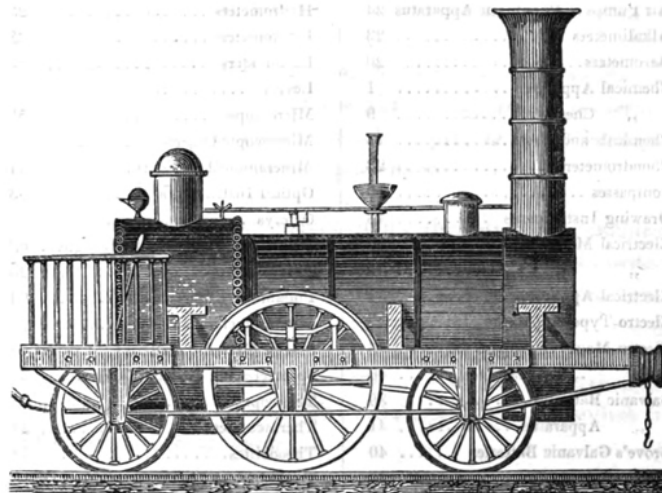


Philosophical Instruments in the Early Victorian Years: The 1840 Edward Palmer Catalogue of Microscopes and other Equipment and Supplies

by Brian Stevenson, Kentucky, USA

Edward Palmer was a relatively minor figure in microscopy. He operated a natural philosophy (i.e. scientific) shop in London during the 1830s-40s. He was probably the master with whom William Henry Thornthwaite served his apprenticeship (Thornthwaite later formed the optics company of Horne, Thornthwaite and Wood). But Palmer is included in this series of biographical essays because he issued an extensive catalog of his wares in 1840, which is presently the earliest identified, freely-accessible sales catalog of microscopical apparatus (available from Google Books, and from links at <http://microscopist.net>). Palmer's catalog provides important insights into what sorts of microscopes and other items were available to scientifically inclined Englishmen during the early Victorian era.

**PALMER'S
NEW CATALOGUE,
WITH
THREE HUNDRED ENGRAVINGS OF APPARATUS,
ILLUSTRATIVE OF
CHEMISTRY, PNEUMATICS, FRICTIONAL & VOLTAIC ELECTRICITY,
ELECTRO MAGNETISM, OPTICS, &c. &c.
MANUFACTURED AND SOLD BY HIM
At 103, NEWGATE STREET, LONDON.**



**WORKING MODELS OF STEAM ENGINES AND ALL KINDS
OF MACHINERY MADE TO DRAWINGS.**

LABORATORIES FITTED UP ON A LARGE OR SMALL SCALE.

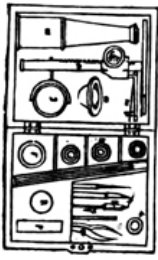
LONDON:

PRINTED BY W. GILBERT, SALTERS-HALL COURT, CANNON STREET.

1840.

Entered at Stationers' Hall.

Figure 1. Cover of Edward Palmer's 1840 catalog.

A**MICROSCOPES, &c.**

Gould's Improved Compound Microscope, in case, with apparatus, complete, £1. 15s.

This Microscope is recommended to the naturalist, mineralogist, and botanist, for its extreme portability and high magnifying power, being sufficient to discover the most minute animalculæ, seed vessels, &c. It has also the uses of the single, compound, opaque, and aquatic Microscopes.

Fig. 253.

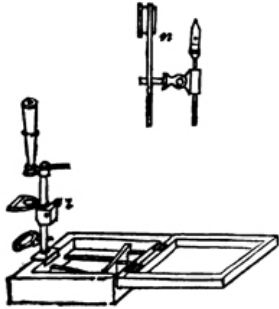


Fig. 254.
Gould's Microscope as set up for use.

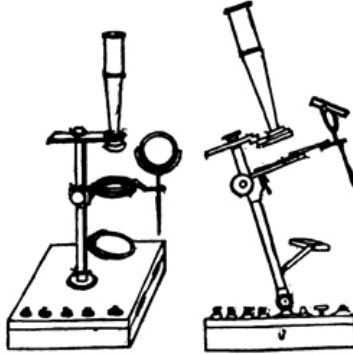
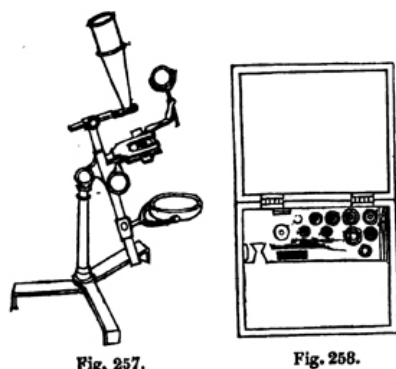


Fig. 255. Larger improved Compound Microscope, containing in addition to the above, condenser & silver speculum for opaque objects, £3. 3s.

Fig. 256. Third-size ditto, with joint for the convenience of slanting the Microscope, containing condenser and 2 silver speculums, £5. 6s.

B

Figure 2. (A) The first page of microscopes listed in Palmer's catalog, all of the type designed by Charles Gould. The inclusion of Gould's name here suggests that he was the actual maker of these instruments. Gould was working for William Cary in the mid-1820s when he designed the type of microscope labeled 'Fig. 254', and these types of microscopes are often called "Cary". Palmer's catalog indicates that, by 1840, one could purchase the original Gould-type microscope, in which the microscope mounted to the inside of the box (fig. 254), or larger microscopes that mounted to the center of the wooden box, without or with a hinge for tilting the instrument (figs. 255 and 256, respectively). William Cary died in 1825, and, although Cary's nephews inherited the business, Gould reportedly managed the operation. In 'The Great Age of the Microscope', G. Turner hypothesized that a single factory may have produced many or all Gould-style microscopes – Palmer's catalog suggests that this may have been the Cary-Gould enterprise. Gould's book, 'Companion to the Microscope', was written to accompany his microscopes. Palmer's figures 253 and 254 were adapted from illustrations in Gould's book. **(B)** A Gould-style microscope engraved 'Edward Palmer', sold in 2010 by Bonham's auctioneers. This is a "third-size" microscope with a joint, as illustrated by Palmer in his figure 256.



Pillar Microscope, fig. 257, with folding tripod foot, for the convenience of packing; containing Dr. Wollaston's doublet, 2 silver speculums, plain and achromatic lenses, a variety of transparent and opaque objects, apparatus, &c. in neat mahogany case, fig. 258. £10. 10s.

Extra-large very superior Microscope, with tangent screw for very delicate adjustment, moveable stage, 2 condensers, frog plate, Dr. Wollaston's doublet, 2 silver speculums, plain and achromatic lenses, a variety of transparent and opaque objects, apparatus, &c.; the whole packed in a neat mahogany cabinet, price .. 35 0 0
 Dissecting Microscopes, very superior.....from 10 10 0

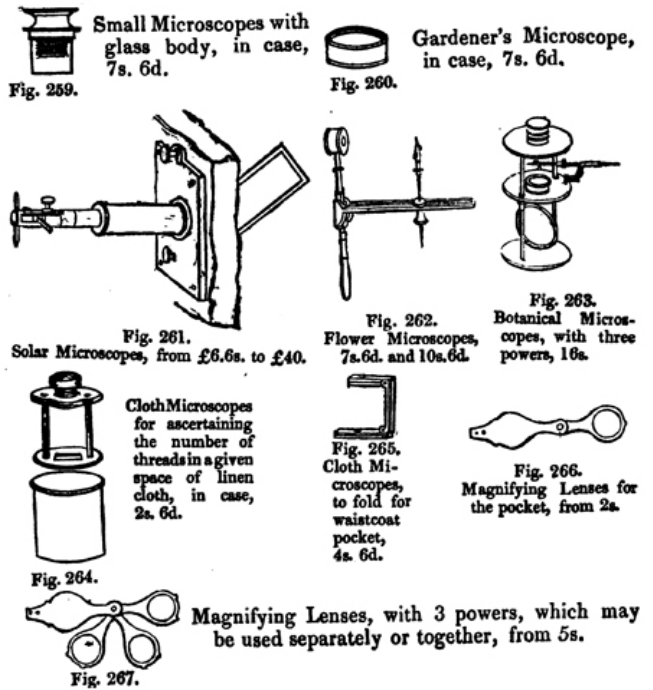


Figure 3. The other microscopes offered in Palmer's catalog, ranging from single-lens magnifiers to complex compound microscopes. Note that the 'extra-large very superior microscope' cost £35, placing it well beyond the reach of the vast majority of people in 1840.

OBJECTS FOR MICROSCOPES.

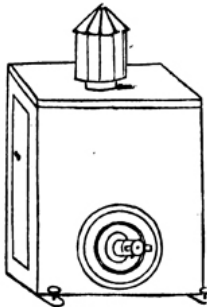
Set of nine ivory Slides, with four opaque objects on each, in leather case	0 15 0
Set of six ditto, with four transparent objects on each, in leather case	0 8 6
Set of six glass Slides, with very delicate test objects, in case	0 7 0
Set of 40 glass Slides, each containing a different object, in leather case	0 10 6
Set of 50 ditto, arranged in different partitions, in mahogany case	0 18 0
Set of six double glass Slides, containing 18 sections of the following woods, oak, ash, elm, willow, beech, and horse-chestnut, in case	0 10 6
Set of twelve ditto, with 36 sections, each slide containing three different cuttings	1 0 0
Set of six glass ditto, containing specimens of sea-weeds and botanical objects, in case	0 7 0
Set of six ditto larger, with a great variety of objects, in case	0 12 0
Set of 12 ditto larger, for Solar or Oxy-hydrogen Microscope, in case	2 2 0
Set of six Objects preserved in Canada Balsam, in case ..	0 12 0
Set of 12 ditto ditto	1 1 0
Large Balsam Objects, for Solar and Oxy-hydrogen Microscopes, from 1s. 6d. to 5s. each.	
Sections of Fossil Woods for the Microscope	each 0 4 0

These sections are cut so thin, that they readily transmit the light through them, and show the form and disposition of the woody fibre, vascular tissue, medullary rays, glands, pith, &c. &c.



Figure 4. The list of microscope slides offered by Palmer in 1840. The photograph shows examples that correspond with Palmer's descriptions (please note that there are no indications that any of these examples was retained by Palmer). Left to right: ivory slide with four opaque objects, ivory slide with four transparent objects, double glass slide containing three sections of elm wood, two double glass slides containing three each sections of wood, double glass slide containing botanical objects (sarsaparilla), and a slide of sections of fossil wood. The double glass slides, sealed with red wax, are nowadays often attributed to Andrew Pritchard because he described their production in a 1847 book, and because such slides are occasionally found with Pritchard's name attached. However, there is no evidence that Pritchard actually made any of these slides, nor that he was the only retailer to have sold them. John Quekett, in his 'Treatise on the Use of the Microscope' stated that these slides were made by William Darker. A detailed biography of William Darker and his extensive involvement with early microscopy and optics is currently under production.

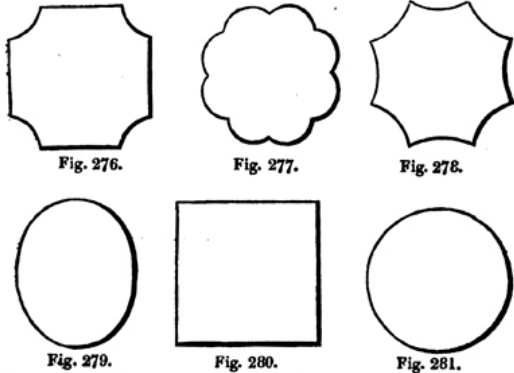
POLARIZATION OF LIGHT.



Apparatus to show the beautiful and extraordinary phenomena of Polarized Light, upon an opaque or semi-transparent screen, consisting of brass work with condensing lenses, and a polariscope, with tourmalines and series of different crystalline polished plates in ivory slides. By the light obtained in the combustion of lime with oxy-hydrogen gas, may be exhibited on a screen the splendid coloured rings, &c., £9.

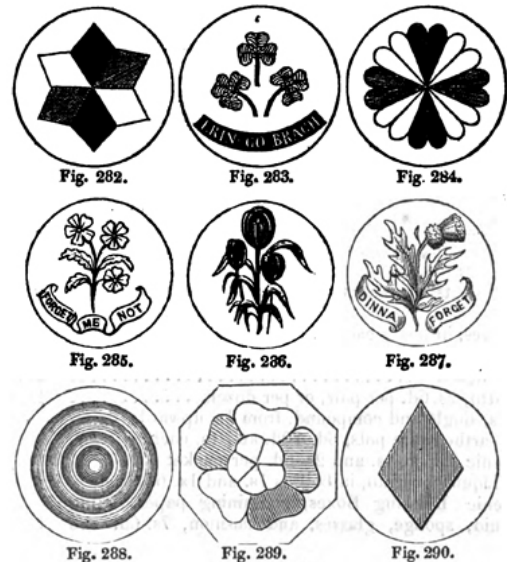
Fig. 276.

Polariscope, in rosewood	2	10	0
Polarizing Eye Pieces.....	0	5	0
Double Image Prisms, of calcareous spar and glass.....	0	10	0



Six Unannealed Glasses, for showing the tints of polarized light, figs. 276—7—8—9—80—1 1 1 0

Selenite Designs



Six-pointed Star, fig. 282	0	8	0
Shamrock with motto, Erin-go-bragh, fig. 283	0	14	0
Superposing Stars, 16 rays, fig. 284.....	0	14	0
The Flower Forget-me-not with motto, fig. 285	0	14	0
Tulip, fig. 286.....	0	14	0
Thistle with motto, Dinna Forget, fig. 287	0	14	0
Selenite Slide for exhibiting the Newtonian colored rings, fig 288	0	10	0
Rosette, fig. 289	0	14	0
Selenite Wedges, fig. 290	0	7	6
Pansy with motto, Heart's-ease	1	0	0
Crosses and Discs of various colors, for superposing, each	0	10	0
Selenite Windows	from £3. 3s.	to 40	0 0

Figure 5. Palmer's offerings for the study and enjoyment of the effects of polarized light. All of these items may have been produced by William Darker, who was renowned for his polarizing and projecting microscopes, and "a great variety of devices prepared with films of selenite of different thicknesses, and which constitute philosophical toys .. Gothic windows, stars, flowers, fruits, animals (butterflies, parrots, dolphins and chameleons), and theatrical figures (Jim Crow, harlequin, &c.), are some of the ingenious, and often laughable illustrations contrived by Mr. Darker" (Pereira).

APPEARANCE OF A DROP OF STAGNANT WATER, AS SEEN THROUGH THE STANHOPE LENS.



Fig. 268.

Stanhope Lenses, in white metal, 3s.6d. and 4s.6d., fig. 269, 270.

Fig. 269. Fig. 270.

Stanhope Lenses, mounted in silver, 6s. and 10s. 6d.

Fig. 271.

This useful and ingenious Microscopic Lens is the invention of Lord Stanhope ; both ends are ground convex, the one next the eye rather more so than the other. It has many advantages over the common Lens : for instance, the difficulty of holding the hand steady to the focus, and the loss of light and small field attendant on viewing with a high magnifying power are here obviated ; for, the length of the Cylinder being the exact focus, the object has only to be placed upon the end that is ground less convex, or to be brought in contact with it, when the advantage of great magnifying power will be obtained, with a field of nearly five inches—equal to many of the Compound Microscopes.

The portability of this Instrument, its low price, and the facility with which it can be used, must recommend it strongly to all who use Microscopic Lenses. With it may be viewed the animalcules in water, mites in cheese, eels in paste and vinegar, the perspiration, human hair, farina and leaves of flowers, the hairs of animals, the down of moths, &c. ; and, if a single drop of the crystallisation of salts be spread lightly over the end of the Lens, and viewed without delay, the formation of the crystals will be beautifully apparent.

Best Silver Stanhope and Coddington Lens, in case 1 8 0
 Coddington's Spherical Lens, mounted in German silver, for the pocket, particularly adapted for viewing minerals, opaque and transparent objects 0 9 0

Coddington's Spherical Lens, in silver, 16s. Fig. 272. Small magnifying Glasses, 2s. and 2s. 6d. Fig. 273.

Figure 6. Stanhope and other small magnifying glasses offered by Palmer.

Palmer's Improved Portable Oxy-Hydrogen Apparatus and Microscope with prepared objects, complete.

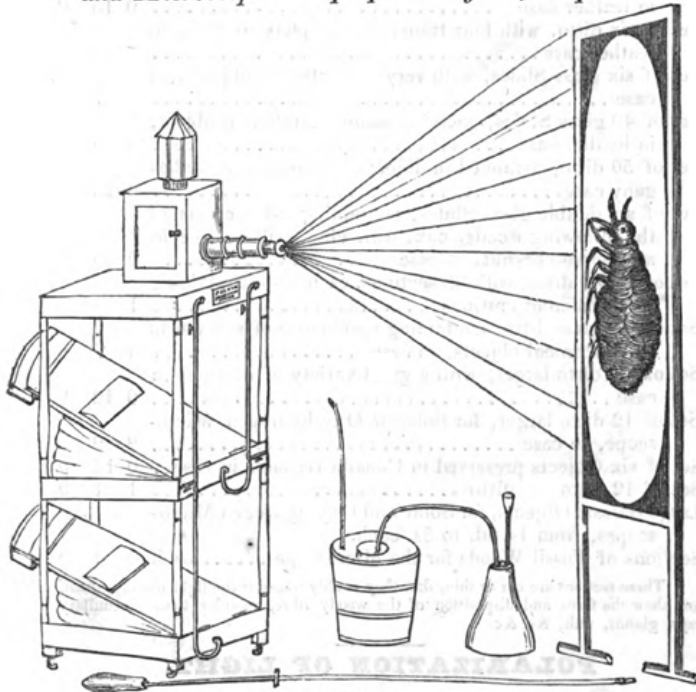


Fig. 274.

The Microscope is capable of showing various objects, magnified on a medium of from ten thousand to two million times, price £35.; or, without the Microscope, £20. Fig. 274.

E. PALMER begs to submit the following splendid Apparatus to the attention of Lecturers, Schoolmasters, and Scientific Gentlemen, as by far the most portable and convenient Apparatus of the kind hitherto invented.

As an Appurtenance to the Laboratory, it will be found exceedingly useful, not only for the production of intense heat and light, but also for many of the manipulations in Pneumatic Chemistry, which usually require expensive Apparatus, large quantities of water, and much room.

To the scientific Lecturer it is an Apparatus of great value, as it enables him to exhibit to an audience many very interesting and beautiful phenomena connected with the various Sciences; and also to illuminate diagrams for the illustration of Lectures on Astronomy and Natural History. All danger being obviated by the Gases being kept in separate vessels, which, when charged, contain Hydrogen enough to last half an hour, and Oxygen enough to last one hour, and by simply turning a cock, the Hydrogen vessel may be replenished.

Oxy-hydrogen Microscopes, fitted up on a larger scale, from £60. to £100.

Turned Cylinders, of very superior hard lime, prepared for the Microscope, 9s. per dozen.

Figure 7. Projection microscopes offered by Edward Palmer. These burned hydrogen gas in the presence of pure oxygen, which produces a very intense light.



Retort Stands large, brass, with fountain Argand Lamp, three sliding rings, &c. very complete 1 16 0

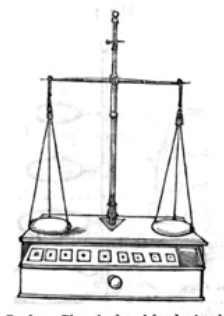
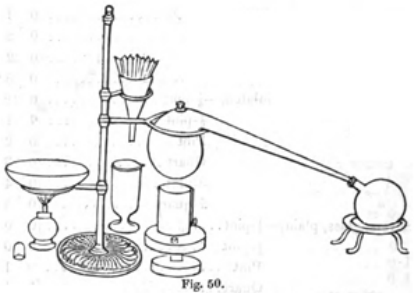


Fig. 51.

CHEMICALS.

Acid, Acetic	0 2 oz.	Antimony, Nitro Muriate, Sol. ..	0 2 oz.
" " strong	1 6 "	" Oxide	1 0 "
" Arsenious	0 2 "	" Phosphate	0 8 "
" Arsenic	1 0 "	" Sulphuret	0 8 lb.
" Benzoic	3 0 "	" Tarrate and Potash ..	0 6 oz.
" Boracic	1 0 "	Archil	0 2 "
" Camphoric	1 0 "	Arsenic	0 6 "
" Chloric	5 0 "	" Sulphurets	0 4 "
" Chromic	5 0 "	Baryta	2 6 "
" Chloro Chromic	5 0 "	Baryta Crystals	3 0 "
" Citric	1 0 "	" Acetate	1 0 "
" Fluo Silicic	0 6 "	" Carbonate	0 4 "
" Gallic	12 0 "	" Native	0 4 lb.
" Hydriodic Sol	1 6 "	" Chlorate	0 6 "
" Malic	0 3 lb.	" Muriate	0 6 "
" Muriatic, common	0 2 oz.	" Nitrate	0 8 "
" " pure	12 0 "	" Oxide	0 8 "
" Molybdic	1 0 lb.	" Phosphate	0 8 "
" Nitrous	1 4 "	" Sulphate	0 4 "
" Nitric	0 4 oz.	Barytic Water	0 6 "
" " pure	0 4 "	Bismuth	0 3 "
" Nitro Muriatic	0 4 "	" Oxide	1 0 "



Fig. 59. Best Wheel Barometer with screw Hygrometer, rosewood inlaid with pearl, and German silver fittings, very elegant, £7. 7s.

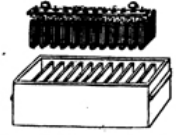


Fig. 60. Upright Barometer with Thermometer, plain, £3. 3s. to £5. 5s.



Fig. 64. Plain Boxwood Thermometer, 4s. 6d. 3-inch Ivory-scale ditto, in morocco case, for the pocket, 7s.

Batteries fitted up with pots of all sizes and any number to order.
Insulated Stand, for exhibiting the combustion of charcoal, fusing of wire, &c., with the Galvanic Battery 1 1 0



Dr. Wollaston's Battery of twelve pair of 4-inch plates, in porcelain troughs, £2. 2s.

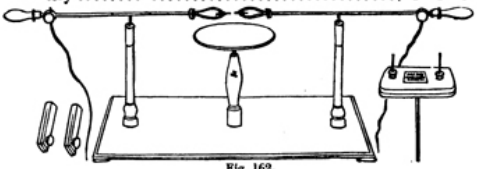


Fig. 162. Insulated Stand, very superior, with Henley's Universal Discharger and Press, two pair of forceps, &c., applicable both for Voltaic and Frictional Electricity, 2 2 0
Apparatus for the Decomposition of Water, small 0 5 0
Large Ditto 0 18 0
Ditto ditto, with graduated tube 1 4 0
Small double Decomposition Apparatus, having separate tubes for collecting the oxygen and hydrogen gases.. 0 7 0

Amper's Apparatus, for exhibiting the rotation of a battery round a magnet 0 6

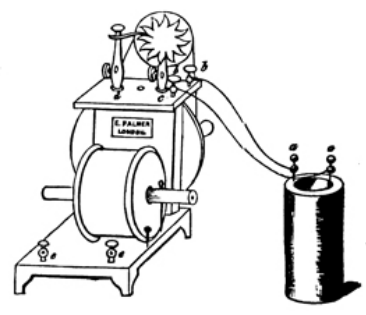
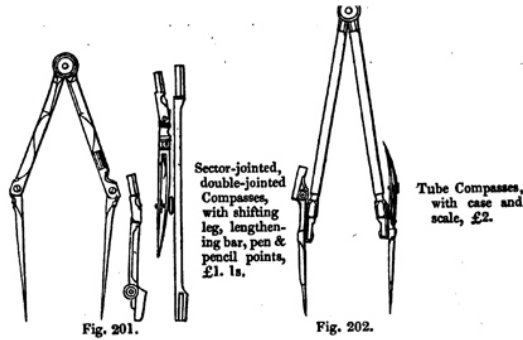
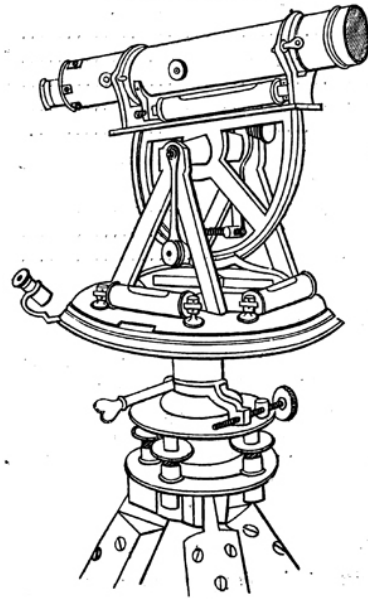


Figure 8. Some other types of items offered in the 1840 Palmer catalog. A wide variety of instruments, chemicals, etc. were sold to meet virtually every scientific or engineering need.



THEODOLITES.



7-inch best Theodolite, with two Telescopes	42	0	0
6-inch ditto, with one Telescope	28	0	0
Ditto ditto, on the most improved plan, with two Telescopes	36	0	0

**AGENT FOR NEWTON & Co.'s
TERRESTRIAL and CELESTIAL GLOBES.**



No. 1,
20-inch Globes, per pair, on black stained wood frames, particularly applicable for schools, £10.
Ditto, on neat mahogany frames, for table use, £11.
15-inch ditto, £6 6 0 and £6 16 6
12-inch ditto, 4 4 0 and 4 14 6
9-inch ditto, 2 12 6 and 3 3 0

No. 2, Low pillar and claw mahogany frames.

15-inch, per pair	7	17	6
12-inch ditto	5	10	0
9-inch ditto	3	13	6
6-inch ditto	2	12	6
3-inch ditto	2	2	0

No. 3, Chair-high plain mahogany pillar and claw frames, with compass boxes.

20-inch Globes, per pair	14	14	0
15-inch ditto, ditto	9	9	0
12-inch ditto, ditto	6	6	0



No. 4, Chair-high best carved mahogany pillar and claw frames, with compass boxes and double hour circles, complete.
20-inch Globes, per pair, £15 15 0
15-inch ditto ditto 10 10 0
12-inch ditto ditto 6 16 6

Fig. 218.

Best single-jointed Gold Spectacles, with picked Brazil pebbles, fig. 223	3	10	0
Ditto double ditto, fig. 224	from	4	0
Best double-jointed Silver Spectacles, with picked Brazil pebbles, fig. 224	1	10	0
Ditto, with glasses	1	0	0
Single-jointed ditto, with pebbles, fig. 223	1	5	0
Ditto ditto, with glasses	from	0	15
Best blue steel ditto, being very light wear and strong	from	0	10
Ditto ditto, with Brazil pebbles	1	0	0
German-silver Spectacles	from	0	7
Best Tortoise-shell Spectacles	from	0	9
Steel Spectacles	from	0	2



Fig. 226. French pattern solid blue steel Spectacles, 18s.



Fig. 227. Spectacles adapted for reading and public speaking, particularly suitable for Clergymen, &c. from 12s.

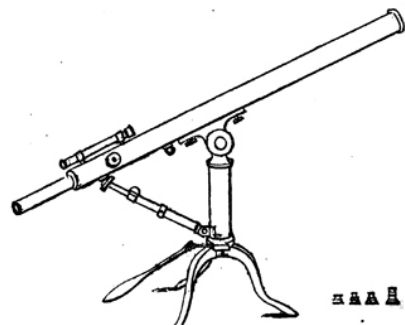


Fig. 228. Eye Preservers, mounted with the new neutral tint glass, from 25s.

**VERY SUPERIOR TELESCOPES,
Adapted for either Astronomical or other purposes.**



18 inches long, with rack and pinion, on stand	8	8	0
30-inch ditto	12	12	0
Ditto, with vertical rack	14	14	0
Ditto, with vertical and horizontal rack	21	0	0
42-inch, with rack and pinion	30	0	0
Ditto, with vertical rack	32	0	0



42-inch, with vertical and horizontal rack, £36.

Figure 9. Further items available from Edward Palmer.

Edward Palmer was born July 1, 1803, in the parish of St. Bartholomew-by-the-Exchange, Middlesex (London). At some point during the next 25 years, Edward moved south, across the Thames, to Southwark. He lived in the parish of St Olave Southwark during 1828, when he married Jemima Closs Law. The 1830

christening record of their only child, also named Jemima, reported that the Palmers then lived in St. Giles Southwark. The christening record also stated that Edward worked as a “*chemist*”. Later records indicate that Palmer was skilled at fine machine work. Where and from whom he learned his trades is not known.

By 1837, Palmer had established a business at 103 Newgate St., London, dealing in “*Chemical and Philosophical Apparatus, Microscopes, &c.*” (Figure 10A). Electrical and magnetic devices sold by Palmer (Figure 10B) were probably made by him. A series of advertisements that appeared in the 1839 *Athenaeum* promoted “*pneumatic filtering machines*”, whereby one could filter and concentrate “*liqueurs, wines, essences, &c. with a rapidity perfectly astonishing. The concentrated essence of coffee, produced by this unequalled process, surpasses anything of the kind in flavour*”.

A

INSTRUCTIVE AND AMUSING PRESENTS FOR YOUTH.

E. PALMER begs to direct Parents and Friends of Youth to the great variety of Articles particularly adapted for Presents, contained in his new Catalogue of Chemical and Philosophical Apparatus, Microscopes, &c. just published, price 1s. with upwards of 100 Engravings, at 103 Newgate Street, London.
E. P. has an opening for a genteel, well educated youth, of a decidedly mechanical genius, as an Apprentice. A liberal premium required.

B

ELECTRICAL and ELECTRO MAGNETIC MACHINES, AIR PUMPS, IMPROVED VOLTAIC BATTERIES and every description of **CHEMICAL and PHILOSOPHICAL APPARATUS**, of superior workmanship, Manufactured and sold on very moderate terms by **E. PALMER**, 103, Newgate Street, London: where may also be had, just published, **BACHHOFFNER'S POPULAR TREATISE ON VOLTAIC ELECTRICITY and ELECTRO MAGNETISM**, price 1s. 6d. with Plate of Apparatus.

C

NEW and VERY POWERFUL VOLTAIC BATTERY.—Smee's Chemo-Botanical Battery, described in the *Philosophical Magazine* for this month, manufactured in Silver, Plated Metal, &c. of all sizes and forms, by **E. PALMER**, Chemical and Philosophical Instrument Maker, 103, Newgate-street, London; where they may be seen in action.

These Batteries are recommended from their being not only very powerful, but the most economical in action, and requiring less manipulation than any others.

N B. Apparatus for the Electrotpe, or Art of Copying Medals, Copper-plate Engravings. Price 5s , 7s. 6d., 10s. 6d., and upwards.

Figure 10. Advertisements from Edward Palmer that appeared in (A) *The Literary Gazette*, December 15, 1837, (B) *Arcana of Science and Art*, published early 1838, and (C) *The Edinburgh Review*, April, 1840. Note that Palmer also advertised in 1837 for an apprentice. The 1841 census recorded the Palmers sharing their home on Newgate with 15 year-old “shop boy” William Bolton. He is probably the same person who later operated his own photographic supply shop in London. In 1841, 103 Newgate was also home to “chemical and philosophical instrument makers” William Thornthwaite and Thomas Willatts, both approximately 20 years old (the 1841 census rounded off ages to 5 or 10 years) and who probably had also apprenticed with Palmer.

On June 12, 1841, “Edward Palmer, of Newgate-street, gentleman”, was awarded a patent for “improvements in producing printing surfaces, and in the printing china, pottery, ware, music, maps, and portraits”. These were advances in electroplating/electrotyping, and is indicative of Palmer’s skills in engineering and electronics. He elaborated on this in the following 1840 advertisement, “**ELECTROTYPE**;

or, the Art of Procuring, in the most simple manner, by means of Galvanic Action, perfect Facsimiles of engraved Copper-plates of all sizes, even of the most elaborate workmanship; also correct copies of Medals, and all kinds of Metallic Ornaments; specimens of which may be seen, and the Apparatus had, of all sizes, of E. PALMER, Philosophical Instrument Maker, 103, Newgate-street, London. Prices 5s., 7s. 6d., 10s. 6d., and upwards". The figures for Palmer's 1840 catalog were probably made by this method, as indicated by another 1840 ad, "THREE HUNDRED ENGRAVINGS of Apparatus illustrative of Chemistry, Pneumatics, Friction, and Voltaic Electro-Magnetism, Optics, &c. &c, embracing many new and valuable instruments of research and amusement, are now publishing by E. PALMER, 103, Newgate-street., London, in his new printed Catalogue for 1840. Price 1s. 6d., to be had of all Booksellers".

Palmer sold electrotyped pictures, equipment for producing electrotypes, and books on electrotyping. He also printed books, probably using electrotype. Some announcements and reviews follow:

ELECTROTYPE.—JOHN KNOX REPROVING MARY QUEEN OF SCOTS, by J. BURNETT. E. PALMER having electrotyped the above splendid and highly interesting engraving, Prints, both of the original and electrotyped plates may now be had, price 21s. each at his Optical and Philosophical manufactory, 103, Newgate-street, London.—Engravers and Publishers furnished with copper duplicates of their engraved plates. (from The Art Union, 1841)

ELECTROTYPE. — Just Published, by E. PALMER, 103, Newgate-street, and Longman and Co., Paternoster-row, ELEMENTS OF ELECTROMETALLURGY, OR THE ART OF WORKING IN METALS BY THE GALVANIC FLUID; containing the laws regulating the reduction of the Metals; the states in which the deposit may take place; the apparatus to be employed ; and the application of Electro-Metallurgy to Manufactures; with minute description of the processes for Electro-Gilding, Plating, Coppering, &c.; the method of etching by Galvanism; the art of working in Gold, Silver, Platinum, and Copper; with full directions for conducting the Electrotype. Illustrated with Woodcuts. By A. Smee, Esq., Surgeon to the Bank of England, &c. Price 10s. 6d., elegantly bound in cloth, gilt edges. (from The Art Union, 1841)

THE FIRST PART of a Series of ILLUSTRATIONS of the ART of ELECTROTYPE, as applicable to the multiplication of engraved plates of the most delicate and elaborate workmanship, intended as an accompaniment to "Smee's Elements of ElectroMetallurgy," containing a variety of Specimens in Line and Chalk, both from Copper and Steel plates, the Originals by Finden, Heath, Robinson, Miller, and others. Published by E. Palmer, 103, Newgate-street, London; and Longman & Co. Paternoster-row. N. B. — Engravers and Publishers furnished with duplicates of their Plates of all sizes, by E. Palmer as above. (from The Art Union, 1841)

Electrotint; or, the Art of making Paintings in such a manner that Copper Plates and " Blocks" can be taken from them by means of Voltaic Electricity. By Thomas Sampson. Palmer. 103, Newgate-street. This is a short pamphlet published by Mr. Palmer, in explanation of his process of Electrotint painting. The discovery is a valuable one, since it enables the artist to infuse into the copper plate his own touch and feeling without the mediate assistance of a copier; and we cannot doubt, that an art presenting so great advantages as that of Electrotint will speedily arrive at an increased state of perfection. The printing surfaces it produces are either raised or sunken: each is explained; and the pamphlet contains technical directions concerning brushes, tools, plates, handling, &c. for the use of artists in Electrotint, or of such chemists as may desire to amuse themselves by practising, as a matter of curiosity, this new application of the powers of voltaic electricity. To these we recommend it as an indispensable assistant. The specification of the patent is appended, containing a concise description of the invention, and the mode in which it is applied. (from The King's College Magazine, 1841)

GLYPHOGRAPHY; or, ENGRAVED DRAWINGS, by which Books may now be Illustrated in a very superior manner, securing to Artists a faithful copy of their Designs to the minutest touch, and at a very great saving of expense, the Drawings being transferred to Surface Printing Blocks, which are printed like Wood Cuts, with the Type. The most elaborate Drawings can, by these means, in a few days, be made ready for the Press. A great variety of Specimens may be seen, and every information afforded to Authors, Publishers, and Artists, on personal application to the Patentee at 103, Newgate-street, London, between 9 & 10 o'clock, a.m.— N.B. A little Work, descriptive of the process, and containing full directions for Artists with Illustrations, is in the Press, and will shortly be published, price 1s. 6d. By E. Palmer, 103, Newgate-street, London. (from £.S.D., 1843)

Photographic Manipulation, price 1s. 6d., containing simple and practical details of the most improved processes of Photogenic Drawing, Daguerreotype, and Calotype, illustrated with Cuts. Just published by E. Palmer, 103, Newgate-street, London, where may also be had all the apparatus and chemicals required for carrying out these interesting and valuable discoveries. (from Mechanics Magazine, 1843)

In either 1844 or 1845, Palmer sold his business to his former employee, William Henry Thornthwaite, and Fallon Horne. Thornthwaite was the author of *Photographic Manipulation* (described in the preceding paragraph), which was one of the first books on photography. The first edition was published by Palmer in 1843 without naming the author. The second edition, also published by Palmer in 1843, gave authorship credit to Thornthwaite. In 1846, Edward George Wood joined as manager, and the partnership became Horne, Thornthwaite and Wood. The company produced microscopes, photographic equipment and other optical apparatus and supplies for many years.

Edward Palmer was only 42 when he sold the business at 103 Newgate. For the 1851 census, he described his occupation as being an “*auctioneer and estate agent*”, with he, Jemima and their daughter living in Clerkenwell, Middlesex. In 1861, Edward was a “*commercial traveller*” (traveling salesman), and he and his wife lived in Islington, Middlesex. Edward and Jemima were retired on annuities by 1871, and lived with their daughter, her husband and 6 grandchildren in Leeds, Yorkshire. Edward Palmer died in Leeds late in 1872, at the age of 69.

This and other essays on historical microscopists may also be read at the author's web site, <http://microscopist.net>

Comments to the author are welcomed. Email: bstev0 AT email DOT uky DOT edu

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Resources

Arcana of Science and Art for 1837 (1838) Advertisement from E. Palmer, rear of the book

The Art Journal (1840) Advertisements from E. Palmer, Vol. 1, page 84

The Art Union (1841) Advertisements from E. Palmer, Vol. 3, pages 2, 39 and 98

The Athenaeum (1838) Advertisements from E. Palmer, pages 288, 383, 442, 879, 911 and 991

The Athenaeum (1854) Advertisement from William Bolton, Nov. 11, page 921

Bachhoffner, George H. (1838) *A Popular Treatise on Voltaic Electricity and Electro-magnetism*, Simpkin and Marshall, and E. Palmer, London

Bonham's Auction web site (accessed June, 2011), Lot 203: An Edward Palmer Gould-type microscope, English, 1838-45, <http://www.bonhams.com/eur/auction/18148/lot/203/>

A Catalogue of Electro-magnetic and Voltaic Apparatus, Manufactured by Edward Palmer, Philosophical Instrument Maker, 103, Newgate Street, London (1838) J. Nichols, London

Christening record of Edward Palmer (1803) St. Bartholomew Exchange, accessed through familyhistory.org

Christening record of Jemima Closs Law (1804) St. Giles Camberwell, accessed through familyhistory.org

Christening record of Jemima Palmer (1830) St. Giles Camberwell

The Civil Engineer and Architect's Journal (1841) List of new patents, Vol. 4, page 248

Early Photography (accessed June, 2011) Horne, Thornthwaite and Wood, <http://www.earlyphotography.co.uk/site/companies1.html - hornethornthwaite>

The Edinburgh Review (1840) Advertisements from E. Palmer, Vol. 71, pages 35 and 39

English birth, christening, marriage, death and census records, accessed through ancestry.co.uk

Gould, Charles (1829) *The Companion to the Microscope*, sixth edition, W. Cary, London

Historic Camera (accessed June, 2011) Horne, Thornthwaite and Wood, <http://www.historiccamera.com/cgi-bin/librarium/pm.cgi?action=display&login=htw>

The London Journal of Arts and Sciences (1841) Review of *Elements of Electro Metallurgy* by Alfred Smee, Vol. 17, pages 381-383

The King's College Magazine (1841) Review of *Electrotint; or, the Art of making Paintings in such a manner that Copper Plates and "Blocks" can be taken from them by means of Voltaic Electricity* by Thomas Sampson, Vol. 2, page 167

The Literary Gazette and Journal of Belles Lettres, Arts, Sciences, &c. (1837) Advertisement from E. Palmer, Dec. 15, Issue No. 1143, page 798

Marriage record of Edward Palmer and Jemima Closs Law (1828) St. Giles Camberwell

Mechanics' Magazine (1843) Advertisement for *Photographic Manipulation*, published by E. Palmer, page 521

Palmer's New Catalogue (1840) printed by W Gilbert, London (pdf available for download at <http://microscopist.net>)

The Penny Mechanic and Chemist (1841) Answers to queries, pages 207, 352, 392 and 440

Pereira, Jonathan (1854, 1st edition written in 1843) *Lectures on Polarized Light*, 2nd edition, Longman, Brown, Green and Longmans, London, 2nd edition, pages x, 60 and 135-136

£. S. D., or, Accounts of Irish Heirs Furnished to the Public (1843) Advertisement section

Publisher's Circular and Bookseller's Record (1844) Advertisement for *Glyphography*, published by E. Palmer, page 141

Quekett, John (1848) *Practical Treatise on the Use of the Microscope*, first edition, Bailliere, London, pages 289-290 (Mr. Darker's method)

Quekett, John (1852) *Practical Treatise on the Use of the Microscope*, second edition, Bailliere, London, pages 317-318 (Mr. Darker's method), and 403-404 (mounting wood sections)

Sampson, Thomas (1842) *Electrotint; or, the Art of Making Paintings in such a Manner that Copper Plates and "Blocks" can be taken from them by Means of Voltaic Electricity*, E. Palmer, London

Sidney, Edwin (1843) *Electricity: its Phenomena, Laws and Results*, Religious Tract Society, London, preface and pages 20-21

Stevenson, Sara, Julie Lawson, Michael Gray (1988) *The Photography of John Muir Wood 1805-1892*, Scottish National Portrait Gallery, Edinburgh, page 23

Thornthwaite, William H. (1845) *A Guide to Photography*, R. Groombridge and Sons, London, especially pages 69-71

Thornthwaite, William H. (1843) *Photographic Manipulation*, second edition, E. Palmer, London

Turner, Gerard L'E. (1989) *The Great Age of the Microscope*, IOP Publishing, Bristol, pages 75-85