

"More than Just a Shell Collection": Dorothy Alford (1866–1937), a female Cambridge student of natural history, 1885-1891

"Plus qu'une simple collection de coquilles" : Dorothy Alford (1866–1937), une étudiante de Cambridge en histoire naturelle, 1885-1891

P. GRAHAM OLIVER¹ & HEATHER PEGG²

¹ Honorary Research Fellow, National Museum of Wales, Cardiff, CF10 3NP - graham.oliver@museumwales.ac.uk

² Archivist, Hergest Croft, Kington, Herefordshire.

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A.H. Cooke
J.R. le B. Tomlin
W. Bateson
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Summary: This paper reports on a collection of molluscan shells assembled by Dorothy Alford (1866-1937), one of the first women to gain a degree in Natural Sciences from Girton College, Cambridge in 1887. The collection has significant specimens both from the United Kingdom, India, Eastern Mediterranean, Australia and New Zealand. The relationships between Dorothy Alford and eminent conchologists/natural scientists at Cambridge reveal the attitudes to women graduates in the late Victorian period. While A.H. Cooke (1854-1934), J.R. le B. Tomlin (1864-1954), W. Bateson (1861-1921) and T. McKenny Hughes (1832-1917) taught or befriended Dorothy she was never encouraged to take her interest in shells or fossils to a research level. Consequently Dorothy Alford left academia but continued her interest in the Mollusca as a hobby. Her collection and archive remain in her family home of Hergest Croft, Hergest Gardens and Estate, Kington, Herefordshire, England.

Résumé : Cet article traite d'une collection de coquilles rassemblée par Dorothy Alford (1866-1937), l'une des premières femmes à obtenir un diplôme en sciences naturelles au Girton College, Cambridge en 1887. La collection contient des spécimens importants provenant du Royaume-Uni, de l'Inde, de la Méditerranée orientale, de l'Australie et de la Nouvelle-Zélande. Les relations entre Dorothy Alford et d'éminents conchyliologues / naturalistes de Cambridge révèlent les attitudes réservées aux femmes diplômées à la fin de l'époque victorienne. Alors que A.H. Cooke (1854-1934), J.R. le B. Tomlin (1864-1954), W. Bateson (1861-1921) et T. McKenny Hughes (1832-1917) enseignaient ou se lièrent d'amitié avec Dorothy, elle n'a jamais été encouragée à s'intéresser aux coquilles ou aux fossiles pour faire de la recherche. Par conséquent, Dorothy Alford a quitté le monde universitaire mais a continué à s'intéresser aux mollusques comme un hobby. Sa collection et ses archives sont restées dans sa maison familiale de Hergest Croft, Hergest Gardens and Estate, Kington, Herefordshire, Angleterre.

Introduction

In the past few years I (PGO) have been researching conchological collections housed in regional museums, in the United Kingdom, that lack relevant taxonomic expertise. Many museums in the UK have carried or are carrying out reviews of their holdings often with a view to transfer or disposal. A prerequisite of any such actions is an assessment of both the scientific and social significance something that cannot be done without the relevant expertise. In 2011 such an assessment was done for the Doncaster Museum and Art Gallery (Oliver, 2011; in press) and as a result the collection was retained, furthermore two scientific papers resulted from the review (Oliver, 2012; 2015). Such collections can be found in numerous museums and result from shell collecting spanning some 300 years by the layperson to the professional malacologist (Dance, 1986). The acquisition of such collections has led to issues of storage space and relevance and when combined with a lack of relevant expertise results in the collections being effectively "lost". Examples of uncovering taxonomic significance are the Juliana Linter collection in the Royal Albert Memorial, Museum, Exeter (Morgenroth, Oliver & Breure, 2018) and the William Lyons collection in Tenby Museum (Oliver *et al.*, 2020). During this period there was the creation of a project to recognise type material in regional UK museums (Ablett *et al.*, 2018). While this initiative has made exceptional progress in recognising taxonomically important type specimens the wider significances may be over-looked. Biological specimens can be used to record past distributions that may be relevant to environmental and climate change. There may be a significance related to the history of science and also may have relevance to the social history of the period. It is a combination of both scientific and social aspects of a collection that this paper reports upon.

In 2016 I was alerted to a shell collection held by a private charitable trust in the house, Hergest Croft ¹ that is close to the town of Kington, Herefordshire, England. I agreed to examine the collection, but as I had never heard of the collector Dorothy Alford (later Mrs W.H. Banks), I expected little from it. However, with the data that was available from an extensive archive held at the house, and being conserved and researched by my co-author, Heather Pegg, my expectations changed.

Dorothy Alford was one of the first women to gain a first-class distinction in the Cambridge Tripos ² for Natural History in 1888. Moreover, her Director of Studies was the well-known conchologist Alfred Hands Cooke (1851–1934) ³. My first look also revealed that specimens from John Read le Brockton Tomlin (1864–1954) ⁴ were present, his massive collection now forms the core of the molluscan collections in Amgueddfa Cymru-National Museum Wales in Cardiff (Trew, 1990).

These initial discoveries made us decide to carry out a full inventory of the shell collection, which has led to this paper. But as we shall report there is so much more to this story than just the collection but also of the men who influenced a woman student of natural sciences in the late Victorian period.

The collection is housed in the house Hergest Croft and held by the Hergest Trust and presided over by Mr W. Lawrence Banks (Dorothy Alford's grandson). Access is currently by private appointment only. Most of the histories related below come from the archive or from family memories of the Banks family. These sources are not publicly available but in 1998 the then archivist R.W.D. Fenn along with J.B. Sinclair delivered the "Banks Lecture" titled "*Isn't it simply spiffing... to be a Girton Girl*" which summarised their findings on the life of Dorothy Alford. These lectures were held for the Banks family only and were not published but R.W.D. Fenn deposited a copy in the Girton College archives, reference GB 271 GCPP Banks. The work of R.W.D. Fenn was not completed and resumed by Heather Pegg with the result that the Fenn data has now been significantly added to but is not yet fully catalogued or publicly available. While the Sinclair and Fenn study covers the whole of Dorothy's life we focus here on her interest in conchology and the years at Girton where she fell under the influence of a number of notable scientists. An extensive report (Oliver *et al.*, 2020) on this collection was prepared for the Hergest Trust and a copy has been deposited in the Girton College archive.

The Collection

From a note to Dorothy from her father stating that he was intending to buy her a book on conchology for her fifteenth birthday we can assume that she had already started to collect shells by 1881. Collecting may have started

1. <https://www.hergest.co.uk>. Web site introducing the house, gardens and Banks family.

2. The Tripos system of undergraduate teaching at Cambridge University allows a broad range of subjects to be taken over the three year period of study. Liveing, G. (1874). The Natural Sciences Tripos. In *The Student's Guide to the University of Cambridge* (Cambridge Library Collection - Cambridge, pp. 218–236). Cambridge: Cambridge University Press. doi:10.1017/CBO9780511694158.008.

3. Obituary of A.H. Cooke by J.R. le B. Tomlin, 1935. *Journal of Molluscan Studies*, 21(4): 229–232.

4. Obituaries of J.R. le B. Tomlin by A.E. Salisbury, 1955. *Journal of Molluscan Studies*, 31(3–4): 85–87. & *Journal of Conchology*, 24: 29–33.

earlier, for in a note from her father, the Reverend Bradley Hurt Alford ⁵, written in Venice reads "*Dadsie and Mother* (Mrs Caroline Alexa Alford nee Lyall ⁶) *picked up a lot of beautiful shells to bring home for the dear Bimb* (Margaret Alford ⁷) & *Dorffie* (Dorothy Alford)". The 'baby talk' language used suggests that both girls were very young so we may assume that the collection began in the 1870s. Dorothy continued to collect throughout her life with the last collecting date being 1929 when on a trip to North Africa. Dorothy was not only interested in shells but also in fossils and minerals. In a letter dated 1881 from a family friend Fanny Torlesse ⁸ she reports that Dr Liveing ⁹ is sending a book on fossils and that he hoped she liked the mineral specimen he sent to her. We found no fossils or minerals that date from this early period, those fossils in her collection were probably acquired during her time at university.

The collection is contained in a bespoke wooden cabinet of 51 drawers following a design suggested by A.H. Cooke in 1895. The arrangement remains unchanged and is as Dorothy left it, and we have retained it. Most of the shells are in glass topped boxes and often very neatly laid out with the unusual use of pink coloured cotton wool. Most of the labelling is on the reverse of the boxes, hand written in pencil by Dorothy. Despite being married to W.H. Banks when referring to herself she always used the initials DA.

The collection is divided into British and Foreign with three of the drawers given over to fossil Mollusca. The contents can be summarised in the following tables. We have recognised 871 lots of British Mollusca representing 184 species (Table 1).

The origins of the specimens are many but mostly from southern England and Wales (Table 2). Many family holidays were spent around Tenby in Pembrokeshire and many shells came from there, collected over many seasons from 1898 to 1923. The second most numerous are from the Channels Isles but none of the boxes carry dates. We know from Dorothy's sketch books that she was in Guernsey in 1884, this before she went up to Girton College, Cambridge in 1886. Dorothy's connection with the Channel Islands continued at Girton and we return to this when we review her relationship to A.H. Cooke and J.R. le B. Tomlin. Both Cooke and Tomlin gave shells to Dorothy, often the rarer species that she could not collect herself.

We isolated 1107 lots of foreign shells representing 616 species although many are not identified to species (Tables 3 & 4). The majority of shells were collected by Dorothy on the many trips she and her husband made to destinations in Europe. Some were made on trips to the Mediterranean with her sister or parents. One significant portion, that of the Andaman shells, was given to her by her uncle C.J. Lyall ⁹ in 1890. Dorothy also visited him in 1893/94 collecting shells herself. Among shells from Tomlin were north American land snail shells and she received shells from her friends, the Torlesse sisters in New Zealand.

The identifications we assume are made by Dorothy but with help from Cooke and Tomlin. Letters from Tomlin do show that he helped her but also that she visited the now Natural History Museum, London identifying shells from the display cabinets and consulting the library.

5. Bradley Hurt Alford biographical details in J.G. Alford & W.P.W. Phillimore, 1908. *Alford Family Notes, Ancient and Modern*. Phillimore, London. 258 pp.

6. Caroline Alexa Lyall (Mrs Bradley Hurt) biographical notes in <http://www.thepeerage.com/p53181.htm#i531808>.

7. Biography of Margaret Alford in R. Mayer, 2014. *Margaret Alford: The Unknown Pioneer*, in Rosie Wyles and Edith Hall (eds), *Unsealing the Fountain: Pioneering Female Philologists from the Renaissance to the Twentieth Century*. Oxford University Press.

8. Histories of the Torlesse and Liveing families in Torlesse, F.H. 1914. *Bygone Days*. Harrison & Sons, London. 293 pp.

9. Biographical information on C.J. Lyall, https://en.wikipedia.org/wiki/Charles_James_Lyall and in A. A. B. (October 1920). "Sir Charles James Lyall". *The Journal of the Royal Asiatic Society of Great Britain and Ireland* (4): 667-669.

Taxon	No. of lots	No. of species
Marine Bivalvia	370	80
Freshwater Bivalvia	30	8
Land & Freshwater Gastropoda	198	46
Marine Gastropoda	260	45
Scaphopoda	4	2
Polyplocophora	8	3

Table 1. Numbers of lots and species within the British series of the Alford collection.

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Location	No. of lots	Date
Tenby & Saundersfoot	130	1898, 1923
Channel Isles	110	1884-1888?
Kington etc	62	1892, 1909, 1911, 1915, 1927
North Wales	53	
Gower	37	1910
Cornwall	34	1916
Weston	30	
North Devon	26	1887
Scilly Isles	22	
Rugby	19	1891, 1892, 1916
Teignmouth	17	
Yorkshire	16	
Cambridge	15	1892
Weston	30	
North Devon	26	1887
Scilly Isles	22	
Teignmouth	17	
Yorkshire	16	
Cambridge	15	1892
Norfolk	8	1911

Table 2. Numbers of lots from British collecting sites with dates where known.

Taxon	No. of lots	No. of species
Marine Bivalvia	207	122
Freshwater Bivalvia	6	3
Land & Freshwater Gastropoda	275	128
Marine Gastropoda	611	357
Scaphopoda	2	2
Polyplacophora	1	1
Cephalopoda	5	3

Table 3. Numbers of lots and species within the non-British series of the Alford collection.

Location	No. of lots	Date
Greece	49	1890
India	18	1893/94
Andaman Islands	67	from Lyall, 1890
Holyland	75	1894
Wimereux & Calvados	113	1909
Sicily	62	1911
Italy	114	1891/1894/1911
Corsica	10	1913
North Africa	16	1929
New Zealand	21	from Torlesse
Aden	40	1894
USA	17	from Tomlin
Unlocalised	324	

Table 4. Numbers of lots from overseas regions and countries with dates and sources where known.

Significant shells

Shell collecting was an encouraged pastime during the Victorian period and museums are now inundated with donations of collections of unknown scientific or cultural value. The value of collections depends on the extent of the associated data, identification, where and when collected, collector, identifier.

The British shells in the Alford collection do carry most of this data such that the collection acts as a temporal record of distributions at that time. Such data is useful in assessing biodiversity changes through time and in relation to anthropogenic effects, including climate change. For example the data in the UK's National Biodiversity Network (NBN) suggests that the land snail *Monacha cantiana* has a predominantly southern distribution and was recorded further north only in 1985 but shells are present in the Alford collection collected in the 1890s from the Welsh borders. A second example are the shells of the alien bivalve *Petricolaria pholadiformis* collected in Norfolk in 1911. This species arrived in Kent in the 1890s and the Alford shells suggest that it was spread quite rapidly but today it is poorly recorded from Norfolk.

The freshwater snail *Segmentina nitida* is now on the UK Red Data list ¹⁰ and is present in the collection but from Coe Fen, Cambridge, which is not a recognised locality for this species. Some shells add to the taxonomic research resource of rare species and examples here are specimens of *Menetus dilatatus* and *Gyraulus parvus* collected by Tomlin from a canal near Burnley. A shell of the Mediterranean land snail, *Retinella olivetorum* (Fig. 1) is labelled as

found at Tenby but this species has never been recorded from the British Isles and this would be the first and only record of this species here.

The most significant foreign shells in the collection are those from India and the Andaman Islands. Over a period in 1893/1894 Dorothy visited her uncle Charles James Lyall (1845–1920) and stayed with him in Calcutta (Kolkata) and travelled with him to the Himalayas in the region of Simla (Shimla) in the north-western state of Himachal Pradesh. She probably did a colonial tour and one lot suggests that she was also in Jaipur in Rajasthan. C.J. Lyall was her mother's brother and was a senior civil servant in India and a renowned Arabic scholar. Dorothy's collection contains 12 lots she collected herself as well as some she credited to C.J. Lyall. Lyall was at some time was responsible for duties in Assam and this may explain the presence of shells labelled as from Brahmaputra.

Most of the shells she did not or was unable to identify to species. The fauna of the Himalayas remains poorly studied but we were able to find experts to identify some lots.

At the time Dorothy Alford was there the Indian fauna was just being described and the Zoological Survey of India, based in Calcutta, was very active. One might have imagined that Dorothy would have visited the ZSI but we have no correspondence suggesting that she was in contact with any of the colonial naturalists.

The most significant lot is that labelled *Carychium himalayanum*, (Fig. 2A), which is apparently a manuscript name. The species is actually *Carychium indicum* described by Benson in 1849 based on shells from Simla. Shells from the original description could not be found by the leading researcher in this group Dr Adrienne Jochum. She confirms that these are topotypical specimens and will be illustrated in a forthcoming paper. These maybe the same shells that Dorothy noted in her diary from 6/Sept/1894 as “went Snailing but found very little. However, I got some tiny white shells- Pupae I suppose- wh’ may be some good”.

The *Diplommatina follicula* Pfeiffer (Fig. 2B) also are topotypical coming from Simla. The *Bensonies theobaldiana* (Fig. 2E) had been described only 10 years before Dorothy collected her shells. In 1890 Dorothy's uncle C.J.

10. The Red Data books list species of conservation concern at local, national and international levels; For UK non-marine molluscs see M.B. Seddon, I.J. Killeen & A.P. Fowles. 2014. *A Review of the Non-Marine Mollusca of Great Britain: Species Status No. 17.* NRW Evidence Report No: 14, Natural Resources Wales, Bangor, 84 pp.



Fig. 1. *Retinella olivetorum* (Gmelin, 1791) reputedly from Tenby.

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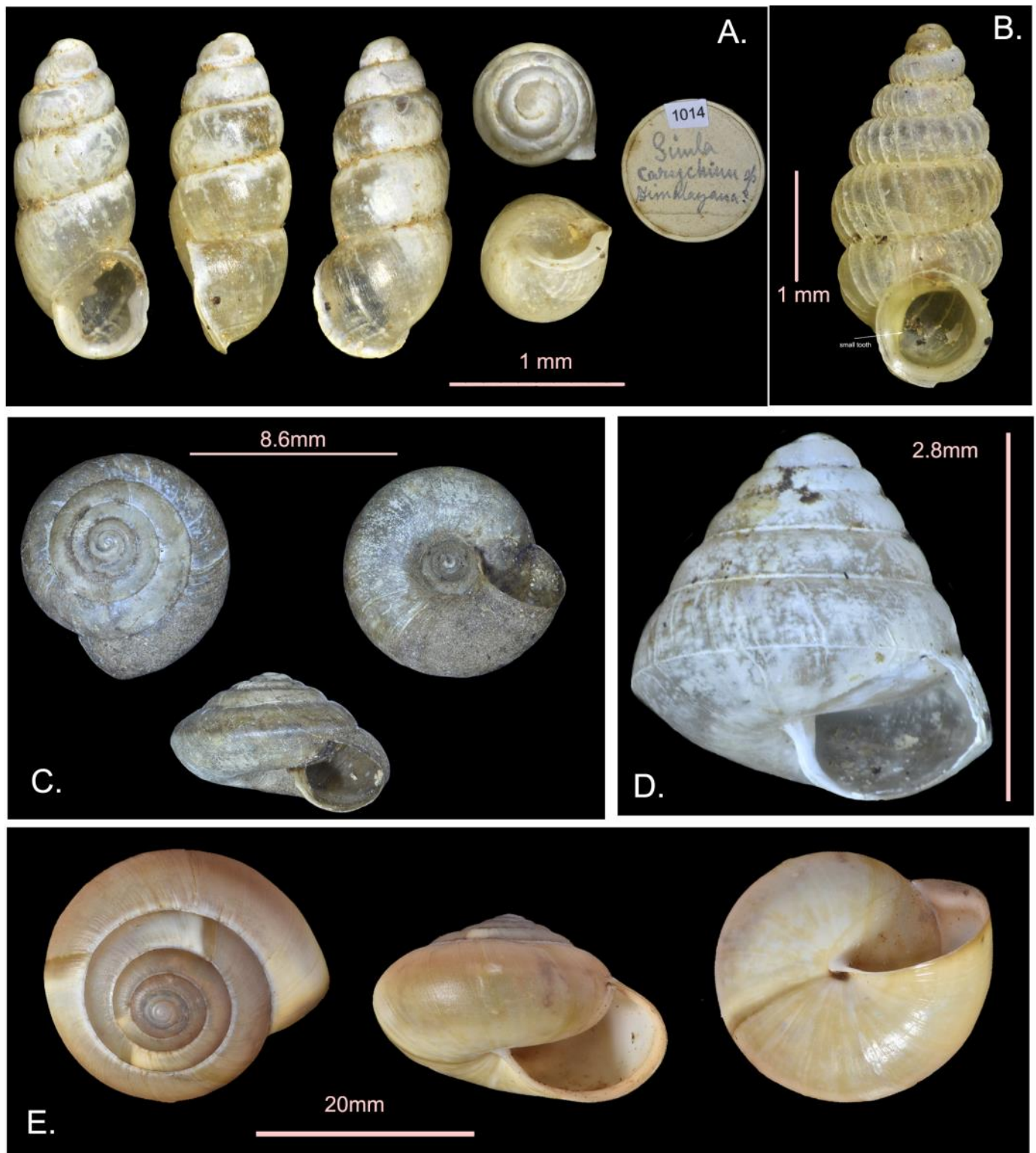


Fig. 2. Some of Dorothy's shells from Simla, NW India collected by her in 1894.

A, *Carychium indicum* Benson, 1849 (topotype) [DA1014]; B, *Diplommatina folliculus* Pfeiffer, 1846 [DA1073]; C, *Landouria huttonii* (Pfeiffer, 1842) [DA881]; D, *Kaliella barrakporensis* (Pfeiffer, 1853) [DA883]; E, *Bensonies* (now *Macrochlamys*) *theobaldiana* (Godwin-Austen, 1888) [DA578].

Lyall sent to her a collection of shells from the Andaman Islands. Lyall had been involved with setting up the penal colony in Port Blair, Andaman Islands and had excellent contacts. In his letter (Fig. 3) to Dorothy whom he called Dorfe he wrote from Calcutta in 1890:

"My Dear Dorfe
Some friends of mine from Assam who left

Calcutta last Thursday on the "Chusan" are taking you a collection of Andaman shells which I hope will reach you in good condition. They are in the box just as they were packed by the man who collected them for me, as I thought it best to leave them undisturbed I enclose his letter and the list he sent me, & I trust that the collection will be of some use."

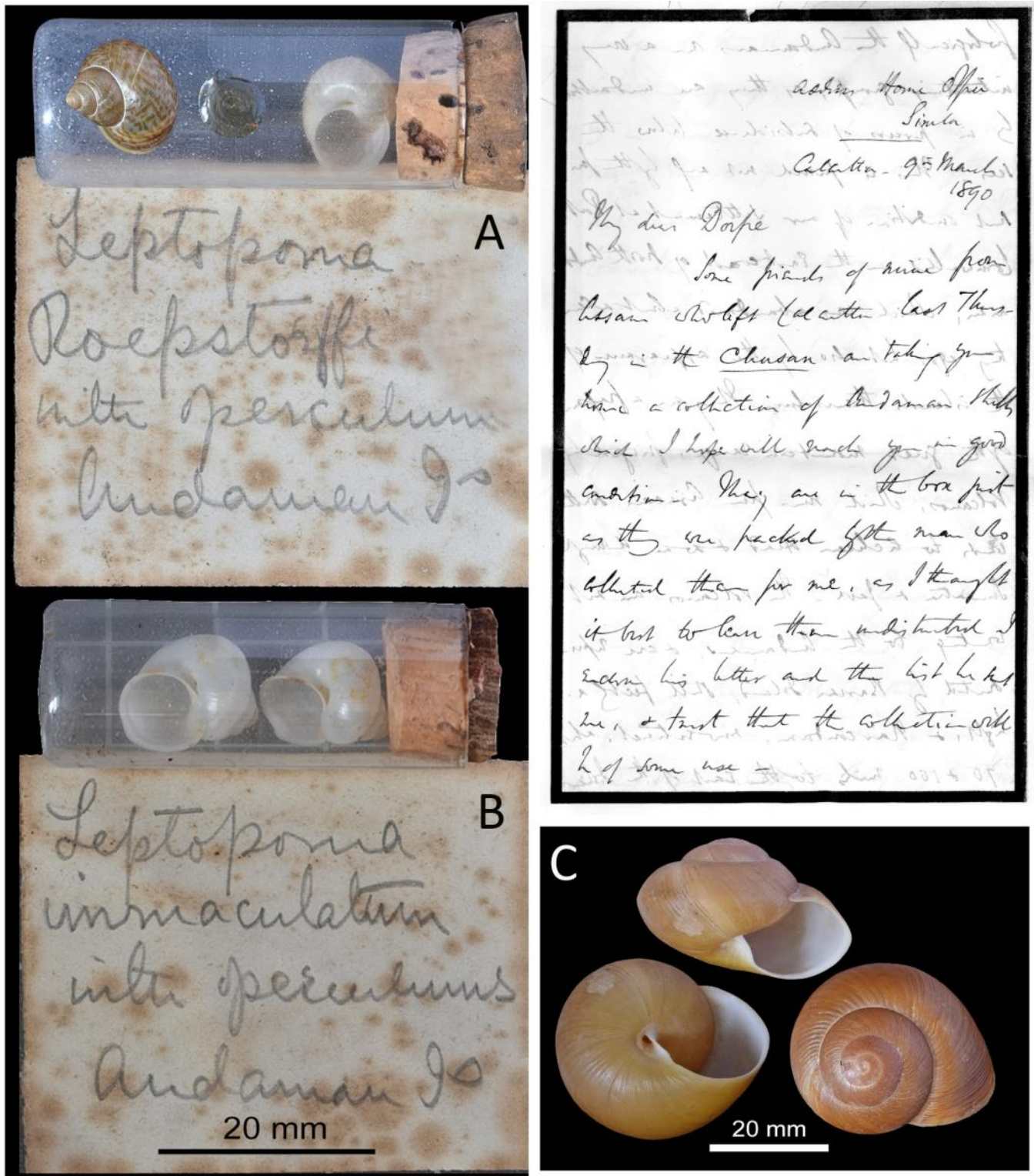


Fig. 3. Letter to Dorothy Alford from C.J. Lyall informing her of the Andaman collection. Three land snails from the collection. A, *Leptopoma roepstorffianum* (Nevill, 1878) [DA539]; B, *Leptopoma immaculatum* (Sowerby, 1839) [DA540]; C *Rhyssotopsis haughtoni* (Benson, 1860) [DA579].

Unfortunately the letter and list enclosed with the collection has not been found in the collection or archive. The collection consists of 74 lots of shells, most of which are larger marine species. There are only four lots of land snail of which three are of endemic species to the Andaman Is; *Leptopoma immaculatum* (Fig. 3), *L. roepstorffianum* (Fig. 3) and *Rhyssotopsis haughtoni* (Fig. 3).

Subba Rao & Mitra (1991) mention these species but there are very few examples in the Indian Museum collections and their paper records that *Rhyssotopsis haughtoni* had not been collected since 1871, which is many years before Dorothy's shells were collected, so a rare species. Who identified these shells is questionable as it seems doubtful that Dorothy would have had the relevant literature.

Leptopoma roepstroffianum although described in 1878 by Nevill was not illustrated until 1921 and would only be recognisable by local experts working in the Zoological Survey of India. This is possible as some of the most prolific collectors were Assistant-Commissioners in Port Blair and would have worked with C.J. Lyall, Dorothy's uncle. Given that the collection was made in the late 1880s it is possible that one of these was Harold Godwin-Austen who supplied his brother and doyen of Indian conchology Henry Haversham Godwin-Austen (Godwin-Austen, 1895; Subba Rao & Mitra, 1991).

In the collection are small land snail shells collected by L.M. Elder from Lakes Entrance, Gippsland, Victoria. They were not identified but have now been determined by Michael Shea of the Australian Museum, Sydney. Lot #884 is *Magileoma penolensis* (Cox, 1868) and lot #927 contained three different species. All forms are restricted to Victoria and come from the area devastated by the forest fires of late 2019 and early 2020. The three species in lot #927 (Fig. 4) were described by C.J. Gabriel (1879–1963)¹¹ but not until decades later (1929–1947).

Dorothy seems to have made no attempt to investigate these shells further nor apparently bring them to the attention of Cooke or Tomlin. Lilian sent no other shells and there seems to have been no concerted effort to make a representative collection of the shells of Victoria. These species are not well represented in British museum collections and could only be found in the National Museum of Wales and Natural History Museum, London.

Lilian Mary Elder (b. 1864) married the Rev. Frederick Tracey and resided for some time in Victoria, Australia. A letter dated 1890 from L.M. Elder to D. Alford mentions that she has met A.H. Cooke at Girton and that she is to be married. This is the Miss Elder that accompanied Tomlin and Laura Howell to the British Museum in 1887 and the Miss Elder that Tomlin received a letter from on the eve of her departure to Australia on the 14th Jan 1888.

The many shells collected on Dorothy's excursions around the Mediterranean are mostly common species but some of the Sicilian specimens were collected from restricted and isolated mountain locations such as Mount Ercte and Mount Eryx. Dorothy collected from brackish lagoons such as Lake Menzeleh in Egypt and Lake Tunis and over the intervening 100 years such environments may have changed resulting in Dorothy's shells having some residual ecological significance.

Two shells that may have historic significance are labelled as being ex. Mrs Somerville Collection (Fig. 5). Mrs Mary Somerville (1780–1872)¹² was a celebrated polymath and astronomer. Somerville College, Oxford University is named after her. Her collection was recently donated to Somerville College by the Fairfax



Fig. 5. *Pinctada margaritifera* (Linnaeus, 1758) [DA1677] from the Somerville collection.

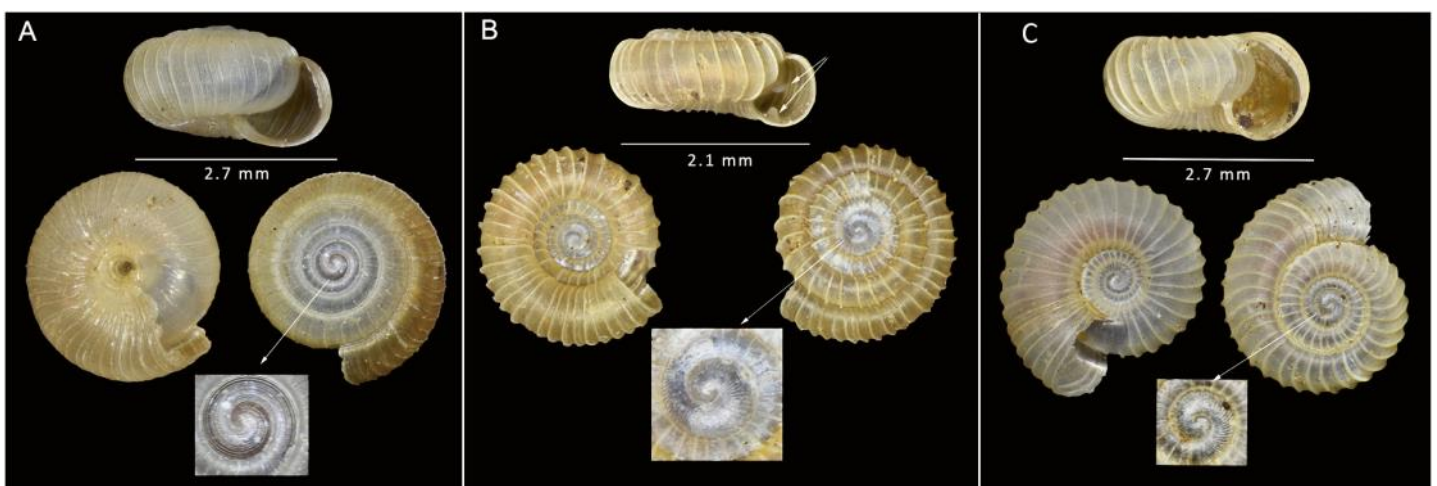


Fig. 4. Shells collected by Lilian Elder in Gippsland: A, *Oreomava cannfluviatilis* (Gabriel, 1929) [DA927a]; B, *Egilodonta bairnsdalensis* (Gabriel, 1930) [DA927b]; C, *Austellorien jemmysensis* (Gabriel, 1947) [DA927c].

Lucy family (Kate O'Donnel pers. comm.) so it is difficult to comprehend how Dorothy Alford may have acquired these shells. There is, however, a link between Somerville and Girton as the books belonging to Mary Somerville were donated to Girton College and are now in their Special Collections section but there is no evidence that the shells were ever at or offered to Girton (Hannah Westall pers. comm.). A detailed examination of the collection may reveal some contacts, perhaps not directly but it would not surprise us if A.H. Cooke or J.R. le B. Tomlin were aware of the collection.

Dorothy Alford (1866–1937)

Before Girton

Dorothy Alford (**Fig. 6**) was born into a home of intellectualism and Christian socialism, her father was the Reverend Bradley Hurt Alford and her mother was Caroline Alexa Lyall. Bradley Hurt Alford's half-brother, Henry Alford (1810–1871)¹³, was Dean of Canterbury and his predecessor was W.R. Lyall (1788–1857)¹⁴, Caroline Alexa Lyall's uncle. The parishes tended by Dorothy's father were poor so that Dorothy was fully aware of the social difficulties of the day and her parents' involvement in educating the poor. The Alford's, however, were not poor and both had private means notably Mrs Alford whose father was C.J. Lyall, a partner in the trading firm of Lyall Matheson which laterally had the unfortunate attachment to the opium trade in India. Dorothy and her sister Margaret (1868–1951) were educated in Girls Public Day School Trust's schools in Paddington and Maida Vale reflecting their parents' adherence to education for all girls. Margaret Alford was to become a pioneer scholar of Classics (Meyer, 2014).

Although a deeply religious family the Alford's had many lay friends and are known to have been friends of the poet Tennyson, visiting him on the Isle of Wight and where Dorothy, as a child, was photographed by the renowned Julia Margaret Cameron¹⁵. It was perhaps on such visits to the Isle of Wight that Dorothy became interested in Geology.

Dorothy's father was a Cambridge graduate and her uncle a Trustee of the newly formed Girton College for women students. It is not surprising therefore that Dorothy Alford goes up to Cambridge but perhaps surprisingly to read Natural Sciences for this was a very new



Fig. 6. Dorothy Alford (1866–1937).

course. Her sister Margaret in a letter date May 1885 to Dorothy remarked *"It seems to me rather a pity that you should give up your own speciality of geology & botany & go in for classics"* but this did not happen and Dorothy entered to study for the 3-year Natural Sciences Tripos.

Girton 1885 to 1891

On arriving at Girton College Cambridge Dorothy was soon to meet four men who influenced her natural science and conchological interests. She also met a fifth, a fellow student W.H. Banks, whom she married in 1894. Here we will examine her relationships with these men and how they influenced her student life and try to understand why in 1891 she promptly turned her back on a potentially fruitful academic life.

These four academics were Alfred Hands Cooke, John Read le Brockton Tomlin, Thomas McKenny Hughes and William Bateson.

Reverend A.H. Cooke (1854–1934)

Reverend Alfred Hands Cooke (**Fig. 7**) although trained as a classicist was a passionate conchologist and was curator of the zoological collections at Cambridge from 1880 to 1890. He is best remembered for his revision of the Macandrew collection of Red Sea shells (Cooke, 1886) and his book *"Mollusca"* part of the Cambridge Natural History series published in 1895 (Cooke, Shipley & Reed, 1895). He became Dean of Kings College Cambridge and had extra-collegiate duties at Girton College. As Chaplain of Girton College he may have been

13. Chisholm, Hugh, ed. (1911). "Alford, Henry". *Encyclopædia Britannica*, 1 (11th ed.). Cambridge University Press. p. 582.

14. [https://en.wikipedia.org/wiki/William_Lyall8\(priest\)](https://en.wikipedia.org/wiki/William_Lyall8(priest)).

15. Ford, Colin (2008). "Cameron, Julia Margaret, 1815–1879". In Hannavy, John (ed.). *Encyclopedia of Nineteenth-Century Photography*. London, UK: Routledge. Retrieved 28 April 2019.

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K. C.

6 Nov. 1889

My dear Dorothy,

You remember kindly bringing me some a lot of *Purpura* from Iffa-
crahe? I want to ask you one or
two questions about them, as I am
going to read a paper to the Philo-
sophical Society about *P.*'s varieties,
and I want to use these shells in
illustration of a theory I have set
up.

You remember, perhaps, that there
were 2 very distinct types of shell
amongst those you brought - one a
nice, graceful form, with a tapering,

rather sharp, spire, generally banded
with yellow: altogether a well made
respectable and shapely to the eye.
The other was a little misshapen
pinched up thing, with scarcely any
spire at all - small and deformed -
looking very sad and hungry. Now I
want you to tell me where you
found these 2 forms - what was the
difference in their station - for in
different stations I am sure they must
have lived - especially with regard to
whether they were or were not exposed
to heavy seas, or were in a comparatively
sheltered district. This if you will do,
dear Dorothy, you will earn my hearty



A.H. Cooke

patience and kind of the Society.
Many thanks for your little note
of the poem. I didn't know the
Latin - and like it much. It was
too long to quote in a Sunday sermon -
or I would have done so. Indeed, I very
seldom quote poetry, as you know!
It is delightful when the pleasure of
looking forward becomes you here - some
thing to look forward to indeed - you
must of course visit us some time
- if Mr. Will let you - but you
will very likely find us in the spring
of morning - so will excuse a rough reception.
This is not a letter, and a note, &
a very hurried one - so goodbye - from

Yours ever affectionate

Alfred H. Cooke

Fig. 7. Portrait of A.H. Cooke and a letter concerning his use of *Purpura* (Nucella) from her collection in a forthcoming paper of his.

acquainted with the Alford family before Dorothy's arrival in 1885 as her father was also a vicar and Cambridge graduate and her uncle was a trustee of the college. However we have no correspondence confirming this. Cooke was allocated as Dorothy's Director of Studies and a relationship developed that was to last for decades to come.

Cooke was a friend and colleague of Henry Melvill Gwatkin¹⁶ and the two of them started a long lasting interest in the conchology of the Channel Islands publishing a checklist in 1878 (Cooke & Gwatkin, 1878). We know that Dorothy visited Guernsey in 1884 and she may have already been aware of Cooke and Gwatkin before going up to Girton. It is almost certain that she visited Guernsey again as alluded to in a letter from Tomlin to her in 1890 and this was probably at the invitation of the Gwatkins who were known for their social gatherings. The presence of Mrs Gwatkin would have ensured the correct propriety required at this time.

There is a long series of letters from Cooke to Dorothy in the Hergest archive and although Sinclair & Fenn regarded Cooke's relationship as entirely innocent some of the wording would have given cause for concern in today's student life. Cooke writes to her as "My Dear Dorothy" not as "My Dear Miss Alford" which we see in letters from others, and letters such those following verge on infatuation.

May 1888. King's College, Cambridge. Alfred Cooke to Dorothy Alford at Girton. *'I did go down to the gardens just to try and imagine what it would have been like if you had been there too and they were so lovely that I soon came away. I shall try and see you if but for a moment after service, that it mayn't be a dark Sunday instead of the specially light one I was hoping for.'*

2nd June. *'How nice of you to ask me to help you, I will bring you some books over tomorrow...'*

17th June. King's College. *'I am hoping to come up to town...for a long day at the Museum.. Shall you care to come too?'*

15th July. Care of the Provost, Eton College. *'Is there the remotest chance of your being at home on Friday afternoon...'*

6th August 1887. King's College. *'I miss my kind assistant so..'*

24th May 1888. Kings College. *'I want to see you badly before Sunday'*

17th September 1888. Rose Villa, Freshwater, Isle of Wight. *'I had you with me all day at Barton. When do you come back to town.'*

There are undated post cards and short notes, too:

'Be sure you come and see me on Friday...'

'I am very anxious to hear how you are getting on..'

'Can you come and see me a few minutes before six.'

'Something has come in this afternoon which I long to show you...'

'I shall probably be in the gallery...when you come.'

'It is quite three weeks since I saw anything of you...'

'Any chance of your being able to come to the Museum...tomorrow?'

'Something has come in this afternoon which I long to show you...'

There is also a letter from Sydney Harmer¹⁷ replying to Cooke concerning how to ensure that Dorothy Alford and Laura Howell can gain 1st class distinctions in their Tripos.

My Dear Cooke

I am able to give you some information with regard to the late examination in Nat. Sciences, as it effected Miss Alford + Miss Howell. In both cases, it would not require very much improvement to bring them within the limits of the First Class, + I know no reason why such improvement shd not take place before the Tripos next year. I .. Comp Anat in wh. I saw the papers of the 2 candidates, the practical work was quite good in both cases, but the papers were not quite so satisfactory. Miss Howell wd. have obtained a much better total if she had answered the full no. of questions, for wh. there ought to have been sufficient time; - Miss Alford wd. have done better of she had not taken one or two questions in Elem. Biol. wh. is naturally not marked so highly as the other part of the papers (as it is not a Tripos subject). Both Miss Howell + Miss Alford answered some of the questions very creditably + with a moderate amount of reading before the Tripos, they ought to be able to give a better account of themselves than in the exam. wh. is just over. Judging by the marks of the other examiners, improvement is required most of all in Pract. Chem. + in Geol (in the latter subject esp in the case of Miss

16. Obituary of H.M. Gwatkin by T.D.A. Cockerell, 1916. *The Nautilus*, 30(10): 119-120.

17. Obituary of Sidney Frederic Harmer. 1862-1950 by W.T. Calman 1951. *Obituary Notices of Fellows of the Royal Society*, 7(20): 359-371.

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18. The Marquis de Monterosato was a prolific shell collector publishing numerous a papers on Mediterranean molluscs and describing many new varieties, subspecies and species. Appolloni M, Smriglio C, Amati B, et al., 2018. Catalogue of the primary types of marine molluscan taxa described by Tommaso Allery Di Maria, Marquis of Monterosato, deposited in the Museo Civico di Zoologia, Roma. *Zootaxa*, 4477 (1):1-138.

He was a frequent correspondent with J.R. le B. Tomlin (Trew, 1998).

19. Obituary of Thomas McKenny Hughes by Anon 1918. *Quarterly Journal of the Geological Society of London*, 74: lii-liv.

Alford). Further the marks show that more reading is required in all the subjects. Although the total marks in both cases were near the First Class limit, there was no single subject in wh. First Class marks were obtained. It is very desirable that all persons who are anxious to appear in Class I shd have at any rate one good subject - If by special attention either Comp Anat or Botany for instance Miss Howell + Miss Alford cd. bring their best subj up to 1st cl. rank, it seems to me probable) or at least possible) that this subject together with the marks wh. they are sure to obtain in their other subjects may ultimately raise them a class higher than in this exam.

Yrs sincerely

Sidney F. Harmer

Both students did gain firsts, and Laura Howell went on to marry Sydney Harmer. Harmer was destined to be the Director of the British Museum (Natural History) and was knighted for his services.

Given this intense interest in Dorothy there are few references to her shell collection and we could only recognise 26 lots as coming from Cooke. There is no mention of Dorothy doing other than collecting shells, in some instances Cooke asks Dorothy for shells to support his research specifically for examples of *Nucella lapillus* that were used in his paper of 1889 (Fig. 7). There are no indications of Cooke trying to involve Dorothy in his research or to develop her own projects. In Tomlin's letters there are references to asking Cooke to help with identifications.

At the beginning of her time at Girton, her sister mentioned Dorothy's decision to study Geology and Botany, Zoology is not mentioned. Then in one letter Cooke implores Dorothy to help him with his photography because he says it is important for the study of Geology. We have to ask that given her passion for shells, why did Cooke never suggest this as a direction for her studies. In a letter of 1892 her sister Margaret writes to Dorothy from Gt. Malvern:

"Mr Cooke has been out this afternoon and paid me a visit. He enquired after you and lamented that you had given up snails now - a fact of which I informed him."

There is a hint of intolerance here in Margaret's tone and perhaps the sisters were rather tired of Cooke's attentions. Dorothy had not given up snails and continued to collect for the rest of her life. Cooke wrote to Dorothy again in February 1892 while she was in Algiers mentioning the Marquis de Monterosato¹⁸ and suggesting she may seek him out and ask him to show her his collection. This letter lacks any of the tones of infatuation and may indicate a change in his feelings for Dorothy. Cooke and Dorothy never lost touch and the last correspondence we have is a letter of from Cooke concerning the death of his wife in 1920.

Prof. Thomas McKenny Hughes (1832-1917)
Mrs Mary Caroline McKenny Hughes (1862-1916)

Thomas McKenny Hughes¹⁹ (Fig. 8) was the Woodwardian professor of Geology, taking over from Adam Sedgwick in Cambridge. He



Fig. 8. Geological excursions and the McKenny Hughes (from the collection of W.H. Banks held in Hergest Croft).

was responsible for the creation of the Sedgwick Museum and with his wife Caroline²⁰ was a proponent of women's education in Cambridge University. Botany and Geology were strongly represented in the Natural Sciences Tripos and Dorothy received lectures from Prof. McKenny-Hughes and J.E. Marr (1857-1933). The combination of husband and wife allowed the McKenny Hughes to lead mixed sex geological excursions. On these excursions we find Dorothy, her future husband W.H. Banks as well as on occasions her sister Margaret and W.H. Banks sister Rosa although neither Margaret nor Rosa were studying geology. We know that through this route Dorothy went with Mrs McKenny Hughes (Fig. 8) and J.R. le B. Tomlin on an excursion to North Devon. Mrs McKenny Hughes in her paper (1888) on Barnwell Gravel molluscs acknowledges both Cooke and Tomlin so we begin to see the formation of a tight knit community of enthusiastic geologists and naturalists. Tomlin certainly remembered with great fondness these excursions as evidenced in a letter (Fig. 13) he wrote to Dorothy in 1890:

"It was very jolly to hear all about the geological excursions once more, and have by this time got quite reconciled to hearing of the trips without much envy - though you'll hardly believe it. I remember the Keswick hotel when we all stayed one year by Thirlmere in a jolly old farmhouse".

Dorothy became an intimate friend of Caroline McKenny Hughes as expressed in two letters from Caroline in 1890 and 1894. In the first she pleads "So I do want you to come to keep me company in my loneliness", her husband is on fieldwork in the Malverns.

In the second (Fig. 9) Caroline is distressed at the death of Rosa Banks "I can never get over her loss- no one was like her to me- so true & sympathetic & unselfish..." but ends with comments on Dorothy's impending marriage "You are much blessed in your choice I think - both of you!"

These letters indicate that the Alford, Banks and McKenny-Hughes families had become intimate friends, much more than academic colleagues. In this circle we can probably include A.H. and Mrs Cooke, and J.R. le B. Tomlin.

Fig. 9. Letter from Mrs McKenny Hughes to Dorothy Alford, 1894.

ASHBANK,
PENRITH.
Aug. 4. 94.

My dear Dorothy

Your letter has made me very glad! I have thought so often of poor old Banks & of that home deprived of so much of its Sunshine & how your coming to him will bring new joy & I rejoice for I can never get over her loss - no one was like her to me - so true & sympathetic & unselfish - don't you think that she knows about it all now & that perhaps her joy will throw a spiritual radiance upon your love? - I like to think that it is so. -

I hope that you will not have to wait long before you are married - the time of waiting, though it has much sweetness,

him & for dear Mrs. Banks & for you too because I believe that you are sister brack other that the future has good things in store for you! Dear Dorothy - in the midst of the gladness I am thinking so much of Rosie - how sweet she would have been & how loving to you both -

has also many anxieties - we shall hope to have you both staying with us before long!

You are much blessed in your choice I think - both of you!

Ever your affectionate
M. C. Hughes.

20. Palmer, D. 2016. Mary Caroline McKenny Hughes (1860-1916) - promoter of geology for women in the University. Sedgwick Museum News. <http://www.sedgwickmuseum.org/index.php?mact=News,cntnt01.detail,0&cntnt01articleid=55&cntnt01returnid=243>.

In Dorothy's shell collection there is little evidence of her collecting shells on the Sedgwick Club excursions but we do have evidence that she collected fossils. In the Sedgwick Museum (formerly Woodwardian Museum) there is the holotype of the graptolite fossil *Dydymograptus deflexus* Elles & Wood, 1901 (Fig. 10) that was presented by Miss Alford in 1890 and had been collected at Barf, near Keswick. One assumes that this fossil was collected on one of the Sedgwick Club excursions and placed directly into the Cambridge collections by Dorothy. Another specimen in this series was donated by a Miss Banks, who we take to be Rosa Marianna Banks (1869–1893) the sister of W.H. Banks and friend of Dorothy. These species were described by Dorothy's contemporaries Gertrude Elles (1872–1960)²¹ and Ethel Wood (1871–1946)²² who were protégées of the McKenny Hughes and with whom Dorothy would be well acquainted. We have no evidence that Dorothy attempted to make a collection of fossils except for a relatively small number of fossil molluscs in her collection. Neither do we see any indication of Dorothy joining McKenny-Hughes's cohort of young women research protégées (Burek, 2009).

Although Dorothy finished her degree in 1888 she continues to be linked with Cambridge and the Sedgwick set. She appears at Sedgwick excursions in 1890 and 1892 (Fig. 8) but then so does W.H. Banks her future husband. W.H. Banks was a keen photographer recording a number of the Sedgwick Club excursions in a series of images present in the Hergest archive.

William Bateson (1861–1921)

William Bateson (Fig. 11) graduated from St Johns College Cambridge in 1883 and soon became a of Fellow and Master of St Johns College Cambridge. His interest, during the late 1880s and 1890s, was in the variation of species and the influence of environment on morphology. This research drew him into the work of Mendel and he then began experimenting on breeding, resulting in pioneering work on genetics. Through this research he became recognised as the founder of modern genetics. Much has been written about him (Bateson, 2002; Schwartz, 2007) and in one paper attention is drawn to his co-option of Newnham female students into helping with his genetic studies from 1902 onwards (Richmond, 2001).

In a series of twelve letters from 1888–1890 in the Alford archive and not mentioned by Sinclair and Fenn (1999), we learn that Bateson was similarly supervising Dorothy on a project on the alga *Spirogyra*. The letters start in December, 1888 in which Bateson says that he has discussed the project with the eminent botanist Prof. Marshall Ward and it is thought to be worth pursuing. However, he cautions Dorothy that it will take some effort and that she must stick to it.

By February 1889 Dorothy has made drawings that Bateson regarded as good enough to publish but require some modification. In March Bateson left Cambridge to work for a period at the Plymouth Marine Laboratory. He writes to Dorothy again in September 1889 from Plymouth enquiring how the project is going and that if she is not continuing with it she should publish her observations so far in the *Annals of Botany*. However, in October Bateson says she needs to do more work to make it "a much more better thing". In this lengthy letter he discusses and suggests the things she needs to do and on the 11 October sends her a sketch of how to do the "contact experiment" and in November he offers her a microscope and suggests using a camera lucida to aid her drawing.

21. Smith, P. 2018. Legends of Rock: Gertrude Elles. *Newsletter of the Palaeontological Association*, 99: 35–37.

22. Obituary of Ethel Wood later Dame Ethel Shakespear by Elles, G. Dame Ethel Shakespear, D. B. E. *Nature*, 157, 256–257 (1946).
<https://doi.org/10.1038/157256a0>



Fig. 10. Graptolite presented to Sedgwick Museum by Dorothy Alford.

The impression that Dorothy was academically more experienced as a geologist than a conchologist is supported by a letter of 1892 from a friend who asks if Dorothy wishes to do some teaching as there is a Geology post at Cheltenham Ladies College. Somewhat contradictory is that letter from Sidney Harmer to A.H. Cooke (see above) there is a comment that Dorothy did not do well at her Geology exami-

1

7 Febr. 1890.

ST JOHN'S COLLEGE,
CAMBRIDGE.

Dear Miss Alford,

Of course I am sorry
that you or any one else
should give up; but I am
sure that you are right to
aim at things other than
Natural History, if circum-
stances are such that it
can't be made the chief-
things.

2

It is very good of you to
write as you have done,
though I fear there is very
little for which you are
beholden to me.

— Please remember us if you
get a chance of collecting
common beetles or shells
from any Greek island.



3

In some of these places there
are autumnal-flowering
buds which have a com-
mercial as well as a
scientific value.

(v. Maw: Monograph of Gross
etc.)

I wish you good luck
in your journeying.

Yours most truly,

W. Bateson

Fig. 11. Portrait of William Bateson and his last letter to Dorothy Alford.

Dorothy therefore continues but in a letter of 7th February 1890 we learn that she has had an accident, apparently falling from and being dragged by a horse. Then in a letter dated 7th of September 1890 (Fig. 11) we learn that she has informed Bateson that she can no longer continue.

Bateson also encouraged Dorothy to carry out other experiments for him and this she agreed to do with groundsel, a common weed which has either hairy or smooth leaved forms.

Bateson in a letter dated 7/Feb/1890 wrote:

"Should you care at any time to grow the seeds of two varieties of groundsel in a box? They are vars from (1) heavy arable, (2) garden soil respectively, and are exceedingly different.

I think it is almost certain that you would produce no change by cultivating them together in, say loam or sand- but I think it wd be worth trial.

It cd. be done anywhere- when about to flower the respective lots wd have to be covered to prevent x-fertilisation with a view to trying the next generation.

Groundsel is however almost always (according to belief) self-fertilised. It grows very rapidly + wants no attention beyond watering.

If you care to try it, I will send the plants and seeds. There is no hurry."

In letters from her sister, Margaret, dated 16/ Feb/1890 she asks Dorothy "where are you going to grow the groundsel and in what?"

Later in a letter from her mother dated 20/ June/1890 she wrote:

"You will like having Mr Bateson. I think it really is groundsel that is coming up in the box. I have been to look and the second pair of leaves seem of a jagged groundsel kind, but I cannot distinguish any difference between them at the two ends of the box. Both experiments were done at the family home in London, what came of the groundsel we do not know but the Spirogyra was difficult to maintain. Her sister Margaret writes on the 6th November 1890."

"It is very satisfactory that Mr Bateson has been to inspect in person and realizes that your spy (MA writes spy for Spirogyra) has had every chance & won't live. I suppose now you really will give it up, which will be a great relief I know".

This indicates that Dorothy was unhappy with this work, it was difficult to maintain the culture and Bateson's continual requests to do more may have been just too much for Dorothy.

The groundsel experiment, in particular, is a precursor of the studies that Bateson and Edith Rebecca Saunders (1865–1945) carried out on *Biscutella*, *Matthiola* and *Lychnis* from 1896 to 1900 (Richmond, 2001).

We may never know the exact reason but the inference from Bateson's letter is that "*natural history could not be her chief thing*". Perhaps if she had "stuck to it" she might now be regarded as one of the earliest women geneticists. However, soon after she left for Greece on a grand tour with her parents and sister.

Finding Dorothy working on *Spirogyra* rather than on fossils or molluscs seems surprising. Through her contacts with the McKenny Hughes why did she not follow the likes of

Gertrude Elles or Edith Ward? Furthermore, why did Dorothy not study molluscs under Bateson; he had published on variation in cockles (Bateson, 1889) and from his letters he had asked Dorothy to collect winkles for a project he wished to do. Dorothy's close friend Laura Howell did start work on pond snails and here again Bateson was interested in the subject as he asked Dorothy to find out if Laura Howell was going to continue or not. Neither Dorothy nor Laura finished their projects and we can find no evidence that Bateson published on either topic. Within the next three years both Dorothy and Laura were either married or betrothed, did this put paid to their academic progression?

William Bateson did not disappear from Dorothy's social circle as in a letter to Dorothy we find Laura Howell gossiping about his impending marriage and cheekily wondering if they are both taking butterfly nets on their honeymoon! Then we also find in a letter from Dorothy's mother that she is entertaining Mrs Bateson, the mother of William Bateson, writing in 1896:

"We have a new member, Mrs Bateson, Mother of your Mr Bateson, who lives close by & is said by Miss Bradley who introduced her to be very lonely".

John Read le Brockton Tomlin (1864–1954)

John Read le Brockton Tomlin (1864–1954) (Fig. 12) was one of the most celebrated British conchologists having amassed the second largest ever collection held in private hands. He also collected conchological books and his library and shell collection now form the core of the malacology section of the National Museum of Wales (Trew, 1990). Unlike the above mentioned men Tomlin was not a tutor but rather a fellow student albeit a little older. Tomlin read classics from 1883 to 1886 at Pembroke College Cambridge but had already developed a deep interest in conchology whilst at school in Winchester College. At Cambridge he became friendly with Alfred Hands Cooke and Henry Melvill Gwatkin soon becoming part of their social network in particular their association with the Channel Isles through the Société Guernaise. Tomlin was a frequent visitor to Guernsey and maintained his contact throughout his life. Tomlin left Cambridge to a teaching post in Liverpool then to the Cathedral School in Cardiff, in 1890.



Fig. 12. Portraits of the young and elder John Read le Brockton Tomlin (1864-1954).

We are not certain when Tomlin first met Dorothy and the first confirmation is their joint trip to Ilfracombe in March, 1887 (Tomlin, 1887). In this paper Tomlin writes that he was accompanied by Miss Alford and Mrs McKenny Hughes but Sinclair and Fenn (1992) note that W.H. Banks, Dorothy's future husband was also on this excursion but they do not mention Tomlin ever in their notes. Tomlin as a classicist was not a formal part of the geology teaching, he seems to have tagged along presumably to collect shells but perhaps to meet female members of the group. He also seems to have become a friend of the McKenny Hughes' and stays in contact after leaving Cambridge. In a letter dated January 1888 from Chester, Tomlin tells Dorothy that he had lunch and afterwards a walk with the Professor (McKenny Hughes):

"The Professor was here on Thursday to read a paper on the Cefn caves. I couldn't go to hear him. on account of a ball, but had lunch at the home where he was staying & a walk afterwards."

Tomlin also remained in contact with Mrs Hughes *"I had a letter from Mrs Hughes a few days ago. I sent her word, when she was at St. Asaph to collect a lot of common shells for the local museum here and the Professor left a nice box on his way through last Monday."* Tomlin's

relationship with the Gwatkins was very genial as he writes to Dorothy on Jan. 7th 1888: *"I have just written to blow Mr Gwatkin up for general remissness"* and again on Feb. 1st 1889:

"I'm sure you will be very glad to hear that I had a letter yesterday from Mr Gwatkin himself with annotations by Mrs Gwatkin written in bed, it is true, but he maybe is going to get up & is inspirited by the thought of a new cabinet & legions of beasts awaiting him."

Tomlin, in letters at this time, also urges Dorothy and Laura Howell to let him copy their notes, presumably their geology ones but he does not specify. Tomlin must have been friends with Dorothy's friends Laura Howell and Lilian Elder as he accompanied them to the museum in London Letter to Dorothy dated 27th Dec 1888:

"On the day after I saw you I went to the Nat Hist Museum with Miss Elder and Miss Howell but had no time for more than a cursory inspection, so last Thursday I went early and spent the whole day, and named a quantity of shells."

These references reveal an intimate social group surrounding Dorothy that included students and academics and one that broadened

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Fig. 13. An example of one of the letters written by Tomlin to Dorothy Alford in 1890.

Glandaff
July 20. 1890

Dear Miss Alford

if you were at all
long in answering my letter, -
which I did not think at all -
the result was an ample and
delightful recompense. It was
very jolly to hear all about
the Geological excursions once
more, and I have by this time
got quite reconciled to
hearing of these things without
much envy - though you'll hardly
believe it. I remember the
Henrick hotel when ~~with~~ we all
stayed one year by Thirlmere in a

jolly old farmhouse. I wonder
if the waterworks operations have
abolished it? we used to cross
the lake by a footbridge in the
middle & were at the house
directly. The party seems to
increase steadily in numbers.
How jolly for you to be going to
Greece. It seems somehow such
a faraway country - and yet
by steamer it is under a week's
journey I daresay. Shall you go
that way or overland? You won't
do any collecting, I imagine, -
even I should feel inclined
to make that a secondary
consideration in Greece; can you
believe it?
I shd. very much like to pay
you a call & see the photos etc.
but am not in the least
likely to be in town this year.
Perhaps when I do come you'll have

lots of splendid curiosities
fr. further afield, and you
must promise to show me
them some day. We have in the
cathedral at home some interesting
Greek relics in the shape of 6
marble pillars from an old Athenian
temple!

I am off as soon as our holidays
begin to dredge on the W. coast of
Ireland nr. Galway if we can
find lodgings. Then I shall come
back & take my mother & sisters
away somewhere probably. They are
been on the Channel Isles. I don't think
our old lodgings wd. be big enough
(Mr. Groat's was there all June; did you
know it?). I wonder whether you
have any addresses?

The lines you sent were very
good indeed. The weather you had
reminds me of the first expedition.
I had to Clapham - only to rain,
add snow, sleet or hail every
day, & bitterly cold winds.

I am surprised that Mr. Cooke
has dropped the photography.
Perhaps he will begin on shells
again soon. I ought to be going
up for my M. A. I could have
taken it ages ago.

This will be the first regular
dredging work I've ever had &
ought to be great fun. I get a good
many foreign kinds steadily coming
in by exchange but can't get hold
of an Australian correspondent.

Did I tell you how I caught a
young kestrel on the shore of the
Bristol Channel a month ago?
It cd. not fly so I thought it better
not to leave it, as the place was
close to a village; I sent it off home
by train in charge of the guard & my sister
secured it at the other end. It is flourishing
muchly & feeds on mice. They say the
first 'scrunch' is awful. Of course the mice
are killed first.

Now I must shut up, & thank you once
more for yr. 'spiffing' letter.
Very sincerely yours
Buckley Tomlin

to include the Banks family. In the letter (Fig. 13) from Tomlin to Dorothy dated 1890 he recalls being on another geological excursion together to Keswick in the Lake District. He then mentions lodgings in the Channel Islands indicating that they had been there at the same time and by inference with the Gwatkins. With Dorothy's interest in collecting shells and her family's connection with A.H. Cooke she was probably invited to the Channel Islands by the Cookes and Gwatkins and as inferred in Tomlin's letter. However, the overlap time of Tomlin and Dorothy is relatively short, Tomlin from 1883-1886 and Dorothy 1885-1888. This leads us to surmise if Dorothy went on collecting trips with the Cookes and Gwatkins before going up to Cambridge.

Regardless, it is evident that Tomlin took a great interest in Dorothy and his letters are framed in a very personal manner suggesting that, initially, he may have been rather "keen" on her. The letters do however focus on shells and in a much more meaningful way than those of Cooke's which are often very personal and about feelings towards Dorothy. Tomlin's correspondence consists of ten letters, nine between 1888 and 1890 and then one in 1916. We do not know if or when they met again, although in 1890 Tomlin expressed his desire to meet. After Dorothy's marriage to W.H. Banks in 1894 we have but a single letter from 1916 concerning Cornish Shells, which coincided with one of Dorothy's collecting trips to Cornwall in 1916.

We have been intrigued by the level of identification found on Dorothy's shells as many of the Mediterranean shells would have required specialist literature or knowledge. As the current library at Hergest Croft is not well represented with conchology books we feel that Dorothy must have been helped or had access to a wide ranging set of literature. Tomlin's letters reveal that A.H. Cooke was asked to help with identifications and that they visited the shell exhibits in the then British Museum (Natural History) now NHMUK. Tomlin also included Laura Howell and Lilian Elder in these visits, both Laura and Lilian subsequently sent shells to Dorothy. We have evidence that shells collected in Sicily in 1911 were exchanged with Tomlin and we have examples of where identifications have been changed and are in Tomlin's handwriting. In (Fig. 14) the corrections '*virgineus* and *pullastra*' are in Tomlin's script and for one written on a lot collected in 1909

(from comparisons in Tomlin collection, National Museum of Wales).

Tomlin regarded Dorothy with respect and on occasions asked her to check the identity of some shells and to check the nomenclature of some species. He writes on 27 Dec. 1888:

"I want you to ask Mr Cooke the names of the two Helices I send you from Tangier, though I doubt the likelihood of his knowing; perhaps you may be paying a visit to S. K. (BMNH) before the end of the Vac., and in that case wouldn't mind looking them up. and When you go up to Cambridge again I shall ask you - unless you seem averse- to look up one or two things in Reeve about the Patellidae."

In total Tomlin gave Dorothy 45 lots of both British and foreign shells. the former of the more unusual species that Dorothy would not be able to collect. Tomlin may have gathered rather quickly that Dorothy was not the avid collector that he was and soon gave up plying her with shells. They do appear to have kept in touch and Tomlin as always was known for his willingness to help others with anything conchological.

During this time Tomlin was not in a position to foster a research interest for Dorothy as he was a collector and only much later would he begin to describe new species to science. He was however the only one of the Cambridge set to fully engage with her conchologically.

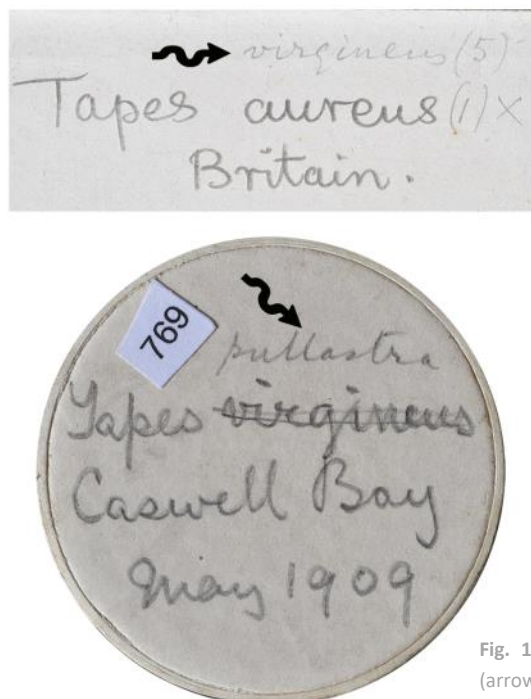


Fig. 14. Examples of where Tomlin (arrowed) has corrected the identifications made by Dorothy Alford.

.23. Biographical data for Alfred Comyn Lyall. https://en.wikipedia.org/wiki/Alfred_Comyn_Lyall.

The Rising Tide: the struggle to confer degrees on women graduates

In a recent exhibition "The Rising Tide" Prof. Lucy Delap (Delap, 2019) traced the history of the struggle to confer degrees on women graduates in Cambridge University. This struggle began in the late 1800s but was not successful until 1948. Correspondence in the Hergest Archive between Laura Howell (Lady Harmer) (1867–1951) and Dorothy Alford attest to this struggle in 1887 and 1897.

Laura Howell was a fellow student at Girton College and member of the Natural Sciences Club, although a year older than Dorothy she became a close friend and later god-mother to Dorothy's children. She left Cambridge in 1888 to read medicine in London and passed the London matriculation examination in 1890. In June 1890, she sat the Preliminary Scientific Examination, taking honors in zoology and then entered London Medical School, where she received prizes in anatomy, histology, and chemistry. She returned to Cambridge in 1890 and lectured on elementary biology and on elementary morphology. She married Sydney F. Harmer, a Cambridge zoologist, in 1892, and discontinued teaching after one term.

Both Laura and Dorothy were much aggrieved at not being allowed to graduate and both were active in the petitioning of 1887 and 1897.

Cambridge did not confer degrees on women at this time and not for another 60 years. Dorothy's Cambridge career ended in June 1887 when she took her Geology Tripos with first class honours, but, of course she was not allowed to take her degree. Both women were proud of their achievement, Laura Howell writing :

"Don't you wish we had been in the Senate House on Saturday, I can imagine how pleased Mr Cooke must be." "Theodora my dear, aren't you proud of being a Girtonian, I wouldn't be anything else for worlds. Isn't it spiffing!"

Dorothy was not prepared to take her exclusion from the Senate House on degree day lightly and she took an active part in getting names for the petition submitted to the University Senate that year (1887) seeking full membership of the University for women, a privilege granted by the University of London in 1878. She engaged the assistance of her aunt Harriet Lyall. With her husband, Sir Alfred

Comyn Lyall (1835–1911) ²³, she had just returned to England from India where Sir Alfred had been Lieutenant Governor of the North-west Provinces and had founded the University of Allahabad. But Harriet, like her niece Dorothy, met rebuffs:

"I am sorry I cannot give an account of successful effort on behalf of Women's' Degrees. The Provost of Eton decidedly refused his name"

On the other hand her brother in law Charles James Lyall, CIE, LLD Edin, MA Balliol, 1845–1920, Secretary to the Chief Commissioner for Assam wrote from Shillong with his ready agreement to sign Dorothy's petition.

The issue of women's degrees came up again in May 1897 and this time Dorothy was opposed by her husband, to the distress of her old Girtonian friend Laura Harmer.

"I can't help telling you how very sorry I am that Mr Banks is going to vote against us. You, who live at a distance, do not realise what a constant source of disquiet this question of Degrees for Women is & as long as women get no tangible reward, the discontent & agitation will continue, very naturally. It seems to me that the present proposals grant all that is asked without infringing on the men's privileges in any way. If only this resolution could be passed there would be peace for years to come: but if it is thrown out the whole question will be brought up again before long, for matters cannot last as they are. But no one yet was ever converted by arguments so I will not trouble you with any more. Is your father going to vote against us too? Don't be vexed with me for thinking so much of it: you don't know how much it means to us both, not only for the sake of peace and quiet in the University, but on account of the influence it will have on women's education generally. Is your Father going to vote against us too?...But I will stop."

Feelings were certainly high over the issue of women's degrees at Cambridge, even within the Banks family. Dorothy's husband went up to Cambridge to vote on the matter and his aunt Louisa Coulson wrote to her from Queen Anne's Street, Cavendish Square W:

"What do you say to this meeting of Will's at Cambridge, are you of his opinion? Lewis Hartland was up yesterday and says if women

are admitted many men will go down without taking their BA. Feeling evidently is strong against us in some quarters."

Happily, W.H. Banks changed his mind and signed the petition. Miss Welsh, the Mistress of Girton, wrote to Dorothy, thanking her first for the Welsh shawl she had sent her, and then she continued:

"You must come...and see the college.... I am glad to see that Mr Banks has, as in private duty bound, signed the degree memorial. We have now got 1918 signatures and hope to get 2000."

The petition was once again unsuccessful.

William Hartland Banks (1867-1930) and Rosa Banks (-1893)

William Hartland Banks was the son of Richard William Banks (1819-1891), and Emily Rosa Hartland (1835-1924). R.W. Banks was a banker and a lawyer, and a naturalist, archaeologist and distinguished geologist associated with the geological excursions of Murchison into the Welsh borderlands (Banks, L 2008; Torrens, 2008; Sinclair & Fenn, 1999). R.W. Banks contributed to the geological literature (Banks, 1856) and his valuable collection of Silurian and Devonian fossils is preserved at Hergest Croft. So it is not surprising the W.H. goes up to Trinity College Cambridge to read geology. He was two years younger than Dorothy Alford and although only overlapping for a year they did, and continued to meet, through Sedgwick Club trips through to 1892. W.H. was a keen photographer and he photographed some of the excursions (Fig. 8) The Sedgwick Club archives also record Rosa Banks attending excursions, probably at the invitation of W.H. as Rosa was never a student at Cambridge. Rosa did however befriend the McKenny Hughes' and stayed with them in Cambridge. Rosa and Dorothy were to become good friends and Dorothy stayed at the Banks' home in Kington for 10 days over 1890/91. W.H. and Dorothy were therefore acquainted for a number of years before finally becoming betrothed in 1894. Rosa Banks died in a tragic accident at Ridgebourne in 1893. The social significance of the Sedgwick Club was probably instrumental in a number of flourishing relationships and Sinclair and Fenn record one letter from a friend of Dorothy's professing that she (presumably Laura Howell) *'always knew the danger of these Geological expeditions.'*

An initial difficulty between Dorothy and W.H. may have been the debate around the awarding of degrees to women at Cambridge University.

Discussion

A scientific life thwarted or rejected

Dorothy Alford had a long-lasting passion for collecting shells and an education with all the opportunities for developing this interest into an academic career. However, her passion never developed beyond making a collection and her geological training was never used.

One might have expected A.H. Cooke and W. Bateson to have encouraged Dorothy to develop her interest in shells to a research direction but there is no indication that either men made any attempt to do so, although both were happy to ask her for shells for their own research. Bateson seemed more intent on using Dorothy to help with his own interests as he was to do later with women students at Newnham College. The groundsel experiments mirror that carried out later by Newham students.

Cooke seems more interested in having her company, wishing her to get a good degree but nothing more. Although Cooke was praised for his book *Mollusca* his malacological contributions are actually rather limited and given his classics background may not have been in a position to develop Dorothy's interests.

The McKenny Hughes could have developed Dorothy further as they did for the likes of Gertrude Elles and Ethel Wood but again there is no indication of this despite the close friendship between Dorothy and Caroline. Perhaps Dorothy was not as capable as the likes of Gertrude Elles, (as suggested in the letter from Harmer to Cooke, above), or not prepared to be so dedicated to an academic life and give up on a married life as did her sister Margaret.

Many interesting shells came into Dorothy's possession but she appears to have made no attempt to research these beyond putting a name to them. The Indian connection could have flourished, she was there at a time when the fauna was being explored by the likes of H.H. Godwin-Austen (Moorehead, 2013) and with her connections could have approached the then Zoological Survey of India.

The Australian land snails were likewise ignored and here Tomlin might have been able

to help as we are sure that he would have recognised them as being undescribed at that time.

However in 1891 she tells Bateson that Natural History cannot be her chief thing and leaves academia behind her. Although doing so she retained her interest in shells and she and her husband created a beautiful arboretum where one presumes her botanical training may have been useful. Was her future husband's initial antagonism to the conferring of degrees to women and the failure of related petitions instrumental in moving her away from any academic activity?

The collection

The collection contains quite a few specimens of taxonomic interest but would have been more significant if research had been done at the time of collecting. This applies most to the Indian and Australian shells. Generally data are additions to our understanding of past distributions and in two cases to the time of appearance of invasive species. Collections with good geographic information can be useful and are always worthy of research in contrast to collections with little or no geographic data. Only if there is a recognisable historic context can such poorly labelled collections be of value.

Shell collections made by women are far less numerous than those made by men and during the Victorian period, there are none representing women of science these only appearing in the twentieth century with the likes of Marie Lebour (1876–1971)²⁴ and Annie Massy (1868–1931)²⁵. Women did collect in earlier times but rarely if ever contributing to the scientific literature although their collections were often used by their male counterparts. The collections of Jane Saul (Dance, 1986) and Juliana Linter (Morgenroth *et al.*, 2018) were frequently cited but neither were ever credited as authors of the new species in their collections, their recognition at the most was an eponym. A number of women were recognised for their distributional additions to the British fauna but their recognition was most often simply an acknowledgement by a male author. In the UK, during the Victorian period, written contributions by women were simple distributional records mostly in the *Journal of Conchology*, examples of which are those made by Fanny Hele (1842–1923) eg. Hele (1877) and Janet Carphin (1836–1913) eg. Carphin (1895). From the data in Dorothy Alford's collections she

could have made similar notes but did not do so which is the more surprising because of her contact with Tomlin who was to become the long time editor of the *Journal of Conchology*. Dorothy Alford does not appear to have ever joined a conchological or natural history society keeping her interest very private.

Correspondence

The correspondence in the Hergest archive is perhaps as interesting if not more than the collection itself. The letters from Tomlin are the only ones to show his personality as the correspondence archive in the National Museum of Wales is more of an autograph collection and entirely about shells. The Hergest letters reveal that Tomlin had an enthusiasm for collecting from an early age and a wider interest in natural history. We see this later when he also started to collect beetles eventually donating a collection of around 50,000 specimens to the National Museum of Wales. From his undergraduate days at Cambridge, he was intent on developing a wide network for exchange on a world-wide basis. He started making identifications from the public display of shells at the now Natural History Museum, London something that could never be done from the reduced contents of modern museum exhibits. At this early stage we can begin to see how as a classics student Tomlin develops his conchology, firstly through A.H. Cooke but also with H.M. Gwatkin and the McKenny Hughes. Cooke and Gwatkin were also classicists by training and only the McKenny Hughes were scientists. Tomlin is essentially a collector at this time and only much later does he begin to write taxonomic papers. Tomlin's emphasis is on enlarging the number of species in his collection and getting names on them. The relationship with the Gwatkins seems rather intimate and Tomlin's association with Guernsey through them lasted all his life. At Cambridge, Tomlin became part of an academic social set through which he had access to museums collections and also quickly gained a reputation as a competent identifier of shells. Caroline McKenny Hughes recognised this and Tomlin's friendship with Laura Howell, later Dame Laura Harmer, may have opened doors for him at the Natural History Museum, where he was to become an honorary curator for some forty years. Tomlin was generous with his time for Dorothy and this feature was experienced by many others in the conchological community.

24. Obituary of Marie Lebour Obituary and list of papers, Russell, F.S. Obituary-Marie V. Lebour, 1972. *Journal of the Marine Biological Association*, 52 (3): 777–788.

25. Obituary of Annie Massy in Praeger, Robert Lloyd (1931). "Obituary". *Irish Naturalists' Journal*, 3: 215–217.

The Bateson letters essentially confirm what has been written before, in his strongly directional thinking and an analytical approach. His letters are direct and focussed and always demanding more from Dorothy although he did make it quite clear that such work would require dedication. These contrast markedly from those of A.H. Cooke which are perhaps over personal and lack any academic direction or indeed much content. At the best one might regard them as paternalistic. In common with all correspondents none encourage Dorothy to study shells but Bateson at least did offer Dorothy a lead into research even if he may well have soured her vision of such a career.

The indignation at the inability for women to graduate at Cambridge is clear to see from Dorothy's correspondence with Laura Howell. Both women were capable graduates but neither wanted to or were able to develop academically.

The Hergest correspondence gives a graphic picture of life in Cambridge academic circles with a strong social integration between staff and students. The Alford's like many were of a privileged social class but despite this and the intellectual ability of the women graduates there were few opportunities for them. There were perhaps few balanced outcomes it was either a spinster academic or a marriage focussed solely on the family.

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