

“The Morphological Laboratory”, 1883 - 1884

of

John Ernest Ady, 1857 - 1918

Heinrich Hensoldt, 1856 - ca. 1918

by Brian Stevenson and Steve Gill

The “Morphological Laboratory” was a scientific sales partnership formed in 1883 by Heinrich Hensoldt and John Ernest Ady. Hensoldt, a son of microscope manufacturer Moritz Hensoldt of Wetzlar, was an accomplished preparer of thin-sectioned minerals for the microscope/polariscope. Ady was experienced in several aspects of microscopy, and with scientific writing and drawing illustrations. Ady was at the time an editor of *Studies in Microscopical Science*, along with Arthur C. Cole. A short-lived partnership was also in effect with mounter Alfred Doherty. It is reasonably certain that some of the mineral slides sold under the label of The Morphological Laboratory were made by Hensoldt, while others were likely produced by Ady and Doherty. Other makers, such as Cole, may also have provided slides to the company. The lives of Hensoldt and Ady have been described in publications in the *Quekett Journal of Microscopy*, and will also be forthcoming on MicScape.



Figure 1. Examples of microscope slides sold by The Morphological Laboratory. Hensoldt produced lapidary slides for the Morphological Laboratory until he left England ca. 1884, so he may have made the leftmost slide of talc/mica/soapstone. “Mr. Rudler” was probably geologist William F. Rudler. The other illustrated slides were probably made by Ady, Doherty or contract mounters. There is no evidence to connect R.G. Mason with The Morphological Laboratory, so Mason’s trade label on the next-to-the-right-end slide is probably from a re-sale. The center slide, a section of human parietal bone, was advertised in February, 1884 for 10 pence (see Figure 4).



Figure 2. Left, a thin-sectioned mineral microscope slide prepared by Heinrich Hensoldt. Right, the handwriting on the labels of this mineral thin-section slide is the same as on the three right-most slides of Figure 1 (above). This may be Ernest Ady's handwriting.

Ady and Hensoldt planned, among other things plans, to produce a collectable work of “etched diagrams” and “specimens made by Hr. Hensoldt”. Significantly, this collection of drawings and microscope slides would be made available by “subscription, payable in advance.” In other words, Ady and Hensoldt collected their money in advance, with the promise that they would deliver at a later date.

The December, 1883, *Hardwicke's Science-Gossip* included an editor's report on Hensoldt and Ady's new business. “A New Morphological Institution.- We understand that a Morphological Laboratory is about to be instituted in London by Mr. John Ernest Ady, whom most of our readers will remember as the author of Vol. I. of the ‘Studies in Microscopical Science,’ nominally edited by Mr. Arthur C. Cole, the well-known object mounter, who prepared the slides in illustration of that work. At present the laboratory is limited to the production of microscopical preparations, and especially of rock and mineral sections, in which latter Mr. Ady has the co-operation of perhaps the most efficient preparer in Great Britain, Mr. H. Hensoldt. Messrs. Ady and Hensoldt propose to issue a series of rock sections, with explanatory etched diagrams and letterpress descriptions, early next January. No fewer than twenty-four exquisitely prepared specimens, accompanied with copious notes and sketches, and issued fortnightly, will be furnished to subscribers for a sum of a guinea and a half. As the supply of the work can be but limited to about one hundred copies, we strongly recommend our readers to make an early application. This limitation we hear is compulsory, because the labour requisite for the production of a greater number of specimens cannot be secured. The laboratory will include an educational, and an exchange and mart department. For further information, we refer our readers to 7, Machell Road, Nunhead, London, S.E.”

MORPHOLOGICAL LABORATORY,

7, Machell Road, Nunhead, London, S.E.

Under the direction of Messrs. ADY and HENSOLDT.

This Laboratory will be divided into three Departments as follows:—

I.—EDUCATIONAL DEPARTMENT.—A course of 12 Lessons on “*How to Work with the Microscope,*” Mounting Objects, Section Cutting, and Drawing. Fee £2 2s.

II.—PUBLICATION DEPARTMENT.—**Studies in Microscopical Petrography.**—To be issued on the 7th of January, 1884, approximately, and fortnightly thereafter; a series of 24 exquisitely prepared rock and mineral sections, with accurate etched drawings and descriptions, at a subscription in advance of £1 11s. 6d. per 24 fortnightly issues, or of 15s. 9d. per 12 numbers.

N.B.—As the slides for this series are made by special and elaborate machinery, we can safely defy competition in excellence of production.

A SAMPLE SLIDE MAY BE PROCURED FOR 1s. 6d.

LIST OF A FEW SECTIONS TO BE ISSUED.

- 1.—**Eozoon**, Led Beg, Sutherland, discovered for the first time in Great Britain. By permission of Professor HEDDLE.
- 2.—**Paulite-Diorite**, Banff. By permission of Dr. HEDDLE. A unique specimen, cannot be obtained from any other source.
- 3.—**Nephelinite**, Katzenbuckel. A magnificent rock made classical by Rosenbusch.
- 4.—**Anamesite**, Craiglockhart Hill, Edinburgh. Described by Professor Geikie.
- 5.—**Amazonstone**, Pennsylvania. A beautiful object for the polariscope.
- 7.—**Luxullianite**, Cornwall. A most remarkable rock, the subject of one of Professor BONNEY's researches.
- 9.—**Eklogite**, (reddish garnets and grass-green smaragdite) from the celebrated locality of Eppenreuth.
- 15.—**Staurolite-Schist**, Belhelvie, Aberdeen.
- 17.—**Minette**, Swindale Beck, Westmoreland, the Salefield Minette of J. CLIFTON WARD.
- 20.—**Blast-furnace Slag**, Sheffield, full of magnificent brush-like endomorphs (*see Vogelsang's Works*).
- 21.—**Tachylite**, Schiftenberg, Giessen, a beautiful yet typical example.
- 23.—**Leucite-Lava**, Capo-di-Bove, Rome, the most characteristic lava of its variety.

The others include exquisitely beautiful and typical forms of **Eisenglimmer - Dolerite, Pitchstone, Actinolite, Gabbro, Oordierite-Gneiss, Foraminiferous Limestone, Flint-Conglomerate** (Puddingstone) with organisms, **Dolerite, Sandstone and Pikrite.**

III.—EXCHANGE AND MART DEPARTMENT.—For the sale and exchange of Microscopical and other Preparations (Skeletons, &c.), Instruments, Books, &c.

Anatomical Preparations.—Articulated Skull of *Cod-fish* on stand with bones accurately named, £1 1s. Skeletons of Fish, Amphibians, Reptiles, Birds and Mammals.

Sample Slides now ready.—L. S. and T. S. **Human Bone**, on one slip, mounted by the “*laccic method of occlusion,*” in Canada balsam, to show Lamellar systems, Lacunæ, Canaliculi, etc. Price 1s. Slide of **Human Flat Bone** (*Parietal or Frontal*), V. S., to show the Vitreous layers, &c., mounted as above, 10d. each.

L. S. or T. S. **HUMAN TEETH**, mounted as above to show dental tubuli, so-called interglobular spaces, etc.; one hard section on each slip; price 1s. to 1s. 6d. each.

Microscopical Drawings, etc., sketched accurately from nature. Estimates for Chromotypes, etc.

Illustrated and Descriptive Catalogues in course of preparation.

For further Particulars apply to the Directors, 7, Machell Road, Nunhead, London, S.E.

Figure 3. January, 1884 Hardwicke's Science-Gossip advertisement from Hensoldt and Ady, announcing their new Morphological Laboratory. The given address, 7 Machell Road, was Hensoldt's home.

The January, 1884, issue of *Hardwicke's Science-Gossip* reported, “*Microscopy Sample Slides.—We have received two of the slides prepared by Messrs. Ady & Hensoldt, as advertised in our columns. One of them is a double object, containing both a longitudinal and a transverse section of the compact tissue of the middle of shaft of the human humerus, mounted in gum and Canada balsam; and the other a section of the Eozoonal white Serpentine, recently discovered by Dr. Heddle in Sutherlandshire. These specimens approach the best style of mounting we have yet seen, and if the new Morphological Laboratory continues to send forth slides of this character it cannot fail soon to command general attention*”. The human bone slide was advertised as a “*sample slide*” in the partnership's January advertisement (Figure 3). The “*Eozoonal white Serpentine*” was also to be the first specimen provided to subscribers of *Microscopical Petrography* (see below).

The journal *Nature* was also supportive of the project, writing on January 24, that “*Studies in Micrographic Petrography. (Ady and Hensoldt, 7, Machell Road, Nunhead, S.E.) The growing interest taken in this country in the study of petrography is well shown by the rapidly increasing facilities offered for the prosecution of this branch of science. The most recent of these has just appeared under the foregoing title. It is to consist of the issue of two dozen microscopic slides of characteristic minerals and rocks prepared by Mr. Hensoldt of Wetzlar, with illustrative drawings and descriptive text by Mr. J.E. Ady, who is already favourably known for his microscopic preparations of British rocks. The first number of the 'Studies' is devoted to 'Eozoon, Led Beg, Sutherland'. It contains two*

lithographic plates illustrative of the so-called eozoonal structure of a limestone in the north of Scotland, and four pages of descriptive text. The author gives a brief reference to the literature of the subject, and an account of the microscopic structure of some portions of the limestone in question, which he regards as akin to that of the Canadian Eozoon, but as being of inorganic origin. We are afraid his sketch is too slight to have much weight in the controversy regarding Eozoon. His effort to extend the opportunities of petrographical investigation, however, and to popularise this fascinating but difficult branch of geology is praiseworthy, and we hope that his 'Studies' may meet with such success as may induce him to continue them".

February's *Hardwicke's Science-Gossip* noted, "Petrographical Studies.- We have received No. 1 of Messrs. Ady & Hensoldt's new publication bearing the above title. It deals with the specimen of Calciferous Serpentine sent out as a slide, to which reference was made in our last number, commonly called eozoonal. A brief, but exceedingly clear abstract is given of the opinions of Carpenter and others as to the organic character of Eozoon, on the one hand, and of Mobius on the other. The Sutherlandshire Eozoon lends considerable evidence to the mineralogical theory of Professors King, Rowney, and Mobius. The sketches accompanying the part are very carefully drawn and executed".

The February issue also included two advertisements from The Morphological Laboratory, providing more details on the subscription series and an apparently novel type of microscopical cabinet (Figure 4). The advertisement listed several prominent names who had already paid their subscriptions. Due to high levels of interest in the series, Ady and Hensoldt increases the number of subscriptions from 100 to 150.

STUDIES IN MICROSCOPICAL PETROGRAPHY.

A series of 24 exquisitely prepared rock and mineral sections, with accurately etched drawings, and clearly lithographed descriptions, at a Subscription in advance of £1 11s. 6d. per 24 fortnightly issues, or of 15s. 9d. per 12 numbers.

N.B.—As the Slides for this Series are made by special and elaborate machinery, we can safely defy competition in excellence of production.

A Sample Slide may be procured for 1s. 6d.

In consequence of the large number of applications for this work, arrangements have been made for the supply of another set of 50 copies.

The following names have recently been added to the List of Subscribers:—His Grace THE DUKE OF ARGYLL, K.G., F.R.S., &c., &c., The Rev. Dr. H. W. CROSSKEY, F.G.S., &c., &c., The Rev. Professor T. WILTSHIRE, F.G.S., &c., &c., Professor M. FORSTER HEDDLE, M.D., &c., &c., Professor W. FREAM, H. TURTON NORTON, Esq., G. W. SHRUBSOLE, Esq., F.G.S., &c.

List of Sections to be issued.—Eozoon, Nephelinite, Paulite-Diorite, Anainesite, Amazonstone, Luxullianite, Eisenglimmer-Dolerite, Eklogite, Puddingstone, Gabbro, Pitchstone, Foraminiferous Limestone, Actinolite, Staurolite-Schist, Dolerite, Minette, Pikrite, Porphyritic Dolerite, Blast-Furnace Slag, Tachylite, Cordierite-Gneiss, Leucite-Lava, Sandstone.

Other Sample Slides now ready.—Globigerina ooze (*Challenger*). The best slide of its kind in the market, 8d. Doubly-stained plant sections in great variety, 8d. each. Sections to show fructification of Lichens, and other cryptogams, 10d. each. L. S. and T. S. Human Femur on one slide, 1s. Parietal Bone, 10d.

Microscopical Drawings, &c., either etched or highly finished in water colours, in illustration of author's papers.

Illustrated and Descriptive Catalogues in course of Preparation. Catalogue of Rock Sections now ready.

For further particulars apply to

**MESSRS. ADY AND HENSOLDT, The Morphological Laboratory,
7, Machell Road, Nunhead, London, S.E.**

THE MICROSCOPICAL CABINET OF THE FUTURE.

A MARVEL OF ECONOMY AND UTILITY.

For full particulars apply to "The Inventor,"

**THE MORPHOLOGICAL LABORATORY,
7, Machell Road, Nunhead, London, S.E.**

Figure 4. Advertisements from Hensoldt and Ady's business, February, 1884 issue of *Hardwicke's Science-Gossip*. The structure of Hensoldt's 'Cabinet of the Future' is not known.

The advertisement mentioned that The Morphological Laboratory would also provide "double-stained plant sections in great variety" and "sections to show fructification of Lichens, and other cryptogams".

At this same time, Ady formed a partnership with Manchester slide-maker Alfred Doherty, and, beginning in March, began a series similar to the petrographical series. Doherty was renowned for his double-stained botanical section slides. One of the first specimens he provided to the Ady and Doherty series was of the lichen *Physcia stellaris*. Thus, it is likely that some botanical slides offered by Ady and Hensoldt were produced by Doherty.

The progress, and demise, of the *Studies in Microscopical Petrography* can be followed in subsequent issues of *Hardwicke's Science-Gossip*:

March, 1884: "*Petrographical Studies*.- We have received two exquisitely prepared slides illustrative of this series, now being issued by Messrs. Ady & Hensoldt. One is a section of Nephelinite, from the Odenwald, perhaps the most remarkable of all volcanic rocks, for its beautiful appearance under the polariscope. The other is a section of Amazon stone (a green feldspar) from America. Both slides are accompanied by terse, but accurately written, descriptions. A new and valuable feature in this work is the series of hand-tinted plates illustrating the essays, which enable a student easily to verify the various mineral constituents of each specimen".

April, 1884: "*Petrographical Studies*, by Messrs. J.E. Ady and H. Hensoldt. The last two parts of this valuable work, from the exquisite neatness of the lithographed text, and the carefulness with which the plates have been coloured, indicate the intention of the authors to give the world a really good and useful production. The objects figured and described are 'Paulite-Diorite', from Banff, Scotland, magnified twenty diameters; and 'Pikrite', from Inchholm, Firth of Forth, magnified thirty diameters. The slides sent out with these papers are, of course, specimens of the rocks themselves, and they are cut and mounted in Mr. Hensoldt's best style of workmanship. Mr. Ady's 'Popular Studies in Comparative Histology', in which he is assisted by Mr. A.J. Doherty, of the Victoria University, Manchester, commenced on March 10th."

May, 1884: "*Petrological Studies*.- The last two slides sent out from Messrs. Ady & Hensoldt's morphological laboratory fully sustain the high character which these petrological studies have already earned among geologists and mineralogists. The first is a specimen of Pitchstone, from the Isle of Arran, and is accompanied by a gracefully-written and very interesting essay, with a coloured plate showing the composition of the mineral as it appears when x 150, and a detailed explanation of each substance. The second slide is a beautifully-prepared section of Anamesite, from Craiglockhart, Scotland. The physiological preparations have been commenced, one showing a section of the common lichen (*Physcia stellaris*) through a mature apothecium, plainly reveals both brown spores and green conidia. It is a very striking object, and of great value to the botanical student."

July, 1884: "Mr. J.E. Ady writes to say that owing to certain differences betwixt himself and his colleague, Mr. Hensoldt (which we cannot enter into here), he begs the indulgence of the subscribers until suitable arrangements can be made for continuing the *Petrological Studies*."

August, 1884: "Mr. A.J. Doherty requests us to inform our readers that he has withdrawn from his connection with Mr. J.E. Ady, and that none of the slides accompanying the 'Popular Studies in Comparative Histology', with the exception of the sections of *Physcia stellaris* and *Rosa canina*, will be prepared by him".

and

"*Petrological Studies*.- Mr. J.D. (sic) Ady has issued another part of these *Studies*, dealing with the Dolorite of Whitwick, the Olivine-Serpentine of Saxony, and the Luxulyanite of Cornwall. It is illustrated by three admirably drawn plates, and the text is turned out with the usual neatness and finish."

The magazine made no specific mention of the *Petrological Series* after that. However, the February, 1885, *Hardwicke's Science-Gossip* noted that Ady was providing what may have been substitutes for the mineral slides, "We have received from Mr. J.E. Ady, an additional issue of his able papers, entitled 'Deep Sea Soundings,' illustrated. Mr. Ady also offers what he calls 'Optional Slides' to his subscribers". If the *Hardwicke's Science-Gossip* reports are a complete description, then Hensoldt provided only 7 of his 24 promised specimens. Whether Ady completely fulfilled the subscriptions is not clear, nor is it known whom he found to prepare the additional slides described in August, 1884.

With over 100, possibly as many as 150, subscribers who pre-paid nearly £2 each, there may well have been a considerable number of angry customers in England.

Hensoldt had fled the country. He resurfaced in Cedar, Texas, U.S.A., a small, rural town that was about as far as possible one could move from London. Cedar had a large population of recent German immigrants, and Hensoldt taught their school. Through the next three decades, Hensoldt lived a remarkable (and shady) life as an instructor at Columbia University, lecturer on the Indian subcontinent, quack physician, and bigamist many times over, eventually disappearing from records in 1917 while the FBI was investigating him for espionage.

Ady involved himself with several further microscopy and geology projects. During the 1890s, he changed his professional name to Ernest Howard Adye. That was probably to distance himself from his elder brother, who became notorious for providing illegal abortions and causing at least one woman's death.

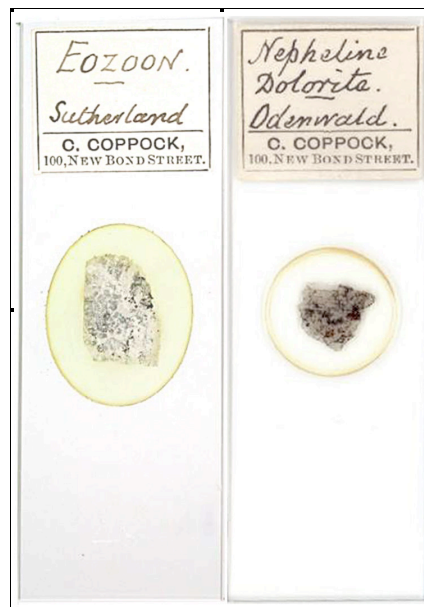


Figure 5. Charles Coppock was a managing partner of R. & J. Beck, resigning from that company in early 1883 to form his own optical business. He sold outsourced microscope slides under his own name. These two slides of thin-sectioned rocks bear strong similarities to those produced by Hensoldt. The specimens, Eoozoan from Sutherland and Nepheline Dolorite from Odenwald, were also sold as part of Hensoldt and Ady's 'Studies in Microscopical Petrography'.

This and other essays on early microscopy can also be read at <http://microscopist.net>

Acknowledgements

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Resources

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