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Catherine Raisin, a role-model professional geologist

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Catherine Alice Raisin (Fig. 1) was born on 24 April 1855, the youngest child of Daniel Francis Raisin and Sarah Catherine Woodgate. She lived at 13 Camden Terrace, Camden New Town, in the subdistrict of Kentish Town, then in the County of Middlesex. Her father was employed at the Inner Temple as a pannierman, a paid officer of the Inns of Court who brought provisions from the market with a horse and panniers - hence the name. These posts were abolished in 1900. Both her parents were from the Suffolk/Essex border, her mother hailing from Kersey, near Hadley in Suffolk, and her father from Sturmer, near Haverhill in Essex. They had moved away from their families to London, probably for work..Catherine had three brothers who were substantially older than herself as her mother was 45 when she was born.

She was educated at the North London Collegiate School and received a sound training in all subjects. North London Collegiate School was founded in 1850 and was one of the oldest girl's private schools in Britain. In 1871 it became an endowed grammar school, allowing parents of less well off pupils to enrol their daughters. Miss Buss, the head teacher and founder of the school, believed vehemently in female education and provided her pupils with an enlightened curriculum using only qualified teachers. Catherine remained as a teacher at her old school until 1875.

Higher education

From an early age, Catherine had an interest in geology, perhaps kindled by her eldest brother's employment as an ornamental engraver. By her own admission, in 1893 she acknowledged, when receiving the Lyell fund from the Geological Society of London, the debt she owed to Sir Charles Lyell 'whose *Principles of Geology* was one of the earliest books to arouse my enthusiasm'. At the age of 18, she went to classes in University College London, and first

studied geology under Morris in 1875-1876 and the following year, mineralogy, the subject that was to become her own speciality and research area.

By 1878, London University had opened its doors more widely to women and Catherine entered those hallowed doors, emerging in 1879 with a pass in the intermediate exam. She returned the following year to complete her degree, working and studying under T.G. Bonney, but she also attended Thomas Huxley's zoological lectures at the Royal School of Mines. In 1884, she was finally awarded her BSc (Hons) in both geology and zoology. To complete her degrees, she received a DSc in 1898, only the second woman ever to achieve this honour. During her studies, she developed an interest in microscopic petrology but above all else valued fieldwork. Later in her teaching career, she was renowned for taking 'her girls' out into the field until male students turned up, at which point she would march the girls out of the quarry or away from the cliff section.

Catherine Raisin published over 24 journal articles during her academic life, mostly on the petrology of serpentines. Her first paper, in 1887, was read to the Geological Society of London by Bonney - not by herself, as women were not normally allowed to present them. This was only three years after she graduated. At this time, she was working as a demonstrator in botany at Bedford College. Her paper followed up on work by Bonney in South Devon and Salcombe. She made two visits to the area to collect and study for this first paper and a pattern started to emerge where Catherine did the fieldwork and Bonney did the microscopy. He acknowledged this in 1899 in a paper regarded as a classic, being the first to try to map metamorphic facies.

As well as publishing in the *Quarterly Journal of the Geological Society*, she also published a paper in the 1903 *Proceedings of the Geologists' Association*, of which she was a member for 67 years. She was very careful and detailed in her work, and in this respect she mirrored Gertrude Elles and Ethel Wood in their graptolite work. She was also following a long-established tradition in geology set up by James Hutton in that she believed in observation

and interpretation founded on in-depth fieldwork, a skill she taught to her students. However, she always backed up her fieldwork with lab work and was regarded as a first class petrographer. This was acknowledged by her PhD student, Doris Reynolds.

Catherine spent her whole academic career at Bedford College, which had been founded in 1849 by Elizabeth Jesser Reid as a girls' college. In 1890 she took over from Grenville A. J. Cole as Head of the Department of Geology, the following year being appointed Head of the Department of Botany too. By this time, the college had moved from its original location in Bedford Square to York Place, near Baker Street. The third move, to Regent's Park in 1913, was during Catherine Raisin's time as head of department. In her correspondence, she alludes to the time-consuming event it must have been because it disrupted her research work. 'No other Lecturer, holding, as I do, that it is an essential for a college post, that research work should be carried on, would have such work interrupted first, by a struggle to maintain for many years two departments of the college and then, secondly, when that extra burden was laid aside by the necessity of planning rooms and moving and arranging collections. Nor I think would any other Lecturer be likely to give to this last mentioned duty such an excessive amount of time as I have given'.

Higher positions

In 1898 she was appointed the first female Vice-Principal of a college, a position she held for three years, and in 1902 she was elected a fellow of University College London. During this time she was still head of the two departments, positions she held until 1907, when she recommended that the departments be split up into two. From this time onwards, until her retirement in 1920, she remained Head of Geology - a total period of 30 years. I wonder how many heads of departments would take on the task nowadays if that was the length of time required? She was therefore Morton-Sumner Curator and Lecturer in Geology from 1906, and from 1907 the Morton-Sumner lecturer in geology and geography. Under her initial instigation, geography became both a separate subject and, on her retirement, a separate department. She still

felt, however, that geology should underpin geography. 'I know no better subject for general training in science and widened thought than geology - precise in its methods and yet giving broad interests in its bearing on earth features and geographical methods'.

Catherine Raisin was remarkable for four reasons:

- (1) her research into petrology, especially serpentines;
- (2) her dedication to female education and equality;
- (3) her enthusiasm for her subject, which made her an excellent teacher; and
- (4) her administrative capabilities.

To illustrate the first of these, I will refer to her publications and extensive collection of over 270 specimens of serpentines from Anglesey, Vosges and the Brenner area, all of which she personally collected. Catherine also published a paper on the formation of chert and its microcrystalline structure in Jurassic strata in the *Proceedings of the Geologists Association* in 1903, but her key paper was in 1905 with T. G. Bonney in the *Quarterly Journal of the Geological Society*. However, she constantly complained about the lack of time her teaching and administrative duties gave her for research - for example, '...a Department Head to devote his or her whole time to the (administrative) work. Even the whole time will prove inadequate, since it rarely allows the lecturer to carry on their own research investigations.'

To illustrate the second reason, I would mention her founding of the Somerville Club, a discussion forum for women started in 1880 in London at a time when women had few intellectual opportunities. She was only 25 at the time. At its height, the club had over 1000 members. This pioneering achievement was the forerunner of the youth movements of today. She served first as its honorary secretary and then as its chairman. It was deemed to have served its function when other educational opportunities were made available to women in London, and so it was wound up in 1887.

As further illustration of the second point, I can do no better than to quote Catherine herself in a letter of 1901 to the Council of Bedford College about

the future management makeup of the college: 'the council itself to be made up of 1/3 women'. In this communication, she also points out that only two out of 15 heads of departments were women. She must have had an affinity with the other female professor, Beatrice Edgell, as she left her £400 in her will many years later. Professor Edgell actually wrote her obituary in 1945. The general situation in Britain is not substantially different today, except, of course, that Bedford College was then an all-women college. I will make no further comment here.

Illustrating the third reason, I register two facts: (1) her students called her 'The Sultana' as a sign of endearment; and (2) one of her students and protégés was Doris Reynolds, the second wife of Arthur Holmes. Indeed, Doris wrote Catherine's obituary in 1945 in the *Quarterly Journal of the Geological Society*.

The fourth part of Catherine's remarkable achievements was that she was able to run three departments simultaneously. She was masterful in balancing the requirements of the Geology, Botany and Geography departments and in college committees. To quote her colleague and head of geology from 1921, Leonard Hawkes, she was 'to the weaker brethren, an intimidating fighter'. 'Neither colleagues nor students could lightly disregard her opinions on college matters. Her earnestness and sincerity were always beyond question, even where one disagreed with her point of view' (Beatrice Edgell).

However, the workloads were increasingly burdensome and she was continually asking for additional help as she did all her own specimen curating as well as lecturing. In March 1907, some help materialized in the form of two female lecturers, one in Botany and one in Geology, although later in 1907 she lost her key demonstrator, Miss Gibson, to a school teaching position.

In 1910, a temporary demonstrator was appointed but only after Catherine supplemented her pay herself. In fact, generosity was a trait that shows itself throughout her life and indeed after her death too.

Until 1910, Catherine Raisin, despite her position, had only one-year appointments, but after that date conditions of employment changed. So in March she was appointed for three years as Head of Geology and Morton Sumner Lecturer, at £400 per annum full time. In comparison, at this time demonstrators received £100 and worked full time with 16-22 contact hours. Funnily enough, Catherine, while accepting the appointment, complained that there was not enough time to carry on her own research. Again, it is a cry often heard today. This is true of many of the comments that Catherine made throughout her life and career and echoes of comments made then are equally applicable today. Catherine was certainly at the front, if not ahead, of her time in educational matters.

In 1913, her salary went up to £600 per annum, but with statutory retirement looming at the age of 60 years and a life of educational service behind her, she was not ready to give up yet. The move to Regent's Park had just been completed and she had not yet had time to organize the collections to her satisfaction. It is interesting to note here that the contractual agreement between the college and Catherine Raisin in 1913 refers to Catherine as 'he' not 'she'! It also stipulates that in the event of absence for any reason during term time, the lecturer may be requested to provide a substitute at 'his' own expense. Obviously, *Miss Raisin* was exempt!

Throughout this time, three questions constantly raised their heads, all of which could easily be true even now: (1) what will happen to my collection of specimens when I retire?; (2) why do I only get short-term contracts?; and (3) why in 1919 did a man get precedence for a job over a woman who was equally well qualified? Except for the date in the last statement, all these questions could be heard and debated today!

As Catherine approached retirement, she was most concerned about her collection. However, these were unusual times as The Great War raged. 'But the War has changed this, and other work would be now more urgent. I have therefore to determine in what way my geological collection may be of most use in the future'. Of course, we all know now that the World War continued to

dominate life and special circumstances were operating. Thus in the event Catherine did not retire but continued in her position until 1920, when she was 65 years old.

In answer to the second question, she queries another one-year appointment by stating firstly 'I greatly regret that they have not allowed me the hope of retaining my appointment for the term of five years permitted by statute.' And secondly: 'I might, at least, have looked forward to devoting time during the next four or five years, as I would wish, to some of my many specimens. But the Council have negatived this possibility'.

As regards the last question, Catherine Raisin states: 'The (Botany) Committee decided to recommend:

- (a) that there should be a temporary appointment for one year,
- (b) that it should be offered to Mr N.J.,
- (c) that after next session there should be a University appointment made in the usual way.

The committee was practically unanimous on (a) and (c) but unfortunately the recommendations (a) and (b) were put together and voted on as one resolution'. She goes on to argue the case for a female applicant. 'Miss H... has practically carried on the Department for a considerable time. No difficulties have as far as I know arisen in this administration... If a temporary appointment is to be made it would be an opportunity for the college to show Miss H. the appreciation which her loyal action deserves.' The Council's reply is not recorded.

Catherine was generous with both time and money throughout her long life. There are examples of her topping up wages, giving money for prizes, spending time with students to help them understand problem areas and finally in death making bequests. She left £12 117, and much of this was to educational institutions and family and friends. University College, Bedford College, Westfield College and St. John's Hall, all of London University, benefited from her inability to serve the war effort and all of which had

suffered material war damage. However, her legacies that made the headlines in *The Times* and *The Daily Telegraph* were those to the National Society of Non Smokers for £300, and £200 to the 'Headmistresses Association, the interest to be applied for an annual lecture on the duty of thrift!' (*Salford City Reporter*, 1946).

Catherine's generosity comes through

- in 1915 when she (anonymously in the first instance) offered a prize of £50 to a suitable candidate for Hons. Geology;
- in 1916 when she donated £150 to the college to start up Geography as a subject;
- in 1917 when Miss Munroe's salary was supplemented by Catherine;
- in 1932 when she donated 475 maps to the Geography department; and
- in 1946 when she left £300 in her will as a annual prize for the Geography department. This is still awarded today.

Catherine Raisin never married and regarded her students as her children, especially her daughters! Although average in stature, she had a strong profile and was strong in mind and body. She was not afraid to stand up for her rights or the rights of others if she felt injustice had been done. Perhaps this is as a result earlier in her life of having three older brothers. All her life she was an avid non-smoker and joined the National Society for Non Smokers as soon as it was established in 1926. She was not afraid to tell people of her displeasure in theatres, trains and on buses when they lit up! A formidable character! She felt so strongly about this that in her will she left a £500 bequest to Bedford College for the benefit of nonsmoking students.

Catherine started asking questions at a time when questions were not usually asked and she fought hard for female rights. In 1907 she attended the Geological Society's centenary celebrations and remarked that 'Except for a representative of a Belfast College, I was the only woman among the delegates: and many would have regretted it if they had not included some

representative on women geologists'. She had a formidable exterior but a heart of gold - a true pioneer and a 'character'. Archibald Geikie, the President of the Geological Society at the time, wrote: 'We have also to express our sense of the honour conferred upon the Society by the fact that the College was represented by so distinguished a delegate as Miss C.A. Raisin'. It is interesting to note here that he does not use her professorial title. Obviously her sex is of greater importance!

She entered each door as it was opened for women and her achievements are listed here:

- the first woman to study Geology at University College London (1875);
- the first woman to become professor of a science department in Bedford College and head of a Geology department (1890);
- the first woman to receive the Lyell Fund (1893);
- the first woman to become Vice-Principal of a college (1898);
- the second woman to receive a DSc from London University (1898);
and
- the ninth in the second batch of women to become Fellows of the Geological Society on 25 June 1919 along with Margaret Flowerdew Romanes (née Macphee).

As Catherine approached her final years, she increasingly became an invalid and for the last three years of her life was confined to one room. She must have missed the field excursions of earlier times. She maintained a keen interest in current affairs up until the end.

Catherine Raisin died of cancer at the age of 90 in Ash Prior's Nursing Home, Cheltenham, on 12 July 1945 as the Second World War was ending. Her fight finished first. Her legacy was outstanding. Perhaps it is fitting that a female doctor, Gwendolen Brown, certified her death. The final accolade! However, she never lost her interest in geology and up until 1932 attended lectures of the Geologists' Association. In her obituary in *Nature*, Doris Reynolds summed up Catherine Raisin as 'not only a stimulating and enthusiastic

teacher, who worked ungrudgingly to promote their interests, but also as a generous, brave and sympathetic woman whom they loved.' What better tribute can a woman have?