citizen of Powhatan, is a native of Scotland, a son of Rev. John McEwen. His father was a minister in the established church of Scotland and served 45 years as pastor of the church at Dyke Forres, Murrayshire (*sic*).' The article then mentions, correctly, that John McEwen (actually during his University course) spent one year in Canada, 'crossing the ocean with his sister Margaret... During that year all the family were in America – his father, mother, four brothers, Peter, James, Donald and William, and sisters, Grace and Janet.' John's death in 1886 left 'a family of seven children – Alexander (*sic*) [Andrew was actually the other brother], Donald, Robert, Marjory, John, Mary and Henry. Donald, a surveyor (*sic*) in the British army, died in 1886, having spent thirteen years in India and passed through Sudan with the army under Gen. 'Chinese' Gordon. Robert went to India, where he engaged in the indigo trade and died at Edinburgh in 1893. Marjory married John Smith, a merchant at Hong Kong, China. John became an assistant to his father before his death and is now his successor as pastor at Dyke Forres. Mary married Rev. George Bissett of the established church, and lives in Edinburgh.' Now we come to the subject of this biography: 'Henry is superintendent of the electric light plant in Glasgow. He received a medal for some astronomical drawings from the London Astronomical society (*sic*) at the World's Fair in Chicago in 1893, and was made a member of the Royal Astronomical Society of London.' The text continues with details of Alexander McEwen's life up till 1904.

9 I am most grateful to Angela Seenan (Archival Assistant, University of Strathclyde) for checking records concerning McEwen's years at the former Technical College, and for sending explanatory details of the Whitworth Exhibitions and Scholarships from the G&WSTC Calendar for 1895/96.

10 Correspondence between the writer and Harvard University Archives and Tulhane University Archives (New Orleans, Louisiana), USA, 1997.

11 R. J. McKim, *J. Brit. Astron. Assoc.,* **103**, 164–170 and 219–227 (1993); **104**, 8 (1994) and **106**, 347 (1996).

12 'Mr Gladstone... electrified the House by declaring that every man who was not incapacitated by some consideration of personal unfitness or of political danger was morally entitled to come within the pale of the constitution.' See Arthur Bryant's *English Saga* (1840–1940), Collins, 1940, page 187.

13 From the birth certificate accessed via the official Scottish government internet site (http://www.scotlandspeople.gov.uk). Henry habitually spelt his surname as MacEwen in the early 1890s, and it is often spelt thus in the earlier volumes of the BAA *Journal*. The letterbox of his later residence at Cambuslang, Glasgow, is also imprinted with the name MacEwen. But frequently he abbreviated it to McEwen. The official records and censuses contain many errors in spelling, the commonest being McEwan. Mr Robert McEwen informs me that MacEwen is really correct.

14 H. V. Morton's classic travelogue *In Search of Scotland* was first published by Methuen & Co. in 1929. Details about Forres and surroundings were extracted from several sites on the internet. (In particular, see: http://www.forres-net.co.uk)

15 From the entry for the family of the Rev. John McEwen in Hew Scott's *Fasti Ecclesiae Scoticanae*: *The succession of Ministers in the Church of Scotland from the Reformation*, Volume 6, *Synods of Aberdeen and of Moray*, Oliver & Boyd, 1926. (See Volume 2, *Synods of Merse and Teviotdale Dumfries, and Galloway*, 1917 for details of George Alexander Bissett.) Henry McEwen is listed as Harry. We should note in passing that this compendium is somewhat inaccurate in general. Thus Andrew Robert Haldane McEwen is listed as two separate brothers, Andrew and Robert Haldane.

16 From information kindly supplied by Mrs Kirstine Baxter of Bishop's Stortford, a descendant of the McIntosh family.

17 Another church in Dyke, now called 'The Old Kirk' and formerly a Free Church of Scotland, is today a bed and breakfast establishment. Its present owners, Christine and Uwe Schlueter, kindly supplied historical details, as well as many photographs of the Rev. John McEwen's Church of Scotland manse (see Figure 4B). The two Dyke churches were united in 1941.

18 The *Forres Gazette*, Wednesday June 16, 1886.

19 For this information I am grateful to Graeme Wilson, Moray Council Local Heritage Officer. However, Donald Keith McEwen, son of John McEwen Jr., had lived in the area till his death in 1972.

20 After several changes of name, this college later amalgamated with the Scottish College of Commerce to form the University of Strathclyde in 1964. (See http://www.strath.ac.uk for further historical details.)

21 Samuel Smiles *(ed.)*, *James Nasmyth, Engineer, an Autobiography*, John Murray, 1885.

22 Calculated from the accepted figures giving the fluctuation of the Retail Price Index over the years.

23 This is implied by remarks in a paper concerning the visibility of the crescent Venus with the unaided eye. See H. McEwen, *J. Brit. Astron. Assoc.,* **6**, 34–35 (1895).

24 He was not included in the Liverpool Astronomical Society's membership lists for 1884 or 1888, which I was able to locate in its *Journal*, in the RAS library.

25 McEwen's 5-inch Wray features in a Small Advertisement in *J. Brit. Astron. Assoc.,* **65**, part 6, iii (1955). McEwen's successor P. A. Moore – now Sir Patrick – recently informed me that he too never discovered the fate of this telescope.

26 McEwen contributed two very interesting papers about telescopic eyepieces: see H. McEwen, *J. Brit. Astron. Assoc.,* **36**, 48–51 (1925) and **37**, 59–62 (1926).

27 H. McEwen, *English Mechanic*, No. 1470, **57**, 309–310 (1893 May 26).

28 Having personally studied eyepieces from this epoch, Christopher Lord is of the opinion that the minimal eye relief of Wray's originals would not have been conducive to the use of colour filters (private communication 2003 April 30). In any case, McEwen wrote of his aversion to using 'coloured glasses' in the light-path (*J. Brit. Astron. Assoc.,* **6**, 65–66 (1895)).

29 The writer thanks Richard Baum for his descriptive catalogue of these diaries, compiled whilst Director of the Mercury & Venus Section.

30 H .McEwen, *The British Astronomical Association, Its Nature, Aims and Methods*, Notes Supplementary to the 1948 edition, 1952 October, pp 2–3.

31 N. E. Green, *Mem. Brit. Astron. Assoc.*, **2**, part 1 (1893), frontispiece.

32 R. J. McKim, 'N. E. Green: Artist and Astronomer', *J. Brit. Astron. Assoc.,* **114**, 13–23 (2004). This paper describes the origin of Green's planetary drawing blanks.

33 RAS MSS WILLIAMS contains letters, lists of CM transits and Jupiter drawings sent from McEwen (and many others) to Stanley Williams.

34 RAS MSS WILLIAMS 2; copy of letter from Williams to McEwen, 1893 May 10.

35 RAS MSS WILLIAMS 5.32.
36 For Becker's life and work, see his obituary notice in *Mon. Not. R. Astron. Soc.*, **108**, 41–43 (1948).
37 RAS Letters, 1895; H. McEwen to W. H. Wesley, June 27.
38 RAS Letters, 1904; H. McEwen to W. H. Wesley, April 7.
39 This fee-paying school has produced many famous pupils in its long history, such as the author John Buchan. Records for the period of James' education are unfortunately missing.
40 René Jarry–Desloges published ten fine volumes summarising the work of his observatories located in France and Algeria (including all the observational work by the Fournier brothers on Mercury and Venus, which was of special interest to McEwen): *Observations des Surfaces Planétaires*, 1907–1946. McEwen's BAA Library card shows that he had borrowed these volumes for long stretches of time.
41 From information given on James McEwen's death certificate (1984). I have not tried to locate James' place of work.
42 The following addresses for McEwen before and after his marriage were located from the G&WSTC records, BAA membership lists, the BAA *Journal*, RAS correspondence and contemporary GPO directories: during 1888 to 1890 he lived at 5 Elliot Street. From 1891 he lived in the suburb of Mount Florida. Until the summer of 1897 – by which time Sarah had become pregnant – the address was 5 Cathkin Terrace; from then till 1901 the McEwens lived at 10 Ethel Terrace. In 1901 they moved to 5 Wendover Crescent; in 1904 they relocated to what would have then been a brand new flat at 10 Randolph Place. But according to the Post Office Directory for 1906 the McEwens had moved back to 5 Cathkin Terrace, Mount Florida. (Ethel Terrace was demolished in the 1960s following subsidence.)
43 This information was taken from the website of the Hampden Terrace Residents Association, http://www.hampdenterrace.co.uk, and from two excellent recent historical booklets compiled by Jean Rafferty: *Mount Florida Part 1: Notes and Nostalgia*, Hampden Terrace Residents Association, 2001; *Mount Florida Part 2: Buildings & Blethers*, Hampden Terrace Residents Association, 2002.
44 *English Mechanic*, No. 1590, **62**, 89–90 (1895 September 13).
45 The map *Lanarkshire, Glasgow and its environs*, sheet X. 2.20, 1895 (2nd edition) gives names to individual terraces and is therefore useful; a copy was supplied by the Mitchell Library, Glasgow.
46 This discovery by Jean Rafferty was sparked by a childhood memory: imagine the surprise when Laurel & Hardy turned up out of the blue at her school Sports Day in 1945, throwing sweets from a car to the children! She then discovered that Stan Laurel had attended the same school (truancy notwithstanding). Stan was on stage in Glasgow at the age of 16; in 1910 he visited the USA with a touring company as understudy to Charlie Chaplin. And he stayed...
47 *J. Brit. Astron. Assoc.,* **5**, 502–503 (1895). Unfortunately the early Branch records have been mislaid by the Astronomical Society of Glasgow.
48 The first letter written by McEwen to the Editor of *English Mechanic*, as far as I can be sure, appeared in that serial in 1894 January.
49 A very useful historical list of rotation periods quoted by different authorities can be found in: Garry Hunt & Patrick Moore, *The Planet Venus*, Faber & Faber, 1982, Appendix 2. All are very wide of the mark!
50 'Arcturus' (*aka* H. McEwen), *English Mechanic*, No. 1509, **59**, 11, 1894 February 23.
51 'Arcturus' (*aka* H. McEwen), *ibid.,* No. 1547, **60**, 296, 1894 November 16. [We might just add that '*EM*' was somewhat notorious for allowing the use of pseudonyms at that epoch: one of the best-known astronomical ones was 'F.R.A.S.' (*aka* Captain Noble, the first BAA President).]
52 R. J. McKim, in J. Muirden *(ed.)*, *Sky Watcher's Handbook*, W. H. Freeman, 1993, chapter 3.
53 R. M. Baum in P. Moore *(ed.)*, *The Observational Amateur Astronomer*, Springer, 1995, chapter 5.
54 H. McEwen, *English Mechanic*, No. 1552, **60**, 408–409 (1894 December 21).
55 H. McEwen, *ibid.,* No. 1579, **61**, 414 (1895 June 28).
56 H. McEwen, *ibid.,* No. 1583, **61**, 507 (1895 July 26).
57 H. McEwen, *J. Brit. Astron. Assoc.,* **7**, 380–381 (1897).
58 For some details of the historical work of the Lowell Observatory see the writer's BAA Presidential Address, 'Astronomy on Mars Hill', *J. Brit. Astron. Assoc.,* **105**(2), 69–74 (1995).
59 W. P. Sheehan & T. Dobbins, *Sky & Telesc.,* **104**(4), 12–14 (2002).
60 For a biography of Leo Brenner (1855–1928 or 1936), see: J. Ashbrook, *The Astronomical Scrapbook*, Cambridge University Press, 1984. Also see: J. Ashbrook, *Sky & Telesc.*, **56**(6), 515–516 (1978). Since the 1990s there has existed a 'Leo Brenner Society', based in Mali Lošinj (formerly Lussinpicollo), the town where Brenner had founded his 'Manora Observatory'.
61 H. McEwen, *English Mechanic*, No. 1586, **61**, 579–580 (1895 August 16).
62 Leo Brenner, *ibid.,* No. 1590, **62**, 88–90 (1895 September 13) and *ibid.,* No. 1592, **62**, 137–139 (1895 September 27). There were two equally spurious versions of this remarkable map!
63 Arthur Mee, *Observational Astronomy*, Western Mail Ltd., Cardiff and London, 1897, frontispiece.
64 The writer thanks R. M. Baum for pointing out McEwen's interest in Barker's work. Barker was an observer who habitually drew the fine, illusory martian canali. (This can be seen from his writings or from the BAA Mars Section Archives for the period 1924 to 1952.) Antoniadi wrote of him 'he admires Lowell blindly.'[11] An example of one of Barker's Venus papers can be found in *J. Brit. Astron. Assoc.,* **43**, 159 (1933).
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70 Edward Winter of chesscafe.com kindly provided a high resolution scan of this portrait, facilitating its first reproduction in an astronomical journal. The portrait is reproduced with an article about Antoniadi's chess-playing in: *British Chess Magazine*, 1907 September, pp 413–415 (1907).
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81 For a few years around 1913 the Société Astronomique de France issued a separate annual publication collecting together the observational work done by its members, though this material was also published in its regular journal, *l'Astronomie*. Some of the Venus observations for 1913 were recently reproduced again in a work celebrating 100 years of the SAF's journal: Audouin Dollfus, Roger Kieffer & Michael Sarrazin *(eds.)*, *Un siècle d'Astronomie*, Société Astronomique de France/Editions Vuibert, 2003. (See page 38 of the latter work.)

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