

Samuel Henry Meakin (1876-1955) and Stanley Meakin (1904-1988)

Samuel Henry Meakin (1876-1955)

(from an obituary in the Quekett Microscopical Club Journal by A. Morley Jones)

S. H. Meakin, who died on 23rd March 1955 was well known to all QMC members who were interested in the diatomaceae, by the series of articles in the Journal describing new and rare diatoms, written in collaboration with J. W. Barker and A. L. Brigger (see Meakin references). Meakin was an engineer, and his hobbies were gardening, photography and microscopy. Shortly after the end of the first world war, owing to a sever physical disability, he decided to retire from his profession and take up an occupation which could be followed at home. At this time the correspondence columns of the 'English Mechanic' contained many letters dealing with microscopical matters and Meakin replied to a letter from myself (A.M.J.) offering help in mounting diatoms.

He soon became an accomplished mounter and J. A. Long and Reverend Dingley P. Fuge helped him in nomenclature in the early stages of his work. His engineering skill enabled him to build his own microscope (to which he later added a commercial binocular eyepiece) and to make many pieces of accessory apparatus, including the mechanical fingers which he used with such success in the manipulation and mounting of diatoms, of which his preparations are unsurpassed. His extraordinary skill in manipulating diatoms and splitting frustules and even valves into their component parts enabled him to make full use of his unusually keen powers of observation. Meakin described his apparatus in a series of articles in 'The Microscope', later republished in book form with instructions on collecting and mounting diatoms.

His excellent photographic reproductions of figures of diatoms were well known.

As a Christmas Greeting Meakin usually sent his friends and correspondents a beautifully mounted diatom enclosed in a cardboard box which he had made with infinite care.

Meakin was an ideal correspondent being punctual in replying and including clarity of content.

His observations of facts, based on his handling and mounting of thousands of diatoms, were unquestionably accurate, but his conclusions were often controversial, and as he upheld his opinions with the utmost enthusiasm, his correspondence was always most stimulating.

Stanley Meakin (1904-1988)



Stanley Meakin died on the 21st May 1988. Stanley Meakin, a Fellow of the Pharmaceutical Society was the manager of Boots the Chemist branch in Ashton-under-Lyne, near Manchester until his retirement.

He joined the Quekett Microscopical Club in 1969, a member of the North Western Naturalists Union for 17 years from 1966, was an honorary life member of the Postal Microscopical Club and joined the Manchester Microscopical Society in 1952. He took an active part in the latter Society until 1983 when ill-health forced him to take a less active role. During his active association with the Society he acted as treasurer and instrument curator and became its President for the 1961 season and vice-president for some years thereafter.

He was known as a private but kindly gentleman and was noteworthy amongst his fellow microscopists as a skillful mounter of diatoms. In this respect he followed in his fathers footsteps. He busied himself with lectures and demonstrations, generously teaching others the techniques learnt over two generations and passing on his enthusiasm for the diatoms themselves. He was expert in the use of the Mechanical Finger (a micro-manipulator) designed and built by his father.

A man of great mechanical expertise he invented and built many accessories and tools to help the diatomist. These ranged from repair of objectives to extending handles for plankton nets. At one time he made a complete microscope which he used to sort diatoms in-situ. Many of the items he built or repaired are, even today, still in use and much appreciated by their owners. His diatom mounts have found their way into many microscopists cabinets and are treasured examples.

Francis St.D. Rowntree, O.B.E.

During the preparation of this Index Frank Rowntree passed away. It seems only fitting that a copy of his obituary (by Roy Winsby) should appear here.

Frank, by which name he was well known, suffered a severe heart attack and died in hospital on the 25th October 1996.

His working background was in public health for which subject he had numerous qualifications, and for which work he was awarded the O.B.E. in 1986. In 1987 he was appointed Vice President of the Royal Society for the Prevention of Accidents and also Vice President of the Institute of Health.

His interest in microscopy began at an early age. He joined the Manchester Microscopical Society as a novice at age 15 in 1943, at a time when he was living at Denton, Manchester. In later years he also became a member of the Royal Microscopical Society, the Quekett Microscopical Club, the Postal Microscopical Society, the Sorby Microscopical Club and the Leeds Microscopical Society. He attended as many meetings of these bodies as he could, saying that if societies go to the trouble of organising meetings then he felt he should support them by attending those meetings. Though his home for many years has been in Sheffield, he and Mrs. Rowntree regularly attended meeting in Manchester even though it meant travelling some 40 miles over the inhospitable mist enshrouded Pennine moors on winter evenings.

He had immense enthusiasm and boundless energy for microscopy, which he loved, and his main concern was that people interested in amateur microscopy were mainly nowadays of the older age groups, and that efforts should be made to attract younger converts to the fascinating hobby. He had great patience helping beginners, particularly young people, reiterating time after time how he came to the Manchester Microscopical Society as a young beginner and how he received guidance and help. As regards his own interests, he was particularly interested in the history of microscopy and pond life, but he was very knowledgeable on all aspects of microscopy. The Open National Meetings he organised at Sheffield each June were most popular and always well attended. For many years he published his thrice yearly Sales and Wants and Fact File lists which were a boon to amateur microscopists. He had a kindly nature, always ready to help and advise anyone but particularly when it came to helping widows dispose of their former husbands microscopes, books and equipment, and items to this effect were to be seen regularly in his Sales & Wants List where, to his credit, the usual final line was that cheques for such purchases were to be made out to the particular widow.

His death has left a tremendously large void in contacts for amateur microscopy and he will undoubtedly be missed by members of all Microscopical Societies in which he was interested. People like Frank with such knowledge, ability and willingness to help are far too few.

The collection

The collection itself is stored in a number of makeshift boxes and drawers containing in excess of 2000 samples. An index was found relating to three of the drawers. It is this index that is the subject of this document. Most of the cleaned samples are stored in glass tubes or phials each being numbered. There are a number of raw specimens. These have not been documented.

Appendix B is a facsimile of the hand written sheets used by the Meakins to maintain their index. This index was bound in a brown folder with leaves stuck in as required.

It is clear from this index that he abbreviated place names and also specie names. One assumes that he knew the origin of specimens and therefore did not need to make his entries more detailed e.g. Dunkirk (in the United states of America, in Europe?).

Where only one location is possible or sufficient information is available the entries have been expanded and can be examined in the second part of this document which is in table format. It runs in the same sample tube order as the hand written list.

Some of the cross-references do not match up. This is probably due to tubes being replaced with later specimens.

Both Father and Son supplied slides and samples to various microscopical supply companies. From entries in the Index it is certain that some were sent to W. Watson & Sons Ltd. Other companies may have been Flatters & Garnett Ltd and possibly Richard Suter. There are many mentions of Wheeler, which was possibly Edmund Wheeler. It is likely that the samples were from residual stock as Wheelers main stock was taken over by Watsons in the mid 1880s.

There is also mention of "Norman diatoms". J. T. Normans stock has recently become available (1996) from his descendants. Samuel Henry Meakin appears as a customer in the accounts of J. T. Norman where two sales are recorded. One in May 1926 and another in June of the same year. A 1910 postcard advertisement by J. T. Norman offers tubes of diatomaceae ready for mounting at 1s 1d per tube. The tube numbers are similar to those found in the Meakin Index. Some samples are also marked "ex-Ross". This is probable Robert Ross.

Some research is required to trace the other name references.

The "T." notation has, by cross-referencing, been resolved to J. Tempère.

Appendix B are photocopies of entries from these companies catalogues. Items advertised may be found within the Meakin collection.

Some appreciation of the efforts that were required to accumulate such a collection of cleaned material can only be appreciated if the mechanisms involved in preparing specimens is understood. The methodology has changed little over the years. An article in 'The Microscope' of January 1949 by Cecil Charles Swatman set out the process used by all the diatomists of the day. Here follows a summary of that article.

Important Note:- Since writing this introduction to the Meakin Collection, which was based on the index and a brief description of the raw material from Frank before he passed away, the actual phials have been unearthed. This has allowed me to extend the index to include those phials not previously detailed and also provide a description of their storage.

The tubes are actually contained in 12 boxes (3 of which were empty, two of which were un-numbered and assumed to be spare boxes for work in progress).

The boxes were not of uniform size.

Box 1 with spaces for tubes 1 thru 144.

8.75 inches wide, 8.75 inches deep and 2.125inches high.

The tubes were 1 5/16 inches high x 3/8 inch wide, round bottomed. 15 tubes were missing from this box. 16 were without stoppers, all the rest being corked.

Box 2 with spaces for tubes 145-288.

8.75 inches wide, 8.75 inches deep and 2.125 inches high.

Few tubes remaining tubes present.

The tubes were 1 5/16 inches high x 3/8 inch wide, round bottomed.

Box 3 with spaces for tubes 289-432.

8.75 inches wide, 8.75 inches deep and 2.125inches high.

No tubes remaining.

Box 4 with spaces for tubes 433 thru 656.

10 5/8 inches wide, 9 5/8 inches deep, 2 1/8 inches high.

In the main, this box contained tubes 1.5 inches high and 3/8 inch wide, all round bottomed.

2 tubes were missing. 4 were without corks and all other were corked.

Box 5 with spaces for tubes 657-880.

10 7/8 inches wide, 9 5/8 inches deep and 2 1/8 inches high.

Tubes were 1.5 inches high, 3/8inch wide, all round bottomed. 6 tubes were missing, 6 were without corks and all the rest were corked.

Box 6 with spaces for tubes 881-1000.

The Meakin Diatom Collection 10 5/8 inches wide, 9 5 inches deep and 2 5/8 inches high. Tubes were 2 inches high, .5inch wide, all flat bottomed. All but 2 were corked, those two being plastic capped.

Box 7 with spaces for tubes 1001-1120. 10 5/8 inches wide, 9 5 inches deep and 2 5/8 inches high. Tubes were 2 inches high, .5inch wide, all flat bottomed. 2 Tubes were missing. All but 4 were corked, those four being plastic capped.

Box 8 with spaces for tubes 1121-1379. 10 5/8 inches wide, 9 5 inches deep and 2 5/8 inches high. Tubes were 2 inches high, .5inch wide, all flat bottomed.

Box 9 with spaces for tubes 1380-1454
12 inches wide, 9 inches deep, 3 5/8 inches high.
4 rows of 9 large bottles 2.5 inches x 5/8 inches all corked.
3 rows of smaller tubes 2.25 inches x 11/16 inches all but 2 being corked, the others being plastic capped.

Box 10. Drawer. 12 inches deep, 15 inches wide, 3 inches high. 7 rows of large tubes 2.5 inches x .5 inch. Flat bottomed. All corked bar 3 with plastic caps. Plus 7 rows of smaller tubes 2.25 inches x 3/8 inch round bottomed. 1 missing all the remainder corked.

The document now contains the original information gleaned from the hand-written index and is supplemented by a separate set of tables detailing what was actually on the tube labels.

Cleaning Diatoms for Microscopical Use by Cecil Charles Swatman

Broadly speaking the cleaning of Diatoms, whether fresh or fossil, is done in three stages. Firstly, the removal by mechanical means of waste and unwanted matter, such as fine mud, debris, weeds, coarse sand etc. Secondly, the oxidation of organic matter and solution of as much mineral matter as possible by means of acids, and thirdly, the breaking up and removal of all remaining insoluble matter by means of alkalis and mechanical processes.

A few pieces of apparatus and some reagents are needed.

- 1/ Retort stand.
- 2/ Wire gauze
- 3/ Spirit lamp or Bunsen
- 4/ 150cc Pyrex Flasks
- 5/ Porcelain Evaporating Dishes
- 6/ Sieves of various gauges 150-300 meshes to the linear inch
- 7/ Concentrated Sulphuric Acid
- 8/ Concentrated Nitric Acid
- 9/ Dilute Hydrochloric Acid
- 10/ Ammonia Solution
- 11/ Caustic Soda Solution 5-10%
- 12/ Potassium Chlorate crystals
- 13/ Sodium Acetate crystals

The sieves are used to both remove extraneous matter and to subsequently grade the diatom material remaining. The most commonly used sieves are 150-300 meshes to the linear inch. Any material passed through the sieves should be subjected to frequent washings before it is applied to the sieves so that any remaining reagents in the sample are diluted to such a degree that damage to the meshes does not occurr. Various settlings and decantatings should be performed to the liquid that has passed through the mesh as many diatoms are smaller than the mesh size.

The cleaning and breaking down of fossil earths must be done to such a degree of fineness that the acids and oxidising agents used can attack them effectively. This may be achieved by the repetative melting and re-crystallisation of the sample mixed with sodium acetate crystals. The earth is broken into pieces which will conveniently fit into a flask of suitable size. To this is added a quantity of commercial Sodium Acetate crytal and a few drops of water (about 5% of the volume of sodium acetate). The flask is then heated until the crystals melt. It is allowed to cool and a single crystal of sodium acetate added. The solution will crystallise almost immediately and give off a large amount of heat, so take care. Reheat and repeat the process until the earth is thoroughly broken up. When this is the case water is added to the molten mass and the solution allowed to settle. The liquor is poured off and the process repeated two or three times, by which juncture most of the Sodium acetate will have been borne away. The contents are then sieved as previously explained.

Treatment for Lime.

The broken up earth is transferred to the flask and tested with a few drops of dilute Hydrochloric Acid for Carbonate of Lime. Should the solution effervesce more acide should be added until such ceases. When this occurs heat the contents and dilute with water. Leave to settle and decant off the liquor. Sieve again. Transfer to another flask and add a quantity of concentrated Sulphuric Acid, about equal in volume to the remaining earth. The flask is then heated and as soon as some boiling begins a small crytal of pottasium chlorate is dropped into the mixture. Repeat the addition of a crystal of potassium chlorate until the mixture is a straw yellow. The mixture should be further boiled until a white fume cloud fills the flask.

Removal of Iron.

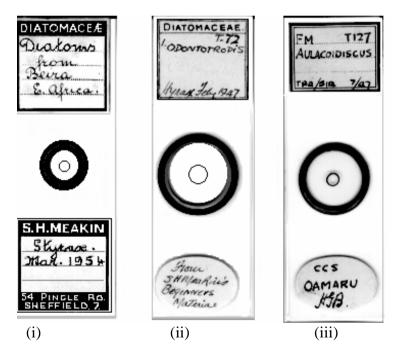
After being allowed to cool the whole should be diluted carefully until the flask is some three quarters full. The liquor should be swirled to mix the contents and the whole allowed to settle again. After two or three washings the liquor should be decanted off and the renainder sieved. The diatoms should be returned to the flask. With the flask about a quarter full add 1-2cc of caustic soda solution. If the solution turns buff in hue then boil and and dilute. Allow to settle and pour off the liquor Dilute HCl is added to make the contents of the flask slighty acidic and water then added to increase the volume to about three-quarters of the flask. Most of the lumps will now be found to have broken up and the fine debris will remain suspended in the lquid. Sieve and examine under a microscope.

Mounted Slides

Whilst there are no mounted slides in the collection (as these were disposed of seperately), both Meakins produced slides from the collection, strews, arranged slides and type slides. Many of these crop up in the collections of Diatomaceae that come onto the market from time to time. Many diatomists mounted samples of the Meakin diatom collection.

The pictures below are

- (i) one of Samuel Henry Meakins slides. The labels were commissioned by S. H. Meakin, white lettering on a blue panel. Each slide bore detail of mounting e.g. dry, styrax, realgar, species if single sampe, and source. They usually also bore a date.
- (ii) an unsigned mount but bearing the legend 'From S. H. Meakins Beginners Mixture'. This sample appears in the index as tube 1123.
- (iii) a slide mounted by Horace G. Barber from material supplied by Cecil Charles Swatman. This illustrates that the community of diatomists about this period passed material one to the other. Items in the index are marked as being from these diatomists. e.g. tube 439 which was supplied by Cecil Charles Swatman.



Meakin References

Author(s)	Title	Publication	Source	Year	Notes
Meakin, S. H.	The Study of Diatoms	The Microscope	Volume 3 (pages 152, 187, 209, 239) and Volume4 (pages 8,50)	1939	Reprinted together as 'Mounting Diatoms with Notes on Cleaning Material' by S. H. Meakin and C. C. Swatman
Barker, J. W. and Meakin, S. H.	New Genera and Species of Diatoms from Russia	Journal of the Quekett Microscopical Club	Series 4 Volume 1 Issue 6 (pages 251-255 and plates 38 and 39)	1943	
Barker, J. W. and Meakin, S. H.	New and Rare Diatoms	Journal of the Quekett Microscopical Club	Series 4 Volume 2 Issue 1 (pages 18-22 and plates 3 and 4)	1944	
Barker, J. W. and Meakin, S. H.	New and Rare Diatoms	Journal of the Quekett Microscopical Club	Series 4 Volume 2 Issue 2 (pages 76-78 and plates 15 and 16)	1945	
Barker, J. W. and Meakin, S. H.	New Diatoms from the Moreno Shale	Journal of the Quekett Microscopical Club	Series 4 Volume 2 Issue 3 (pages 143 and 144 and plate 22)	1946	
Barker, J. W. and Meakin, S. H.	Diatoms from Russian Deposits	Journal of the Quekett Microscopical Club	Series 4 Volume 2 Issue 4 (pages 175-178 and plate 24)	1947	
Barker, J. W. and Meakin, S. H.	New and Rare Diatoms	Journal of the Quekett Microscopical Club	Series 4 Volume 2 Issue 5 (pages 233-235 and plate 28)	1948	
Barker, J. W. and Meakin, S. H.	New and Rare Diatoms	Journal of the Quekett Microscopical Club	Series 4 Volume 2 Issue 6 (pages 301-303 and plates 37 and 38)	1949	
Burke, J. F. and Brigger, A. L.	Variations in Aulacodiscus fugei Barker and Meakin	Proceedings Staten Island Institute of Arts and Sciences	Volume 26 Issue 2 (pages 50-52)	October 1971	

Author(s)	Title	Publication	Source	Year	Notes
Meakin, S. H.	A note on	Microscopy, Journal of the Quekett	Volume 1 Issue 5 (pages 197-199	1936	
and Swatman, C.	Craspedoporous	Microscopical Club	and plate 14)		
C.	elegans and				
	Porodiscus				
	interruptus				
Meakin, S. H.	Note on a new	Microscopy, Journal of the Quekett	Volume 1 (pages 100-102 and	1938	
	Diatom from	Microscopical Club	plates 14 and 15)		
	Joe's River,				
	Barbadoes				
Meakin, S. H.	New and Rare	Journal of the Quekett	Volume 3 Issue 1 (pages 41 and 42	1949	
and Brigger, A.	Diatoms	Microscopical Club	and plate 6)		
L.					

Chas. Adams

Miss Mary Louise Renton

Samuel Henry Meakin Cecil Charles Swatman

Charles Leslie Odam

Frederick Clunie Wise

Robert Ross M.A.

Harasa C Darbar

J. Tempère

J. A. Long

Reverend Dingley P. Fuge (1874-1944)

Diatomists

The following are the known addresses of those diatomists, mounters and suppliers that appear in this document.

Edmund Wheeler 48a Tollington Road, Holloway, London N., England.

W. A. Firth Whiterock, Belfast, Northern Ireland.

M.A., M.R.C.S., L.R.C.P

J. T. Norman 178 City Road, London, E. C., England [1846-1893].

147 Dalston Lane, Hackney, London, E.S., England [1893-1898].

13 Alvington Crescent, Hackney, London, England [1898-1936].

24 Melrose Street, Great Hosten, Bradford, Yorkshire, England.

20 Scarborough Road, Shipley, Yorkshire, England.

23 Manchester Road, Southport, England.

168 rue?, Paris, France.

'Sunnyside', The Pleasance, Falkland, Fife, Scotland (@December 1945).

Menston, Leeds, Yorkshire, England.

54 Pingle Road, Sheffield, Yorkshire, England (@December 1945).

23 Canning Road, Walthamstow, London E.17., England (@December 1945).

230 Brockley Road, London, S.E. 4., England (@December 1945).

British Museum, Cromwell Road, London S. W. 7., England (@December 1945).

Balallan, Ross-shire, Scotland (@November 1953)

54 Abingdon Court, London W. 8., England (@December 1945).

'Hafan', 91 Mancetter Road, Nuneaton, Warwickshire, England (@December 1945)

LIOIII	From the written index - Contents of Phials in Third Drawer								
No.	Name.	Source.	Type.	Diatomist.	Cross Ref.	Notes.			
433		Acores Isles		J. Tempère					
434	Erased					formerly Actinoptychus heliopelta J. Tempère large Patuxent River, Maryland, United States of America			
435		Alexandria, Egypt		Leonard					
436		Ambrim Isles, New Hebrides	Recent Marine	Williams					

From	the written index - C	ontents of Phials in Third D	rawer			
No.	Name.	Source.	Type.	Diatomist.	Cross Ref.	Notes.
437	Amphipleura pellucida			Reverend Dingley P. Fuge		Finest
438	Amphipleura pellucida			Reverend Dingley P. Fuge	443 - Failed Cross- check	Medium formerly Heavy
439	Amphipleura pellucida	Hells Kettle, Darlington, England	Recent Freshwater	Cecil Charles Swatman.		
440	Erased					formerly Ananino, Russia No.1. J. Tempère
441		Apia, Western Samoa				
442	Arachnoidiscus Ehrenbergii, Arachnoidiscus hybridus	Agar-agar		S.H.M.(Samuel Henry Meakin)		
443	Arachnoidiscus Ehrenbergii	Lompoc, California, United States of America	Fossil Marine	J. Tempère		
444		Atlantic City, New Jersey, United States of America (?)	Fossil Marine	J. Tempère		No.1.
445	Erased					formerly Atlantic City, New Jersey, United States of America No. 1. J. Tempère
446	Aulacodiscus Kittoni			J. Tempère		·
447		Bains Lower, Oamaru, New Zealand	Fossil Marine	J. Tempère		Light.
448		Barbadoes	Probably Fossil Marine	Blood		
449		Barbadoes	Probably Fossil Marine	Leonard		
450		Cambridge Estate, Barbadoes	Fossil Marine	Robinson		
451		Cambridge Estate, Barbadoes	Fossil Marine	Robinson		Light.
452		Newcastle, Barbadoes	Fossil Marine	Robinson		

From	the written index -	Contents of Phials in Third Dr	awer			
No.	Name.	Source.	Type.	Diatomist.	Cross Ref.	Notes.
453		Beaufort Harbour, North Carolina, United States of America		Leonard		(Dr. Albert Mann)
454		Bergouzano, Italy	Fossil Freshwater	J. Tempère		
455	Biddulphia sinensis	Brokenshire from Plymouth				
456		Burges' Pond		J. Tempère		
457		Black Moss, Aberdeen, Scotland	Fossil Freshwater	S.H.M.(Samuel Henry Meakin)		No.1.
458		Black Moss, Aberdeen, Scotland	Fossil Freshwater	J. Tempère		No.1.
459		Black Moss, Aberdeen, Scotland	Fossil Freshwater	S.H.M.(Samuel Henry Meakin)		No.2.
460		Black Moss, Aberdeen, Scotland	Fossil Freshwater	S.H.M.(Samuel Henry Meakin)		No.3.
461		Bogangoe, Aberdeen, Scotland	Fossil Freshwater	J. A. Long		
462		Borries, Oamaru, New Zealand	Fossil Marine	J. Tempère		
463		Borries, Oamaru, New Zealand	Fossil Marine	J. Tempère		
464		Bory, Hungary	Fossil Marine	J. Tempère		
465		Boulogne sur Mer, France	Recent Marine	J. Tempère		
466		Braunton, North Devon, England		S.H.M.(Samuel Henry Meakin)		
467		Calama, Chili		Williams		
468	Erased					formerly Cannes, France J. Tempère
469		Cape Agulhas, South Africa	Fossil Marine	J. A. Long		
470		Caralulup Creek, Victoria, Australia				
471		Catania, Sicily		J. Tempère		

From t	the written index - C	ontents of Phials in Third Dr	awer			
No.	Name.	Source.	Туре.	Diatomist.	Cross Ref.	Notes.
472		Cebu, Philippines		Leonard		
473		Celebes, Indonesia		Leonard		
47.4		(Sulawesi)		I Taran Nas		
474		Celles, France		J. Tempère		
475		Chili		Williams		
476		Carlovo, Russia	Fossil Marine			Fine. formerly Columbo, Ceylon J. Tempère (used)
477		Constantinople		J. Tempère		
478		Cormacks Sidings, Oamaru, New Zealand	Fossil Marine	Williams		
479		Corsica		Leonard		
480	Coscinodiscus			S.H.M.(Samuel Henry Meakin)		Pure
481		Cuxhaven, Germany	Recent Marine	Leonard		
482		Devils Lake, Dakota, United States of America		Leonard		
483		Devonshire, England		Robinson		
484	Discovery Dredgings			J. A. Long		
485		Dunkirk		J. Tempère		
486		Havana, Cuba		- Consequence		
487		Falkland Isles		Williams		
488		Falkland Isles		Williams		
489			Freshwater	J. Tempère		
490		Forresters Rock, Oamaru, New Zealand	Fossil Marine	J. Tempère		
491	Eunotia	Florida, United States of America	Recent Freshwater			Pure. formerly Furr, Jutland, Denmark - Williams
492	Erased					formerly Furr, Jutland, Denmark
493	Erased					formerly Furr, Jutland, Denmark (J. Tempère?)
494		Grotte, Sicily	Fossil Marine	J. Tempère		, , , , , , , , , , , , , , , , , , , ,
495		Hakodate, Japan	Fossil Marine	Leonard		
496		Hakodate, Japan	Fossil Marine	J. Tempère		

From	the written index - Co	ntents of Phials in Third D	rawer			
No.	Name.	Source.	Type.	Diatomist.	Cross Ref.	Notes.
497	Haliotis Shells	California, United States of America		J. Tempère		
498		Halsinger Bog, North Devon, England		S.H.M.(Samuel Henry Meakin)		
499		Hornsey Bank, North Devon, England		S.H.M.(Samuel Henry Meakin)		
500	Japanese Oyster Stomachs			J. Tempère		Huitres du Japon.
501		Ibo, Mozambique, East Africa		Leonard		
502		Ibo, Mozambique, East Africa		J. A. Long		
503		Ibo, Mozambique, East Africa		Williams		
504		Rodrigues Isle		J. Tempère		No.1.
505		Rodrigues Isle		J. Tempère		
506		Sandwich Isles	Recent Marine	J. Tempère	573	
507		Izopalaga, Hungary	Fossil Marine	J. Tempère	532 - Failed Cross- check	
508		Jacksons Paddock, Oamaru, New Zealand	Fossil Marine	J. Tempère		No.1.
509		Jacksons Paddock, Oamaru, New Zealand	Fossil Marine	J. Tempère		No.1.
510		Jacksons Paddock, Oamaru, New Zealand	Fossil Marine	J. Tempère		No.1.
511		Jacksons Paddock, Oamaru, New Zealand	Fossil Marine	J. Tempère		No.2.
512		Karviand??				
513		Kaiwaka??		Williams		
514		Kekko, Hungary	Fossil Marine	J. Tempère		No.1. Mixed
515	Erased					formerly Kekko, Hungary No.1. J. Tempère
516	Erased					formerly Kekko, Hungary No.1. J. Tempère

No.	Name.	 Contents of Phials in Third Dr Source. 	Type.	Diatomist.	Cross Ref.	Notes.
		Source.	rype.	Diatomist.	CIOSS Rei.	
517	Erased					formerly Kekko, Hungary No.1. J. Tempère
518	Erased		_			formerly Kekko, Hungary No.2. J. Tempère
519		King Georges Sound,	Recent	J. Tempère		
		Kerguelen	Marine			
520		Kobe, Japan		J. Tempère		?
521		La Bourboule, France		J. Tempère		
522		Leates Island,	Fossil	J. Tempère		
		Conneticutt, United States	Brackish			
		of America	Water			
523		Leates Island,	Fossil	J. Tempère		
		Conneticutt, United States	Brackish	·		
		of America	Water			
524				J. Tempère		Lignites du Japon. (Brown Coal?)
525		Loch Kinnord, Aberdeen,	Fossil	S.H.M.(Samuel		No.1.
		Scotland	Freshwater	Henry Meakin)		
526		Loch Kinnord, Aberdeen,	Fossil	S.H.M.(Samuel		No.2.
		Scotland	Freshwater	Henry Meakin)		
527		Loch Kinnord, Aberdeen,	Fossil	S.H.M.(Samuel		No.3.
		Scotland	Freshwater	Henry Meakin)		
528		Malacca (possibly	Recent	J. Tempère		
		Malaka, Malaysia)?	Marine			
529		Maryland, United States		J. Tempère		
		of America				
530		Maurice Isle?		J. Tempère		
531		Nagasaki, Japan	Recent	J. Tempère		
J U .		. iagasain, sapair	Marine	5. 75po.		
532	Erased					formerly Nottingham, (probably Maryland, United
						States of America) Blood
533		Nottingham (probably	Fossil Marine	J. Tempère		
300		Maryland, United States				
		of America)				
534	Erased					formerly Nottingham, (probably Maryland, United
JU .	_,4004					States of America) J. T. Norman

From	the written index - C	ontents of Phials in Third D	rawer			
No.	Name.	Source.	Type.	Diatomist.	Cross Ref.	Notes.
535		Nossi Be, Madagasca	Recent Marine	J. Tempère		
536		Noumea, New Caledonia [in the Coral Sea]	Recent Marine	J. Tempère		
537	J. T. Normans Diatoms					No.14. probably J. T. Normans tube number
538	J. T. Normans Diatoms					No.17. probably J. T. Normans tube number
539	J. T. Normans Diatoms					No.17. probably J. T. Normans tube number
540	J. T. Normans Diatoms					No.24. probably J. T. Normans tube number
541	J. T. Normans Diatoms					No.27. probably J. T. Normans tube number
542	J. T. Normans Diatoms					No.32. probably J. T. Normans tube number
543	J. T. Normans Diatoms					Mixed
544	J. T. Normans Diatoms					Mixed
545	J. T. Normans Diatoms					Mixed
546	J. T. Normans Diatoms					
547	Navicula cuspidata & Nitzschia sigmoidea J. T. Normans Diatoms	Stanleys Allotment			968	No.24. probably J. T. Normans tube number
548	J. T. Normans Diatoms					No.26. probably J. T. Normans tube number
549	Blank					
550	Blank					

		Contents of Phials in Third Di		Diotom:st	Cross Def	Notes
No.	Name.	Source.	Туре.	Diatomist.	Cross Ref.	Notes.
551		Oamaru, New Zealand	Fossil Marine	Robinson		All searched over S.H.M. (Samuel Henry Meakin)
552		Paama Island, New	Recent	Leonard		No.1.
		Hebrides	Marine			
553		Paama Island, New	Recent	Leonard		No.2.
		Hebrides	Marine			
554		Paama Island, New	Recent	Leonard		No.3.
		Hebrides	Marine			
555	Off 6ft Weed	Australia				formerly Patuxent River, Maryland, United States
						of America No.1. J. Tempère
556		Florida, United States of	Recent			formerly Patuxent River, Maryland, United States
		America	Freshwater			of America No.1. J. Tempère
557		Patuxent River, Maryland,	Fossil Marine	J. Tempère		No.1.
		United States of America				
558		Patuxent River, Maryland,	Fossil Marine	J. Tempère		No.2.
		United States of America				
559		Patuxent River, Maryland,	Fossil Marine	J. Tempère		No.2.
		United States of America				
560		Pensacola Bay, Florida,	Recent	J. Tempère		
		United States of America	Marine			
561		Philippines		J. Tempère		
562		Peru		Williams		
563	Pleurosigma			J. Tempère	[403 - Not	
	angulatum				Available],	
					564, 704,	
					807	
564	Pleurosigma				[403 - Not	
	angulatum				Available],	
					563, 704,	
					807	
565	Pleurosigma			Leonard		Pure
	angulatum					
566		Redondo, California,	Fossil Marine	Leonard		
		United States of America				

From	the written index - Co	ontents of Phials in Third D	rawer			
No.	Name.	Source.	Type.	Diatomist.	Cross Ref.	Notes.
567		Pollet Lake, New Brunswick		Blood		
568		Richmond, Virginia, United States of America	Fossil Marine	J. Tempère		(74)
569	Aulacodiscus Kittoni or AF????	Rio de Janeiro, Brazil		Dr. Albert Mann. Leonard		Pure
570	Frustulia lewisiana					formerly Royal Sound, Kerguelen J. Tempère
571		Nancoon (Nancoori?)				Good formerly Royal Sound, Kerguelen J. Tempère
572		San Redondo				Medium (Blood - Erased)
573		Sandwich Isles	Recent Marine		506	formerly San Redondo Light Blood
574		Italy	Fossil Freshwater			formerly San Redondo Large S.H.M.(Samuel Henry Meakin) (Blood material)
575		Sharks Tooth Hill, California, United States of America	Fossil Marine			Fine formerly San Redondo Small S.H.M.(Samuel Henry Meakin) (Blood material)
576		Shiloh, New Jersey, United States of America	Fossil Marine	J. Tempère		
577		Springfield, Barbadoes	Fossil Marine	J. Tempère		
578		Successful Bay, Kerguelen	Recent Marine	J. Tempère		
579	Surirella gemma			J. A. Long		
580		Tamatave, Madagascar	Recent Marine	J. Tempère		No.1.
581		Tamatave, Madagascar	Recent Marine	J. Tempère		No.1.
582		Tamatave, Madagascar	Recent Marine	J. Tempère		No.2.
583		Tamatave, Madagascar	Recent Marine	J. Tempère		No.2.
584		Tamalambo, Madagascar (actually in West Africa)	Recent Marine	J. Tempère		

From	the written index - C	ontents of Phials in Third Di	rawer			
No.	Name.	Source.	Type.	Diatomist.	Cross Ref.	Notes.
585		Thursday Island	Recent Marine	J. Tempère	[315 - Not Available]	
586		Tide Pond		J. Tempère		
587		Todd Hollow		J. Tempère		
588		Totara, New Zealand	Fossil Marine	(Dr. Albert Mann) Leonard		
589		Washington				
590		Walfisch Bay (probably Walvis Bay, South Africa)	Recent Marine	J. Tempère		
591		Walfisch Bay (probably Walvis Bay, South Africa)	Recent Marine	J. A. Long		?
592		Weir in Millhouses Park		S.H.M.(Samuel Henry Meakin)		
593		Williams Bluff, Oamaru, New Zealand	Fossil Marine	J. Tempère		No.2. (Used)
594		Williams Bluff, Oamaru, New Zealand	Fossil Marine	J. Tempère		No.2. (Used)
595		Williams Bluff, Oamaru, New Zealand	Fossil Marine	J. Tempère		No.2.
596		Williams Bluff, Oamaru, New Zealand	Fossil Marine	J. Tempère		No.3.
597		Jesso, Japan		Blood		
598	Fish Stomachs					
599		Santa Paula, California, United States of America		ex Smith		
600		Kamischev, Russia	Fossil Marine			Sand and Large Diatoms
601		British Honduras				formerly Kamischev, Russia
602		San Clemente Island, off coast of California, United States of America				formerly (in order) Kamischev, Russia - fine then Richmond, Virginia, United States of America (good)
603		Villefranche, France.	Recent Marine	Mr. Laporte		1931 formerly Kamischev, Russia
604		Inza, Russia				

From t	the written index -	Contents of Phials in Third D	rawer			
No.	Name.	Source.	Type.	Diatomist.	Cross Ref.	Notes.
605		Eastbourne, Sussex, England	Recent Brackish water	Robinson		1931
606		Kimo, Betumura, Japan		Cecil Charles Swatman		
607	Blank					
608	Blank					
609	Guano	Peru		H.R.S. Williams		
610	Guano	Peru		H.R.S. Williams		
611		"probably Chatsworth Trough", England	Freshwater			Good
612	Cyclotella					
613		Montezil, Spain				
614		Montezil, Spain				Large
615		Renkan, Holland	Fossil Freshwater			Large diatoms
616		New Zealand	Fossil Freshwater			
617	Mattonata? Triceratium trifoliatum					Needs cleaning
618	Blank					
619	Blank					
620	Blank					
621	Blank					
622	Blank					
623	Blank					
624	Blank					
625	Blank					
626	Blank					
627	Blank					
628		Croom, Maryland, United States of America	Fossil Marine			Good
629	Blank					

No.	Name.	Source.	Type.	Diatomist.	Cross Ref.	Notes.
630	Blank					
631	Blank					
632	Blank					
633	Blank					
634	Diatoms	Java	Fossil Marine			AP6
635	Diatoms	Java	Fossil Marine			AP9 [poly - crossed out]
636	Poly[cistina]	Java	Fossil Marine			AO7
637	Poly[cistina]	Java	Fossil Marine			AP5
638	Blank					
639	Blank					
640	Blank					
641	Blank					
642	Blank					
643	Blank					
644	Blank					
645	Blank					
646	Blank					
647	Blank					
648	Blank					
649	Blank					
650	Blank					
651	Blank					
652	Blank					
653		Atlantic City (probably New Jersey, United States of America)	Fossil Marine			
654	Blank					
655	Blank					
656	Blank					

No.	Name.	Source.	Type.	Diatomist.	Cross Ref.	Notes.
657		Portland, Oregon, United States of America	Fossil Freshwater			Poor
658	Erased	Otates of America	Tresnivater			formerly Kekko, Hungary
659	2.4664	Newcastle, Barbados	Fossil Marine			Territoria realizary
660		Calama, Chili	1 Good Marino			
661		Uist, Shetlands				
662	Pleurosigma angulatum	Torbay, Devon, England	Recent Marine			Wants cleaning
663	J	Nagasaki, Japan	Recent Marine			
664		Penrose, New Zealand				
665		Aberdeenshire, Scotland	Fossil Freshwater (?)			From Peat
666		Pauey, Sumatra				
667		Antrim, Ireland				
668	Pleurosigma Balticum	River Debeu				Pure
669		Selanai, Japan				Fine
670		Selenai, Japan				Coarse
671	Coscinodiscus Actinocyclus etc	Cape Town, South Africa				Dredgings
672	Erased					formerly Loch Culthir?, Scotland
673		Dunrobin Castle, Sutherland				
674		Troy, New Hampshire, United States of America				
675		Palo Verde, California, United States of America	Fossil Marine			
676		Mors, Jutland, Denmark	Fossil Marine			
677		Cape of Good Hope, South Africa				Inshore gatherings

	1	st of Tubes in 4th Drawer	1_			1
No.	Name.	Source.	Type.	Diatomist.	Cross Ref.	Notes.
678		Lake Mericonish, Nova Scotia				
679	Amphiprora alata	Eastbourne, Sussex, England	Recent Marine			
680	Cymatopleura solea					
681		South Yarra, Australia				
682		Mejillones, Chili				
683		Cape Town, South Africa			1199, 684	formerly Arachnoidiscus ornatus
684	Arachnoidiscus ornatus	Cape Town, South Africa			1199, 683	
685	Surirella striatula, Navicula etc	Guimbles, Eastbourne				Good
686		River Colne, Essex, England	Recent Brackish Water		703	Heavy
687		River Colne, Essex, England	Recent Brackish Water			Light
688		River Colne, Essex, England	Recent Brackish Water			Light
689	Rhabdonema adriaticum	Long Island, New York, United States of America				
690	Guano	Peru				
691		Santa Monica, California, United States of America	Fossil Marine			
692		Oamaru, New Zealand	Fossil Marine			Small
693		Petersburg, Virginia, United States of America	Fossil Marine			
694	Pleurosigma attenuatum					
695		Lake Windermere, Lake District, England				

From t	the written index - L	ist of Tubes in 4th Drawer				
No.	Name.	Source.	Type.	Diatomist.	Cross Ref.	Notes.
696	Rhabdonema	Torbay, Devon, England	Recent			Off weed
	arcuatum		Marine			
697	Pleurosigma					
	attenuatum					
698		Wonerash near Guildford, England				
699		Dartford Creek, River Thames, England				
700		Madiera				
701		Camberley				
702		Atlantic City, New Jersey,	Fossil Marine			
7		United States of America	1 00011 Warine			
703		River Colne, Essex,	Recent		Off 686	Medium
		England	Brackish			
			Water			
704	Pleurosigma			J. Tempère	[403 - Not	
	angulatum				Available],	
					563, 564,	
705	Blank				807	
705	DIATIK	Adriatic Sea, Trieste, Italy	Recent			Lorgo
706		Adhatic Sea, Theste, Italy	Marine			Large
707		Adriatic Sea, Trieste, Italy	Recent			thro 300
707		Adnatic Oca, Thesic, Italy	Marine			1110 300
708	Sl. Asaph.?			H.R.S. Williams		
709	Sl. Asaph.?			H.R.S. Williams		
710	Sl. Asaph.?			H.R.S. Williams		
711	Sl. Asaph.?			H.R.S. Williams		
712	Sl. Asaph.?			H.R.S. Williams		
713	Sl. Asaph.?			H.R.S. Williams		
714	Sl. Asaph.?			H.R.S. Williams		
715	Sl. Asaph.?			H.R.S. Williams		
716	Sl. Asaph.?			H.R.S. Williams		
717	Blank					

From	the written index - L	ist of Tubes in 4th Drawer				
No.	Name.	Source.	Type.	Diatomist.	Cross Ref.	Notes.
718		Lake Deary, Isle of Skye		H.R.S. Williams		
719		Warri, Nigeria	Recent Brackish Water	H.R.S. Williams		
720		Franzenbad, Bohemia	Fossil Brackish Water	H.R.S. Williams		
721	Blank					
722		Havana, Cuba		H.R.S. Williams		
723	Blank					
724	Blank					
725	Blank					
726		Bonn River, West Africa				"Warri?"
727		Kerguelen	Recent Marine			
728		Kusnetzk, Russia				
729		Moron, Spain	Fossil Marine			Small diatoms formerly Moron, Spain
730	Blank					
731	Erased					formerly Moron, Spain
732		Trout Lake North Carolina, United States of America		Wheeler [possibly Edmund Wheeler]		formerly Lagy Civitos?
733		Troublesome Gully, Oamaru, New Zealand	Fossil Marine			Lower
734		Troublesome Gully, Oamaru, New Zealand	Fossil Marine			Upper
735		Cormack, S. W. Corner, Oamaru, New Zealand	Fossil Marine			
736		Gropi Valley				
737	Coscinodiscus Jonesiana	Orinoco, Venezuela	Recent Freshwater			
738	Coscinodiscus Ientigiuosus	South Georgia, Antarctic				

No.	Name.	Source.	Туре.	Diatomist.	Cross Ref.	Notes.
739	Stephanopyxis etc	Orinoco, Venezuela	Recent Freshwater			
740	Synedra etc	Orinoco, Venezuela	Recent Freshwater			
741	Polymyxus	Amazon, Brazil				
742		Trout Lake		Wheeler [possibly Edmund Wheeler]		
743		Advioudack Junction, Quebec, Canada		Wheeler [possibly Edmund Wheeler]		
744		Chelsea Hill, Richmond, Virginia, United States of America	Fossil Marine	Wheeler [possibly Edmund Wheeler]		
745		High Bank, Managausett Bay		Wheeler [possibly Edmund Wheeler]		
746		Kilwor? N.Y.	Fossil Freshwater	Wheeler [possibly Edmund Wheeler]		
747		Lake Belauger, Canada		Wheeler [possibly Edmund Wheeler]		
748	Off Oyster shells			Wheeler [possibly Edmund Wheeler]		
749	Anchor Mud	Broome Lake		Wheeler [possibly Edmund Wheeler]		
750	Erased					formerly Richlieu River, Wheeler [possibly Edmund Wheeler]
751	Erased					formerly Little Quill Lake, Canada. Wheeler [possibly Edmund Wheeler]
752	Erased					formerly Greenwich, Conneticutt, United States of America, Wheeler [possibly Edmund Wheeler]
753		Woods Hole		Wheeler [possibly Edmund Wheeler]		Dr. Albert Mann
754		Rock River, Illonois , United States of America		Wheeler [possibly Edmund Wheeler]		
755	Erased					formerly White River, Indianapolis, United States of America. Wheeler [possibly Edmund Wheeler]

No.	Name.	List of Tubes in 4th Drawer Source.	Type.	Diatomist.	Cross Ref.	Notes.
756	Kieselguhr (diatomite)	California, United States of America (?)	1,450.	Wheeler [possibly Edmund Wheeler]	Oroco Horr	Large Marine
757	Erased	or randina (.)		Editional Wilectory		formerly Ashley River near Charlestown River Marine. Wheeler [possibly Edmund Wheeler]
758	Erased					formerly River des Praries, Carterville. Wheeler [possibly Edmund Wheeler]
759	Erased					formerly Fossil Fresh water - Wheeler [possibly Edmund Wheeler]
760	Erased					formerly Under Woolworths Building. Wheeler [possibly Edmund Wheeler]
761		Singelewsky, Russia	Fossil Marine			formerly Reuffs Pond. Wheeler [possibly Edmund Wheeler]
762		Singelewsky, Russia	Fossil Marine			formerly Broome Lake. Wheeler [possibly Edmund Wheeler]
763		Singelewsky, Russia	Fossil Marine			formerly St. Paul ? III. Wheeler [possibly Edmund Wheeler]
764		Singelewsky, Russia (very large)	Fossil Marine			formerly Old Warwick Road. Wheeler [possibly Edmund Wheeler]
765		Singelewsky, Russia (<300)	Fossil Marine			formerly U. Scotvale R?. Wheeler [possibly Edmund Wheeler]
766		Singelewsky, Russia (<300)	Fossil Marine			formerly Artesian Well Borings, Florida, United States of America. Wheeler [possibly Edmund Wheeler]
767		Nykjobing, Jutland, Denmark	Fossil Marine			formerly Troy recent Freshwater
768		Singelewsky, Russia	Fossil Marine			formerly Nova Scotia. Wheeler [possibly Edmund Wheeler]
769		Arafura Sea, Challenger Expedition	Recent Marine			formerly Stomachs of Sea Eggs, Barbados
770	Erased					formerly Algerian diatomite (small off 756 - Cross check failed)
771	Erased					formerly Fossil Marine. Wheeler [possibly Edmund Wheeler]

From	the written index -	List of Tubes in 4th Drawer				
No.	Name.	Source.	Type.	Diatomist.	Cross Ref.	Notes.
772	Erased					formerly Auvergue Wheeler [possibly Edmund Wheeler]
773	Erased					formerly Queens Co. Nova Scotia. Wheeler [possibly Edmund Wheeler]
774	Erased					formerly Auvergue Wheeler [possibly Edmund Wheeler]
775	Erased					formerly Isthmia nervosa California, United States of America. Wheeler [possibly Edmund Wheeler]
776	Pleurosigma curvulum					formerly Holland. Pl. Maryland, United States of America. Freshwater or Fossil Marine. Wheeler [possibly Edmund Wheeler]
777	Pleurosigma fasciola			Wheeler [possibly Edmund Wheeler]		
778		Auvergue (probably The surface of Lava, Puy de Dome)		Wheeler [possibly Edmund Wheeler]		
779	Fragilaria virasceus?					formerly Philippine Is. Albatross Dr. Albert Mann
780		Toluca, Mexico		Adams		(probably Chas. Adams, 23 Manchester Road, Southport)
781	Melosira	Carterville		Wheeler [possibly Edmund Wheeler]		
782		River des Praries		Wheeler [possibly Edmund Wheeler]		
783		Toluca, Mexico				
784	Blank					
785		Warri, Nigeria	Recent Brackish Water	H.R.S. Williams		Large
786		Warri, Nigeria	Recent Brackish Water	H.R.S. Williams		Small
787		Toluca, Mexico				

From t	rom the written index - List of Tubes in 4th Drawer									
No.	Name.	Source.	Туре.	Diatomist.	Cross Ref.	Notes.				
788		Santa Barbara, California,		Wheeler [possibly						
		United States of America		Edmund Wheeler]						
789	Rhabdonema	Long Island (probably				formerly Colon?				
	adriaticum	New York, United States								
	(arcuatum)	of America)				1000				
790		Limfiord, Denmark	Fossil	Wheeler [possibly		1869				
704	0			Edmund Wheeler]						
791	Cymatopleura solea			Wheeler [possibly Edmund Wheeler]						
792	Rhabdonema			Editiona wheelers						
192	arcualum									
793	Diatoma auceps									
794	Erased Erased					formerly Simbirsk, Russia				
795	Erased					formerly Fragilaria viviscens				
796	Synedra					Tomony i raginaria misosino				
	(tabulata crossed									
	out)									
797	Lichmophora									
	Ehrenbergii									
798	Himantidium									
	soleriolei									
799	Synedra superba									
800	Actinanthidium									
	flexellum									
801		Llanberis, North Wales								
802	Nitzschia									
902	vidovichi									
803 804	Blank	Lyakil Swadon		I Tompàro						
805		Lyskil, Sweden Odeuse Fjord	Recent	J. Tempère J. Tempère						
000		Oueuse rjord	Brackish	J. rempere						
			Water							
806	Eucyonema			J. Tempère						
	caespilosum?									

From	the written index - Lis	st of Tubes in 4th Drawer				
No.	Name.	Source.	Type.	Diatomist.	Cross Ref.	Notes.
807	Pleurosigma angulatum			J. Tempère	[403 - Not Available], 563, 564, 704	
808		Paama Island, New Hebrides	Recent Marine			
809		Paama Island, New Hebrides	Recent Marine			
810		Hog Harbour, New Hebrides				
811	Pleurosigma angulatum	Clovelly, Devon, England				
812	Erased					formerly Paama Island, New Hebrides. off weed
813		Mount Hillaby, Barbados	Fossil Marine			·
814	Auliscus coelatus	Walfish Bay (probably Walvis Bay, South Africa)	Recent Marine			
815	Navicula rhomboides	Exmouth, England				
816		North Sea		Dr. Reinhold		
817		Namagualand, South Africa				
818		Ocean Beach, Durban, Natal				
819	Grammataphora					formerly Lake Ugami, South Africa
820		Delagoa Bay, South Africa	Recent Marine			
821	Odontidium mesodon					
822		Mors, Jutland, Denmark				Cleaned S.M.? Very Good
823	Mixed Diatoms			Reverend Dingley P. Fuge		
824	Blank					
825	Inshore gatherings	Cape of Good Hope, South Africa				Fine

From	the written index - I	List of Tubes in 4th Drawer				
No.	Name.	Source.	Type.	Diatomist.	Cross Ref.	Notes.
826		Walvis Bay (probably	Recent	W. A. Firth		Ex stock?
		Walvis Bay, South Africa)	Marine			
827	Blank					
828	Blank					
829	Blank					
830	Blank					
831	Blank					
832	Blank					
833		Warri, River Niger, Nigeria	Recent Brackish Water			
834		Warri, River Niger, Nigeria	Recent Brackish Water			
835		Warri, Nigeria	Recent Brackish Water			
836		British Columbia?				
837	Diatom ooze					
838		Royal Sound, Kerguelen	Recent Marine			
839		Richmond, Virginia, United States of America	Fossil Marine			
840		Santa Barbara, California, United States of America				
841	Oyster Shell washings					
842		Birds Hill, Ind?				
843		Port Townsend, Washington, United States of America	Fossil Marine			
844		Los Angeles, California, United States of America				

From t	From the written index - List of Tubes in 4th Drawer									
No.	Name.	Source.	Type.	Diatomist.	Cross Ref.	Notes.				
845		Terribourne, Canada								
		(could be Terrebonne,								
		Oregon)								
846	Amphipleura									
0.47	pellucida									
847	Amphipleura pellucida									
848	Amphipleura									
040	pellucida									
849	peliuciua	Jacksons Paddock,	Fossil Marine							
0+3		Oamaru, New Zealand	1 OSSII WATITE							
850	Mud	Southend								
851	Mad	Totara, New Zealand	Fossil Marine							
852		Cormacks Sidings,	Fossil Marine							
		Oamaru, New Zealand								
853	Guano	Mejillones, Chile		J. Tempère						
854		New Anna??, Nova Scotia								
855		Santa Crux, Mexico								
856		Yuba Isle								
857	Erased					Used (Burma?)				
858		New Caledonia [in the								
		Coral Sea]								
859		Chincha Island								
860		Tahiti								
861		Monaco								
862		Meuloue??								
863		Pabillou								
864		Elesd, Hungary	Fossil Marine							
865						Used Diatoms				
866		Hakwia, Kenya, Africa								
867	Synedra ulna &									
	Bacillaria									
	paeadora									
868	Eunotia etc									

No.	Name.	st of Tubes in 4th Drawer Source.	Туре.	Diatomist.	Cross Ref.	Notes.
869	Hame.	Santa Monica, California,	Fossil Marine	Diatomist.	Ologgittel.	110103.
009		United States of America	FUSSII Marine			
870	Navicula vividis	Critica States of America				Small var.
871	Traviodia vividio	Joes River				Special. Fine
872		Springfield, Barbados	Fossil Marine			opediai. Time
873		Cleland, Barbados	probably Fossil Marine			
874		Florida, United States of America	Fossil Freshwater			formerly Springfield, Barbados
875		Petersburg, Virginia, United States of America	Fossil Marine			Good. formerly Springfield, Barbados
876		Oamaru, New Zealand	Fossil Marine			Level of Rock. formerly Springfield, Barbados
877		Oamaru, New Zealand	Fossil Marine			30' above mid level. formerly Springfield, Barbados
878	Erased					formerly Newcastle, Barbados
879	Blank					
880	Blank					
881		Skegness, England				Mud
882		Yarra Yarra (River), South Australia		W. A. Firth		
883		Carloro???				thro 200 ou 400
884		Bory, Hungary	Fossil Marine			Ex British Museum
885	Aulacodiscus Africanus			W. A. Firth		
886		Upper Marlboro, Maryland				
887	Arachnoidiscus Ehrenbergii	Port Townsend, Washington, United States of America	Fossil Marine			
888		Bolinon Bay, California, United States of America	Recent Marine			Off weed
889		Tarland, Aberdeen, Scotland		W. A. Firth		
890		Panoche Hills, Moreus? (probably California, United States of America)	Fossil Marine			

No.	Name.	Source.	Type.	Diatomist.	Cross Ref.	Notes.
891		Jutland, Denmark	Fossil Marine			
892		Mergui, Burma				Shell scrapings
893		Kerguelen	Recent Marine	W. A. Firth		
894	Pleurosigma, Aulacodiscus etc	Sydney, Australia				
895	Cymatopleura, Nitzschia	Cromford Pond				
896	Cymatopleura, Nitzschia	Cromford Pond				
897	Cymatopleura, Nitzschia	Cromford Pond				
898		Jacksons surface B (probably Oamaru, New Zealand)	Fossil Marine			1944 formerly Singelewsky, Russia - A. L. Brigger
899		Carilovo	Fossil Marine			ou 200
900	Arachnoidiscus	Port Townsend, Washington, United States of America	Fossil Marine			
901		Skegness, England				Mud
902	Heliopelta	Muddy Creek, Maryland, United States of America	Fossil Marine			ou 100
903	Heliopelta	Muddy Creek, Maryland, United States of America	Fossil Marine			ou 100
904	Erased					formerly Groom Road, Arachnoidiscus Ehrenbergii [Walsh]
905		Port Townsend, Washington, United States of America	Fossil Marine	W. A. Firth		
906	Isthmia nervosa, Aulacodiscus Oregonus					

From	the written index - Lis	st of Tubes in 4th Drawer				
No.	Name.	Source.	Type.	Diatomist.	Cross Ref.	Notes.
907	Biddulphia reticulata, Aulacodiscus	Dunedin, New Zealand				
908	Navicula formosa, Van Huerckia Lewisina					
909		Castel, Hungary	Fossil Marine	A. L. Brigger	978	
910		Hong Kong		W. A. Firth		
911	Blank					
912	Actinoptychus	Bory, Hungary	Fossil Marine			Ex British Museum
913	Blank					
914		Bogangoe, Aberdeen, Scotland	Fossil Freshwater			
915		Nova Scotia				?? Mixed
916		Nova Scotia				?? Mixed
917		Nova Scotia				?? Mixed
918	Navicula maculata					Pure
919	Navicula maculata, Nitzschia scalaris					
920	Rylandsia	Papakaio, Oamaru, New Zealand	Fossil Marine			
921	Rylandsia	Papakaio, Oamaru, New Zealand	Fossil Marine			Large
922		Conset, Barbados				Heavy
923		Kamischev, Russia	Fossil Marine	A. L. Brigger	953	SM
924		Dunkirk, (Ma?)				formerly Singelewsky, Russia, A. L. Brigger
925		Bend, Oregon, United States of America		A. L. Brigger		
926		Del Dessa, United States of America		A. L. Brigger		

No.	Name.	Source.	Туре.	Diatomist.	Cross Ref.	Notes.
927	Trainer	Portobello, Dunedin, New Zealand	.,,,,,	J. a. c. in a	- Cross Ron	11000
928	Surirella etc	Des Chutes River, N.C.				Large
929		Lake Pupicho, Auckland, New Zealand	Fossil Freshwater			
930		Toco, Chile	Fossil Freshwater	ex Burke		
931		Barbados	probably Fossil Marine			No. 1. Best
932		Barbados	probably Fossil Marine			2 nd Best
933		Barbados	probably Fossil Marine			thro 200 ou 300
934		Barbados	probably Fossil Marine			thro 300 ou 400
935		Barbados	probably Fossil Marine			No. 1. Best
936		Barbados	probably Fossil Marine			2 nd best ou 300
937		Barbados	probably Fossil Marine			thro 300 ou 400
938		Barbados	probably Fossil Marine			thro 300 ou 400
939		Port Townsend (?7?), Washington, United States of America	Fossil Marine	W. A. Firth		
940		Ongarato, New Zealand	Fossil Freshwater			
941		Ongarato, New Zealand	Fossil Freshwater			
942		Ongarato, New Zealand	Fossil Freshwater			
943		Ongarato, New Zealand	Fossil Freshwater			

No.	Name.	ist of Tubes in 4th Drawer Source.	Туре.	Diatomist.	Cross Ref.	Notes.
	ivallie.			Diatomist.	CIUSS Nei.	Notes.
944		Ongarato, New Zealand	Fossil			
0.45		Occasion No. 7 de la d	Freshwater			
945		Ongarato, New Zealand	Fossil			
0.10			Freshwater			
946		Ongarato, New Zealand	Fossil			
	5		Freshwater			
947	Brebissonia	Cape Cod,	Fossil			
		Massachusetts, United	Freshwater			
	<u> </u>	States of America				
948	Brebissonia	Cape Cod,	Fossil			Light
		Massachusetts, United	Freshwater			
		States of America				
949	Navicula	Leates Island,	Fossil			
	maculata	Conneticutt, United States	Brackish			
		of America	Water			
950	Chinese fish					
	stomachs					
951	Chinese fish					
	stomachs					
952	Chinese fish					
	stomachs					
953		Kamischev, Russia	Fossil Marine	A. L. Brigger	Off 923	
954	Guano	Peru			Off 1008	Fine
955		Barbados	probably	ex Burke	957	
			Fossil Marine			
956	Arachnoidiscus	Nankoori			958	
	Indicus					
957		Barbados	probably	ex Burke	Off 955	Light
			Fossil Marine			
958		Nankoori			Off 956	Light
959		California, United States		Reverend Dingley		Heavy
		of America		P. Fuge		
960		California, United States of		Reverend Dingley	977	Light
		America		P. Fuge		

From	the written index - Li	st of Tubes in 4th Drawer				
No.	Name.	Source.	Type.	Diatomist.	Cross Ref.	Notes.
961	Chinese fish					Last. Heavy
962	Chinese fish					
963	Chinese fish					
964		Panoche (probably California, United States of America)	Fossil Marine			Large
965		Panoche (probably California, United States of America)	Fossil Marine			Small
966	Navicula maculata, Navicula scalarii	St. Johns pond.	Recent Freshwater			
967		Simbirsk, Russia	Fossil Marine			
968		Stanleys Allotment			547	
969		Akita?		Watsons		
970	Aulacodiscus simulans			Ferguson		
971		Isle of Lewis				
972		Oamaru, New Zealand	Fossil Marine			
973		Oamaru, New Zealand	Fossil Marine			
974		Archangel				
975	Blank					
976	Blank					
977		California, United States of America		Reverend Dingley P. Fuge	Off 960	Light
978		Castel, Hungary	Fossil Marine	A. L. Brigger	Off 909	Fine
979	Blank					
980	Blank					
981		Bevia, South Africa		ex Charles Leslie Odam		
982		Monte Gibbio, Italy				
983		Napasima, Trinidad				
984	Polymyxos	Para River, Brazil	Recent Marine			

		st of Tubes in 4th Drawer	T	D'atamiat	0 D-(Nata
No.	Name.	Source.	Туре.	Diatomist.	Cross Ref.	Notes.
985		Valparaiso				
986		Abashiri, Japan				
987		Jacksons B. (probably	Fossil Marine			Light
		Oamaru, New Zealand)				
988	Blank					
989	Pleurosigma					
	angulatum					
990	Pleurosigma					
	angulatum					
991		Kentmere, Westmorland,	Fossil			
		England	Freshwater			
992		Welland				Mixed
993		Singelewsky, Russia	Fossil Marine			
994	Aulacodiscus	Furr, Jutland, Denmark	Fossil Marine			
	Jutlandieus					
995		Papakaio, Oamaru, New	Fossil Marine			Grovea??
		Zealand				
996		Newport, California,				Moderate
		United States of America				
997		Nutwell, Maryland, United				formerly Singelewsky, Russia - last lot
		States of America				
998		Singelewsky, Russia	Fossil Marine			
999		Hakodate, Japan	Fossil Marine			
1000		Amytyville Bay, Long				
		Island, United States of				
		America				
1001	Cyclotella					
	stelligera					
1002		Belfast, Northern Ireland				
1003	Melosira	Rustangata, New Zealand				
1004	Amphiprora alata					Pure
1005	p p 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Lake Taka Puna, New				
		Zealand				

From th	ne written index - Li	st of Tubes in 4th Drawer				
No.	Name.	Source.	Type.	Diatomist.	Cross Ref.	Notes.
1006		Toombe Bridge (Toom	Fossil			
		Bridge and Toome	Freshwater			
		Bridge), Ireland				
1007		Ananino, Russia	Fossil Marine		954	
1008	Guano	Peru				ou 200 mesh
1009		Isle of Skye				
1010		Staraya, Russia				
1011		Kola Peninsula, Russia				
1012		Klamath Falls, Oregon,	Recent			
		United States of America	Freshwater			
1013		Cherryfield, Maine, United	Fossil			
		States of America	Freshwater			
1014		Bulls Hill??, Maryland,				
		United States of America				
1015	Triceratium	Lake Waratarua				
	trifoliatum					
1016	Mastoucis	Sydney, Australia				
	biformis					
1017	Arachnoidiscus	Szakal, Hungary	Fossil Marine			
1018	Pleurosigma	Australia				
	decorum,					
4040	Nitzschia etc	Occasion Barrier Inc.	E I NA			400 th 000
1019		Conset, Barbados	Fossil Marine			ou 400 thro 300
1020	0 ' "	Conset, Barbados	Fossil Marine			Best - don't sell
1021	Coscinodiscus	Conset, Barbados	Fossil Marine			Heavy
4000	excavatus	In-a Duncia				000
1022	Lepidodiscus	Inza, Russia				ou 200
4000	elegans	Ct Lawrent France	Fassil Maning			
1023		St. Laurent, France	Fossil Marine			
1024	0	Lake Ngame, Africa	Fossil			forms only Association and the Con-
1025	Cocconeis	Port Townsend,	Fossil Marine			formerly Amphipleura pellucida
		Washington, United				
4000		States of America				farmanh. Arrahinlarina nalliraida
1026		Linton ???				formerly Amphipleura pellucida

From t	he written index - L	ist of Tubes in 4th Drawer				
No.	Name.	Source.	Type.	Diatomist.	Cross Ref.	Notes.
1027		Abbotsbury Swannery				formerly Amphipleura pellucida
1028	Gomphonema geminatum					formerly Amphipleura pellucida
1029		Dunkirk, Maryland, United States of America	Fossil Marine			
1030		Popes Creek, Maryland, United States of America	Fossil Marine			
1031		Lyons Creek, Maryland, United States of America	Fossil Marine			
1032		Powel River, Canada	Fossil Freshwater			
1033		Mors, Jutland, Denmark	Fossil Marine			Large, good
1034		Newcastle, Barbados	Fossil Marine			Good
1035	Aulacodiscus Kittoni					
1036	Aulacodiscus Kittoni					
1037		Trinidad				
1038		Newcastle, Barbados	Fossil Marine			
1039		Cleland, Barbados	probably Fossil Marine			
1040		Newcastle, Barbados	Fossil Marine			
1041		Barbados	probably Fossil Marine			Large
1042		Springfield, Barbados	Fossil Marine			
1043		Newcastle, Barbados	Fossil Marine			
1044		Barbados	probably Fossil Marine			
1045		Newcastle, Barbados	Fossil Marine			
1046		Hillaby, Barbados (probably Mount Hillaby)	Fossil Marine			
1047		Barbados	probably Fossil Marine			thro 300
1048		Springfield, Barbados	Fossil Marine			

From tl	he written index - Lis	st of Tubes in 4th Drawer				
No.	Name.	Source.	Type.	Diatomist.	Cross Ref.	Notes.
1049		Pitt River, Oregon, United	Fossil			
		States of America	Freshwater			
1050		Cambridge, Barbados	Fossil Marine			
1051		Springfield, Barbados	Fossil Marine			Very good
1052		Lompoc, California, United	Fossil Marine			Large
		States of America				
1053		Naparma??, Trinidad				
1054		Oran, Algeria	Fossil Marine			
1055		Woods Hole,				
		Massachusetts, United				
		States of America				
1056		Terrebourne, Canada (or	Fossil			
		Terrebonne, Oregon)	Freshwater			
1057	Polycistina			J. Tempère		
1058	Polycistina			J. Tempère		
1059	Polycistina			J. Tempère		
1060	Spicules			J. Tempère		
1061		Lake Nawasha, Kenya				
1062	Amphipleura pellucida					
1063	Anchors & plates					
1064	Aulacodiscus Kittoni					
1065		Toombe Bridge (Toom Bridge and Toome Bridge), Ireland	Fossil Freshwater			thro 300
1066		Tarland, Aberdeen, Scotland				
1067		Belfast, Northern Ireland				
1068	Isthmia nervosa, P. inc??					formerly Providence, Rhode Island, United States of America.
1069	Dredgings	South West Africa				
1070		Renkum, Holland				

From tl	he written index - Li	st of Tubes in 4th Drawer				
No.	Name.	Source.	Type.	Diatomist.	Cross Ref.	Notes.
1071	Biddulphia pulchella					
1072	Campylodiscus spiralis	Saxony				
1073	Melosira	Chatsworth Park, England	Freshwater			
1074	Melosira	Chatsworth Park, England	Freshwater			
1075	Melosira	Chatsworth Park, England	Freshwater			1961
1076		Moreno shale, Panoche Hills, California, United States of America				formerly Ongaroto, New Zealand
1077	Erased					formerly Ongaroto, New Zealand
1078		Ongaroto, New Zealand	Fossil Freshwater			
1079		Ongaroto, New Zealand	Fossil Freshwater			
1080		Java				Good diatoms
1081		Palos Verdes (probably Palo Verde, California, United States of America)	Fossil Marine			
1082		San Pedro, California, United States of America	Fossil or Recent Marine			
1083		Inza, Russia				thro 200
1084	Blank					
1085		Germany				
1086	Blank					
1087		Pausram, Bohemia				
1088		Kerguelen	Recent Marine			
1089		Richmond, Virginia, United States of America	Fossil Marine			
1090		Simbirsk, Russia	Fossil Marine			
1091		Lompoc, California, United States of America	Fossil Marine			

From t	he written index - I	List of Tubes in 4th Drawer				
No.	Name.	Source.	Type.	Diatomist.	Cross Ref.	Notes.
1092		Lompoc, California, United States of America	Fossil Marine			
1093		Crescent City				
1094		Vallee de Baryche, Russia				
1095		Santa Barbara				
1096		Palos Verdes (probably Palo Verde, California, United States of America)	Fossil Marine			
1097	Blank	,				
1098		Palos Verdes (probably Palo Verde, California, United States of America)	Fossil Marine			
1099		Palos Verdes (probably Palo Verde, California, United States of America)	Fossil Marine			
1100		Todd Hollow				
1101		Palos Verdes (probably Palo Verde, California, United States of America)	Fossil Marine			Good
1102		Palos Verdes (probably Palo Verde, California, United States of America)	Fossil Marine			
1103		Lompoc, California, United States of America	Fossil Marine			
1104		Georgia, Russia				
1105		Monterey (probably California)	Fossil or Recent Marine			
1106		Newport, California, United States of America	Fossil or Recent Marine			
1107		Palos Verdes (probably Palo Verde, California, United States of America)	Fossil Marine			

No.	Name.	Source.	Type.	Diatomist.	Cross Ref.	Notes.
1108		Palos Verdes (probably Palo Verde, California, United States of America)	Fossil Marine			
1109		Palos Verdes (probably Palo Verde, California, United States of America)	Fossil Marine			
1110		Palos Verdes (probably Palo Verde, California, United States of America)	Fossil Marine			
1111		Moreno shale, Panoche Hills, California, United States of America				
1112		Singelewsky, Russia	Fossil Marine		1113, 1116	Best - formerly Papakaio, Oamaru, New Zealand
1113		Singelewsky, Russia	Fossil Marine		Off 1112, 1116	formerly Kamischev, Russia
1114		Castel, Hungary	Fossil Marine			
1115		Moulton Ranch, California, United States of America	Fossil Marine			
1116		Singelewsky, Russia	Fossil Marine		Off 1113, 1112	formerly Jacksons Paddock, Oamaru, New Zealand
1117		Jacksons Paddock, Oamaru, New Zealand	Fossil Marine			
1118		Sharmans Lake???				Formerly Jacksons Paddock, Oamaru, New Zealand
1119		Florida, United States of America	Recent Freshwater			formerly Troublesome Gully, New Zealand
1120	Actinocyclus splendens					

No.	Name.	ontents of Phials in Large S	Type.	Diatomist.	Cross Ref.	Notes.
1121	Traino:	Retford Pond	Recent Freshwater	D.atomot.	Ologo Iteli	Heavy
1122		Hawkesbury River, Australia				
1123						Beginners Mixture
1124	Arachnoidiscus Ehrenbergii			ex Burke		Cleaned S.H.M.(Samuel Henry Meakin) formerly Pleurosigma Balticum not pure
1125	Surirella gemma, Pleurosigma angulatum					Very Large
1126		Monteqil, Spain				
1127		Antarctic				Tow net
1128	Asterolampra or Asteromphalus	McKittuck, California, United States of America	Fossil Marine			
1129	Mixed Test Diatoms					1950
1130		Retford Pond	Recent Freshwater			Large, good
1131		Sydney, Australia				Mixed heavy
1132		Simbirsk, Russia	Fossil Marine			formerly Polycistina Watsons
1133	Polycistina	Jeremie, Haiti				
1134	Polycistina					J. T. Normans Earth
1135	Polycistina					For Watsons slides
1136	Polycistina					For Watsons slides
1137		Eastbourne, Sussex, England	Recent Marine			
1138	Melosira arenaria					
1139		Panoche. Glous.? (probably Panoche Hills, California, United States of America				
1140		Mr. Isaacs Pond, Nova Scotia				

From t	he Written Index - C	ontents of Phials in Large S	Separate Drawer			
No.	Name.	Source.	Type.	Diatomist.	Cross Ref.	Notes.
1141	Pleurosigma formosum					Very good
1142	Coscinodiscus gracilentus etc	Trinidad		Wainwright		
1143	Pleurosigma Balticum & Surirella gemma					Mixed
1144		St. Laurent, France	Fossil Marine			Heavy
1145		Silent Pool, Shere				Good mixture
1146		Conset, Barbados	Fossil Marine			
1147	Aulacodiscus Orientalis	Hog Harbour		ex Ware		
1148	Isthmia enervis					
1149	Polycistina	Conset, Barbados	Fossil Marine			
1150		Sharks Tooth Hill, California, United States of America	Fossil Marine		1416 - Large	Fine
1151		Jeremie, Haiti	Fossil Marine			
1152		Panoche (probably California, United States of America)	Fossil Marine			400D. No good
1153		Cormacks, Oamaru, New Zealand	Fossil Marine			
1154		Cormacks, Oamaru, New Zealand	Fossil Marine			
1155	Amphipleura pellucida				1156	
1156					Off 1155	Heavy
1157	Actinocyclus Berkleyi			J. T. Norman		24 probably J. T. Normans tube number
1158	Pleurosigma angulatum, Pleurosigma Balticum etc					Mixed, Good

From t	he Written Index - Co	ontents of Phials in Large S	eparate Drawer	•		
No.	Name.	Source.	Type.	Diatomist.	Cross Ref.	Notes.
1159	Surirella spiralis	Via Gellia				
1160	Achnanthes sp.	California, United States of America				Pure
1161	Graspedodiscus mesotylus	Barbados	probably Fossil Marine			
1162	Pleurosigma Balticum					formerly Moreno shale, Panoche Hills, California, United States of America
1163		Panoche (probably California, United States of America)	Fossil Marine			
1164		Richmond, Virginia, United States of America	Fossil Marine			
1165	Gomphonema geminatum					
1166		Springfield, Barbados	Fossil Marine	Leonard		
1167	Arachnoidiscus Ehrenbergii					
1168		Dunkirk				Large
1169	Synedra capitata etc	Grosetto, Tuscany				
1170		St. Johns, New Brunswick, Canada				Large
1171	Erased					formerly Oamaru, Jacksons, New Zealand. Good
1172		Wittington Farm, Maryland, United States of America				
1173		Palos Verdes (probably Palo Verde, California, United States of America)	Fossil Marine			Good
1174		Papakaio, Oamaru, New Zealand	Fossil Marine			For sale
1175	Pleurosigma aestuarii	Skegness Beach, England	Recent Marine			

From t	he Written Index - C	Contents of Phials in Large	Separate Drawei			
No.	Name.	Source.	Type.	Diatomist.	Cross Ref.	Notes.
1176	Mixed Test Diatoms					
1177		Toome Bridge (Toom Bridge and Toome Bridge), Ireland	Fossil Freshwater			
1178	Blank					
1179	Isthmia nervosa (Lichmophora Ehrenbergii)					
1180	•	Des Chutes River, N.C.				
1181	Erased					formerly Moreno shale, Panoche Hiils, California, United States of America. Good
1182		Olive River		ex Ross (probably Robert Ross)		
1183	Surirella biseruata (gemma)	Glossop, England				(J. T. Norman erased)
1184	Surirella biseruata	Reservoir near Glossop, England	Recent Freshwater			
1185		Glossop, England		Stanley		
1186		Yarra River, Australia (probably near Melbourne)	Recent Brackish Water			
1187		Walvis Bay, South Africa	Recent Marine			
1188	Aulacodiscus, Auliscus etc	Mejillones, Chile		ex Frederick Clunie Wise		Heavy
1189	Arachnoidiscus ornatus	California, United States of America		ex Solcol		Off weed
1190	Erased					formerly Forresters Hill, Oamaru, New Zealand September 1948 for sale
1191		Forresters Hill, Oamaru, New Zealand	Fossil Marine			Poor

No.	Name.	Contents of Phials in Large S Source.	Type.	Diatomist.	Cross Ref.	Notes.
1192	Itallic.	Newcastle, Barbados	Fossil Marine	Diatomist.	CIOSS IXEI.	Notes.
1193		Forresters Hill, Oamaru,	Fossil Marine			
1193		New Zealand	1 Ossii Waliile			
1194		Forresters Hill, Oamaru,	Fossil Marine			Good
		New Zealand				
1195		Forresters Hill, Oamaru,	Fossil Marine			Good
		New Zealand				
1196	J. T. Normans mixed					
1197		Waikato River, New	Fossil			Not bad
		Zealand	Freshwater			
1198		Sharks Tooth Hill,	Fossil Marine			For sale
		California, United States				
		of America				
1199	Arachnoidiscus	Cape Town, South Africa			683, 684	
4000	ornatus					
1200	Blank Auliscus & Slic?	Palos Verdes (probably	Fossil Marine			Good
1201	Auliscus & Slic?	Palos verdes (probably Palo Verde, California,	Fossii Marine			G000
		United States of America)				
1202		Allans Farm, Oamaru,	Fossil Marine			
		New Zealand	1 occil manno			
1203		St. Laurent, France	Fossil Marine			
1204		Moulton Ranch, California,	Fossil Marine			
		United States of America				
1205		California, United States				Locality?
		of America				
1206		Australia				Fish stomachs - light
1207		Monterey (probably	Fossil or			
		California, United States	Recent			
		of America)	Marine			
1208		Palos Verdes (probably	Fossil Marine			
		Palo Verde, California,				
		United States of America)				

From t	he Written Index - C	ontents of Phials in Large \$	Separate Drawei	•		
No.	Name.	Source.	Type.	Diatomist.	Cross Ref.	Notes.
1209	Erased					formerly California, United States of America locality?
1210	Pleurosigma elongatum & Surirella striatula					
1211		San Pedro, California, United States of America	Fossil or Recent Marine			
1212	Polycistina					Good. for sale
1213	Synedra	Cromford Pond				Pure
1214		San Pedro, California, United States of America	Fossil or Recent Marine			
1215		Java	Fossil			Mixed
1216		Lake Carla, Australia				
1217		Newport, California, United States of America	Fossil or Recent Marine			
1218		Palos Verdes,Malaga Cove (probably Palo Verde, California, United States of America)	Fossil Marine			
1219		Chatsworth Park				
1220	Blank					
1221		Monterey, California, United States of America	Fossil or Recent Marine			
1222	Blank					
1223		Hawkesbury River, Australia				
1224		Newport Beach, California, United States of America	Fossil or Recent Marine			

No.	Name.	ontents of Phials in Large S Source.	Type.	Diatomist.	Cross Ref.	Notes.
1225	Traine.	Palos Verdes (probably Palo Verde, California, United States of America) 6A??	Fossil Marine	Diatomieti	Gross Ron	
1226		Papakaio, Oamaru, New Zealand	Fossil Marine			
1227		Jacksons (probably Oamaru, New Zealand)	Fossil Marine			formerly Cherryfield, Maine, United States of America
1228	Blank					
1229		Loch Cuithri???, Isle of Skye				
1230		Loch na Cuilc, Isle of Lewis				Very fine diatoms
1231	Surirella constricta etc	New Zealand	Fossil Freshwater			Good
1232	Blank					
1233	Auliscus & Triceratium	Sydney, Australia		ex Ross (probably Robert Ross)	Off 1345	Light. formerly Jacksons Paddock, Oamaru, New Zealand
1234		Illawarza Lake, Australia		,		
1235		Carlova				Best
1236	Stephanodiscus Niagarae					
1237		Jaen, Spain				
1238		Moron, Spain	Fossil Marine			
1239		Osuna, Spain	Fossil Marine			
1240		Cordoba, Spain				
1241		Cromford Pond				Small
1242	Pleurosigma Balticum	Hunstanton				
1243	Synedra melosira etc	Wainfleet, Skegness, England				

From t	he Written Index - C	ontents of Phials in Large S	eparate Drawer	•		
No.	Name.	Source.	Type.	Diatomist.	Cross Ref.	Notes.
1244	Kittonia Hanna	Moreno shale, Panoche Hills, California, United States of America				
1245	Pleurosigma decorum	Australia				Pure
1246	Shale	Moreno				Fine
1247		Weir near Via Gellia				
1248		Lyons Creek, Maryland, United States of America	Fossil Marine			Very good
1249		Groom Road, Maryland, United States of America				
1250	Erased					formerly Groom Road, Maryland, United States of America
1251		Maryland, United States of America		Dr. Sassons		
1252		Muddy Creek, Maryland, United States of America	Fossil Marine			
1253	Biddulphia Edwardsii			Nielson		Pure
1254	Small mixed diatoms		Marine			
1255		Carburton Dam				
1256		Moreno shale, Panoche Hills, California, United States of America				
1257	Pleurosigma angulatum etc			Pilling		
1258	Arachnoidiscus hybridus	Agar-agar				
1259	Hyalodiscus subtilis			Nielson		
1260		St. Laurent, France	Fossil Marine			
1261	Sand	Castel, Hungary	Fossil Marine			Heavy
1262	Sand	Castel, Hungary	Fossil Marine			Heavy

From tl	he Written Index - Co	ontents of Phials in Large S	Separate Drawer	•		
No.	Name.	Source.	Type.	Diatomist.	Cross Ref.	Notes.
1263		Singapore Harbour	Recent			
			Marine			
1264		Singapore Harbour	Recent			
			Marine			
1265		Marufa, Spain				
1266		Szakal, Hungary	Fossil Marine			Mostly sand
1267	Navicula oblonga			Miss Mary Louise Renton		Pure
1268		Newport Beach,	Fossil or			
		California, United States	Recent			
		of America	Marine			
1269	Aulacodiscus Mullerii	Maclean River, Australia				
1270		Cherryfield, Maine, United	Fossil			Fine
		States of America	Freshwater			
1271		Szakal, Hungary	Fossil Marine			
1272		Castel, Hungary	Fossil Marine			
1273		St. Laurent, France	Fossil Marine			
1274	Odontidium			Stanley		
	hyernale					
1275		Delagoa Bay, South Africa	Recent Marine			Off weeds
1276		South Africa	Manne			Dredging
1277		Mamaqua Land, South				Dreaging
1277		West Africa				
1278		Portland, Oregon, United	Fossil			
		States of America	Freshwater			
1279		Mors, Jutland, Denmark	Fossil Marine			Fine
1280	Scoliopleura	·				
	tumida					
1281				Reverend Dingley P. Fuge		Good
1282		Oran, Algeria	Fossil Marine	Ĭ		
1283	Achnanthes	Hunstanton				

No.	Name.	ontents of Phials in Large S	Type.	Diatomist.	Cross Ref.	Notes.
1284	Pleurosigma		Турол	Diatomioti	Groce Ren	1101001
1207	strigosum					
1285	Pleurosigma					
	Spencerii					
1286		Paama Island, New	Recent	ex Frederick		Ap 1945
		Hebrides	Marine	Clunie Wise		'
1287		Panoche (probably	Fossil Marine			
		California, United States				
		of America)				
1288	Blank					
1289	Pleurosigma					
	prolongatum					
1290	Nitzschia subtilis					
1291	Synedra etc	Cockerham				
1292	Pleurosigma					
	angulatum &					
	Pleurosigma					
	attenuatum					
1293	Mixed					
	Pleurosigma &					
1001	Surirella fatuosa			344 : : : 14		N o
1294		Trinidad		Wainwright		No.2
1295	0	Retreuch Quarry, Trinidad		Wainwright		
1296	Surirella spiralis	S. Tyrol				
1297	Blank					
1298	Erased					formerly Palos Verdes (probably Palo Verde, California, United States of America)
1299	Erased					formerly Palos Verdes (probably Palo Verde,
						California, United States of America)
1300	Blank					
1301		Newcastle, Barbados	Fossil Marine			Good
1302	Nitzschia					
	longissima					

From t	he Written Index - C	ontents of Phials in Large S	Separate Drawer	•		
No.	Name.	Source.	Type.	Diatomist.	Cross Ref.	Notes.
1303		Moulton Ranch, California, United States of America	Fossil Marine			
1304		Panoche Hills, California, United States of America	Fossil Marine			
1305		Panoche Hills, California, United States of America	Fossil Marine			
1306		Panoche Hills, California, United States of America	Fossil Marine			
1307		Monterey, California, United States of America	Fossil or Recent Marine			
1308	Blank					
1309		Coulinga				
1310		Panoche Hills, California, United States of America	Fossil Marine			
1311		Point Dune, California, United States of America				
1312	Pleurosigma formosum	Hunstanton				
1313	Amphora ovalis					
1314	Amphipleura Lindheimeri					
1315	Amphipleura Lindheimeri					
1316	Terpsinoe musica					
1317		Playa St. Fe, Cuba				
1318		Playa St. Fe, Cuba				
1319		San Pedro, California, United States of America	Recent Marine			
1320	Coscinodiscus triceratum	Melbourne, Australia				

From tl	ne Written Index - Co	ontents of Phials in Large S	Separate Drawer	•		
No.	Name.	Source.	Type.	Diatomist.	Cross Ref.	Notes.
1321	Triceratium favus, Eupodiscus radiatus, Auliscus	Florida, United States of America	Recent Freshwater			
1322	Nitzschia scalaris					
1323	Nitzschia scalaris	Herring River				
1324	Cymatopleura mexicana etc	Santa Cruz, Mexico				
1325	Gomphonema geminatum					
1326	Diatoma	Michigan				Pure
1327	Navicula Rhomboides	Florida, United States of America	Recent Freshwater			
1328	Navicula serians	Florida, United States of America	Recent Freshwater			
1329	Campylodiscus spiralis	Redondo Beach, United States of America	Fossil Marine			Pure
1330		Nova Scotia				
1331		Los Angeles, California, United States of America				City tap water
1332		Playa del Rey, California, United States of America	Brackish			
1333	Gephyria, Lichmophora, Arachnoidiscus	Balbao Beach, California, United States of America	Recent Marine			
1334		Shirebrook Reservoir				
1335	Stephanodiscus astrae	Klamath Falls				
1336						Challenger Expedition
1337		Hungary	Fossil Freshwater			Small diatoms
1338	Guano			Carter		

No.	Name.	ontents of Phials in Large Source.	Type.	Diatomist.	Cross Ref.	Notes.
1339	Meridon circulare		1,950.	Cecil Charles Swatman	C. C.C. Italia	Cleaning
1340	Auliscus	Newport Beach	Fossil or Recent Marine	Owatmen		Good
1341	Auliscus	Newport Beach	Fossil or Recent Marine			Good
1342	Eunotia	Waikato River, New Zealand	Freshwater			
1343		Moliro Katango		ex Rheinhold		
1344		Hydrosilicon Flat, Australia		ex Ross (probably Robert Ross)		
1345		Hydrosilicon Flat, Australia		ex Ross (probably Robert Ross)	1233	
1346		Port Hacking		ex Ross (probably Robert Ross)		
1347		Port Hacking		ex Ross (probably Robert Ross)		
1348	Pinnularia etc	Waikato River, New Zealand	Freshwater	,		
1349		Panoche (probably California, United States of America)	Fossil Marine			
1350		Panoche (probably California, United States of America)	Fossil Marine			
1351		Panoche (probably California, United States of America)	Fossil Marine			

From t	he Written Index - C	ontents of Phials in Large	Separate Drawer			
No.	Name.	Source.	Type.	Diatomist.	Cross Ref.	Notes.
1352		Panoche (probably California, United States of America)	Fossil Marine			
1353	Navicula Smithii	Australia				
1354		Central Mexico				
1355	Stephanodiscus Niagarae (asetriae)	Mexico				
1356		Mexico				
1357		Java				AY. 12.
1358	Polycistina	Java				Used - for Watsons
1359		Totara, Oamaru, New Zealand	Fossil Marine			
1360		Troublesome Gully, Oamaru, New Zealand	Fossil Marine			
1361		Marmorito, Italy	Fossil Marine			
1362		Jacksons, Oamaru, New Zealand	Fossil Marine			
1363		Allans Rock, Oamaru, New Zealand	Fossil Marine			
1364	Navicula lata					
1365		Bains Lower, Oamaru, New Zealand	Fossil Marine			
1366	Erased					formerly Troublesome Gully, Oamaru, New Zealand
1367	Tooth Paste	Greenville, Conneticutt, United States of America				
1368		Cormacks Sidings, Oamaru, New Zealand	Fossil Marine			
1369	Surirella constricta, Stauroneis phoenicenteron					

From t	he Written Index - C	ontents of Phials in Large S	Separate Drawei			
No.	Name.	Source.	Type.	Diatomist.	Cross Ref.	Notes.
1370	Cymbella, Navicula cuspidata etc	Lagoon, New Zealand				
1371		Edendale, New Zealand		Copping		
1372	Navicula gongotaha	Brakes, New Zealand		Copping		
1373		Commonwealth B., Adelie Land				
1374		Commonwealth B., Fordham				
1375		Commonwealth B., Fordham				
1376		Sydney, Australia				Light Mixed
1377		Sydney, Australia				Washings
1378	Blank					
1379		Jacksons (probably Oamaru, New Zealand)	Fossil Marine	Copping		
1380	Pleurosigma angulatum.					Pure, wants cleaning
1381	Pleurosigma angulatum					Best
1382	Pleurosigma angulatum					
1383	Pleurosigma angulatum & Nitzschia sigma					
1384	Nitzschia sigma					Pure
1385	Surirella gemma					Pure
1386	Surirella gemma with some Pleurosigma angulatum					

1387 <i>Pl</i> ar	lame. Pleurosigma Ingulatum & Iitzschia sigma	Source.	Туре.	Diatomist.	Cross Ref.	Notes.
ar Ni	ngulatum &				010331101.	110103.
Ni						
	litzschia sigma					
1388						
		Retford Pond	Recent			
			Freshwater			
	Polycistina					
	Polycistina					
1391		Oamaru, New Zealand	Fossil Marine	J. A. Long		Mixed
1392		Dunkirk				thro 50 ou 300
1393		Cherryfield, Maine, United	Fossil			For sale
4004		States of America	Freshwater			
	Blank					
	Pleurosigma o			Pilling		
	Spencerii &					
	Pleurosigma etc					Divis
	Scoliopleura umida					Pure
1397	umua			Dilling		Mixed
	Pleurosigma			Pilling		Good
	ormosum					Good
1399	Dilliosulli	Singelewsky, Russia	Fossil Marine			For sale
	Surirella tumida	Welland	FUSSII Marine			roi sale
	R Pleurosigma	Vveilariu				
	ngulatum					
1401	gaiataiii	Dunkirk				Large. for sale
1402		Dunkirk				thro 100 ou 200
1403		Australia				Fish stomach
1404		Welland				Wants cleaning
	sthmia nervosa					Pure
1406		Aberdeen, Scotland	Fossil			
			Freshwater			
1407		Des Chutes River, N.C.				
	Polycistina	, -				
	Polycistina					

From t	he Written Index - C	ontents of Phials in Large S	Separate Drawei	•		
No.	Name.	Source.	Type.	Diatomist.	Cross Ref.	Notes.
1410	Polycistina					
1411	Polycistina					
1412	Polycistina					
1413		Hakodate, Japan	Fossil Marine			thro 200 ou 300 sale
1414		Muddy Creek, Maryland, United States of America	Fossil Marine			
1415			Fossil Freshwater			Good
1416		Sharks Tooth Hill, California, United States of America	Fossil Marine		1150	Sale
1417		Loch Cuithir				
1418	Surirella gemma	Llanfairfechan, North Wales, United Kingdom				Pure
1419		Palos Verdes (probably Palo Verde, California, United States of America)	Fossil Marine			Good for sale as No 2
1420		Shell Island, Llanfairfechan, North Wales, United Kingdom				
1421		Llanfairfechan Marsh, North Wales, United Kingdom				
1422	Synedra tabulata					
1423		Port Glenome, Ireland	Fossil Freshwater			
1424	Synedra ulna					
1425		Cockersham Pond				
1426		Loch Authin, Isle of Skye??				Blue diatom earth
1427		Fairy Bridge, Isle of Skye	Recent			Needs cleaning
1428		Fairy Bridge, Isle of Skye	Recent			Needs cleaning
1429		St. Laurent, France	Fossil Marine			Good

From t	From the Written Index - Contents of Phials in Large Separate Drawer					
No.	Name.	Source.	Type.	Diatomist.	Cross Ref.	Notes.
1430	Minute Navicula Kieselguhr (diatomite)					
1431		Wilmont, New York, United States of America	Fossil Freshwater			Partly cleaned
1432		Wilmont, New York, United States of America	Fossil Freshwater			Cleaned ready for use
1432 (a)		Wilmont, New York, United States of America	Fossil Freshwater			Partly cleaned

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