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Eliza Catherine Jelly (28th September 1829 – 3rd November 1914): pioneer female bryozoologist

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1. Introduction

We should first note the great difficulty in studying the history of women, as one of us realised when investigating the career of the English fossil collector and dealer Mary Anning (1799-1847).¹ The real problems which such women scientists faced during their careers are nicely demonstrated by the treatment meted out to another of the first women in English science, who wrote a pioneering *Catalogue* of the fossils of Wiltshire in 1831. This is the Wiltshire-based geologist and palaeontologist Etheldred Benett (1775-1845). After she donated a copy of this in person to the British Museum library, she wrote thus in 1836 of her treatment at the hands of males:-

They have made me a member of the Imperial Natural History Society of Moscow and have sent me a Diploma of the appointment, but it is provoking that no one will believe that a Lady could write such a trifling thing [as her *Catalogue*] - in this Diploma I am called *Dominum Etheldredum Benett* and Mr Lyell [Charles Lyell 1797-1875] told me that he had been written to by foreigners to know if *Miss Benett* was not a Gentleman, as of course I sent them all 'with Miss Benett's compliments': nor was this error confined to Foreigners. I had two letters the

same day from the British Museum, one thanking me for fossils [collecting which was a respectably female activity] as Miss Benett, the other for my book as Etheldred Benett Esq., though I gave the Book into the hands of one of the Librarians and told him that it was written by myself, so you can see that scientific people in general have a very low opinion of the abilities of my sex.²

We shall find Eliza Jelly facing similar problems as a student of zoology 52 years later (see Figure 1).

Born ten years after Queen Victoria (1819-1901), Eliza Catherine Jelly lived through the entire Victorian era and into the Edwardian - from gaslight to electric lighting, from the horse-drawn carriage to the motor car - yet, largely because of her sex, many details of her life remain both enigmatic and symptomatic, of the silence afforded to the many women who were already working in science. We have been able to uncover a good deal about where, and with whom, she lived, but little of the how or why of her life and particularly why exactly she became a bryozoologist. What we do know of her character and motivation comes from her own writings, the preface to her book and her extant letters to colleagues, especially the series written from May 1895 to Sir Sidney Frederic Harmer (1862-1950), while he was superintendent of the University Museum of Zoology at Cambridge University, now preserved in the Bryozoa Section at the Natural History Museum, London. As much as we can, we hope to let Miss Jelly speak for herself.

2. Parentage

Eliza Catherine Jelly was born in Bath, Somerset, England, on 28th September 1829.³ But only her christening, on 11th November 1829, was recorded in the registers of St. Swithin's, the Walcot parish church near the house at 13 Walcot Parade, where her parents then lived. The situation with her only brother, Harry Richardson Jelly (1831-1894), was different. His birth on 21st March 1831, was carefully recorded in these same registers, along with his baptism, when he was later christened in the same church.

Her father, Harry Jelly (1800-1843), was an Anglican clergyman and Oxford graduate. Her mother, Eliza Cave (c. 1798-1860), came, like her paternal great-grandfather, from a family of Bath builders. Her parents were married at Walcot by licence on 1st January 1829. Like many clergymen of the time, Harry Jelly was also a naturalist, with strong interests in palaeontology.⁴ During the nineteenth century natural history was considered a most desirable hobby for a clergyman. Not only might hiking through the countryside keep him active and healthy, but searching for the plants, fossils, or insects that were his special interest allowed him many opportunities to interact in a casual and friendly way with his parishioners, increasing his ability to serve as their spiritual advisor.⁵

Harry Jelly had been orphaned in August 1801 at the age of less than one by the death

of his father Thomas Jelly junior (c. 1763?-1801), an attorney in Bath. The same fate soon attended Harry's later close friend John Phillips (1800-1874), orphaned in 1808, who was to become Professor of Geology at Oxford University.⁶ Phillips later referred to Harry Jelly as "one of my earliest friends... and a student in the school of Richardson and Smith".⁷ Phillips had, by 1813, been sent to a school at nearby Holt in Wiltshire. This had been recommended to his uncle, William Smith (1769-1839), the pioneer of stratigraphy and mineral prospecting, by Smith's friend the naturalist parson, Rev. Benjamin Richardson (1758-1832) after whom Eliza's brother was to be named. From this school, in 1814 Phillips "passed to a most pleasant interlude by accepting a twelve-months invitation to the home of my ever-honoured friend, the Rev. Benjamin Richardson of Farleigh Castle, near Bath", where he joined Harry Jelly.⁸

3. Jelly ancestry

Eliza's great grandfather, Thomas Jelly senior (fl. 1752-died 1781), was a carpenter, builder and architect in Bath who was one of the creators of that fashionable spa city from 1752.⁹ He married Mary née Smith (1725-1790),¹⁰ then of Bradford-on Avon, Wiltshire, at Bath's St Michael church on 25th September 1760.¹¹ The close link between the Jelly and Richardson families arose from this marriage, because Benjamin Richardson's wife Ann was a daughter of another marriage,¹² now of Richard Whatly (1709-1782), also of Bradford-on-Avon, to Mary Smith's younger sister, Elinor Smith (1725-1786). These two sisters were daughters of Richard Smith, and his wife Elizabeth and baptised on 25th July 1725 and 26th February 1726 at St Martin in the Fields, London.¹³ Harry Jelly was thus, not Richardson's nephew as claimed,¹⁴ but "a distant relation" of Mrs Richardson by marriage.¹⁵

Benjamin Richardson had married Ann Whatly in 1785.¹⁶ Benjamin Richardson's will¹⁷ left everything to his widow Ann Richardson (1763-1847) and was witnessed by Harry Jelly's first cousin Selina Jelly (born 1789) and by Harry's brother-in-law A.G. Barretté. Ann Richardson's will¹⁸ equally mentions her many Jelly relations, including Harry Jelly and his first cousin John Gresley Jelly (1790-1859), the father of Selina.

Thomas Jelly senior had had three children, Mary and two brothers, John Jelly (1761-1813)¹⁹ and Thomas Jelly junior (c. 1763?-1801). John Jelly provides the first evidence of any Jelly family interest in natural history. After entering Lincoln's Inn in London from 1782 and marrying well,²⁰ he became a money lender and solicitor in Bath. Here he published in 1794 *Hortus Bathoniensis or a Catalogue of the Plants cultivated in the Subscription Botanic Garden at Bath*.²¹ But on 7th February 1795 a Commission of Bankruptcy was issued against him²² and he was forced to sell his house and property, including the Botanic Garden he had created.²³ He had also collected material for a "*Flora Bathonica*, which, from [these] unforeseen circumstances, was never published".²⁴

John's younger brother, Thomas Jelly junior, was equally unfortunate. He was baptised in 1773 but this seems certain to have been a late baptism. He was probably born about 1763. He too became a solicitor in Bath, but died in August 1801 supposedly aged 27 [probably 37], leaving a widow and six children²⁵ including Eliza Jelly's father. Such were the sad circumstances of Eliza Jelly's grandfather and great uncle.

4. Eliza's father

Harry Jelly was orphaned at an age of less than one. He is first heard of when he and John Phillips spent time together living with the Richardsons at Farleigh Hungerford rectory, Somerset in 1814 and 1815, before Phillips left for London on 21 November.²⁶ Certainly Harry Jelly was still living with the Richardsons between 1818 and 1821.²⁷ He next matriculated at Oxford University (St Alban Hall) aged 27 in 1828. He was awarded his B.A. degree in 1832 and his MA degree in 1835. He next became curate at Farleigh Hungerford in 1831 and 1832,²⁸ serving as assistant to its rector Benjamin Richardson, the man who had inspired him long before this to start collecting fossils. He is first recorded donating some of these, Chalk, fossils from Wiltshire and Transition beds [Silurian] fossils from Gloucestershire, to the Bath Literary and Philosophical Institute in 1826.²⁹ He was duly listed as a geological donor to that Institute in 1829 in William Lonsdale's MSS catalogue.³⁰ This overriding interest was one on which he also published some papers, as well as some valuable biographical notices.³¹

His only published volume, of *Sermons* published by subscription, shows that he next became assistant curate at Walcot, St Swithin's church, where Eliza had been baptised. He took up this position on 18th September 1832 at the annual salary of £100.³² His final position was as Minister or perpetual curate of Trinity Church, Bath. Sadly he had by now become an invalid, suffering from consumption (tuberculosis). From his letters to John Phillips after 1836,³³ a little of his movements can be gathered. In 1836 he was living at 12 Claremont Place, Bath. By August 1837 he was at Redland, near Bristol and again visiting there in August 1838, when he writes that his "long illness [had] caused me to be ordered down to Penzance [Cornwall] last winter [between January and June 1838] as a means of escape from the severity of the winter". While he was there Harry Jelly collected corals and other fossils from the South Devon coast for Phillips.³⁴ In the same letter Jelly adds:-

I am thinking of a longer journey... for I am seriously proposing a voyage this autumn [from October 1838] to Jamaica. I have a[n elder] brother³⁵ settled there in the practice of physic and he strongly urges my making a sea voyage as the best means of recovering my health.

This journey Jelly certainly made, as he donated specimens from Jamaica to the Geological Society of London in September 1839 (see Note 31).

His published volume of sermons is dated from Penzance March 1840. This shows that he had returned to Cornwall after Jamaica, having been forced by ill-health to give up his Trinity Church position in Bath. In February 1841 he was still in Penzance living at 3 Morrab Place. But his ill-health had failed to respond to either the West Country or the West Indies and on 18th March 1843 he died at Down Cottage, West Clifton, near Bristol aged 41, and was buried at St John the Evangelist church, Redland, Bristol.³⁶ Phillips recorded in an April 1843 letter how fine Jelly's personal collection of fossils had been, but all trace of it has since been lost.³⁷ Jelly's 1838 will, leaving effects under £6,000, was proved on 13th July 1843 in the Prerogative Court of Canterbury. This left all his estate to his widow Eliza, now of Westbury-on-Trym, Bristol, who died 8th September 1860 aged 70 at 11 Lockyer Street, Plymouth, Devon.³⁸ After her demise his estate was to be shared equally between his two children, Harry Richardson and Eliza Catherine since they had long reached the age of 21.

5. Eliza's natural history background

Under such a family's, and in particular such a father's, influence, it is easy to see how Eliza Catherine was drawn to the study of natural history. But for her, living invertebrates, especially molluscs and bryozoans, and plants, particularly algae and liverworts, were finally to prove more attractive than fossils. The Jelly family lived in the Bath and Bristol area until Eliza was 13, with visits to the sea coast at Penzance, in Cornwall, in hope of restoring their father's health. It is almost certain that Eliza's first experiences with bryozoans came while collecting on the seashores there. The family seems to have remained in Devon until 1860 where, as we have seen, Eliza's mother was living, in Plymouth, when she died.

The Jelly's were never wealthy, and the opportunities open to their children were limited by this fact. Harry Richardson Jelly did briefly attend one of England's best (or at least now most expensive!) schools, Eton College, in Berkshire from January 1845 at the age of 13 where his tutor was W.L. Evans but he appears to have very soon left, in the summer of 1846.³⁹ Probably funds collected for his education after his father's early demise had been exhausted. He next matriculated at Oxford (Brasenose College) in 1849 aged 18. He graduated B.A. in 1854 and now followed in his father's footsteps by becoming an Anglican clergyman. He was ordained at Winchester between 1854 and 1861, when, now as Jellie to confuse historians and genealogists, he married Alice Maria Loveless at Barnstaple in Devon.⁴⁰ He later held a large number of church positions, in Teignmouth, Devon 1863-4; Alberbury, Shropshire 1864-5; Alverstoke, Hampshire 1869-1871; Haddenham, Cambridgeshire 1871-75; Ealing [London] 1875-76; London 1876-77 and he was finally appointed chaplain to the Fulham and Hampstead hospitals in London, from 1883 until his death on 2nd September 1894 at 91 Tubbs Road, Willesden, Middlesex aged 63.⁴¹ He seems never to have taken any interest in natural history, unlike his father and his sister.

6. The Stewart family

The 1871 census entry for Haddenham, Cambridgeshire records Harry Richardson Jellie's eldest son living there. He had been named Thomas Stewart Jellie, and was born in 1863 at Teignmouth, Devon.⁴² This link with the Stewart family (just as with the Richardson family earlier) was to prove highly significant for Eliza Catherine's later life and work. No such advanced schooling as was given to her brother was available to her. The first women's college at Oxford was not founded until 1879, so she could not follow her brother there. However, despite her opportunities for formal education being so limited, her family background, plus the strong Victorian belief in self education seems to have enabled Eliza to pursue her scientific interests. Collecting natural history specimens and microscopy were both mid-Victorian passions. Eliza may have gravitated toward bryozoans as a good subject for microscopy. Well-brought up Victorian women were often discouraged from anything that resembled useful or gainful employment, but study of minute bryozoan specimens under the microscope was probably considered 'useless' enough to be acceptable, on the same level as 'desirable' female accomplishments like needlework, watercolour painting and making decorative objects from shells and seaweed collected at the seashore.

Eliza never married. Perhaps with no dowry it would have been difficult for her to have done so. After her mother's death in 1860, she lived in friends' homes, later working as a "Governess" and then as a "Lady's Companion". These were two of the few acceptable options by which well-bred young women without families could support themselves. For much of the decade from 1861 to 1870 she seems to have lived in the household of Colonel William Stewart (c. 1795-1865), after whom her brother's eldest son had been named. Stewart was a retired Madras Army colonel, who lived at Eldon Villa, in Lower Redland Road, Bristol. In the 1861 census entry for Eldon Villa, Eliza Catherine is listed living there as "an unmarried friend, without occupation aged 31".⁴³ It is possible that the Stewarts, who came from either Liverpool (the husband) or East India (the wife), were friends or relatives of Eliza's mother's family.

William Stewart died on 31st December 1865 at Eldon Villa and in his will, leaving effects under £8,000, he left Eliza Catherine Jelly £400.⁴⁴ Stewart's wife, Isabella née Bowser (c. 1801-1879), continued to live at Eldon Villa until after 1870 when she moved to 17 Brock street, Bath where she died on 2nd December 1879.⁴⁵ By May 1870 Eliza was instead based on the Wirral peninsula in Cheshire.

7. Eliza's interests in natural history

Eliza's serious interests in natural history had certainly already started while she was living at Eldon Villa. Her first, and only, scientific journal publication was a list of the land and freshwater molluscs of Bristol, published when she was 38 from this address, uniquely

under the new spelling of their name which her brother now used, Jellie.⁴⁶ She soon however reverted to the spelling Jelly. Her whereabouts between 1870 and 1880 are partly revealed by five of her letters to the botanist Rev. Edward Adolphus Holmes (1809-1886) F.L.S. 1834⁴⁷ preserved in the archives of the Linnean Society, London.⁴⁸

In the first, of 12th May 1870, Eliza writes from Dee House, Parkgate, a sea-side resort near Neston in Cheshire, about the local natural history. She first discusses a moss she then called *Dicranella fallax*, noting Dr Robert Braithwaite (1824-1917)'s comments on this species. She had found it there in "a deepish ditch, down close to the water & hidden by grass etc [where it was] no easy matter, especially for a lady to hunt it up". Braithwaite specifically referred to her discovery of this species here in his own work, with another moss from Teignmouth which she must have collected while living in Devon.⁴⁹ This letter continues by knowledgeably discussing lichens she had also found there. Her next two letters, 16th and 23rd July 1870, are from 4 Peel Terrace, New Brighton, a larger resort at the north east corner of the Wirral peninsula. She had been in North Wales in the interim. These discuss other lichens and the alga *Conferva Brownii* which she had sent Holmes from Mousehole cave, Cornwall, "the only English habitat" the previous year. She also promised to send Holmes a carte de visite photograph of herself and to put him in touch with a female algologist in Jersey and others in Scotland.

Her fourth letter, of 24th October 1870, is from Albion Street in New Brighton and announces that she has now been busy, and successfully, collecting zoophytes on the local shores, but was not sure if Holmes took any interest in them. She asks if he had ever found the hydroid *Plumularia myriophyllum* on the south coast. She also asks if he had heard from the Cornish cryptogamist William Curnow (c. 1809-1887) from whom she "can get no answer to her letters". Her final surviving letter, of 22nd July 1871, comes from "The Oval, Addiscombe, Surrey" thus giving us her new permanent address. She now sends Holmes, a letter from Alexander Croall (1809-1885) about a sea-weed she had queried with him. She also returns Holmes' zoophytes, "one of which I cannot name as it does not belong to the families I am studying. I believe it is one of the Gorgoniadae" [i.e. sea fans]. This provides the first evidence we have that Eliza was now collecting and studying Bryozoa, having already clearly mastered to a considerable extent sea-weeds, algae, lichens and mosses.

Eliza Jelly is listed in the 1871 Census as a governess, i.e. a female teacher in a private household, living at 1 Pretender Villas, Oval Road, Addiscombe, Croydon, a few miles due south of London. Her earlier references to south coast specimens record her own new accessibility to the Sussex coast by train, whence came many of the Chalk fossils with which she later supplied G.R. Vine. She shared this Croydon house with three other women, one of whom was another lodger, Edith Williams, (c. 1837-1899), the third daughter of William Williams, a Cardiff brewer.⁵⁰ She will reappear a lot in Eliza's story.

In 1880 Eliza was still busy collecting. The first surviving specimen we can associate with her is her Cornish seaweed, *Nitophyllum gmelini* Lam. “with tetrapores from Penzance, May 1880”, now preserved in the Dr Philip Brooks Mason (1842-1903) collection at Bolton Museum, Lancashire.⁵¹ Eliza’s presence in Cornwall is confirmed by the 1881 Census which records her sharing 5 Florence Place, Falmouth, Cornwall with five other unmarried women, including one born in North America.⁵² Two more can be identified:

- (1) Rebecca S[mith] Fox (1823-1901), a daughter of Joseph Fox (1792-1861) of the Quaker Fox family long resident there,⁵³ which included a number of American Consuls based at Falmouth and
- (2) Edith Williams, who had been with her in 1871 at Croydon.

A problem is created by Augustus Hamilton (1854-1913) in New Zealand who later reported that “in 1880 [he] commenced a correspondence with Miss E.C. Jelly who was then residing at Bristol”.⁵⁴ It seems most likely that Hamilton was simply wrong about when their correspondence actually started.

8. Eliza Jelly as bryozoologist

Eliza kept MSS “Notes on Polyzoa” which now survive as a single bound volume in the Harmer library at The Natural History Museum, London (hereafter NHM). These include the record of “*Diastopora saruiensis* Norman, Hastings, 1878, E.C.J.” which seems to be her first specific bryozoan record. The same volume preserves two letters to her from the London surgeon and polyzoologist George Busk (1807-1886) of 32 Harley Street.⁵⁵ The first, dated 7th July 1882, identifies species of *Idmonea* and *Catenicella* for her. The second dated 26th July 1885 tries to do the same for species of *Membranipora*.

In 1880 the British Association for the Advancement of Science (= BAAS) had reappointed Peter Martin Duncan (1824-1891) and George Robert Vine senior (1825-1893), a bryozoologist and stay and corset maker in Sheffield, as a committee to report on British Fossil Polyzoa with Vine as its secretary and chief operative.⁵⁶ Vine’s work, with his son G.R. Vine junior, is reviewed elsewhere in the present volume.⁵⁷ The third *Report* of this Committee was issued in 1883. It now comprised two members both from Sheffield, Henry Clifton Sorby (1826-1908) and Vine. It asked for contributions from “any student of British or Foreign Fossil Polyzoa” and included records from the local cabinet of a Miss Gatty.⁵⁸ This was the Sheffield bryozoologist, Horatia Katherine Frances Gatty, later Mrs Thomas Bainbridge Eden (1844-1945),⁵⁹ who was a daughter of the famous children’s and natural history writer Margaret Gatty (1809-1873), who had earlier made her own special study of Bryozoa.⁶⁰

Vine and Sorby’s fourth *Report* was issued in 1884. It covered British Cretaceous Polyzoa and now thanked “Miss E.C. Jelly for lending specimens and furnishing the

minute details necessary for this Report”. Eliza Jelly seems to have been introduced to Vine by Miss Gatty, since this same *Report* also ended by thanking Miss Gatty for allowing her collection of Polyzoa to be examined. Eliza Jelly’s Chalk Polyzoa recorded here included two provisionally new species from Beachy Head, Hastings, Sussex and other specimens from Haldon Hill, Devon.⁶¹ The fullest tribute to Eliza Jelly’s collaboration with Vine came in his fifth and final *Report*. This thanked both Jelly and Gatty for the loan of fossil specimens and noted that Vine had:-

only intended to give the history and classification of Cyclostomatous Polyzoa... because of the limited time [he had available but] in making my wants known to my ever constant friend - Miss E.C. Jelly - her answer was prompt and welcome: ‘The Cheilostomata *must* be done, and you can command my services to any extent in the work’. Of her labours I have gladly availed myself.⁶²

From this it seems likely that Vine and Jelly had been collaborating since the start of this BAAS project. But only an undated 25 page alphabetical “Index to [recent] Polyzoa by E.C.J.” now survives in Vine’s archive at the National Museum of Wales, Cardiff.⁶³

It seems certain that Eliza Jelly’s first recorded donations of Bryozoa to museums, made to Sheffield Museum in February 1883, July 1885 and March 1886, came as a result of this same collaboration. Her donations comprise mainly microscope slides of material from around the world especially Australia, New Zealand and Great Britain (particularly Hastings and the south coast of England). The 1883 donation was of 74 slides from Britain, including Shetland and Guernsey, while the 1885/6 donation was of 177 foreign specimens in two parts. Her address at the time of these donations was not recorded. A single 1886 Jamaican specimen (E 86-114) came from a collector with the initials E.J.S.

Eliza made another donation in February 1883 to Liverpool Museum, whose records list 72 specimens of identified, and only British, Polyzoa, arranged according to Rev. Thomas Hincks (1818-1899)’s *History of the British Marine Polyzoa* of 1880, many from Devon, also others from Hastings, Guernsey and all round Britain as in her above first Sheffield donation. Again no address for Miss Jelly seems to have been recorded with this donation. Hincks’ books provided another catalyst to Miss Jelly’s specialist bryozoological activities. They too were in contact and some of her Bryozoa are now in the Hincks collection at the Natural History Museum, London. Hincks had been forced to retire from the Unitarian church in 1869 and he soon retired to Clifton where they could have been in close, if brief, proximity.⁶⁴

According to a note by Dr Anna B. Hastings preserved at the Natural History Museum:-

Miss Jelly was evidently in communication with a wide circle of polyzoologists and made a practice of distributing samples of collections sent to her. These she mounted and labelled before sending them out, with the result that various important collections contain slides

prepared by Miss J., and identically mounted and labelled. Samples of the same material can be found in several collections in this way. Examples of [such] twin slides [can be seen] in the Hincks and [John] Bracebridge Wilson [1828-1895]⁶⁵ collections in the [Nat. Hist. Museum]... Much of the material described by Hincks in his *Annals [and Magazine] of Natural History* series [1880-1893] on “Contributions towards a general history...” were provided by Miss Jelly.⁶⁶

Other such material is in the Arthur William Waters (1946-1929) collection at Manchester Museum.⁶⁷ These two were certainly in contact by April 1881.⁶⁸

It is clear that Eliza was, from about 1880, corresponding with people all over the world about the study and collection of bryozoans. Miss Jelly was thus an important collector and distributor of bryozoan specimens, as well as being their bibliographer. Although we have no information that Eliza ever travelled abroad herself, her letters show that she corresponded with most of the bryozoan workers, both fossil and Recent, of the day. As the Belgian palaeontologist Edward Pergens reported of her in 1894 “qui bon nombre de bryozoologistes doivent la possession d’une grande partie de leurs matériaux”.⁶⁹ She convinced them and other overseas correspondents to collect for her and to send her specimens. She described no new species herself, but sorted, identified, and mounted and labelled the material she amassed. Those specimens she considered might represent new taxa she passed on to colleagues like Waters for formal description:-

part of the material forming the subject of the present communication I received in exchange from Miss E. C. Jelly, in a small test tube, already washed out of the clay; and on two subsequent occasions she has kindly lent me a number of slides from her collection,⁷⁰

or Randolph Kirkpatrick (c. 1863-1950)⁷¹

Miss E. C. Jelly recently sent to the Natural History Museum an interesting species of *Retepora* from Port Western [Australia], belonging to an undescribed species,⁷²

or Augustus Hamilton

in 1880, when living at Petane, near Napier [New Zealand], I commenced correspondence with Miss E. C. Jelly.... on the subject of our New Zealand Bryozoa, and from that time until quite recently I have been forwarding parcels for recent and fossil species from different parts of New Zealand... Through Miss Jelly the specimens I collected have been passed on to the principal authorities on the various groups. Several of the new species have been described in English scientific publications and others are still awaiting description.⁷³

In 1887 Eliza Jelly was elected a Fellow of the Royal Microscopical Society (one of the few scientific societies which then “admitted” women) when her address was given as “Hatchlands”, now in Hatchlands Road, Red Hill, Surrey.⁷⁴

9. Change of address

This was in a wealthier neighbourhood 30 kms (20 miles) due south of London, a little farther out of London to the south west of her previous Croydon address.⁷⁵ Hatchlands, which still stands, is the next house east of the Forester's Arms public house, at Shaw's corner, between Red Hill and Reigate. Eliza had clearly moved here between 1881 and 1887. Red Hill was equally convenient for London by train, and still allowed good access to London libraries. She remained a Fellow until 1897 when, as we shall see, she retired from such work.

She must have moved to Red Hill to be the single companion and caregiver to her old friend Edith Williams (c. 1837-1899), third daughter of a Cardiff brewer with whom, as shown above, she had been living at Croydon in 1871 and at Falmouth in 1881. Edith had first moved after 1881, when they shared their Falmouth home, to Apple Tree Farm, Winscombe near Weston-super-Mare, Somerset, maybe also with Eliza Jelly. But since Edith was to die of breast cancer, it seems likely that Eliza now agreed to share the costs, and the painful duties of house sharing for Edith Williams at Red Hill. The 1891 Census shows them living together there, with Edith Williams as head of the household, "living on her own means".⁷⁶ When Edith Williams died at Hatchlands on 1st December 1899 she left her entire estate, of £2,276, to her "dear friend, Eliza Catherine Jelly"⁷⁷ and they share a double grave in Chart Lane cemetery, Reigate (see Figure 4).

In 1887 and 1888 Eliza gave two further bryozoan collections to Oxford University,⁷⁸ the first was again British material (which survives today) and the second Australian, "156 slides of foreign polyzoa" (but of which no trace has been found recently).⁷⁹ Two letters from her survive at Oxford with these donations, the first, of July 28th [1888], reports that she had sent:-

a series of mounted Polyzoa (foreign) as a supplement to the British collection I had previously given... I should like to hear that they are [now] in your possession. I do not suppose my name in connection with the previous set has been kept as E.C. Jelly, Esq. although the letter I received from some member of the family of Professor [Henry Nottidge] Moseley [1844-1891 - saying he was ill] was so addressed.⁸⁰

The age old problems for women working in science clearly persisted into late Victorian times!

10. *The Synonymic Catalogue of the Recent Marine Bryozoa*

Sometime during the 1880s she began her book, *A Synonymic Catalogue of the Recent Marine Bryozoa*. This must have been inspired by the work she had done for Vine before 1885. His last "*Report on Fossil Polyzoa*" (see above) had noted that:-

Hatfield, Red Hill
 Surrey
 July 28.

Dear Sir
 I promised Professor
 Moseley last year that I
 would send him a series
 of mounted Bryozoa (Fries)
 as a supplement to the
 British collection I had
 previously given to the
 Museum -
 A few days since

I despatched a box con-
 taining one hundred or
 fifty slides to him for the
 Museum - I hear this morning
 that he is ill, and I am
 directed to write to you
 with this information - so
 perhaps you will kindly
 unpack the slides & deposit
 them in your Museum
 as you see best -
 I should like to learn

that they are in your
 possession, and a line
 addressed to Miss Jelly
 will find me - I do not
 suppose my name in con-
 nection with the previous
 set has been kept as E.C. Jelly
 altho' the latter I received
 today from some member of
 the family of Professor Moseley
 was so addressed -
 Believe me dear Sir
 Yours truly
 E.C. Jelly

Figure 1. A sample of Eliza Jelly's handwriting. This 28th July [1888] letter was addressed to an unknown member of the Oxford University Museum staff (OUM archives).

I owe to her the compilations of many of the elaborate lists given below [including one - listing Manzoni's Italian Pliocene Bryozoa. As Vine did] not have these papers by me, I can only give this list as supplied by Miss E.C. Jelly.⁸¹

Eliza's importance to bryozoan history lies first and foremost in this book, which consists of an alphabetical listing of names and synonyms for all the 1,696 Recent species known up to the time of the publication date given on its title page - 1889. In fact, since reviews only appeared from August 1890 and its Preface is dated "Red Hill, December 1889", it was clearly not published until 1890. The *Catalogue* was begun as a personal effort, partly to help her in organizing her own collection:-

the study of the Bryozoa having been carried on by many naturalists in many parts of the world, it has followed as a natural result that more than one name has been given to a single species ... as also, that one name has fallen to the lot of two or three different species.

It was based not just on the published literature, but on determinations of valid taxa by herself and other experts. As she said in her preface:-

two chief ideas have been kept in view. The first was to collect in a workable form all the names of recent Bryozoa that have been published, so far as books and scattered papers could be obtained... The second idea was to reduce the synonymy to something like 'fact,' including in such synonymy only the fossil forms belonging to recent species... With the great variety of opinions on much connected with the subject of synonymy, it would be impossible to adopt that of all writers, but the lines I worked upon are those of Mr. [Thomas] Hincks and Mr. [Arthur

William] Waters, for recent and fossil respectively, venturing to differ from these known authorities only on rare occasions.⁸²

According to her preface, fellow bryozoologist Arthur Waters had encouraged her to publish the *Catalogue*, “had it not been for the kindly encouragement of Mr. Waters, my spirit would have failed me many times”,⁸³ but she had had to raise the money for its publication herself. According to her letter dated 2nd March 1889, probably to Professor Moseley at Oxford:-

I have been at work for several years on a Catalogue of all published recent Polyzoa with a full synonymy, a work which has never yet been attempted, and which Mr Hi[n]cks in his letter accompanying my application to the Royal Society for a grant of money said would fill a vacant place in the literature of the subject.

The letter asks Moseley to recommend her *Prospectus* to the notice of the Oxford Museum Committee

and ends

I have but a small chance of ever seeing it published, and this would be a little disappointing after the heavy work and expense it has entailed for years... I have personally examined every reference.⁸⁴

She seems certain to have received a grant from the Royal Society, probably of £100, towards printing costs.⁸⁵ She also wrote to bryozoan workers and museums around the world asking them to subscribe for copies to make publication possible, and she apparently received financial help from microscopist friends, especially from Charles Nathaniel Peal (c. 1832-1898) of Ealing, West London,⁸⁶ of whom she wrote:-

To Mr. Peal I owe everything connected with the publication; he undertook the seeing it through all its financial difficulties, and has proved himself a very real friend in bringing my work to a practical result.⁸⁷

The book was published by Dulau and Co., booksellers and publishers, in Soho Square, London. Sadly this publisher’s premises were destroyed, and their then Director Leslie Chaundy killed, in an air raid during the Second World War,⁸⁸ so we cannot discover how many copies of the book were printed. It was one of a number of such synoptic or bibliographic guides which Dulau published from 1888 to 1892, like those on Foraminifera by C.D. Sherborn 1888,⁸⁹ on British Fossil Vertebrata by A.S. Woodward and Sherborn 1890,⁹⁰ or on British Jurassic Gasteropoda by W.H. Hudleston and E. Wilson in 1892.⁹¹ The first of these books had been earlier refused a grant of £100 from the Royal Society towards costs of printing, because its later famous bibliographer author, Charles Davies Sherborn (1861-1942), had written “a savage criticism of a foreigner” who had published

A CATALOGUE
OF THE
PUBLISHED SPECIES of RECENT POLYZOA
WITH A FULL SYNONYMY,
BY
E. C. JELLY, F.R.M.S.

The above work, which will be published as soon as a sufficient number of Subscribers has been obtained, gives *all published names* of recent Polyzoa, with *recent and fossil synonyms in full*. The main lines followed are those of Hincks and Waters, the two British authorities on recent and fossil Polyzoa respectively. No attempt at making such a Catalogue has hitherto been made, and in addition to showing all synonymy, it enables the future student to avoid the use of specific names which have been already appropriated.

An early reply on the accompanying form will be a favour.

Figure 2. Her 1889 Prospectus - preserved at the Oxford University Museum of Natural History (OUM archives).

an earlier quite inadequate foram bibliography.⁹² Sherborn's bibliography was only published thanks to the enterprise of Frederick Justen (died 1906 - managing director of Dulau and Co.) who must have been equally involved with Eliza Jelly's book. Sherborn later paid these fine tributes to him:-

Justen was a great and true friend and later on offered me a partnership in [that] firm. He had the most extraordinary knowledge of natural science literature and was a dear and amiable man..., who practically made the [Natural History Museum, London library] collection.⁹³

The following review of Eliza's book appeared in August 1890 in the *Journal of Royal Microscopical Society*⁹⁴ probably soon after the book was published:-

Synoptic Catalogue of Recent Marine Bryozoa.* — Miss E. C. Jelly is to be congratulated on the completion of this most valuable work. Though it is not to be expected that her fellow-workers will in all cases agree with her in her views of synonymous names, they are all greatly indebted to her for the long and patient labour necessary for a work of this kind; in many cases a single species occupies more than a page and sometimes nearly two. When a recent form is also known in the fossil state, references to the fossil specimens are given. Only a systematist will fully appreciate the service Miss Jelly has performed for students of the Marine Bryozoa. *8vo, London, 1889, 322 pp.

In October 1890 *Nature* also gave it an enthusiastic review⁹⁵ saying:-

It was a work that all students of the Polyzoa should be grateful for. It supplies an undoubted want and will greatly facilitate the investigation of the large and interesting class with which it deals..., the work ... bears the marks of careful and conscientious labour.... The value of such works depends entirely on the care and minute accuracy with which they are compiled. Miss Jelly's *Catalogue* affords abundant proof that these qualities have not been wanting in her case. The book is handsomely got up, and printed in a type which, so far as clearness is concerned, leaves nothing to be desired. Miss Jelly is to be congratulated on the completion of a very onerous task.

A third review was published in 1890. It regarded it as an "exceedingly useful book" which was almost too conscientiously complete. It had to point out a few faults, but then noted only one single incorrect synonym. It finally complained that the book was about Polyzoa, not Bryozoa, but concluded that "the author deserves the gratitude of all students" of that group.⁹⁶

Later systematists certainly appreciated her efforts and put Miss Jelly's *Catalogue*, as it came to be called, to use:-

Miss Jelly has long been known as an enthusiastic student of the Bryozoa, and as one whose intimate acquaintance with the literature of the subject gives authority to the excellent synonymic catalogue of the recent marine Bryozoa, published by her in 1889.⁹⁷

Even today her work is a good starting point for taxonomic research into Recent species described up to the time of its publication, which comprise about a quarter of those known today.

The proceeds from the book were important to her financially, as her correspondence shows:-

Mrs. Dymond tells me you seem disappointed at not having a copy of my *Catalogue* in the Museum library, but my dear Sir your museum did not subscribe to the work. I myself sent you prospectus and subscription forms for filling in when I forwarded to other Australian workers, but your museum committee took no notice of it, and I was not in a position to give copies anywhere.⁹⁸

Eliza may also have depended on the sale of collections and specimens to augment her income. However, she clearly also collected for herself and for the joy of seeing and owning new specimens, as another letter to the curator of the Australian Museum shows:-

Dear Sir: A letter from my old friend Mrs. Dymond, now in Sydney, tells me of her interview with yourself about a species of *Retepora* I asked her to try and get for me. It is very difficult to get the Bryozoa comprehended by anyone who does not know them, and I told her that Mr. Brazier's children called it the 'Red Coral'. It is really the *Retepora phoenicea* of Busk, of which I wanted to get a few full grown, fairly perfect specimens. I have never seen anything but fragments of it and I wanted a whole specimen if it could be had.⁹⁹

Despite her lack of involvement in formal taxonomic publication she had clear opinions on species' identities, taxonomic characters, and methodology. Some of them are detailed in her *Catalogue*:-

Waters' places *Cellepora rota* of MacGillivray as a synonym to this species, but MacGillivray insists on their being two quite distinct forms. It is possible that Mr. Waters has had imperfect specimens of *C. costata*, as the sinus in '*costata*' and '*rota*' are certainly of different shapes.¹⁰⁰

To others, as in these excerpts from her letters to Harmer between May 1895 and December 1897, she did not hesitate to give directives to professional taxonomists:-

Do you not think it might be advisable with these South African specimens, to accept some that may be unnamed in the hope that either Mr. Hincks or Mr. Waters may name and publish them at some future date? As for instance, I have odd pieces of a species that seems to partake of features partly *Adeona* and partly *Adeonella*. If I am not mistaken Busk ranks those possessing true rooting processes and fenestra as *Adeona*. Now this S. African species has true fenestra but no true rooting process. Mr. Waters fancied it was *Adeona grisea*, but I have written to him and shown him that it is quite distinct from that form. It seems a pity as you intend working up a Museum collection of Bryozoa, not to receive *new* species because a specific name has not [yet] been assigned. *Localization* of all specimens is a necessity, but is a new species to be shut out

because unnamed? Do turn this over in your mind dear Sir, and let me know your further thoughts regarding this point.¹⁰¹

or

I am so glad that you see the necessity of keeping several slides of a species. As a general rule, I think that two slides are always required for a species with or without oecia. *Cribrilina clithridiata* W. needs several, to show the cell, the oecium, the avicularium and the central cell. In my own collection I paid special attention to the cell of origin, and I strove to make a species fully represented in all forms and varieties rather than hunt after novelties. I think the variations of a species are not sufficiently attended to.¹⁰²

Eliza Jelly also organized many of the specimens she received into sets of slides (e.g., 50 slides of British species, 50 of South African species). She continued to disperse these collections of identified specimens to a number of institutions including the Royal Microscopical Society, where in October 1890 “attention was called to a donation of special importance, consisting of 200 slides of Marine Bryozoa, from Miss E. C. Jelly, who had recently published a catalogue of Bryozoa”.¹⁰³ There are also slides from Miss Jelly at Oxford University, Cambridge University Museum of Zoology (she gave part of her personal collection to Sidney Harmer when he was at Cambridge), Sheffield, Manchester, Liverpool, and Trinity College, Dublin. These last comprise a collection of 110 bryozoans in wooden cavity slides, mainly from Port Phillip and Port Western, Australia, with other material from Western Australia, California and New Zealand (Figure 3).¹⁰⁴

Abroad there are other of her specimens at the Australian Museum, Sydney, and the Zoological Museum, Copenhagen. These last were collections she sent to George Marius Reinold Levinsen (1850-1914) in Copenhagen between August 1890 and 1895 which survive there. They were referred to in Levinsen’s major monograph of 1909.¹⁰⁵

Eliza Jelly was honoured for her work as a bryozoologist by Levinsen by the new species *Euthyroides jellyae*.¹⁰⁶ Edward Wilhelm Gerard Pergens (1862-1917) had earlier, in 1894, founded a Cretaceous species, *Truncatula jellyae*, after her.¹⁰⁷ As, in 1896, did John Walter Gregory (1864-1932) who named a new Jurassic species *Multiclausa jellyae*.¹⁰⁸ After her death Sidney Frederic Harmer named *Tervia jellyae*, after her, from a Queensland specimen she had supplied to him.¹⁰⁹ David Alexander Brown named a further species *Exochella jellyae* in her honour.¹¹⁰ More recently she has been honoured with the new genus, *Jellyella*, created by Paul Taylor and Neale Monks in 1997 for two pseudoplanktonic membraniporid species.¹¹¹

Eliza Catherine Jelly does not fit Victorian stereotypes of the ‘weaker sex’. What we know of her life through her letters and collections shows her determination, intelligence, and clarity. In many ways, she embodied those Victorian virtues, of self-confidence,



Figure 3. Five of the bryozoan cavity slides she presented to Trinity College, Dublin.

self-improvement, devotion to duty, social responsibility, and liberality of mind. As a child of a naturalist, growing up during the years of natural history's greatest popularity, she believed strongly in its benefit throughout her life:-

The queer little fish came from Port Elizabeth, S[outh] Africa. Can you give me its name? I gave another specimen of it to a young friend of mine who is a true naturalist, and I do all I can to foster her love for the study. Her principal delight lies among shells, but I think that young eyes and minds should cultivate an all round acquaintance with Nature and Nature's objects, taking one particular branch for collecting and studying.¹¹²

She was interested in a wide range of natural history as her letter of 11th March 1894 to Francis Jeffrey Bell (1855-1920) proves.¹¹³ She writes about *Gorgonia* specimens which had been sent to her from South Africa, "many months ago you very kindly offered to name some South African species of *Gorgonia* on the one condition that they were [later] given to the [Natural History] Museum".

Although always polite to her colleagues, it is also clear from her letters that in cases of taxonomic controversy she did not defer to the professionals, but defended her own knowledge and experience:-

Mr. Hincks, as a rule, never sent me localities of a thing, but the specimen of his *T. Dawsoni* was given into my hand when I was dining there one day. He was showing me the specimens he had so named, and I protested that it was not a new species, but only *Idmonea milneana*. Later

on he examined them critically, and said that I was right. Yes, you are to consider the locality to be that given in his original description of *T. Dawsoni*.¹¹⁴

11. Her last decades

In at least the last decade of the nineteenth century, Eliza devoted her life to nursing her close friend, Edith Williams, who was suffering from breast cancer. This cannot have been a happy situation in days when pain was not so easily alleviated. Despite chronic health problems of her own, Eliza retained her sense of humour, “Ill health is a sad block to *deeds*. I seem to end in nothing but words!”¹¹⁵ or:-

Please do not take the trouble and spend your valuable time in writing me thanks for each lot separately. I will tell you when I have sent you all I have to send and then you see dear Sir one thank would suffice and save you a lot of trouble!¹¹⁶

We do not know what illnesses Eliza suffered from, although one letter mentions that gout had hindered her work.¹¹⁷ A letter to her from the Australian bryozoologist Paul Howard MacGillivray (1834-1895) in Bendigo, Victoria¹¹⁸ dated 6 June 1892, notes “I am very sorry to hear of your continued ill health, and sincerely trust that the prospect of a return to health is not as bad as you think”.¹¹⁹ Her death certificate merely gives the cause of her death as “old age”. Miss Jelly first mentions ill-health in a letter to Harmer dated 17th July 1895, “my interest in all this work is not lessened thro’ my ill health, altho’ power to study, compare and mount is gone”.¹²⁰ The disposals of both her bryozoan collections and her library, which also started in 1895, seem to have been instigated for this same reason. She finally decided to give up all bryozoan studies two days after her 67th birthday, due to continued illness. “Ill health has quite put an end to all work, but the interest is very keen still and always will be until the end of the chapter”.¹²¹

When she decided to give up scientific work she decided to dispose of the remainder of her collections. The first recipient of these final disposals seems to have been Manchester Museum, although that museum’s poor record-keeping makes any final determination difficult.¹²² Two original wooden Jelly slide cabinets survive there, but they have in the past been both separated, and separately catalogued. This has encouraged the wrong inference that only one half of any Jelly collection has survived there. The first cabinet contains material from Genera A (*Adeona*) to L (*Lunulites*) while the second contains material from Genera M to Z. Donation registers seem not to survive at Manchester (or they may be currently unavailable). There is no evidence of the Jelly donation in those printed *Reports* which survive at that Museum either, until 1910-11. But in the *Report* for 1895-96 there is certainly the record of a gift by “Miss E.C. Jelly of *Cellaria setigera* and *M. lepida*” being made between 1st January 1895 to 30th June 1896.¹²³ She herself refers to some of her rarest specimens of *Retepora* and *Parmularia* already being at this, then Owens College, Museum in a letter to Harmer dated 2

September 1896,¹²⁴ so her collection must have arrived there by then. No full record was given in that Museum's *Reports* until that for 1910-11 which notes:-

The Jelly Collection of Marine Polyzoa consisting of over 1,000 slides, has been worked over and re-arranged by Mr [Robert] Standen, [Assistant Keeper of Zoology, Manchester Museum] in two cabinets. The arrangement followed that given in Miss Jelly's book *A Synoptic Catalogue of Marine Polyzoa* and the collection as now completed forms a useful reference readily available to students.¹²⁵

D.A. Brown worked through these Manchester Museum collections and reported that the A.W. Waters collection there also contained a considerable amount of New Zealand material from Miss Jelly's collection. He also reported that the main Jelly collection there comprised "about 1,100 mounted specimens including 203 from New Zealand localities".¹²⁵ Brown ended his introduction:-

I cannot conclude without paying a tribute to the work of Miss E.C. Jelly, not only for her excellent *Synoptic Catalogue* (1889) but also for her vast enthusiasm displayed as a collector of Polyzoa. Outside her own large collections[s], many specimens, both Recent and fossil, mounted and labelled by her are found in the Hincks, Vine, Waters, Bracebridge Wilson, and J[ohn] W[alter] Gregory [1864-1932 - Scottish explorer and geologist]¹²⁷ Collections, and Levensen also studied a considerable amount of her material.

Yet another, whose bryozoological studies she helped, was Thomas Rogers (1827-1901).¹²⁸

In 1897 when she finally gave up all scientific work on doctor's orders, she gave the final portion of her own collections, comprising over 300 still unnamed specimens, to Sidney Frederic Harmer at Cambridge.¹²⁹ She also made efforts to sell her collection of bryozoan literature. She gave Harmer in 1897 her MSS notebooks, which survive among the Harmer MSS at The Natural History Museum, London.¹³⁰ One of her last letters to Harmer ends by her:-

Very heartily regretting that the severance with my favourite study of many years will bring to an end all the pleasant communications I have enjoyed with workers like yourself. I need scarcely add that the severance is one of compulsion, and not of choice; and accepted only on stringent orders of the Doctor.¹³¹

In spite of the ill health that had plagued her, she lived to be 85. In fact, one of the problems we have in learning more of her life stems from the fact that she outlived most of the colleagues who might have written an informed obituary. When Edith Williams died in December 1899, she left "Hatchlands" and £2,276 to Eliza, which should have kept Eliza well enough for a few years. However, by the time Eliza made her own will on 2nd December 1905 she was living at a new, smaller, house, at 34 Gloucester Road, Red Hill,



Figure 4. Her grave in Chart Lane Cemetery, Reigate, Surrey. The lower inscription reads “who died November 3rd 1914 aged 85 years. Jesus said I have the keys of death” (HST photograph).

Surrey.¹³² When she died in 1914, she did so at a nursing home located at 156 Station Road, Red Hill. Her date of death was 3rd November 1914,¹³³ at the beginning of the first hard winter of the Great War. She was buried on 6th November in Chart Lane Cemetery, Reigate, in the same plot as Edith Williams, where their shared grave survives.

Miss Jelly's will left all her effects (valued at only £338) to Edith Frances Cooper, spinster, of the Firs, Red Hill, Surrey. It is nice to be able to report that, in October and November 1918, Miss Cooper dutifully presented a number of Eliza Jelly's remaining books to The Natural History Museum in London.¹³⁴

12. Acknowledgements

Grateful thanks are due to Penny Barents (Sydney), Ben Bather (London), Clifford Bird (Diss), Stella Brecknell (Oxford), Roger Clark (Bristol), John Collins (London), Sammy De Grave (Oxford), Gina Douglas (London), Tabitha Driver (London), Paul Ensom (London), Patricia Francis (Bolton), Sam Hallett (Bristol), Mrs P. Hatfield (Eton College), Caroline Hensley (London), Sheila Jelley (Amersham), Colin Johnston (Bath), Mary Spencer Jones (London), Alistair Maclean (Sheffield), Henry McGhie (Manchester), Paul T. Milan (Reigate), Mary Petersen (Copenhagen), Stella Pierce (Wincanton), Derek Shorrocks (Taunton), Susan Snell (London), Ian Wallace (Liverpool), Grace Woutersz (Croydon) and Patrick Wyse Jackson (Dublin) for so helping our hunt for Eliza Jelly. We have relied too on earlier investigations by Pat Cook (London) and the late Leslie J. Pitt (London who published one of the very few notices of her work in 1971, see footnote 110). The first author's research notes have been donated to the Harmer library, NHM.

Notes

- 1 See: H.S. Torrens, "Mary Anning (1799-1847) of Lyme; 'the greatest fossilist the world ever knew'", *British Journal for the History of Science*, 28 (1995), 257-284.
- 2 H.S. Torrens, E. Benamy, E.B. Daeschler, E.E. Spamer and A.E. Bogan, 'Etheldred Benett of Wiltshire, England, the first lady geologist - Her fossil collection in the Academy of Natural Sciences of Philadelphia, and the rediscovery of "lost" specimens of Jurassic Trigoniidae (Mollusca: Bivalvia) with their soft anatomy preserved', *Proceedings of the Academy of Natural Sciences of Philadelphia*, 150 (2000), 59-123 (63-64).
- 3 This date comes from a later affidavit made in 1855 by Augustus George Barretté, husband of Sarah Jelly (born 1797), as to the validity of Mrs Ann Richardson (1763-1847)'s copy will, preserved at the Wiltshire Record Office. Barretté, after a career in the Navy from 1809, retired on half pay, married Sarah in 1823 and became a solicitor in Bath (W.R. O'Byrne, *A Naval Biographical Dictionary* (London, 1849), 50). Sarah Jelly was youngest daughter of Thomas Jelly (c. 1763?-1801) and Eliza Jelly's aunt.
- 4 H.S. Torrens, C.J.T. Copp and R.F. Pickford, 'The Bath Geological Collections', *Newsletter of the Geological Curators Group*, 1 (3) (1975), 88-124 (97-9).
- 5 D.E. Allen, *The Naturalist in Britain* (London, 1976), 22-23.

- 6 J.M. Edmonds, 'The First "Apprenticed" Geologist, *Wiltshire Archaeological and Natural History Magazine*, 76, 141-154.
- 7 J. Phillips, *Geology of Oxford and the Valley of the Thames* (Oxford, 1871), 6, 411, 414 and 415. Richardson was later one of the dedicatees of Phillips', *Memoirs of William Smith LL.D.*, (London, 1844).
- 8 J. Evans, 'Obituary of John Phillips', *Quarterly Journal of the Geological Society of London*, 31 (1875), *Proceedings* xxxvii-xliii. For Richardson, see A.G. Davis, 'The Triumvirate: A Chapter in the Heroic Age of Geology', *Proceedings of the Croydon Natural History and Scientific Society*, 11 (1943), 123-146.
- 9 See R.S. Neale, *Bath 1680-1850: a Social History* (London, 1981), 73, 159-60, 182 and 210 and H.M. Colvin, *A Biographical Dictionary of British Architects 1600-1840* (London, 1978), 457.
- 10 See *Gentleman's Magazine*, 60 (1790), 672 and 768.
- 11 Registers at Somerset Record Office, Taunton.
- 12 At Bath Abbey on 17th July 1751, see *Publications of the Harleian Society, Registers*, 27 (1900), Bath Abbey vol. 1, 261.
- 13 International Genealogical Index <www.familysearch.org>
- 14 J.E. Jackson, *A Guide to Farleigh-Hungerford*, third edition (London, 1879), 67.
- 15 W.S. Mitchell, 'Notes on Early Geologists connected with the neighbourhood of Bath', *Proceedings of the Bath Natural History and Antiquarian Field Club*, 2 (1872), 324-325 and Jackson, note 14, p. 62.
- 16 At Bradford-on-Avon on 31st January 1785 to which Thomas Jelly junior was a witness, see Bradford Marriage Register, Wiltshire Record Office, Trowbridge and *Bath Chronicle* (3rd February 1785).
- 17 Prerogative Court of Canterbury, proved 1832.
- 18 In Prerogative Court of Canterbury, copy will at Wiltshire Record Office, Trowbridge, proved 1847 with later affidavits.
- 19 *Gentleman's Magazine*, 73 (1813), i 498.
- 20 *Historical Collections for Staffordshire*, 19 (1898), 113.
- 21 Copy in E. Green collection, Bristol Public Library. The Garden opened in September 1793 see *Bath Chronicle* (12th September 1793).
- 22 See entry in William Smith and Co's, *A list of Bankrupts...from 1786-1806* (London, 1806) and *Bath Journal* (9th February 1795).
- 23 S. Sydenham, 'Bath Token issues of the 18th century', *Proceedings of the Bath Natural History and Antiquarian Field Club*, 10 (2) (1903), 207-238 (209, 213-215, 221, 235 and 238).
- 24 T.B. Flower, *Phytologist*, 3 (1849), 581.
- 25 *Bath Chronicle* (20th August 1801). His PCC copy will, proved in February 1802, survives at Bath Record Office (Acc. 59/2/4).
- 26 Edmunds, note 6, p. 145.
- 27 John Skinner MSS, British Library Add Mss, 33653, 33655-6, 33663, 33665, 33668 etc.
- 28 Jackson, note 14, p. 67.
- 29 Torrens, Copp and Pickford, note 4, p. 98.
- 30 W. Lonsdale, *Catalogue Raisonné of Rocks, from the neighbourhood of Bath* (MSS - dated 1829 - at the Bath Royal Literary and Philosophical Institute, Bath).
- 31 He published the following articles (apart from a volume of *XXII Sermons* (Wigan, 1840) - copy in British Library London):- 1) 'Biographical notice of Rev. B. Richardson', *Bath and Bristol*

- Magazine*, 1 (1832), 303-307; 2) 'The Lansdown encrinite' [now *Ailsacrinus prattii* (Gray)], [*ditto*], 2 (1833), 37-46; 3) 'Biographical Notice of J.S. Miller', [*ditto*], 2 (1833), 111-122; 4) 'On the study of Nature', [*ditto*], 2 (1833), 297-304 and 5) 'On the Fossil Shells of the genus *Modiola*, being frequently found in the Bath Oolite, enclosed in the Shells of the genus *Lithodomus*', *Magazine of Natural History*, NS 3 (1839), 551-553. He also donated fossils and minerals to the Bristol Institution in 1833 (*ex inf.* Roger Clark) and British and Foreign land shells in 1839 (C. Copp, *South West Natural Science Research Unit*, 1 (3) (1985), 12 and *ex inf.* Sam Hallett) and Jamaican geological specimens on 24th September 1839 to the Geological Society of London (*Transactions*, 6 (1) (1841), 15 - these last as Rev. Harvey Jelly).
- 32 According to a note in the transcript of Walcot Birth and Marriage Register by Rev. Caius Barry, Somerset Record Office, Taunton.
- 33 John Phillips MSS 1836/27; 1837/43; 1838/40 and 1841/09, Oxford University Museum of Natural History.
- 34 J. Phillips, *Figures and Descriptions of the Palaeozoic Fossils of Cornwall, Devon and West Cornwall* (London, 1841), vi-vii.
- 35 This was Thomas Jelly born 1793 of Savanna la Mar, West Jamaica who published three pamphlets there:- 1) *Remarks on the condition of the white and free coloured inhabitants of Jamaica* (1826) - copy in Institute of Commonwealth Studies, University of London, 2) *On the Condition of Jamaica* (1847) and 3) *On British sugar colonies* (1848) - copies of these in the British Library.
- 36 See death notices in *Bath Chronicle* (23rd March 1843), 3; *Felix Farley's Bristol Journal* (25th March 1843), 3 and *Gentlemen's Magazine*, 174 (June 1843), 664.
- 37 Phillips to H.T. De la Beche, National Museum of Wales De la Beche MSS, 29th April 1843.
- 38 See Death Certificate (General Register Office, London) and *Gentleman's Magazine*, NS 9 (November 1860), 561.
- 39 *ex inf.* Miss P. Hatfield, College archivist, 18th April 2001.
- 40 Marriage Certificate, General Register Office, London.
- 41 Death Certificate, General Register Office, London.
- 42 PRO RG 10/1602, folio 68.
- 43 PRO RG 9/1739, folio 124.
- 44 Proved 1866, Principal Probate Registry, London.
- 45 Will dated 1876, proved 1880, Principal Probate registry, London.
- 46 E.C. Jellie, 'A list of Land and Fresh-water Molluscs belonging to Bristol and its immediate neighbourhood', *The Naturalist*, 3 (1867), 148-149.
- 47 J.A. Venn, *Alumni Cantabrigienses*, part 2, vol. 3, (Cambridge, 1947), 422 and F.W. Galpin, *Account of the Flowering Plants... of Harleston*, (London, 1888), 23-4.
- 48 E.A. Holmes MSS Z 35 (b).
- 49 R. Braithwaite, *The British Moss-Flora*, vol. 1, part 4 p. 67 and part 5 p. 111 (London, 1881). Specimens she supplied from Parkgate passed into Braithwaite's own moss collection.
- 50 *ex inf.* Croydon Local Studies Library.
- 51 *ex inf.* Patricia Francis, Keeper of Botany and see E.G. Hancock, A. Howell and H.S. Torrens, 'Geological Collections and Collectors of Note - Bolton Museum', *Newsletter of the Geological Curators Group*, 1 (7) (1976), 328-330.
- 52 PRO RG 11/2316/150, 44.
- 53 See Burke's *Landed Gentry* (London, 1972), 347.
- 54 A. Hamilton, 'A list of Recent and Fossil Bryozoa collected in various Parts of New Zealand',

- Transactions and Proceedings of the New Zealand Institute*, 30 (1898), 192-199.
- 55 Bound in her MSS Notes on Polyzoa, Harmer library, NHM, pp. 133 and 141.
- 56 *Report of the 50th meeting of the BAAS* (1880), lxi.
- 57 See C.J. Buttler, P.N. Wyse Jackson and T. Sharpe, this volume.
- 58 *Report of the 52th meeting of the BAAS* (1883), 251-2 and 266.
- 59 See Burke's *Landed Gentry* (London, 1952), 964.
- 60 *Dictionary of National Biography* and J.H. Ewing (ed.) *Parables from Nature* by Margaret Gatty (London, 1903), xix. See also S.L. Sheffield, *Revealing New Worlds: Three Victorian Women Naturalists* [one of whom is Margaret Gatty], (New York and London, 2001).
- 61 *Report of the 53rd meeting of the BAAS* (1884), 162-3, 167-8, 172-5. Miss Jelly's Chalk fossil Bryozoa need to be traced in extant collections. One of her type specimens of a provisional new Vine species was soon noted, by J.W. Gregory, *Catalogue of the Fossil Bryozoa in the Department of Geology British Museum (Natural History) - The Cretaceous Bryozoa* (London, 1899), vol. 1, 101, as already "missing from Vine's collection". It may thus have been returned to Eliza Jelly.
- 62 *Report of the 54th meeting of the BAAS* (1885), 153.
- 63 *ex inf.* Patrick Wyse Jackson, 11th May 2001.
- 64 'Obituary of Thomas Hincks 1818-1899', *Year Book of the Royal Society of London* (1900-1901), 27-28.
- 65 See *Australian Dictionary of Biography*, 6, 1851-1890 R-Z, (Melbourne, 1976), 417-418.
- 66 Pre 1977 TSS in the Bryozoa section, NHM, London.
- 67 See D.A. Brown, *The Tertiary Cheilostomatous Polyzoa of New Zealand*, (London, 1952), 2-6.
- 68 A.W. Waters, 'On Fossil Chilostomatous Bryozoa from South-West Victoria, Australia', *Quarterly Journal of the Geological Society of London*, 37 (1882), 309.
- 69 E. Pergens, 'Nouveaux Bryozaires du Crétacé du Limbourg', *Bulletin de la Société Belge de Géologie [etc]*, 7 (1894), 177.
- 70 Waters, note 68.
- 71 See obituary notice in *Nature*, 165 (29th April 1950), 669-670 and S.J. Gould, 'Crazy Old Randolph Kirkpatrick', *Natural History*, 87 (3) (1978), 20-22.
- 72 R. Kirkpatrick, 'Description of a new Species of *Retepora* from Port Western, Victoria', *Annals and Magazine of Natural History*, (6) 2 (1888), 269.
- 73 Hamilton, note 54, p. 192.
- 74 *ex inf.* Gerald Turner, RMS Hon. Archivist. In case this is thought to have been some 'brave new' concession to the women this Society had admitted as Fellows from 1884, we should note that the Society took their Admission Fees and Annual Contributions but did not allow them to attend meetings (see A.T. Gage, *A History of the Linnean Society of London* (London, 1938, p. 86). Gage rightly calls this a "preposterous arrangement which endured until 1909".
- 75 See W. Hooper, *Reigate: its story through the ages* (Guildford, 1945), 92 and 205.
- 76 PRO RG12/S77, Enumeration district 7, Folio 111, 1.
- 77 Death Certificate, General Register Office and will (proved 23rd December 1899) in the Principal Probate Registry, London.
- 78 K.C. Davies and J. Hull, *The Zoological Collections of the Oxford University Museum* (Oxford, 1976), 71.
- 79 *ex inf.* Sammy De Grave, Oxford University Museum of Natural History.
- 80 Archives of the Oxford Museum of Natural History.

- 81 Note 62, p. 153 and 209.
- 82 E.C. Jelly, *A Synonymic Catalogue of the Recent Marine Bryozoa* (London, 1889), vii.
- 83 Jelly, note 82, p. ix.
- 84 Jelly, note 82.
- 85 But no records of this survive in the Archives of the Royal Society, *ex inf.* Martin Carr, library assistant.
- 86 See his obituary in *Proceedings of the Linnean Society of London*, session 111 (October 1899), 57.
- 87 Jelly, note 82, p. ix.
- 88 See P.H. Muir, 'Further Reminiscences I to IV', *Book Collector*, 5 (3), 6 (4), 7 (2), and 7 (3) (Autumn 1956 to Autumn 1958) (especially IV, 278).
- 89 *A Bibliography of the Foraminifera* (London, 1888).
- 90 *A Catalogue of British Fossil Vertebrata* (London, 1890).
- 91 *A Catalogue of British Jurassic Gasteropoda* (London, 1892).
- 92 C.D. Sherborn, 'An "Instructive" Bibliography of the Foraminifera', *Nature*, 37 (1888), 583-584.
- 93 J.R. Norman, *Squire: Memories of Charles Davies Sherborn* (London, 1944), 50 and 95.
- 94 *Journal of the Royal Microscopical Society*, part 2 (August 1890), 449.
- 95 *Nature*, 42 (16th October 1890), 589-590.
- 96 *Annals and Magazine of Natural History*, sixth series, 6 (1890), 194.
- 97 Hamilton, note 54, p. 192.
- 98 E.C. Jelly to the Curator of the Australian Museum, 5th January 1891.
- 99 Jelly, note 98.
- 100 Jelly, note 82, p. 49.
- 101 Jelly to Harmer, (10th June 1895), NHM Letter no. 226.
- 102 Jelly to Harmer, (2nd September 1896), NHM Letter no. 363.
- 103 Notice in Minutes of the 15th October 1890 Meeting of the Society, *Journal of the Royal Microscopical Society*, part 2 (1890), 830.
- 104 Registered TCD 47613-47723, 48280-48282 *ex inf.* Patrick Wyse Jackson, 16th October 2001.
- 105 G.M.R. Levinsen, *Morphological and Systematic Studies on the Cheilostomatous Bryozoa*, (Copenhagen, 1909).
- 106 Levinsen, note 105, p. 264.
- 107 Pergens, note 69, pp. 176-177, plate 8, fig 4.
- 108 J.W. Gregory, 'A Revision of the British Jurassic Bryozoa - part VI', *Annals and Magazine of Natural History*, series 6, 17 (1896), 292.
- 109 S.F. Harmer, 'The Polyzoa of the Siboga Expedition. Part 1. Entoprocta, Ctenostomata, Cyclostomata', *Siboga Expeditie*, 28a (1915), 143-146, pl. XI, figs 1-3.
- 110 Brown, note 67, pp. 67, 291-293, figs 218, 219; see also L.J. Pitt, 'An Account of the Work on Polyzoa', *Proceedings of the Geologists' Association*, 72 (1961), 171-186 (182).
- 111 P.D. Taylor and N. Monks, 'A New Cheilostome Genus Pseudoplanktonic on molluscs and algae', *Invertebrate Biology*, 116 (1997), 39-51. The type species was based on Queensland material she had again supplied.
- 112 Jelly to Harmer, (17th July 1895), NHM letter no. 228.
- 113 In NHM archives, DF 250/1, Dept of Zoology correspondence.
- 114 Jelly to Harmer, (27th October 1896), NHM letter no. 368.

- 115 Jelly to Harmer, (12th August 1897), NHM letter no. 500.
116 Jelly to Harmer, (10th June 1895), NHM Letter no. 226.
117 Jelly to Harmer, (22nd September 1896), NHM Letter no. 364.
118 See *Australian Dictionary of Biography*, 5, 1851-1890 K-Q, (Melbourne 1974), 155-156.
119 This letter, with two others dated 1887 and 1891, are in NHM archives.
120 Jelly to Harmer, (17th July 1895), NHM Letter no. 228.
121 Jelly to Harmer, (30th September 1896), NHM Letter no. 365.
122 The situation is not helped by the fact that these collections are in store (in Buxton, Derbyshire) as this is written and so unavailable for study.
123 This *Report* is preserved in the NHM library, London.
124 Jelly to Harmer, (2nd September 1896), NHM Letter no. 363.
125 *ex inf.* Henry McGhie, Manchester Museum.
126 Brown, note 67, pp. 2-6.
127 [P.G.H. Boswell], 'John Walter Gregory 1864-1932', *Obituary Notices of Fellows of the Royal Society of London*, 1 (1932), 53-59.
128 J.C. Melvill, 'Obituary of Thomas Rogers', *Journal of Conchology*, 10 (1902), 142-144.
129 See 'Natural Science at Cambridge', *Natural Science*, 9 (October 1896), 221 and *Cambridge University Reporter*, 1183, (26th October 1897), 141 and 1184 (2 November 1897), 159.
130 F.C. Sawyer, 'A Short History of the Libraries...', *Bulletin of the British Museum (Natural History), Historical*, 4 (2) (1971), 79-204 (145).
131 Jelly to Harmer, (11th January 1897), NHM letter, unnumbered.
132 Principal Probate Registry, London. Eliza Jelly is not listed in the 1901 British census <www.census.pro.gov.uk>
133 *Times*, (5th November 1914), 1.
134 NHM Archives DF 204/10 and 205/78.