

Dr Kathleen Drew-Baker (1901-1957)

The Museum holds two microscopes used by Dr Kathleen Drew-Baker during her research work in the botany department at the University of Manchester. The microscopes are displayed in the Manchester Science Gallery.



Kathleen Drew was born on 6 November 1901 in Leigh, Lancashire. She was a gifted student and won a county major scholarship to study botany at Manchester University. After graduating with first-class honours in 1922, one of the first women to do so, Dr Drew began to research the biology of seaweed, becoming assistant lecturer in Botany at Manchester University. In 1925, she was awarded a Commonwealth Fellowship to work for two years at Berkeley College at the University of California.

Dr Drew returned to Manchester and resumed work at Manchester University. In 1928, she married Dr Henry Wright Baker, who later became Professor of Mechanical Engineering at the university of Manchester Institute of Science and Technology (UMIST). Dr Drew-Baker's employment at the university was terminated owing to her marriage. However, she obtained an Ashburne Hall Residents

Fellowship, which enabled her to become an Honorary Research Fellow.

Dr Drew-Baker studied the edible seaweed *porphyria umbilicalis*, found on the North Wales coastline. This seaweed was commonly used in soups and lava bread. *Porphyria umbilicalis* is a close relative of the edible seaweed nori farmed in Japan; both seaweeds grow in the same way. The position of Honorary Research Fellow enabled Dr Drew-Baker to continue her research at the University, but her work was unpaid. Dr Henry Baker supported Dr Drew-Baker's work and built her a tidal tank in the laboratory to assist her research. He later described the tank as 'a rather Heath-Robinson affair but it worked'.

Seaweed farming in Japan can be traced back many centuries. Throughout its history, nori has been part of the staple diet of the Japanese at times of good harvest, regarded as a luxury item when harvest were poor and used as a medicine. It is rich in minerals such as calcium, iron and iodine, and is reputed to be good for the skin and hair. Nori grows in shallow water on rocks, shells and branches of trees. The nori seaweed grows from October until February and by June it completely disappears. Prior to the publication of Dr Drew-Baker's research, harvests of nori would fluctuate wildly from year to year and, as a consequence, it became known as gamblers' grass.

In 1948, disaster struck the Japanese nori farming industry. The increased use of fertilisers on Japanese farms and the increase in industrial pollution in coastal waters, combined with a series of typhoons, destroyed many of the seaweed beds and led to very poor harvests. Many farmers lost their livelihoods and as a result were left with nothing. Japanese scientists were unable to offer any practical help, as little was known about the life cycle of the nori seaweed.

In 1949, Dr Drew-Baker published a paper in the journal *Nature* detailing her research findings on the life history of the seaweed *porphyra umbilicalis*. Because this seaweed and nori are part of the same family, Dr Drew-Baker's discovery enabled Japanese scientists to build on artificial seeding techniques. The new techniques enabled nori to be grown as a farm crop and led to greater control over harvests. As a consequence, nori production increased. Nori farming in Japan today is a very lucrative business, generating hundreds of thousands of pounds in annual revenue.



One of Dr Drew-Baker's microscopes

Dr Drew-Baker's research gained her the everlasting gratitude of Japanese nori farmers and she is credited with helping to save the Japanese nori farming industry.

In 1963, a memorial to Dr Kathleen Drew-Baker was erected in Tokyo by grateful nori farmers. The statue, in Sumiyoshi Shrine Park overlooking the Ariake Sea, was paid for by contributions from nori farmers. Each year on 14 April, people involved in the lava farming industry gather at Sumiyoshi Shrine Park to celebrate the Drew Festival. The memorial refers to Dr Drew-Baker as 'the mother of the sea'.

In 1952, Dr Drew-Baker was instrumental in founding a society for the study of algae, and she was elected the first President of the British Phycological Society in January 1953. In September 1957, Dr Kathleen Drew-Baker died of cancer in Manchester, whilst still working at the University of Manchester.

For further information:

Read Charlton, W. A and E. G. Cutter. *135 years of Botany at Manchester*. Manchester, UK: University of Manchester Press, 1998.

Visit The Manchester Science Gallery
<http://www.city.uto.kumamoto.jp/culture/culture02-01.htm>