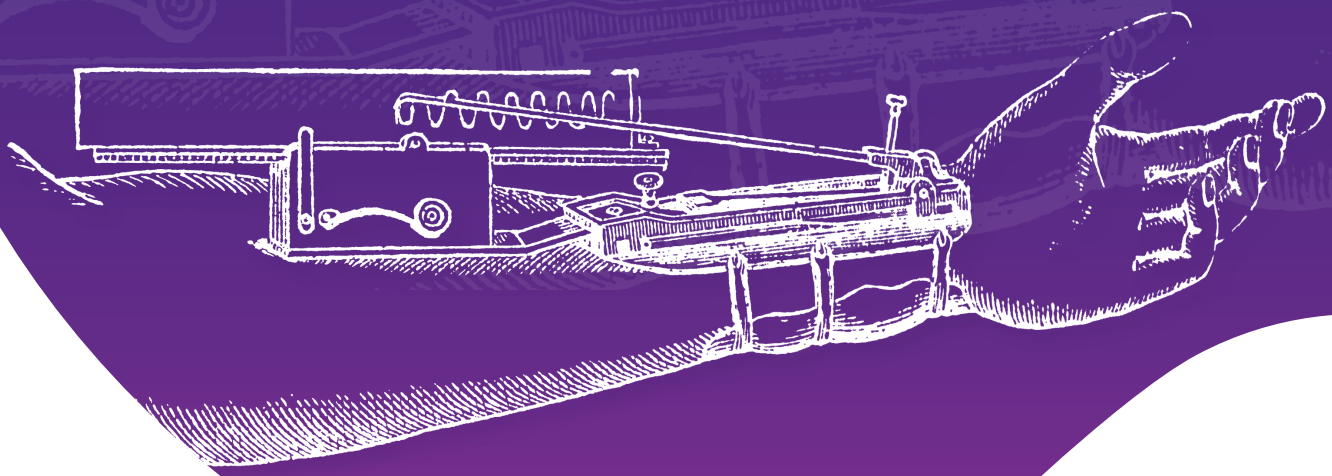
The Sphygmograph



Journal of the Marks-Hirschfeld Museum of Medical History

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THE UNIVERSITY OF QUEENSLAND
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CREATE CHANGE

Curator's introduction

Welcome to the 82nd edition of our newsletter.

Or I could say, welcome to the first edition of *The Sphygmograph*: Journal of the Marks-Hirschfeld Museum of Medical History! You will have noticed that the newsletter has a new masthead, thanks to the votes of our readers. I like the new name — it tips a hat to the vintage of our collection, it charts a pulse as we chart history, and it has a part to play in lie detection, thus keeping us to the truth. A stretch? Perhaps. But I still think it's a great choice.

In our feature article, John Hains recounts the case of a nine-month-old girl brought to the Children's Hospital in the mid-1960s with severely laboured breathing. The small patient rapidly deteriorated, and John steps us through the remarkable lengths taken to treat her. This wonderful story is a testament to the skill, dedication, and innovation of Queensland's medical practitioners.

This edition welcomes the Museum's newest volunteer Dr Gertrude Behan, who introduces herself in her own kenspeckle style and we profile the fabulous Museum of Dentistry (MoD) established by the ADAQ. *The Sphygmograph* will run a series of stories from the MoD over the next few editions so teeth aficionados, stay tuned.

Until then keep warm, keep well, and keep in touch.

All the best,

Charla Strelan

Curator
Marks-Hirschfeld Museum of Medical History

Where there's a will there's a way

A story from Dr John Hains (Anaesthetic Registrar RBH 1966-67)

Queesland's first instance of the mechanical ventilation of a small child.

In the early 60's, children with stridor or serious chest infections were admitted to a medical ward where there were beds with facilities to increase humidity and oxygen concentration.

These were plastic tents which covered the head of the bed much like a mosquito net. The ward was near the operating theatre in case the patient's condition deteriorated and they required an urgent tracheostomy.

This procedure had evolved from the era when diphtheria was prevalent. The successful immunisation program had virtually eliminated diphtheria, yet the alarm was sounded at 8.30am each morning as a reminder of time past but was viewed as an indication to residents that it was time to start work.

At midnight on the 29 April, 1966, the daughter of one of the medical staff, a little girl aged nine months and weighing 19.5 pounds (8.84kg) was brought to the Children's Hospital with a severe cough and rapid respiratory rate. The following morning, she was placed in a steam tent but there is no mention in the chart of any diagnosis. (The original chart was destroyed when the hospital was transferred but a copy had been made so all timings can be authenticated).

1/5/66 – She was formally admitted by the deputy superintendent (Dr John Eckert) who was concerned enough to notify the superintendent (Dr C. Fison). A throat swab taken at the time showed growth of staph aureus and E.coli which were sensitive to Streptomycin and Chloromycetin.

Medically the child's condition is deteriorating even though the medical staff are wanting it to improve. By 2pm. Fison records that "the child is wearing out and needs relief". By 3.30 she has had a tracheostomy under general anaesthetic. The smear had been examined and Chloramphenicol was prescribed. At 7.45 John Eckert records she is still restless and tachypnoeic though at 10.30 pm she is recorded as sleeping with a good colour and respiration not laboured.

2/5/66 – She looked restful but was refusing to eat so tube feeding was introduced. As well there was a problem with the tracheostomy tube so at 9.30am she was returned to theatre where this was corrected, and thick pus was aspirated. The anaesthetists were so worried

Silver paediatric tracheotomy tubes.

From the collection of the Marks-Hirschfeld Museum of Medical History.

Where there's a will there's a way, cont'd.

that the director (Dr. Beric Jackson) slept the night in the flat under the ward.

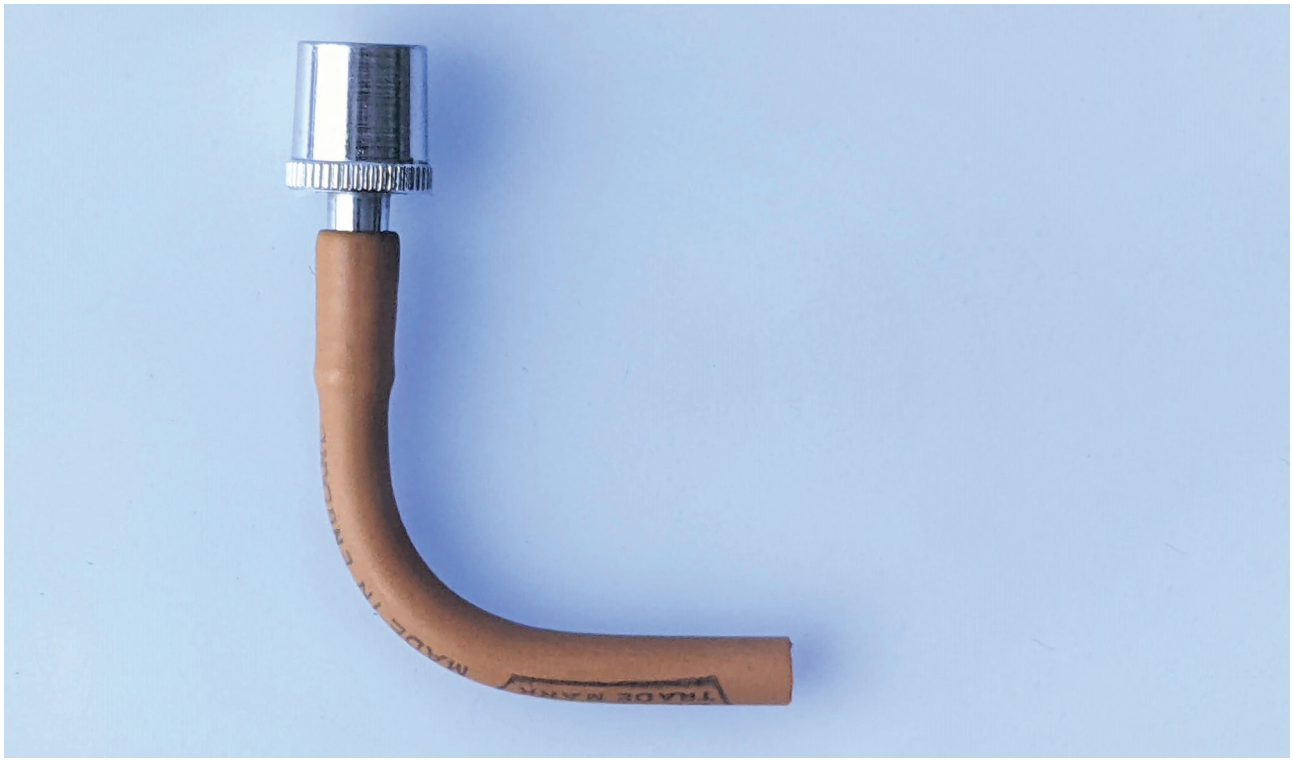
3/5/66 – At 10am she was pumped gently with an "oxygen bag" with some improvement which was not maintained when this was ceased. She was transferred to the adult Respiratory Unit. The tracheostomy tubes used at this time were silver and consisted of an outer curved trochar which could be tied in place and an inner tube which could be removed for cleaning or replaced with one of similar size.

There are numerous examples of these in the Museum. The disadvantage of these is that they were not sufficiently airtight to allow the lungs to be ventilated. There were no commercially available disposable paediatric tracheostomy tubes but there were red rubber Oxford curved endotracheal tubes.

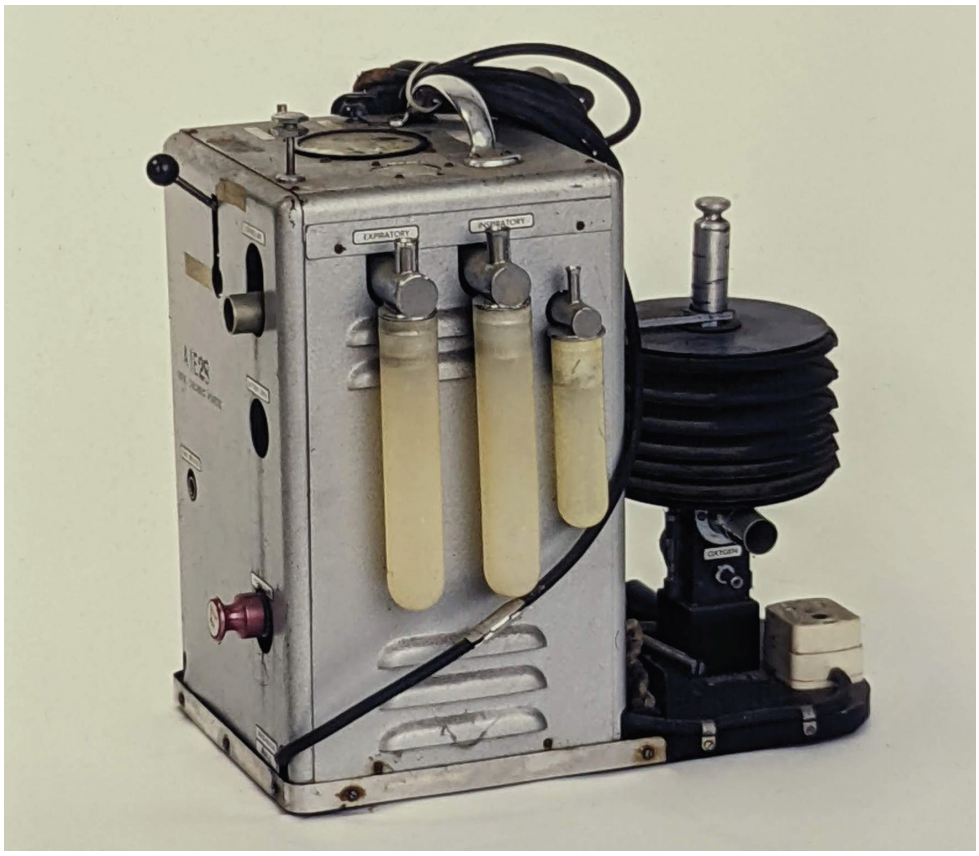
4/5/66 – At the morning review it was noted that the liver was displaced downwards and medially and her condition had deteriorated markedly. Chest Xray confirmed that there was a right tension pneumothorax with collapse of the right lung. A chest tube was inserted and the lung re-expanded. She still had difficulty breathing.

Paediatric anaesthetist Dr. David Jackson modified an Oxford tube (cut 4cms off the tip) and used this to replace the silver trachy tube.

By using taper tip connections this could be connected to the T-Piece used to ventilate children during an anaesthetic. Manual ventilation was begun in the afternoon with anaesthetists taking it in turns as this was quite tiring. In between spells, David began fiddling with a Radcliffe ventilator not in use at the time. This was a simple machine with an electric motor which was used to drive a clover-shaped wheel which lifted a weight and let it fall again which connected to a bellows would ventilate the lungs. This produced a tidal volume much larger that required for a 8.5kg child whose estimated tidal volume would be about 60ml. Using a 2-litre expiratory bag he constructed a dummy lung in parallel and adjusted the resistance so the child received approximately 90 mis per breath with the rate set at 20/ minute. There was no method of measuring the tidal volume other than a Wright's spirometer



Oxford endotracheal tube with the end cut.



Mechanical bellows respirator, similar to the model improvised by Dr Jackson.
From the collection of the Marks-Hirschfeld Museum of Medical History.

which measured the expired volume over a number of breaths and then calculated the tidal volume at 90 mis.

5/5/66 – Dr. Jackson stayed with the child during the night and reported there had only been one problem due to secretions and debris blocking the tube.

6/5/66 – Despite improvement in the clinical situation and Chest X-ray attempts to take her off the ventilator were not successful and it was decided to wait another day.

7 /5/66 – At 8am it was decided to again give her a trial off the ventilator. There are no times mentioned in the chart but the last entry of the day at 8pm. "there is a large cyst in the lower R lung and the patient continues to breath spontaneously". She continued to improve though there were serious problems with the chest drain and secretions blocking the tracheostomy tube. The intercostal drain was removed on 11 May 1966 and the tracheostomy on 16 May 1966. She was transferred to Fraser ward on the 19th and discharged on the 21st.

Although some larger children were ventilated in an "iron lung" during the polio epidemic, this was not possible with small children with serious lung disease. I believe this was the first child to have mechanical ventilation of the lungs in this state. Her survival was due to a number of factors including her high profile, the resilience of her parents, excellent nursing and the best medical attention available at the time.

Despite this harrowing beginning, the patient is living a full and happy adult life with three children of her own (Personal communication).

Photograph of the patient years later, grown up and healthy.
Used with permission of the family.

A visit to the dentist has never been fun

Our friends and colleagues at the ADAQ invite you to engage with their newest endeavour – a Museum of Dentistry. This piece comes from the Museum's Project Officer, Alessandra Boi.

Discover the real i...**DENT**ity of the dental profession in Queensland at the Australian Dental Association Queensland's Museum of Dentistry.

Step in an early 1900s dental surgery, with genuine equipment and furniture from those years.

Learn more about the history of denture making and casting of crowns, including the *Five dentures* display, showcasing the evolution of prosthodontics techniques 1600s onwards, from animal bones to plastics.

Admire ornate foot-pedal drills, early x-ray equipment, a beautiful swan-armed dental chair from the early 1800s, and many examples of beautiful – and barbaric – extraction keys...

The new ADAQ Museum of Dentistry, nicknamed MoD, is arguably Queensland's first dental 'cabinet of curiosities'.

It is reflection on past experiences in dentistry and oral health, from the dental professionals' perspective and the patient experiences. Most importantly, the future goal is to use it as a platform for communicating about oral health with the wider public of all ages.

MoD is currently open by appointment, and feedback received through these private openings, with different future visitors *personae*, young and older, has so far been overwhelmingly positive.

Visitors' reactions so far have highlighted an appetite for more oral health information delivered in fun ways, and a willingness to interact with the beauty and craftsmanship of old dentistry: for example, the desire to *sit on the old [dental] chairs* (you can't for safety reasons). Many reported experiencing strong emotions linked to the traditionally gruesome, or perhaps bad memories.

Work continues towards attracting the wider public. This means making the exhibition more accessible and interactive, developing educational programs for schools, and fleshing out a budding program of temporary exhibits.

Future programs will explore themes such as dentistry's 'then and now' (e.g.: denture flasks vs 3-d printing, Indigenous practices) and 'here and there', i.e., exploring cultural differences in dentistry.

Another future exhibit in the pipeline will explore the little-known creative streak many dentists share that sees them often involved in artistic pursuits in wood carving, miniature work, and jewellery making.

Meanwhile, most of the object collections are now available to the public online through the cataloguing platform eHive. A history blog is also on the ADAQ website.

To arrange a visit to MoD or to contact the Committee: adaq@adaq.com.au or call 07 3252 9866.

Introducing Dr Gertrude Behan

Our volunteering program's newest recruit

I have been asked by the Museum Curator to write about myself, so make yourself a cuppa...

A long time ago I was born in Queensland. And an even longer time ago, Queensland opened its doors to its brand-new Medical School and in the 86 years since has graduated many skilled and caring doctors. There are a quite few families who over generations have had strong links to the UQ Medical School. If, like me, you are a scion of one of these families with a good yarn, please get in touch.

But back to myself. After graduating from UQ I did my residency at The Mater. Patients who recognised by surname asked if I was related to my great uncle, a beloved maverick GP.

Patients would say "Dr Norman Behan, he was my ENT surgeon", or "he was my Paediatrician" or "he was my Gynaecologist". I asked his son, a retired plastic surgeon, if he or Norman had bequeathed anything to the Marks-Hirschfeld Museum. They haven't, maybe Norman thought bequeathing his Art collection, the eponymous "Behan Collection" to the UQ Art Museum was enough.

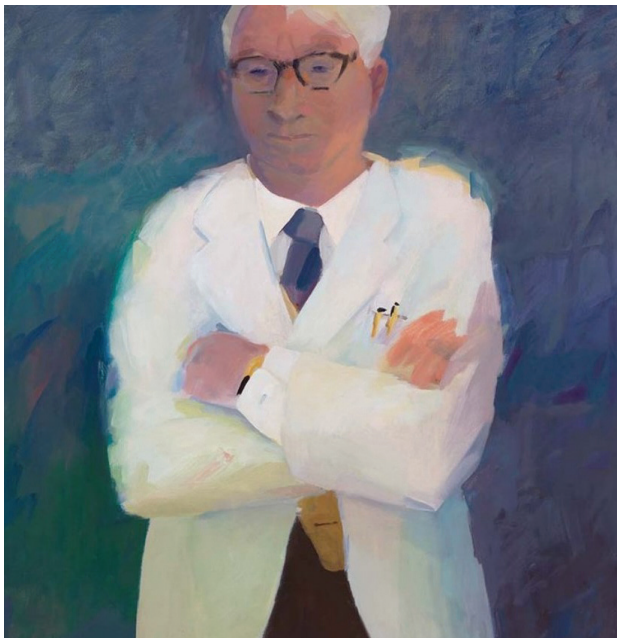
I have attached a painting of Dr Norman Behan by artist Sam Fullbrook which is at QAGOMA. Other than the fact that Norman and I both know a great coat when we see one, I don't think there is much family resemblance. (As a matter of interest, artist William Dobell also painted Norman Behan -ed.)

In 1993 my husband and I set up our own GP clinic, after a few staff Christmas in July parties here we are in 2022.

In the interim I was very lucky to be a GP supervisor and have supervised quite a few Registrars over the decades. I know I was supposed to be teaching them but I am eternally grateful for everything I have learnt from them and feel privileged to have worked alongside such intelligent and compassionate doctors. As many of us know, our patients are also good teachers and to them also I am very grateful.

As a young gun doctor I had a keen interest in Women's Health, HRT was only just becoming "a thing". After I had a few sproggins of my own I was devoted to learning and teaching Children's Health. I was a keen advocate of the Triple P Program (for those that don't know it is about getting on with your kids and your kids doing what they are told!)

When I began to see the merits of the Bonds line of clothing compared to the Elle McPherson offerings, I also began to see dermatology in a whole new light. My husband and I added a stand-alone Skin Clinic to our other Family Health Clinics and now here we are in July 2022 with our next staff Christmas in July party just around the corner!



Norman Behan by artist Sam Fullbrook, 1965. Oil on canvas, from the collection of QAGOMA.

Used with permission.

Dr Gertrude Behan, portrait by Imogen Behan-Willett

Used with permission.

Adventures with leeches

By Dr Gertrude Behan

Hello and welcome to my first contribution to *The Sphygmograph*

The Marks-Hirschfeld Museum has a growing catalogue of objects donated by the good doctors and health professionals of Queensland.

Parts of the collection are on a rotating display at the Herston Medical School and on a Tuesday or a Thursday if you book ahead, you could have a personal tour provided by the Museum Curator Charla Strelan which I think is a wonderful thing to do.

Staffordshire leech jar.
From the collection of the Marks-Hirschfeld Museum of Medical History.

On my tour I was intrigued by a ceramic jar made specifically for leeches. It is a cream jar with a green design. At the time the jar was made the green pigment was most likely derived from copper particles. This jar was made c.1848 in Staffordshire, UK. Staffordshire had a thriving pottery industry since the 12th Century because of the region's abundant clays.

What was not so abundant as it happened were the leeches. Wordsworth in his poem "Resolution and Independence", aka "The Leech Gatherer" (1807) noted the waning number of leeches. The British Leech was being captured to extinction and so for a time Britain imported leeches from Australia, that Leech being the British leech's occidental cousin "Richardsonianus Australis."

There is a record from 30AD of leeches being used to drain a periorbital haematoma. Hirudin contained in leech saliva has long been known to be an anticoagulant. The chemical structure of this thrombin was not elucidated until the 1950's by Markwardt.

I came across this interesting fact recently—about 20 years after our jar in the Marks-Hirschfeld Museum was made, British physician Thomas Tanner wrote in "The Practice of Medicine" a list of treatments for obesity, one of which was Leeches applied to the anus. I am sure you will agree this is quite bizarre. More bizarre in my mind is that a quick Google search shows that leeches are still prescribed for obesity.

When exactly the Museum's leech jar arrived in Australia is not known. It was donated to the Museum following a call out on an ABC radio program for medical objects of interest.

Do you have any objects of medical interest that the Museum might be interested in? Details on donating to the Museum can be found on our website, medicine.uq.edu.au/museum/donate

Leech acquired in the eye of the author during a bushwalk at O'Reilly's.

Collection close up - Magneto-electric machine c.1880

Electricity revolutionised late Victorian society, ushering in an exciting era of electric lights, telephones and batteries. With the public fascinated by the promise and mystery of electricity, it did not take paramedicals long to capitalise on the electrical nature of animal tissue. They spruiked the logic that if a system is 'run down' or 'lacking energy', a quick application of electricity would restore vitality. This philosophy spawned a myriad of electrical belts, brushes, corsets, and this magneto-electric machine popular in the mid-late 1800s.

The device works by rotating two solenoids (fine wires tightly wrapped around a metal core and encased in velvet) within the field of a very large magnet (blue in the photos). The spinning of the solenoids is powered by a manual crank, which generates a 'mild' alternating electrical current (AC) to the attached electrodes.

To use, the operator would place the electrodes in the patient's hands or elsewhere on the patient's body and turn the crank. The faster it was turned, the greater the current. The makers claimed that it could relieve pain, as well as cure numerous diseases, including cancer, tuberculosis, diabetes, gangrene, heart disease, tetanus, and spinal deformities.

The Museum is lucky to have two of these objects in excellent, presumably working, condition in its collection.

Dudgeon sphygmograph, c. 1890. Down Bros, London.
From the collection of the Marks-Hirschfeld Museum of Medical History

Get involved

Support us

Our generous philanthropic supporters are vital to our work and play an important role in preserving Queensland's medical history.

- Your gift to the Marks-Hirschfeld Museum could support:
- Conservation of our rare book collection
- Protective storage for our laboratory and pharmacological glassware
- Archival sleeves for our collection of Trephine magazines
- Digitisation of our photographic and vinyl record collections
- Refurbishment of historic exhibition cases
- Publication of an exhibition catalogue
- Purchase of an audio-visual display to play significant films from the collection
- And that's just for starters!

You can support the Museum by:

donating online

contacting us on 07 3365 5423

or emailing med.advancement@uq.edu.au

Become a volunteer

If you'd like to join the volunteer team, please contact us at medmuseum@uq.edu.au.

Join the conversation

Contribute to the Museum newsletter

The Marks-Hirschfeld Museum of Medical History newsletter is issued four times per year. We are always on the lookout for interesting materials that explore the rich tapestry of medical history. If you would like to contribute a story or have a topic that you would like to see included in future editions, please send an email to medmuseum@uq.edu.au.

Our next newsletter will be distributed in June 2022. If you are interested in submitting an article, please send your story and photographs by no later than Monday 16 May 2022.

Share your feedback

Your experiences and suggestions will help shape future editions of the newsletter and ensure we continue to create content that you can enjoy. Completing the survey will also help us get to know you personally.

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