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BAUSCH & LOMB MICROSCOPES

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Stanford University

	TERMS	
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Parties unknown to us will please send cash with order; or, if desiring to open an account, they will please give such information and references as will enable us to establish their financial standing.

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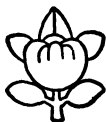
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MANUFACTORY OF BAUSCH & LOMB OPTICAL COMPANY.

Floor space, 138,000 square feet. 1899.

MICROSCOPES AND ACCESSORIES



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STATE AND WASHINGTON STS.

Catalogue A

Sixteenth Edition

MP

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BAUSCH & LOMB OPTICAL CO.

ROCHESTER, N. Y.

*The Genesee Press
The Post Express Printing Co
Rochester N Y*

BAUSCH & LOMB

1335
1900

OUR FACILITIES FOR MANUFACTURE



IN presenting this, the sixteenth edition of our microscope catalogue, we find ourselves so far advanced in the production of microscopes and allied apparatus, and our instruments in such general use in this and foreign countries, that we feel justified in yielding to a general desire for more information in regard to the development of our manufactory, and the methods employed in producing our apparatus. In doing so, we take occasion to express our deep obligation to the many men of science in all parts of the country who have contributed to the up-building of our institution by means of kindly criticism and suggestions, and by their liberal patronage of our products.

While the production of complete microscopes has been carried on in our factory for a period of twenty-five years, lens-making has been our specialty for nearly half a century, and embraces every conceivable form of lens from the smallest used in the microscope objective to the huge 36-inch lenses which serve as reflectors for the searchlights of the modern man-o'-war. It has always been our policy to produce every article which we place upon the market *in its entirety*, in order that we may absolutely know that every part is of the proper material, properly made, properly finished and assembled.

Our patrons, therefore, have the satisfaction of knowing that our microscopes are made, *every part and detail*, under our own personal supervision. The development of our business from a small beginning to its present



A Corner of the Steam and Electric Plant.

magnitude has been due solely to the painstaking, accurate, and conscientious work which has been bestowed upon each individual one of our



Metal-working Machinery.

products, coupled with never-tiring vigilance in securing for our works the most improved mechanical equipment, the best raw materials, and the results of every advance which science has made in constructive formulæ.

How many users of the microscope realize the number of skilled hands and the number of operations through which the various parts have passed on the way from the rough material to the perfected instrument? So exacting are the requirements of modern construction that the processes involved are multiplied until, at the present time, over one thousand operatives are actually employed in our manufactory. The mechanical equipment consumes the energy of a seven hundred horse-power double engine. Steam, gas, compressed air, drinking and wash water are distributed in the departments through more than seven miles of piping. Over five thousand gallons of chilled water are required per day for washing lenses, and over seven hundred gallons of cooled water for drinking purposes



The Making of the Stand.

in the same time. An eighteen-ton ice machine is kept in constant operation to cool this amount of water. Optical work requires constant care and inspection. To provide against dark days, early twilight, and for night labor, a complete electric lighting plant has been installed, feeding two thousand incandescent and one hundred arc lights through ten miles of wires.

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Every department is in perfect communication with every other department by means of the Bell internal telephone system, requiring thirty miles of wires and having forty stations. From the central station one may not only communicate with every part of the works, but with every portion of the civilized world reached by telegraph, cable, or long-distance telephone.

Warmth and ventilation are secured by a hot-air apparatus, delivering 145,000 cubic feet of air per minute, to heat which two and a half miles of steam pipes are required.

These are the nerves and arteries of our manufactory, and serve simply to outline the extensive equipment of delicate and accurate machinery absolutely necessary in order to produce a grade of work which will test up to the high optical and mechanical standards which we have established.

In our methods of working we have endeavored to keep fully abreast of modern improvements, and have introduced not only all the most improved devices generally employed for securing accurate work, but many machines of our own invention, built in our own machine shops, where a force of from forty to fifty men is constantly employed. In fact, wherever an advantage may be gained by the use of special machinery, it has been constructed. This extensive mechanical equipment is supplemented by the employment of mechanics of superior accomplishments, many of whom have grown up in the various departments in which their special work is now done. In the making of optical parts, only men of the ripest experience and highest skill are permitted to engage in the delicate work required. Our system of tests has been continually improved, until at the present moment we feel confident that imperfect work cannot pass our inspection.

In order that communication with our patrons may be easier for them and that their orders, inquiries, and suggestions may have the most prompt and thorough attention, a force of eighty-five correspondents, accountants, and clerks is employed at the present time. We take pleasure in replying to inquiries and supplying information when at our command, taking a personal interest in serving each of our friends to the best of our ability.



Lens Grinding.

OF IMPORTANCE TO THE PURCHASER

In presenting these, our latest microscopes, we do so with the assurance that they represent the most recent improvements, both optically and mechanically, and that they meet the requirements which the rapid advancement in laboratory methods, and the opening of new fields of microscopical investigation, have made upon the manufacturer.

As an indication of the appreciation with which our efforts have been met, we are pleased to be able to announce that we have now

Made and Sold Over 30,000 Compound Microscopes.

This number does not include the

Thousands of Dissecting Microscopes

and simple hand microscopes which we have produced during the same period.

The great majority of these instruments have been purchased by educational institutions and are now in daily use in their laboratories.

The fact that we are still receiving orders for new instruments from institutions which we equipped fifteen to twenty years ago, as well as from those which we have supplied more recently, indicates the satisfactory character and lasting qualities of our instruments.

Our apparatus is, to a large extent, the result of suggestions from American investigators and therefore best calculated to meet the wants of American laboratories and individuals.

We keep on hand a stock of the apparatus listed. While the constantly increasing demand for our products makes it difficult to have at all times a sufficiently large stock to meet every requirement, we have so increased the capacity of our works that we are in position to fill all orders promptly. This will be appreciated as a convenience by those who have been subjected to the delays incident to ordering from abroad.

Our prices are as low as first-class apparatus can be produced for, and as low as those of any other maker of high-grade instruments. When it is

considered that we maintain the highest possible standard, both optically and mechanically, our claim of giving more value for the same amount of money is justified.

We guarantee our instruments free from optical or mechanical defects. Every piece of apparatus is produced under our own personal supervision and carefully inspected, and tested before shipment, our system of tests being the most rigid possible to devise. It is, therefore, almost impossible for faulty work to pass unnoticed, but in a business so extensive as ours this may occasionally occur. In such cases we cheerfully remedy any defects at our expense.

Repairs in cases of accidents are quickly and cheaply made on our instruments, all parts being made to gauge and duplicates kept in stock. We charge for repairs on our own products only enough to cover the cost of labor and material. To accommodate our patrons, we are daily making repairs on foreign objectives and instruments. The cost of such repairs is necessarily higher than of repairing our own. In serious cases it is often better that the repairs on objectives should be made by the maker only, the disadvantage with foreign lenses being that the user is without them for several months.

Suggestions regarding improvements in our apparatus and the making of new and useful instruments are desired at all times. We are prepared to do special work where accuracy and experience are required.

CATALOGUES

We publish the following catalogues, which will be mailed, post free, on request, to interested persons:

- A** Microscopes, Objectives, and Accessories.
- B** Microtomes and Apparatus for Microtomy.
- C** Photo-Micrographic Apparatus.
- D** Projection Lanterns, Accessories, and Lantern Slides.
- E** Bacteriological Apparatus.
- F** Chemical Apparatus.
- G** Chemicals and Reagents.
- H** Photographic Lenses, Shutters, and Accessories.
- Bausch & Lomb-Zeiss Stereo Binocular Field Glasses.

BRANCHES: NEW YORK CITY AND CHICAGO.

HOW TO SELECT A MICROSCOPE

So many requests reach us daily in regard to the selection of microscopes for different kinds of work, that we believe the following information, based on our long experience in the manufacture of microscopes for the various purposes mentioned, will be found worthy of careful consideration by intending purchasers in doubt as to the suitability of any of the numerous types listed for a given purpose. These recommendations are based on the proportionate demand.

GENERAL LABORATORY WORK IN BIOLOGY, BOTANY, HISTOLOGY, AND PATHOLOGY.

The majority of colleges and universities are using the BB microscopes, and almost without exception an equipment of two-inch and one-inch eyepieces, and $\frac{2}{3}$ -inch, 0.25 N. A., and $\frac{1}{6}$ -inch, 0.82 N. A., objectives. These give magnifying powers of 41, 78, 205, and 385 diameters respectively, adequate for all general work. A few very low-power and $\frac{1}{12}$ oil-immersion objectives may be added for special demonstrations. The double nosepiece is now almost universally employed, as it saves time and the risk of breaking and losing objectives.

The Abbe condenser of 1.20 N. A. should always be added where funds will permit, as it not only greatly increases the effectiveness of the objectives, but insures ample illumination on dark days, toward evening, and in unfavorable situations.

The attachable mechanical-stage should also be a part of the equipment, as without it a complete examination of any preparation is almost impossible, and it greatly facilitates all kinds of work. The durability and small cost of the new construction and the fact that it can be so readily detached and replaced remove all former objections to the use of the mechanical stage.

LABORATORIES OF SECONDARY SCHOOLS.

In several states and in many individual schools the same microscope is used as recommended for general laboratory work, i. e., the BB stand with two-inch and one-inch eyepieces, $\frac{2}{3}$ -inch and $\frac{1}{6}$ -inch objectives, and double nosepiece, and this microscope is always recommended where the cost is not prohibitive.

The B microscope with two-inch and one-inch eyepieces, $\frac{2}{3}$ -inch, 0.25 N. A., and $\frac{1}{6}$ -inch, 0.82 N. A., objectives (giving magnifications of 41, 78, 205, and 385 diameters), and double nosepiece, is next in favor, and is used in a large number of high schools, academies, etc.

It must be borne in mind, however, that as the B stand has no substage

arrangement for the reception of illuminating apparatus, objectives of higher power than those mentioned can not be used to advantage.

BACTERIOLOGICAL LABORATORY AND INDIVIDUAL BACTERIOLOGICAL WORK AND FOR BREWERS' USE.

For this work the BB microscope, with two-inch and one-inch eyepieces, $\frac{2}{3}$ -inch objective, 0.25 N. A., $\frac{1}{8}$ -inch, 0.82 N. A., and $\frac{1}{12}$ -inch oil-immersion, 1.32 N. A., triple nosepiece and Abbe condenser with iris diaphragm, is recommended. These lenses give powers of 41, 78, 205, 385, 470, and 900 diameters respectively. The $\frac{1}{12}$ oil-immersion lens is absolutely necessary in order to do reliable bacteriological work, and it is, on account of its high numerical aperture, of little use without the condenser.

Modern equipments also include the attachable mechanical stage, as without such a device the examination of preparations suspected of containing organisms is not only laborious but uncertain as to completeness. Counting and general examinations under high-powers are made much easier by its use.

When cost will permit we strongly recommend the CA stand in place of the BB, as it has much larger stage, permitting the use of Petri plates, etc., and complete substage, giving complete control of illuminations for all conditions, as in the study of living bacteria, etc.

CYTOLOGICAL AND OTHER SPECIAL INVESTIGATIONS.

The CA, CD, D, or DD stand may be selected according to individual preference, fitted with two-inch, one-inch, and two-thirds-inch compensating oculars, $\frac{2}{3}$ -inch and $\frac{1}{3}$ -inch dry, and $\frac{1}{12}$ -inch oil-immersion, 1.40 N. A., apochromatic objectives, triple nosepiece, Abbe condenser, 1.42 N. A., and, in case the CA stand is chosen, the attachable mechanical stage.

This equipment gives powers of 55, 96, 144, 230, 410, 615, 580, 1060, and 1590 diameters, and the highest attainable resolution and definition.

MICROCHEMICAL LABORATORY.

The Chamot Chemical Microscope, herein listed for the first time, is a practical instrument for the microchemist. This branch of microscopical work is rapidly developing, and its growth will be greatly aided by the completion of this special microscope.

PHOTOMICROGRAPHY.

While any of our better stands may be used for this purpose, the DD stand is especially designed to give that solidity of construction, convenience for every manipulation, larger cone of rays on account of its larger tube, and extreme delicacy of adjustment required for the work. It should always be selected where the best work is required.

PHYSICIAN'S LABORATORY.

The physician's requirements include the examination of urinary and other comparatively coarse deposits, morbid tissues, blood and substances containing bacteria, many of them the smallest and most difficult to see, hence his microscope should have powers ranging from about 50 to 1000 diameters in order to put him in position to make really serviceable examinations.

The BB stand with $\frac{3}{8}$ -inch, 0.25 N. A., $\frac{1}{8}$ -inch, 0.82 N. A., dry, and $\frac{1}{12}$ -inch oil-immersion, 1.32 N. A., objectives, in triple nosepiece and with two-inch and one-inch eye-pieces, giving powers of 41, 78, 205, 385, 470, and 900 diameters, will cover the ground thoroughly, and is a complete equipment at the least cost. The Abbe condenser is also required for the $\frac{1}{12}$ -inch oil-immersion lens. The $\frac{3}{8}$ -inch lens is very useful for ordinary work and regional examinations of tissues, as well as for the study of parasites, etc.; the $\frac{1}{8}$ -inch is adapted for tissue work, as in the determination of cancers, urinary deposits, tumors, and for blood counting; while the $\frac{1}{12}$ -inch is necessary for bacteriological and blood examinations. While the microscope described is the lowest-priced one which meets all requirements, greater convenience in working, added possibilities in the direction of complete control of the illumination, centering devices for condensers, stage, etc., are secured by substituting the CA, CD, or DD stands in place of the BB, and will be appreciated by those who can afford them. The mechanical stage should always be a part of the physician's microscope, as it facilitates the speed and accuracy of his work in blood counting, searching sputum, pus, etc., for bacteria, and in all other examinations.

The Attachable Mechanical Stage is used with the BB and CA stands.

FOR THE AMATEUR.

The individual who uses the microscope as a means of general information, recreation, and study has the widest choice possible. If inclined especially toward any of the subjects mentioned above, the instruments designated there will be found serviceable and satisfactory. If the object is economy, and only ordinary objects, such as parts of insects, pond life, hairs, scales, feathers, crystals, food-stuffs, fabrics, etc., are to be examined, the A or AB will afford much amusement and information at a trifling cost.

If it is intended to lay the foundation for a more complete outfit later, a stand such as the BB, having an adjustable substage, should be the basis, and then such objectives, eyepieces, condensers, nosepiece, etc., as are desired can be added at any time. The magnifying powers attainable with any objective and eyepiece can be found in the Table of Magnifications.

FIELD AND TRAVEL.

The Portable Microscope has been especially designed for this purpose, and it meets the requirements of compactness, lightness, stability, and convenience. With the addition of the Abbe condenser and $\frac{1}{12}$ -inch oil-immersion lens, it is a most excellent instrument for the veterinarian called upon to make examination in the field or at a distance from the laboratory, as well as for physicians desiring to make a diagnosis at the bedside.

DRAWING FROM NATURE.

Next to photography, the most satisfactory method of reproducing objects, as seen under the microscope, is by means of the Camera Lucida. Our improved Abbe Camera Lucida is to be recommended first of all, after which comes the simplified Abbe, Double Prism, Wollaston, and Neutral Tint in the order named. The Adjustable Drawing Table should be used with the Abbe cameras to insure best results.

A great aid in the selection of a microscope as well as in its use will be found in the following publications, both of which are recognized as standard:

MANIPULATION OF THE MICROSCOPE

A copy of *Manipulation of the Microscope*, by Mr. Edward Bausch (third edition, bound in cloth, price 75 cents), accompanies each microscope purchased, except the Library and simple microscopes, and those sold at special rates to educational institutions, etc. In case it is desired to study the principles of the microscope before selecting an instrument, a copy of the book will be mailed on receipt of price, and we will give credit for the amount when an instrument is purchased at the regular price.

Manipulation of the Microscope gives in clear and concise language all information regarding the principles, and leads to the intelligent use of the microscope. Beginning with the purpose of the microscope, the parts of the instrument are next described in detail, together with the principles involved in their construction, followed by a chapter outlining requisites for work. How to work, not only with the microscope, but with its various accessories, is supplemented by a chapter on advanced manipulation. Chapters on how to test when selecting and how to care for a microscope contain valuable information and enable one to not only select the proper instrument for the work to be done but to keep it in working order after it has been secured.

JOURNAL OF APPLIED MICROSCOPY

Established January, 1898.

Issued Monthly.

Subscription, One Dollar per year in advance.

Devoted exclusively to the practical application of the microscope in the various sciences and industries; methods, apparatus, and materials employed in Laboratory Photography, including the process required in the transformation of an object, macroscopic or microscopic, into an illustration.

The matter published consists of original papers on microscopical technique and apparatus, reviews, in English, of contemporary literature in English, German, French, Italian, and other languages, and news and notes of general interest to laboratory workers.

The review department embraces Botanical Literature, Animal Biology, Bacteriological Literature, Normal and Pathological Histology, Neurological Literature, and Current Mineralogical Literature. All reviews are strictly up-to-date.

The list of contributors includes representatives of the leading educational institutions in the country, thus insuring authoritative papers in all lines of work.

BRANCHES: NEW YORK CITY AND CHICAGO.

CONSTRUCTION

TYPES OF STANDS.

All of our microscope stands are constructed after two types: the American type, which we have developed from the Jackson model and which was for many years, until the Oberhauser model took its place, the standard instrument in public and private laboratories; and the compact, solidly built type of stand which we have constructed, along the lines laid down by Oberhauser, to meet the growing demand for a microscope having the greatest possible durability, coupled with the greatest compactness consistent with practicability.

In the development of these stands to meet American requirements, so many original modifications have been made by us that our instruments have come to be recognized as distinct from other forms of the Oberhauser type and have often been referred to as the **Bausch & Lomb Continental Stands**. We shall therefore adopt this designation in the present list of these instruments.

Our improvements of the Continental construction have been so freely imitated that we have been obliged to cover the most important features with patents, not for the purpose of increasing prices, as will be seen from an examination of the price list, but simply to secure the results of our labors. Our patrons will therefore bear in mind that ours are the only instruments now having these improvements.

Of the American type, all except the Model and the Universal have become obsolete. Complete descriptions of these will be found accompanying the price list.

Only the best metals and materials of all kinds are used in construction, those which have proven themselves by actual trial to be the best adapted for the purpose.

In the development of our products our ideal has been a higher one than the mere attainment of commercial requirements. We have sought elegance in design, the arrangement of parts for convenience in working, perfection in finish, the proper selection of metals for greatest wear. We follow the distinctively American system of gauging and controlling the construction of the various parts in each of the processes of manufacture which, coupled with rigid inspection, secures the greatest exactness and uniformity of workmanship, looking always toward absolute perfection as well as permanency.

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

The following general features of construction apply to all of our microscope stands, except in special cases where attention is called to a different construction under the description of that instrument.

GENERAL FEATURES.

The mechanic takes pride in sharp edges and square corners, but these have been found to be a disadvantage, making the microscope disagreeable to handle, and, in the hands of inexperienced students in the bacteriological laboratory, even dangerous, on account of the liability to infection through slight abrasions of the skin which may be produced by contact with sharp corners. Recognizing these facts a number of years ago, we began to make the edges rounded wherever permissible, and the advantages of this construction are now generally accepted.

Brass parts are first highly polished and then coated with a transparent, hard lacquer of great resistance, which effectually protects the metal from the erosive action of the air or corrosive gases which it may contain, as well as from the effects of handling and ordinary wear. The proper method of making and applying lacquer to brass work, as well as the preparation of the metal to receive the lacquer, is a process few manufacturers have mastered. On it depends the permanent good appearance of the instrument. In the lower priced compound microscopes and in the dissecting microscopes, where metal other than iron is used for some parts, it is protected by successive coats of japanning baked on at a high temperature, forming the most durable finish which it is possible to give to metal for laboratory use.

PARTS OF THE STAND.

Base.—The horseshoe base is a compact modification of the tripod base. In our construction of it, the supporting points are brought considerably farther apart than is usual, giving increased stability. The width of the base is always so calculated as to bring the center of gravity sufficiently low, and stability in the inclined position is secured by extending the back claw.

Joint.—This essential part of the stand is made with the greatest care. The axle is of steel, cone-shaped, and accurately ground and fitted. Any desired tension is obtained by loosening one nut and tightening the other.

Stage.—Stages of all microscopes except the simpler forms are constructed with vulcanite tops, which are joined to the metal supporting plates by a chemical union between the vulcanite and the metal, insuring permanency, which cannot be obtained when the rubber plates are fastened down by means of screws or other devices. The vulcanite presents a smooth, even surface, over which the object can be moved with facility. Stages of all microscopes are of large size and of suitable thickness to give the requisite firmness under manipulation.

Mirror.—The mirrors are plane and concave and of ample size to give good illumination. They are silvered by a special process original with us, which gives a surface of exceptional brilliancy and permanency. They are of the proper foci for the best results.

Iris Diaphragm in the Plane of the Stage.—Heretofore diaphragms with fixed openings have generally been employed to control the volume of light entering the objective, except when the condenser is used, in which case an iris diaphragm has been placed below the condenser.



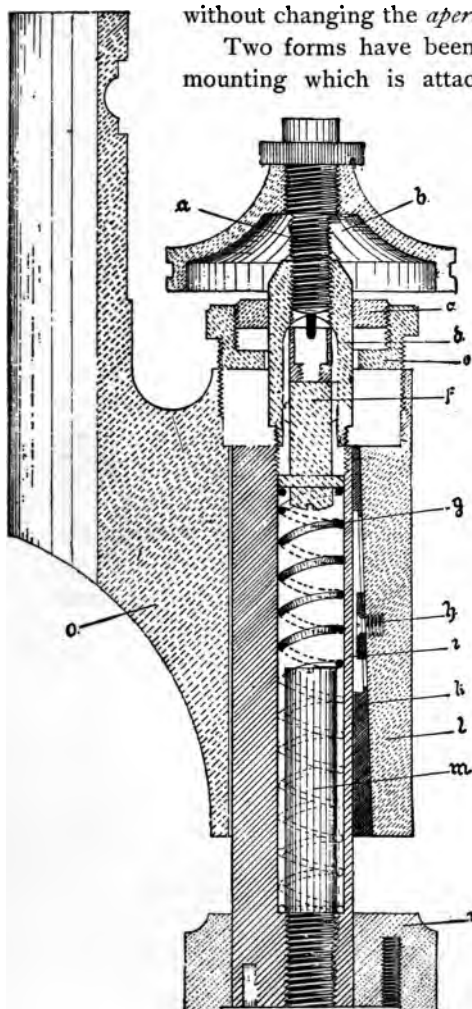
Top view and cross section, showing construction of stage and position of iris diaphragm.

This form of the iris diaphragm is so designed as to be used in the plane of the stage, either with or without the condenser, and to give any desired size of aperture, even sufficient for the condenser to be used *through* it in oil-immersion contact with the slide if desired.

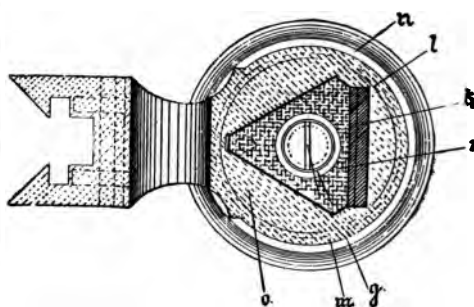
The advantage of such a diaphragm is apparent, as it is thus in the only position in which the *volume* of light entering the objective can be varied without changing the *aperture* of the illuminating cone.

Two forms have been adopted: for the BB stand, a shallow mounting which is attached to the substage arm, and for all instruments provided with the complete substage a deeper, detachable form. Both are adjustable with reference to the plane of the stage.

Fine Adjustment.—The fine adjustments in all the instruments except the AB are constructed on the same principle. The micrometer



Vertical section of fine adjustment.



Cross section of fine adjustment.

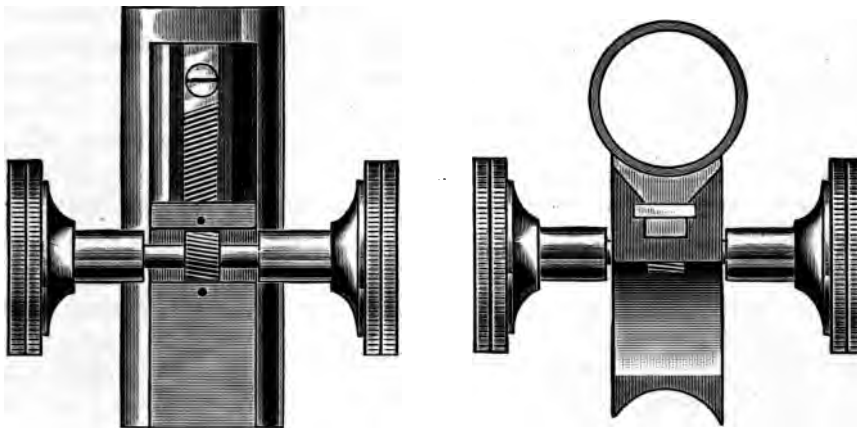
screw acts directly upon the fixed triangular portion of the arm, the weight of the body of the microscope being balanced by a spiral spring (g), and the screw (a) is thus subjected to a strain equal only to the friction or resistance in the adjustment, plus the difference between the tension of the spring and the weight of the body, as

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

the spring is compressed when the adjustment is brought nearer to its limit of motion. Lateral motion is eliminated by an original device which does away with set-screws and springs, with their liability to relaxation and wear. This form of adjustment has been proven by actual laboratory tests during the past five years to be superior in delicacy of motion, and in its ability to withstand severe wear and hard usage, to any adjustment which has ever been placed upon a microscope; and during this period we have not had one of the thousands sent out returned for repair, nor do we know of one which has deteriorated.

In the sections, "i" represents the triangular fixed portion of the arm which, as shown in the cross section, is in perfect contact with the movable portion of the arm on two sides. The contact on the third side is by means of a wedge (k), the inner surface of which is exactly parallel with the surface of the triangular bearing (i). An absolutely perfect fit of all bearing surfaces is secured in the simplest possible manner by forcing the wedge into position, where it is securely held by the set-screw (h). This fitting is permanent because it is of the same solidity as though made of a solid piece of metal, and can be relied upon to last as long as any other part of the microscope and to retain both its delicacy of action and freedom from lateral motion to the last.

The head of the micrometer screw is sufficiently large to give great delicacy of movement and, in all but the low-priced instruments, is graduated into 100 parts for measuring the thickness of objects.



Coarse adjustment, showing diagonal rack and pinion.

Cross section of coarse adjustment, showing extra piece or tube for accurate bearing.

Rack and Pinion Adjustments.—The rack and pinion adjustments of all our microscopes are made exactly alike. The diagonally cut rack and pinion is used throughout, as this construction has the greatest wearing qualities and gives the most delicate movements. We have built special machines for cutting the rack and pinion, thus producing the most accurate and uniform results possible. The bearings of the pinion are all accurately ground and polished, insuring permanent, smooth working and best wearing qualities. Important advances have also been made in the construction of the sliding

parts. The use of specially devised machinery for cutting and finishing the surfaces with the utmost accuracy permits the hand fitting to be done with an exactness before impossible. In fact, these adjustments are more perfect when they leave the machine for the hand fitter than the completed instruments were only a few years ago. Although a more expensive construction than that employed in microscopes of foreign manufacture, the use of an extra piece of metal, attached to the body tube and on which the sliding surface is made, has been warranted by the increased efficiency secured. It is mechanically more perfect, and it gives a much more rigid bearing, free from all lateral motion and with minimum friction. It is impossible to make an accurate fitting direct to the body tube, as it is impossible to draw brass tubing true. This can be easily demonstrated by placing a straight-edge lengthwise on the tube of any microscope and holding the surfaces in contact toward the light. The pinion box is provided with automatic tension for taking up any possible wear.

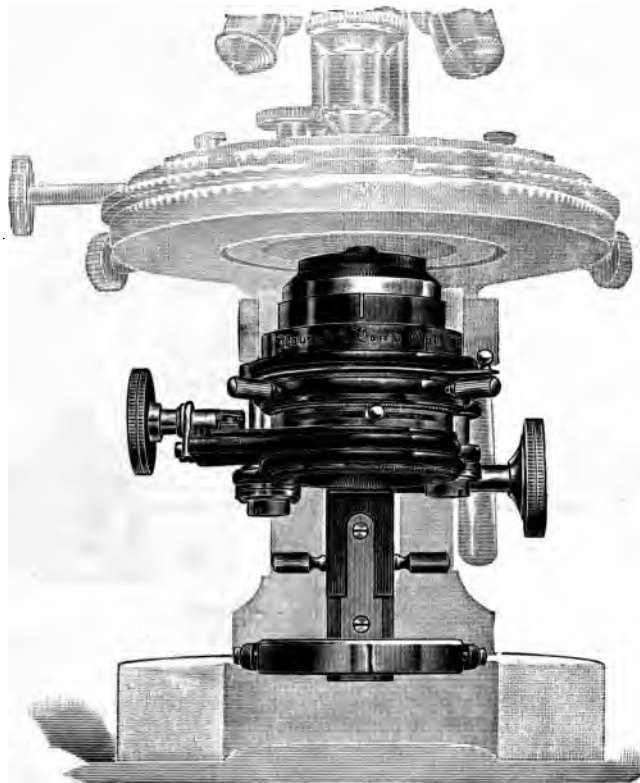
Draw Tube.—All stands, except the simpler forms, are provided with nicked draw-tubes graduated in millimeters and sliding in cloth-lined sleeve tube. The cloth lining has been used on our microscopes for the last decade, and has proven very satisfactory. The movement, while firm, is very agreeable to the touch, being free from the harshness of metallic bearings, working smoothly and firmly after years of use. The ordinary metal draw-tube in metal sleeve, on the contrary, becomes difficult to operate after being in use some time.

Complete Substage.—We introduce herewith an original construction of the substage. All substages heretofore constructed have been deficient either in stability or convenience, and more often than otherwise in both. The very limited space available, and the variety of adjustments required in the substage, have made it very difficult to design a form which, while sufficiently convenient, would be rigid enough to withstand constant wear and at the same time not be out of proportion to the microscope. This substage obviates these difficulties in a very simple manner, and is without question the most complete and practical yet offered.

The construction is shown in the engravings: Fig. 1, the substage as in actual use; Fig. 2, the parts opened out. The entire substage is supported on a heavy metal bar joined to the main arm of the microscope, to which it is attached by a slide with rack and pinion, whereby the whole may be raised and lowered for adjustment with reference to the object on the microscope stage. The slide and rack-and-pinion are of the same size and weight, and they are made in the same careful manner as the coarse adjustment of the microscope, insuring the same accuracy and wearing qualities. The automatic device for keeping the pinion in adjustment has been retained.

The substage is composed of three parts arranged one above the other: (1) The upper part consists of a fixed ring supporting the removable iris diaphragm. This diaphragm may be brought flush with the top of the stage. It is operated by a lever, is easily accessible from the front of the substage, and is thus in the most effective position, as it comes, if desired, directly in contact

with the object-slide without the interposition of the condenser. This diaphragm is especially useful with low-power objectives where the condenser is not used, and for high-power lenses with the condenser; as when the condenser is in use, the upper iris diaphragm limits the *volume* of light entering



One-half actual size.

Complete Substage.

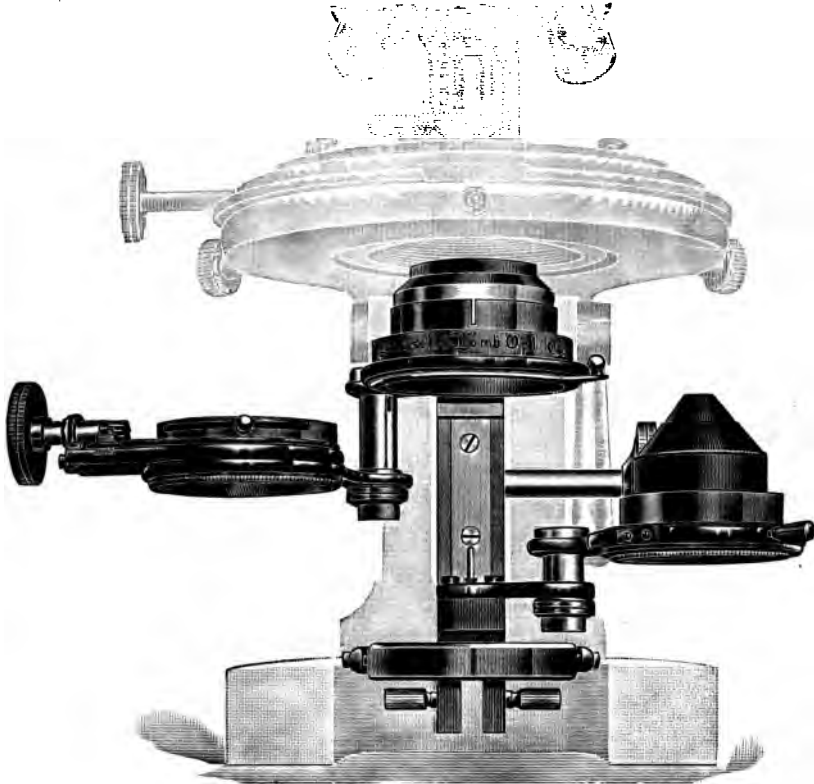
Fig. 1. Substage closed.

the objective, without reducing the *angle* of the illuminating cone. This method of controlling the light is of great importance in the examination of transparent bodies, such as living bacteria, diatoms, and similar objects.

The middle section of the substage is movable vertically and consists of a ring, with *centering screws*, carrying a 1.20 N. A. Abbe condenser. The condenser ring swings laterally to the left of the instrument in such a manner that the condenser is entirely out of the path of light from the mirror when not required, and is also perfectly free for changing accessories. The condenser ring, the arm on which it is carried, and the sliding support are all very firmly built, giving perfect rigidity and remaining accurately centered after long use. The vertical adjustment of this section of the substage permits the condenser to be brought in immersion contact with the object slide, or to be placed in any other desired position without reference to the position of the upper iris diaphragm.

BRANCHES: NEW YORK CITY AND CHICAGO.

The lower section of the substage carries the large iris diaphragm which is used below the condenser, controlling the volume of light and at the same time the angle of the illuminating cone. This diaphragm may be swung from under the condenser to the right of the instrument. It is so mounted that it



One-half actual size.

Complete Substage.

Fig. 2. Parts separated to show construction.

may be rotated upon its own axis and is laterally movable by rack and pinion, giving illumination of any desired obliquity.

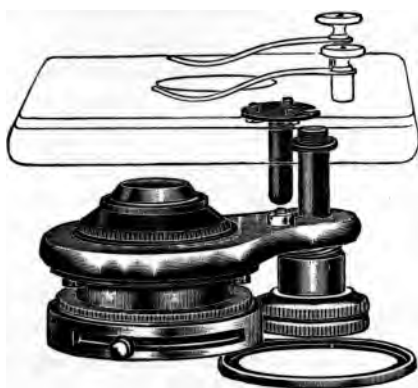
When the complete substage is desired for microscopes other than those with which it is regularly listed, we shall be pleased to adapt it where possible.

SCREW SUBSTAGE.

This form of substage is intended to provide an accurate and convenient means of focusing the substage condenser on the object and of removing the condenser from the path of light from the mirror quickly and easily when desired. Its simplicity and low cost permit the use of a condenser where it would otherwise be too expensive. In this substage the ring for holding the condenser is carried on a solid metal arm, which is moved vertically by means of

a heavy, quick-acting, six-strand screw. The condenser is retained constantly in the optical axis by means of a rigid guide post passing through the arm.

The condenser may be quickly lowered by turning the milled head at the lower end of the screw, and when it reaches the limit of downward motion swings out to one side. Turning the milled head in the opposite direction swings the condenser back into place and elevates it.

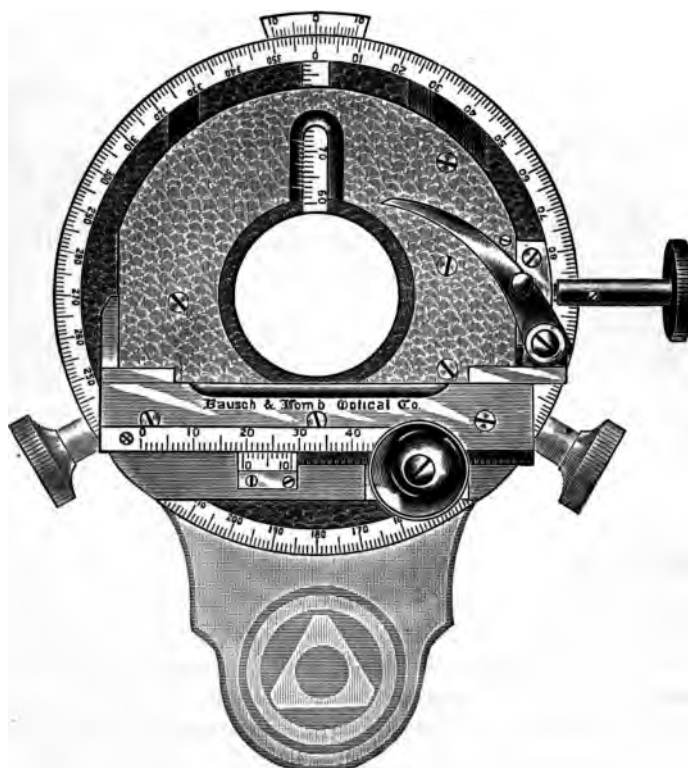


Screw Substage.

An iris diaphragm is attached to the upper side of the arm, and is so arranged that when the substage is raised to the fullest extent the iris is in the plane of the stage. This diaphragm may thus be used in the most advantageous position, either with or without the condenser.

This substage is attached to the BB microscope only.

REVOLVING MECHANICAL STAGE.



BRANCHES: NEW YORK CITY AND CHICAGO.

A mechanical stage, to be of any value, must be constructed with such accuracy that it will carry the minutest object without the slightest deviation from a given plane throughout its various movements and with such rigidity as not to be affected by any pressure applied to it during manipulation, otherwise the object will not remain in focus when high-power lenses are used. It is further very important that this delicacy and accuracy of movement shall remain permanently, even after long use. Various combinations of screw and rack and pinion have been used for the movements, but the screw has always proven unsatisfactory and soon wears out. We have therefore adopted the diagonal rack and pinion movement for both motions, and it is very satisfactory in every respect, giving equal speed and sensitiveness to both pinions and having unquestioned wearing qualities.

The movements have exceptionally long range, permitting the examination of series of sections and large objects. A graduated millimeter scale, with vernier reading to tenths, permits readings in either direction to be taken, while the circumference is divided into 360° and has verniers reading to tenths of a degree. It will thus be seen that an object may be moved from front to back, sidewise in either direction, or rotated upon its axis, and its position recorded for future observation.

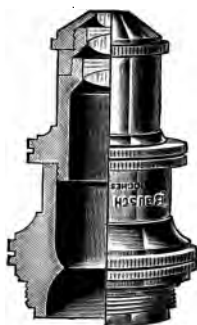
The object slide is held in place by means of a spring finger.

The stage with the object may be centered to the optical axis of the microscope by means of two centering screws at the side.

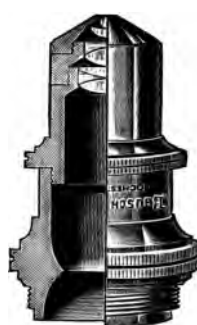
This form of stage is only applicable to those microscopes with which it is listed.



3-inch Objective.



1/2-inch Objective.



1/2-inch Oil Immersion Objective.

OBJECTIVES.

The all-important part of the microscope is the objective. No matter how perfectly designed, well made, and finely finished the stand may be, it is useless without first-class lenses with which to work.

Realizing the great importance of producing the highest grade of objectives, we have always been on the alert for improvements, and these have been made as fast as improvements in the manufacture of optical glass, machinery for constructing mounts, and discoveries in the application of

physical laws have permitted. In this direction we feel that we have kept fully abreast of the times,—no easy task, as the requirements of to-day are almost the opposite of those of a few years ago. The objectives in the sub-joined price lists will be found classified according to their numerical aperture, and while a great variety both as to initial magnification and numerical aperture is offered, three lenses meet the majority of requirements for individual and laboratory work,

The $\frac{3}{8}$ -inch objective is the type of the low-powers. These lenses have exceptionally large, flat, and evenly illuminated fields, depth of focus, and high resolving power. The tips of the mountings are nicked so that they may be cleaned without injury.

The $\frac{1}{8}$ -inch represents the medium power lenses, which are all three-system, a hemispherical front lens and two doublets.

Medium-power lenses are used for such a variety of work that long working distance combined with the highest attainable numerical aperture are required. Our medium-power lenses have these qualities to an unusual degree. Their high aperture gives them great resolving power and illumination and their remarkably long working distance adapts them to the examination of thick objects which lenses of a shorter working distance could not be used upon. They have, at the same time, exceptional flatness of field.

The $\frac{1}{2}$ oil-immersion objective is the type, and for almost every purpose the only desirable, high-power lens. It is the embodiment of the highest optical and mechanical skill, and while necessarily a somewhat delicate instrument, all possible precautions have been taken to insure against the effects of wear and accident. The front half of the mounting is heavily nicked to permit frequent cleaning without injury, and all milled edges are purposely omitted, first because they constantly accumulate dirt and oil, and second to prevent the possible unscrewing of the tip containing the hemisphere, which is often done thoughtlessly and invariably results in damage to the objective. The front has the correct bevel to secure the best contact with the oil, and to prevent the formation of bubbles and reflections.

The minute hemispherical front lens is held in place in the mounting through compression of the metal around its periphery, thus securing the solidest hold upon the hemisphere, least interference with the entering cone of light, and eliminating the possibility of leakage. These points are worthy serious consideration when making a selection for laboratory use where the lenses are to be handled by students not always familiar with the delicate care required of most $\frac{1}{2}$ th lenses. As to the defining power, flatness of field, uniformity, and correct magnification of our $\frac{1}{2}$ th, we believe them to be superior to any other $\frac{1}{2}$ th in the world. We realize this to be a broad statement, but the careful estimation of authorities who use them justifies our statement. They are gladly sent for trial and comparison, the best way to prove the merits of such an apparatus. We absolutely guarantee the permanency of all glass and material used in our objectives. Our lenses have been used for years in all kinds of climates, and their permanency is unquestioned.

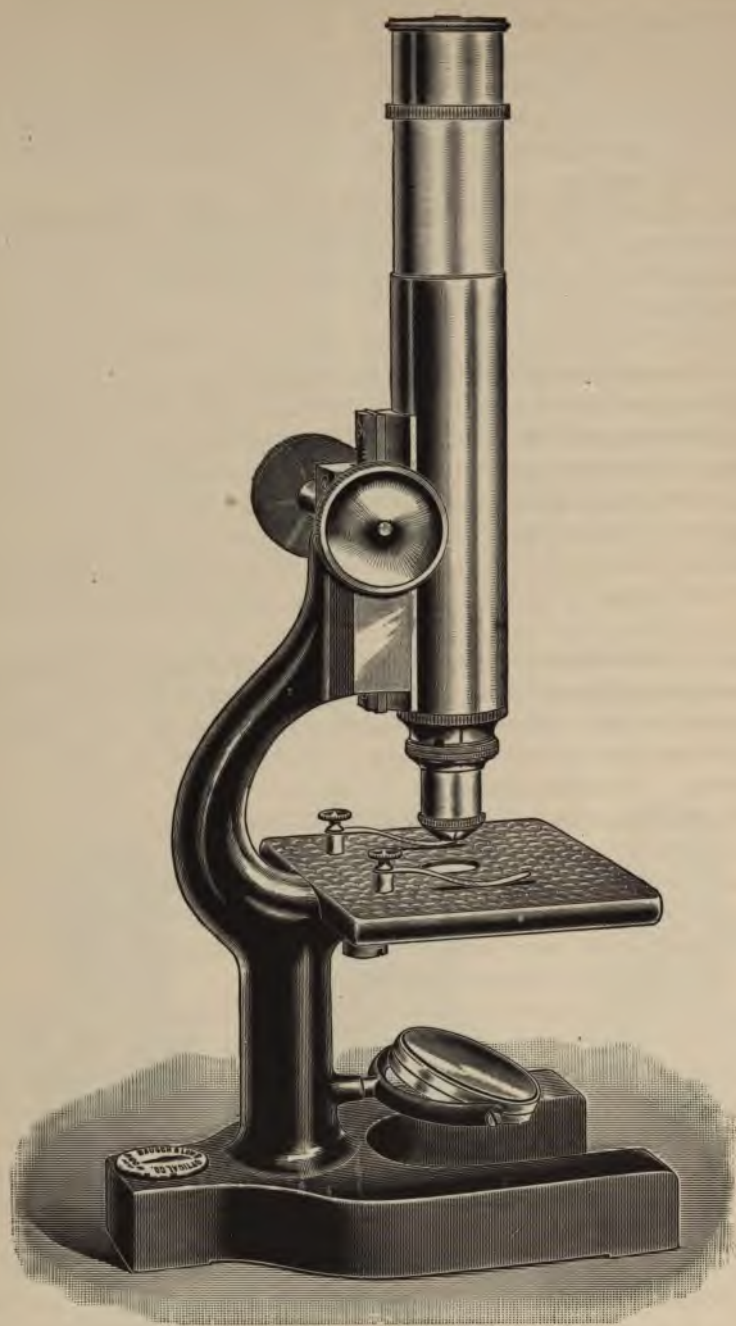


Figure one-half actual size.

Bausch & Lomb Continental Microscope—A

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Bausch & Lomb Continental Microscope

A

This microscope is designed to meet the popular demand for a low-priced instrument which, while necessarily not so elaborate as those of higher price, will serve for the examination of a multitude of objects, such as starches, sugars, drugs, silks, and other fabrics, and the fibres from which they are made, pork and other flesh suspected of containing trichinæ and other parasites, cements, earths, paper and materials for making paper, paint and its components, grinding and polishing materials, and for the examination of pond life, parts of insects, pollen of plants, spores of moulds, ferns, etc., as well as the coarser structures of plants and animals.

The stand is of sufficient size for convenient work and is well made in every respect, thus differing from most low-priced microscopes. The stage is extra large and nicked to insure against the action of corrosives. The objectives are focused by means of a delicately adjusted rack and pinion. The main tube has society screw.

This instrument is furnished in neat cherry carrying case with metal handle.

Telegraphic Code.	Catalogue Number.	Objectives.	Eyepieces.	Nosepiece.	Price.
<i>Aac</i>	A1	1 Divisible—1½ and ½ in.	1 in.	. . .	\$14 00
<i>Aalus</i>	A2	1 Divisible—1½ and ½ in.	2 in., 1 in.	. . .	16 00
<i>Aantes</i>	A3	1 Divisible—1½ and ½ in., and a ¼ in. Special.	1 in.	. . .	20 00
<i>Aatos</i>	A4	1 Divisible—1½ and ½ in., and a ¼ in. Special.	2 in., 1 in.	. . .	22 00
<i>Aaderus</i>	A5	1 Divisible—1½ and ½ in., and a ¼ in. Special.	2 in., 1 in.	Double	27 00



Figure one-half actual size.

Bausch & Lomb Continental Microscope—AB

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Bausch & Lomb Continental Microscope

AB

For the laboratories of secondary schools, when a small, compact, and low-priced instrument is required, and for amateur work where it is imperative that the cost of the microscope shall be very little, the AB Microscope will be found much superior to any other offered at or near the same price. It is thoroughly well made and has the advantage of having a base of suitable size for stability, stage of sufficient proportions for work, and sufficient working distance between stage and arm to permit the use of the nosepiece. These features are not found in other microscopes of similar price. The coarse adjustment is by accurately made sliding tube. Fine adjustment by micrometer screw acting upon a V-shaped bearing fitted in the solid pillar of the instrument, thus securing extreme rigidity, accurate movement, and durability.

Each AB Microscope is furnished in neat cherry carrying case with metal handle.

Telegraphic Code.	Catalogue Number.	Objectives, Dry.	Eyepieces.	Nosepiece.	Price.
<i>Abalus</i>	AB1	$\frac{2}{3}$, $\frac{1}{6}$	1 in.	. . .	\$26 00
<i>Abantu</i>	AB2	$\frac{2}{3}$, $\frac{1}{6}$	1 in.	Double	31 00
<i>Abatos</i>	AB3	$\frac{2}{3}$, $\frac{1}{6}$	2 in., 1 in.	. . .	28 00
<i>Abderum</i>	AB4	$\frac{2}{3}$, $\frac{1}{6}$	2 in., 1 in.	Double	33 00

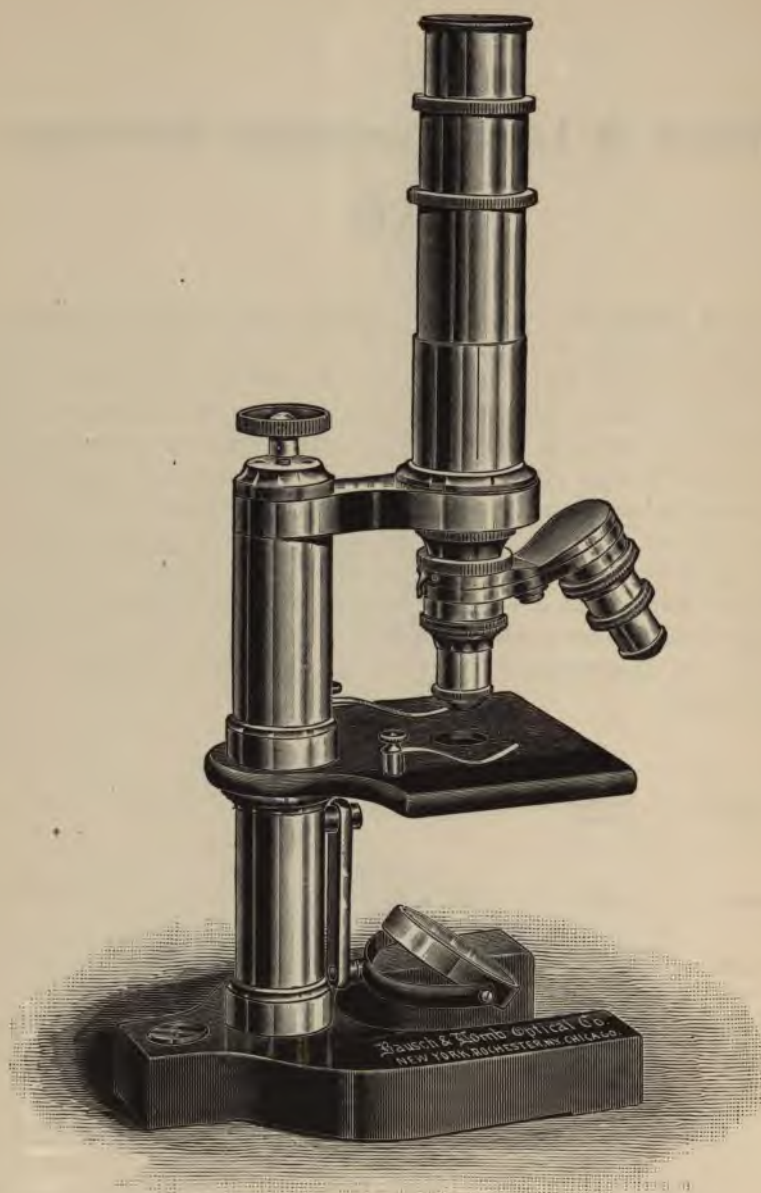


Figure one-half actual size.

Bausch & Lomb Continental Microscope—AC

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Bausch & Lomb Continental Microscope

AC

This stand is the best of those having sliding tube coarse adjustment, and will do good work where high powers are not required. The base is standard size, neatly japanned black, the stage is oxidized black metal and with rotating diaphragms. There is good working distance between stage and arm.

The sliding tube for coarse adjustment has binding screw (not shown in the illustration) by which the body tube is quickly clamped in any position, preventing rotation where the double nosepiece is used.

The fine adjustment is our regular triangular bar construction (see description under "Construction").

The main tube has draw tube and society screw for use of very low powers.

Each AC Microscope is furnished in polished cherry carrying case with handle and lock.

Telegraphic Code.	Catalogue Number.	Objectives, Dry.	Eyepieces.	Nosepiece.	Price.
<i>Acomar</i>	AC1	2/3, 1/6	1 in.	. . .	\$30 00
<i>Aceras</i>	AC2	2/3, 1/6	1 in.	Double	35 00
<i>Achaea</i>	AC3	2/3, 1/6	2 in., 1 in.	. . .	32 00
<i>Achan</i>	AC4	2/3, 1/6	2 in., 1 in.	Double	37 00



Figure one-half actual size.

Bausch & Lomb Continental Microscope—B

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Bausch & Lomb Continental Microscope

B

This microscope has now been in use six years, and in that time has found its way into a very large number of high school and some college laboratories, for the reason that it combines the essential features of a microscope for student work where low powers only are required, namely, coarse adjustment by standard rack and pinion and standard micrometer screw fine adjustment (for description see "Construction"), joint for inclination, draw tube and society screw, with a very moderate cost. The stage is oxidized metal, and has revolving diaphragms.

This microscope is without substage attachment. Its simplicity makes it easy for young students to use it, and it is very durably made and finished.

Each B Microscope is furnished in polished cherry case with handle and lock.

Telegraphic Code.	Catalogue Number.	Objectives, Dry.	Eyepieces.	Nosepiece.	Price.
<i>Beber</i>	B1	2/3, 1/6	1 in.	. . .	\$35 00
<i>Bebrius</i>	B2	2/3, 1/6	1 in.	Double	40 00
<i>Bectria</i>	B3	2/3, 1/6	2 in., 1 in.	. . .	37 00
<i>Begul</i>	B4	2/3, 1/6	2 in., 1 in.	Double	42 00

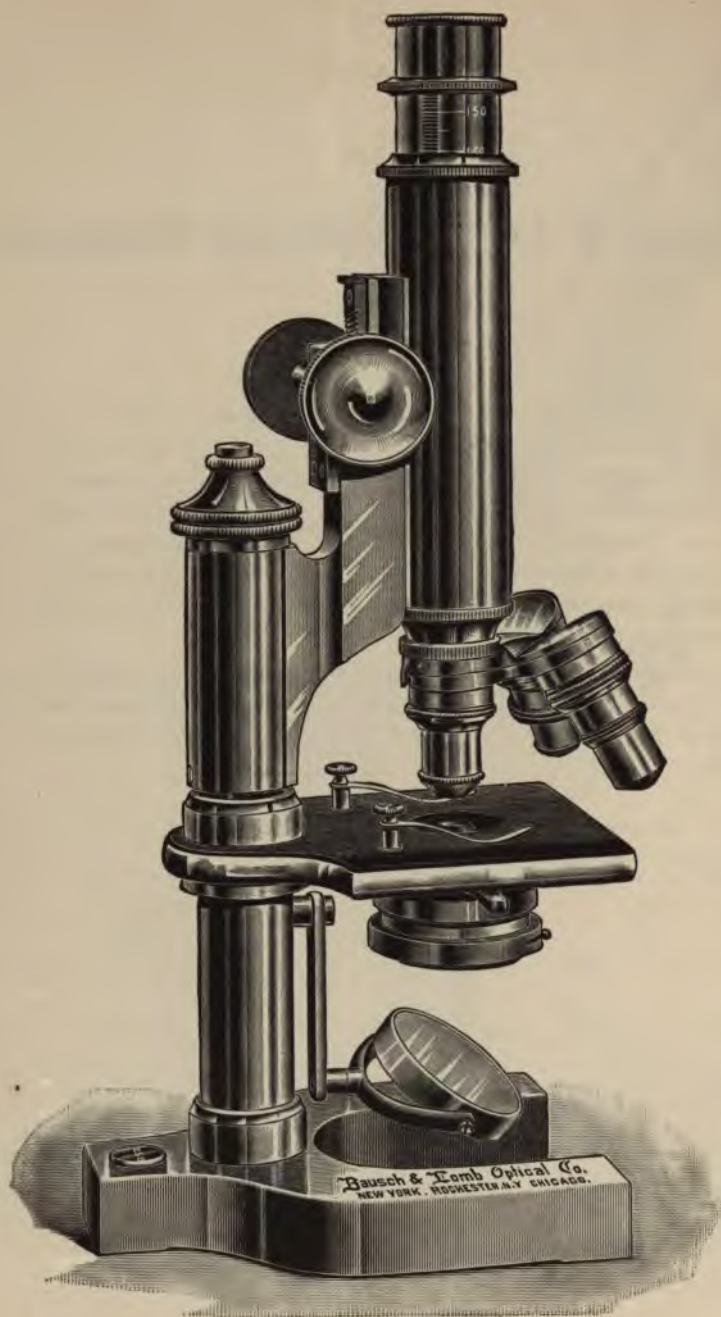


Figure one-half actual size.

Bausch & Lomb Continental Microscope—BA

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Bausch & Lomb Continental Microscope

BA

The BA Microscope is a comprehensive laboratory instrument, having standard rack and pinion, coarse and triangular bar fine adjustments, large base and stage, adjustable substage arrangement for condenser, iris diaphragm, etc. It has no joint for inclination, hence appeals more directly to those who prefer always to use the microscope vertical.

The stand is of brass throughout. The substage has simple but effective lever arrangement for focusing the condenser. The main tube has nicked, graduated draw tube. This substage is regularly fitted with thimble diaphragms, giving three sizes of openings.

The attachable mechanical stage is applicable to this stand and adds greatly to its value for blood, bacterial, urinary, and similar work.

Each BA Microscope is furnished in polished cherry case with handle and lock.

Telegraphic Code.	Catalogue Number.	Objectives.		Eye-pieces.	Nose-piece.	Abbe Condenser.	Price.
		Dry.	Oil Immersion.				
<i>Baku</i>	BA1	2/3, 1/6		1 in.	. .	. .	\$40 00
<i>Bala</i>	BA2	2/3, 1/6		1 in.	Double	. .	45 00
<i>Balbi</i>	BA3	2/3, 1/6		2 in. 1 in.	. .	. .	42 00
<i>Balkas</i>	BA4	2/3, 1/6		2 in. 1 in.	Double	. .	47 00
<i>Balkan</i>	BA5	2/3, 1/6		1 in.	Double	1.20 N.A.	55 00
<i>Ballari</i>	BA6	2/3, 1/6		2 in. 1 in.	Double	1.20 N.A.	57 00
<i>Baldus</i>	BA7	2/3, 1/6	1/12, 1.32 N.A.	2 in. 1 in.	. .	1.20 N.A.	85 00
<i>Bali</i>	BA8	2/3, 1/6	1/12, 1.32 N.A.	2 in. 1 in.	Triple	1.20 N.A.	92 00



Figure one-half actual size.

Bausch & Lomb Continental Microscope—BB

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Bausch & Lomb Continental Microscope

BB

This microscope has now been in actual laboratory use for over six years, and its sales have increased with a rapidity surprising even to ourselves, although it has had to bear the brunt of competition with the best foreign instruments. Fully one-half of all microscopes sold by us are BB's. The very best laboratories are equipped with them, and they are finding much favor in laboratories which have heretofore purchased instruments of much lower price, as, being so thoroughly well built in every detail and adaptable to every kind of work, they are actually more economical as a laboratory instrument than those of less cost.

The stand is of brass throughout. The joint has steel stops for holding the body parallel with the base when photographing. Mirrors are extra large, plane and concave, and adjustable on the mirror bar. The mirror bar is adjustable laterally, and has click indicating central position. The screw substage (see "Construction") permits use of condenser when desired, and has iris diaphragm working in the plane of the stage. Stage is large and with vulcanite top. Coarse adjustment is our standard rack and pinion construction, fine adjustment our standard triangular bar form. The head of fine adjustment screw is graduated for measuring the thickness of objects under observation. The main tube has nicked draw tube graduated in millimeters and sliding in cloth lined sleeve.

The attachable mechanical stage should be included where the instrument is intended for bacteriological, blood, urinary or similar work.

Each BB Microscope is furnished in polished wood carrying case, with handle and lock.

Telegraphic Code.	Catalogue Number.	Objectives.		Eye-pieces.	Nose-piece.	Abbe Condenser.	Price.
		Dry.	Oil Immersion.				
<i>Bbedes</i>	BB1	2/3, 1/6		1 in.	. .	. . .	\$ 48 00
<i>Bbehles</i>	BB2	2/3, 1/6		1 in.	Double	. . .	53 00
<i>Bbeket</i>	BB3	2/3, 1/6		2 in. 1 in.	. .	. . .	50 00
<i>Bbesse</i>	BB4	2/3, 1/6		2 in. 1 in.	Double	. . .	55 00
<i>Bbla</i>	BB5	2/3, 1/6		1 in.	Double	1.20 N.A.	63 00
<i>Bbelai</i>	BB6	2/3, 1/6		2 in. 1 in.	Double	1.20 N.A.	65 00
<i>Bberi</i>	BB7	2/3, 1/6	1/12, 1.32 N.A.	2 in. 1 in.	. .	1.20 N.A.	93 00
<i>Bbegas</i>	BB8	2/3, 1/6	1/12, 1.32 N.A.	2 in. 1 in.	Triple	1.20 N.A.	100 00

BRANCHES: NEW YORK CITY AND CHICAGO.

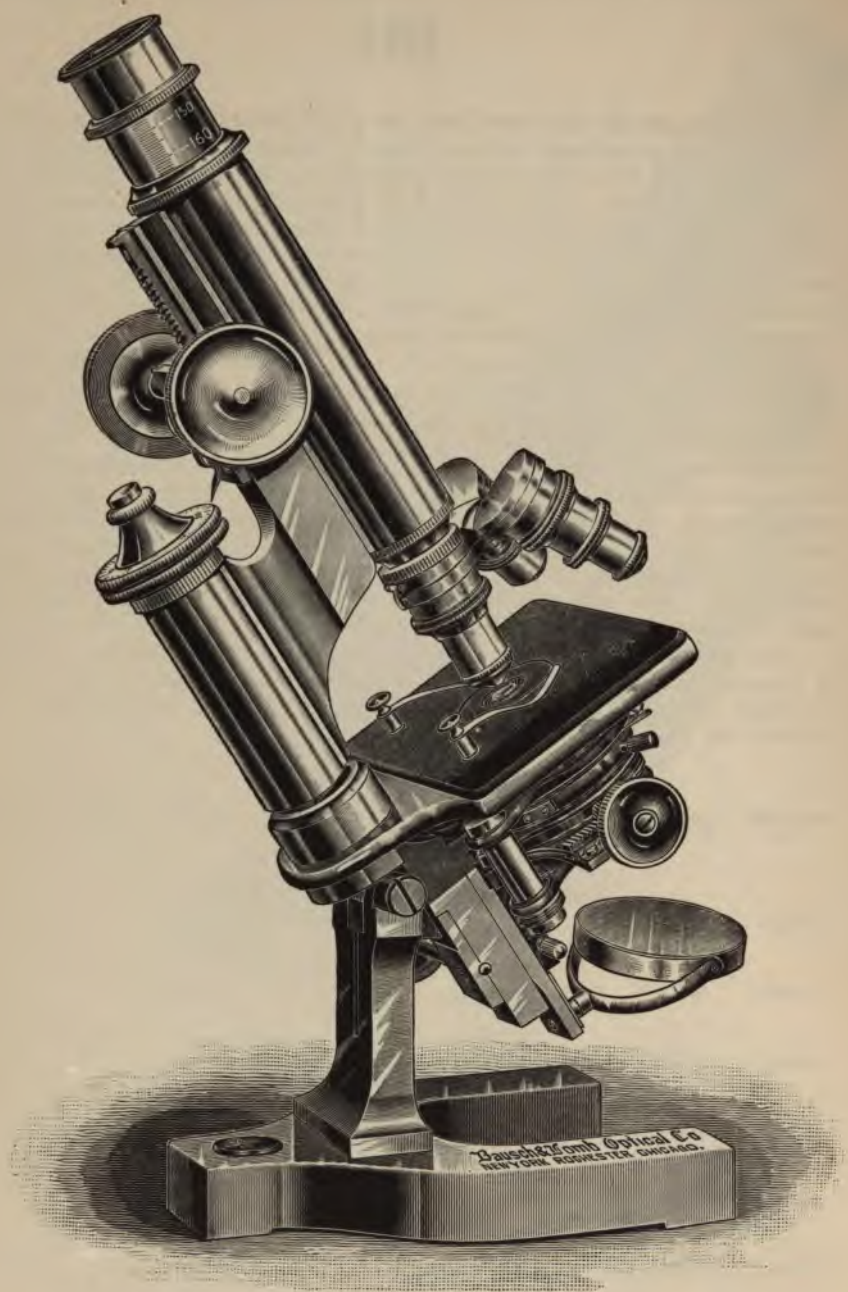


Figure one-half actual size.

Bausch & Lomb Continental Microscope—BC

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Bausch & Lomb Continental Microscope

BC

The BC Microscope is the simplest form having the complete substage, and is designed for bacteriological and general advanced work where complete control of substage illumination is required, and where cost prevents the use of one of the larger microscopes. The addition of the attachable mechanical stage makes a very complete instrument.

The stand is of brass throughout. The complete substage (see "Construction") includes the Abbe condenser with blue glass and dark ground stop. Coarse adjustment is our standard rack and pinion adjustment; fine adjustment, our standard triangular bar form. Head of fine adjustment screw is graduated. Main tube has draw tube nicked, graduated, and sliding in cloth lined sleeve. The draw tube also has society screw for use of very low power objectives.

Each BC Microscope is furnished in polished wood carrying case with handle and lock.

Telegraphic Code.	Catalogue Number.	Objectives.		Eye-pieces.	Nose-piece.	Abbe Condenser.	Price.
		Dry.	Oil Immersion.				
<i>Bcali</i>	BC1	2/3, 1/6		1 in.	. .	1.20 N.A.	\$ 73 00
<i>Bcca</i>	BC2	2/3, 1/6		1 in.	Double	1.20 N.A.	78 00
<i>Bcma</i>	BC3	2/3, 1/6		2 in. 1 in.	. .	1.20 N.A.	75 00
<i>Bcedu</i>	BC4	2/3, 1/6		2 in. 1 in.	Double	1.20 N.A.	80 00
<i>Bcago</i>	BC7	2/3, 1/6	1/12, 1.32 N.A.	2 in. 1 in.	. .	1.20 N.A.	108 00
<i>Bcni</i>	BC8	2/3, 1/6	1/12, 1.32 N.A.	2 in. 1 in.	Triple	1.20 N.A.	115 00

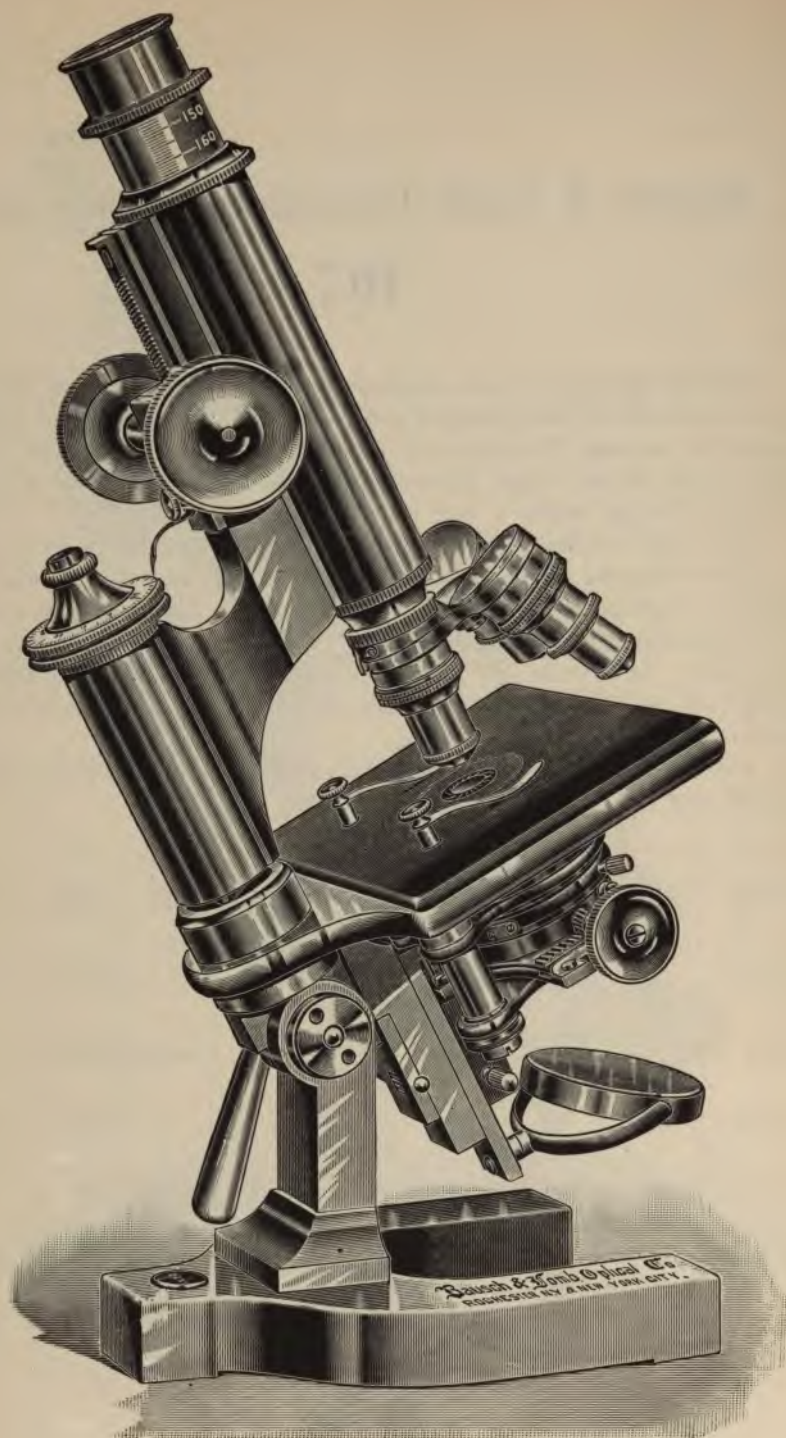


Figure one-half actual size.

Bausch & Lomb Continental Microscope—CA

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Bausch & Lomb Continental Microscope

CA

This instrument is larger in every respect than the instruments previously described. It is preëminently the bacteriologist's microscope, although equally well adapted for general work. The extra large stage, high arm, and roominess about the substage, make it very convenient for work, and permit the use of Petri plates or large slides with series of sections. The general solidity of the instrument makes it very desirable for delicate work.

The stand is of brass throughout, the base and pillar being extra heavy. The joint has locking lever for instantly fixing the body of the microscope at any desired angle. The complete substage with condenser gives perfect control of illumination. The fine adjustment is our standard triangular bar form with extra long range of adjustment and head of micrometer screw graduated. The coarse adjustment is our standard diagonal rack and pinion construction. The draw tube is graduated, nickeled, and slides in cloth lined sleeve.

The attachable mechanical stage is an almost indispensable adjunct to the microscope for bacteriological, embryological, blood, and other work.

Each CA Microscope is furnished in fine polished wood carrying case, with handle and lock.

Telegraphic Code.	Catalogue Number.	Objectives.		Eye-pieces.	Nose-piece.	Abbe Condenser.	Price.
		Dry.	Oil Immersion.				
<i>Cabes</i>	CA1	2/3, 1/6		1 in.	. .	1.20 N.A.	\$ 85 00
<i>Cabra</i>	CA2	2/3, 1/6		1 in.	Double	1.20 N.A.	90 00
<i>Cabrera</i>	CA3	2/3, 1/6		2 in. 1 in.	. .	1.20 N.A.	87 00
<i>Cabriel</i>	CA4	2/3, 1/6		2 in. 1 in.	Double	1.20 N.A.	92 00
<i>Cabul</i>	CA7	2/3, 1/6	1/12, 1.32 N.A.	2 in. 1 in.	. .	1.20 N.A.	120 00
<i>Cacafon</i>	CA8	2/3, 1/6	1/12, 1.32 N.A.	2 in. 1 in.	Triple	1.20 N.A.	127 00

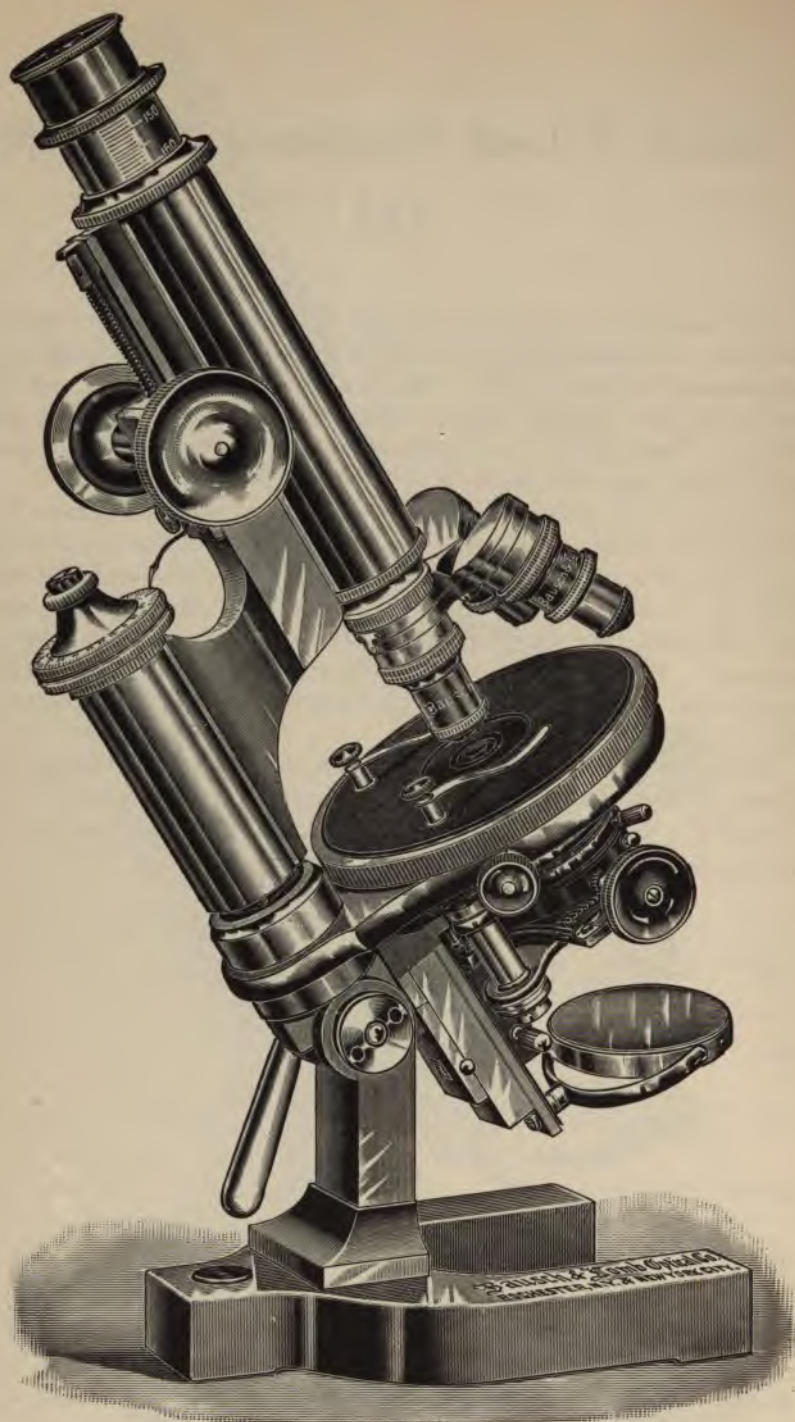


Figure one-half actual size.

Bausch & Lomb Continental Microscope—CC

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Bausch & Lomb Continental Microscope

CC

The CC Microscope is designed for general work, being large, solidly built, roomy above and below the stage, and having great delicacy and accuracy in all its movements, and stability under manipulation.

The stand is of brass throughout. The joint has locking lever for fixing the microscope at any angle of inclination. The complete substage with condenser gives perfect control of the illumination.

The stage is circular and revolves about the optical axis of the instrument. It has centering screws which permit the centering of the object to the axis of the microscope, or, to a limited extent, the searching of a slide under very high power. Fine adjustment is by our standard triangular bar movement, having extra long range and with head of micrometer screw graduated; coarse adjustment by standard diagonal rack and pinion construction. Main tube has nicked, graduated draw tube sliding in cloth lined sleeve.

Each CC Microscope is furnished in fine polished wood carrying case, with handle and lock.

Telegraphic Code.	Catalogue Number.	Objectives.		Eye-pieces.	Nose-piece.	Abbe Condenser.	Price.
		Dry.	Oil Immersion.				
<i>Ccara</i>	CC1	2/3, 1/6		1 in.	. .	1.20 N.A.	\$ 95 00
<i>Ccrabe</i>	CC2	2/3, 1/6		1 in.	Double	1.20 N.A.	100 00
<i>Ccrops</i>	CC3	2/3, 1/6		2 in. 1 in.	. .	1.20 N.A.	97 00
<i>Ccfalu</i>	CC4	2/3, 1/6		2 in. 1 in.	Double	1.20 N.A.	102 00
<i>Ccglie</i>	CC7	2/3, 1/6	1/12, 1.32 N.A.	2 in. 1 in.	. .	1.20 N.A.	130 00
<i>Cchegin</i>	CC8	2/3, 1/6	1/12, 1.32 N.A.	2 in. 1 in.	Triple	1.20 N.A.	137 00

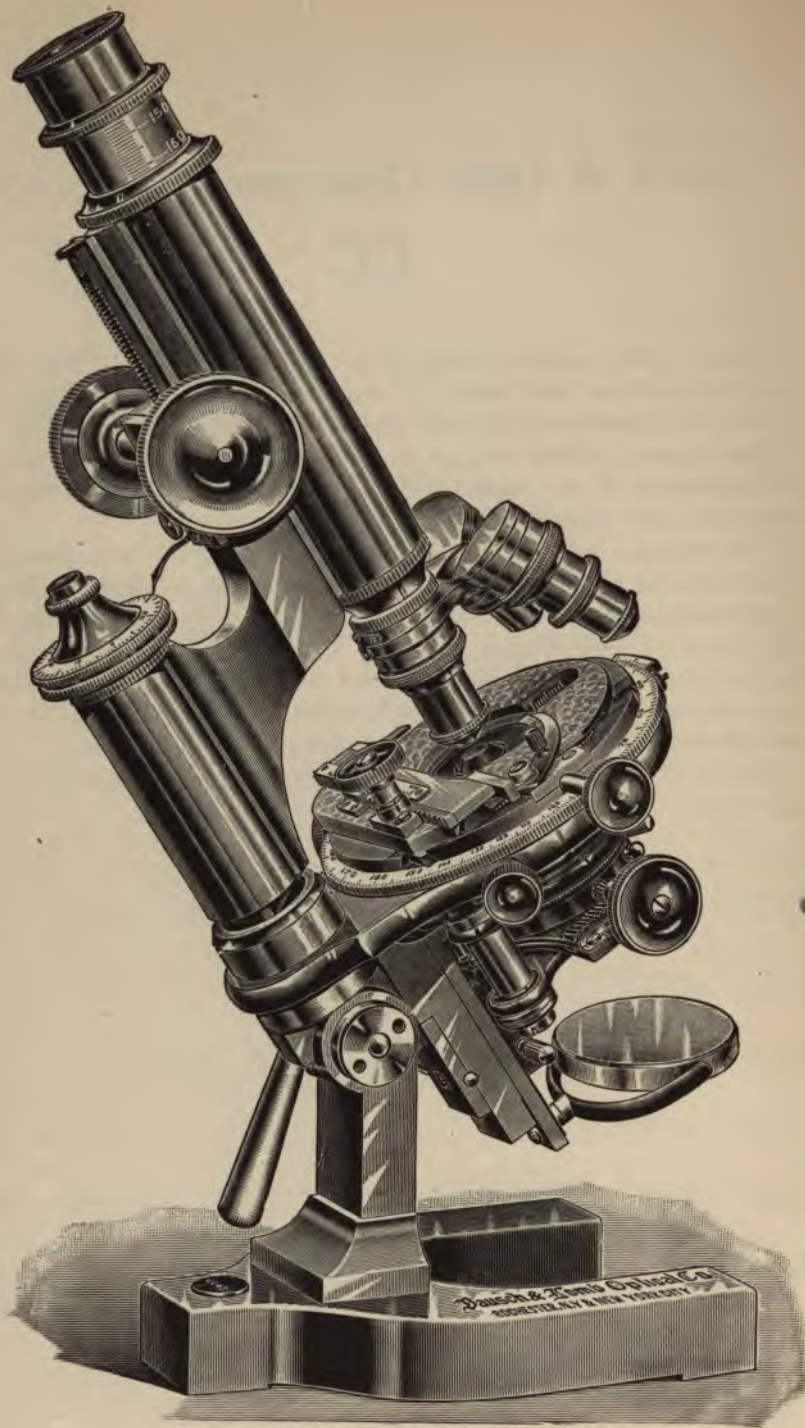


Figure one-half actual size.

Bausch & Lomb Continental Microscope—CD

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Bausch & Lomb Continental Microscope

CD

This microscope is the type of completeness and compactness, adapted for all general work, and having a grace and elegance of design and finish in keeping with the mechanical excellence of every detail.

The stand is of brass throughout. The base and pillar are extra large, insuring rigidity and stability. The joint has lever locking device for fixing the microscope at any angle of inclination. The complete substage gives perfect facilities for illumination. Our improved mechanical stage (see "Construction") is a very important feature of this microscope, fitting it for all kinds of bacteriological, blood, urinary, embryological, plankton, and other search work, as well as for mineralogical and chemical investigations with the addition of the polariscope.

The fine adjustment is our standard triangular bar form, with head of micrometer screw graduated, coarse adjustment by standard diagonal rack and pinion, having extra long range of adjustment. Draw tube is nickeled, graduated in millimeters, and has society screw for the use of very low power objectives.

Each CD Microscope is furnished in fine polished wood carrying case with handle and lock and receptacle for eyepieces, objectives, etc.

Telegraphic Code.	Catalogue Number.	Objectives.		Eye-pieces.	Nose-piece.	Abbe Condenser.	Price.
		Dry.	Oil Immersion.				
<i>Cdeon</i>	CD1	2/3, 1/6		1 in.	. .	1.20 N.A.	\$120 00
<i>Cdeves</i>	CD2	2/3, 1/6		1 in.	Double	1.20 N.A.	125 00
<i>Cdinch</i>	CD3	2/3, 1/6		2 in. 1 in.	. .	1.20 N.A.	122 00
<i>Cdio</i>	CD4	2/3, 1/6		2 in. 1 in.	Double	1.20 N.A.	127 00
<i>Cdive</i>	CD7	2/3, 1/6	1/12, 1.32 N.A.	2 in. 1 in.	. .	1.20 N.A.	155 00
<i>Cdoch</i>	CD8	2/3, 1/6	1/12, 1.32 N.A.	2 in. 1 in.	Triple	1.20 N.A.	162 00

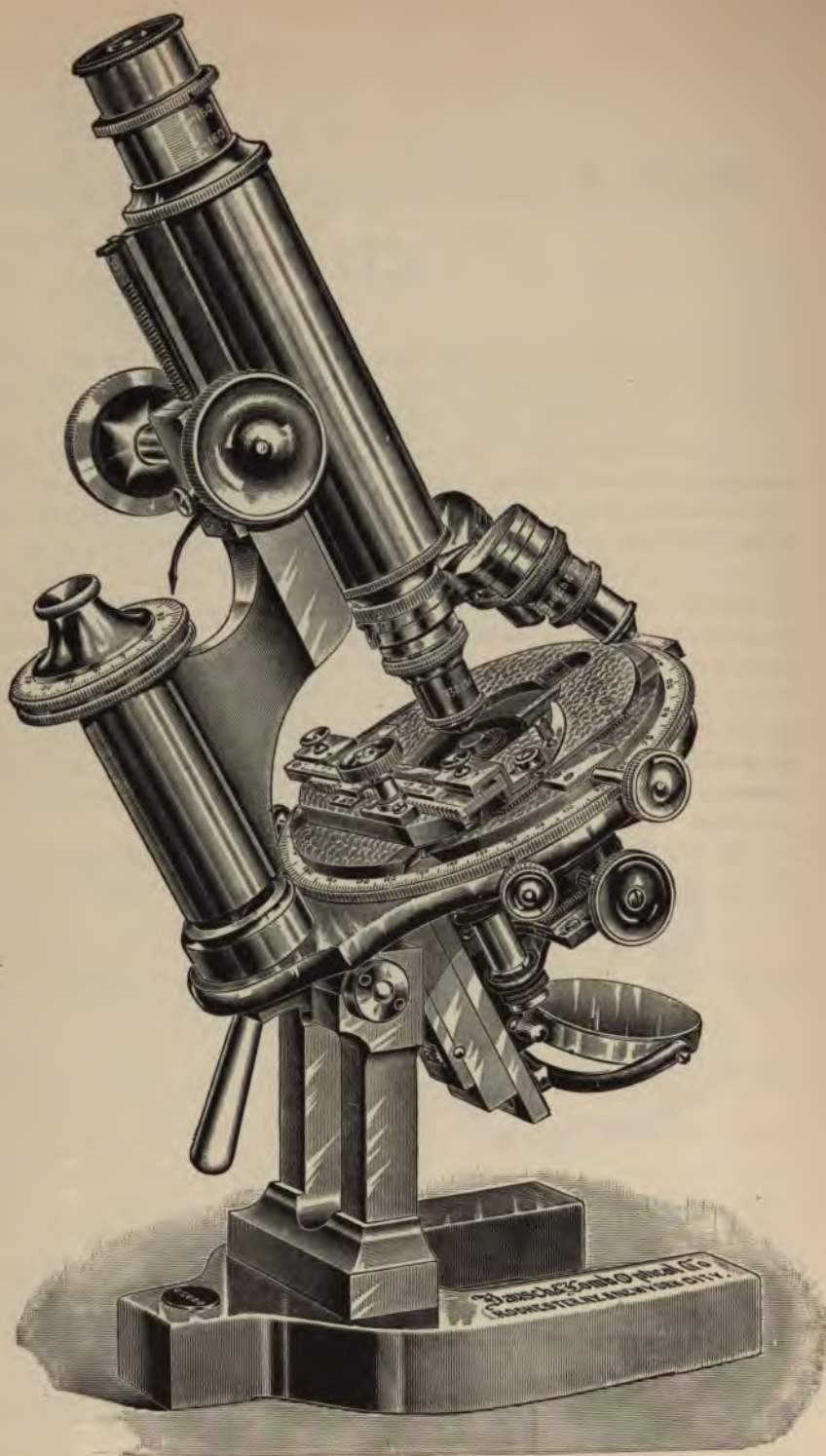


Figure one-half actual size.

Bausch & Lomb Continental Microscope—DD

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Bausch & Lomb Continental Microscope

DD

The DD Microscope is the largest, most complete, and perfect of all the continental instruments. It represents the most recent and highest attainments of the designer's and mechanic's skill. Nothing which could contribute in any practical way to its value as a microscope for the most critical work, and especially for photo-micrography, has been omitted. The DD stand is made of either *brass* or *red bronze* as desired, being protected when bronze is used by a colorless lacquer which enhances the beauty and finish of the metal. Every dimension is magnified to secure increased strength and solidity—this applies to the triangular bar of the fine adjustment, distance between optical center and center of fine adjustment, distance between base and stage, between stage and arm, size of main tube, and of stage as well.

The body of the instrument is supported on two massive pillars, the joint having lever locking device for fixing the body at any angle of inclination. The illuminating apparatus consists of the Complete Substage with Abbe Condenser. A special mechanical stage, larger than any of the others we make and having much greater range of movements, is constructed for this instrument. The movements are described under "Construction." The spring fingers for holding the object slide are both adjustable, permitting the use of slides of various sizes. The left hand stop is graduated for record purposes, as are also the forward and back, lateral and circular movements. The stage has centering screws, and these are also graduated for recording their position, showing the total number and parts of revolutions. This is the only microscope made with revolving centering stage, with which it is possible to record the position of an object on the slide and replace it accurately according to record.

The fine adjustment is of our standard triangular bar form, except that all parts are made larger and stronger. The head of the micrometer screw is very large, giving great sensitiveness, has hollow at top to rest the index finger in giving additional delicacy. The circumference is grooved for cord, when the stand is used for photography, and graduated to one hundred parts.

The main tube is much larger than in other microscopes, allowing a greater cone of light to pass when photographing, and has graduated and nicked draw tube sliding in cloth lined sleeve.

The mechanical stage is quickly detached, and may be replaced by a plain stage with vulcanite top for gross bacterial or other work. The plain stage is not supplied unless specially ordered as per list. Each DD Microscope is furnished in fine paneled wood carrying case, with handle and lock and receptacle for accessories.

Telegraphic Code.	Catalogue Number.	Objectives.		Eye-pieces.	Nose-piece.	Abbe Condenser.	Price.
		Dry.	Oil Immersion.				
<i>Ddan</i>	DD1	2/3, 1/6		1 in.	. .	1.20 N.A.	\$165 00
<i>Ddbay</i>	DD2	2/3, 1/6		1 in.	Double	1.20 N.A.	170 00
<i>Ddbora</i>	DD3	2/3, 1/6		2 in. 1 in.	. .	1.20 N.A.	167 00
<i>Ddcan</i>	DD4	2/3, 1/6		2 in. 1 in.	Double	1.20 N.A.	172 00
<i>Ddcains</i>	DD7	2/3, 1/6	1/12, 1.32 N.A.	2 in. 1 in.	. .	1.20 N.A.	200 00
<i>Ddces</i>	DD8	2/3, 1/6	1/12, 1.32 N.A.	2 in. 1 in.	Triple	1.20 N.A.	207 00

Plain revolving stage, extra, \$10.00.

BRANCHES: NEW YORK CITY AND CHICAGO.



Figure one-half actual size.

American Type Microscope—F

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

American Type Microscope

F

The F Microscope represents a distinct type of instrument, possessing the advantages of lightness, graceful proportions, and convenience for working, combined with stability and low cost. It has been for many years the standard instrument in a large number of laboratories, and a prime favorite with individual workers.

The base is of the tripod form, making the instrument firm even on uneven surfaces. It, as well as the arm, is japanned with a lasting black finish. The mirrors are plane and concave, adjustable vertically and may be swung above the stage on either side for illumination of opaque objects.

The stage has substage ring fitted with dome diaphragm which gives four sizes of openings by simply rotating the sector containing them. The Abbe Condenser may be used in this ring if desired.

The fine adjustment is our patented frictionless parallel spring construction. Coarse adjustment by standard diagonal rack and pinion.

Main tube has nickeled draw tube graduated in millimeters and sliding in cloth lined sleeve.

Each F Microscope is supplied in polished wood carrying case with handle and lock.

Telegraphic Code.	Catalogue Number.	Objectives.		Eye-pieces.	Nose-piece.	Abbe Condensor.	Price.
		Dry.	Oil Immersion.				
<i>Fabias</i>	F1	2/3, 1/6		1 in.	. .	. .	\$40 00
<i>Fabre</i>	F2	2/3, 1/6		1 in.	Double	. .	45 00
<i>Fagel</i>	F3	2/3, 1/6		2 in. 1 in.	. .	. .	42 00
<i>Falun</i>	F4	2/3, 1/6		2 in. 1 in.	Double	. .	47 00
<i>Fano</i>	F7	2/3, 1/6	1/12, 1.32 N.A.	2 in. 1 in.	. .	1.20 N.A.	85 00
<i>Fars</i>	F8	2/3, 1/6	1/12, 1.32 N.A.	2 in. 1 in.	Triple	1.29 N.A.	92 00

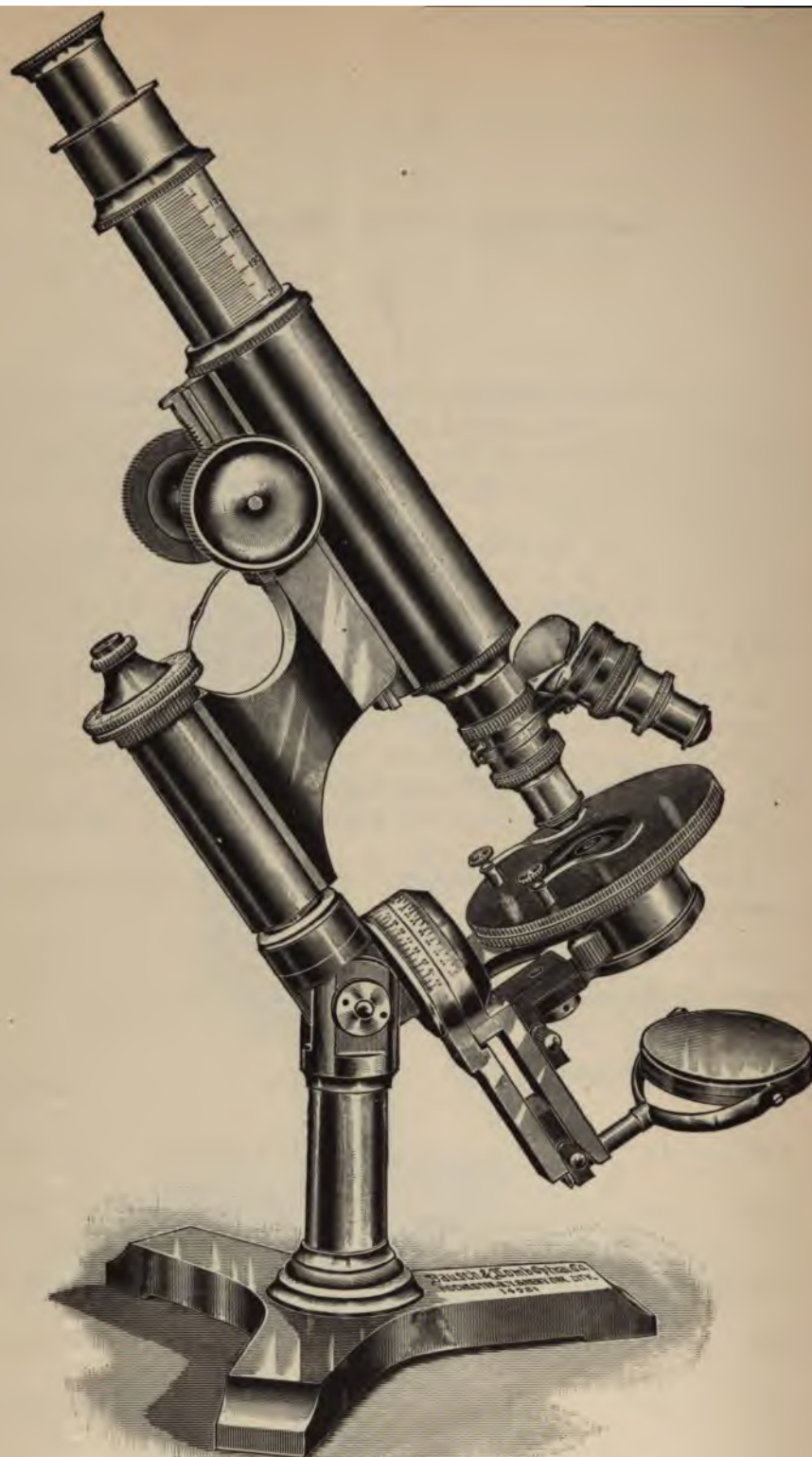


Figure one-half actual size.

American Type Microscope—J

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

American Type Microscope

J

The J Microscope is the most complete of the American type instruments. Its convenience and the variety of work which can be done with it have made it popular for many years.

The stand is of brass throughout, highly finished. The base is of the tripod form; mirrors plane and concave, adjustable on the mirror bar, which swings to any angle above or below the stage. The substage ring is carried on a separate arm and is adjustable vertically. It carries the dome diaphragm, which has four different sizes of openings. Both the mirror bar and substage bar are graduated so that the angle of inclination to the optical axis may be read. The stage revolves about the optical axis. The fine adjustment is our standard triangular bar construction. Coarse adjustment by standard rack and pinion. The main tube is extra large and has nicked draw tube graduated in millimeters. The eyepieces furnished with this microscope have larger lenses than the regular eyepieces and are mounted with removable eye cap, preventing outside reflections.

Each J Microscope is furnished in polished wood carrying case with handle and lock.

Telegraphic Code.	Catalogue Number.	Objectives.		Eye-pieces.	Nose-piece.	Abbe Condenser.	Price.
		Dry.	Oil Immersion.				
<i>Jala</i>	J1	2/3, 1/8		1 in.	. .	. .	\$65 00
<i>Janai</i>	J2	2/3, 1/8		1 in.	Double	. .	70 00
<i>Jabal</i>	J3	2/3, 1/8		2 in. 1 in.	. .	. .	69 00
<i>Jabin</i>	J4	2/3, 1/8		2 in. 1 in.	Double	. .	74 00
<i>Jabok</i>	J7	2/3, 1/8	1/12, 1.32 N.A.	2 in. 1 in.	. .	1.20 N.A.	112 00
<i>Jachin</i>	J8	2/3, 1/8	1/12, 1.32 N.A.	2 in. 1 in.	Triple	1.20 N.A.	119 00



Figure one-third actual size.

Portable Microscope—E

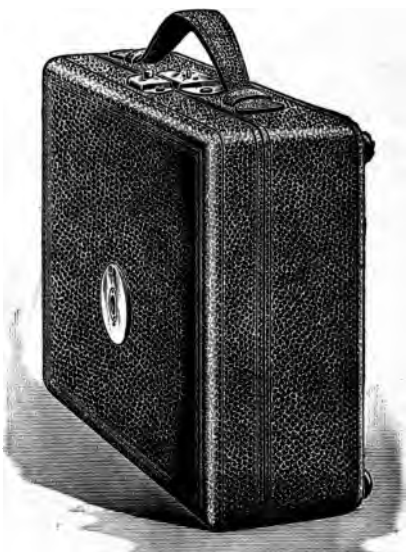
BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Portable Microscope

E

The E Microscope is designed to meet the requirements of extreme compactness, lightness, and comeliness, coupled with a practical degree of stability and convenience for work. While the so-called portable microscopes heretofore made are either of flimsy construction or very high priced, we believe this instrument will be found entirely practical and of moderate cost.

The microscope proper is so arranged that it will fold up and pack inside the case *with the accessories attached*, whereas it is necessary to dismember other instruments to pack them. The case forms the base for the stand, to which it is quickly attached by a thumb nut. Inclination is secured by opening the cover, which is held in position by catches. The stage is of oxydized metal with revolving diaphragm, very solid, and sufficiently large for convenient working. Fine adjustment is by micrometer screw acting on a V slide in the solid pillar, a very accurate and durable construction. Coarse adjustment by sliding tube. Main tube has draw tube. For bacteriological work the screw substage, with Abbe Condenser, is attached to a slide plate, which slips into a corresponding recess on the under side of the stage.



Portable Microscope Packed for Traveling.
Figure one-third actual size.

Telegraphic Code.	Catalogue Number.	Objectives.		Eyepiece.	Nosepiece.	Price.
		Dry.	Oil Immersion.			
<i>Ebal</i>	E1	1/8	. . .	1 in.		\$32 00
<i>Eblis</i>	E2	2/3, 1/6	. . .	1 in.	Double	43 00
<i>Ebro</i>	E3	. . .	1/12	1 in.		58 00
<i>Eck</i>	E4	1/8	1/12	1 in.	Double	75 00
Adjustable Substage with Abbe Condenser, 1.20 N. A., on slide plate,						17 00

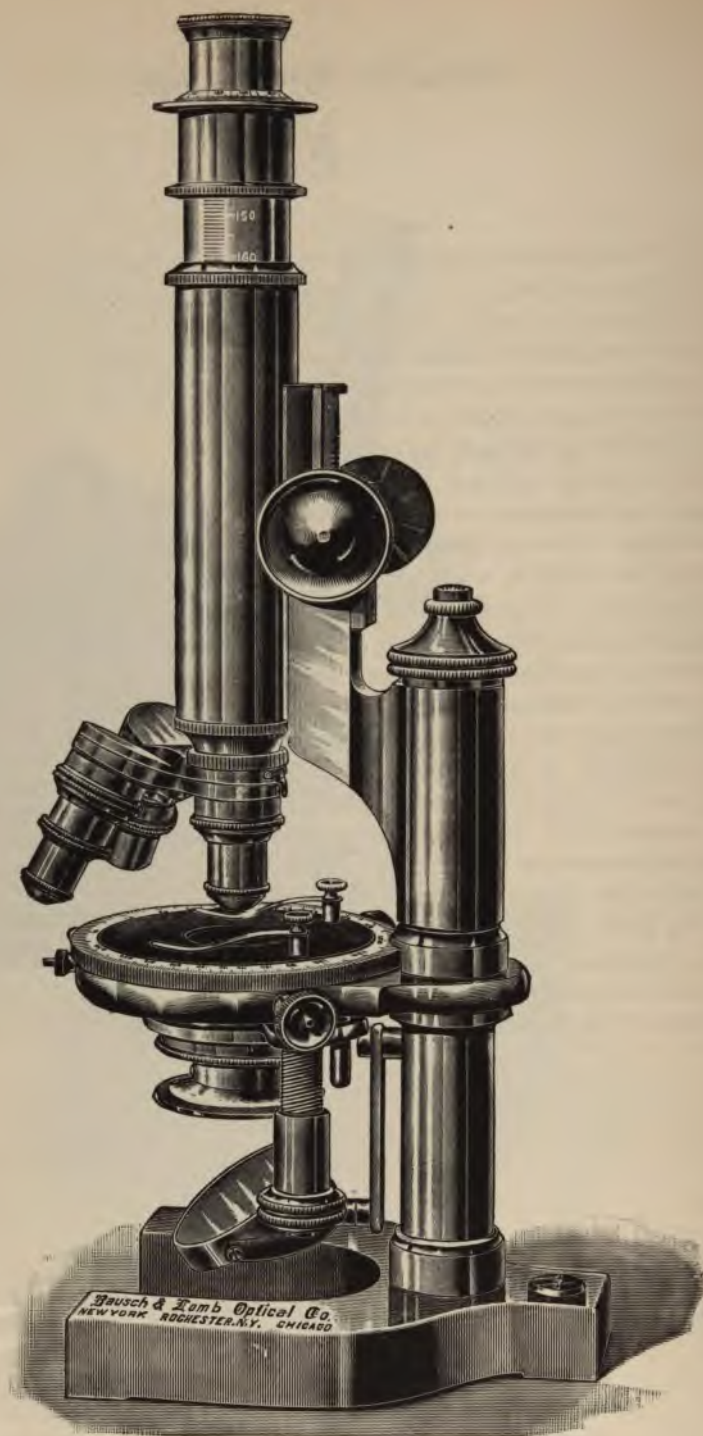


Figure one-half actual size.

Chamot Chemical Microscope—M

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Chamot Chemical Microscope

M

This microscope is intended for micro-chemical examinations of all kinds, and is constructed after specifications by Professor E. M. Chamot of Cornell University. The production of a suitable instrument at the very reasonable price at which we are able to offer it adds much to the possibilities of micro-chemistry in our universities and colleges, as well as for the individual worker. This microscope is also specially adapted for the examination of food stuffs suspected of containing adulterations.

The stand is of brass throughout, base large, pillar solid, screw substage (see "Construction"). Fine adjustment is our standard triangular bar form, coarse adjustment by standard diagonal rack and pinion.

The polarizer may be swung out from the optical axis if desired, and quickly raised and lowered. The mounting has stop indicating zero point. The analyzer is in revolving mounting, with circle graduated in degrees, and fits over the eyepiece. It can be lifted off for quickly changing eyepieces.

All eyepieces are fitted with cross hairs and have a pin at the side, which fits into a recess at the top of the draw tube, for lining the cross hairs. The analyzer mounting is fixed to the draw tube by a stud and recess. This permits changing of eyepieces and replacing of analyzer, so that the prisms are crossed without further adjustment. The draw tube has vertical adjustment, but rotation is prevented by means of a stud on the draw tube traveling in a vertical groove in the body tube. The stage revolves, and has centering screws by which the object may be centered to the axis of rotation. The surface is of vulcanite, not affected by ordinary fluids. The circumference is graduated to degrees. Only low-power objectives are listed with this stand, as the higher powers come so near the fluids as to be liable to erosion. To guard against any deterioration of the lenses, even in the low powers, a number of thin glass circles are supplied which are to be cemented to the front of the objective with pure glycerine and changed as often as they become clouded.

The desired magnification is obtained by the use of higher power eyepieces.

Each M Microscope is furnished in polished wood carrying case, with handle and lock.

Telegraphic Code.	Catalogue Number.	Objectives.	Cross Hair Eyepiece.	Nosepiece.	Price.
<i>Magog</i>	M1	1/2, 1/4	1 in., 1/2 in.	. . .	\$72 00
<i>Mahath</i>	M2	1/2, 1/4	1 in., 1/2 in.	Double	77 00
<i>Mahol</i>	M3	1, 1/2, 1/4	2 in., 1 1/2 in., 1 in., 1/2 in.	. . .	85 00
<i>Mahli</i>	M4	1, 1/2, 1/4	2 in., 1 1/2 in., 1 in., 1/2 in.	Triple	92 00

BRANCHES: NEW YORK CITY AND CHICAGO.

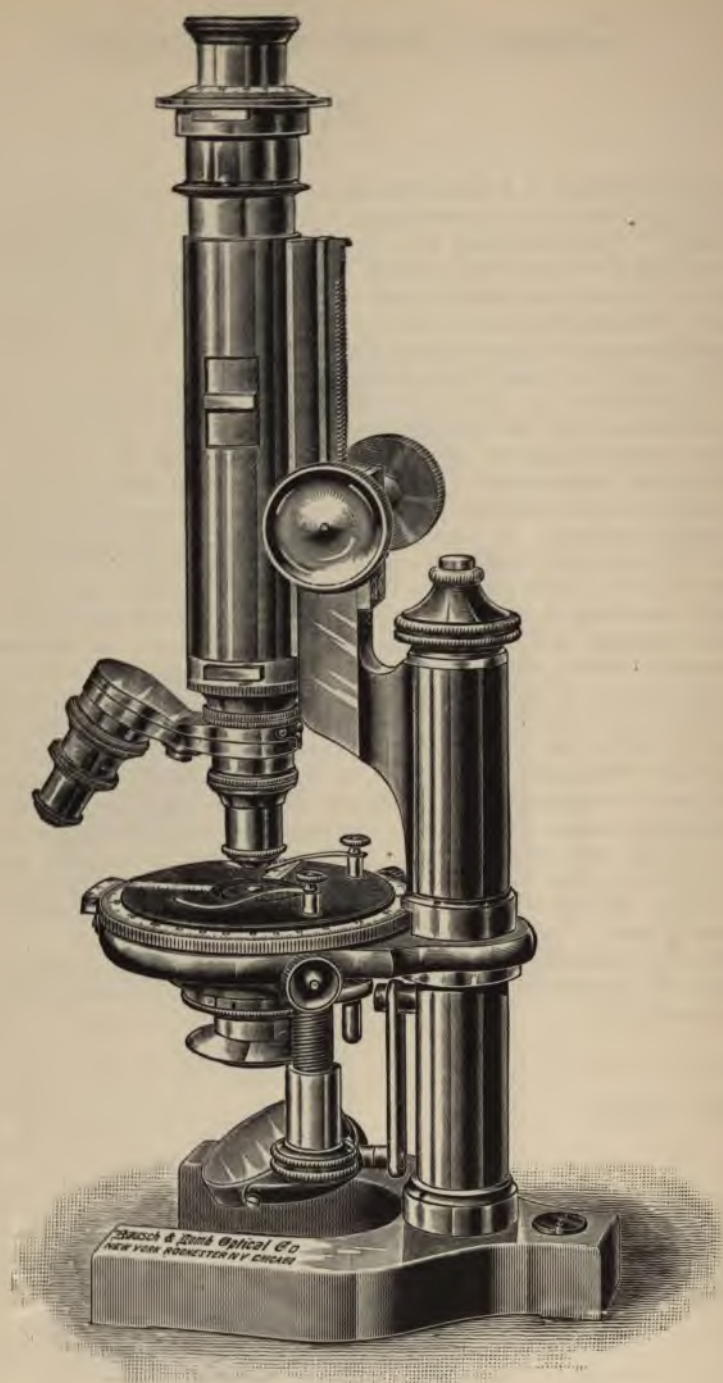


Figure one-half actual size.

Petrographical Microscope—LA

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Petrographical Microscope

LA

This microscope is specially constructed for petrographical and mineralogical work, the intention being to supply a thoroughly reliable instrument having all the essential features, at a very moderate cost. It is of brass throughout, the base, pillar, arm, fine and coarse adjustments being of standard construction as used in our continental stands. The stage is removable, with vulcanite surface having graduated circumference and quadrant. The object is centered to the optical axis by means of centering screws. The polarizer is in fixed mounting, and has compound condenser arranged so as to permit removal of its upper portion for less converged light or its entire removal when converged light is not required. The ring carrying the polarizer is held in place by three screws passing through slots permitting centering to optical axis. The analyzer fits over the eyepiece and has silvered circle graduated to degrees. The eyepieces are provided with cross hairs, and have a projecting stud at the side which fits into a recess in the top of the draw tube.

The Bertrand lens for magnifying the interference figure may be inserted when wanted in the slot in the draw tube, proper adjustment being made by means of the drawtube. The lens is easily withdrawn when not desired.

The other accessories are inserted in a slot above the eyepiece, or in the slot in the nosepiece; this latter may be closed by a ring shutter.

A Selenite Plate and Quartz Wedge accompany each stand.

Each LA Microscope is furnished in a polished wood case with handle and lock.

Telegraphic Code.	Catalogue Number.	Objectives.	Cross Hair Eyepiece.	Nosepiece.	Price.
<i>Ladan</i>	LA1	2/3, 1/6	2 in., 1 in.	. . .	\$ 98 00
<i>Laban</i>	LA2	2/3, 1/6	2 in., 1 in.	Double	103 00
<i>Labe</i>	LA3	1 1/2, 2/3, 1/6	2 in., 1 in.	. . .	104 00
<i>Labi</i>	LA4	1 1/2, 2/3, 1/6	2 in., 1 in.	Triple	111 00
<i>Lbru</i>	Bertrand Lens for magnifying interference figures, each, . . .				6 00
<i>Lbque</i>	Bertrand Quadrant Eyepiece with revolving prism, each, . .				14 00
<i>Lbup</i>	Quarter Undulation Mica Plate, each.				4 00

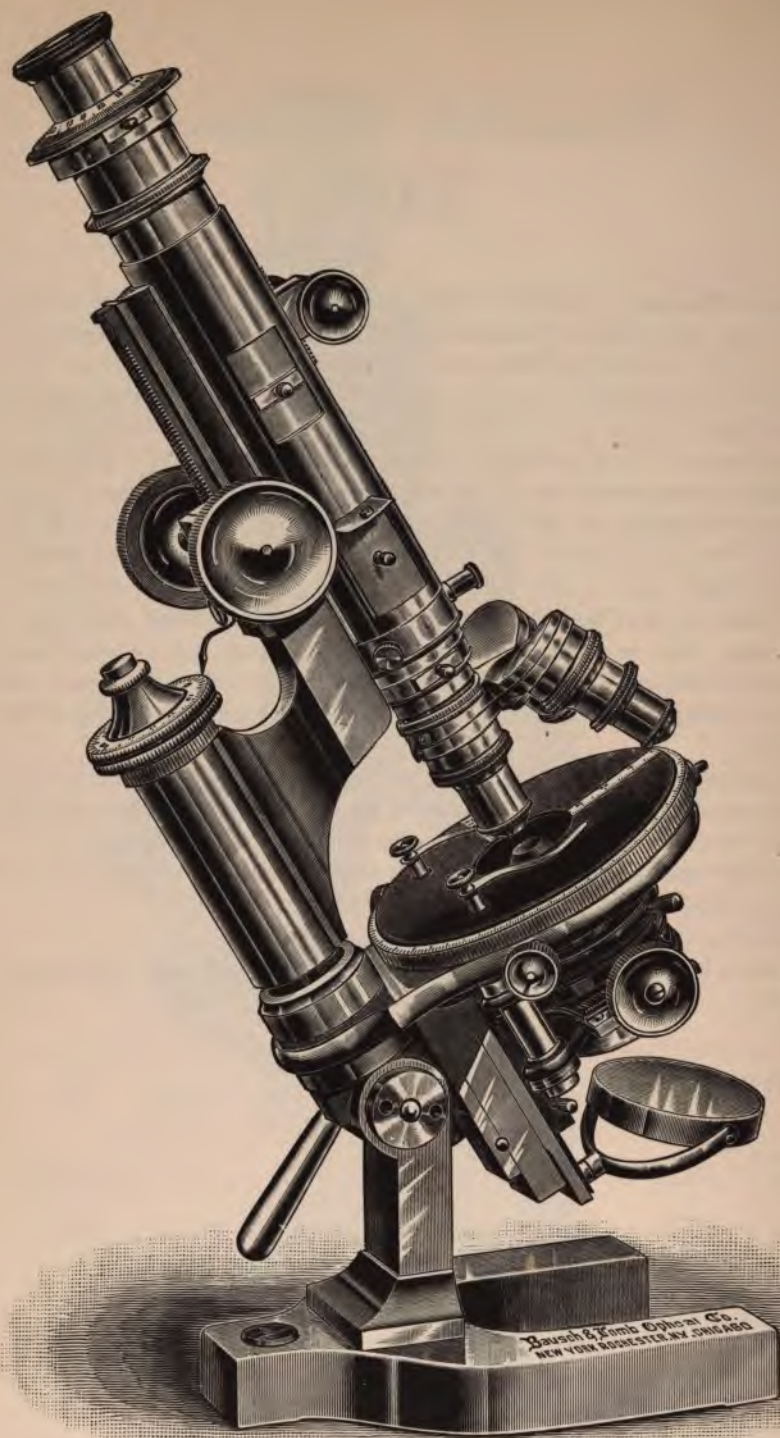


Figure one-half actual size.

Petrographical Microscope—LC

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Petrographical Microscope

LC

The LC Microscope is a complete instrument for all kinds of petrographical work and is so arranged that it may be used for ordinary microscopical observations as well.

The base, pillar, stage, arm, fine and coarse adjustments are of standard size as used in our CC Microscope. The substage is of very firm construction, adjustable by rack and pinion and having an upper arm carrying the Abbe Condenser 1.20 N.A., which swings out of the optical axis to the left. The condenser mounting has centering arrangement, and its upper portion is removable when less convergent light is desired. A lower arm with revolving iris diaphragm laterally adjustable by rack and pinion and rotating on its own axis, carries the polarizer.

The polarizer is removable and has stop at zero point. There are two analyzers, one immediately above the objective, mounted in sliding light tight box so that it may be instantly thrown in or out of the optical axis; the other, in revolving mounting with graduated circle and slot for accessories, fits over the eyepiece. The stage is revolvable, has graduated circumference and quadrant, also centering arrangement by which the object may be centered to the optical axis. The surface of the stage is of vulcanite. The graduated revolving mechanical stage (see "Construction") may be substituted by simply loosening the centering screws. The objective or revolving nosepiece is attached to the centering nosepiece whereby each may be separately centered to the optical axis. There is a slot with light excluding ring for the use of quartz wedge, gypsum plate, etc.

The Bertrand lens for magnifying the interference figure is carried in a slot in the drawtube, the drawtube being adjustable by rack and pinion. The cross hair eyepieces are oriented by means of a projecting stud fitting in slots 45° apart at the top of the drawtube.

The following accessories are included with the microscope: Bertrand lens; quarter undulation mica plate; quartz wedge; gypsum plate red of the first order.

Each LC Microscope is furnished in polished wood carrying case with handle and lock.

Telegraphic Code.	Catalogue Number.	Objectives.	Cross Hair Eyepiece.	Nosepiece.	Price.
<i>Lcac</i>	LC1	2/3, 1/6	2 in., 1 in.	. . .	\$170 00
<i>Lcah</i>	LC2	2/3, 1/6	2 in., 1 in.	Double	175 00
<i>Lcak</i>	LC3	1 1/2, 2/3, 1/6	2 in., 1 in., 1/2 in.	. . .	179 00
<i>Lcam</i>	LC4	1 1/2, 2/3, 1/6	2 in., 1 in., 1/2 in.	Triple	186 00
<i>Lbqui</i>	Bertrand Quadrant Eyepiece,				14 00
<i>Leage</i>	Revolving Mechanical Stage,				35 00



Figure one-third actual size.

Horizontal Microscope—N

BAUSCH & LOMB OPTICAL CO., ROCHESTER

Horizontal Microscope

N

This microscope is constructed after specifications by Professor Charles R. Barnes, University of Chicago, and is intended for making microscopical readings and observations where the ordinary microscope is unavailable. It will be found especially serviceable in observing the movements of plants and in reading fine scales, etc. The instrument is of brass throughout. The base is a large tripod with leveling screws. The pillar has nicked post, carrying the microscope, sliding in it, giving great vertical range of adjustment, a collar with clamping screw holds the microscope at any height. The final vertical adjustment is by diagonal rack and pinion. The microscope body has rack and pinion adjustment for focusing, and accurate spirit level. A one-inch eyepiece, with micrometer ruled to tenths millimeter across the entire field is a part of the instrument. Any of our regular eyepieces and objectives may be used with this microscope.

Telegraphic Code.	Catalogue Number.	Objectives.	Micrometer Eyepiece.	Price.
<i>Neiva</i>	N1	3	1 in.	\$34 00
<i>Nejd</i>	N2	1	1 in.	34 00
<i>Nemea</i>	N3	3, 1	1 in.	40 00
<i>Nepal</i>	N4	3, 1	2 in., 1 in.	44 00

Dissecting Microscope

U



Figure one-half actual size.

The U Dissecting Microscope represents the greatest utility at the least cost, and is intended to supply the demand for a thoroughly well made instrument for large classes, where a low cost is imperative. The base is our regular horse-shoe form, neatly japanned. All other parts are nickeled to prevent corrosion by reagents. The stage is of large size, the opening being provided with glass disc. The lenses are carried on a metal arm, by which they may be moved over the stage, and are focused by means of the knob at the side of the pillar, this method being practical for lenses of the powers used.

The U stand is listed with Doublet, Coddington, and Triplet lenses. The Triplet lenses, however, should be selected whenever the cost is not too great, as they give the best results. Lenses of the foci listed are the most used, but those of any other focus regularly listed will be supplied at the same price, if preferred.

Each U Microscope is furnished in nicely finished wood carrying case.

Telegraphic Code.	Catalogue Number.	Lenses.			Price.
		Doublet.	Coddington.	Aplanatic Triplet.	
<i>Unc</i>	U1	1 in.	.....	.....	\$ 6 75
<i>Undu</i>	U2	1 1/2 in., 3/4 in.	.....	.....	7 50
<i>Unex</i>	U3	.....	1 in.	.....	7 50
<i>Unfra</i>	U4	.....	1 1/2 in., 3/4 in.	.....	9 00
<i>Ungal</i>	U5	.....	.....	1 in.	9 50
<i>Unjen</i>	U6	.....	.....	1 in., 1/2 in.	13 00
<i>Unka</i>	Glass Disc with millimeter rulings				50
<i>Unkl</i>	Wooden Hand Rests, per pair				1 25

Dissecting Microscope

W

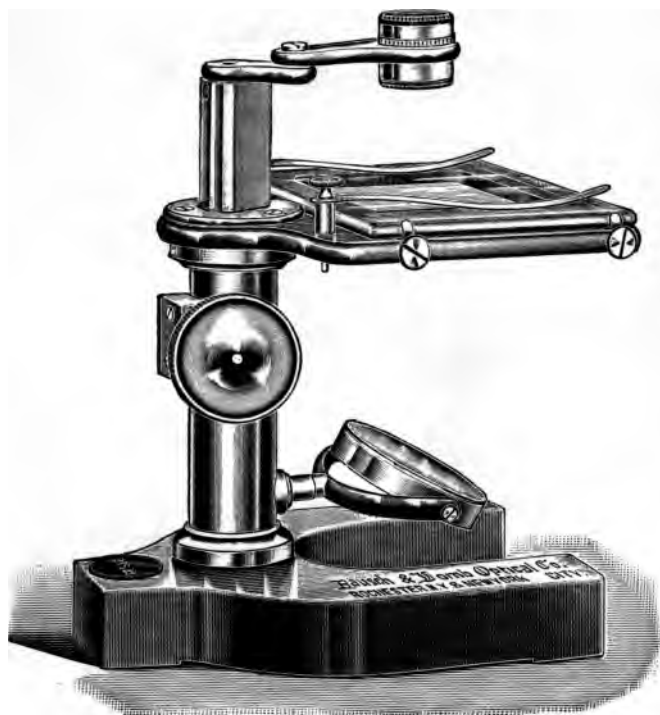


Figure one-half actual size.

This microscope is constructed to secure great steadiness under manipulation, convenience in working, and durability. The base is heavily japanned, all other parts being nickeled to prevent corrosion. The mirror frame holds a concave mirror and a white plane glass reflector. The stage is extra large, and the entire surface of the thick glass stage plate is available for work, as the spring clips are attached to the metal supporting frame. The stage plate is held in place by spring clips so as to be easily removable for cleaning, etc. Size of stage plate, 75 x 100 mm.

The lens arm is jointed so that the lens may be moved over every part of the stage. The focusing arrangement is by accurate diagonal rack and pinion of very long range, giving great working distance between lens and stage. The Aplanatic triplet lenses should always be selected when cost is not prohibitive. Lenses of the foci listed are most generally used. Those of any of the regular foci can be substituted if preferred.

Each W Microscope is furnished in neat wooden carrying case.

Telegraphic Code.	Catalogue Number.	Lenses.			Price.
		Doublet.	Coddington.	Aplanatic Triplet.	
<i>Wuna</i>	W1	1 in.	.....	.....	\$ 9 75
<i>Wunct</i>	W2	1 1/2 in., 3/4 in.	.....	.....	10 50
<i>Wunder</i>	W3	.....	1 in.	.....	10 50
<i>Wunel</i>	W4	.....	1 1/2 in., 3/4 in.	.....	12 00
<i>Wunfy</i>	W5	.....	.....	1 in.	12 50
<i>Wungas</i>	W6	.....	.....	1 in., 1/2 in.	16 00
Folding wooden Hand Rests, per pair,					2 00

BRANCHES: NEW YORK CITY AND CHICAGO.

Dissecting Microscope

Y



Figure one-half actual size.

This instrument is constructed after the Paul Meyer pattern, with such changes as have been recommended to increase its usefulness. It is larger and more solidly built than any of the other dissecting microscopes, and is believed to have advantages not possessed by other instruments of similar type.

The metal parts are all heavily nickeled to prevent corrosion.

The horse-shoe base is extra large, giving increased stability. The mirrors are also very large, a necessity in the dissecting microscope where the field of the lenses used is large.

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

The glass stage plate measures 90 x 110 mm., and the entire surface is free for work. It can be easily removed for cleaning, being held in place by spring clips.

Black or white backgrounds are provided for by means of a plate with one black and one white side, which is hinged to the front left corner of the stage frame in such a manner that either side can be brought uppermost immediately below the stage, or placed vertically at the side, entirely out of the way for ordinary observations, or when the Camera Lucida is used. The advantage of this construction over the cumbersome and often misplaced removable backgrounds is obvious.

The lenses are carried on a jointed arm, permitting their use over the entire stage, and are focused by means of accurate diagonal rack and pinion, having extreme range of motion. The working distance can be further increased 125 mm. by drawing out the post to which the lens arm is attached. The lens arm also has sleeve and binding screw for attaching the Abbe Camera Lucida.

The Hastings Aplanatic Lenses are especially recommended for this stand.

Each Y Microscope is furnished with folding wooden hand rests which fit inside the finely finished wood carrying case.

Telegraphic Code.	Catalogue Number.	Lenses.					Camera Lucida.	Price.
		Doublet.	Coddington.	Aplanatic Triplet.	Hastings Triplet.	Brucke Lens.		
<i>Yaa</i>	Y1	1	...	...	...	...	...	\$25 75
<i>Yabe</i>	Y2	1 1/2, 3/4	...	...	...	...	...	26 50
<i>Yacal</i>	Y3	...	1	...	...	...	...	26 50
<i>Yadis</i>	Y4	...	1 1/2, 3/4	...	...	...	...	28 00
<i>Yafra</i>	Y5	...	...	1	...	...	...	28 50
<i>Yagur</i>	Y6	...	...	1 1/2, 3/4	...	...	...	32 00
<i>Yahas</i>	Y7	...	...	...	1 1/2, 3/4	...	...	32 00
<i>Yajam</i>	Y8	...	...	...	1 1/2, 3/4	...	Abbe	51 00
<i>Yallo</i>	Y9	...	...	...	1 1/2, 3/4	High Power	Abbe	64 50
<i>Yalhol</i>	Triple Revolving Lens Holder, for the above, extra,							5 00

Demonstration Microscope

O

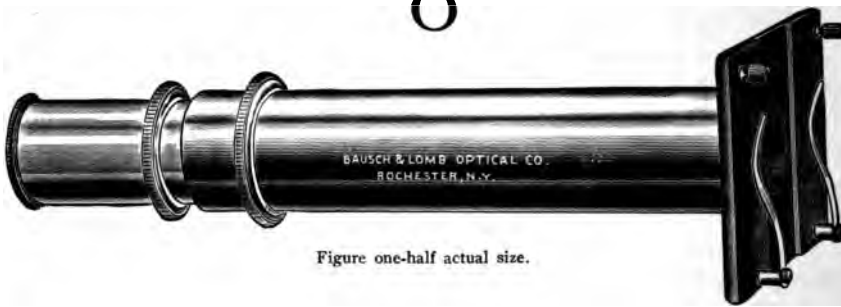


Figure one-half actual size.

This microscope is intended for the demonstration of microscopic objects in the lecture room. It is so arranged that the object can be placed in position, the lens focused upon it, and the whole passed from hand to hand and examined without disturbing the focus of the objective.

The tube carrying the eyepiece and objective, slides in the body tube and has spiral groove with pin by which the objective may be accurately focused. This improvement avoids the easy derangement of adjustment and prevents the objective from coming in forcible contact with the slide.

Telegraphic Code.	Catalogue Number.	Eyepiece.	Objective.	Price.
<i>Omra</i>	O	1 in.		\$ 6 00
<i>Omdi</i>	O1	1 in.	$\frac{2}{3}$	12 00

Tripod Dissecting Microscope

QR

This microscope gives a large, clear field and sufficient magnifying power for elementary, botanical, and zoölogical studies. The lens is focused by screwing it up or down in the frame. It is a very convenient instrument, as it may be adjusted and set over the object, which will always be in focus.



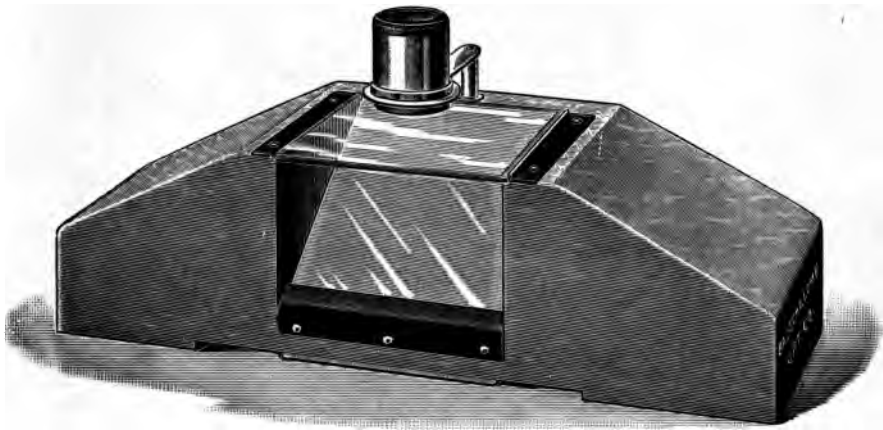
Figure actual size.

Telegraphic Code.	Catalogue Number.	Price.
<i>Qacc</i>	QR	\$.50

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Barnes Dissecting Microscopes

T TT



This practical and inexpensive form of dissecting microscope was designed by Prof. Charles R. Barnes, Botanical Department, University of Chicago. Its popularity has been so great that many copies of it have been put on the market. A comparison of these with our instrument will show the desirability of our construction even were the imitation offered at a much lower price. The T and TT Microscopes will be found extremely well suited for class use in elementary botany, zoölogy, etc.

The body of the stand is of neatly finished light wood, and is shaped to form hand rests. The stage is extra large and easily removed for cleaning. The mirror is as large as the stage, giving effective illumination. A plate, with a black and a white side, is stowed beneath the stand, and may be laid over the mirror if a black or white background is desired. The lens carrier slides in a metal sleeve, which is firmly fixed in the wooden base, permitting focusing with sufficient accuracy for powers required. Doublet lenses, having much larger, flatter field, and better definition than the simple lenses usually furnished, are listed with this microscope and form a most desirable equipment at the price. Coddington or Aplanatic Triplet lenses may be used with equal facility, and are more desirable where their cost is not prohibitive.

In many laboratories where elementary work is done there is no convenient receptacle for the scalpel, tweezers, dissecting needles, etc. To provide for this we have added to the T microscope an iron base hinged to the wooden stand so that it forms a tray for material and at the same time adds to the stability of the instrument. We would recommend the purchase of this stand, which we designate as the TT, in all cases where cost will permit.

Telegraphic Code.	Catalogue Number.	Doublet Lenses.	Price.
<i>Tarn</i>	T1	• 1 in.	\$2 50
<i>Tarni</i>	T2	2 in., 1 in.	3 25
<i>Tabnitz</i>	TT1	1 in.	3 00
<i>Terbitt</i>	TT2	2 in., 1 in.	3 75

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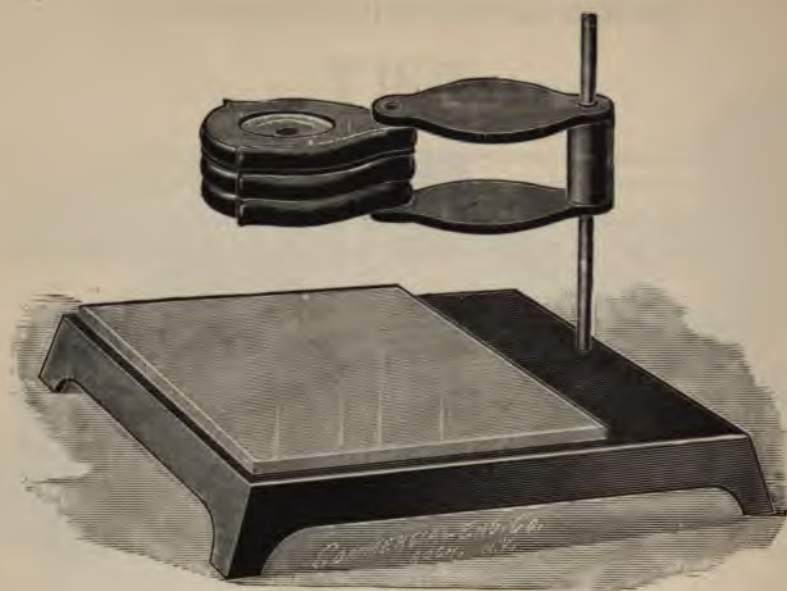


Figure actual size.

Dissecting Microscope—R

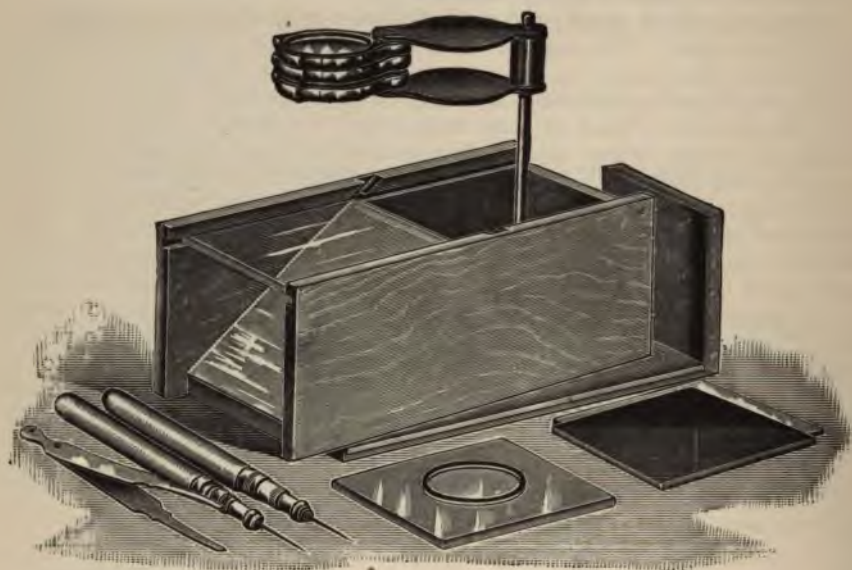


Figure one-half actual size.

Dissecting Microscope—S

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Dissecting Microscope

R

The R Microscope is desirable where a very compact and low priced instrument is required. It has the advantage that the lenses, which are mounted in a pocket case, may also be used separately as a hand magnifier.

This microscope consists of a metal base with white glass stage plate. The magnifying lens is adjustable for focus by simply sliding up or down on the post.

The lenses may be used separately or in combination, giving powers of from 5 to 20 diameters. A diaphragm securing sharper definition is placed between the lenses of the R2 and R3 Microscopes.

The lens post is easily removed from the base for packing. A pair of nickeled pliers is given with each microscope.

Telegraphic Code.	Catalogue Number.	Number of Lenses.	Price.
<i>Radce</i>	R1	1	\$1 25
<i>Repci</i>	R2	2	1 50
<i>Rorco</i>	R3	3	2 00

Improved Excelsior Dissecting Microscope

S

The illustration shows the construction and parts of this microscopical *multum in parvo*. The mirror rests in a groove in one end of the case at the proper angle. A metal stage with one black and one white side and a stage with cell are interchangeable with the plain glass stage, affording facilities for the study of black, white, transparent, or living objects.

The lens is adjustable on the metal post, and has working distance of 50 mm. between stage and lenses.

The lenses give from five to twenty diameters magnification, and may also be used as a pocket magnifier if desired. Two needle holders with a straight and a bent needle and one pair of forceps are included. All the accessories are contained in the case when closed.

Telegraphic Code.	Catalogue Number.	Number of Lenses.	Price.
<i>Sae</i>	S1	1	\$1 00
<i>Silc</i>	S2	2	1 25
<i>Sorcl</i>	S3	3	1 50

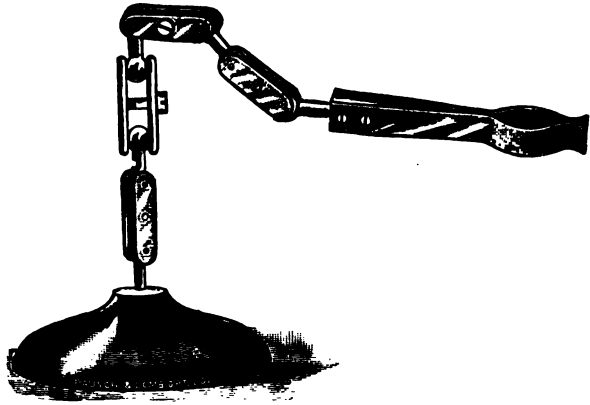


Figure one-half actual size.

Lens Holder—TS

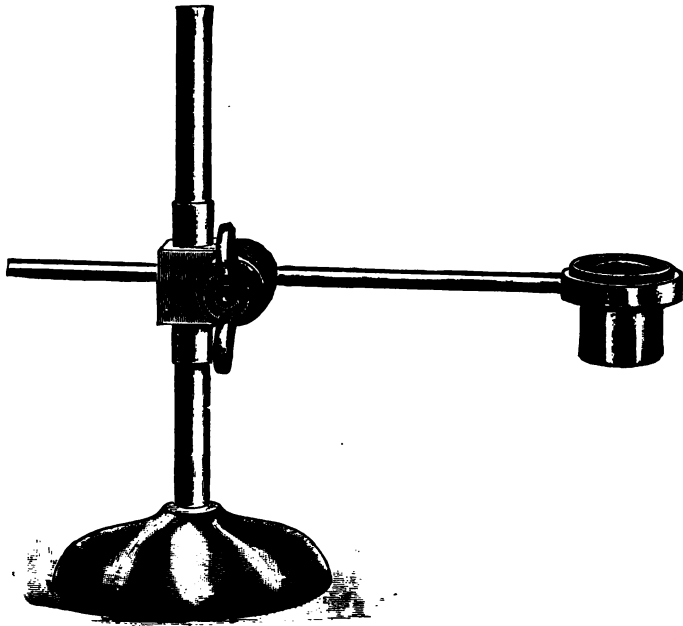


Figure one-half actual size.

Lens Holder—TU

Lenses are held in a spring fork not shown in figure.

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N.Y.

DISSECTING LENS HOLDERS

The dissection of small animals and plants and parts of larger ones is often difficult or impossible without the aid of a lens. It is therefore essential to have a mechanical holder for the lens which will permit of its being placed in any desired position and focused with some degree of accuracy and facility. The holders described below differ chiefly in the matter of adjustability, the more expensive being more convenient.

Lens Holder

TS

This holder consists of a base heavy enough to support the lens when the arm is extended and an arm composed of ball and socket joints. A spring fork permits the use of any lens not more than $1\frac{1}{2}$ inches in diameter. This holder is very compact, gives an unlimited number of adjustments for the lens, and is well made.

Telegraphic Code.	Catalogue Number.	Price.
<i>Tazz</i>	TS	\$3 00

Lens Holder

TU

The TU Lens Holder carries the lens in a spring fork, not shown in illustration, vertical and lateral adjustments being controlled by the thumb screw. The base is large enough to give stability and is japanned, all other parts being nickeled.

Telegraphic Code.	Catalogue Number.	Price.
<i>Tuam</i>	TU	\$4 00

Lens Holder TUS

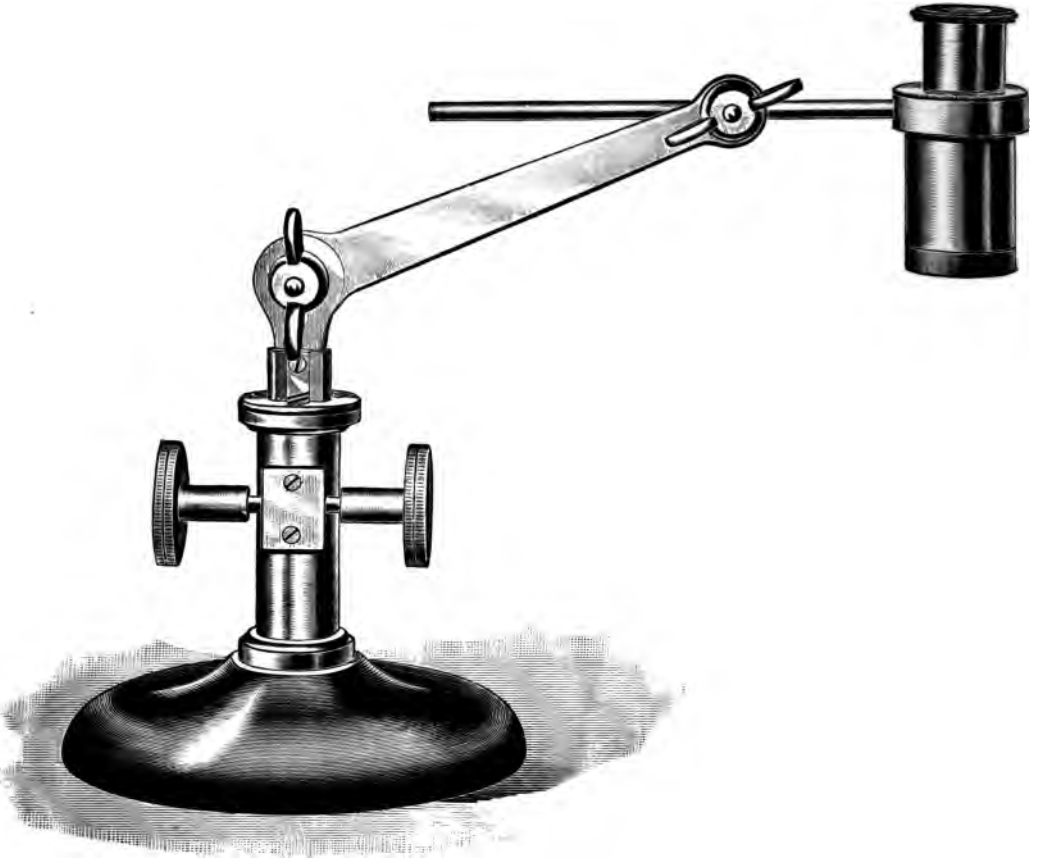


Figure one-half actual size.

Lens shown does not accompany the lens holder.

The TUS is the largest of the lens holders, having great range of adjustment and very long arm and lens holder. The base is broad, holding the lens steadily. Vertical adjustment may be made by raising or lowering the lens arm and by diagonal rack and pinion. The lens arm moves laterally about the axis of the stand. A spring fork, not shown in the illustration, permits the use of any desired lens not greater than $1\frac{1}{2}$ inches in diameter. This lens holder is especially useful with the low power Breucke lens.

Telegraphic Code.	Catalogue Number.	Price.
<i>Tustex</i>	TUS	\$9 00

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Pocket Magnifiers

Our pocket magnifiers have always been considered the standard. They have superseded those of foreign manufacture mounted in horn, etc., as the vulcanite which we employ for mountings is much preferred on account of its greater permanence, lightness, and neat appearance. The lenses used are accurately ground and give good results.

Vulcanite Mounting

Oval Form



No. 50 Magnifier.
Actual size.



No. 51 Magnifier.
Actual size.

Telegraphic Code.	Catalogue Number.	Diameter of Lenses in Millimeters.	Price.	Telegraphic Code.	Catalogue Number.	Diameter of Lenses in Millimeters.	Price.
<i>Paab</i>	50	18	\$ 20	<i>Paef</i>	68	37	\$ 50
<i>Paib</i>	51	15, 18	40	<i>Pamg</i>	69	30, 37	80
<i>Paci</i>	56	25	30	<i>Pafi</i>	74	43	60
<i>Pakd</i>	57	21, 25	50	<i>Pani</i>	75	37, 43	1 00
<i>Pade</i>	62	30	40	<i>Pagl</i>	78	50	75
<i>Palf</i>	63	28, 30	65	<i>Paoj</i>	79	43, 50	1 25

Bellows Shaped



No. 101 Magnifier.
Actual size.



No. 102 Magnifier.
Actual size.

Telegraphic Code.	Catalogue Number.	Diameter of Lenses in Millimeters.	Price.	Telegraphic Code.	Catalogue Number.	Diameter of Lenses in Millimeters.	Price.
<i>Petaf</i>	101	18	\$ 20	<i>Pipr</i>	112	15, 18, 21	\$ 60
<i>Pexai</i>	102	15, 18	35	<i>Pewah</i>	119	25	30
<i>Pivqa</i>	103	12, 15, 18	50	<i>Pezak</i>	120	21, 25	50
<i>Pevog</i>	110	21	25	<i>Peyaro</i>	121	18, 21, 25	80
<i>Peyaj</i>	111	18, 21	40	...	...	...	...

BRANCHES: NEW YORK CITY AND CHICAGO.

Nickeled Mountings

The metal mountings are intended for use where there is great need of protection for the lenses. The construction and finish of the case as well as of the lenses will be found superior to those of foreign make.

Telegraphic Code.	Catalogue Number.	Diameter of Lenses in Millimeters.	Price.	Telegraphic Code.	Catalogue Number.	Diameter of Lenses in Millimeters.	Price.
<i>Piba</i>	101NK	18	\$ 40	<i>Pinar</i>	112NK	16, 16, 25	\$ 90
<i>Piej</i>	102NK	12, 18	60	<i>Pidi</i>	119NK	32	60
<i>Pitwa</i>	103NK	12, 16, 16	80	<i>Pigla</i>	120NK	25, 32	80
<i>Picc</i>	110NK	25	50	<i>Pivec</i>	121NK	25, 25, 32	1 00
<i>Pifka</i>	111NK	18, 25	70	...	...	...	...

Aluminum Mountings

Aluminum recommends itself on account of its lightness, durability, and non-tarnishing qualities. The lenses furnished in these magnifiers are of the very best quality.

Telegraphic Code.	Catalogue Number.	Diameter of Lenses in Millimeters.	Price.	Telegraphic Code.	Catalogue Number.	Diameter of Lenses in Millimeters.	Price.
<i>Pikma</i>	101A	18	\$ 70	<i>Piln</i>	110A	21	\$ 90
<i>Pimo</i>	102A	15, 18	80	<i>Pinpa</i>	111A	18, 21	1 00
<i>Pirt</i>	103A	12, 16, 19	1 00	<i>Pisu</i>	112A	16, 19, 22	1 25

Real Tortoise Shell Mountings

Telegraphic Code.	Catalogue Number.	Diameter of Lenses in Millimeters.	Price.	Telegraphic Code.	Catalogue Number.	Diameters of Lenses in Millimeters.	Price.
<i>Pehar</i>	50S	18	\$ 75	<i>Pemob</i>	57S	21, 25	\$1 50
<i>Pelab</i>	51S	15, 18	1 00	<i>Pekad</i>	62S	30	1 50
<i>Pejab</i>	56S	25	1 00	<i>Penil</i>	63S	28, 30	2 00

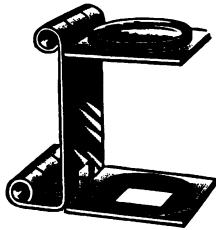
Shell Zylonite Mountings

Telegraphic Code.	Catalogue Number.	Diameter of Lenses in Millimeters.	Price.	Telegraphic Code.	Catalogue Number.	Diameter of Lenses in Millimeters.	Price.
<i>Papl</i>	50Z	18	\$ 40	<i>Paus</i>	57Z	21, 25	\$1 00
<i>Patr</i>	51Z	15, 18	75	<i>Parp</i>	62Z	30	80
<i>Paqo</i>	56Z	25	60	<i>Pavt</i>	63Z	28, 30	1 25

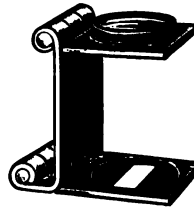
Ivory Zylonite Mountings

Telegraphic Code.	Catalogue Number.	Diameter of Lenses in Millimeters.	Price.	Telegraphic Code.	Catalogue Number.	Diameter of Lenses in Millimeters.	Price.
<i>Paxy</i>	50ZI	18	\$ 60	<i>Peba</i>	62ZI	30	\$1 00
<i>Peda</i>	51ZI	15, 18	1 00	<i>PeFa</i>	63ZI	28, 30	1 50
<i>Payr</i>	56ZI	25	80	<i>Pecc</i>	68ZI	37	1 25
<i>Peeb</i>	57ZI	21, 25	1 25	<i>Pegab</i>	69ZI	37, 43	1 75

Pocket Magnifiers in Folding Mounting



No. 141.



No. 142.

These magnifiers, often called linen testers, fold up to occupy the smallest possible space. The lens gives about ten diameters magnification and is focused on the opening in the base so that the magnifier is simply set over the object. The several sizes of openings are useful in examinations of linen and other fabrics.

Telegraphic Code.	Catalogue Number.	Opening.		Price.
		Size in Millimeters.	Shape.	
<i>Plair</i>	141	25 x 25	Square	\$2 00
<i>Plaima</i>	141 1/2	12 x 12	Square	25
<i>Plaju</i>	142	6 x 12	Rectangular	25
<i>Plake</i>	143	6 x 6	Square	25
<i>Plali</i>	143 1/2	6	Circular	25

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Watchmaker's Glass

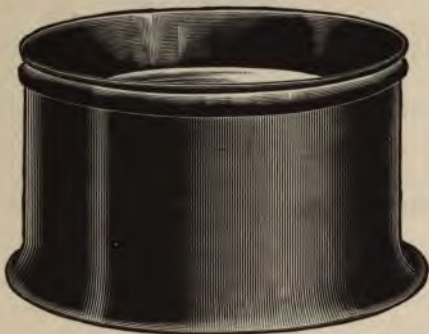


Figures actual size.

In this style of magnifier one or more lenses are mounted in a deep vulcanite mounting, which is held in the orbit of the eye, permitting the use of both hands while making the examination. No. 144LP has a spring which is clasped around the head to hold the glass before the eye, and is to be preferred where continuous work is done.

Telegraphic Code.	Catalogue Number.	Focus of Lens in Millimeters.	Price.	Telegraphic Code.	Catalogue Number.	Focus of Lens in Millimeters.	Price.
<i>Plab</i>	144	60	\$ 40	<i>Plade</i>	144A	60, 25	\$ 75
<i>Placa</i>	144 1/2	25	40	<i>Plaef</i>	144LP	60	50

Engraver's Glass



No. 146. Actual size.

This magnifier will be found especially useful for large dissections. The field is much larger than that of other magnifiers and the magnifying power sufficient for general work. These lenses should be used with Lens Holder TUS.

Telegraphic Code.	Catalogue Number.	Diam. of Lens in Mm.	Price.
<i>Plafa</i>	146	40	\$2 00
<i>Plage</i>	Clip for attaching to TUS Lens Holder,		1 00

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Hand Glasses



Magnifying Glass.

Magnifying Hand Glasses are intended for those examinations which require only slight magnifying power and where large field is desired. These glasses are carefully ground and neatly and durably mounted, having nickeled rim and black enameled handle.

Telegraphic Code.	Catalogue Number.	Diameter of Lens in Millimeters.	Price.	Telegraphic Code.	Catalogue Number	Diameter of Lens in Millimeters.	Price.
<i>Plama</i>	200	50	\$ 60	<i>Plapa</i>	206	97	\$1 50
<i>Planca</i>	202	62	80	<i>Plaqa</i>	208	100	2 00
<i>Plaora</i>	204	75	1 00	<i>Plago</i>	210	112	2 50



Diminishing Glass.

Diminishing Hand Glasses are useful in the preparation of illustrations, sketching groups of objects, etc. The lens is double concave. Mounted in nickeled rim with black enameled handle.

Telegraphic Code.	Catalogue Number.	Diameter of Lens in Millimeters.	Price.	Telegraphic Code.	Catalogue Number.	Diameter of Lens in Millimeters.	Price.
<i>Plarca</i>	200CC	50	\$1 00	<i>Plauve</i>	206CC	90	\$3 00
<i>Plasar</i>	202CC	65	1 50	<i>Plaven</i>	208CC	100	4 00
<i>Platca</i>	204CC	75	2 00	<i>Plawna</i>	210CC	115	5 00

BRANCHES: NEW YORK CITY AND CHICAGO.

Doublet Magnifiers



Nos. 1-5.



No. 6.



No. 7.

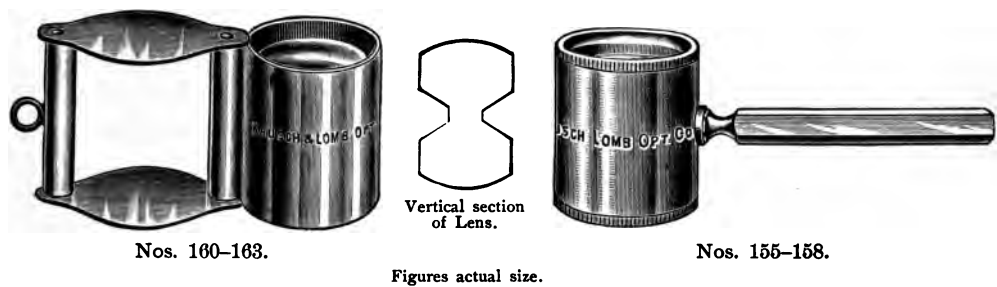
Figures actual size.

These magnifiers are composed of two separated plano convex lenses. The field is large and flat and the definition excellent. The mountings are neat and thoroughly well made. There are three styles, Nos. 1-5 for use on the dissecting microscope, No. 6 with handle for desk use, and No. 7 in folding pocket case.

Telegraphic Code.	Catalogue Number.	Focus.		Mounting.	Price.
		In Inches.	In Mm.		
<i>Pofoba</i>	1	11/2	38	For Dissecting Stand	\$1 00
<i>Pogfo</i>	2	1	25	For Dissecting Stand	1 00
<i>Poax</i>	3	3/4	18	For Dissecting Stand	1 00
<i>Pobsa</i>	4	1/2	13	For Dissecting Stand	1 00
<i>Pocra</i>	5	1/4	6	For Dissecting Stand	1 00
<i>Podnal</i>	6	3/4	18	{ Hand Magnifier Hexagonal Handle }	1 00
<i>Pocr</i>	7	3/4	18		
				Folding Pocket Case	1 25

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Coddington Magnifiers



The Coddington Magnifier is a cylinder of glass cut from a solid sphere and having a groove, equally distant from its surfaces, which acts as a diaphragm. Although the field is somewhat limited, the definition is very good and higher powers can be used than in the simpler lenses. The surfaces are ground and polished with great care and the mountings are neatly and durably made. Three styles are supplied, Nos. 160A-163A plain for use with the dissecting microscope, Nos. 155-158 with handle for desk use, and Nos. 160-163 in folding pocket case.

Telegraphic Code.	Catalogue Number.	Focus.		Mounting.	Price.
		In Inches.	In Mm.		
<i>Pohar</i>	163	1 1/2	38	Folding Case	\$2 00
<i>Poiler</i>	162	1	25	Folding Case	1 75
<i>Pojat</i>	161	3/4	18	Folding Case	1 50
<i>Pokram</i>	160	1/2	13	Folding Case	1 50
<i>Polsta</i>	158	1 1/2	38	With Handle	1 75
<i>Pontar</i>	157	1	25	With Handle	1 50
<i>Poonu</i>	156	3/4	18	With Handle	1 25
<i>Pofran</i>	155	1/2	13	With Handle	1 25
<i>Poqua</i>	163A	1 1/2	38	For Dissecting Stand	1 75
<i>Porvi</i>	162A	1	25	For Dissecting Stand	1 50
<i>Postiv</i>	161A	3/4	18	For Dissecting Stand	1 25
<i>Potan</i>	160A	1/2	13	For Dissecting Stand	1 25

Coddington Magnifiers

Second Quality

To meet the demand for a Coddington lens at a less price than it is possible to produce the best grade for, we list these lenses. The mountings are well made and the lenses are of clear glass carefully ground and polished. They are far superior to the foreign made glasses offered as Coddingtons. Furnished only in folding pocket cases.

Telegraphic Code.	Catalogue Number.	Focus.		Price.
		In Inches.	In Mm.	
<i>Ponda</i>	175	2	50	\$1 75
<i>Povlo</i>	176	1 1/2	38	1 50
<i>Powki</i>	177	1	25	1 25
<i>Poxtil</i>	178	3/4	18	1 10

Aplanatic Triplet Lenses



Figure actual size.

These lenses are thoroughly achromatic, being composed of two flint lenses between which a very thick crown lens is cemented. They give very clear flat images with large field free from distortion and chromatic aberration, and powers of ten to twenty diameters.

Telegraphic Code.	Catalogue Number.	Magnification in Diameters.	Focus.		Mounting.	Price.
			In Inches.	In Mm.		
<i>Praba</i>	167	10	1	25	Folding Case	\$4 00
<i>Praco</i>	166	14	3/4	18	Folding Case	4 00
<i>Pradir</i>	165	20	1/2	13	Folding Case	4 00
<i>Prael</i>	167A	10	1	25	For Dissecting Stand	4 00
<i>Prafti</i>	166A	14	3/4	18	For Dissecting Stand	4 00
<i>Prage</i>	165A	20	1/2	13	For Dissecting Stand	4 00

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Compound Dissecting Lenses

Bruecke Type



Figure actual size.
High Power, No. 42.

The High Power Bruecke Lens consists of an achromatic eye lens and of three achromatic objective systems which may be used separately or combined, giving six different magnifying powers, ranging from 15 to 100 diameters. The image is not inverted and the working distance with any power is sufficient for dissecting purposes. This lens may be used on any of our dissecting microscopes and in connection with the camera lucida.

Telegraphic Code.	Catalogue Number.	Working Combinations.	Magnification in Diameters.	Working Distance.	Price.
<i>Psap</i>	42	3 lenses with eyepiece 2 lenses with eyepiece 1 lens with eyepiece 3 lenses without eyepiece 2 lenses without eyepiece 1 lens with eyepiece	100 60 40 30 20 15	8 mm. to 20 mm.	\$13 50

The Low Power Bruecke Lens consists of two achromatic systems of long focus and a magnifying eyepiece adjustable in the tube, by means of which a variation in magnifying power from 5 to 10 diameters with a working distance of 60 to 75 mm. is obtained. This lens is of great value for dissecting where abundant illumination without a mirror, large field and long working distance are required. It should be used with the TS, TU, or TUS stands.

Telegraphic Code.	Catalogue Number.	Magnification.	Working Distance in Mm.	Price.
<i>Psabu</i>	40	5-10	60-75	\$10 50

BRANCHES: NEW YORK AND CHICAGO.

Hastings Aplanatic Triplet Magnifiers

After formulæ by Prof. Chas. S. Hastings, Sheffield
Scientific School, Yale University.

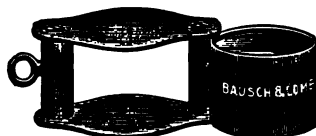


Figure actual size of three-fourths inch lens.

These lenses offer advantages found in no other hand magnifiers, the improved construction being possible through the recent improvements in optical glass. The field embraces a very wide angle, and the working distance is almost equal to that of a simple lens of the same power. The defining power is such as to show structures not visible with other magnifiers of equal power. The mounting is German silver, neatly and durably made.

Telegraphic Code.	Catalogue Number.	Magnification.	Focus.		Real Field Mm.	Mounting.	Price.
			Inches.	Mm.			
<i>Prahar</i>	174	5	2	50	40	Folding Pocket Case	\$7 00
<i>Prail</i>	173	7	1 1/2	38	30	Folding Pocket Case	7 00
<i>Prajab</i>	172	10	1	25	20	Folding Pocket Case	7 00
<i>Prakal</i>	171	15	3/4	19	14	Folding Pocket Case	7 00
<i>Pralor</i>	170	20	1/2	13	8	Folding Pocket Case	7 00
<i>Prama</i>	174A	5	2	50	40	For Dissecting Microscope	7 00
<i>Pranot</i>	173A	7	1 1/2	38	30	For Dissecting Microscope	7 00
<i>Praok</i>	172A	10	1	25	20	For Dissecting Microscope	7 00
<i>Prapel</i>	171A	15	3/4	19	14	For Dissecting Microscope	7 00
<i>Praquir</i>	170A	20	1/2	13	8	For Dissecting Microscope	7 00

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Achromatic Objectives

The important advances which have been made in the production of optical glass by the Jena Glass Works and other manufacturers have enabled us to materially increase the effectiveness of our objectives.

In our computations we have endeavored to eliminate the chromatic and spherical aberrations and to increase the numerical aperture and working distance, and have succeeded to an unusual extent.

In the medium and high powers we have made a decided improvement in the flatness of the field, and have increased the working distance.

Only absolutely permanent materials are employed in construction, no glass being used until it has been subjected to thorough tests to determine its power of resisting atmospheric action and internal change.

Our own constructive formulæ are used throughout and the work is done under our own personal supervision by workmen specially trained by us.

The system by which every process of manufacture is controlled and the rigid inspection to which the objective, in its various stages and in its completed form is subjected, insure perfect uniformity and the highest optical efficiency.

Our firm name, the focal length in inches, and the tube length for which correction has been made are engraved on the mounting of each objective. All have standard society screw and are furnished in neat metal boxes.

With oil immersion lenses a bottle of specially prepared immersion oil is furnished, and this oil should always be employed, as other oils may not only affect the optical results but the setting of the front lens as well.

Tube length is measured from the top of the draw tube to the shoulder on the nosepiece (single or revolving) against which the objective rests. Objectives should always be used with the tube length for which they are corrected. All objectives in fixed mountings are **corrected for covered glass of 0.18 millimeters thickness**, this being the mean thickness of No. 2 cover glass, nine-tenths of all covers used being No. 2.

We are the only manufacturers who correct objectives to one thickness of cover.

All manufacturers lay great stress upon the use of a constant tube length, because a deviation from the tube length for which the objective is corrected affects the spherical corrections; and as minimal variations in the adjustment of the objective, differences or variations in cover thickness, affect its correction to a much greater extent and consequently the distinctness of the image, it seems but rational that objectives should be corrected for one mean thickness of cover glass only. Such correction is extremely difficult, but our patrons are assured of the utmost possible efficiency.

For very critical work measured covers of 0.18 mm. thickness should always be employed.

In the variable objective the systems are mounted so that by rotating the graduated collar the initial magnifying power may be varied from 2 to 3.4 diameters, making it a very useful lens for low power work. The $\frac{2}{8}$ inch 0.24 N.A., $\frac{1}{6}$ inch 0.85 N.A., and the $\frac{1}{12}$ inch 1.32 N.A. oil immersion

lenses meet nearly every requirement as to variety of magnification, and while we believe any of our lenses are as good as the best, we consider these three superior to any achromatic lenses of similar power now made. They will be found especially satisfactory on account of their extra long working distance, flatness of field, sharply defined and brilliant images.

The $\frac{1}{6}$ inch 0.66 N.A. objective is especially constructed for blood counting, as its working distance is sufficient to permit its use with the hæmacytometer.

Any of our lenses are sent to responsible persons for trial, and comparative tests are invited.

Telegraphic Code.	Catalogue Number.	Focus.		Numerical Aperture.	Tube Length. Mm.		Mounting.	Price.
		Inches.	Millimeters.					
<i>Prara</i>	1000	3 to 5	75 to 125	. .	. .	Dry	Adjustable	\$15 00
<i>Prasti</i>	1002	3	75	0.08	160	Dry	Fixed	6 00
<i>Pratil</i>	1004	3	75	0.10	160	Dry	Fixed	12 00
<i>Praul</i>	1006	2	50	0.10	160	Dry	Fixed	6 00
<i>Pravid</i>	1008	2	50	0.14	160	Dry	Fixed	12 00
<i>Prawny</i>	1010	$1\frac{1}{2}$	37	0.14	160	Dry	Fixed	6 00
<i>Praxit</i>	1012	$1\frac{1}{2}$	37	0.20	160	Dry	Fixed	12 00
<i>Prayla</i>	1014	1	25	0.22	160	Dry	Fixed	6 00
<i>Prazma</i>	1016	1	25	0.31	160	Dry	Fixed	12 00
<i>Psaar</i>	1018	$\frac{3}{4}$	18	0.22	216	Dry	Fixed	6 00
<i>Psabo</i>	1020	$\frac{3}{4}$	18	0.35	160	Dry	Fixed	12 00
<i>Psacra</i>	1022	$\frac{2}{3}$	16	0.24	160	Dry	Fixed	6 00
<i>Psada</i>	1024	$\frac{1}{2}$	12.5	0.35	160	Dry	Fixed	8 00
<i>Psafef</i>	1026	$\frac{1}{2}$	12.5	0.54	160	Dry	Fixed	14 00
<i>Psafa</i>	1028	$\frac{1}{4}$	6.5	0.85	160	Dry	Fixed	10 00
<i>Psagro</i>	1030	$\frac{1}{5}$	5	0.85	160	Dry	Fixed	12 00
<i>Psahar</i>	1032	$\frac{1}{6}$	4.2	0.66	160	Dry	Fixed	12 00
<i>Psail</i>	1034	$\frac{1}{6}$	4.2	0.85	160	Dry	Fixed	12 00
<i>Psajab</i>	1036	$\frac{1}{8}$	3.2	0.93	160	Dry	Fixed	12 00
<i>Psakla</i>	1038	$\frac{1}{8}$	3.2	0.93	216	Dry	Fixed	12 00
<i>Psalma</i>	1040	$\frac{1}{10}$	2.6	1.25	160	Oil Immersion	Fixed	30 00
<i>Psamo</i>	1042	$\frac{1}{12}$	2.0	1.32	160	Oil Immersion	Fixed	38 00
<i>Psanir</i>	1044	$\frac{1}{12}$	2.0	1.38	160	Oil Immersion	Adjustable	75 00
<i>Psaot</i>	1046	$\frac{1}{18}$	1.6	1.32	160	Oil Immersion	Fixed	54 00

Projection Objectives

These lenses are intended for the projection microscope, where flat field and large lenses giving brilliant illumination are required. The lenses are mounted to secure the greatest safety when heated in the projection microscope.

Telegraphic Code.	Catalogue Number.	Focus.		Initial Magnification.	Price.
		Inches.	Millimeters.		
<i>Psague</i>	1040	3	75.0	3.3	\$13 00
<i>Psara</i>	1042	2	50.0	5.0	13 00
<i>Psasto</i>	1044	1 1/2	38.0	6.8	15 00
<i>Psatri</i>	1046	1	25.0	10.0	15 00
<i>Psaul</i>	1048	3/4	18.0	14.0	15 00
<i>Psavon</i>	1050	1/2	12.5	20.0	12 00
<i>Psawar</i>	1052	1/4 two system	6.3	40.0	12 00

Photo-Micrographic Objectives

These objectives are especially corrected for photography, and for the powers listed give results which are not surpassed by lenses of any other construction. For this reason we have not found it advantageous to make low powers of our apochromatics. All are provided with an iris diaphragm, by which the penetration and defining power are considerably increased.

Telegraphic Code.	Catalogue Number.	Focus.		Numerical Aperture.	Price.
		Inches.	Millimeters.		
<i>Psaxol</i>	1060	3	75.0	0.10	\$13 00
<i>Psayre</i>	1062	2	50.0	0.14	13 00
<i>Psaza</i>	1064	1 1/2	37.0	0.20	15 00
<i>Psoat</i>	1066	1	25.0	0.31	15 00
<i>Psobo</i>	1068	3/4	18.0	0.35	15 00
<i>Psobun</i>	1070	1/2	12.5	0.54	18 00

Bausch & Lomb-Zeiss

Planar Photo-Micrographic Objectives



In these lenses the principles of the celebrated Zeiss Planar photographic lenses have been applied. We manufacture them here under the Zeiss patents, the formulæ and glass being furnished us by Zeiss. They give a considerably larger field than can be obtained with the construction employed in microscopical objectives, making them especially valuable for photographing objects of large area under comparatively great magnification. They give very sharp definition, brilliant and evenly illuminated image free from marginal indistinctness or distortion.

Unlike most lenses specially constructed for photography, they give excellent optical results as well. The 15 to 20 mm. focus lenses are mounted with iris diaphragms and have society screw. They should, in order to obtain the full angle, be used with the DD microscope, which has extra large tube. All the Planar Photo-Micrographic Objectives are used without eyepieces for photography.

Telegraphic Code.	Catalogue Number.	Focus.		Air Angle.	Numerical Aperture.	Price.
		Inches.	Millimeters.			
<i>Placet</i>	1076	3	75	65°	0.54	\$42.00
<i>Placenta</i>	1078	2	50	65°	0.54	35.00
<i>Placard</i>	1080	1 ³ / ₈	35	65°	0.54	35.00
<i>Placage</i>	1082	³ / ₄	18	65°	0.54	35.00

Illuminating Objectives

For reading fine scales, examination of metallic surfaces and ores, vertical illumination is required for the best results, and this can only be obtained by passing a beam of light through the lenses of the objective onto the object, from which it is again reflected to the eye. All other methods of illumination which have been devised for this purpose have not been satisfactory. A reflecting prism is set in the mounting between the lens systems in such a manner that while abundant direct vertical illumination is secured the definition is not impaired.

Telegraphic Code.	Catalogue Number.	Focus, Inches.	Price.
<i>Psocal</i>	1086	1 ¹ / ₂	\$22 00
<i>Psodad</i>	1088	1	22 00
<i>Psoef</i>	1090	³ / ₄	22 00
<i>Psofal</i>	1092	¹ / ₂	18 00

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Huyghenian Eyepieces



Mounted for Continental Microscope.



Mounted for American Type Microscope.

The Huyghenian eyepieces are to be used with the achromatic objectives and are corrected so as to give the greatest flatness of field and marginal definition with these lenses. They are so constructed that the **focal plane coincides** in all powers. The optical tube length therefore remains practically constant and the objectives require refocusing by fine adjustment only when eyepieces are changed.

Continental Mounting

Telegraphic Code.	Catalogue Number.	Equivalent Focus.		Price.
		Inches.	Millimeters.	
<i>Psolif</i>	1100	2	50	\$2 00
<i>Psomit</i>	1102	1 1/2	38	2 00
<i>Psonar</i>	1104	1	25	2 00
<i>Psoom</i>	1106	3/4	18	2 00
<i>Psopa</i>	1108	1/2	13	2 00

American Type Mounting

Telegraphic Code.	Catalogue Number.	Equivalent Focus.		Price.
		Inches.	Millimeters.	
<i>Psogat</i>	1110	2	50	\$3 00
<i>Psoham</i>	1112	1 1/2	38	3 00
<i>Psoila</i>	1114	1	25	3 00
<i>Psojaka</i>	1116	3/4	18	3 00
<i>Psokali</i>	1118	1/2	13	3 00

BRANCHES: NEW YORK CITY AND CHICAGO.

Apochromatic Objectives and Compensating Oculars

After formulæ by Professor Charles S. Hastings, Sheffield
Scientific School, Yale University.

These Apochromatic Objectives contain **no Fluorite** and are made throughout of absolutely permanent materials.

The formulæ computed by Professor Hastings are entirely independent of any other work which has been done in this line.

In these lenses the separation of the optical elements introduces a new error in the image formed by the improved objectives, namely, a chromatic difference of magnification.

This difference appears to the eye as a color defect, which, insensible at the center of the field, increases continuously in approaching the margin.

The error is eliminated by the use of specially devised oculars, having a chromatic error opposite to that of the objectives, and which are called **Compensating Oculars**.

Since achromatic objectives of apertures less than 0.30 are entirely satisfactory, and those greater than 1.40 are practically unattainable, we confine our list of Apochromatic Objectives to these limits, with the exception of the 38 mm. lens, which is especially useful for projection purposes.

As the oil immersion of 1.30 aperture is only seven per cent. less effective than that of 1.40 aperture, and the greater certainty of accurate construction and consequent saving of cost is considerable, this type is also included.

All of the Compensating Oculars are applicable to the entire series of objectives, the rear lenses being of like diameters.

Number 2 is useful chiefly as a finder and in photomicrography.

Numbers 4 and 8 are most generally useful in ordinary work.

Number 12 is desirable when the utmost power of the objective is to be called upon, while the number 16 is very useful as an aid in securing the finest adjustment in the objectives for a given object.

The magnification can be found in every case by dividing 250 mm., the conventional distance for distinct vision, by the focal length of the objective and multiplying the quotient by the number of the ocular; thus, the lowest power of the series is equal to $(250 \text{ mm.} \div 38) \times 2 = 13$, and the highest to $(250 \text{ mm.} \div 3.5) \times 16 = 1136$.

The corrections are all made for a tube length of 160 mm.

Higher and lower powers than those given, both of objectives and oculars, can be supplied, but it is believed that those listed will meet all rational requirements in the most satisfactory manner.

The Apochromatic objectives herewith listed differ from all others in that they contain **no fluorite** and are constructed of **absolutely permanent materials**.

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Huyghenian Eyepieces



Mounted for Continental Microscope.



Mounted for American Type Microscope.

The Huyghenian eyepieces are to be used with the achromatic objectives and are corrected so as to give the greatest flatness of field and marginal definition with these lenses. They are so constructed that the focal plane coincides in all powers. The optical tube length therefore remains practically constant and the objectives require refocusing by fine adjustment only when eyepieces are changed.

Continental Mounting

Telegraphic Code.	Catalogue Number.	Equivalent Focus.		Price.
		Inches.	Millimeters.	
<i>Psolif</i>	1100	2	50	\$2 00
<i>Psomit</i>	1102	1 1/2	38	2 00
<i>Psonar</i>	1104	1	25	2 00
<i>Psoom</i>	1106	3/4	18	2 00
<i>Psopa</i>	1108	1/2	13	2 00

American Type Mounting

Telegraphic Code.	Catalogue Number.	Equivalent Focus.		Price.
		Inches.	Millimeters.	
<i>Psogat</i>	1110	2	50	\$3 00
<i>Psoham</i>	1112	1 1/2	38	3 00
<i>Psoila</i>	1114	1	25	3 00
<i>Psojaka</i>	1116	3/4	18	3 00
<i>Psokali</i>	1118	1/2	13	3 00

BRANCHES: NEW YORK CITY AND CHICAGO.

Anatomical Models



No. 1200.



No. 1202.

These models are intended for class demonstration in physiology and elementary anatomy. Each is arranged so that it may be taken apart to show the important parts. The material used in construction is light and durable. An explanatory key is furnished.

Telegraphic Code.	Catalogue Number.				Price.
<i>Raxaa</i>	1200	Human Ear, 39 cm. in diameter,	-	-	\$10 00
<i>Raxbon</i>	1202	Human Eye, enlarged six diameters, -	-	-	10 00
<i>Raxcam</i>	1204	Human Heart, enlarged two diameters, -	-	-	7 50

Apparatus for Blood Examination



No. 1214.



No. 1220.

<i>Raxel</i>	1206	Thoma-Zeiss Hæmacytometer for counting red corpuscles, complete in case, net, - - - -	10 40
<i>Raxfay</i>	1208	Extra mixing pipette, net, - - - -	3 60
<i>Raxgil</i>	1210	Thoma-Zeiss Hæmacytometer for counting white corpuscles, complete in case, net, - - - -	10 40
<i>Raxhit</i>	1212	Extra mixing pipette, net, - - - -	3 60

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Telegraphic Code.	Catalogue Number.		Price.
<i>Raxili</i>	1214	Thoma-Zeiss Hæmacytometer for counting red and white corpuscles, complete in case, net, - - -	\$14 40
<i>Raxjap</i>	1216	Extra counting chamber for Thoma-Zeiss Hæmacytometer, net, - - - - -	6 00
<i>Raxkar</i>	1218	Extra cover glasses for counting chamber of Thoma-Zeiss Hæmacytometer, each, net, - - -	30
<i>Raxdit</i>	1220	Gowers' Hæmacytometer for counting red and white corpuscles, complete in case, net, - - -	23 00
		Hæmatokrit for rapid blood counting (see Centrifuge).	
<i>Raxmil</i>	1224	Gowers' Hæmaglobinometer for measuring the amount of hæmaglobin in blood, complete in case, net, - - - - -	7 60



No. 1224.



No. 1228.

<i>Raxnot</i>	1226	Gower's Hæmaglobinometer, simplified form, complete in case, net, - - - - -	2 25
<i>Raxopo</i>	1228	Fleischl's Hæmometer, for measuring the amount of hæmaglobin in blood. Blood is diluted with a fixed quantity of water and its color matched with a graduated tint scale, from which the percentage of hæmaglobin is read. Complete in case with handle and lock, net, - - - - -	25 00
<i>Raxpar</i>	1230	Hæmacytometer and Hæmaglobinometer after Gower, complete in one case, net, - - - - -	30 00



No. 1232.

BRANCHES: NEW YORK CITY AND CHICAGO.

Telegraphic Code.	Catalogue Number.		Price.
<i>Raxque</i>	1232	Migge's Apparatus for spreading blood for microscopical examination. It is next to impossible to make uniform and satisfactory cover glass preparations of blood which are to be stained for examination, as in malaria, etc., without some special apparatus of this kind. The set consists of a pair of lock forceps with broad ivory blades for holding one cover glass, a pair of special cover glass forceps for holding the other cover, and a lancet for drawing blood. The whole in compact leather case with receptacle for cover glasses, complete, - - - - -	\$5 00

Botanical Supplies

<i>Raxrax</i>	1240	Drying paper, extra heavy, 33 x 46 cm., per hundred,	\$1 00
<i>Raxsil</i>	1242	Genus Covers, 42.5 x 61.3 cm., extra quality and weight. Surface specially prepared for writing upon, per hundred, - - - - -	2 00
<i>Raxtar</i>	1244	Mounting Paper, 29.2 x 42 cm. This paper, as well as the Genus Covers and Driers, is made especially for us in very large quantities, and we have used in it the purest, strongest stock, producing a mount which has that desirable stiffness and "backbone" so seldom found in mounting papers. The color is very white and does not change with age, as papers made of impure stock are sure to do; per ream (500 sheets), - - - - -	4 50

Prices named above are for usual quantities. Large orders can be furnished for less.



No. 1246.



No. 1248.

<i>Raxumu</i>	1246	Portable Plant Press. It is usually better to place specimens in the press as soon as collected. This press is light and strong and may be carried with ease. Elastic bands prevent disarrangement of specimens and unused driers when the press is opened. With six driers, - - - - -	2 00
<i>Raxvol</i>	1248	Vasculum, metal, enameled, with door opening along entire length, 13 x 20 x 40 cm., with strap,	1 50

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Centrifuges

The Centrifuge is rapidly coming into general use for the clinical examination of blood, urine, milk and sputum, and for the collection of the organisms or solids in water, chemical substances, etc. The increased use of this apparatus is largely due to the improvements which we have made in its mechanical construction, and to our efforts in the dissemination of information as to proper methods for securing the results.

Our hand centrifuge is extremely compact and yet strong and durable.

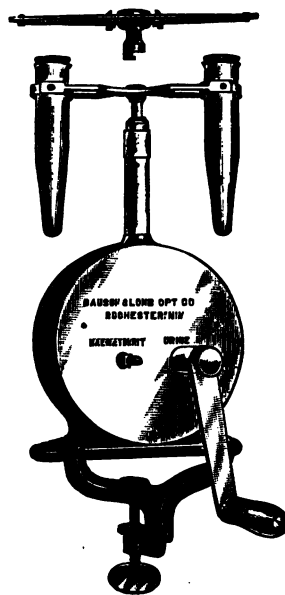
The use of phosphor bronze, spirally cut gear and accurate workmanship throughout, enables us to produce a very easy, quiet running, and lasting machine which we sell at a very moderate price. Information as to methods and construction will be found in our manual "Centrifugal Analysis," sent gratis on request.

The Centrifuge applied to urinary analysis permits the estimation of the per cent. of Albumen, Chlorides, Phosphates and Sulphates in three minutes time at the bedside if desired, and the collection of cellular elements for microscopical examination. The Haematokrit gives the number of red corpuscles in the blood, also in three minutes, and without the necessity of diluting it.

Our Centrifuges are everywhere acknowledged as the best in design and workmanship. They embody the correct principles of construction as laid down by the eminent authorities who have assisted in their development, and results as described in the literature of the subject can only be obtained by the use of our standard instruments. Every Centrifuge of our manufacture has our firm name engraved across the front of the case. Any instrument offered without our name is not our make.



Single Speed Centrifuge No. 8540.



Double Speed Centrifuge No. 8544.

Telegraphic Code.	Catalogue Number.
<i>Raxwen</i>	8540

Single Speed Centrifuge, giving 3000 revolutions per minute, with one graduated and one ungraduated sedimentation tube, for urine, sputum and other examinations, net,	-	-	-	-	-	\$10 00
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Price.

BRANCHES: NEW YORK CITY AND CHICAGO.

Telegraphic Code.	Catalogue Number.		Price.
<i>Raxxil</i>	8544	Double Speed Centrifuge, giving speeds of 3000 to 10,000 revolutions per minute, with two tubes for urinary and sputum examinations, and with Daland's Hæmatokrit for the rapid estimation of red corpuscles in blood, two sputum tubes for collection of bacteria from tuberculous sputum, etc., net, - - - - -	\$20 00
<i>Raygala</i>	8546	Carrying Case for Centrifuge, either style, net,	4 00



No. 8554.



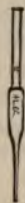
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No. 8560.



No. 8562.



No. 8564.

<i>Rayfoyl</i>	8548	Guard for Hæmatokrit, - - - - -	2 00
<i>Rayfan</i>	8550	Four-tube Head for Centrifuge. This is used in Board of Health and other laboratories for milk testing, as four tests can be made at one time; net, - - - - -	5 00
<i>Raxyar</i>	8552	Percentage Tubes for Hæmatokrit, each, net, - - - - -	50
<i>Raycama</i>	8554	Automatic Blood Lancet, net, - - - - -	1 50
<i>Raycord</i>	8555	Automatic Pipette for filling Hæmatokrit Tubes, net, - - - - -	75
<i>Raybond</i>	8556	Sputum Tubes, for use in Hæmatokrit frame, each, net, - - - - -	40
<i>Raxzola</i>	8558	Graduated Sedimentation Tubes, each, net, - - - - -	50
<i>Rayala</i>	8560	Ungraduated Sedimentation Tubes, net, - - - - -	25



No. 8550.



No. 8546.

<i>Raydor</i>	8562	Milk Tubes. These tubes are used in place of the regular sedimentation tubes and are graduated to give per cent. of fats in milk according to the Leffman-Beam or Babcock method. Very useful for human as well as cow's milk analysis; each, net, - - - - -	50
<i>Rayele</i>	8564	Pipette for filling milk tubes, net, - - - - -	10

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Cells, Mounting. When cells of some depth are required these ready-made cells of glass, rubber or zylonite will save the labor of building up cement ones. They are hollow cylinders with parallel tops and bottoms. The rubber and zylonite cells may be had from 0.5 to 3 mm. depth, and the glass ones from 2 mm. to any depth. Diameters are 13, 16, 19 and 22 mm., and assorted sizes are sent unless otherwise ordered.

Telegraphic Code.	Catalogue Number.	Material.	Price Per Ten.
<i>Raba</i>	1250	Glass	\$ 85
<i>Raber</i>	1252	Rubber	12
<i>Rabos</i>	1254	Zylonite	20

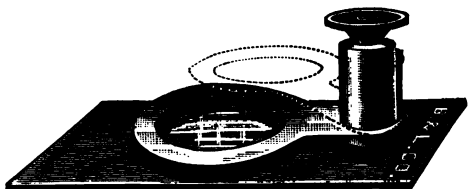


No. 1258.

Telegraphic Code.	Catalogue Number.		Price.
<i>Rabym</i>	1258	Cells, Atwood's rubber. For mounting opaque objects and to enable an object to be mounted independent of the slip. Recess for cover is 13 mm. diameter. Outside diameter, 19 mm., per ten,	\$ 25

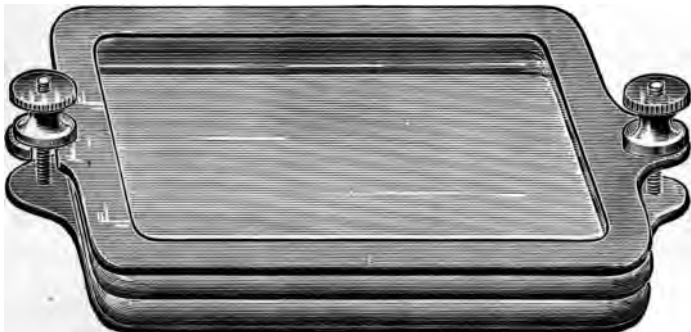


No. 1260.



No. 1262.

<i>Racit</i>	1260	Compressor, Wenham's, diam. of glass discs 22 mm. each,	1 50
<i>Racore</i>	1262	Compressor, parallel, an improvement of the Wenham compressor, in which the arm carrying the upper compressor glass is moved vertically by means of a screw and spring, and may be turned to one side if desired. Diam. of glass discs 20 mm., each,	3 50



No. 1264.

Bureau of Animal Industry Compressor.
Figure Actual Size.

BRANCHES: NEW YORK CITY AND CHICAGO.

Telegraphic Code.	Catalogue Number.		Price.
<i>Racuvo</i>	1264	Compressor, Bureau of Animal Industry. This compressor is used by the Government bureaus for meat inspection and is specially adapted to rapid and accurate examination of flesh suspected of containing trichinæ or other parasites; each,	\$2 00

Cover Glass and Object Slides

All our covers are of the best pure white glass, especially manufactured for us and measured, cut and packed in our factory. This glass is extra tough, very uniform in thickness, and easily cleaned.

No. 2 covers should in all cases be used for our objectives, whether dry or immersion, as all are corrected for the standard thickness of 0.18 mm., the mean of the No. 2 glass.

For critical work or for use with foreign lenses, where the cover thickness is marked on the mount, measured covers should always be used, as the results obtainable warrant the slight extra cost. Those who prefer to measure the covers themselves will find our Cover Glass Gauge convenient and accurate.

Our Glass Slides are of the finest glass obtainable and are the whitest and freest from defects of any produced. The medium thickness is recommended for general work, as they are as thin as can be used in the laboratory without undue amount of breakage. The edges of all slides are finely bevel ground.



Our regular circular and square cover glasses are packed in half-ounce packages and are furnished in 13, 15, 18, 22 or 25 mm. ($\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$ or 1 in.) diameter. When ordering always give *shape, thickness, size and quantity*. If no designation is given, 18 mm. No. 2 circles will be sent.

Price List of Cover Glass.

CIRCULAR COVERS.

Telegraphic Code.	Catalogue Number.	"No."	Thickness.	Price.	
				Per 10.	Per Oz.
<i>Racawap</i>	1270	0	Selected extra thin	25c.	\$2 50
<i>Racawek</i>	1272	1	0.13 to 0.17 mm. $\frac{2}{100}$ to $\frac{17}{100}$ in.	18c.	1 25
<i>Racawos</i>	1274	2	0.17 to 0.25 mm. $\frac{17}{100}$ to $\frac{25}{100}$ in.	16c.	1 00
<i>Racawy</i>	1276	3	0.25 to 0.50 mm. $\frac{25}{100}$ to $\frac{50}{100}$ in.	14c.	80

Less than 13 mm. ($\frac{1}{2}$ inch) in diameter, 25 per cent. advance.

SQUARE COVERS.

<i>Rachal</i>	1277	0	Selected extra thin	20c.	\$2 00
<i>Rachep</i>	1278	1	0.13 to 0.17 mm. $\frac{2}{100}$ to $\frac{17}{100}$ in.	16c.	1 05
<i>Rachog</i>	1280	2	0.17 to 0.25 mm. $\frac{17}{100}$ to $\frac{25}{100}$ in.	14c.	80
<i>Rachuy</i>	1282	3	0.25 to 0.50 mm. $\frac{25}{100}$ to $\frac{50}{100}$ in.	12c.	60

Less than 13 mm. ($\frac{1}{2}$ inch) in length, 25 per cent. advance.

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

RECTANGULAR COVERS.

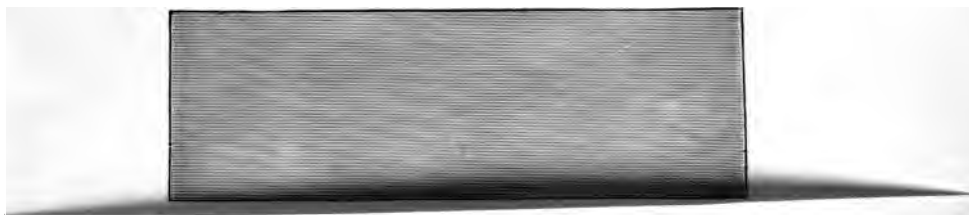
Sizes other than those listed will be cut to order.

No. 1 Thickness 0.13 to 0.17 mm. Telegraphic Code, <i>Raccab</i> Catalogue Number, 1284				No. 2 Thickness 0.17 to 0.25 mm. Telegraphic Code, <i>Raccod</i> Catalogue Number, 1286				No. 3 Thickness 0.25 to 0.50 mm. Telegraphic Code, <i>Raccim</i> Catalogue Number, 1288			
Catalogue Letter.	Size, mm.	Price.		Catalogue Letter.	Price.		Catalogue Letter.	Price.			
		Per 10.	Per 100.		Per 10.	Per 100.		Per 10.	Per 100.		
a	18 x 30	30c.	\$1 30	a	25c.	\$1 15	a	20c.	\$1 05		
c	18 x 40	35	1 65	c	30	1 50	c	25	1 35		
h	20 x 30	30	1 40	h	25	1 25	h	20	1 15		
j	20 x 40	40	1 90	j	35	1 70	j	30	1 55		
l	20 x 50	50	2 30	l	45	2 10	l	40	1 90		
n	22 x 30	35	1 55	n	30	1 40	n	25	1 25		
o	22 x 40	40	2 05	o	35	1 85	o	30	1 70		
p	22 x 50	50	2 60	p	45	2 30	p	40	2 10		
r	24 x 40	45	2 25	r	40	2 00	r	35	1 80		
s	24 x 50	55	2 75	s	50	2 50	s	45	2 25		
t	24 x 60	65	3 25	t	60	3 00	t	55	2 75		

Telegraphic Code. Catalogue No.

Raccot 1289 Measured Covers. Any size up to 25 mm., circles or square, any thickness, from No. 1 to No. 3, 25 per cent. additional to regular catalogue price of the size and thickness desired.

Microscopical Object Slides.



Notice.

Owing to the advance in the cost of the raw material, we are obliged to make the following changes in the prices of our slides and cover glasses.

1290....\$1 00 per gross 1274....\$1 25 per oz.
1292.... 1 15 " " 1276.... 1 00 " "
1298.... 1 25 " " 1278.... 1 25 " "
1300.... 1 50 " " 1280.... 1 00 " "
1272.... 1 50 " oz. 1282.... 75 " "

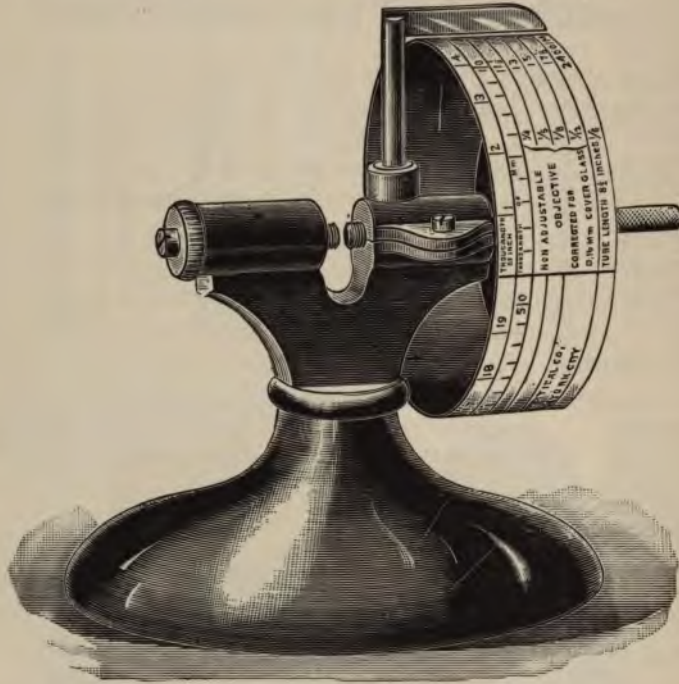
BAUSCH & LOMB OPTICAL Co.

Rochester, N. Y.. Sept. 20, 1900.

Cover Glass Compressors.

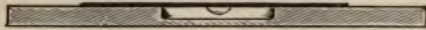
Telegraphic Code.	Catalogue Number.		Price.
<i>Racfen</i>	1340	Spring, of metal, per ten,	\$ 35
<i>Racfeos</i>	1342	Spring, of wood, per ten,	30

Cover Glass Gauge.



No. 1350.

- Racfli* 1350 This instrument should be found on the work table of everyone possessing a microscope. With it the thickness of cover glass is quickly and accurately determined. Measurements are made by placing the cover glass between the stop and micrometer screw and bringing the screw in contact with the glass. The thickness is read off in thousandths of a millimeter. Scales are provided showing the exact tube length required for covers of different thickness to compensate for variation from standard thickness, - - - \$3 00



No. 1352.



No. 1354.

- Racfol* 1352 **Culture Slide.** For drop cultures; cavity 18 mm. diameter, ground in. Slip: 25 x 75 mm., each, 30
- Racelmt* 1306 **Culture Slide,** with concave center, each, - - 05

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Telegraphic Code.	Catalogue Number.		Price.
<i>Racfoy</i>	1354	Culture Slide. For moulds. Consists of a glass ring with side tubes attached to a 25 x 75 mm. slide without the use of cement, which makes it suitable for the most delicate cultivations. Diameter of cell, 17 mm.; depth, 12 mm. Length of tubes, 60 mm., each, - - - - -	\$1 00
<i>Racgad</i>	1360	Dehydrating Apparatus, Schultz's. Specially adapted for hardening delicate tissues. The object is placed in a tube having the lower end covered by an animal membrane. This tube is suspended in the neck of a bottle-shaped vessel and surrounded by another similar tube, also with diaphragm. Upon filling the tubes with water and the outer vessel with alcohol, a slow osmotic action takes place, hardening the object very gradually. Delicate tissues are not apt to shrivel and collapse in this apparatus. For less sensitive objects, one of the tubes may be removed, when hardening proceeds much more rapidly. Diameter of inner tube, 10 mm. Capacity of vessel, 100 cc.; each, - - - - -	1 50



No. 1362.

<i>Racgo</i>	1362	Dehydrating Apparatus, Thomas' Nine large glass tubes are supported in a vulcanite disc so as to be adjustable in height. This apparatus has cover fitting air tight. Diaphragms of animal membrane are held in the lower end of the tubes by nicked metal clamps which may be removed for insertion of new diaphragms. Tissue to be hardened is placed in the tubes in water, and jar filled with alcohol. Jar: 20 cm. diam., 21 cm. in depth. Tubes: 1.8, 2.5 and 3 cm. diams., -	7 50
<i>Racgoal</i>	9880	Diamond. For writing on glass. A fine diamond point mounted in a metal handle; each, -	1 50

BRANCHES: NEW YORK CITY AND CHICAGO.

Dissecting Apparatus

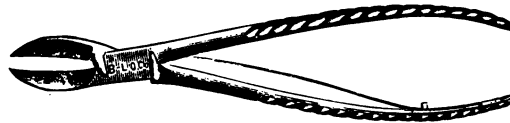


No. 1370.



No. 8500.

Telegraphic Code.	Catalogue Number.		Price.							
<i>Radab</i>	1370	Blow-Pipe. Of nickeled metal, 120 mm. long; each, - - - - -	\$ 15							
<i>Radace</i>	8500	Brushes, Camel's hair. Small, quill handles,								
		Number, A 1 B 2 C 3 D 4 E 5 F 6 G 7 H 8								
		Length of hair, mm., 8 10 12 14 16 18 20 22								
		Per ten, \$ 25 30 35 40 45 50 55 60								
<i>Radada</i>	8502	Brushes, Camel's hair. Pointed, with silk binding, swan quill handles.								
		Length of hair, mm., A 18 B 22 C 25								
		Per ten, \$ 60 75 1 00								
<i>Radafte</i>	1372	Forceps, Artery (Serrafines). Small, self-closing steel forceps with corrugated points and handles; nickeled. Length, 55 mm.; each, -	50							



No. 1374.

<i>Radagan</i>	1374	Forceps. Bone-cutting. Strong, accurately made blades; pinless lock-joint holding the blades together firmly during use, and also permitting their separation for cleaning. The spring is also removable. Straight blades, length 200 mm.; each, - - - - -	2 50
<i>Radaho</i>	1376	Straight blades, length 275 mm.; each, - - -	2 75

Forceps, Dissecting. These instruments are all steel, excepting No. 1406, and are made in the best possible manner. The handles are corrugated and points roughened. Guide pins insure accurate closing together of the points.

***Quality are perfectly finished in every detail. The * quality are of the same grade of material, but are not so well finished.



No. 1378.

No. 1380.

No. 1384.

No. 1394.

No. 1400.

Of steel, *** quality, nickel plated ; with corrugated handles and guide-pin :

Telegraphic Code.	Catalogue Number.	Description.	Length mm.	Finish of Points.	Price Each.
<i>Radais</i>	1378	Fine ; straight points	115	Fine file-cut	40c.
<i>Radajm</i>	1380	Fine ; curved points	110	Fine file-cut	40c.
<i>Radako</i>	1382	Medium fine ; straight points	100	Fine file-cut	40c.
<i>Radali</i>	1384	Medium fine ; curved points	105	Fine file-cut	40c.
<i>Radana</i>	1386	Medium heavy ; straight points	115	Corrugated	50c.
<i>Radaop</i>	1388	Heavy ; straight points	115	Corrugated	50c.
<i>Radapa</i>	1390	Heavy ; two pins, straight points	130	Corrugated	60c.
<i>Radaro</i>	1392	Heavy ; two pins, straight points	145	Corrugated	65c.
<i>Radasa</i>	1394	Heavy ; straight points ; for vertebrate work This forceps has no guide-pin	125	Corrugated	40c.

Of steel, * quality, nickel plated, and smooth handles :

<i>Radear</i>	1400	Fine ; straight	110	Fine	25c.
<i>Radeim</i>	1402	Fine ; curved	120	Corrugated	30c.

Of steel, smooth handle :

<i>Radeok</i>	1404	Blunt points	110	Roughened	15c.
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Of spring brass, nickel plated :

<i>Radeuf</i>	1406	Blunt	88		10c.
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BRANCHES : NEW YORK CITY AND CHICAGO.



No. 1410.



No. 1412.



No. 1414.

Forceps, Cover Glass. These forceps are of steel, *** quality finish and nicked. A cover lying on a plane surface is easily picked up by their blade-like points. Corrugated handles.

Telegraphic Code.	Catalogue Number.	Description.	Length mm.	Price Each.
<i>Radfac</i>	1410	Bent blades	100	\$ 65
<i>Radfade</i>	1412	Thin, straight blades ; guide-pin	120	60
<i>Radfafo</i>	1414	Self-closing ; thin, bent blades	120	80



No. 1418.



No. 1426.

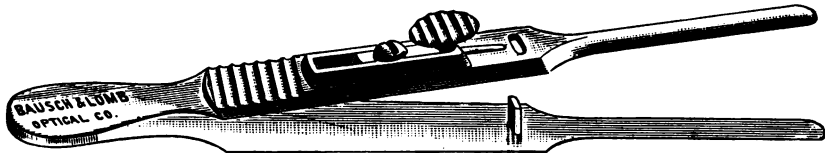


No. 1424.

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

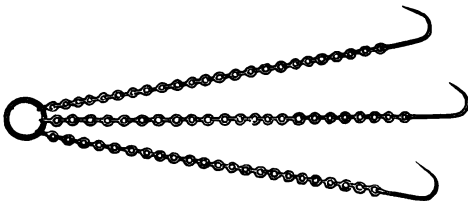
Forceps, Cover-glass staining. Cover-glass preparations may be made with these forceps without soiling the hands, as they are so shaped that the fluids do not run back on the blades. The cover is held firmly and the forceps may be placed on the table in a vertical position.

Telegraphic Code.	Catalogue Number.		Price.
<i>Radfed</i>	1418	Cornet's forceps are made of one piece of spring brass. Only a small surface of the cover is grasped by the end of the blades. Nickeled, 120 mm. long; each, - - - - -	\$ 50



No. 1420.

<i>Radfehe</i>	1420	Ehrlich's forceps have long, flat blades which come together accurately, so that a cover is held firmly on the edge during the operation of making a blood spread. Length, 135 mm.; each, -	1 25
		Novy's forceps have a flat lower blade with a broad end and a thin, sharp edge; the upper blade is narrow, curved, and terminates in a point. The thin edge of the lower blade enables a cover to be easily picked up; the curving prevents capillary drainage, and the small contact of the upper blade on the specimen enables it to be thoroughly washed. These forceps are also fitted with a lock, which holds the points together.	
<i>Radfejo</i>	1422	Novy's forceps, without lock, each, - - - - -	75
<i>Radfeku</i>	1424	Novy's forceps, with lock, - - - - -	1 00
<i>Radfelm</i>	1426	Stewart's forceps, being made of nickeled spring wire, are light and easily sterilized. A ring, not shown in the illustration, prevents the blades from spreading sidewise. Each, - - - - -	15



No. 1430.

<i>Radfik</i>	1430	Hooks and Chains. Hooks with sharp points, all nickeled, - - - - -	20
<i>Radfilo</i>	1432	Knife, Brain. Blade very thin, of finest steel; ebony handle; length, 185 mm.; width, 26 mm.; each, - - - - -	2 00



Actual Size and Shape of Knife and Scalpel Blades.

Knives and Scalpels. These instruments are of the best grade steel, properly tempered to retain a good cutting edge. They are carefully finished in every detail. The all-steel scalpels can be easily cleaned and sterilized. Knife No. 1444, having a straight cutting edge, is designed for trimming paraffin blocks, cork, etc. Each instrument bears our name on the blade.



Shape of Ebony Handle of Knives and Scalpels.

Dissecting Knives. Blades of best steel, *** quality, set in ebony handles.

Telegraphic Code.	Catalogue Number.	Cutting Edge, mm.	Price, Each.
<i>Radfude</i>	1436	35	35c.
<i>Radfufi</i>	1438	35	35c.
<i>Radfugo</i>	1440	35	35c.
<i>Radfuhm</i>	1442	10	35c.
<i>Radfuin</i>	1444	50	35c.

Scalpels. Blades of best steel, *** quality, set in ebony handles.

<i>Radfule</i>	1446	50	35c.
<i>Radfum</i>	1448	45	35c.
<i>Radfuny</i>	1450	38	35c.
<i>Radfuok</i>	1452	32	35c.
<i>Radfupa</i>	1454	25	35c.
<i>Radfure</i>	1456	18	35c.

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Scalpels. Entirely of steel (steel handles), *** quality, nickeled. These scalpels are easily cleaned and sterilized.

Telegraphic Code.	Catalogue Number.	Cutting Edge, mm.	Price. Each.
<i>Radfya</i>	1458	45	40c.
<i>Radfybe</i>	1460	38	40c.
<i>Radfyco</i>	1462	32	40c.
<i>Radfydi</i>	1464	25	40c.

Scalpels. Blades of best steel, * quality, set in ebony handles.

<i>Radfyfc</i>	1468	45	25c.
<i>Radfygy</i>	1470	38	25c.
<i>Radfyhd</i>	1472	32	25c.
<i>Radfyil</i>	1474	25	25c.

Telegraphic Code.	Catalogue Number.		Price.
<i>Radfylm</i>	1476	Oil Stones for sharpening scalpels; each,	- \$ 60



No. 1482.

Razors, Section. These razors have perfectly straight edges, and are tempered specially for sectioning; vulcanized handle.

<i>Radfymi</i>	1480	*** quality, concave on two sides, 100 mm. long; each,	- - - - - 1 50
<i>Radfyob</i>	1482	*** quality, folding handle, 75 mm. long; each,	- 1 25
<i>Radfypp</i>	1484	* quality, folding handle, 75 mm. long; each,	- 1 00
<i>Radfyou</i>	1486	*** quality, solid handle, 75 mm. long; each,	- 1 50
<i>Radfyst</i>	1488	*** quality, solid handle, 85 mm. long; each,	- 1 75
<i>Radfyts</i>	1490	*** quality, solid handle, 100 mm. long; each,	2 00

Knives, Cartilage. All steel; extra heavy and strong; corrugated handles; nickeled all over, cutting edge 45 mm.

<i>Radgaf</i>	1492	*** quality finish,	- - - - - 40
<i>Radgeb</i>	1494	* quality finish,	- - - - - 30

Knives, Cartilage. Ebony Handle. (Prosecting Knives.) The blades are extra heavy and extra thick at the back.

<i>Radgit</i>	1496	70 mm. cutting edge,	- - - - - 1 50
<i>Radgum</i>	1498	90 mm. cutting edge,	- - - - - 2 00

BRANCHES: NEW YORK CITY AND CHICAGO.

Needles, Ebony Handle. Knife steel is used in these delicate needles. No. 1500 is very delicate and has a curved end (not shown by illustration).



Telegraphic Code.	Catalogue Number.	Shape.	Length, mm.	Price, Each.
<i>Radhat</i>	1500	Straight, sharp	135	40c.
<i>Radhep</i>	1502	Curved, sharp	130	40c.
<i>Radhelt</i>	1504	Curved, blunt	130	40c.
<i>Radhir</i>	1506	Spear, single cutting edge	130	45c.
<i>Radhise</i>	1508	Spear, double cutting edge	125	45c.
<i>Radhop</i>	1510	Harpoon, two cutting edges	135	75c.
<i>Radhuk</i>	1512	Hook, fine and delicate	145	60c.

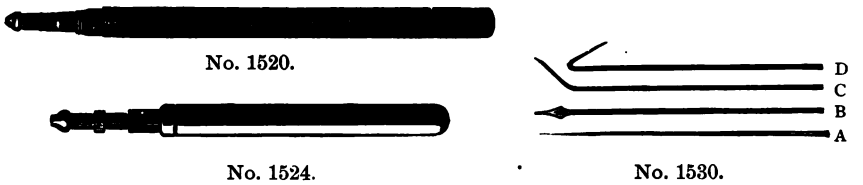
No. 1516.

Needles, Cedar Handle. A cheap needle for class use, substantially made.

Telegraphic Code.	Catalogue Number.		Price.
<i>Radlas</i>	1516	Straight, per ten,	\$ 30
<i>Radlato</i>	1518	Bent, per ten,	30

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Needle Holders. Any needle may be used in these holders, as the clamp is adjustable; the steel needles illustrated are recommended. Bone handles.



Telegraphic Code.	Catalogue Number.	Length of Holder, mm.	Price.	
			Holder Alone.	Holder and Four Needles.
<i>Radleh</i>	1520	85	5c.	...
<i>Radlin</i>	1522	85	...	10c.
<i>Radlop</i>	1524	110	10c.	...
<i>Radlud</i>	1526	110	...	15c.

Needles, for above needle holders. Of steel, length 50 mm.

Telegraphic Code.	Catalogue Number.	Style.	Price per Ten.
<i>Radmah</i>	1530	A	6c.
		B	10c.
		C	8c.
		D	8c.



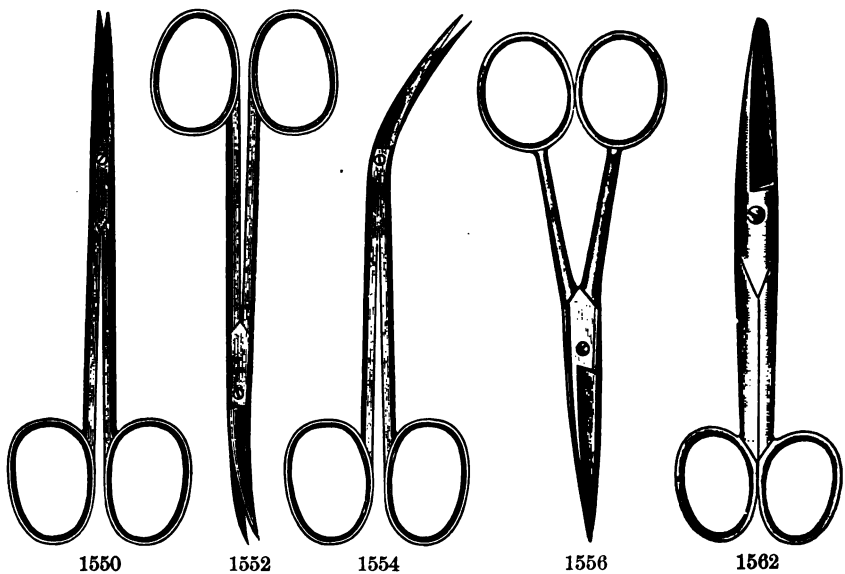
No. 1532.

Telegraphic Code.	Catalogue Number.		Price.
		Pan , dissecting, of heavily tinned metal, with metal loops in the corners to which the limbs of animals are tied during dissection. Size: 28.5 x 23.5 x 2.5 cm.	
<i>Radnap</i>	1532	Unlined, each, - - - - -	\$ 30
<i>Radnek</i>	1534	Lined with wax on bottom, each, - - - - -	50
<i>Radmon</i>	1536	Saw, bone. Total length, 200 mm.; each, - - - - -	4 00

Scissors, anatomical, with lock joint, of steel, *** quality. Points are sharp, except those of No. 1546, one of which is rounded. These scissors do not have the objectionable oval locking-pin; the lugs of the joint hold the blades firmly during cutting and permit easy cleaning when the blades are taken apart.

Telegraphic Code.	Catalogue Number.	Length, mm.	Price.
<i>Raffal</i>	1540	105	\$ 75
<i>Raffew</i>	1542	115	1 00
<i>Raffib</i>	1544	125	1 25
<i>Raffog</i>	1546	140	1 50

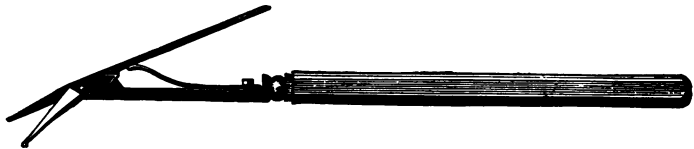
Scissors, of steel; * quality, nickeled; 115 mm. long, excepting Nos. 1560 and 1562 (which are 140 mm).**



Telegraphic Code.	Catalogue Number.	Description.	Price.
<i>Ragble</i>	1550	Fine; straight	\$ 50
<i>Ragcal</i>	1552	Fine; curved	60
<i>Ragdog</i>	1554	Fine; bent	60
<i>Ragef</i>	1556	Medium; straight	35
<i>Raggle</i>	1558	Medium; straight; probe point	75
<i>Raghag</i>	1560	Heavy; straight	50
<i>Ragih</i>	1562	Heavy; straight; one blunt point	75
<i>Raglas</i>	1564	Heavy; straight anatomical, 175 mm.	1 00

Of steel, * quality; 115 mm. long.

<i>Ragmof</i>	1566	Fine; straight	40
<i>Ragnem</i>	1568	Medium; straight (nickeled)	25

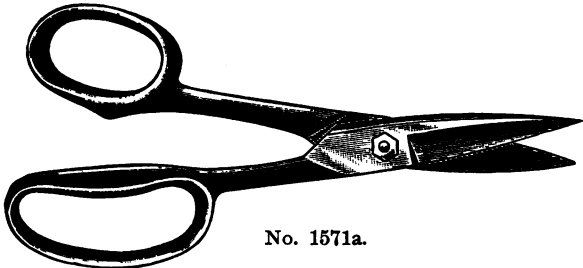


No. 1570.

Telegraphic Code.	Catalogue Number.	Description.	Price.
<i>Rahabe</i>	1570	Scissors, very fine, dissecting. These scissors are very delicate and suited for the finest invertebrate dissecting. All the metal parts are nickeled. Handle of real ivory. Length of blades, 10 mm.; of whole instrument, 146 mm.; each,	\$3 50

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Telegraphic Code.	Catalogue Number.		Price.
<i>Rahaca</i>	1571	Shears, Cloth. Nickeled blades, japanned handles. Length, 280 mm.; length of blades, 155 mm.; each, - - - - -	\$1 25

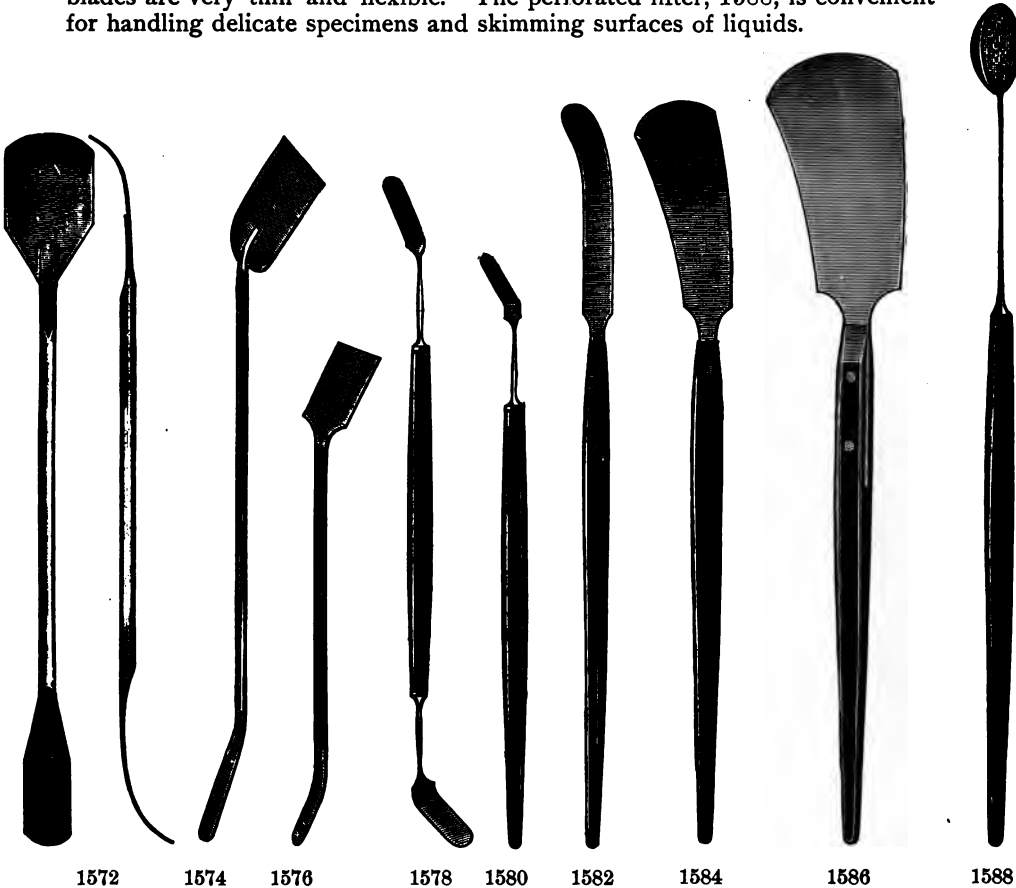


No. 1571a.

Shears, Laboratory. Strong throughout; bolt and nut joint, large handles. Blades are nickeled, handles japanned. Length, 195 mm.; length of blades, 55 mm.

<i>Rahadm</i>	1571a	Straight blades; each, - - - - -	1 25
<i>Rahaen</i>	1571b	Curved blades; each, - - - - -	2 00

Section Lifters. Nos. 1582 to 1586 are of spring metal, nickeled; blades are very thin and flexible. The perforated lifter, 1588, is convenient for handling delicate specimens and skimming surfaces of liquids.

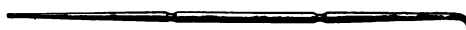


1572 1574 1576 1578 1580 1582 1584 1586 1588

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Section Lifters — (Continued)

Telegraphic Code.	Catalogue Number.	Length. mm.	Width of Blades, mm.	Handle.	Price.
<i>Rahafub</i>	1572	185	11 and 22	Metal	\$ 25
<i>Rahagca</i>	1574	175	22	Metal	15
<i>Rahahud</i>	1576	100	11	Metal	10
<i>Rahakel</i>	1578	135	6 and 10	Ebony	40
<i>Rahaluf</i>	1580	127	4	Ebony	30
<i>Rahamas</i>	1582	135	10	Ebony	30
<i>Rahanuh</i>	1584	147	20	Ebony	35
<i>Rahapol</i>	1586	157	34	Ebony	40
<i>Rahary</i>	1588	160	18	Ebony	75



No. 1590.

Telegraphic Code.	Catalogue Number.		Price.
<i>Rahote</i>	1590	Seeker. One end tapers to a blunt point, the curved end is sharply pointed and its inner curve has a sharp edge. Length, 150 mm.; each,	\$ 25
<i>Rahoux</i>	1592	Shears, Anatomical. Very strong blades and heavy handles. Made of steel *** quality, nicked. Length, 180 mm.; length of blades, 70 mm.; each, - - - - -	7 00
<i>Rahove</i>	1594	Shears, Cartilage. These shears have short knife-shaped blades, a lock joint, and corrugated handles with detachable spring between; of steel *** quality, nicked all over. Length, 230 mm.; blades, 60 mm.; each, - - - - -	3 00



No. 10154.

<i>Vejmig</i>	10154	Spatulas, flexible steel blades, wooden handles.	
		Length of blade, mm.,	^E 75, ^A 100 ^B 125 ^C 150 ^D 175
			\$ 25 25 30 35 45
<i>Vejnot</i>	10156	Spatulas, of horn, 150 mm.; each, - - - - -	20



No. 1596.

<i>Rahret</i>	1596	Tenaculum. Flat, steel shank terminating in tapering sharp hook; riveted, ebony handle. Length of steel portion, 65 mm.; each, - - -	25
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Dissecting Instruments in Sets

The sets have been made up of the most desirable instruments for work in anatomy, botany and histology.

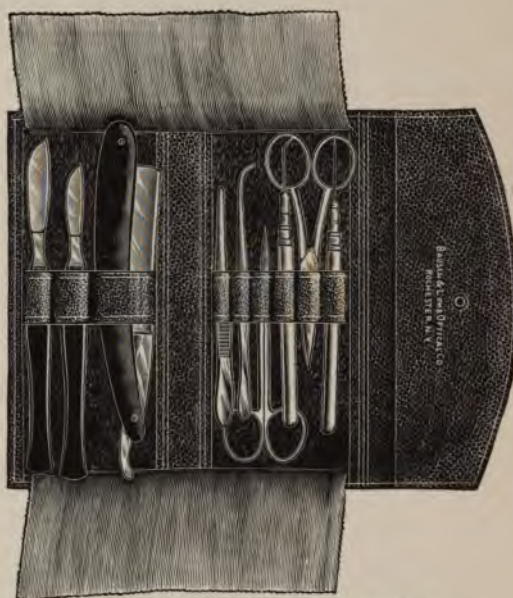
They are uniform in quality and finished in the neatest manner possible. The cases are our folding pocket form, the instruments thus occupying the least possible space and being thoroughly protected. Genuine Morocco

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

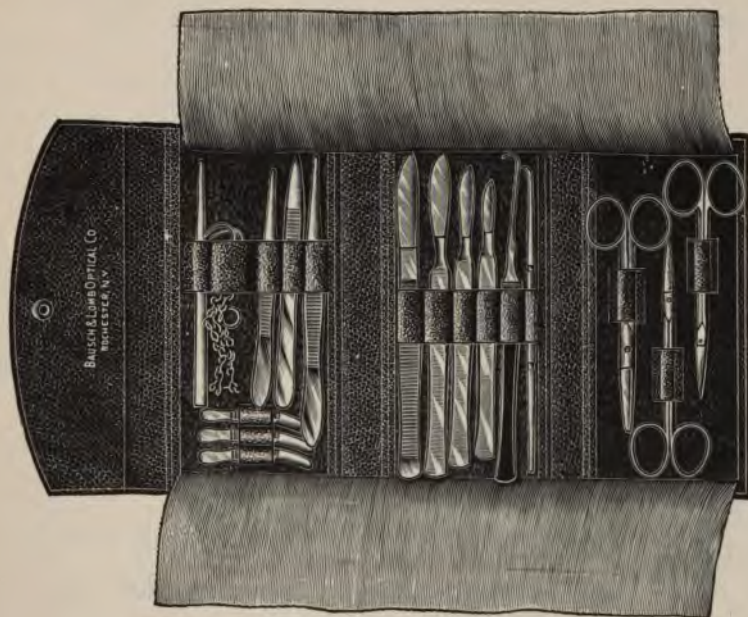
leather is used in the best grade cases, best quality leatherette, almost equal to leather in strength and appearance, being employed for the cheaper sets. The inside of the cases is finished in velvet, cloth or chamois, and properly reenforced on the folding and outside edges. Separate loops for each instrument and protecting flaps keep the instruments in place and well protected. A button-clasp fastens the case when folded up. A button-clasp fastens the case when folded up.



Style of One-fold Case (Sets Nos. 1600 and 1602).



Style of Two-fold Case (Sets Nos. 1604, 1606, 1608, 1610, 1612, and 1618).



Style of Three-fold Case (Sets Nos. 1614 and 1616).

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Tables of Contents and Prices of Dissecting Sets.

Telegraphic Code	No. of Set.	(Steel instruments are * quality.)	
<i>Rakeel</i>	1600	1 Scalpel, No. 1470; ebony handle, edge 88 mm. 1 Scissors, No. 1568; medium, straight. 1 Forceps, No. 1404; blunt blades. 1 Forceps, No. 1402; fine, curved points. 2 Needle Holders, No. 1520, and Needles; length, 85 mm.	
		Price, complete set in lined leatherette one-fold case, with protecting flaps, - - - - -	\$1 25
		(Steel instruments are *** quality.)	
<i>Rakens</i>	1602	1 Scalpel, No. 1450; ebony handle, edge 88 mm. 1 Scissors, No. 1556; medium, straight, nickeled. 1 Forceps, No. 1384; medium fine, curved points. 1 Forceps, No. 1386; medium, straight points. 2 Needle Holders, No. 1524, and Needles; length, 110 mm.	
		Price, complete set in Morocco leather one-fold case, with leather lining and protecting flaps, - - -	2 25
		(Steel instruments are * quality.)	
<i>Rakepel</i>	1604	1 Scalpel, No. 1468; ebony handle, edge 45 mm. 1 Scalpel, No. 1474; ebony handle, edge 25 mm. 1 Scissors, No. 1568; medium, straight. 1 Forceps, No. 1394; heavy, straight, for vertebrate work. 1 Tenaculum, No. 1596. 1 Cartilage Knife, No. 1494; all steel, edge 45 mm. 1 Triple Chain and Hooks, No. 1430. 1 Blow-pipe, No. 1370.	
		Price, complete set in lined leatherette two-fold case, with chamois-skin protecting flaps, - - -	2 25
		(Steel instruments are *** quality.)	
<i>Rakist</i>	1606	1 Scalpel, No. 1448; ebony handle, edge 45 mm. 1 Scalpel, No. 1454; ebony handle, edge 25 mm. 1 Scissors, No. 1556; medium, straight, nickeled. 1 Forceps, No. 1394; heavy, straight, for vertebrate work. 1 Tenaculum, No. 1596. 1 Cartilage Knife, No. 1492; all steel, edge 45 mm. 1 Seeker, No. 1590. 1 Triple Chain and Hooks, No. 1430. 1 Blow-pipe, No. 1370.	
		Price, complete set in Morocco leather two-fold case, with velvet lining and chamois-skin protecting flaps, - - -	4 00
		(Steel instruments are * quality.)	
<i>Rakitep</i>	1608	1 Scalpel, No. 1468; ebony handle, edge 45 mm. 1 Scalpel, No. 1474; ebony handle, edge 25 mm. 1 Scissors, No. 1568; fine weight, straight. 1 Scissors, No. 1568; medium weight, straight. 1 Forceps, No. 1402; fine, curved points. 1 Forceps, No. 1404; medium, blunt points. 2 Needle Holders, No. 1520, and Needles; length, 85 mm. 1 Section Razor, No. 1484, folding handle.	
		Price, complete set in lined leatherette two-fold case, with chamois-skin protecting flaps, - - -	3 25

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Telegraphic Code.	No. of Set.	(Steel instruments are *** quality.)
<i>Rakived</i>	1610	1 Scalpel, No. 1448; ebony handle, edge 45 mm. 1 Scalpel, No. 1452; ebony handle, edge 32 mm. 1 Scissors, No. 1550; fine weight, straight, nickeled. 1 Scissors, No. 1556; medium fine, straight, nickeled. 1 Forceps, No. 1384; medium fine, curved points. 1 Forceps, No. 1386; medium heavy, straight points. 2 Needle Holders, No. 1524, and 2 Needles; length, 110 mm. 1 Section Razor, No. 1482, folding handle.

Price, complete set in Morocco leather two-fold case,
with velvet lining and chamois-skin protecting flaps, \$5 00

		(Steel instruments are *** quality.)
<i>Rakobe</i>	1612	1 Scalpel, No. 1458; all steel, edge 45 mm. 1 Scalpel, No. 1462; all steel, edge 32 mm. 1 Scalpel, No. 1464; all steel, edge 25 mm. 1 Scissors, No. 1550; fine, straight. 1 Scissors, No. 1560; heavy, straight, 140 mm. long. 1 Forceps, No. 1394; for vertebrate work. 1 Forceps, No. 1388; heavy, straight, 120 mm. long. 1 Cartilage Knife, No. 1492; all steel, edge 45 mm. 1 Tenaculum, No. 1596. 1 Seeker, No. 1590. 1 Triple Chain and Hooks, No. 1430. 1 Blow-pipe, No. 1370.

Price, complete set in Morocco leather two-fold case,
with velvet lining and chamois-skin protecting flaps, 5 00

		(Steel instruments are *** quality.)
<i>Rakocm</i>	1614	1 Scalpel, No. 1458; all steel, edge 45 mm. 1 Scalpel, No. 1462; all steel, edge 32 mm. 1 Scalpel, No. 1464; all steel, edge 25 mm. 1 Scissors, No. 1550; fine, straight, nickeled. 1 Scissors, No. 1552; fine, curved. 1 Scissors, No. 1558; medium, straight, probe point. 1 Forceps, No. 1394; for vertebrate work. 1 Forceps, No. 1386; medium heavy, straight, 115 mm. long. 1 Forceps, No. 1390; heavy, straight, 130 mm. long. 1 Cartilage Knife, No. 1492; all steel, edge 45 mm. 1 Tenaculum, No. 1596. 1 Seeker, No. 1590. 1 Triple Chain and Hooks, No. 1430. 1 Blow-pipe, No. 1370. 3 Serrafines (Artery Forceps), No 1372.

Price, complete set in Morocco leather three-fold case,
with velvet lining and chamois-skin protecting flaps, 7 25

Johns Hopkins University Anatomical Dissecting Sets.

		(Steel instruments are *** quality)
<i>Rakode</i>	1616	1 Scalpel, No. 1448; ebony handle, edge 45 mm 1 Scalpel (Special); ebony handle, edge 38 mm. 1 Scalpel (Special); ebony handle, edge 32 mm. 1 Scalpel (Special); ebony handle, edge 25 mm. 1 Scissors (Special); heavy, straight, very fine metal; blades, 44 mm.; total length, 127 mm. 1 Forceps (Special); heavy, straight, coarsely serrated points; length, 127 mm. 1 Probe (Special); coarse, all steel, octagonal handle; length, 152 mm. 1 Dissecting Hook (Special); double end, two points on each end.

Price, complete set in Morocco leather three-fold case,
with velvet lining and chamois-skin protecting flaps, 5 00

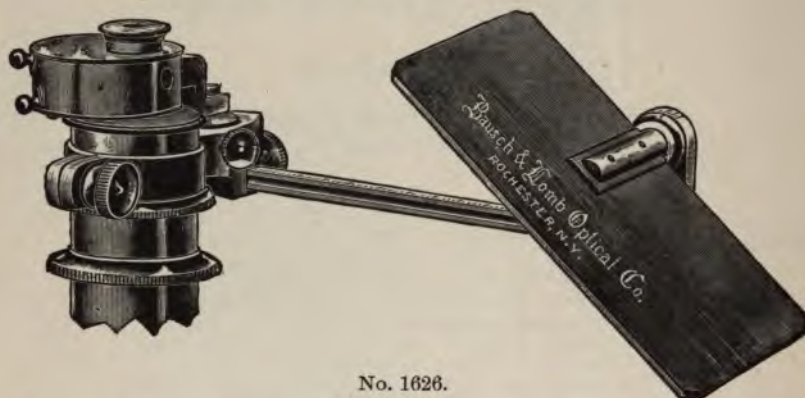
Johns Hopkins University Histological Set.

Telegraphic Code.	No. of Set.	(Steel instruments are *** quality.)
<i>Rakoeff</i>	1618	1 Scalpel (Special); handle, edge 25 mm. 1 Scissors No. 1550; fine, straight. 1 Forceps (Special); fine and heavy; straight, smooth points; very accurately adjusted. 1 Lancet Needle (Special); double blade, ebony handle. 2 Teasing Needles (Special); straight, ebony handle. 1 Section Lifter, No. 1584; blade, 20 mm.; ebony handle.

Price, complete set in morocco leather two-fold case,
with velvet lining and chamois-skin protecting flaps, \$3 75

Sets Nos. 1616 and 1618 are used in the laboratories of Johns Hopkins University, and are selected with a view of securing the best quality, most effective apparatus regardless of cost. The knives, forceps, scissors, probe, hook, etc., are special shapes not found in the market, and made to order for these sets only. They are not listed elsewhere in this catalogue.

Drawing Apparatus



No. 1626.

Camera Lucida, Abbe. Our construction of this camera lucida presents a number of important improvements over the older forms, although retaining the original optical principle, whereby the image of the paper and pencil point is superposed upon the image of the object by means of the Abbe prism and an adjustable mirror, making the image of the object appear to be projected upon the paper, where all its details may be accurately traced out, producing an accurate drawing with the least expenditure of time.

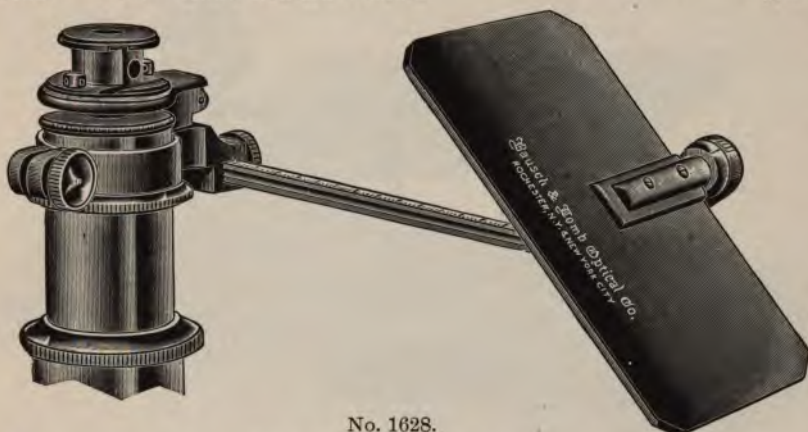
The Abbe prism is mounted in a closed box provided with a rotating disc carrying a series of dark glasses of different shades. These glasses come between the prism and light from the microscope eyepiece, and serve to moderate its intensity. A similar series of colored glasses is arranged to moderate the light coming from the mirror. With the two series a clear view of object and pencil point can be had with any combination of objective and eyepiece.

The prism mounting has centering arrangement, so that the aperture in the prism can be centered to the microscope eyepiece, giving a clearly defined and equally illuminated image of the object. The prism can be turned back out of the way, permitting the ordinary use of the microscope and the changing of eyepieces without disturbing the camera lucida. The mirror is extra large, enabling correspondingly larger drawings to be made. The mirror axis is graduated in degrees for reading angle of inclination. The mirror bar is graduated in millimeters and is movable so that the distance between mirror and prism may be varied to suit conditions.

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The Camera Lucida is attached to the microscope draw-tube by a collar with binding screw. This permits the setting of the prism at the proper distance from the eye lens of the microscope—a great advantage, as, unless this adjustment is provided, the camera can not be used with all eyepieces.

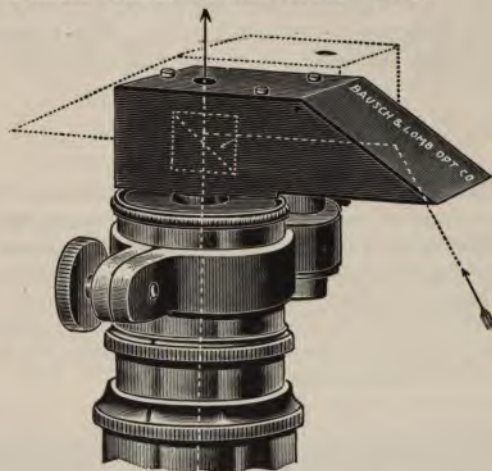
Telegraphic Code.	Catalogue Number.		Price.
<i>Ralcam</i>	1626	Abbe Camera Lucida.	\$20 00



No. 1628.

Camera Lucida, Abbe, simple form. This camera lucida is similar in construction to No. 1626, the Abbe prism, mirror and mirror bar being of the same dimensions. The prism is adjusted by means of two capstan head-screws passing through slots, and the moderating glasses are placed in slots between the mirror and prism and between the prism and eyepiece. The prism swings back from the eyepiece, permitting the use of the microscope for ordinary work and the changing of eyepieces without disturbing the camera lucida. This camera may be used with any power eyepiece and with the triplet dissecting lenses.

<i>Ralden</i>	1628	Camera Lucida as described.	Each,	-	-	12 00
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No. 1630.

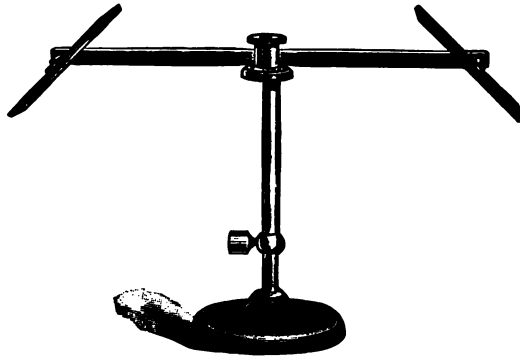
Camera Lucida, Abbe Prism. In this camera the mirror is small, fixed, and close to the Abbe prism, making a very compact instrument and one very much more satisfactory and useful than the Wollaston Camera Lucida which it is designed to supersede.

<i>Ralef</i>	1630	Camera Lucida as described.	Each,	-	-	8 00
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Camera Lucida, simple form. This camera lucida is attached to the edge of the eyepiece mounting, and, while not so convenient to use as the more expensive form, good work can be done with it.

Telegraphic Code.	Catalogue Number.				Price.
<i>Ralgic</i>	1636	Camera Lucida as described.	Each,	- - -	\$1 50



No. 1638.

Camera Lucida, for drawing objects actual size. This apparatus is designed to meet the demand for a convenient means of making drawings the actual size of the object. It may also be used for slightly enlarged or reduced drawings.

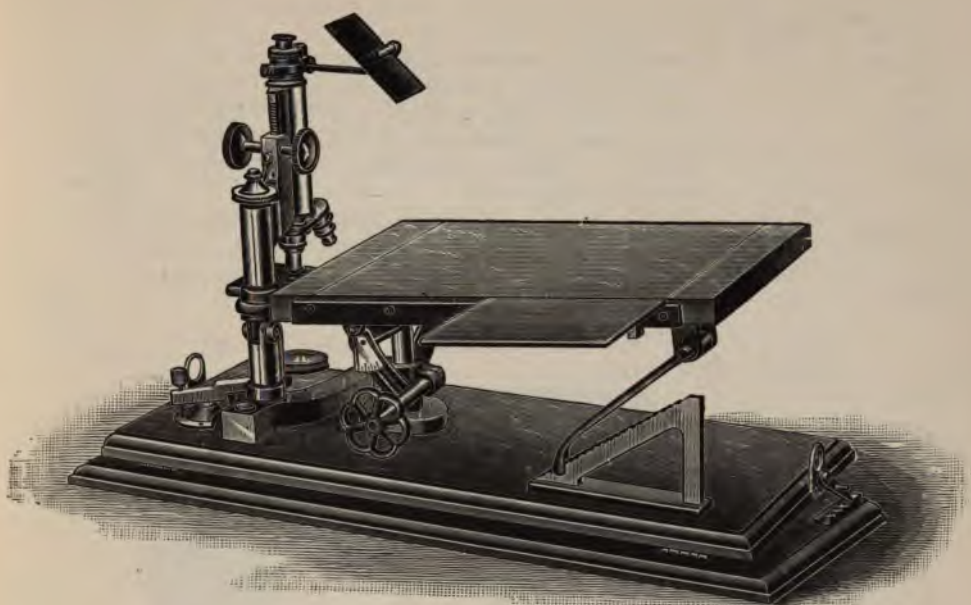
It consists of a base with vertical standard on which the optical portion slides. Two horizontal arms support two mirrors at their extremities. Midway between the mirrors a metal box holds the reflecting Abbe prism. The image of the object is reflected into the prism by means of one of the mirrors, the light reaching the eye parallel with the pencil reflected into the prism from the paper, making both images appear as one. The distance from each mirror to the prism being the same, if object and paper are on the same plane the reproduction will be natural size.

<i>Ralgide</i>	1638	Camera Lucida as described,	- - -	12 00
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Drawing Board, Camera Lucida (adjustable). The necessary inclination of the mirror of the Abbe Camera Lucida to the drawing surface produces a constantly increasing elongation of the visual field when the drawing surface is parallel to the field of the microscope, except when the mirror of the camera lucida is at 45 degrees. The proportion of distortion increases as the distance from the perpendicular rays increases. It is, therefore, necessary to incline the drawing surface in order to obtain accurate reproductions of any considerable size.

The drawing board proper is vertically movable on a strong metal axis, permitting adjustment to secure the same magnification on the paper as in the microscope—a very important feature in nearly all work. Inclination of the drawing plane is effected by simply raising or lowering the right hand end of the board, the ratchet arm holding it firmly in any position. The angle of inclination is read off on the graduated arc. The microscope is held in place by a suitable clamp. No. 1642 is so arranged that the drawing board and microscope may be inclined toward the user, making observation and work much less fatiguing. Size of Drawing Board, 38.5 x 23.5 cm.

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No. 1642.

Telegraphic Code.	Catalogue Number.		Price.
<i>Ralhag</i>	1640	Drawing Board, without means for inclining microscope, - - - - -	\$12 00
<i>Ralhef</i>	1642	Drawing Board, with means for inclining microscope, - - - - -	14 00

Drawing Materials

<i>Ramib</i>	1650	Bristol-Board. Clear white color, good erasing surface and weight. Size: 33 x 40 cm.; per ten sheets, - - - - -	25
<i>Ramjkl</i>	1652	Ink, Higgins'. In quill-stoppered bottles, black waterproof, per bottle, net, - - - - -	25
<i>Ramkod</i>	1654	Ink, Higgins'. Red, per bottle, net, - - - - -	25
<i>Ramlop</i>	1656	Paper, Tracing. Very thin, transparent and tough. Size: 50 x 68 cm., per quire, - - - - -	1 25
<i>Rammeg</i>	1658	Pens, Crow-Quill. One dozen in a box, per box, - - - - -	60
<i>Rammoh</i>	1660	Pens, Lithographic Crow-Quill (Gillott's), per dozen, with holder, - - - - -	75
<i>Ramnul</i>	1662	Pen Holder for Crow-Quill pens, each, - - - - -	10



No. 1666.

Pencils, Drawing, best quality.

<i>Ramoga</i>	1664	3H, per dozen, - - - - -	1 50
<i>Ramohe</i>	1666	6H, per dozen, - - - - -	1 50

BRANCHES: NEW YORK CITY AND CHICAGO.

Telegraphic Code.	Catalogue Number.		Price.
<i>Rampan</i>	1668	Note Book Covers. These covers open on the side and have a flexible margin near the back, which permits full width of paper held by them to be used. Either side of the leaves may be written on with equal facility. Very handy for the laboratory; each, - - - - -	\$ 40
<i>Ramqub</i>	1670	Note Book Paper for above covers is unruled and of a good quality for writing with ink. It is furnished punched to fit the covers. Per package of one pound with fasteners, - - - - -	40
		By mail; extra for postage, - - - - -	20



No. 1672.

<i>Ramry</i>	1672	Sponge Rubber. For cleaning drawings; solid rubber back. Size: 63 x 44 x 16 mm., each, -	35
<i>Ramsez</i>	1674	Thumb-Tacks. Of one piece of steel, per ten,	10

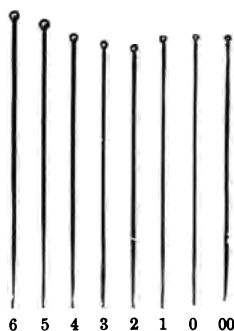
Entomological Supplies

Cork, in sheets. For lining cabinets, etc. Size: 10 x 30 cm., 5 mm. thick.

<i>Raqork</i>	1680	***Quality, per ten sheets, - - - - -	1 25
<i>Raqost</i>	1682	**Quality, per ten sheets, - - - - -	85



No. 1684.



No. 1688.

Insect Pins, Klæger. White, with round heads; sharp, perfectly shaped points. Very stiff.

<i>Raqpin</i>	1684	Per 100 of a size, - - - - -	15
<i>Raqpor</i>	1686	Per 1000 of a size, - - - - -	1 20

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Telegraphic Code.	Catalogue Number.		Price.
		Insect Pins, Klæger. Black, enameled, with round yellow heads; sharp, perfectly shaped points. Very stiff.	
<i>Ragra</i>	1688	00 and 0, per 100 of a size, - - - -	20
<i>Raqse</i>	1690	1 to 6, per 100 of a size, - - - -	18
<i>Raqti</i>	1692	00 and 0, per 1000 of a size, - - - -	1 75
<i>Raquo</i>	1694	1 to 6, per 1000 of a size, - - - -	1 50
<i>Raqvy</i>	1696	Pinning Forceps. These forceps have their blades bent at a convenient angle to get among dense collections. Points and handle are corrugated. Each, - - - -	1 50
<i>Raquo</i>	1698	Pinning Forceps, with lever handles. These are extra strong and accurately made. Length, 150 mm.; each, - - - -	2 50



No. 1700.



No. 8750.

<i>Rarew</i>	1700	Eye Shade, Ward's. This is attached to the microscope tube so that the shield covers the eye not used for observation, permitting both eyes to be kept open during work. In ordering, the approximate diameter of tube should be given ; each,	50																					
<i>Vamem</i>	8750	Filter Paper, B. & L. O. Co. A good white filter paper, found by a series of tests to be equal to higher priced papers. Packages of 100 sheets, under our own trade-mark. Cut round.																						
		<table><tr><td></td><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td></tr><tr><td>Diameter, ctm.,</td><td>5.5</td><td>7</td><td>9</td><td>11</td><td>12.5</td><td>15</td></tr><tr><td>Price per 100 sheets,</td><td>\$ 10</td><td>12</td><td>15</td><td>20</td><td>25</td><td>30</td></tr></table>		A	B	C	D	E	F	Diameter, ctm.,	5.5	7	9	11	12.5	15	Price per 100 sheets,	\$ 10	12	15	20	25	30	
	A	B	C	D	E	F																		
Diameter, ctm.,	5.5	7	9	11	12.5	15																		
Price per 100 sheets,	\$ 10	12	15	20	25	30																		
		<table><tr><td></td><td>G</td><td>H</td><td>J</td><td>K</td><td>L</td><td>M</td></tr><tr><td>Diameter, ctm.,</td><td>18.5</td><td>24</td><td>27</td><td>32</td><td>38.5</td><td>50</td></tr><tr><td>Price per 100 sheets,</td><td>\$ 35</td><td>50</td><td>65</td><td>80</td><td>1 00</td><td>1 75</td></tr></table>		G	H	J	K	L	M	Diameter, ctm.,	18.5	24	27	32	38.5	50	Price per 100 sheets,	\$ 35	50	65	80	1 00	1 75	
	G	H	J	K	L	M																		
Diameter, ctm.,	18.5	24	27	32	38.5	50																		
Price per 100 sheets,	\$ 35	50	65	80	1 00	1 75																		
<i>Vamne</i>	8751	Filter Paper, B. & L. O. Co. Same quality as above, folded. Packages of 100 sheets, under our own trade-mark.																						
		<table><tr><td></td><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td></tr><tr><td>Diam., ctm.,</td><td>12.5</td><td>15</td><td>18.5</td><td>24</td><td>27</td></tr><tr><td>Price per 100 sheets,</td><td>\$ 50</td><td>60</td><td>70</td><td>85</td><td>1 00</td></tr></table>		A	B	C	D	E	Diam., ctm.,	12.5	15	18.5	24	27	Price per 100 sheets,	\$ 50	60	70	85	1 00				
	A	B	C	D	E																			
Diam., ctm.,	12.5	15	18.5	24	27																			
Price per 100 sheets,	\$ 50	60	70	85	1 00																			
<i>Vamol</i>	8752	Filter Paper, B. & L. O. Co. Same quality as above, in sheets 48 x 48 ctm., per 100 sheets, -	1 50																					

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Telegraphic
Code.
Vample 8753

Catalogue
Number.

Filter Paper, B. & L. O. Co. A fine quality of
grey filter paper, tough and durable. Packages
of 100 sheets. Cut round.

	A	B	C	D	E	F	G
Diameter ctm.,	15	19	25	33	40	45	50
Price per 100 sheets, \$	25	35	45	65	90	1 15	1 35

Rasage 1702 **Forceps, Stage.** On slide, each, - - - 2 00

Plain Glassware

Under this heading will be found plain microscopical glassware only.
Graduated glassware is placed immediately after this list of plain glassware.



No. 8916.



No. 8936.



No. 8938.



No. 9010.



No. 9012.

Vaoc 8916 **Beakers, Griffin's, low form, with lip; made of**
best Bohemian glass.

	Nos.	A 0000	B 000	C 00	D 0	E 1	F 2	G 3
Capacity, cc.,		15	20	30	60	100	150	200
Price, each, \$		12	13	14	15	16	18	20
	Nos.	H 4	J 5	K 6	L 7	M 8	N 9	
Capacity, cc.,		280	330	550	800	1100	1500	
Price, each, \$		22	25	30	40	50	60	

Vaohill 8936 **Bell Glass, High form, for covering micro-**
scopes, etc., with knob and perfectly ground lip
for air-tight connections.

		A	B
Height, mm.,	- - - -	350	425
Diameter, mm.,	- - - -	200	225
Price, each,	- - - -	\$1 50	2 00

Voakley 8938 **Bell Glass, Low form, of heavy, clear white**
glass, with knob and perfectly ground lip for air
tight connections.

		A	B	C	D	E
Height without knob, mm.,		80	105	130	180	235
Diameter, mm.,	- -	80	105	130	155	185
Price each, -	- - -	\$ 50	60	75	1 00	1 25

Vaopaf 8966 **Bottles, Collecting, of flint glass, extra wide**
mouth.

		A	B	C
Capacity, cc.,	- - -	30	60	120
Price per ten, -	- - -	\$ 30	35	50

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Telegraphic
Code.
Vapaam

Catalogue
Number.
9010

Bottles, Flint, with ground glass stopper and cap ground on. Of best German make.

	A	B	C	D	E
Capacity, cc., -	30	50	100	250	500
Price, each, -	\$ 40	50	60	80	1 00

Vapad 9012 **Bottles, Balsam, with glass balsam dropper fitting loosely in the neck of the bottle and with glass cap ground on. Capacity, 45 cc.; each, - \$ 25**



No. 9014.



No. 9016.



No. 9020.



No. 9022.



No. 9024.

Vapbob 9014 **Bottles, Balsam, with triangular glass balsam dropper touching neck of bottle only in three points, thus preventing gumming, with glass cap ground on. Capacity, 30 cc.; each, - - - 45**

Vapcad 9016 **Bottles, Balsam, with loose glass rod, balsam dropper, and glass cap. Bottle has very wide mouth.**

	A	B
Capacity, cc., - - - - -	30	60
Price, each, - - - - -	\$ 25	30

Vapcey 9018 **Bottles, Cobalt or Acid, with solid glass stopper reaching to bottom and with ground glass cap. (See illustration No. 9038.)**

	A	B	C	D
Capacity, cc., - - -	10	25	50	100
Price, each, - - -	\$ 30	35	40	50

Vapdug 9020 **Bottles, Dropping, with pipette stopper and rubber cap to control the amount of fluid ejected. Capacity, 15 cc.; each, - - - - - 20**

Vapeped 9022 **Bottles, Dropping, with pipette stopper and glass bulb containing perforation by which the amount of fluid ejected can be controlled. Capacity, 15 cc.; each, - - - - - 25**

Vapfurn 9024 **Bottles, Dropping, with Barnes pipette acting as a stopper for the bottle in which it is placed. A very convenient and inexpensive bottle. Capacity, 30 cc.; each, - - - - - 10**

Vapgar 9026 **Bottles, Dropping, with straight finger pipette.**

	A	B
Capacity, cc., - - - - -	30	50
Price, each, - - - - -	\$ 15	20

BRANCHES: NEW YORK CITY AND CHICAGO.



No. 9026.



No. 9028.



Nos. 9036.



Nos. 9038 and 9018.

Telegraphic
Code.
Vapham

Catalogue
Number.
9028

Bottles, Dropping, with bulb-shaped finger pipette, without rubber bulb.

					A	B	C
Capacity, cc.,	-	-	-	-	15	30	50
Price, each,	-	-	-	-	\$ 10	15	20

Vapib

9030

Bottles, Dropping, same as No. 9028, but with rubber bulb.

					A	B	C
Capacity, cc.,	-	-	-	-	15	30	50
Price, each,	-	-	-	-	\$ 12	18	24

Vapjar

9032

Bottles, Dropping, same style as No. 9028, but made of amber glass; without rubber bulb.

					A	B
Capacity, cc.,	-	-	-	-	30	50
Price, each,	-	-	-	-	\$ 15	20

Vapku

9034

Bottles, Dropping, same as No. 9032, but with rubber bulb.

					A	B
Capacity, cc.,	-	-	-	-	30	50
Price, each,	-	-	-	-	\$ 18	24

Vaplap

9036

Bottles, Dropping, with ground glass stopper, arranged with cavities to permit fluid to escape drop by drop. A half turn of the stopper closes the bottle hermetically. Capacity, 30 cc.; each,

\$ 15

Vapmay

9038

Bottles, Dropping, with hollow pipette and glass cap ground on.

					A	B
Capacity, cc.,	-	-	-	-	30	60
Price, each,	-	-	-	-	\$ 40	50

Rasem

1704

Bottle, Immersion Oil (see No. 1704, opposite page). This vial fits inside a metal case which is the same size as the case of the oil immersion objective. The neck of the vial is wide to prevent smearing with oil. A ground glass stopper carries a small camel's hair brush. This form of oil bottle is very convenient for traveling, as the metal cap holds the stopper of the bottle in place, preventing the escape of the oil even though the bottle be inverted. Capacity, 10 cc.; each,

1 00

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.



No. 1704.



No. 9040.



No. 9050.

Telegraphic
Code.
Vapnela

Catalogue
Number.
9040

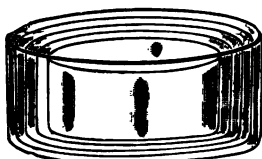
Bottles, Reagent Stock. This bottle is especially intended for keeping stock reagents which are to be distributed in the laboratory. A detachable glass funnel is ground into the neck and serves as a pour-out, and may be removed for filling the bottle. Fitted with glass cap ground on. Capacity, 500 cc.; each, - - - - \$ 60

Vapog

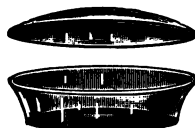
9050

Bottles, Washing, with glass tubes and rubber stopper.

Capacity, cc.,	-	-	A 150	B 250	C 500	D 1000
Price, each,	-	-	\$ 35	45	60	75



No. 9140.



No. 9154.



No. 9156.

Vagbed

9140

Dishes, Crystallization, of clear white glass, with straight sides, flat bottom and polished edges.

	A	B	C	D	E	F	G	H
Height, mm.,	54	58	62	66	70	70	70	70
Diameter, mm.,	110	130	150	170	190	240	270	300
Price, each,	\$ 30	35	40	45	50	85	1 25	1 75

Vagjus

9154

Dishes, Preparation, with convex cover, ground on air tight for permanent preservation or without sealing for ordinary purposes. Of clear white glass.

	A	B
Height, mm.,	-	40
Diameter, mm.,	-	80
Price, each,	-	\$ 25

Vagkle

9156

Dishes, Preparation, of clear, white glass, with loosely fitting cover. While not perfectly air-tight, the deep rim of cover renders the dish sufficiently so for most purposes and the moderate cost commends it still further.

	A	B	C	D	E
Diameter, mm.,	-	50	60	70	90
Price, each,	-	\$ 20	24	28	32



No. 9158.



A



B



C



D

No. 9160.

Telegraphic
Code.
Vaglet

Catalogue
Number.
9158

Dishes, Preparation, of clear white glass, with broad flange at top and perfectly ground, air-tight cover, with knob.

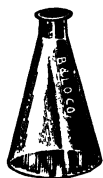
		A	B	C	D
Height, mm.,	- - -	30	35	40	45
Diameter, mm.,	- - -	50	65	80	100
Price, each,	- - -	\$ 40	50	60	75

Vagmes

9160

Dishes, Stender, of clear white glass, free from imperfections. These dishes are straight-walled and with top surface accurately ground into a groove in the cover, making an air-tight fit. We guarantee the covers to be perfectly fitted and the dishes superior to the ordinary Stender dishes.

		A	B	C	D
Height, mm.,	- - -	24	30	35	90
Diameter, mm.,	- - -	36	50	60	60
Price, each,	- - -	\$ 12	15	18	20



No. 9188.



No. 9192.



No. 9212.



No. 9300.



No. 9340.

Vardleu

9188

Flasks, Erlenmeyer form, of best quality Bohemian glass.

	A	B	C	D	E	F	G
Capacity, cc.,	50	100	250	500	1000	2000	4000
Price, each, \$	10	15	20	25	40	50	90

Varfoh

9192

Flasks, Koch form, flat bottom, of best quality Bohemian glass.

	A	B	C	D	E	F	G	H
Capacity, cc.,	50	100	250	500	1000	2000	4000	8000
Price, each, \$	08	10	15	20	30	45	70	1 00

Varleg

9212

Funnels, plain, of clear white glass, with stem ground to a point. Angle of sides exactly 60°.

	A	B	C	D	E	F	G
Diameter, mm.,	50	80	100	120	150	170	200
Capacity, cc.,	30	60	125	250	500	1000	2000
Price, each, \$	10	15	20	25	30	40	50

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Telegraphic
Code.

Catalogue
Number.

Varnox 9300 **Glass Boxes**, 100 x 40 x 40 mm., with cover;
each, - - - - - \$1 25

Vatab 9340 **Jars, Aquarium**, of heavy white glass, straight
sides and heavy flange.

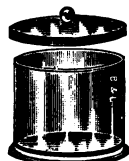
	A	B	C	D	E	F
Capacity, litres, -	2	4	6	8	16	32
Price, each, - \$	40	60	80	1 00	2 00	3 00



No. 9342.



No. 9346.



No. 9348.



No. 1706.



No. 9350.

Vatbat 9342 **Jars, Battery**, of heavy white glass, straight sides.

	A	B	C	D	E	F
Diameter, mm.,	100	105	125	150	200	225
Height, mm.,	125	150	275	225	300	375
Price, each, \$	25	30	40	40	80	1 25

Vatcem 9344 **Jars, Cylindrical**, of clear white glass, flat bot-
toms and plain round rim. The cover fits loosely
over the top of jar. A very useful jar for gen-
eral purposes.

	A	B	C
Height, mm., -	130	180	180
Diameter, mm., -	65	80	100
Price, each, - \$	30	45	60

Vatdun 9346 **Jars, Cylindrical**, of fine white glass, without
foot, with shoulder, loose-fitting cover, and cut
and polished knob. A very fine jar.

	A	B	C	D	E
Height, mm.,	100	120	150	210	260
Diameter, mm.,	100	120	150	210	260
Price, each, \$	1 00	1 25	1 75	2 50	3 25

Vateg 9348 **Jars, Cylindrical**, of fine white glass, with foot,
without shoulder, with loose-fitting cover and
smooth knob.

	A	B	C	D	E
Height, mm.,	100	120	150	210	260
Diameter, mm.,	100	120	150	210	260
Price, each, \$	1 00	1 25	1 75	2 50	3 25

Rasibo 1706 **Embryo Jars**, blown from glass tubing, extra
quality. Capacity, 15 cc., with cork stopper; per
ten, - - - - - \$ 75

Vatfel 9350 **Jars, Preparation**, of clear, white glass, with
neck and foot and ground glass stopper.

	A	B	C	D	E	F
Height, mm.,	80	100	120	150	180	200
Diameter, mm.,	30	30	40	50	60	80
Price, each, \$	25	30	35	45	55	75

BRANCHES: NEW YORK CITY AND CHICAGO.



No. 9352.



No. 9354.



No. 9358.



No. 9360.



No. 9362.



No. 9364.

Telegraphic
Code.

Catalogue
Number.

Vathills

9352

Jars, Preservation, of clear white glass, with glass cover fitting air-tight with rubber ring and held in place with metal cap which screws down upon the cover. A good museum jar.

Capacity, cc.,	-	-	^A 250	^B 500	^C 1000	^D 2000
Price, each,	-	\$	10	15	20	25

Vatine

9354

Jars, Preservation, of clear white glass and self-acting clamp, body of jar same size as mouth. The cover is of glass, fitting air-tight with rubber ring and clamped with spring clamp as shown in illustration.

Capacity, cc.,	-	^A 30	^B 200	^C 250	^D 400	^E 600
Price, each,	\$	10	10	12	15	20

Vatlais

9358

Jars, Specimen, of clear white glass, free from imperfections, with foot and lip, and carefully ground air-tight cover, stopper form, with knob.

Height, mm.,	^A 100	^B 120	^C 120	^D 130	^E 150	^F 180
Diameter, mm.,	75	30	50	75	100	120
Price, each,	\$	50	40	45	60	90
						1 20

Vatmen

9360

Jars, Specimen, of fine white glass, with ground bottom and ground flange.

Height, mm.,	^A 80	^B 100	^C 120	^D 120	^E 130	^F 150	^G 180	^H 230	^J 300
Diam., mm.,	25	40	30	50	75	100	120	180	250
Price, each,	\$	15	20	25	30	50	75	1 00	2 00
									3 00

Vatoo

9362

Jars, Specimen, of fine white glass, with carefully ground air-tight cover.

Height, mm.,	-	^A 80	^B 130	^C 150	^D 180	^E 250
Diameter, mm.,	-	140	100	200	180	220
Price, each,	\$	1 50	1 00	2 00	2 75	4 00

Vatpull

9364

Jars, Specimen, inverted form, of clear white glass, with carefully ground air-tight stopper which acts as pedestal on which jar rests. A very ornamental museum jar.

Height, mm.,	-	-	^A 130	^B 190	^C 220	^D 320
Diameter, mm.,	-	-	50	80	100	120
Price, each,	-	-	\$	50	1 00	1 50
						2 00

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Telegraphic Code.	Catalogue Number.		Price.	
<i>Rasub</i>	1710	Moist Chamber , set of two dishes of heavy white glass; the upper with knob, and fitting outside of the lower.		
		Inside diam. of upper dish in mm., -	A 175	B 230
		Inside height of upper dish in mm., -	37	48
		Inside diam. of lower dish. in mm., -	165	225
		Inside height of lower dish in mm., -	55	67
		Per set, - - - - -	\$1 50	2 50



No. 9380.

<i>Vattup</i>	9380	Pipette , with rubber bulb, 2 cc., straight; per ten,	\$ 30
<i>Vutuet</i>	9382	Pipette , with rubber bulb, 2 cc., curved; per ten,	35
<i>Vatvun</i>	9384	Pipette , with large mouth and extra large bulb, straight; per ten, - - - - -	50
<i>Vatwig</i>	9386	Pipette , with funnel top for finger; 90 mm. long, straight; per ten, - - - - -	35
<i>Vaty</i>	9388	Pipette , with funnel top for finger; 90 mm. long, curved; per ten, - - - - -	40
<i>Vatyor</i>	9390	Pipette , without bulb; 200 mm. long, straight; per ten, - - - - -	50
<i>Vauan</i>	9392	Pipette , with 20 cc. rubber bulb; 200 mm. long, straight; per ten, - - - - -	1 50
<i>Vauble</i>	9394	Pipette , without bulb; 300 mm. long, straight; per ten, - - - - -	75
<i>Vaucal</i>	9396	Pipette , with 20 cc. rubber bulb; 300 mm. long, straight; per ten, - - - - -	1 75



No. 1714.



No. 1716.



No. 1720.

<i>Ratard</i>	1714	Staining Dish , Moore's. For holding covers or slips during hydration, staining, dehydration, etc., of preparations. It consists of a double dish 110 mm. in diameter and 30 mm. deep, inside of which a glass disc is placed, the disc having nine parallel ridges separated by spaces 6 mm. wide. A reservoir of the above size will hold, without crowding, thirty 18 mm. covers, or 6 slides 25 x 75 mm. This dish is not only very convenient, but is economical in the amount of reagents required, the heavy glass disc taking up the space in the dish not needed for the glasses. It is desirable to have a dish for each stain or reagent used; each,	1 00
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Telegraphic Code.	Catalogue Number.		Price.
<i>Ratat</i>	1716	Staining Jar, Naples. (Used in Marine Biological Laboratory at Naples and Wood's Holl, Mass.) A straight glass tube with heavy glass base to prevent overturning, and hemispherical cover. The covers are interchangeable. An extremely practical jar for staining, fixing and clearing on the slide, as the height and width are just sufficient to include a standard size slide, there being least possible waste of space to be filled by reagents. Height without cover, 90 mm.; diameter, 35 mm.; each, - - - - -	\$ 20
<i>Ratavs</i>	1718	Staining Jar, Naples, with cork stopper instead of glass cover; each, - - - - -	16
<i>Ratawe</i>	1720	Staining Dish, Steinach's. This dish consists of an inner glass vessel, 75 diam., with perforated bottom supported on glass feet in a heavy outer dish. Top is ground on air tight; each, - -	1 25



<i>Vauveg</i>	9460	Test Tubes, with lip, thin wall, clearest Bohemian glass.	
		Length, mm.,	B 100 C 120 D 120 E 120 F 150 FF 150 G 150 H 150 I 180 K 200
		Diam., mm.,	12 13 15 18 15 18 20 25 18 20
		Price, per ten, \$	12 15 15 18 20 25 25 30 35 40
<i>Vauyeb</i>	9466	Test Tubes, with side neck.	
		Length, mm.,	- - A 120 B 150 C 180 D 200
		Price, per ten,	- \$ 50 60 75 1 00
<i>Ratbe</i>	1724	Trays, Glass, with vertical sides and polished edges,	
		Length, mm.,	- - - - A 100 B 115 C 120
		Width, mm.,	- - - - 40 50 60
		Height, mm.,	- - - - 40 50 35
		Price, each,	- - - \$ 30 40 50
<i>Vawter</i>	9538	Vials, Glass-stoppered, for preservation of small and valuable specimens, etc.	
		Capacity, grams,	- A 2 B 3 C 4 D 6 E 8
		Price, per ten,	- \$ 40 50 60 75 1 00
<i>Vawwa</i>	9550	Watch Glasses, with concave centers and small facet on bottom; per ten, - - - -	\$ 50

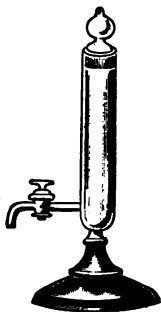
BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Telegraphic Code.	Catalogue Number.		Price.					
<i>Vaxbel</i>	9552	Watch Glasses, thin, concave, German form.						
		Diameter, mm.,	A 40	B 50	C 70	D 100	E 120	F 140 G 160
		Price, per ten, \$	30	40	60	1 00	2 00	3 00 4 00
<i>Vaxcant</i>	9554	Watch Glasses, Syracuse Solid, improved form, plain; outside diameter, 65 mm.; inside diameter, 50 mm.; depth, 10 mm.; per ten,						
			-	-	-	-	-	\$ 50
		The improved Syracuse Watch Glass is of the most convenient form to be handled with least danger of dropping, and will stand more hard usage without breaking or chipping than any other form. The bottom surfaces are parallel, making it possible to examine objects in the glass without distortion, at the same time the slight curvature around the inside of the bottom permits the easy use of the section lifter. The flange around the bottom permits the glasses being securely stacked.						
<i>Vaxdur</i>	9556	Watch Glasses, Syracuse Solid, improved form; with beveled surface ground, forming a writing surface upon which particulars about the contents may be easily written and erased. Outside diameter, 65 mm.; inside diameter, 50 mm.; depth, 10 mm.; per ten,						
			-	-	-	-	-	75
<i>Vaxel</i>	9558	Watch Glasses, Square form, with cover, one vertical surface ground for writing upon; per ten,						
								60
<i>Vaxfling</i>	9560	Watch Glasses, Square form, with cover: upper and lower surfaces cut and polished; one vertical surface ground for writing upon; per ten,						
								1 25
<i>Vaxgable</i>	9562	Watch Glasses, Square form, of black glass, with cover; each,						
			-	-	-	-	-	35

Graduated Glassware



No. 9644.



No. 1728.



No. 9680.

<i>Veying</i>	9644	Burettes, Mohr's, for pinch cock, graduated with greatest accuracy.						
		Capacity, cc.,	A 5	B 10	C 25	D 50	E 50	F 100
		Graduations, cc.,	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{5}$	$\frac{1}{5}$
		Price, each,	\$ 30	50	75	1 00	90	1 50

BRANCHES: NEW YORK CITY AND CHICAGO.

Telegraphic Code.	Catalogue Number.		Price.
<i>Ratibf</i>	1726	Burette Floats, 6 to 15 mm. diameter; each, In ordering these floats, the size of burette should be given.	\$ 20
<i>Vewcyl</i>	9660	Cylinders, Graduated, with foot, lip and pour out; accurately graduated.	
		Capacity, cc.,	A 5 B 10 C 25 D 50 E 75 F 100 G 150
		Price, each,	\$ 20 25 30 35 40 45 50
		Capacity, cc.,	H 200 J 250 K 500 L 1000 M 2000 N 3000
		Price, each,	\$ 60 75 1 00 1 50 2 50 4 00
<i>Ratoat</i>	1728	Cylinder, Reagent, with glass cock and stopper on wooden base. Size: 180 x 25 mm.; each,	2 00

Illuminating Apparatus

Substage Condenser, Abbe. The substage condenser is one of the most useful accessories to the microscope and should be a part of every



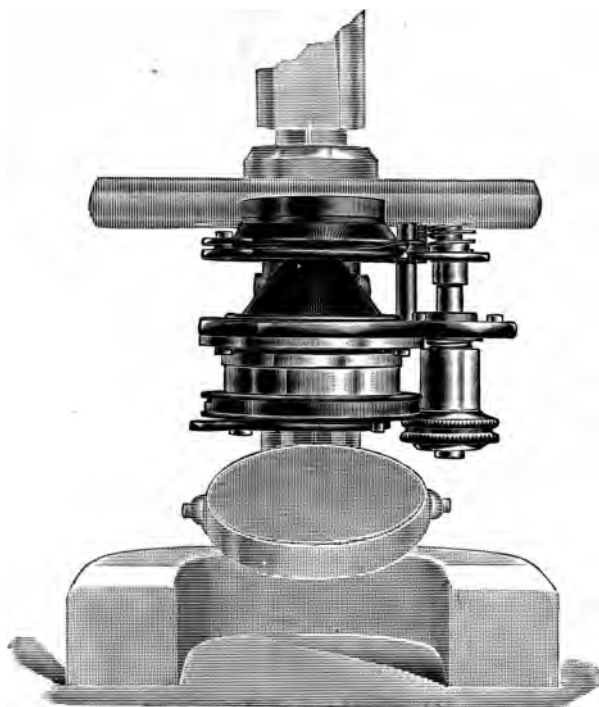
equipment where medium or high power lenses are used. The addition of an Abbe Condenser to many of the older microscopes in which, on account of lack of illumination, it is difficult to use the higher power lenses, will often make these instruments usable for chemical and other work for which they are now useless. For all kinds of bacterial examination the condenser is indispensable. There are two forms of the Abbe Condenser:

That of 1.20 numerical aperture, in which there are two condensing lenses, suitable for all objectives except those having the highest numerical aperture; the 1.42 N. A. Condenser, in which there are three condensing lenses, suitable for the very highest aperture objectives.

Our Abbe Condensers are mounted in a ring which fits the microscope substage ring and are adjusted vertically in the ring. An iris diaphragm is attached below for controlling the volume of light and the angle of the cone emitted by the condenser. A swinging carrier holds blue glass for use with lamp light to give a whiter illumination, and dark ground stops for examining opaque objects.

Telegraphic Code.	Catalogue Number.	Numerical Aperture.	Price.
<i>Roam</i>	1740	1.20	\$10 00
<i>Roci</i>	1742	1.42	12 00

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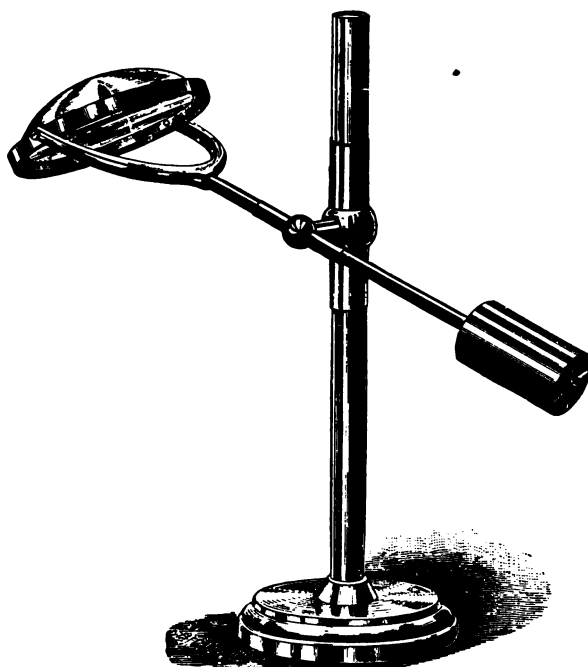
One-half actual size.
Duplex Swing-out Substage.

Substage, Duplex, Swing-out. The purpose of this substage is to provide some of the advantages which are obtained with the Complete Substage in the simple form of the Swing-out substage as constructed for the BB microscope.

While the latter meets all ordinary requirements, the construction illustrated above is much more advantageous when the condenser is not used. The arrangement is simple and convenient, one iris diaphragm being attached to the upper arm and the other to the lower one, which also carries the condenser, both being adjustable. When it is desired to swing out the condenser, it is done in the usual manner. *The upper iris always remains in position and is adjustable* with relation to the stage by means of the milled head, which also moves the condenser when in the optical axis. The condenser shown in the figure is not included in the price of substage.

Telegraphic Code.	Catalogue Number.		Price.
<i>Rogelar</i>	1754	Duplex Substage if ordered with BB microscope in place of regular substage, - - - -	\$4 00
<i>Rogora</i>	1755	Duplex Substage as above attached to BB microscope, - - - - -	7 00 to 10 00

This price includes cost of substage and work of fitting on stand already having substage. The variation in price is made to cover extra work in adapting to old models, etc.
Duplex substage attached to other of our microscopes or to microscopes of other manufacture; price on application.

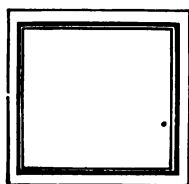


Condensers, Bull's-Eye. For the illumination of opaque objects and for throwing parallel rays upon microscope mirror. Consists of a strong plano-convex lens mounted so that it may be adjusted to any position.

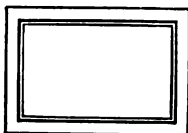
Telegraphic Code.	Catalogue Number.	Diameter of Lens, mm.	Height of Stand, mm.	Price.
<i>Roen</i>	1746	38	145	\$3 00
<i>Roff</i>	1748	56	200	5 00
<i>Rogam</i>	1750	75	248	7 00

Telegraphic Code.	Catalogue Number.		Price.
<i>Rohet</i>	1756	Illuminator, Vertical. Designed for illuminating opaque objects. It is placed above the objective and consists of a plane glass reflector, mounted so as to be readily adjusted, which reflects light coming to it through an aperture in the side of the mounting down through the objective upon the object, from which it is re-reflected to the eye through the microscope. Apertures of three sizes for admission of light are provided. Each,	\$4 50
<i>Roholy</i>	1758	Illuminator, Vertical, prism, - - - -	9 00
<i>Roie</i>	1760	Imbedding Table. A lamp is placed under the projecting end of the table from which heat is conducted along the metal, giving different temperatures and supplying a very simple and effective apparatus. Length, 40 cm. Two copper trays with covers are included. Complete,	2 00

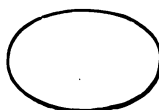
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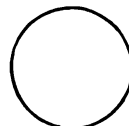
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No. 1764.



No. 1766.



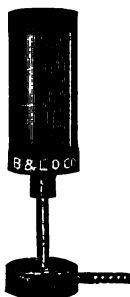
No. 1768.

Labels, Microscopical. Best white gummed paper.

Telegraphic Code.	Catalogue Number.	Shape.	Size, mm.	Price Per box of 100.
<i>Rojac</i>	1762	Square	22	10c.
<i>Rojor</i>	1764	Rectangular	22 x 15	10c.
<i>Rojul</i>	1766	Oval	20 x 14	10c.
<i>Rojume</i>	1768	Round	16	10c.

Labels, Microscopical in books; 500 labels per book. These labels are printed on best white gummed paper similar to No. 1762, and are cut between so as to be readily torn from the book, leaving clean edges. They are much more convenient than the cut labels.

<i>Rojabe</i>	1770	Square; per book,	- - - - -	\$ 30
<i>Rojolm</i>	1772	Oblong; per book,	- - - - -	30



No. 8420.



No. 8468.



No. 8470.



No. 8471.

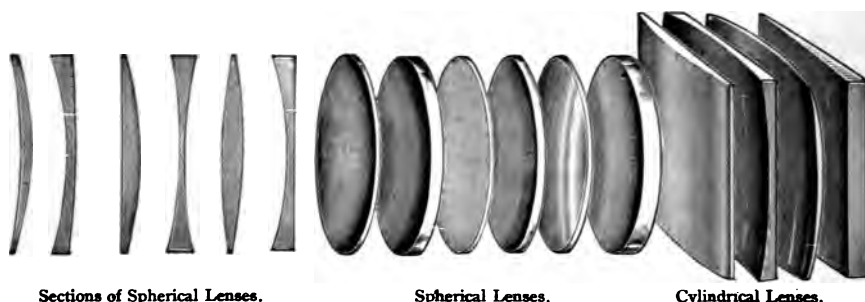
<i>Vahjam</i>	8420	Burner, Bunsen Micro. Specially adapted for use with water baths where only a small flame is required. Gas is projected into the air chamber through a very small opening, enabling the desired small flame to be obtained without danger of lighting back. A detachable mica chimney is supplied. Height, 65 mm. without chimney; 145 mm. with chimney. Complete, - - -	1 00
<i>Rojy</i>	1774	Burner, Bunsen; simple form; each, - -	50
<i>Vaifte</i>	8468	Lamps, Alcohol, of glass, with metal burner and extinguisher also of metal. The body of these lamps is of such form that they may be placed with the flame at four different angles; wicks included.	
		Diameter of burner, mm., - - -	
		A 5	B 7
		C 12	
		Price, each, - - - - -	\$ 70 80 1 00

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Telegraphic Code.	Catalogue Number.					
<i>Vaihel</i>	8470	Lamps, Alcohol, of glass, with metal burner and glass cap for extinguishing. Side tube for filling. Body of the lamp is cylindrical and the bottom flat to prevent overturning; wicks included.				
		Capacity, cc.,	-	-	^A 30 ^B 60 ^C 100 ^D 150	
		Price, each,	-	-	\$ 40 45 50 60	
<i>Vaihuc</i>	8471	Lamps, Alcohol; made of metal throughout, with burner, rack for wick adjustment and cap.				
		Capacity, 200 cc.; each,	-	-	-	\$ 25
<i>Vaik</i>	8472	Wicking only; per ball,	-	-	-	10

Wellsbach Lamp. The Wellsbach light, being very brilliant, steady and white, is a good substitute for sun-light; in fact, is better adapted to certain lines of work than sun-light. Those who work with the microscope at night or who need artificial illumination will find it very desirable. The burner is mounted so as to be adjustable in any position. It is of large size and has a metal shield with an adjustable tube in which a bull's-eye lens is mounted. The shield excludes all light except that passing through the bull's eye. Height of pillar on stand, 250 mm.; diameter of bull's-eye lens, 40 mm.

<i>Rokok</i>	1776	Without bull's eye lens,	-	-	-	4 50
<i>Rokman</i>	1778	With bull's-eye lens and metal shield,	-	-	-	6 00
<i>Rokny</i>	1780	Extra mantles; each,	-	-	-	75



Lenses, Demonstration. Optical principles and their relation to lenses of different curvatures can be well illustrated with these lenses. The edges are ground smooth and polished.

<i>Rokold</i>	1782	Set of 6, 1½ inches in diameter, in box, including, double convex, double concave, plano convex, plano concave, meniscus convex, meniscus concave,	1 25
<i>Rokozab</i>	1784	Set of 10, 1½ inches in diameter, in box, including in addition to the six lenses in set 1782, cylindrical convex, cylindrical concave, spherocylindrical and spheroprismatic,	2 00
<i>Rokozoga</i>	1786	Set of 6 lenses, 2 inches in diameter, in box, consisting of same lenses as in set No. 1782,	2 50
<i>Rokozara</i>	1788	Set of 10 lenses, 2 inches in diameter, in box, consisting of same lenses as in set No. 1784,	3 50
<i>Rokozele</i>	1790	Set of 6 lenses, 3 inches in diameter, in box, consisting of same lenses as in set No. 1782,	4 50
<i>Rokozoro</i>	1792	Set of 10 lenses, 3 inches in diameter, in box, consisting of same lenses as in set No. 1784,	7 50

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Lenses, Double convex or concave.

GROUND EDGES.					PERFECTLY CENTERED.				
Telegraphic Code.	Catalogue Number.	Diam. mm.	Focus. mm.	Each.	Telegraphic Code.	Catalogue Number.	Diam. mm.	Focus. mm.	Each.
<i>Rolm</i>	1800	a	1.5	3	<i>Rolul</i>	1802	a	1.5	3
		b	3	6			b	3	6
		c	5	10			c	5	10
		d	6	13			d	6	13
		e	10	19			e	10	19
		f	13	25			f	13	25
		g	16	32			g	16	32
		h	19	38			h	19	38
		i	25	51			i	25	51
		k	38	76			k	38	76
		l	51	102			l	51	102
		m	64	127			m	64	127
		o	76	152			o	76	152
				\$ 75					\$1 00
				75					1 00
				75					1 00
				90					1 00
				90					1 00
				90					1 00
				90					1 25
				90					1 25
				50					85
				60					95
				75					1 25
				1 25					1 75

Double convex or concave — large diameter.

<i>Rolvon</i>	1804	a	102	30-183	2 00	<i>Rolwad</i>	1806	a	102	30-183	2 50
		b	127	46-183	3 00			b	127	46-183	3 75
		c	152	61-183	4 00			c	152	61-183	5 00
		d	178	76-183	6 00			d	178	76-183	7 50
		e	203	91-183	8 00			e	203	91-183	10 00

Meniscus convex or concave.

<i>Rolz</i>	1808	a	25	51	1 50	<i>Rolyat</i>	1810	a	25	51	2 00
		b	38	76	1 75			b	38	76	2 25
		c	51	102	2 00			c	51	102	2 50
		d	64	127	2 50			d	64	127	3 00
		e	76	152	3 00			e	76	152	3 75

Meniscus convex or concave — large diameter.

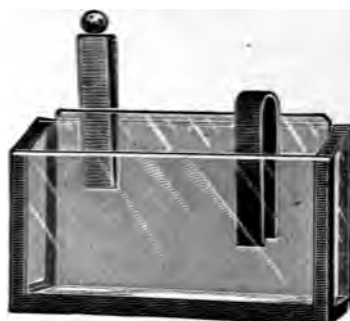
<i>Ronud</i>	1812	a	102	30-183	4 00	<i>Ronvor</i>	1814	a	102	30-183	5 00
		b	127	46-183	6 00			b	127	46-183	7 50
		c	152	61-183	8 00			c	152	61-183	10 00
		d	178	76-183	10 00			d	178	76-183	12 00
		e	203	91-183	12 00			e	203	91-183	15 00

Plano convex or concave.

<i>Roode</i>	1816	a	1.5	3	65	<i>Ropel</i>	1818	a	1.5	3	90
		b	3	6	65			b	3	6	90
		c	5	10	65			c	5	10	90
		d	6	13	75			d	6	13	1 00
		e	10	19	75			e	10	19	1 00
		f	13	25	75			f	13	25	1 00
		g	16	32	75			g	16	32	1 10
		h	19	38	75			h	19	38	1 10
		i	25	51	75			i	25	51	1 10
		k	38	76	85			k	38	76	1 25
		l	51	102	1 00			l	51	102	1 40
		m	64	127	1 25			m	64	127	1 75
		o	76	152	1 50			o	76	152	2 00

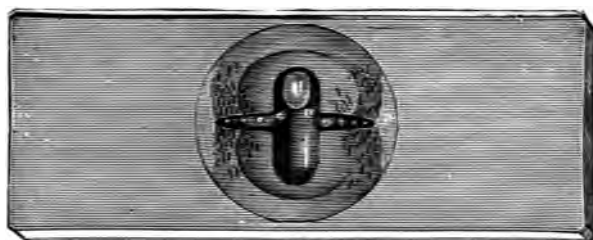


No. 1830.



No. 1834.

Telegraphic Code.	Catalogue Number.		Price.
<i>Roser</i>	1830	Life Box. Consists of two plates of glass, one mounted on a metal slip, the other being adjustable to it by sliding sleeve. There is a space around the lower plate for the escape of excess fluid. Objects in fluid are placed on the lower plate and the film of fluid containing them reduced to any desired thickness. Size of slip, 32 x 80 mm.; diameter of cell, 25 mm; maximum depth, 8 mm.; each, - - - -	\$2 00
<i>Roset</i>	1832	Life (or Animalcule) Cage. On a glass slip, 25 x 75 mm.; each, - - - -	60
<i>Rotag</i>	1834	Life (or Animalcule) Cage. Consists of a four-sided glass tank with partition of glass and separating spring and wedge, with which the thickness of the chamber containing the organism may be varied; complete, - - - -	2 50



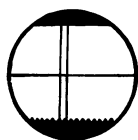
No. 1836.

<i>Rougy</i>	1836	Life Slide, Holman's. This slide has a deep central cavity with a shallower beveled cavity about it. The two cavities are connected by a small channel. Organisms in fluid placed in the deep cavity gather close to the thin edge, where they may be examined. Complete with extra covers, - - - -	1 50
<i>Rovax</i>	1838	Life Slide, Holman's Current. This slide has two cavities which have their inner edges beveled and which are connected by a minute channel. Pressure on the cover over one of the cavities forces a small portion of fluid into the channel, where it may be examined. The slide is of heavy beveled plate glass; each, - - - -	1 50

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Telegraphic Code.	Catalogue Number.		Price.
<i>Rowban</i>	1840	Lens Paper, Japanese. For cleaning lenses; does not easily collect dust nor become greasy or harsh. It is very soft and free from impurities. It is recommended for use with our lenses. In packages of 100 sheets.	
<i>a</i>		Size 18.5 x 27.5 cm.; per package,	\$ 25
<i>b</i>		Size 27.5 x 37.5 cm.; per package,	45

Micrometers



Field of No. 1850.



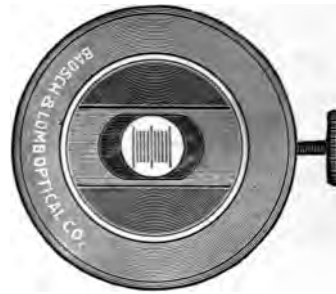
No. 1850.

<i>Rowax</i>	1850	Micrometer, Filar, large size. The Filar Micrometer is used for making the most accurate measurements possible under the microscope. The measuring apparatus consists of a horizontal cross-hair stretched across the field, a vertical reference cross-hair adjustable so that it may be made to coincide with the edge of the object to be measured and a movable cross-hair moved by means of an accurate micrometer screw with graduated head reading to 0.005 mm. In the field, a comb with teeth corresponding with one revolution of the screw serves to record the number of revolutions. The filar micrometer can be attached to any microscope, but accurate measurement of the inside diameter of tube to which it is to be fitted should be sent; in case,	45 00
<i>Rowbed</i>	1852	Micrometer, Filar, medium size. This micrometer is similar to the preceding, but smaller, without comb in the field and having the reference cross-hair fixed; in case, - - - - -	32 00

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No. 1854.



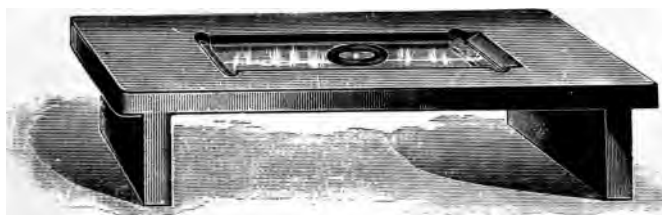
Section of No. 1854 showing scale.

Telegraphic Code.	Catalogue Number.		Price.
<i>Rowcug</i>	1854	Micrometer Eyepiece with movable scale. The scale is divided to tenths millimeter and movable by thumbscrew; each fifth and tenth line being longer than the others. The eye-lens is adjustable; each, - - - - -	\$12 00
<i>Rowdow</i>	1856	Micrometer Eyepiece with fixed scale. Same as No. 1854 in other respects; each, - - -	5 00
<i>Rowel</i>	1858	Micrometer, Disc , ruled to 0.1 mm. Of proper diameter to fit inside the eyepiece and rest on the diaphragm; each, - - - - -	1 50
<i>Rowfeala</i>	1860	Micrometer for Dissecting Microscopes. This is a glass disc, to fit the opening in the stage of dissecting microscopes. Its rulings cover a space of 20 mm., and are properly marked for convenient counting; each, - - - - -	75
<i>Rowfest</i>	1861	Micrometer, Stage ruled to 0.1 and 0.01 mm.; each, - - - - -	3 50
<i>Rowglow</i>	1862	Micrometer, Stage ruled to $\frac{1}{100}$ and $\frac{1}{1000}$ inch; each, - - - - -	2 50

Mirrors. Ground and polished, 100 mm. diameter; mounted in metal back with handle.

Telegraphic Code.	Catalogue Number.	Curvature.	Price.
<i>Roxab</i>	1864	Plane	\$3 50
<i>Roxbed</i>	1866	Sphero-Concave	3 50
<i>Roxcan</i>	1868	Sphero-Convex	3 50

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No. 1870.

Telegraphic Code.	Catalogue Number.		Price.
<i>Roxduc</i>	1870	Mounting Table, Van Cott's. This table is designed to aid in rapid and accurate slide mounting as it affords a better view of the object during the operations of clearing, etc., than when the slide is in contact with the work table. A mark on the surface indicates the center of a 25 x 75 mm. (1 x 3 in.) slide; each, - - - -	\$ 80

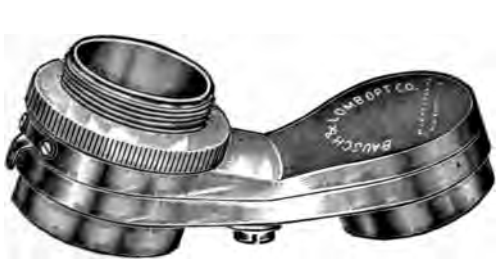


No. 1872.

<i>Roxel</i>	1872	Mounting Stand, Sand-Bath. The sand-bath is attached to the underside of the adjustable stage on which the slide is placed. Alcohol lamp 8468A is furnished with it; complete, - -	2 00
<i>Roxflor</i>	1874	Mounting Table, Brass. For heating slides. The top has a recessed portion for the slide and is supported on four legs. Alcohol lamp 8468A is furnished with it; complete, - - - -	1 50

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Nosepieces and Lens Holders



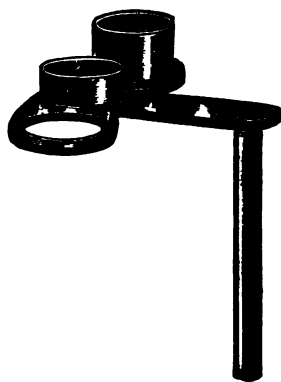
No. 1880.



No. 1882.



No. 1884.



No. 1888.

Nosepiece, Revolving. The revolving nosepiece is recommended for every microscope where more than one lens is used, as it not only saves time but does away with the danger of injury to the objective during changing. The construction is extremely accurate and rigid.

Telegraphic Code.	Catalogue Number.		Price.
<i>Roxmen</i>	1880	Double	\$ 5 00
<i>Roxnop</i>	1882	Triple	7 50
<i>Roxoper</i>	1884	Quadruple	12 00

Telegraphic Code.	Catalogue Number.		Price.
<i>Roxrer</i>	1888	Triple Arm for carrying simple lenses. This arm is applicable to any of our simple dissecting microscopes from numbers T to W. The three adapters are of suitable size to receive any of the lenses, except No. 40, and of such depth as to bring the focal point of the lenses ordered for use with it, in the same plane; each,	\$2 50

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Office and Laboratory Furniture



No. 1900.

Desk, Microscopical. This desk is made full office size, of selected quartered oak. The top measures 127 x 76 cms., and is 77 cms. from the floor. A heavy glass plate furnishes an ideal surface for microscopical work.

The reagent case contains thirty-four glass stoppered bottles and a tray for pipettes and instruments. Each bottle fits in a separate receptacle, thus preventing overturning. The roller curtain front closes with a spring lock.

The upper left-hand drawer has slide receptacles for 216 slides. The slides lie flat. Ample space for manuscript, drawing materials and optical accessories is provided in the other drawers. The right hand lower drawer is double depth and recessed on the inner side to permit easy access for large accessories. It is of sufficient depth to contain the microscope if desired. The shallow middle drawer is especially useful for drawings and instruments needed constantly. It is provided with a lock and key, which also locks all the side drawers simultaneously. Draw-slides on the sides form convenient arm rests or additional working space. Total height, 104 cms.

This desk is a practical and necessary accessory for the physician's office, the professor's private office, and for the library of anyone inclined to microscopical research. In place of the ordinary laboratory tables this desk is an ideal equipment for the biological laboratory.

Telegraphic Code.	Catalogue Number.		Price.
<i>Ruam</i>	1900	Desk, Microscopical. Carefully cased, ready for shipment; each,	\$50 00

BRANCHES: NEW YORK CITY AND CHICAGO.



No. 1902.

Telegraphic Code.	Catalogue Number.
<i>Rubud</i>	1902

Reagent Stand. Holds five 15 cc. reagent bottles and has receptacles, for slips and covers; also a shallow receptacle for instruments. The reagent bottles (9022) have pipette stoppers. Size : 295 mm. long, 80 mm. wide, 35 mm. deep; with bottles complete,	Price.
- - - - -	\$2 00



No. 1906.



Reagent Case. With five 15 cc. bottles, and space for instruments. Fitted with lock; of cherry, with mitered corners. Either reagent bottles No. 9020 or 9022 will be supplied. Size : 230 mm. long, 100 mm. wide, and 110 mm. deep.

<i>Rucem</i>	1904	With bottles, No. 9020; complete,	- - -	3 50
<i>Rucor</i>	1906	With bottles, No. 9022; complete,	- - -	3 75

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No. 1910.

Reagent Case. This case holds eighteen 15 cc. bottles and has a space for instruments. The wood is choice cherry, the corners are mitered, and finish the best. It is fitted with lock. Either reagent bottles 9020 or 9022 will be supplied. Size: 180 mm. long, 185 mm. wide, 145 deep at the back.

Telegraphic Code.	Catalogue Number.		Price.
<i>Rudor</i>	1908	With bottles 9020; complete, - - - -	\$7 75
<i>Rudorab</i>	1910	With bottles 9022; complete, - - - -	8 65

Reagent Stand, Laboratory. Specially adapted for laboratory individual use. Bottles are covered by a bell-jar, hence quickly accessible. The flange of the bell-jar fits into a groove in the oak base and makes a dust-proof enclosure. Holds seven 15 cc. reagent bottles and a 30 cc. Balsam bottle. The bell-jar may be used independently.

Of the various styles of individual reagent cases offered, this has proven the most practical for general laboratory use. Each student can be supplied with a case, giving complete set of reagents at comparatively little expense.

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No. 1916.

Telegraphic Code.	Catalogue Number.		Price.
<i>Ruefle</i>	1916	Reagent Stand, Laboratory, with bottles No. 9022; complete, - - - - -	\$3 40

Slide Receptacles

As mounted microscopic objects represent either labor or money expended, it is of importance that they be carefully stored and accessible for reference. Even small collections of a few slides should not escape proper care. The monetary value of time spent in trying to find slides not systematically stored, soon over-balances the cost of proper receptacles.

In our slide boxes, cabinets, and trays, each slide has a separate place, which is properly marked for indexing, and is protected from injurious effects of dust and light. The spaces for slides are for the standard size, 25 x 75 mm. (1 x 3 in.).



No. 1926.



No. 1933.

Slide Boxes. Of light wood with tight fitting cover; index on the inside; label on the outside with space for titles. Label is visible when box is in position to keep slides horizontal.

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

FOR STANDARD SIZE OF SLIDES.

Telegraphic Code.	Catalogue Number.	Capacity.	Size of Slides, mm.	Price, per 10.
<i>Rufah</i>	1920	3	Standard (25 x 75)	\$ 70
<i>Rufej</i>	1922	6		75
<i>Rufow</i>	1924	12		55
<i>Rufux</i>	1926	25		65

FOR OTHER SIZES OF SLIDES.

<i>Rugar</i>	1930	25	25 x 44	85
<i>Rugen</i>	1932	25	50 x 76	1 70

Telegraphic Code.	Catalogue Number.		Price.
<i>Rugera</i>	1933	Slide Box , white wood, for 25 objects. This box is an improved form of the No. 1926, having a cover which fits over the top so that when removed each slide can be easily removed. Price, per ten,	\$1 00
<i>Rugego</i>	1940	Slide Box , wood, nicely finished, with hinged cover and catch; for 100 objects, . - - -	40
<i>Rugder</i>	1950	Slide Box , cloth-covered, of two parts; the slide box slides into the outer case, and has grooves for twenty-five slides, also hinged cover with printed index; each, - - - - -	25
<i>Rugduc</i>	1960	Slide Trays , map form, holding fourteen slides; per ten, - - - - -	2 50
<i>Rugfra</i>	1962	Slide Trays , map form, holding twenty slides; per ten, - - - - -	2 85



A

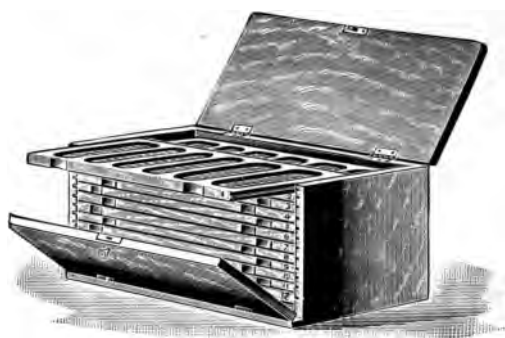
B

C

No. 1995.

<i>Rugsil</i>	1995	Slide Mailing Cases. These handy cases are formed of pieces of wood, all of which are exactly alike and hence interchangeable for top, bottom, or central portion. Only the edge of the slide is held by the wood. Any number may be piled up with slides between, as shown in A; or if only one slide is to be mailed, two pieces may be used in reverse position, as in B. Figure C illustrates the manner in which the slide is held. The recess is sufficiently deep and long to hold slides having large or thick covers. Per dozen,	06
<i>Ruhab</i>	1996	Slide Cabinets, Pillsbury. Of finely polished hard wood, containing twenty boxes, No. 1926 and holding 500 objects; the most compact cabinet made. Price, - - - - -	4 00

RANCHES: NEW YORK CITY AND CHICAGO.



No. 2002.

Slide Cabinets, portable. These cabinets are made in sizes to hold from four single trays to sixteen double ones. Front and top are hinged, permitting easy access to trays. Each tray is made of a single piece of wood with re-enforced ends to prevent warping. It slides in a separate groove, is properly marked for indexing, and has individual slide spaces with rounded corners. Size of single-tray cabinets, 245 mm. long, 125 mm. wide, and from 70 to 140 mm. deep, according to size. Double tray-cabinets are of the same length, of twice the width, and 140 and 175 mm. deep.

WITH SINGLE TRAYS.

Telegraphic Code.	Catalogue Number.	Capacity.		Price.
		Number of Slides.	Number of Trays.	
<i>Ruhed</i>	1998	36	6	\$1 60
<i>Ruhin</i>	2000	54	9	2 25
<i>Ruhoy</i>	2002	72	12	2 75

WITH DOUBLE TRAYS.

<i>Rukah</i>	2006	144	12	4 00
<i>Rukbo</i>	2008	218	16	6 00

Slide Cabinets. These cabinets occupy a comparatively small wall-space, the largest, which holds over twenty-five hundred slides, requiring less than a metre square at the back and but a quarter metre depth. The two smaller sizes hold 984 and 432 slides respectively in a corresponding space. The case is finely polished with ornamental moulding at top and bottom. Thin wooden trays, arranged in one or more tiers, slide in separate grooves, each tray having brass knob and series number for reference. At the bottom of each tier is a drawer with metal handle containing an indexed card-catalogue. The doors of the large cabinet have glass panels; all are furnished with lock and key. The trays are of a single piece of wood re-enforced at the ends with hard wood to prevent warping. Each receptacle holds a single standard size slide, and is rounded at the corners so that the slide may be easily removed. Each tray having independent grooves, there is no more weight on one tray than another, and any one may be removed or replaced at pleasure. No paper, pasteboard, nor glued joints are used in these cabinets, so that the parts are not liable to crack or warp.

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

The card index referred to consists of separate cards for each slide, on which is printed a form for the registration of data for the location of the slide in the cabinet, and its history. These cards are separated by printed guide cards, A to Z. In this form of catalogue, or register, obsolete titles, etc., are easily removed by withdrawing the card; the labor required to re-write and rearrange as collection grows is saved, and the catalogue is always written up to date. The combination of index with cabinet saves the expense of a separate and costly card index.



No. 2016.

Slide Cabinet, of cherry, highly polished; 36 trays; capacity, 432 slides. Outside dimensions: height, 49 cm.; width (exclusive of base), 25 cm.; depth (exclusive of base), 22 cm.

Telegraphic Code.	Catalogue Number.		Price.
<i>Rulam</i>	2016	Each,	\$12 00



No. 2020.

BRANCHES: NEW YORK CITY AND CHICAGO.

Slide Cabinet, of cherry, highly polished; 82 trays; capacity, 984 slides. Outside dimensions: height, 54 cm; width (exclusive of base), 50 cm.; depth (exclusive of base), 22 cm.

Telegraphic Code.	Catalogue Number.	Price.
<i>Rulop</i>	2020 Each,	\$20 00



No. 2025.

Slide Cabinet, of quartered oak, elegantly finished; 210 trays; capacity, 2520 slides. Outside dimensions: height, 92 cm.; width (exclusive of base), 82 cm.; (depth exclusive of base), 24 cm.; with glass panel doors.

<i>Rulomb</i>	2024	Cabinet only,	-	-	-	-	-	-	50 00
<i>Rulomb</i>	2025	Cabinet with base as shown above,	-	-	-	-	-	-	75 00

This is the most convenient and useful cabinet ever made, and its price is far below that at which a cabinet of similar capacity has ever been offered.

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.



No. 2030.

Microscopical Table. This table is of solid quartered oak with japanned iron base. The top is 76 cm. in diameter and has three drawers with ornamental brass handles. The table may be raised and lowered as desired, from 79 cm. to 112 cm. and clamped in position by a heavy hand clamp. The top may also be revolved, and when desired can be clamped in any position by a separate hand clamp. We consider this the handsomest, most substantially made, and convenient microscope table ever offered.

Telegraphic Code.	Catalogue Number.	Price.
<i>Rumash</i>	2030	Microscopical Table, with revolving top and vertical adjustments; each, - - - - - \$15 00

Polariscope and Accessories

Polariscopes, Micro. This apparatus is useful in petrological, chemical and many other examinations, and in demonstrations in physical optics. It affords opportunity of detecting crystals in vegetable tissues; of depolarizing light by numerous salts and other crystallizing bodies and by animal bodies and tissues; and also furnishes the means of studying the influence of vegetable structures upon polarized light.

Nicol's prisms are used for both polarizer and analyzer. The sensitiveness of the polariscope is greatly increased by using a selenite disc between the polarizer and analyzer. Provision is made for this on polariscope No. 2044 by means of the revolving disc shown in the illustration. In the other forms, the selenite disc is fixed above the polarizer.

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(Polarizer.)



(Analyzer.)

No. 2040.

Telegraphic Code.	Catalogue Number.		Price.
<i>Rumclar</i>	2040	Polariscope, with square-faced, Nicol's prisms and one selenite film. The polarizer is fixed in brass mounting and rotated by a large milled head. The analyzer is fixed in a short brass tube with society screw to attach to the nosepiece of the microscope. In leather-covered case, - -	\$18 00
<i>Rumdor</i>	2042	Polariscope, same as above, but with the analyzer in revolving mounting, including case; each, - -	20 00



(Polarizer.)



(Analyzer.)

No. 2044.

<i>Rumpo</i>	2044	Polarscope, with <i>large</i> square - faced, Nicol's prisms and three selenite films. The polarizing prism is mounted in a rotating mounting. The polarizer has three selenites and one clear aperture in a revolving disc. The analyzing prism is arranged in brass revolving mounting and has society screw for attachment to the nosepiece of the microscope. Price, including case, - -	30 00
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Polariscope Accessories

Selenite Films. These films are mounted between glass and are of a size to fit polariscope disc. Each gives two colors.

Telegraphic Code.	Catalogue Number.	Colors.	Price.
<i>Rumor</i>	2046	Blue and Green	\$1 50
<i>Rumosa</i>	2048	Purple and Green	1 50
<i>Rumotu</i>	2050	Red and Green	1 50

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y

Telegraph Code.	Catalogue Number.		Price.
<i>Rumpar</i>	2052	Quartz Plate , Betrand's quadrant. 24 mm. diameter, mounted. Each, - - -	\$10 00
<i>Rumpes</i>	2054	Quarter Undulation mica plate . 12 mm: diameter, unmounted. Each, - - -	2 00
<i>Rumpun</i>	2056	Quartz Wedge Compensator , mounted on glass plate, 55 x 14 mm. Each, - -	6 00
<i>Rumbad</i>	2060	Gypsum Plate , red of the first order, 12 mm. diameter, unmounted. Each, - - -	2 00

Prisms

Prisms, Equilateral, accurately ground and polished.

CROWN GLASS.				LIGHT FLINT GLASS.			
Telegraphic Code.	Catalogue Number and Letter.	Size, mm.	Price.	Telegraphic Code.	Catalogue Number and Letter.	Size, mm.	Price.
<i>Rumrey</i>	2062	a 18 x 36	\$4 00	<i>Rumrex</i>	2064	a 18 x 36	\$4 00
		b 25 x 50	5 00			b 25 x 50	5 00
		c 32 x 64	6 50			c 32 x 64	6 50
		d 38 x 76	8 00			d 38 x 76	8 00
		e 45 x 90	11 00			e 45 x 90	11 00
		f 50 x 100	14 50			f 50 x 100	14 50
		g 62 x 124	19 00			g 62 x 124	19 00

HEAVY FLINT GLASS.

Telegraphic Code.	Catalogue Number and Letter.	Size, mm.	Price.
<i>Rumrez</i>	2066	a 18 x 36	\$ 8 00
		b 25 x 50	10 00
		c 32 x 64	13 00
		d 38 x 76	16 00
		e 45 x 90	22 00
		f 50 x 100	29 00
		g 62 x 124	38 00

Prisms, Rectangular, accurately ground and polished.

CROWN GLASS.				LIGHT FLINT GLASS.			
Telegraphic Code.	Catalogue Number and Letter.	Width, mm.	Price.	Telegraphic Code.	Catalogue Number and Letter.	Width, mm.	Price.
<i>Rumsex</i>	2072	a 6	\$2 00	<i>Rumsey</i>	2074	a 6	\$2 00
		b 12	2 25			b 12	2 25
		c 18	2 50			c 18	2 50
		d 25	3 00			d 25	3 00
		e 32	4 00			e 32	4 00
		f 38	5 00			f 38	5 00
		g 44	6 00			g 44	6 00
		h 50	7 50			h 50	7 50
		i 62	10 00			i 62	10 00

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HEAVY FLINT GLASS.

Telegraphic Code.	Catalogue Number and Letter.	Width, mm.	Price.
<i>Rumsez</i>	2076 { a b c d e f g h l	6	\$4 00
		12	4 50
		18	5 00
		25	6 00
		32	8 00
		38	10 00
		44	12 00
		50	15 00
		62	20 00

Prisms, Nicol's.

DIAGONAL FACE.				SQUARE FACE, EXTRA WIDE FIELD.			
Telegraphic Code.	Catalogue Number and Letter.	Face, mm.	Price.	Telegraphic Code.	Catalogue Number and Letter.	Face, mm.	Price.
<i>Rumsay</i>	2068 { a b c d e f g h l	6		<i>Rumsev</i>	2070 { a b c d e f g h l	6	
		7				7	
		8				8	
		9				9	
		10				10	
		11				11	
		12				12	
		13				13	
		14				14	

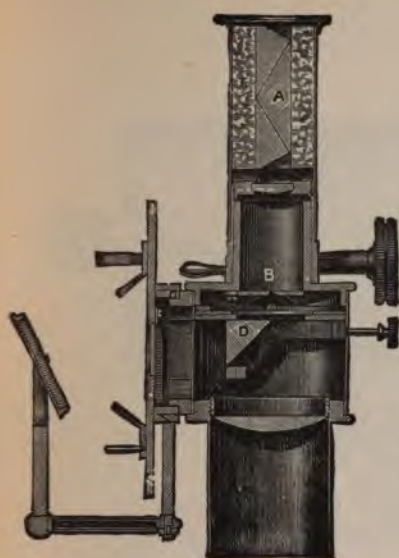
Owing to present condition of the market, we can only quote prices on Nicol's Prisms on application.

Rafter's Apparatus. Consists of a rectangular cell mounted on a slip, a graduated disc and a graduated 1 cc. pipette. It is designed for counting organisms in water (plankton).

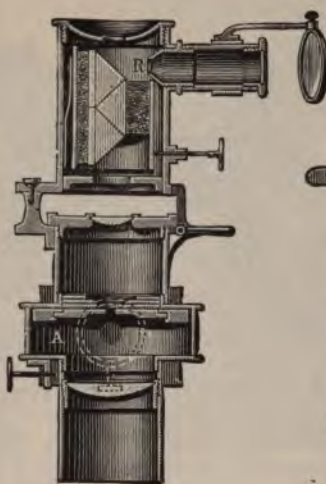
The graduated disc placed in the eyepiece enables the number of organisms appearing within the square millimeter rulings to be counted. A $\frac{2}{3}$ -inch objective and 1-inch eyepiece are recommended for use with this apparatus.

Telegraphic Code.	Catalogue Number.	Price.
<i>Rumtad</i>	2090 Complete with three covers for cell,	\$5 00

Spectroscopic Eyepieces. These eyepieces are designed for the examination of absorption bands produced by colored solids or fluids, and for the analysis of the spectra of very minute quantities of these substances by comparison with a solar or other known spectrum. They are fitted to the draw tube in place of the ordinary eyepiece; the object to be examined being placed on the stage in the ordinary manner. For the comparative method the stages on the eyepieces are used for holding known substances in vials or on slips of glass.



No. 2098.



No. 2100.



Section of No. 2100, showing slit mechanism.

The examination of the absorption bands is effected by a slit-mechanism, adjustable in length and breadth, and an Amici prism; for the comparison of an object's spectrum with that of the solar spectrum or that of a known substance a second source of light for the latter is employed, namely, that obtained by reflection from a small mirror placed at the side of the eyepiece. Light from this mirror is reflected to the prism, forming a second spectrum alongside of that given by the object.

Advantages in the Abbe construction over the Sorby-Browning form are, in the control of the slit-mechanism, the mounting of the Amici prism on a swing out arm—giving free use of the eyepiece for focusing—and in the addition of an extra tube and mirror for the projection of an Angström scale of wave lengths upon the image of the spectrum.

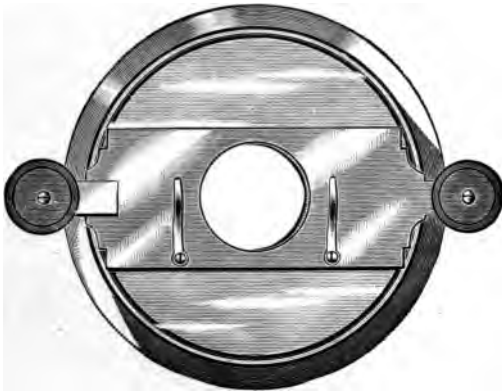
Improvements in the Sorby-Browning form, consisting of greater stage facilities and more convenient location of focusing and adjusting screws, have been introduced since the engraving of the above figures.

Lithographic scales for recording observations, and vials for holding comparison fluids, are supplied with the Abbe micro-spectroscope.

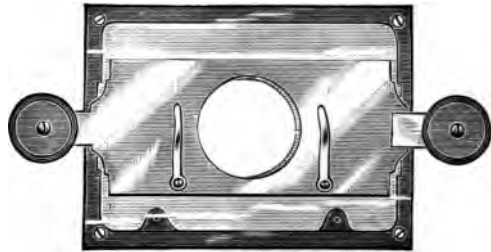
In ordering, please give the name of stand, and inside and outside diameters of draw tube with which the eyepiece is to be used.

Telegraphic Code.	Catalogue Number.		Price.
<i>Rumule</i>	2098	Sorby-Browning spectroscopic eyepiece, in case; each, - - - - -	\$50 00
<i>Rumulator</i>	2100	Abbe spectroscopic eyepiece, in case; each, -	76 00

Stages



No. 2110.



No. 2112.

Stages, Attachable Glass. A glass plate, mounted in a metal frame to fit on or over the microscope stage, supports a movable slide carrier supported on metal points so as to give the greatest steadiness and delicacy of motion during rapid search work. The metal carrier is grasped by the vulcanite discs at either end.

Telegraphic Code.	Catalogue Number.		Price.
<i>Rumup</i>	2110	Circular Stage. This stage is attachable to stands F and J; each, - - - - -	\$5 00
<i>Rumuqi</i>	2112	Rectangular Stage. For BB and BC stands, attached by pins fitting into spring-clip holes; each, - - - - -	5 00

Stage, Attachable Mechanical. (New construction.) The greatest difficulties encountered in making mechanical stages have not been in producing a stage perfect when it leaves the factory, but rather one which will retain its delicate adjustment after a period of wear.

In this Attachable Mechanical Stage (patented), we feel confident of having overcome the difficulties in a very simple and effective manner, and have placed the price at such a figure as to bring this extremely valuable accessory within the reach of all. Every microscope for individual use should be equipped with one of these stages, as they are both durable and inexpensive. The stage is attachable to any, except the very smallest of the Continental Stands.* Any one may easily apply it to the microscope by simply following directions accompanying it. When ordered with the microscope the stage is arranged so that it may be removed, and replaced in exactly the same position. All of our microscopes are now made with slot for this stage.

The rectangular movements are both by rack and pinion, as all the efforts which have been made by various manufacturers to produce a perfect worm-screw movement have been unsuccessful. The rack and pinion is preferable, it being perfectly reliable as to wearing qualities; is more sensitive than the screw, and gives equal speed to both movements. Millimeter graduations with verniers are attached to both movements. The object carrier is so arranged that the slide rests upon the surface of the microscope stage and may be used in immersion contact with the condenser if desired.

The stop against which the slide rests is adjustable, permitting the use of

*When ordering this stage for microscopes other than our make, kindly state: a , distance from center of arm to center of stage; b , distance from top of stage to bottom of arm washer; c , height of arm washer; d , diameter of arm washer; e , diameter of arm. If for one of our older instruments, give serial number of the instrument.

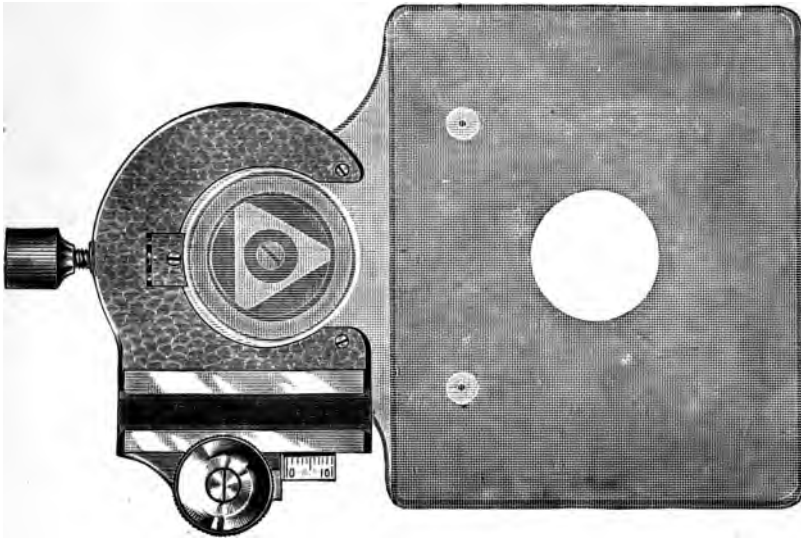


Figure three-fourths actual size.

No. 2114, showing how object carrier may be detached and leave the stage free.

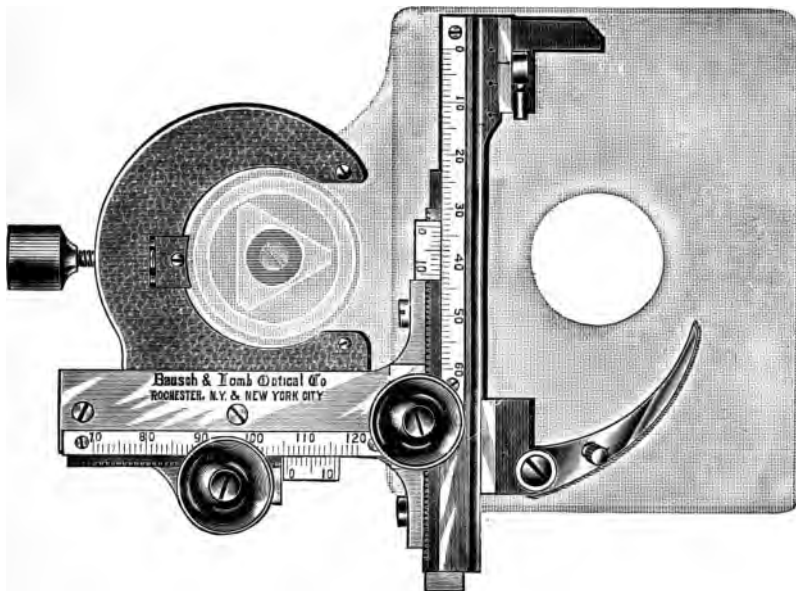


Figure three-fourths actual size.

No. 2114, as applied to Microscope.

slides of various sizes. The object carrier has an extraordinary range, the movements being 35 and 60 mm. respectively.

The Stage is held in place on the microscope by a solid metal clamp, open at one side, which slips upon the base-washer of the arm of the microscope in such a manner that the simple tightening of the thumb screw at the back locks it immovably. The clamping device may be left attached to the microscope permanently and the object carrier removed by simply racking it out of the slide. This feature is of great value, as the Mechanical Stage is

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necessary for search work, counting, etc., while an unobstructed stage is required when examining bacterial cultures in culture dishes, using watch glasses on the stage of the microscope, etc.

Telegraphic Code.	Catalogue Number.		Price.
<i>Rumuro</i>	2114	Attachable Mechanical Stage, in velvet-lined Morocco case, - - - - -	\$18 00
<i>Rumusa</i>	2120	Syringe, Hypodermic. Glass barrel with metal shield; capacity 25 cc.; graduated plunger; finger, rest attachment; two needles, cleaners and vial; in case, complete, - - - - -	1 50
<i>Rumusyo</i>	2122	Extra Needles; each, - - - - -	10
<i>Rumute</i>	2124	Syringe, Injecting. Of metal, nicked; capacity 20 cc.; detachable stop-cock, and four canulas having parallel sides and with ligature catch; in case, complete, - - - - -	8 00
<i>Rumutor</i>	2126	Syringe, Injecting. Barrel of glass, capacity 40 cc.; in metal frame; plunger graduated to half cubic centimeters; two-way stop-cock; three sizes of needles, and a trocar with cleaners; in leather case, complete, - - - - -	4 50



No. 2128.

<i>Rumnox</i>	2128	Syringe, Injecting —For the injection of large quantities of reagents. Barrel of metal; double packed plunger; automatic two way cock at nozzle; attachment with two stop-cocks for bottle; three needles and a trocar. Corrosive fluids may be used without injury, as fluid does not enter the syringe barrel. The bottle containing the injecting fluid may be placed in a water-bath during the process of injecting. Complete, - - -	12 00
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Thermo-regulator, Dunham. This thermo-regulator is extremely sensitive and simple in its regulation. The expansion or contraction of a sensitive fluid contained in it raises or lowers a column of mercury which in turn

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

regulates the flow of gas passing through it. Regulation to 0.1 degree by lowering or raising the gas-tube in arm is easily obtained.

Telegraphic Code.	Catalogue Number.		Price.
<i>Runcad</i>	2150	Glass parts only, - - - - -	\$2 00
<i>Runcue</i>	2152	Complete, with fluid and mercury, - - - - -	3 50



No. 2154.

<i>Runrei</i>	2154	Thermo-regulator, Reichert. Mercury is the expanding medium in this thermo-regulator, the column being adjustable by a set screw; each,	2 00
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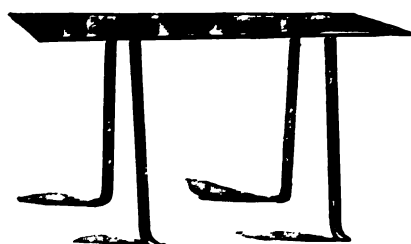
Turn Tables. For ringing mounts and making cells. The slip is held on a revolving disc; the application of varnish or cement is accurately made by a brush held above, the hand resting either upon the stationary portion of table or on the hand-rest. Circles engraved in the center assist in centering the slide.

<i>Runter</i>	2162	With slide clips for holding down slips. Diameter of turn table, 88 mm; each, - - - - -	2 50
<i>Runtus</i>	2164	With three centering pins against which the edges of the slides are placed to bring the slip to the central position. Diameter of turn table, 88 mm.; with detachable hand-rests; each, - - - - -	3 50



No. 2166.

<i>Runtot</i>	2166	With self-centering device. Two stationary pins guide the end of the slip, and two adjustable ones clamp the sides. The latter are actuated by pressure on a sliding collar underneath. Diameter of turn-table, 98 mm. With detachable hand-rests, - - - - -	6 00
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No. 2168.

Telegraphic
Code.

Catalogue
Number.

Runwar

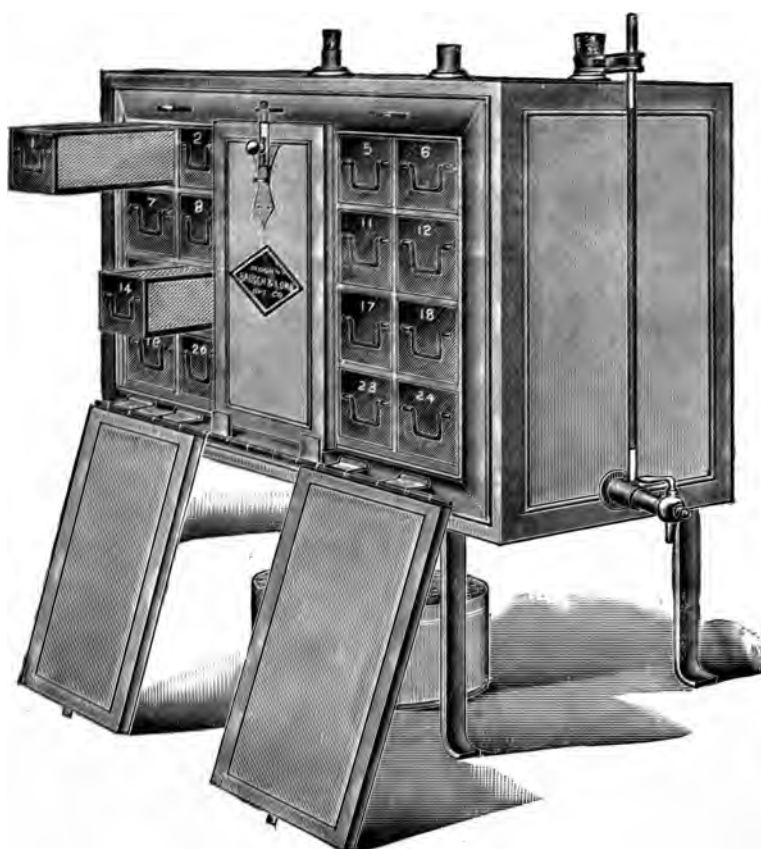
2168

Price.

Warming Table, Huber's. For fixing blood preparations to be stained by the Ehrlich method and other heating or drying purposes. Top is of copper with rounded edges; the legs are movable. Height, 20 cm.; top, 39 cm. long; 10 cm. wide; each, - - - - -

\$ 80

Water Baths

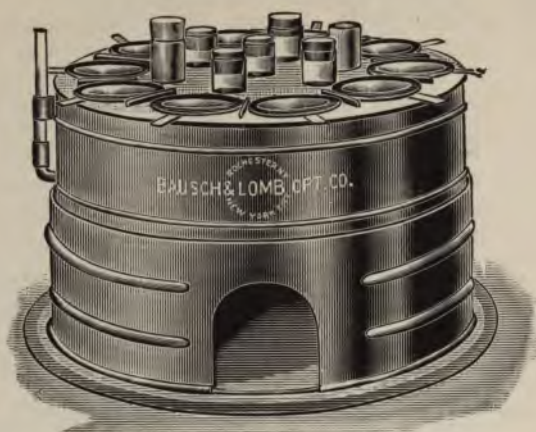


No. 2180 c.

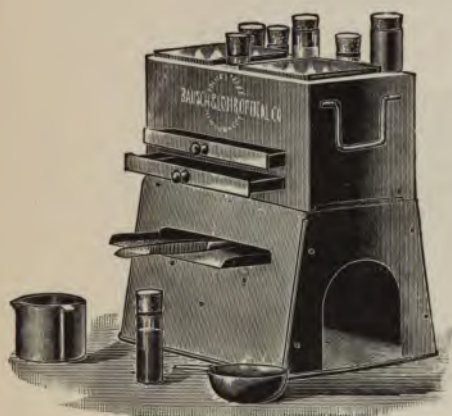
BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Telegraphic Code.	Catalogue Number.		Price.																
<i>Rutar</i>	2180	Water Bath, Lillie's. This bath differs from others in the arrangement of imbedding trays: a series of drawers permits its use by a large number of workers, each of whom may thus have a separate compartment. It is made of copper throughout, covered with non-conducting, water-proof material and supported on a closed base (not according to figure), with an intervening false bottom of sheet-iron. The trays are made with copper front and bottom and with perforated zinc sides and back to secure free circulation of the warmed air. The space within each is divided by cross partitions. The trays run on slides, and are thus free from lateral support, which permits a sufficient circulation of heated air to secure uniform temperature over the top and bottom of the contents of the trays. Each tray is numbered and has a drop handle. The water bath is closed by means of three doors, hinged at the bottom, each exposing two tiers of trays. Water-gauge with emptying stop-cock and one for closing in case of accident to gauge. Tubulations for thermometer and thermo-regulator. Three sizes, of 8, 16 and 24 trays, are offered. Trays: 25 cm. long; 10 cm. wide; 8 cm. deep. The three sizes have the same inside dimensions for height and depth, <i>i. e.</i>, they are 36 cm. high and 27 cm. deep. Price includes thermometer, thermo-regulator and burner. <table> <tr> <td></td><td>A</td><td>B</td><td>C</td></tr> <tr> <td>Number of tiers, - - -</td><td>2</td><td>4</td><td>6</td></tr> <tr> <td>Number of trays, - - -</td><td>8</td><td>16</td><td>24</td></tr> <tr> <td>Width (inside dimen.) cm.,</td><td>23</td><td>46</td><td>67</td></tr> </table> Complete, as above, - \$65 00 82 00 100 00		A	B	C	Number of tiers, - - -	2	4	6	Number of trays, - - -	8	16	24	Width (inside dimen.) cm.,	23	46	67	
	A	B	C																
Number of tiers, - - -	2	4	6																
Number of trays, - - -	8	16	24																
Width (inside dimen.) cm.,	23	46	67																
<i>Rutil</i>	2182	Oil-Heater for Lillie's Water Bath. Sufficient oil to last several days is held by the reservoir of this heater, which has a large burner with metal chimney and a perforated false top forming a safety air chamber above the reservoir and preventing it overheating. The reservoir is made of heavy copper. This heater will maintain a uniform temperature and is suitable for use when the most delicate imbedding is to be done; each,	7 50																
<i>Rutlab</i>	2184	Water Bath, Laboratory. Adapted for large amount of imbedding and infiltration at the same time. Ten large cups: seven deep, three shallow. Five large glass vials. Made entirely of copper with false bottom of sheet iron. Closed sheet-iron base. Water-gauge; tubulations for thermometer and thermo-regulator. Water chamber 31.5 cm. diameter, 9 cm. deep. Complete, with thermometer, thermo-regulator, burner, and asbestos mat, - - - - -	20 00																

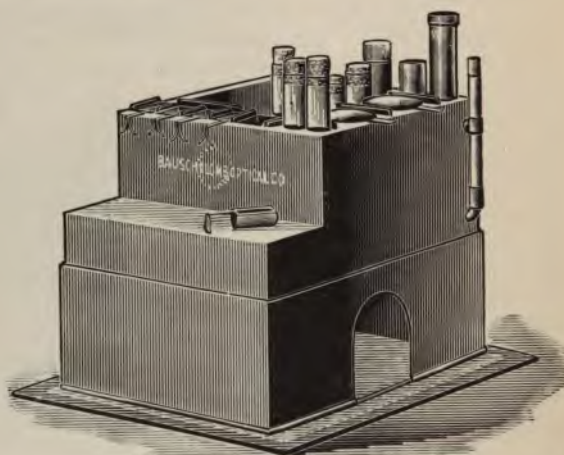
BRANCHES: NEW YORK CITY AND CHICAGO.



No. 2184.



No. 2186.



No. 2188.

Telegraphic Code.	Catalogue Number.
<i>Rutmel</i>	2186

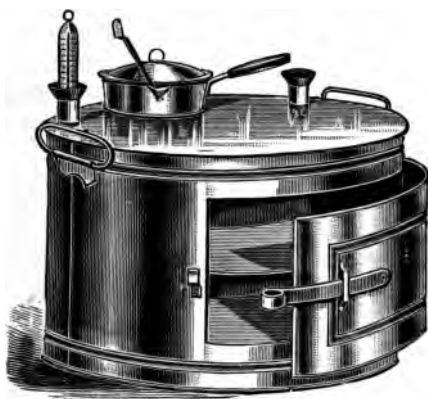
Water Bath, Miller's. Two trays in water-chamber for warming slides and watch-glass imbedding. Each tray holds six slides. Shelf for warming forceps and other instruments over flame. Made of copper throughout, supported on a closed sheet-iron base. Large, deep and shallow imbedding cups with glass covers. Five glass vials of two sizes. Tubulations for thermometer and thermo-regulator. Water chamber 20 cm. long, 10 cm. wide, 10 cm. deep. Complete, with thermometer, thermo-regulator, burner and asbestos mat, - - - - -

Price.

\$15 00

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Telegraphic Code.	Catalogue Number.		Price.
<i>Rutnap</i>	2188	Water Bath, Naples. Arranged for paraffine imbedding, infiltration, digestion experiments, etc. Made entirely of copper. Five semi-cylindrical imbedding pans with supporting handles. One deep and one shallow stock paraffine cup with glass cover. Six glass vials. Large chamber for watch-glass imbedding with tubulation for thermometer and a glass cover. Water-gauge, tubulations for thermo-regulator and thermometer. Sheet-iron closed base. False bottom between copper bottom of water chamber and flame of burner. Water chamber 23 cm. long, 29 cm. wide, and 13 cm. deep. Imbedding chamber 14 cm. long, 10 cm. wide, and 7.5 cm. deep. Complete, with thermometer, thermo-regulator, burner and asbestos mat, - - - - -	\$25 00



No. 2190.

<i>Rutrev</i>	2190	Water Bath and Oven, Reeve's. Combines the features of a water-bath and an oven. Water chamber entirely surrounds drying chamber. Very deep imbedding pan of cone-shape with cover and wooden handle. Tubulations for thermo-regulator and thermometer. Made of copper throughout; enclosed sheet-iron base (not illustrated); removable shelf in drying chamber; long-handled object lifter. Outside dimensions: diameter, 26.5 cm., length, 22 cm. Chamber, 17 plete with thermometer, thermo-regulator, burner and asbestos mat, - - - - -	15 00
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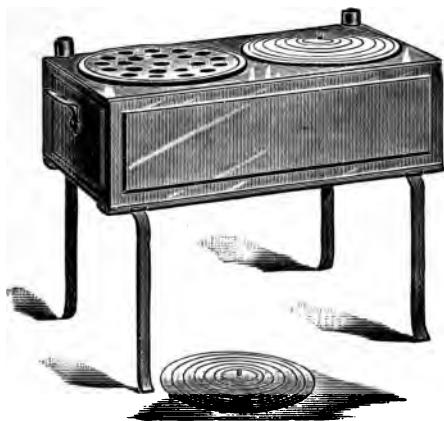
No. 2192.

Telegraphic
Code.
Rutim

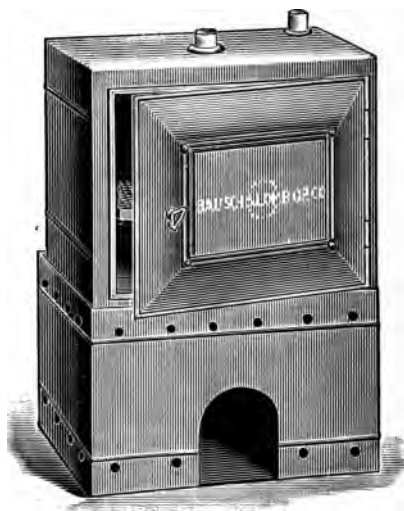
Catalogue
Number.
2192

Price.

Water Bath, Simple form. A convenient sized apparatus for individual use. Two cups, one deep and one shallow; three vials; shelf for warming instruments. Made entirely of copper, with sheet-iron false bottom supported on a closed base of sheet-iron. Tubulations for thermo-regulator and thermometer. Base, 20 cm. high. Complete with thermometer, thermo-regulator, burner and asbestos mat, - - - - - \$10 00



No. 2194.



No. 2196.

Ruttiv

2194

Water Bath, Novy's. Rectangular in shape, with perforated disc and concentric rings. Of polished copper, tin lined. Closed base (not illustrated). Each, - - - - - 10 00

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Telegraphic Code.	Catalogue Number.		Price.
<i>Ruvov</i>	2196	Drying Oven, Water Bath. Of heavy copper throughout with an extra sheet-iron bottom to prevent burning out. Tubulations for thermometers and thermo-regulator. One shelf. Large door. Closed base. Inside dimensions of chamber, 25 x 30 cm. Complete with thermometer, thermo-regulator, burner and asbestos mat,	\$15 00
<i>Ruvode</i>	2198	Drying Oven, Water Bath, with rings. This bath is the same as above, but with the addition of facilities for supporting flasks, cup, etc., in top; as in a small water bath. The rings are of different sizes to accommodate various sizes of flasks. Complete with thermometer, thermo-regulator, burner and asbestos mat,	18 00



No. 10296.



No. 8048.

<i>Ruvopu</i>	10296	Water Bath, polished copper, tin lined, with concentric copper rings, cover, steam escape and extra plate perforated to receive test-tubes.			
			A	B	C
		Diam. mm., - - -	125	150	200
		Number of rings, - - -	4	5	6
		Each, - - -	\$1 25	1 75	2 50
<i>Ruvorn</i>	8048	Water Bath, enameled iron, with copper rings.			
			B	C	D
		Diameter, mm., - - -	165	200	225
		Each, - - -	\$2 50	3 00	3 50
<i>Ruvost</i>	2200	Water Level Constant, fitted to any of the above, extra, - - -	-	-	1 00
<i>Vemlog</i>	10282	Water Bath Tripods.			
			A	B	
		Diameter, mm., - - -	150	200	
		Number of rings, - - -	3	5	
		Each, - - -	\$ 50	65	

MICROSCOPIC OBJECTS



IN revising this list and classifying the subjects represented, we have been guided altogether by the demand of past years, and only enumerate such preparations as are most generally required by the teacher or student who has not the time to prepare them himself. We have arranged with reliable and, in their line of study, representative workers to prepare these objects for us, and we offer only the very best obtainable. It shall be our endeavor to carry as complete a stock as possible, though we cannot guarantee to have it always complete on account of the impossibility at times of obtaining the proper material for the preparations. It is therefore desirable to include a list of duplicate objects which may be sent as second choice in case those first mentioned are not in stock. When an order is not filled complete it may be taken for granted that the slides omitted are not obtainable. It will give us pleasure to send out a reasonable number of objects for examination and selection to any person, those unknown to us giving good references, with the understanding that the cost of transportation and loss by breakage be borne by the purchaser.

All subjects classified are considered typical slides in their respective series. Purchasers will find it more convenient to order slides by their catalogue number and serial letters only.

Comparative Histology

A Quality

Double stained, unless otherwise stated.

Complete Set : Telegraphic Code, *Ryao*.

Catalogue Number, 2300.

Complete set of 34 objects in case, \$20.00.

Each, 60 cents.

To order all the slides from one animal, by telegraph, use the code word opposite; for individual slides use the same word with letters denoting the specimens desired added. When ordering by mail affix letter to catalogue number of series, thus: Ear of Cat by telegraph would be *Ryacath*, and by mail 2300 *h*, and all the slides of Cat would be *Ryacat* or 2300 *e* to *ae* inclusive.

Ryaar—Amphiuma.

- a* Kidney. Shows most marked types of epithelium.
- b* Liver.
- c* Testicle, spermatozoa in situ. Of interest by reason of the extraordinary size of cell structure.

Ryabes—Calf.

- d* Lymphatic gland. Shows lymph spaces and corpuscles, trabeculae, etc.

Ryacat—Cat.

- e* Bladder. Shows mucus and muscular coats.
- f* Colon. Shows mucus and muscular coats.
- g* Duodenum. Shows three coats complete. (Injected.)
- h* Ear. Shows skin and appendages. (Young animal.)
- l* Heart. Exhibits cardiac muscle, striations, etc.
- m* Kidney. Interior section showing cortex, medulla, tubular and vascular arrangements. (Carmine injection.)
- o* Lip. Shows cutaneous border and mucus membrane, etc. (Injected.)
- p* Liver. (Carmine injection in portal vein, hæm. staining.)
- r* Lung. Shows alveolar structure, endothelial lining, bronchi, etc.
- s* Muscle. (A teased preparation, injected.)
- t* Pancreas. Shows gland cells, ducts, and acini.
- u* Ovary. Shows Graafian follicles in all stages of development. (Injected. Young animal.)
- aa* Skin. Shows epidermis and corium with glands, hairs, etc.

- ab* Spleen. Shows corpuscles, trabeculae.
- ac* Stomach. Shows mucosa, muscular, and serous layers. (Injected.)
- ad* Tongue. Shows muscle in all directions, epithelial border, papillae, etc. (Injected.)
- ae* Uterus. Shows mucosa and muscle.

Ryady—Dog.

- af* Oesophagus. Shows mucus, submucosa, muscular, and serous coats.
- ag* Thymus gland. Shows lobules and adenoid tissue.
- ah* Thyroid glands. Shows aveoli, colloid material, areolar tissue, etc.
- al* Trachea. Shows mucosa with cilia, cartilaginous rings, glands, and fibrous tissues.

Ryafon—Monkey.

- am* Liver. Shows lobules and interlobular structures.
- ao* Lung.

Ryagid—Pig.

- ap* Liver. Shows lobules and interlobular tissues.

Ryahab—Rabbit.

- ap* Kidney. Entire section through the organ.
- ar* Liver. Shows lobulations, central veins, and gland cells.
- as* Pancreas and Spleen. (Injected.)
- at* Spleen. Shows parenchyma, Malpighian corpuscles.
- au* Testicle. Shows spermatozoa and spermatogenesis.
- ax* Tongue. Shows muscular structure, epithelium and mucus border.

B Quality

Telegraphic Code, *Ryai*.

Catalogue Number, 2302.

Each, 30 cents.

*Ryai*f—Calf.

- a* Artery.
- b* Ear.
- c* Kidney.
- d* Lung.
- e* Retina.
- f* Spinal cord.
- g* Stomach.
- h* Vein.

Ryajat—Cat.

- l* Blood.

m Duodenum.

- o* Foot.
- p* Ileum.
- r* Kidney.
- s* Lip.
- t* Liver.
- u* Lung.
- aa* Nose.
- ab* Pancreas.
- ac* Spleen.
- ad* Stomach.
- ae* Tongue.

Dog.

- af* Blood.
- Fish.*
- ag* Blood.
- Fowl.*
- ah* Blood.
- Frog.*
- al* Blood.
- Lizard.*
- am* Stomach and other organs in situ.

Ryapr—Rabbit

- ao* Brain.
- ap* Duodenum.
- ar* Ear.
- as* Foot.
- at* Ileum.
- au* Kidney.
- bb* Lip.
- bc* Liver.
- bd* Lung.
- be* Medulla.
- bf* Nose.

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Comparative Histology—B Quality—(Continued)

Ryapr—Rabbit.
(Continued)

bg Pancreas.
bh Spinal cord.
bl Stomach.

Ryaqt—Rat.

bm Duodenum.
bo Foot.
bp Ileum.
br Jaw.
bs Kidney.

bt Lip.

bu Lung.
cc Nose.
cd Pancreas.
ce Stomach.
cf Tongue.

Ryark—Snake.

cg Blood.
ch Brain.
cl Kidney.
cm Intestine.
co Stomach.

Human Histology

A Quality

Stained as indicated (d. s.—double stained; s. s.—single stained).

Complete Set: Telegraphic Code, *Ryash*.

Catalogue Number, 2306.

Complete set of 68 objects in cabinet, \$40.00.

Each, 60 cents.

Artery.

a Transverse section, showing the three coats. d. s.

Bone.

bd Development.
bl Longitudinal section.
bt Transverse section.

Cartilage (hyaline).

ca Showing intercellular matrix and cartilage cells.

Cerebellum.

cm Showing gray and white matter, nerve cells and fibres, cells of Purkinje. s. s.
cp Showing cortical and medullary parts. s. s.

Crystalline lens.

cy Showing capsule and lens-fibres.

Finger (fœtus).

f Showing nail, muscular and cartilaginous tissue. s.

Heart.

h Showing cardiac cells, striations, etc. d. s.

Intestine.

il Large, showing mucosa and muscular layers. d. s.
is Small, showing mucosa and muscular layers. d. s.

Kidney.

kc Cortical part, showing glomerulæ and Bowman's capsule, convolute and irregular, and collecting tubules. d. s.
km Medullary part, showing straight vessels, Henle's tubes and loop. d. s.
kt Infant's. Entire section through long axis. d. s.

Liver.

le Double stained, hæm. and eosin.
lh Single stained, hæm. and eosin.
ln Injected from portal vein, showing inter- and intra-lobular and central veins. d. s.

Lung.

lo Showing bronchi, bronchiolus, mucosa, etc. d. s.
lp Showing cells and structure of the alveolar walls. d. s.
lr Injected and double stained.

Lymph Gland.

ls Showing lymph tissue, corpuscles and fibrous corpuscles. d. s.

Mammary gland.

ma Showing ducts and acini, epithelium and inter-acinous connective tissue. d. s.

Membrane, mucus.

mb From bladder, showing transitional epithelium. d. s.
mc From œsophagus and trachea, showing differences in the mucosa.

Membrane, serous.

me From omentum, inter-cellular space. Stained with nitrate of silver.

Muscle, voluntary—teased preparations.

mf Showing striæ, primitive fibrillæ, etc. d. s.
mg Showing capillary supply, striæ, primitive fibrillæ, etc. (Stained and injected.)

Muscle, voluntary.

ml Longitudinal section. (Stained and injected.)
mt Transverse section, showing fasciculi, endomysium, and perimysium. Stained and injected.

Muscle, involuntary.

mu Teased preparation, showing spindle cell fibres and nuclei.
my Longitudinal section, from wall of stomach.

Nerve cells.

ns Smear preparation, showing various forms of multipolar cells. Methyl-blue stained.

Nerve fibres.

nt Teased preparation, showing axis cylinder, substance of Schwann, neurilemma, etc. d. s.

Nipple.

nv Showing ducts, stroma and cutaneous border. d. s.

Œsophagus.

oa Showing mucus membrane and muscular coat.

Optic nerve.

ob Transverse section, showing bundle of nerve fibres separated by fibrous tissue. d. s.
oc Longitudinal section. d. s.

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Human Histology—A Quality—(Continued)

Ovary.

- od* Transverse section, showing stroma and follicles. d. s.
- of* Exhibiting same as preceding, and showing also corpus luteum.

Pancreas.

- pa* Showing acini and ducts.

Pylorus and duodenum.

- pl* Longitudinal section through both, showing gastric and intestinal mucus membranes, muscle, etc. d. s.

Scalp.

- sf* Negro; showing pigmentary layers, superficial and deep layers, hair, hair follicles, sebaceous and sweat glands, erector pili muscle, hair bulb, etc.
- sd* White; same as above (except pigmentary layers).

Skin.

- sf* Negro; from abdomen, showing epidermis and corium, and pigmentary layer. d. s.
- sg* White; from leg showing epidermis and corium. d. s.

Spinal cord, cervical region.

- sh* Entire transverse section, showing gray and white matter, fissures, anterior and posterior horns and roots, central canal, etc. d. s.
- sl* Longitudinal section, showing medullary nerve fiber in long axis. d. s.

Spleen.

- sm* Showing trabeculae and Malpighian corpuscles. d. s.

Stomach.

- sp* Cardiac portion, showing mucosa, peptic glands, circular and longitudinal muscles, and serous coat. d. s.
- sr* Pyloric portion, showing the same as above.

Supra-renal capsule.

- su* Showing cortex and medulla, and medullary cells.

Testicle.

- te* Transverse and longitudinal sections, showing tunics, seminiferous ducts, and inter-tubular connective tissue. d. s.

Thymus gland.

- tf* Showing follicles and fibrous septa.

Thyroid gland.

- th* Showing acini with colloid section, and interlobular connective tissue. d. s.

Tissues.

- tl* Adipose, showing connective tissue, envelope, cell body, and nucleus. d. s.
- to* Adipose. Injected and stained.
- tp* Connective, embryonic; from thirty-day-old embryo. Stained.
- tr* Connective, embryonic. d. s.
- ts* Connective cells, from umbilical cord.
- tt* White fibrous. Teased and stained.
- tu* Yellow elastic from aorta. Teased and stained.

Tongue.

- tw* Showing mucosa, and muscular structure.

Tooth.

- tx* Longitudinal section. Each, \$1.00.
- ty* Transverse section. Each, \$1.00.

Uterus.

- u* Showing mucosa and involuntary muscle fibres. d. s.

Vagina.

- va* Showing mucosa, muscular and fibrous tissue. d. s.

Vein.

- ve* Transverse section, showing the three coats. d. s.

B Quality

Telegraphic Code, *Ryatgy*.

Catalogue Number, 2308.

Each, 30 cents.

<i>bd</i> Blood.	<i>ch</i> Chin.	<i>f</i> Finger.	<i>lg</i> Lung.	<i>sk</i> Skin.
<i>bo</i> Bone.	<i>e</i> Ear.	<i>k</i> Kidney.	<i>n</i> Nose.	<i>sp</i> Spinal cord.
<i>br</i> Brain.	<i>ey</i> Eye-lid.	<i>lo</i> Liver.	<i>sa</i> Scalp.	

Blood

A Quality

Double stained.

Telegraphic Code, *Ryave*.

Catalogue Number, 2310.

Each, 60 cents.

<i>a</i> Amphiuma (unstained).	<i>g</i> Goldfish.	<i>p</i> Pigeon.
<i>b</i> Bird.	<i>ha</i> Human, anæmia.	<i>ne</i> Necturus.
<i>c</i> Chicken.	<i>hl</i> Human, leukæmia.	<i>nw</i> Newt.
<i>f</i> Frog.		

B Quality

Telegraphic Code, *Ryax*.

Catalogue Number, 2312.

Each, 30 cents.

<i>c</i> Cat.	<i>fi</i> Fish.	<i>fr</i> Frog.	<i>o</i> Ox.
<i>d</i> Dog.	<i>fo</i> Fowl.	<i>h</i> Human.	<i>s</i> Snake.

BRANCHES: NEW YORK CITY AND CHICAGO.

Normal Nervous System—Human

Complete Set—A Quality

Telegraphic Code, *Ryban*.

Catalogue Number, 2320.

Cerebellum.

<i>ca</i>	Nissl stain, - - -	\$2.50
<i>cb</i>	Picro-acid-fuchsin stain, -	1.25

Cerebral cortex.

<i>cg</i>	Golgi stain, - - -	5.00
<i>cn</i>	Nissl stain, - - -	2.50
<i>cw</i>	Weigert staining, - - -	1.25

Medulla (Weigert Stain).

<i>ml</i>	Level of sixth and seventh nerves, - - -	5.00
<i>mo</i>	Olivary level, lower, - - -	2.50
<i>mp</i>	Olivary level, mid., - - -	2.50
<i>mq</i>	Olivary level, upper (through inferior cerebellar peduncles), -	3.75
<i>mr</i>	Pyramidal decussation, - - -	2.00
<i>ms</i>	Sensory decussation, lower, -	2.00
<i>mt</i>	Sensory decussation, upper, -	2.00

Mendullated nerve fibres.

<i>mu</i>	Picro-acid-fuchsin stain, -	\$2.00
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Pons.

<i>p</i>	Mid section through fifth nerve Weigert staining, - - -	5.00
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Spinal Cord.

<i>se</i>	Cervical enlargement. Picro-acid-fuchsin stain, - - -	1.25
<i>sf</i>	Cervical enlargement. Weigert stain, - - -	1.25
<i>sh</i>	Cervical, high. Weigert stain, -	1.25
<i>sl</i>	Lumbar. Weigert stain, - - -	1.25
<i>sm</i>	Mid-dorsal. Weigert stain, - -	1.25
<i>sr</i>	Sacral. Nissl stain, - - -	2.50
<i>sw</i>	Sacral. Weigert stain, - - -	1.25

Spinal Cord, Human Embryo.

<i>sx</i>	At term. Weigert staining, -	2.00
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Normal Nervous System—Human

Condensed Set—A Quality

Telegraphic Code, *Rybbo*.

Catalogue Number, 2322.

Cerebellum.

<i>cp</i>	Picro-acid-fuchsin stain, - - -	\$1.25
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Cerebral cortex.

<i>cw</i>	Weigert stain, - - -	1.25
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Medulla (Weigert stain).

<i>mp</i>	Olivary level, mid., - - -	2.50
<i>mr</i>	Pyramidal decussation, - - -	2.00
<i>ms</i>	Sensory decussation, - - -	2.00

Mendullated nerve fibre.

<i>mu</i>	Picro-acid-fuchsin stain, -	2.00
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Spinal Cord.

<i>se</i>	Cervical enlargement. Picro-acid-fuchsin stain, - - -	\$1.25
<i>sh</i>	Cervical high. Weigert stain, -	1.25
<i>sl</i>	Lumbar. Weigert stain, - - -	1.25
<i>sm</i>	Mid-dorsal. Weigert stain, - -	1.25
<i>sr</i>	Sacral. Nissl stain, - - -	2.50
<i>sw</i>	Sacral. Weigert stain, - - -	1.25

For a High School Course in Physiology

A Quality

Complete Set: Telegraphic Code, *Rybca*.

Catalogue Number, 2326.

Complete Set of 12 objects, in cloth-covered box, \$7.00.

Each, 60 cents.

<i>bd</i>	Blood of bird or frog. d. s.	<i>ms</i>	Muscle, striated. Shows striations and nuclei. Stained.
<i>bo</i>	Bone, transverse section showing lacunæ and canaliculi.	<i>sa</i>	Scalp, showing glands, hair shafts, etc. Double stained.
<i>h</i>	Hyaline cartilage, showing cells. Stained.	<i>sc</i>	Spinal cord of calf, showing multipolar nerve cells, axis cylinder, etc. Transverse stained.
<i>i</i>	Intestine, small. Transverse section from cat, showing blood vessels in villi and epithelium coating the villi. Injected and stained.	<i>st</i>	Stomach, showing cells and peptic glands. Stained.
<i>k</i>	Kidney, showing glomeruli and cells. Injected and stained.	<i>t</i>	Tooth, longitudinal section. Shows enamel, dentine and cementine. Each, \$1.00.
<i>l</i>	Liver, showing cells. Double stained.		
<i>mc</i>	Muscle, non-striated with cells separated and stained.		

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

For a High School Course in Physiology—(Continued)

B Quality

Telegraphic Code, *Rybdee*

Catalogue Number, 2328.

Complete Set of 24 objects, in cloth-covered box, \$6.75.

Each, 30 cents.

<i>a</i>	Artery and vein of ox. Transverse section.	<i>ms</i>	Muscle, striated. From the human tongue. Longitudinal and transverse section.
<i>bd</i>	Blood, human and reptile.	<i>nc</i>	Nerve cells, multipolar. Lumbar region of spinal cord.
<i>bo</i>	Bone (growing), human. Transverse section.	<i>nf</i>	Nerve fibres, medullated. From spinal cord.
<i>ce</i>	Cartilage, elastic. From ear of pig.	<i>r</i>	Retina. From sheep; various layers.
<i>ch</i>	Cartilage, hyaline. From a child.	<i>sk</i>	Skin. From armpit, showing sebaceous glands, etc.
<i>e</i>	Epithelium, columnar. Section of trachea.	<i>st</i>	Stomach of cat. Shows peptic glands.
<i>f</i>	Fibres, elastic. From the mesentery.	<i>te</i>	Tendon, ligamentum nuchæ. Transverse section.
<i>h</i>	Hair shafts and follicles. Section of scalp.	<i>ti</i>	Tissue, adipose. From cutis vera.
<i>i</i>	Ileum. Section Peyer's gland of cat.	<i>tp</i>	Tissue corpuscles, connective. From various localities.
<i>k</i>	Kidney. Transverse section.	<i>to</i>	Tongue, taste bulbs. From rabbit.
<i>lo</i>	Liver, human. Transverse section.		
<i>la</i>	Lung. Transverse section.		
<i>mo</i>	Medulla oblongata of cat.		
<i>mc</i>	Muscle, smooth. Human.		

For a High School Course in Physiology and Botany

Equipment recommended by the Regents of the University of the State of New York.

A Quality

Complete Set: Telegraphic Code, *Rybel*.

Catalogue Number, 2330.

Complete Set of 32 objects, in cabinet, \$18.25.

Each, 60 cents.

Animal.

<i>bl</i>	Bone. Longitudinal section.
<i>bt</i>	Bone. Transverse section.
<i>ca</i>	Cartilage.
<i>cm</i>	Cerebellum.
<i>cr</i>	Cerebrum.
<i>il</i>	Intestine, large.
<i>is</i>	Intestine, small.
<i>k</i>	Kidney.
<i>lo</i>	Liver.
<i>lg</i>	Lung.
<i>mc</i>	Muscle, smooth.
<i>ms</i>	Muscle, striated.
<i>n</i>	Nerve cells.
<i>sa</i>	Scalp. Showing roots of hair.
<i>sk</i>	Skin. Showing sweat glands.
<i>sp</i>	Spinal cord.
<i>st</i>	Stomach.
<i>t</i>	Tooth. \$1.00.

Plant.

<i>cf</i>	Cell formation by budding.
<i>cw</i>	Cell walls.
<i>cy</i>	Collenchyma.
<i>f</i>	Fibro-vascular system of endogen.
<i>mp</i>	Meristem, primary.
<i>pa</i>	Parenchyma.
<i>pi</i>	Pitted vessels of pine.
<i>pl</i>	Plant hairs, various kinds (on one slide).
<i>pm</i>	Pollen, morning glory.
<i>po</i>	Pollen, pine.
<i>pr</i>	Protoplasm and nucleus. Showing chromatin threads.
<i>sc</i>	Scarlariform vessels.
<i>se</i>	Seeds, portulaca.
<i>ti</i>	Tissue, fibrous. From bast, wood, etc.

General Morphology and Histology of Plant Structures

A Quality

Complete Set: Telegraphic Code, *Rycga*.

Catalogue Number, 2340.

Complete Set of 30 slides, in cabinet, \$17.75.

Each, 60 cents.

<i>a</i>	Cell structure, wall, nucleus and cytoplasm of May apple ovaries. Several sections.		Cell reproduction:
		<i>c</i>	By fission in <i>Pleurococcus</i> .
<i>b</i>	Vegetative propagation by budding in cells of yeast.	<i>d</i>	By karyokinesis in the <i>Tradescantia</i> root tips. Several sections.

BRANCHES: NEW YORK CITY AND CHICAGO.

General Morphology and Histology of Plant Structures — A Quality — (Continued)

<i>e</i>	Chloroplastids in leaf of moss. Several sections.	<i>gd</i>	Tracheides.
	Starch storage:		Growing point:
<i>f</i>	In tubers of Erythronium. Several sections.	<i>ge</i>	Root tip of <i>Pteris aquilina</i> . Serial sections of entire tip showing apical cells, etc.
<i>g</i>	In potato.	<i>gf</i>	<i>Chara fragilis</i> . Serial sections of entire tip showing apical cells.
<i>h</i>	Crystals (raphides) slime of <i>Tradescantia</i> .		Epidermis:
<i>l</i>	Cystoliths in the leaf of an India rubber plant (<i>Ficus elastica</i>). Several sections.	<i>gg</i>	Upper and lower of corn (<i>Zea mais</i>).
<i>m</i>	Prisms.	<i>gh</i>	And stomata of <i>Maranta</i> .
<i>o</i>	Parenchyma of the pith of elder.		Epidermal hairs:
<i>p</i>	Collenchyma from Petiole of <i>Begonia</i> .	<i>gl</i>	Branched hair of mullein.
<i>r</i>	Sclerenchyma.	<i>gm</i>	Shepherdia.
<i>s</i>	Wood fibers illustrated by cross and longitudinal sections of pinus.		Vascular Bundles:
<i>t</i>	Tissue, laticiferous.	<i>go</i>	In Monocotyledons (<i>Zea mais</i>).
<i>u</i>	Tissue, sieve. Longitudinal section of pumpkin stem.	<i>gp</i>	In Dicotyledons (<i>Rumex</i>).
	Vessels:		Transverse sections:
<i>ga</i>	Spiral.	<i>gr</i>	Pine needle.
<i>gb</i>	Scalariform.	<i>gs</i>	<i>Pteris</i> rhizome.
<i>gc</i>	Pitted.	<i>gt</i>	<i>Pteris</i> stipe.
		<i>gv</i>	Intercellular spaces in water plant stems.

Representative Forms of Different Plant Groups

A Quality

Telegraphic Code, *Rydr*.

Catalogue Number, 2342.

Each, 60 cents.

***Rydra*—Algæ.**

<i>aa</i>	<i>Oscillaria princeps</i> .
<i>ab</i>	<i>Pleurococcus</i> .
<i>ac</i>	<i>Chlorococcus</i> .
<i>ad</i>	<i>Desmids</i> , <i>Closterium</i> .
	Spirogyra:
<i>ae</i>	Nucleus, plastids and cytoplasm.
<i>af</i>	Conjugation and zygospores.
<i>ag</i>	Zygnema, conjugation and zygospores.
<i>ah</i>	<i>Vaucheria sessilis</i> ; oogonia, antheridia and oospores.
<i>al</i>	<i>Oedogonium nodosum</i> ; oogonia, antheridia and oospores.
<i>am</i>	<i>Ectocarpus littoralis</i> ; unilocular and plurilocular sporangia.

***Rydrf*—Fungi.**

<i>fa</i>	Myxomycetes, <i>Trichia varia</i> ; sporangia, spores and elaters.
<i>fb</i>	<i>Mucor stolonifera</i> ; sporangia and zygospores.
<i>fc</i>	<i>Peronospora</i> .
<i>fd</i>	<i>Peziza</i> ; ascus and ascospores.
	Puccinia (wheat rust):
<i>fe</i>	Uredospores (Summer).
<i>fg</i>	Teleutospores (Winter).
<i>fh</i>	Aecidia spores.
<i>fl</i>	<i>Corpinus comatus</i> ; gills, basidia and basidiospores.
<i>fm</i>	Lichen; <i>Physcia stellaris</i> .

***Rydrf*—Liverworts.**

<i>ll</i>	<i>Marchantia polymorpha</i> . Transverse sections thallus. (Serial.)
<i>lm</i>	<i>Marchantia polymorpha</i> , serial sections:
<i>lo</i>	with archegonia head;
<i>lp</i>	with antheridia head;
<i>lr</i>	with sporophyte head.
<i>ls</i>	Gemmæ.

***Rydrn*—Mosses.**

Funaria:

<i>mt</i>	Protonema with bulbils (buds).
<i>mu</i>	Leaf.
<i>mv</i>	Antheridia. (Serial sections.)
<i>mx</i>	Archegonia. (Serial sections.)
<i>my</i>	Capsule with spores. (Section.)

***Rydrn*—Felicineæ or "true ferns."**

***Pteris aquilina*:**

<i>na</i>	Germinating spores.
<i>nb</i>	Prothalli bearing antheridia. (Serial sections.)
<i>nc</i>	Prothalli bearing archegonia. (Serial sections.)
<i>nd</i>	Prothalli bearing young sporophyte.
<i>ne</i>	Leaf bearing sporangia and spores.
<i>nf</i>	Rhizome. (Transverse section.)
<i>ng</i>	Stipe. (Transverse section.)

***Rydrn*—Equisetineæ or "horse tails," "scouring rushes."**

***Equisetum arvense*:**

<i>oh</i>	Cone. (Longitudinal section).
<i>ol</i>	Spores and elaters.
<i>om</i>	Young gametophyte, whole.

***Rydrp*—Lycopodineæ, or "club mosses," "ground pines."**

Selaginella:

<i>pn</i>	Leaf bearing plastids, whole.
<i>po</i>	Microsporangia and microspores, whole.
<i>pr</i>	Megasporangia and megaspores, whole.
<i>ps</i>	Stem. (Transverse section.)

***Rydrp*—Gymnosperms, or "pines," etc.**

	Pine cone. (Several longitudinal sections):
<i>ra</i>	Staminate.
<i>rb</i>	Carpellate.

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Representative Forms of Different Plant Groups—A Quality—(Continued)

<i>Rydr</i>	Gymnosperms, or "pines," etc.	<i>sm</i>	Ovary, ovules and embryo sacs. (Serial transverse sections.)
	(Continued)		
	Pinus :		Trillium recurvatum :
<i>rd</i>	Pollen grain, microspore.	<i>so</i>	Ovary, ovules and embryo sacs. (Serial transverse sections.)
<i>re</i>	Carpel, showing ovule and embryo. (Several longitudinal sections.)	<i>sp</i>	Leaf. (Several transverse sections.)
<i>rf</i>	Wood. (Several longitudinal and transverse sections.)	<i>sr</i>	Rhizome in winter condition. (Sev- eral transverse sections.)
	Cycas revoluta :		Tulip :
<i>rg</i>	Wood. (Several transverse sections.)	<i>st</i>	Leaf. (Several transverse sections.)
	Araucaria braziliensis :	<i>su</i>	Ovary, ovules and embryo sacs. (Serial transverse sections.)
<i>rh</i>	Wood. (Several transverse sections.)		Capsella bursa-pastoris :
<i>Rydr</i>	Angiosperms.		Ovary, ovules and embryo sacs. (Serial transverse sections.)
	Lilium philadelphicum :		
<i>sl</i>	Anther with spores "pollen grains." (Transverse sections.)	<i>sx</i>	

Starches

A Quality

Telegraphic Code, *Ryeb*.

Catalogue Number, 2344.

Each, 60 cents.

<i>a</i>	Arrow root.	<i>p</i>	Potato.
<i>b</i>	Barley.	<i>r</i>	Rice.
<i>m</i>	Maize.	<i>w</i>	Wheat.

High School Botanical Set

B Quality

Complete Set: Telegraphic Code, *Ryfa*.

Catalogue Number, 2346.

Complete set 24 objects, in case, \$8.75.

Each, 30 cents.

<i>a</i>	Single cell; spores of <i>Osmunda</i> .	<i>p</i>	Starch grains in situ; root of tapioca plant.
<i>b</i>	Cell division; <i>Algæ</i> , <i>Spirogyra</i> .	<i>r</i>	Protein grains in situ; seed of <i>Ri-</i> <i>cinus</i> . (Section.)
<i>c</i>	Division into fourths; <i>Palmella</i> .		Exogen (sections):
<i>d</i>	Growth in all directions, <i>Parenchyma</i> ; stem of young oak, pith and wood.	<i>ga</i>	Perennial stem; stem of <i>Linden</i> .
<i>e</i>	<i>Prosenchyma</i> ; <i>Ficus elastica</i> . (Lon- gitudinal section.)	<i>gb</i>	Vine stem; <i>Ampelopsis</i> .
<i>f</i>	Bast tissue; <i>Abutilon</i> . (Longitudinal and transverse sections.)	<i>gc</i>	Medullary rays; stem of <i>Clematis</i> .
<i>g</i>	Spirals and annular vessels; <i>Ricinus</i> . (Longitudinal section.)	<i>gd</i>	Annual stem; <i>Burdock</i> .
<i>h</i>	Dotted ducts; white pine. (Longi- tudinal radial section.)	<i>ge</i>	Root, tropical; <i>Chondrodendron</i> .
<i>i</i>	Fibro-vascular bundles of <i>Endogens</i> ; <i>Indian corn</i> . (Longitudinal and transverse sections.)	<i>gf</i>	Petiole; <i>Aspen</i> sphaeraphides.
<i>m</i>	Epidermis and stomata; leaf of lily.	<i>gh</i>	Leaf; <i>Ficus</i> cystoliths.
<i>o</i>	<i>Chlorophyll</i> grains; leaf of moss.	<i>gl</i>	Ovary; <i>Tulip</i> tree.
			Endogen (sections):
		<i>no</i>	Reed stem; <i>Arundinaria</i> .
		<i>nr</i>	Rhizome; <i>Acorus</i> .
		<i>ns</i>	Ovary; <i>Lily</i> .

Plant Tissues

B Quality

Telegraphic Code, *Ryhe*.

Catalogue Number, 2348.

Each, 30 cents.

<i>Ryhee</i>	Epidermis with stomata.	<i>ee</i>	<i>Equisetum</i> .	<i>Ryhel</i>	Leaves (sections).
<i>ea</i>	<i>Aloe</i> .	<i>eg</i>	Grass.	<i>la</i>	<i>Aloe</i> .
<i>eb</i>	Apple.	<i>en</i>	<i>Indian corn</i> .	<i>ln</i>	<i>India rubber tree</i> .
<i>ed</i>	<i>Deutzia</i> .	<i>er</i>	<i>Iris</i> .	<i>lr</i>	<i>Iris</i> .
		<i>ey</i>	<i>Yucca</i> .	<i>ls</i>	<i>Lily</i> .
				<i>lt</i>	<i>Ricinus</i> .

BRANCHES: NEW YORK CITY AND CHICAGO.

Plant Tissues—B Quality—(Continued)

<i>Ryhep</i> —Pollen.	<i>sg</i> Gerardia.	<i>Ryhest</i> —Stems (sections).
<i>pa</i> Althea.	<i>sl</i> Lychnis.	<i>ub</i> Burdock.
<i>pc</i> Cobæa.	<i>so</i> Oxalis.	<i>uc</i> Cane.
<i>ph</i> Hibiscus.	<i>sm</i> Penstemon.	<i>ud</i> Clematis.
<i>pl</i> Mallow.	<i>sr</i> Portulaca.	<i>ue</i> Equisetum.
<i>pm</i> Morning glory.	<i>ss</i> Silene.	<i>uf</i> Fern.
<i>po</i> Oenothera.	<i>st</i> Stellaria.	<i>ul</i> Lily.
<i>pp</i> Passion flower.	<i>Ryhesp</i> —Spirals, dissected.	<i>uh</i> Mahogany.
<i>pr</i> Pine.	<i>tl</i> Lotus.	<i>up</i> Maple.
<i>Ryhese</i> —Seeds, opaque.	<i>tr</i> Ricinus.	<i>us</i> Sedge.
<i>sd</i> Drosera.	<i>ts</i> Spirals and scalariform ducts of Fern.	

Pathological Nervous System

A Quality

Complete Set: Telegraphic Code, *Rylm*. Catalogue Number, 2360.

Complete Set of 16 objects in cloth-covered box, \$7.25.

Each, 60 cents.

Alcoholism.	Eclampsia.	Rabies.
<i>ae</i> Cerebellar cortex.	<i>ec</i> Cerebellar cortex.	<i>rs</i> Spinal cord.
<i>ar</i> Cerebral cortex.	Meningitis, cerebral.	Sclerosis.
Ataxia, locomotor.	<i>mc</i> Cerebral cortex.	<i>sa</i> Amytrophic lateral; spinal cord.
<i>at</i> Spinal cord.	Neuritis, peripheral.	<i>sm</i> Multiple; spinal cord.
Degeneration.	<i>np</i> Peripheral nerves.	Sunstroke.
<i>da</i> Ascending; spinal cord.	<i>ns</i> Spinal cord.	<i>sue</i> Cerebellar cortex.
<i>ds</i> Descending; spinal cord.	Paralysis, Landry's.	<i>sur</i> Cerebral cortex.
	<i>ps</i> Spinal cord.	Tetanus.
		<i>te</i> Spinal cord.

Pathological Organs

A Quality

Double stained.

Complete Set: Telegraphic Code, *Rymop*. Catalogue Number, 2362.

Complete Set of 38 objects, in cloth-covered box, \$22.00.

Each, 60 cents.

Heart.	Lung.
<i>hf</i> Fatty degeneration.	<i>pa</i> Anthracosis, or coal miners' phthisis.
<i>hp</i> Pericarditis.	<i>pb</i> Phthisis, fibroid.
Kidney.	<i>pc</i> Pleuro-pneumonia. Shows third stage of pluerisy.
<i>ka</i> Amyloid.	Pneumonia:
<i>kb</i> Catarrhal, acute.	<i>pd</i> First stage, showing congestion and engorgement.
<i>kc</i> Catarrhal, chronic.	<i>pe</i> Second stage, showing red hepatisation.
<i>kd</i> Congestion.	<i>pf</i> Third stage, showing gray hepatisation.
<i>kf</i> Fatty degeneration.	<i>pg</i> Fourth stage, showing resolution.
<i>kh</i> Infarction.	<i>ph</i> Catarrhal, acute.
<i>ki</i> Infarction, hæmorrhagic.	<i>pl</i> Catarrhal, chronic.
<i>ks</i> Swelling, cloudy.	<i>pt</i> Tuberculosis, acute miliary.
<i>kt</i> Tuberculosis.	Spleen.
<i>kt</i> Tuberculosis, acute miliary.	<i>sc</i> Congestion, chronic venous.
<i>ku</i> Tuberculosis (miliary) and hæmorrhagic infarction.	<i>sh</i> Hodgkin's disease.
Liver.	<i>sl</i> Leucocythemic.
<i>la</i> Atrophy, red (nutmeg).	<i>sp</i> Pigmentation.
<i>lb</i> Cirrhosis.	<i>sp</i> Tuberculosis.
<i>lc</i> Congestion.	Supra-renal capsule.
<i>ld</i> Degeneration, fatty.	<i>su</i> Addison's disease.
<i>li</i> Infiltration, fatty.	
<i>lp</i> Pigmentation.	
<i>ll</i> Lesions, typhoid.	
<i>lt</i> Tuberculosis.	
<i>lu</i> Tuberculosis, acute miliary.	

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Tumor Series

A Quality

Telegraphic Code, *Ryok.*

Catalogue Number, 2364.

Each, 60 cents.

Adenoma :		Fibroma :		Sarcoma :	
<i>a</i>	Columnar cell.	<i>r</i>	Hard.	<i>tg</i>	Alveolar.
<i>b</i>	Fibro.	<i>s</i>	Soft.	<i>th</i>	Fibro.
<i>c</i>	Sebaceous.	<i>t</i>	Glioma.	<i>tl</i>	Giant cell.
<i>d</i>	Angioma.	<i>u</i>	Gumma.	<i>tm</i>	Lympho.
	Cancer :	<i>ta</i>	Lipoma.	<i>to</i>	Melanotic.
<i>e</i>	Endothelial.	<i>tb</i>	Lymphoma.	<i>tp</i>	Round cell, large.
<i>f</i>	Hard.		Myoma :	<i>tr</i>	Round cell, small.
<i>g</i>	Melanotic.	<i>tc</i>	Leioma.	<i>ts</i>	Spindle cell, large.
<i>h</i>	Soft.	<i>td</i>	Rhabdo.	<i>tt</i>	Spindle cell, small.
<i>l</i>	Chondroma.	<i>te</i>	Myxoma.		
	Epithelioma :	<i>tf</i>	Papilloma.		
<i>m</i>	Columnar celled.				
<i>o</i>	Squamous.				

Non-Pathogenic Bacteria

A Quality

Pure Cultures.

Telegraphic Code, *Ryfn.*

Catalogue Number, 2366.

Each, 60 cents.

Bacillus :			
<i>ba</i>	acidi lactici.	<i>bs</i>	Bacterium zopfi.
<i>bb</i>	butyricus.	<i>m</i>	Micrococcus prodigiosus.
<i>bc</i>	cyanogenus. (Blue milk.)	<i>o</i>	Oidium lactis.
<i>bf</i>	fluorescens.	<i>ph</i>	Phosphorescing Bacillus.
<i>bi</i>	indicus.	<i>pr</i>	Proteus vulgaris.
<i>bmg</i>	megaterium.	<i>ps</i>	Proteus vulgaris, flagella stained.
<i>bms</i>	mesentericus vulgatus. (Potato.)	<i>sc</i>	Saccharomyces cerevisiæ.
<i>bo</i>	oxytocus perniciosus.	<i>sd</i>	Sarcina aurantiaca, orange sarcine, stained.
<i>bra</i>	ramosus.	<i>se</i>	Sarcina lutea, yellow sarcine, stained.
<i>bru</i>	ruber.	<i>sp</i>	Spirillum rubrum.
<i>brk</i>	ruber, Kiel.	<i>yb</i>	Yeast, black.
<i>bs</i>	subtilis. (Hay.)	<i>yr</i>	Yeast, red.
<i>bv</i>	violacens of water.		

Pathogenic Bacteria

A Quality

Pure Cultures, unless otherwise indicated.

Telegraphic Code, *Ryrb.*

Catalogue Number, 2368.

Each, 60 cents.

<i>a</i>	Achorion schoenleinii. (Favus.)		Bacillus of
<i>b</i>	Actinomycosis hominis. (Lumpy Jaw.)	<i>t</i>	Green pus.
	Bacillus anthracis :	<i>u</i>	Hog cholera.
<i>c</i>	Colonies.	<i>aa</i>	Hog erysipelas.
<i>d</i>	Culture.	<i>ab</i>	Leprosy, human skin.
<i>e</i>	Threads and spores.	<i>ac</i>	Malignant cedema.
<i>f</i>	Blood of Guinea-pig. Gram's method.	<i>ad</i>	Symptomatic anthrax.
<i>g</i>	Kidney of Guinea-pig. Section.		Tuberculosis :
<i>h</i>	Liver of Guinea-pig. Section.	<i>ae</i>	Aviary.
<i>l</i>	Spleen of Guinea-pig. Section.	<i>af</i>	Fish.
<i>m</i>	Bacillus cavica.	<i>ag</i>	Human lung.
<i>o</i>	Bacillus coli communis.	<i>ah</i>	Human lung cavity.
	Bacillus of	<i>al</i>	Human sputum.
<i>p</i>	Black or bubonic plague.	<i>am</i>	Pure culture.
<i>r</i>	Chicken cholera.	<i>bb</i>	Bacillus psittacosis. (Parrot disease.)
<i>s</i>	Glanders.	<i>bc</i>	Bacillus rhinoscleroma.
		<i>bd</i>	Bacillus septicæmia of mice.
		<i>be</i>	Bacillus sanarellis of yellow fever.

BRANCHES: NEW YORK AND CHICAGO.

Pathogenic Bacteria—A Quality—(Continued)

<i>bf</i>	Comma bacillus. (Asiatic cholera.)	<i>cc</i>	Spirilla and Vibrios. From the mouth.
<i>bg</i>	Deneke's vibrio.		Staphylococcus pyogenes :
<i>bh</i>	Eberth's bacillus of typhoid fever.	<i>cd</i>	albus.
<i>bl</i>	Eberth's bacillus, flagella stained.	<i>ce</i>	aureus.
<i>bm</i>	Finkler-Prior's vibrio.		Streptococcus :
<i>bn</i>	Fränkel's pneumococcus.	<i>cf</i>	erysipclatis.
<i>bo</i>	Friedlaender's pneumobacillus.	<i>cg</i>	pyogenes.
<i>bp</i>	Gonococcus in urethral discharge.		Streptothrix :
<i>br</i>	Loeffler's diphtheria bacillus.	<i>ch</i>	bovine farcy.
<i>bs</i>	Micrococcus tetragenus.	<i>cl</i>	maduræ.
<i>bt</i>	Monilia candida.	<i>cm</i>	Vibrio metschnikovi.
<i>bu</i>	Plasmodium malarie. (Febris tertians.)		

Urinalysis

A Quality

Telegraphic Code, *Ryst.*

Catalogue Number, 2380.

Each, 60 cents.

Deposits :		Deposits (cont'd) :	
<i>a</i>	Epithelium.	<i>r</i>	Triple phosphate.
<i>b</i>	Leucine.	<i>s</i>	Tyrosine.
<i>c</i>	Lime, carbonate.	<i>t</i>	Urate of ammonia.
<i>d</i>	Lime, oxalate (dumb bells).	<i>u</i>	Urate of soda.
<i>e</i>	Lime, oxalate (octahedral).	<i>da</i>	Urates, amorphous.
<i>f</i>	Lime, phosphate.	<i>db</i>	Urea.
<i>g</i>	Murexide.	<i>dc</i>	Uric acid.
<i>h</i>	Nitrate of urea.	<i>de</i>	Yeast plant from diabetic urine.
<i>l</i>	Oil globules.		Spermatozoa :
<i>m</i>	Phosphates, amorphous.	<i>df</i>	Fish.
<i>o</i>	Pus.	<i>dg</i>	Man.
<i>p</i>	Tube casts.	<i>dh</i>	Blood.

Set arranged for analysis and diagnosis, according to Dr. Louis Heitzman's text-book, "Urinary Analysis and Diagnosis by Microscopical and Chemical Examination."

Telegraphic Code, *Rytn.*

Catalogue Number, 2382.

Sold only in complete sets. Per set, \$15.25.

Abscess of kidney.	Oxalate of lime.
Abscess of pelvis of kidney.	Papilloma of bladder.
Bacteria found in urine.	Phosphate of lime, star shaped.
Chyluria.	Phosphates :
Cystitis :	Amorphous simple.
Catarrhal.	Triple.
Ulcerative.	Prostatitis and Urethritis.
Hæmoglobinuria.	Urate of ammonia, fully formed.
Hæmorrhage from kidney due to gravel.	Urate of soda.
Lithæmia, catarrhal pyelitis.	Urate of soda, in transition to urate of ammonia.
Nephritis, interstitial :	Uric acid.
Acute.	Vaginitis, catarrhal.
Chronic.	
Nephritis, parenchymatous :	
Acute.	
Chronic.	

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Parasites

A Quality

Telegraphic Code, *Ryus*.

Catalogue Number, 2384.

Each, 60 cents.

<i>a</i>	Bed-bug, <i>Cimex lectularius</i> :	<i>g</i>	Flea of cat, <i>Pulex felis</i> .
	Female.	<i>h</i>	Flea of dog, <i>Pulex canis</i> .
<i>b</i>	Male.		Head lice, <i>Pediculus capitis</i> :
<i>c</i>	Body lice, <i>Pediculus vestimenti</i> .	<i>l</i>	Female.
	Crab lice, <i>Pediculus pubis</i> :	<i>m</i>	Male.
<i>d</i>	Female.	<i>n</i>	House fly.
<i>e</i>	Male.	<i>o</i>	Sheep tick, <i>Melophagus ovinus</i> .
<i>f</i>	Face parasite, <i>Demodex folliculorum</i> .	<i>p</i>	<i>Trichina spiralis</i> , encysted.

B Quality

Telegraphic Code, *Ryvum*.

Catalogue Number, 2386.

Each, 30 cents.

<i>a</i>	Bed-bug.	<i>d</i>	Flea of man.	<i>g</i>	Lice of fowl.
<i>b</i>	Flea of cat.	<i>e</i>	Head lice.	<i>h</i>	Lice of house fly.
<i>c</i>	Flea of dog.	<i>f</i>	Lice of beetle.	<i>l</i>	Lice of grasshopper.

Parts of Insects

A Quality

Telegraphic Code, *Rzma*.

Catalogue Number, 2388.

Each, 60 cents.

Antenna.		Head.		Scales.	
<i>a</i>	Blow fly.	<i>u</i>	Blow fly.	<i>at</i>	Butterfly.
<i>b</i>	Butterfly.	<i>ab</i>	Mosquito, male;	<i>au</i>	Mosquito.
<i>c</i>	Gnat (mosquito).		shows antennæ.	<i>bb</i>	Moth.
Eggs.		<i>ac</i>	Mosquito, female;	<i>bc</i>	<i>Lipisma saccharina</i> .
<i>e</i>	Butterfly.		shows lancets.	<i>bd</i>	Podura.
Eye (cornea).		Lancets.		Skin.	
<i>f</i>	Beetle, showing multiplied images.	<i>ad</i>	Horse fly.	<i>be</i>	Caterpillar.
Eye.		Leg and Foot.		Spinnerets.	
<i>g</i>	Blow fly, vertical section, stained.	<i>ae</i>	Blow fly.	<i>bf</i>	Spider.
<i>h</i>	Drone fly.	<i>af</i>	Honey bee.	Spiracle.	
<i>l</i>	Horse fly, banded winged.	<i>ag</i>	Horse fly.	<i>bg</i>	Blow fly.
<i>m</i>	House fly.	<i>ah</i>	Spider.	<i>bh</i>	Cricket.
Foot.		Mouth parts.		<i>bl</i>	Tomato worm.
<i>o</i>	Horse fly, banded winged.	<i>al</i>	Honey bee.	Sting.	
<i>p</i>	Spider.	Proboscis.		<i>bm</i>	Bumble bee.
Gizzard.		<i>am</i>	Blow fly. Each, 75c.	<i>bo</i>	Honey bee.
<i>s</i>	Cockroach.	<i>ao</i>	Bumble bee.	Trachea.	
<i>t</i>	Cricket.	<i>ap</i>	Honey bee.	<i>bp</i>	Potato bug; shows hairs.
		<i>ar</i>	House fly.	Wing.	
		<i>as</i>	Horse fly, banded winged; shows lancets.	<i>bs</i>	Blow fly.
				<i>bt</i>	Butterfly.
				<i>bu</i>	Honey bee; shows hooklets.
				<i>by</i>	Mosquito.

BRANCHES: NEW YORK CITY AND CHICAGO.

Parts of Insects—(Continued)

B Quality

Telegraphic Code, *Rsmbe*.

Catalogue Number, 2390.

Each, 30 cents.

Antennæ.

a Bee.
b Beetle.
c Butterfly.
d Centipede.
e Cockroach.
f Cricket.
g Moth.

Eye (cornea).

h Beetle.
l Bumble bee.
m Butterfly.
o Cockroach.
p Cricket.
r Dragon fly.
s Honey bee.
t Hornet.
u Horse fly.
ab House fly.
ac Grasshopper.
ad Meat fly.
ae Moth.
af Wasp.

Gizzard.

ag Beetle.
ah Cockroach.
ak Field cricket.
al Katy-did.
am Mole cricket.

Head.

ao Bee.
ap Bug.
an Grasshopper.
a House fly.
at Meat fly.
au Mosquito, female.
ay Mosquito, male.

Leg and foot.

bb Beetle.
bc Centipede.
bd Cricket.
be Gyrinus.
bf Honey bee.
bg House fly.
bh Meat fly.
bl Mosquito.
bm Notonecta.

Ovipositor.

bo Cricket.
bp Grasshopper.
br House fly.
bs Katy-did.
bt Meat fly.

Proboscis.

cc Bumble bee.
cd Butterfly.
ce Fly.
cf Honey bee.
cg Moth.

Scales, opaque.

ch Butterfly.
cl Diamond beetle.
cm Silkworm moth.
co Wing of moth.

Scales.

cp Azure-blue butterfly.
cr Dermestes.
cs Lepisma.
ct Silkworm moth.

Spiracles.

dd Blow fly.
de Grasshopper.
df Honey bee.
dg House fly.
dh Silk worm.
dl Spider.
dm Tobacco worm.

Wing.

do Bumble bee.
dp Butterfly.
dr Crane fly.
ds Dragon fly.
dt Honey bee.
du House fly.
ee Lace-wing fly.
ef Meat fly.
eg Mosquito.
eh Moth.

Chemical Crystals

A Quality

Telegraphic Code, *Rsmcd*.

Catalogue Number, 2400.

Each, 60 cents.

Acid:

a Boracic.
b Gallic.
c Gallo-tartaric.
d Oleic.
e Tartaric.
f Ammonia molybdate.
g Atropium sulphate.
h Barium:
Chloride.
l Oxalate.
m Platino-chloride.

o Cadmium sulphate.
p Copper sulphate.
r Lithium Platino-sulphate.
s Magnesium Platino-cyanide.
Potassium:
ab Chlorate.
ac Ferri-cyanide.
ad Ferro-cyanide.
ae Nitrate.
af Tartrate.

Quinine:

ag Kinate.
ah Sulphate.
al Salicin.
Sodium:
am Borate.
ao Platino-chloride.

B Quality

Telegraphic Code, *Rsmde*.

Catalogue Number, 2402.

Each, 30 cents.

a Asbestos.
Acid:
b Hippuric.
c Palmitic.
d Stearic.
e Actinolite.
Ammonium:
f Oxalate.
g Picrate.

h Amygdalin.
l Berberine.
m Caffeine.
o Chrome alum.
p Copper sulphate.
r Limonite in muscovite.
s Potassium bichromate.
t Sodium nitro-prusside.
u Strontium chloride.

v Salicin.
y Satin spar.
z Theine.

BAUSCH & LOMB OPTICAL CO., ROCHESTER, N. Y.

Chemical Crystals Selected for the Polariscope

A Quality

Telegraphic Code, *Rsmel.*

Catalogue Number, 2404.

Each, 60 cents.

<i>a</i> Acid:	<i>h</i> Copper acetate.	<i>ad</i> Cyanide.
<i>b</i> Arsenious.	<i>l</i> Gold. (Reduced.)	<i>ae</i> Permanganate.
<i>c</i> Hippuric.	<i>m</i> Lead iodide.	<i>af</i> Picrate.
<i>d</i> Oxalic.	<i>o</i> Mercuric iodide.	<i>ag</i> Platino-chloride.
<i>d</i> Alum.	<i>p</i> Mercurous iodide.	<i>ah</i> Strychnine sulphate.
Ammonium:	<i>r</i> Morphine sulphate.	<i>al</i> Sulphur.
<i>e</i> Chloride.	<i>s</i> Murexide.	<i>am</i> Tin sulphide.
<i>f</i> Oxalate.	Potassium:	
<i>g</i> Antimony and potas-	<i>ab</i> Bichromate.	
sium tartrate.	<i>ac</i> Chromate.	

Arranged Diatoms

A Quality

Telegraphic Code, *Rsmho.*

Catalogue Number, 2406.

Groups.

<i>a</i> 6 to 18 specimens, - -	\$2.50
<i>b</i> 18 to 36 specimens, - -	3.50
<i>c</i> 36 to 50 specimens, - -	5.00
<i>d</i> 50 to 65 specimens, - -	7.00
<i>e</i> 65 to 80 specimens, - -	9.00

<i>e</i> 20 Diatoms, - - -	\$ 6.00
<i>f</i> 60 Diatoms, - - -	12.00
Test Plates.	
Dry mounting; arranged same as above.	
<i>g</i> 20 Diatoms, - - -	\$ 7.00
<i>h</i> 60 Diatoms, - - -	13.00

Test Plates.

Balsam or styrax mounting; specimens arranged in line according to their value as test objects.

Test Objects

A Quality

Telegraphic Code, *Rsmim.*

Catalogue Number, 2408.

Each, 60 cents.

Diatoms, balsam or dry:	<i>h</i> angulatum.
<i>a</i> Amphipleura pellucida.	<i>l</i> balticum.
<i>b</i> Frustulia saxonica.	<i>m</i> elongatum.
Grammatophora:	<i>o</i> fasciola.
<i>c</i> marina.	<i>p</i> Surirella gemma.
<i>d</i> subtilissima.	Miscellaneous.
<i>e</i> Navicula rhomboides.	<i>s</i> Proboscis of Blow fly. 75c.
<i>f</i> Nitzschia sigmoidea.	<i>u</i> Scales of Lipisma saccharina.
Pleurosigma:	<i>y</i> Scales of Podura.
<i>g</i> acuminatum.	

Miscellaneous

B Quality

Telegraphic Code, *Rsmol.*

Catalogue Number, 2410.

Each, 30 cents.

Feathers.

<i>a</i> Blue jay.
<i>b</i> Bobolink.
<i>c</i> Canary.
<i>d</i> Fowl.
<i>e</i> Guinea fowl.
<i>f</i> Humming bird.
<i>g</i> Parrot.
<i>h</i> Peacock.
<i>l</i> Sparrow.

Fibres.

<i>m</i> Bagdad wool.
<i>o</i> Cashmere goat hair.
<i>p</i> Cotswold wool.
<i>r</i> Cotton.
<i>s</i> Donski wool.
<i>t</i> Flax.
<i>u</i> Hemp.
<i>ab</i> Hemp, manila.
<i>ac</i> Jute.

<i>ad</i> Lincoln wool.
<i>ae</i> Pineapple.
<i>af</i> Merino wool.
<i>ag</i> Ramie.
Hair.
<i>ah</i> Alpaca.
<i>al</i> Bat.
<i>am</i> Cat.
<i>ao</i> Caterpillar.
<i>ap</i> Camel.

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Miscellaneous — B Quality — (Continued)

Hair. — (Continued)	<i>bl</i> Squirrel.	Silk of silk worms.
<i>ar</i> Cow.	<i>bm</i> Vicuna.	<i>dd</i> Cecropia.
<i>as</i> Dermestes.		<i>de</i> Chinese.
<i>at</i> Dog.	Scales.	<i>df</i> French.
<i>au</i> Goat.	<i>cc</i> Eel.	<i>dg</i> Italian.
<i>bb</i> Horse.	<i>cd</i> Herring.	Spicules.
<i>bc</i> Human.	<i>ce</i> Perch.	<i>dh</i> Foraminifera.
<i>bd</i> Mole.	<i>cf</i> Pike.	<i>dl</i> Gorgonia.
<i>be</i> Mouse.	<i>cg</i> Shad.	<i>dm</i> Polycystina.
<i>bf</i> Mouse, ground.	<i>ch</i> Shark.	<i>do</i> Sponge.
<i>bg</i> Rabbit.	<i>cl</i> Sole.	
<i>bh</i> Rat.	<i>cm</i> Trout.	

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<i>c</i> A Portrait Badly Paid For.	<i>ad</i> Song of the Shirt.
<i>d</i> Carpenter, Dr. W. B.	<i>ae</i> "Suffer Little Children to Come Unto Me."
<i>e</i> Cupid and Psyche.	<i>af</i> The Bashful Lover and the Maiden Coy.
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