

# SARGENT'S Pythagoras Combustion Tubes

*Made of a New and Highly Efficient Material*

We are glad to announce that after a search and experiments covering a long period of time we have been able to find a material which is much better suited to combustion tube use than any other material up to the present time.

SARGENT'S PYTHAGORAS COMBUSTION TUBES made of this material are exceedingly dense at all temperatures and accordingly air tight at all heats.

The melting point is exceedingly high and there is no danger of the tube falling in at temperatures used for combustion work.

An important characteristic is that metals do not readily adhere to the material of which these tubes are made, and, consequently, the tubes are easily cleaned. It is particularly resistive to aluminum.

The tubes are very free from chemical action and are in no way absorbers of the products of combustion, aiding materially in the accuracy of carbon determinations.

The tubes are not affected by molten metals and remain inert. They resist to a very high degree the action of basic salts and acids.

They have a high heat conductivity and as a result there is very little lag between the temperature inside the tubes and outside. They withstand intermittent heating and cooling very successfully.

Their physical strength is excellent and stoppers may be readily forced into the tube without breaking at the ends.

These tubes can be made with relatively thin walls, and, therefore, tubes with one inch inside diameter, which are now so frequently called for, can be readily supplied to fit electric combustion furnaces as now supplied.

The price of these tubes is considerably less than the price of the best tubes now in use, with the exception of porcelain, which has been discarded as combustion tube material. SARGENT'S PYTHAGORAS COMBUSTION TUBES sell for about one-half the price of fused silica tubes and cost considerably less than tubes of other refractory material.

The tubes are supplied in  $\frac{7}{8}$ " and 1" inside diameters and in lengths of 24" and 30". The prices of these SARGENT'S PYTHAGORAS COMBUSTION TUBES are as follows:

$\frac{7}{8}$ " inside diameter, 24" long .....	\$4.25 each
$\frac{7}{8}$ " inside diameter, 30" long .....	4.50 each
1" inside diameter, 24" long .....	4.75 each
1" inside diameter, 30" long .....	5.00 each

We shall be pleased to correspond with our customers regarding these tubes and answer to the best of our ability any questions which may be asked.

(4043)



## E. H. SARGENT & CO.

155-165 East Superior Street · CHICAGO, ILL.  
LABORATORY SUPPLIES

# QUANTITY PRICES ON LABORATORY STAPLES OF CONTROLLED QUALITY

FOR IMMEDIATE SHIPMENT FROM OUR OWN STOCKS

## EXAMPLES

**9444. TEST TUBE, Strain-Finder Tested**, thin wall, with lip. Size 150 x 18 mm. (See Supplement No. 83.)

Per carton of 100, in quantities less than original case	\$2.35
Less 20% discount in original case containing 1200 =	Per 100 1.88
Less 25% discount in lots of 10 original cases =	Per 100 1.76
Less 30% discount in lots of 25 original cases =	Per 100 1.65
Less 33 1/3% discount in lots of 100 original cases =	Per 100 1.57

**8820. RUBBER TUBING, Laboratory White Special**, thick wall, hand made, cloth wrapped. Size 1/4 inch bore by 1/8 inch wall.

Per foot, in quantities less than original 10 ft. length	\$ .22
Less 20% discount in carton of 10 ft. =	Per foot .18
Less 25% discount in carton of 50 ft. =	Per foot .17
Less 25% and 20% discount in lots of 1000 ft. =	Per foot .13

**8810. RUBBER STOPPERS, A. H. T. Co. Special Quality.**

Per lb., in quantities less than 10 lbs.	Per lb. \$1.50
Less 10% discount in lots of 10 lbs. =	Per lb. 1.35
Less 20% discount in lots of 25 lbs. =	Per lb. 1.20
Less 30% discount in lots of 50 lbs. =	Per lb. 1.05
Less 35% discount in lots of 100 lbs. =	Per lb. .98
Less 40% discount in lots of 250 lbs. =	Per lb. .90

**5160. FILTER PAPER, American Standard**, white, circles. Size 125 mm diameter.

Per pack of 100, in quantities less than 100 packs	\$ .20
Less 10% discount in lots of 100 packs =	Per pack .18
Less 20% discount in lots of 500 packs =	Per pack .16
Less 30% discount in lots of 1000 packs =	Per pack .14

**4330. PETRI DISHES**, of selected lime glass. Size 100 x 10 mm. (See Supplement No. 84.)

Per pair, in quantities less than 1 dozen.	\$ .24
Less 10% discount in carton containing 1 dozen =	Per pair .22
Less 20% discount in case containing 1 gross =	{ Per pair .19 Per gross 27.65
Less 25% discount in lots of 10 gross =	{ Per pair .18 Per gross 25.92
Less 30% discount in lots of 50 gross =	{ Per pair .17 Per gross 24.20

**7030-B. MICRO SLIDES, Non-Corrosive, Selection III.** Size 3 x 1 inches. (See Supplement No. 84.)

Per gross, in quantities less than original case	\$1.00
Less 10% discount in case containing 25 gross =	Per gross .90
Less 20% discount in case containing 100 gross =	Per gross .80
Less 25% discount in case containing 500 gross =	Per gross .75

Printed prices above are those in effect June 1st, 1927, and are subject to change without notice

Our price for a given quantity of any of the ten thousand Apparatus items and seven thousand Reagent items listed and stocked by us is invariably and identically the same on open orders as under the utmost stress of competitive bidding.

A ONE PRICE POLICY MEANS FAIR PRICES

## ARTHUR H. THOMAS COMPANY

RETAIL—WHOLESALE—EXPORT

### LABORATORY APPARATUS AND REAGENTS

WEST WASHINGTON SQUARE

Cable Address, BALANCE, Philadelphia

PHILADELPHIA, U. S. A.

# SCIENCE

VOL. XLVI

JULY 1, 1927

No. 1696

## CONTENTS

<i>The Lure of Medical History</i> : DR. E. B. KRUMBHAAR	1
<i>Exit Huebner's Tentamen</i> : DR. W. J. HOLLAND	4
<i>George Bishop Sudworth</i> : WILL C. BARNES	6
<i>Scientific Events</i> :	
<i>Memorial of the Research Club of the University of Michigan; The National Arboretum; Mosquito Control; Award of the Langley Medal; Appointments at the Rockefeller Institute for Medical Research</i>	8
<i>Scientific Notes and News</i>	10
<i>University and Educational Notes</i>	13
<i>Discussion and Correspondence</i> :	
<i>Concerning "Species-grinding"</i> : DR. DAVID STARR JORDAN. <i>Biology versus Mythology in a Criminal Court</i> : PERCY VIOSCA, JR. <i>Datum and Data</i> : DR. W. W. KEEN, CHARLES H. BLAKE. <i>Airgraphy or Aerography?</i> DR. ALEXANDER MCADIE. <i>"Astro-nomic"</i> : DR. RAYMOND S. DUGAN	14
<i>Scientific Apparatus and Laboratory Methods</i> :	
<i>Directions for determining the Colloidal Material of Soils by the Hydrometer Method</i> : DR. GEORGE J. BOUYOUCOS	16
<i>Special Articles</i> :	
<i>The Life History of Tapeworms of the Genus Mesocostoides</i> : DR. BENJAMIN SCHWARTZ. <i>Acclimatization of Bufo Tadpoles to Ethyl and Methyl Alcohols</i> : DR. HARRY THOMAS FOLGER	17
<i>The American Association for the Advancement of Science</i> :	
<i>The Second Nashville Meeting of the Association and Associated Societies</i> : PROFESSOR BURTON E. LIVINGSTON	19
<i>Science News</i>	x

SCIENCE: A Weekly Journal devoted to the Advancement of Science, edited by J. McKeen Cattell and published every Friday by

THE SCIENCE PRESS

New York City: Grand Central Terminal.

Lancaster, Pa.

Garrison, N. Y.

Annual Subscription, \$6.00. Single Copies, 15 Cts.

SCIENCE is the official organ of the American Association for the Advancement of Science. Information regarding membership in the Association may be secured from the office of the permanent secretary, in the Smithsonian Institution Building, Washington, D. C.

Entered as second-class matter July 18, 1923, at the Post Office at Lancaster, Pa., under the Act of March 8, 1879.

## THE LURE OF MEDICAL HISTORY<sup>1</sup>

THE advantages of a respectable acquaintance with the history of one's profession should be obvious to all and have been recognized by many. Littré, the great lexicographer, realized that without its background a science is reduced to the category of a mere trade, and Goethe with no great poetic license maintained that the history of a science is the science itself. If "each age steps on the shoulders of the ages that have gone before" (Foster), then certainly those who hope to be in the forefront of medicine must be acquainted with the body of the preceding age on whose shoulders they are to step. As a matter of practical importance, too, knowledge of how knowledge accrues and of the mistakes of the past is of prime importance in preventing similar mistakes in our present work and no one is on more unsafe ground or slips with less regret on the part of the onlookers than the coxcomb, who, disregarding the past as a dead and buried conglomeration of futile and incorrect superstitions, stakes his all on his own limited vision. As Osler says, "By the historical method alone can many problems in medicine be approached profitably. For example the student who dates his knowledge of tuberculosis from Koch may have a very correct, but a very incomplete appreciation of the subject." As a matter of fact, how many go even as far back as Koch?

If this is so widely recognized, why is the average ignorance of the history of our art so appalling? Chiefly because of the college and state board examinations, which before all else must be passed, so that with rapid accumulation of the facts of medical science, the curriculum becomes more and more overcrowded, the "exam" correspondingly more difficult and your vicious circle is established.

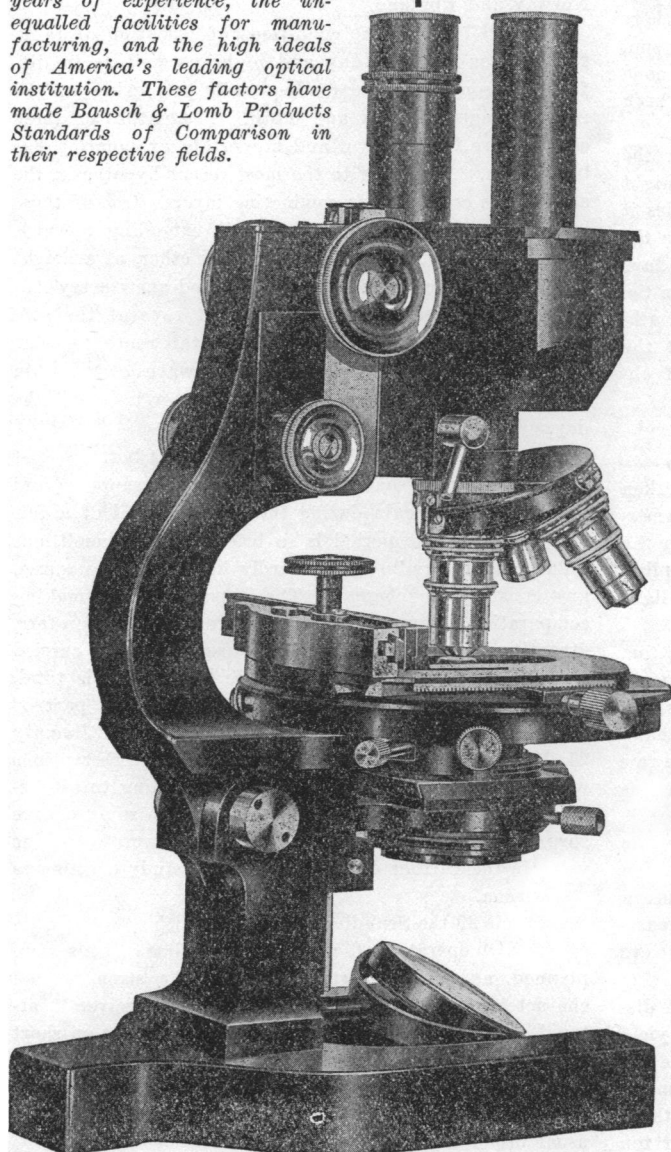
Fortunately, there are signs of a rift in the clouds, permitting the undergraduate student to regain from the curriculum time for thought and the cultivation of some of what might be called the "belles lettres" of his chosen profession. Prominent among these is the history of medicine, which, if impossible for most of us to cultivate as a scientific discipline on account of more pressing work, can at least fill the position of that most useful and important activity—a hobby. Many an American physician has drawn boundless pleasure from this particular hobby and a few even

<sup>1</sup> From the laboratories of the Philadelphia General Hospital. An address to the Piersol Anatomical Society of the University of Pennsylvania, February 18, 1927.



*The innate quality of a microscope is judged, not by its appearance or specifications, but by factors behind it.*

*Behind Bausch & Lomb precision instruments are the 75 years of experience, the unequalled facilities for manufacturing, and the high ideals of America's leading optical institution. These factors have made Bausch & Lomb Products Standards of Comparison in their respective fields.*



## CDE Research Microscope

**Built by Bausch & Lomb**

The advantages of both binocular and monocular vision are assets of B & L Research Microscope CDE, as instant interchange between the binocular tube, and the monocular tube, which is supplied, is possible.

This change does not disturb the nosepiece or objectives.

CDE-8 Microscope, with 16 mm and 4 mm Achromatic Objectives, 1.9 mm Oil Immersion Objective, 5x and 10x Huygenian Eyepieces, Triple Revolving Nosepiece, and Abbe Condenser 1.40 N. A., in hardwood case . . . . \$324.00

*Catalog sent upon request*

## BAUSCH & LOMB

### OPTICAL COMPANY

632 St. Paul Street

Rochester, N. Y.



## School of Medicine

### NEW ADMISSION REQUIREMENTS

At least three years of approved college work including specified requirements in the sciences.

### DEGREE OF B.S. IN MEDICAL SCIENCE

This degree may be awarded at the end of the third or fourth year to students fulfilling certain conditions including the preparation of a thesis.

### DEGREE OF DOCTOR OF MEDICINE

Upon satisfactory completion of prescribed four-year course.

For catalogue and information, address  
**THE DEAN, Washington University**  
School of Medicine, St. Louis,  
Missouri

## Marine Biological Laboratory

Woods Hole, Mass.

### INVESTIGATION

#### Entire Year

Facilities for research in Zoology, Embryology, Physiology, and Botany. Fifty-two private laboratories \$100 each and ninety-four private laboratories \$200 each for not over three months. Fifty-six tables are available for beginners in research who desire to work under the direction of members of the staff. The fee for such a table is \$50.00.

### INSTRUCTION

June 28 to August  
8, 1927

Courses of laboratory instruction with lectures are offered in Invertebrate Zoology, Protozoology, Embryology, Physiology, and Morphology and Taxonomy of the algae. Each course requires the full time of the student. Fee, \$75.00.

### BIOLOGICAL SUPPLIES

For the classroom, museum or collector.

First class preparations.  
Send for new (1926) **Catalogue No. 1.** Zoological and Embryological material, Life Histories and Habitat Groups.

**Catalogue No. 2,** Botanical material.

**Catalogue No. 3,** Microscopic slides.

Address all correspondence regarding material and catalogues to:

Supply Department,  
**GEO. M. GRAY,**

Curator, Woods Hole, Mass.

The annual announcement will be sent on application to The Director, Marine Biological Laboratory, Woods Hole, Mass.



## Johns Hopkins University SCHOOL OF MEDICINE

The School of Medicine is an Integral Part of the University and is in the Closest Affiliation with the Johns Hopkins Hospital.

### COURSES FOR GRADUATES

In addition to offering instruction to students enrolled as candidates for the degree of Doctor of Medicine, the School also offers Courses for Graduates in Medicine. In each of the clinical departments opportunity for advanced instruction will be offered to a small number of physicians, who must satisfy the head of the department in which they desire to study that they are likely to profit by it.

Students will not be accepted for a period shorter than three academic quarters of eight weeks each, and it is desirable that four quarters of instruction be taken. The courses are not planned for purposes of review but for broad preparation in one of the lines of medical practice or research. The opportunities offered will consist in clinical work in the dispensary, ward-rounds, laboratory training, and special clinical studies.

The academic year begins the Tuesday nearest October 1 (October 4, 1927), and students may be admitted at the beginning of any academic quarter. The charge for tuition is \$50 a quarter, payable in advance.

Inquiries should be addressed to the Executive Secretary of the School of Medicine, Johns Hopkins University, Washington and Monument Streets, Baltimore, Maryland.

### PHYSIOLOGICAL AND ECOLOGICAL APPARATUS

For measuring evaporation conditions, total sunshine influence on evaporation, capacity of plant leaves to resist water loss, capacity of soil to supply water to plants, etc.

Standardized atmometers, auto-irrigators, soil points, standardized cobalt-chloride paper and color-standard papers, leaf clips, etc.

**BURTON E. LIVINGSTON,**

6214 Oak Lane, Cedarcroft, Baltimore, U. S. A.

### SCIENTIFIC PERIODICALS

Chemical, Medical and allied subjects. Complete files, volumes and copies, bought and sold. Kindly send us a list of your wants and items of which you may wish to dispose.

**B. LOGIN & SON**

29 East 21st Street

New York, N. Y.



### Hy-Speed Mixers

Clamp to any tank, operate from light circuit, mix all kinds of liquids. Also used for even temperature baths. Thousands in use. Write for circular.

**ALSO ENGINEERING CO.**  
47 W. 63rd St., New York

P  
E  
C  
O  
R  
E

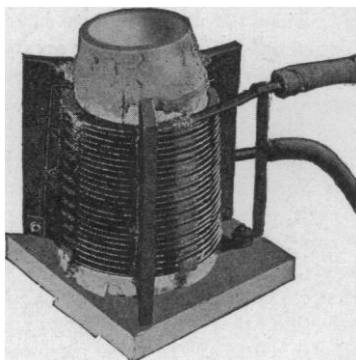
## THERMOMETERS

### SIMPLIFIED BLOOD TRANSFUSION INSTRUMENTS

Clinical  
Chemical  
Industrial

**PECORELLA MFG. CO.** Brooklyn, N. Y.

## Why the AJAX-NORTHROP furnace is unique



The Ajax-Northrup high frequency furnace is unique among electric furnaces for these reasons:

- 1—Quick heating—2900 C. in three minutes.
- 2—Cool exterior—can be used in the hottest weather.
- 3—Carbon-free melts—freedom from carbon guaranteed.
- 4—Uniform temperature—absolutely accurate at all times.
- 5—Quick change from one melt to another entirely different.
- 6—Melts in vacuo—oxidizing or neutral atmosphere as desired.

**Ajax Electrothermic Corporation**  
Trenton, New Jersey

G. H. CLAMER,  
Pres.



E. F. NORTHROP,  
V. Pres. and Tech. Adv.

# AJAX

NORTHROP

## ELECTRIC FURNACES



## COLEMAN & BELL

Laboratory Reagents are Dependable!

Our List Includes:  
C. P. Inorganic Chemicals  
C. P. Organic Chemicals  
Chemical Indicators (dry). Including  
Hydrogen Ion Indicators of  
Clark & Lubs and Sorensen  
Biological Stains (dry)  
Reagents and Solutions—  
Stains in Solution  
Indicators in Solution  
Blood Reagents  
Diagnostic Reagents  
Fixing Solutions  
Mounting Media  
Volumetric Solutions  
Test Papers

Coleman & Bell Products may be secured from the principal dealers in laboratory supplies in the United States and in Foreign Countries, or may be ordered direct. Catalogue sent upon request.

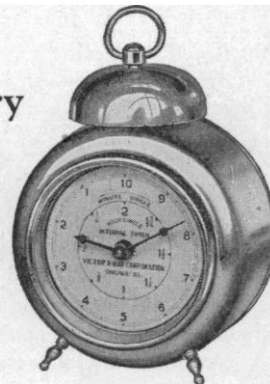
**THE COLEMAN & BELL COMPANY**

(Incorporated)

*Manufacturing Chemists*  
Norwood, Ohio, U. S. A.



Every  
Laboratory  
Needs  
This



**Victor Interval Timer**  
with Automatic Alarm

Measuring time in periods ranging from  
15 seconds to 2 hours

Price \$4<sup>50</sup>

Over 30,000 in use!

VICTOR X-RAY CORPORATION  
Merchandising Dept.  
2012 Jackson Boulevard Chicago, Illinois