

John Thomas Redmayne, 1846-1880
by Brian Stevenson

J.T. Redmayne was a surgeon and physician, and an amateur naturalist specializing in diatoms. His microscope slides of diatoms were very well regarded in his time, notably for their relative purity of species (Figure 1 and 2). He also mounted histological preparations, a logical extension of his occupation, although such slides are rarely encountered today.



Figure 1. Examples of selected diatom slides by J. Redmayne. They contain from four to a few dozen selected frustules, loosely arrayed in the center of the slide. Although the diatoms were not artistically arranged like those of contemporaries such as Laurence Hardman, Redmayne's mounts give views of the diatoms from multiple angles, highly desirable for biologists interested in diatom structure. At the right, top to bottom, are darkfield images of Redmayne's *Campylodiscus cestatus*, *Cymbella* sp., and *Cymatopleura elliptica*. Photographed with colored filters. Note that Redmayne used a variety of handwriting styles on his labels.



Figure 2. Strawn diatom slides by John Redmayne, each of which contains hundreds of diatoms spread evenly under the coverslip. Shown below the slides are, left to right, a gathering of *Pleurosigma angulatum* mixed with small numbers of other species, and a pure gathering of *Isthmia enervis*.

John Thomas Redmayne was born during the first quarter of 1846 near Horton, Yorkshire. He was the first child of William and Isabella Redmayne. William operated a 120 acre farm named "Gallabar". There is some confusion among genealogies posted on the internet, with some family trees suggesting that our J.T. Redmayne's parents were another farming couple named John and Margaret. However, the 1878 marriage record of the John Thomas Redmayne born to John and Margaret indicates that he was not our microscopist. Such confusions are common in genealogical research, as families tended to recycle a very few ancestral names.

By 1861, the Redmaynes had moved to Clitheroe, Lancashire, where William operated a wine shop. Such businesses were usually profitable, and probably helped finance John's medical education.

In September, 1864, John Redmayne passed his preliminary examinations at the Faculty of Physicians and Surgeons, Glasgow. He continued his studies at Guy's Hospital, London, receiving his diploma and admittance to the Royal College of Surgeons in January, 1869.

John married Sarah Fielden Hyatt during the summer of 1870. They set up house in Bolton,

Lancashire shortly thereafter. Apparently, Redmayne took additional classes in Edinburgh around that time, as he reported having received a License in 1873 from the Royal College of Physicians, Edinburgh.

Redmayne evidently developed an interest in diatoms and making slides prior to 1874. In August of that year, he advertised in the popular magazine *Hardwicke's Science-Gossip* to exchange "good slides" of diatoms with other microscopists (Figure 3). The following year he offered to exchange "pure gatherings prepared" of diatoms.

- 1874 GOOD Slides of *Eanolia sibrile* and *Coscinodiscus radiatus* for other diatoms.—Address, J. Redmayne, Astley Bank, Bolton.
- 1875 PURE gatherings prepared of *Fragilaria capucinia* and *Diatoma elongatum*, for other good Diatomaceous Material or Slides.—John Redmayne, Surgeon, Bolton, Lancashire.
- 1878 AN Album of eighty Micro-photographs of nearly 200 of the Diatomaceæ, magnified 250 to 4000 diameters, in exchange for first-class $\frac{1}{4}$ -inch Objective, or first-class Micro Slides (approval).—Address, Dr. Redmayne, Bolton, Lancashire.

Figure 3. Exchange offers advertised by John Redmayne in 'Hardwicke's Science-Gossip'.

George E. Davis, in his 1889 *Practical Microscopy*, gave high ratings to Redmayne's diatom slides, "Cleaning the Specimens - This is a section upon which a moderate-sized volume may be written, as it applies to all objects whether mounted dry, in gum resins, or in aqueous media, and may simply be described as an operation for eliminating matter in the wrong place - dirt. Foreign matters should be eliminated as much as possible, and really, when set about in the right way, it is not very difficult. When we come to compare the slides of diatoms put up by Cole, Redfern, or Redmayne, with many home-mounted slides it may be readily seen what is the effect of a little care on the part of the preparer. Cole's exceedingly clean gatherings, his hand-picked slides, Redfern's single diatom, mounted on a 1/4-inch cover in the centre of a red circle 1/16 of an inch in diameter, and Redmayne's diatom slides all deserve imitation."

Redmayne described a device he invented for the collection of diatoms, in the July, 1875 issue of *Hardwicke's Science-Gossip*. This invention was widely reprinted throughout the world.

"As the beauty of mounted diatoms depends in a great measure on the cleanliness of the original gathering, sand and other impurities being difficult to get rid of in after-manipulation, I have found the following addition to the ordinary collecting apparatus, of very great assistance. It has the advantage of being easily made, and with its aid much better results can be obtained than by any other means.

A cork must be provided which fits tightly to the collecting-bottle; this is to be bored with two holes; in each is fitted a glass tube, as seen in the diagram, one (a) having a slight curve, the other (b) bent at right angles an inch from the end; this can easily be done with the aid of a spirit-lamp. To tube b is attached a piece of elastic tubing, about the length of the collecting-stick, and the free end (c) may be held to the stick with an elastic band, and the apparatus is complete.

It is especially useful in collecting the very thin films of diatoms from the surfaces of mud and sand, so difficult to raise to the surface of the water in the ordinary way with the spoon or bottle.

To use the apparatus, the thumb of the right hand must press the tube firmly against the stick at

c, and the bottle lowered until the mouth of the tube (a) is within a quarter of an inch from the surface of the diatoms; the thumb is then to be raised, and if the water is deep, the bottle will fill by atmospheric pressure, carrying the diatoms in at the same time. In shallow water suction will be necessary to exhaust the air in the bottle: in that case a ball pipette (fig. B) will be useful as a mouthpiece.

The gathering can be further cleaned by placing it in a long bottle in the sun for a few hours. Cover the lower part of the bottle with black paper, when the free diatoms will separate themselves from the mud, and rest on the surface.”

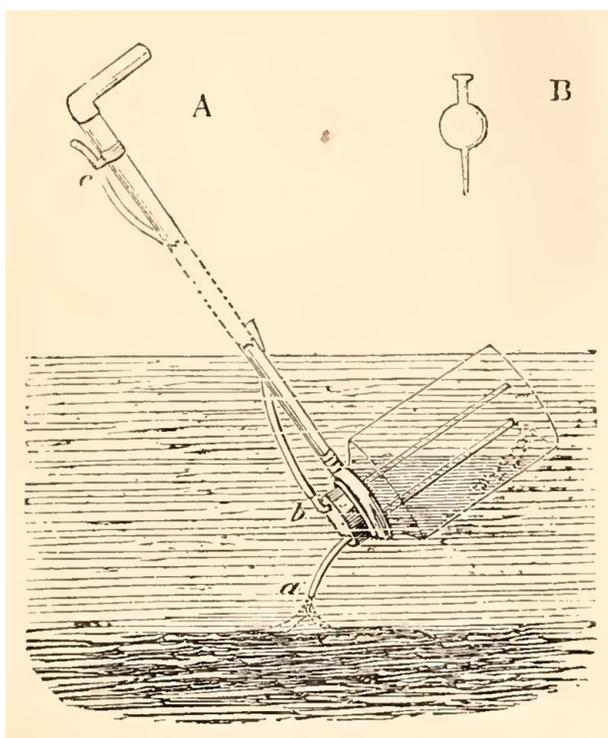


Figure 4. Redmayne's diatom collecting device. From 'Hardwicke's Science-Gossip', 1876.

Approximately 1876, Redmayne self-published a book of photomicrographs of diatoms. The subjects were mostly from a J.D. Möller *Typen Platte*. In all, there were 65 photographs. In 1878, he offered copies of his book in exchange for a good microscope objective lens or slides (Figure 3). George Davis wrote in 1881 that, "*the most successful photographers of microscopic objects have been Col. Woodward, Dr. Maddox, Mr. Wenham, Drs. Abercrombie and Wilson, Mr. Shadbolt, and the late Dr. Redmayne, of Bolton*". Davis also remarked that copies of Redmayne's photographs could be obtained from Edward Ward's shop in Manchester. G.J. Johnson wrote in 1883, after describing the photomicrographs of Fritsch and Müller, that "*these examples of the German photographers, however, do not in any way exceed in beauty the work privately published by my late lamented friend, Dr. Redmayne, of Bolton.*"

Redmayne donated copies of his book to the Quekett Microscopical Club (which he joined in 1876) and the Royal Microscopical Society (which he joined in 1877). Redmayne also helped found the Bolton Microscopical Society, in 1877.

John Thomas Redmayne died after a long illness on September 10, 1880, at the age of only 34. One of the executors of his estate, John Francis Walkingame Tatham, was later a President of the Manchester Microscopical Society. Intriguingly, although the Redmaynes were Quakers

(Society of Friends), Sarah Redmayne was baptized in the Anglican church of All Souls, Bolton, on February 25, 1880.

The 1881 Royal Microscopical Society President's Address, given by Lionel Beale, included a brief, inaccurate eulogy of Redmayne. "*John Thomas Redmayne, of Bolton, L.R.C.P. Edin., M.R.C.S., died in October last at the age of thirty-three. One who was well acquainted with him says that he was a most skilful microscopist, and devotedly fond of the work. He was also an excellent microphotographer. The Bolton Microscopical Society was founded by Mr. Redmayne, and, as his friend remarks, had he lived he would undoubtedly have taken a high place in the scientific world.*"

Far better commentaries on John Redmayne and his microscopy work were published by those who actually knew the man:

The Northern Microscopist report of the November 19, 1880 Annual Conversazione of the Bolton Microscopical Society stated, "*The table possessing a feature of melancholy interest was that covered with the microscopes and rich work of the late Dr. Redmayne, one of the founders of this Society. The presence of his photo-micrographs, the varied assortment of pathological preparations and rare diatoms made it hard to believe that he was not present also.*"

At the Conversazione, the Society's Secretary, William Rideout, delivered the following words, "*I cannot close my review of the work of the Society without referring to the great loss which we, as a Society, have sustained by the long illness and death of our talented and much-lamented treasurer, Dr. Redmayne. During the whole time since the formation of the Society he had his well-being at heart, and few knew better than myself how deeply he regretted that he was prevented from assisting in the work of the Society by his failing health. I am sure that each member of the Society felt that he had lost a dear friend when he heard that the doctor was no more. His pleasant smile and genial manner will long be remembered by us, and failing this his name will live as the founder of the Bolton Microscopical Society.*"

The Northern Microscopist also reported, in the summer of 1881, "*Bolton Microscopical Society - Although this Society enjoys a Summer holiday during the months of June, July, and August, the work is not entirely suspended, for the valuable collection of Slides now in possession of the Society is being re-arranged owing to several recent additions; the most noticeable of which is the gift of six dozen choice Slides by Mrs. Redmayne, from the valuable collection of the late Dr Redmayne, the founder of the Society. In order that the most suitable selection might be made, Mrs. Redmayne kindly placed the whole collection in the hands of the President and the Secretary of the Society for this purpose. Forty eight choice Slides of Diatoms have also been added, so that the members to whom the Slides are lent, will have ample occupation for leisure hours during the winter evenings.*"



Figure 5. Undated photographs of John Thomas Redmayne. Adapted for non-profit, educational use from <http://family.manvell.org.uk/redmayne.htm>.

This and other illustrated biographies of early microscopists can also be viewed at the author's web site, <http://microscopist.net>

Resources

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Museum of the History of Science Collection Records (accessed December, 2012), “*Published Album of Photographs (Albumen Prints, Photomicrographs) of Diatoms, by John Redmayne, Bolton, c.1878*”, described as “*John Redmayne, Micro-Photographs from the Diatomaceae (Bolton, privately published, undated). Bound in dark blue-green cloth. Flyleaf + printed introduction leaf + blank leaf + 65 heavy paper leaves each with a mounted photograph + flyleaf. Thus contains only 1 page of introductory text, and 65 photographs (albumen prints) of diatoms, each captioned by a printed label on the mount. The photographs are mostly brown with pale yellow backgrounds, and some are lilac colour; they are all just under 5 x 4 inches. John Redmayne was elected to the Royal Microscopical Society in 1877, but recorded in their membership list as dead in October 1880. He lived at Bolton and was a surgeon, being a member of the Royal College of Surgeons of Edinburgh. The diatoms photographed were mostly from J. D. Möller’s Typen-Platte, a prepared collection of specimens mounted on microscope slides. Redmayne’s volume was presumably acquired by the society at the time it was issued, and a manuscript description of the diatoms depicted, by E. W. Burgess, dated 1882, was also formerly in the RMS library.*”, <https://www.mhs.ox.ac.uk/collections/search/displayrecord/?mode=displaymixed&module=ecatalogue&irn=29170>

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