FOOD FOR THOUGHT . . .

have you considered

College Botany

by

CLARENCE J. HYLANDER
formerly of Colgate University

and ORAN B. STANLEY
Colgate University

ROOTS USED AS FOOD
from Chapter 8  •  ROOTS

for the one-semester course

Each half of COLLEGE BOTANY represents an independent unit providing adequate material for the one-semester course. Part I discusses the individual plant and its life problems, using a woody green plant to introduce the student to the basic facts of plant morphology, histology, and cell structure, with the necessary correlation between structure and function.

Part II treats plants as groups rather than as individuals. The main taxonomic groups are described, as well as plant communities, environment, geography and diseases. Concluding chapters summarize the role which both heredity and environment play in plant evolution, and the recreation of the prehistoric floras as documented by the fossil record. Published in 1949, 650 pp., $5.50

The Macmillan Company
60 FIFTH AVENUE, NEW YORK 11, N. Y.
INSTRUMENT NEWS is an 8-page quarterly published in the interests of furthering research, material analysis, and production through modern optical instrumentation. Articles of technical and general interest are prepared by leading workers in the field and the Perkin-Elmer staff.

Some of the outstanding articles from the Spring '53 issue are:

NEW CONTINUOUS MULTI-COMPONENT INFRARED STREAM ANALYZER FOR PILOT PLANTS
Description of New Model 14

INFRARED AND THE MEDICAL FIELD
Article by Van Z. Williams

USE OF KBr FOR INFRARED SOLIDS ANALYSIS
Description of Revolutionary New Technique

Among the subjects from the Winter '53 issue are:

CONTINUOUS PROCESS STREAM INFRARED ANALYZERS
One step closer to the automatic plant

NEW MODEL 13 RATIO-RECORDING INFRARED SPECTROPHOTOMETER
Operates single or double beam

ULTRAVIOLET AND NEAR INFRARED SPECTROPHOTOMETRY
Adopting the Perkin-Elmer Model 112 IR spectrometer

You may receive INSTRUMENT NEWS regularly without charge by filling in the coupon below.

THE PERKIN-ELMER CORPORATION
840 MAIN AVENUE, NORWALK, CONN.

Please send me INSTRUMENT NEWS

NAME .................................. TITLE ..................

FIRM ........................................

ADDRESS ..................................

CITY .................................. STATE ..........

The handiest aid in the laboratory is the Carver Laboratory Press. Compact, self-contained, this press provides controlled pressures to 20,000 lbs. Interchangeable accessories are available for pressure filtering of thick fluids, separating liquids and solids, pressing out concentrated extracts and flavors and many other uses. Send for new descriptive Catalog.

FRED S. CARVER INC.
HYDRAULIC EQUIPMENT
9 CHATHAM ROAD, SUMMIT, N. J.
Accuracy... day in and day out... 'round the clock dependability... that's what you get in a Cenco Mercurial Barometer. Cenco features... patented improvements... precision manufacture... plus an effective method of filling under vacuum... combine to provide an instrument of unusual quality at a remarkably low price.

These instruments are built with the tube completely enclosed in hexagonal brass tubing to which the metric and English scales are attached. Patented construction of the mercury well permits fine adjustment and its transparent glass wall admits plenty of light for good visibility.

Cenco Mercurial Barometers are constructed as prescribed by the U. S. Weather Bureau and conform to correction charts established by the Bureau.

Order today for prompt delivery

No. 76890 Cenco Mercurial Barometer for altitudes 0 to 4000 ft.
with scales ranging from 600 to 800 mm and 24.5 to 31.5 inches—verniers for reading to 0.1 mm or 0.005 inch. Each...............

$47.16

No. 76891 Cenco Mercurial Barometer, same as No. 76890 but for altitudes from 1500 up to 10,000 feet. Scale ranges from 500 to 700 mm and 19.5 to 27.5 inches. Each...................

$55.15

No. 76892 Barometer Mounting made of sheet metal for safe and convenient mounting of Cenco barometers. Finished in white lacquer to provide a light background for adjusting the zero index and vernier. With conversion table. Length, 37½ inches, width 3½ inches. Each...

$8.33

Cenco Mercurial Barometers are available through CENTRAL SCIENTIFIC COMPANY and other scientific supply houses.

CENTRAL SCIENTIFIC COMPANY
1700 IRVING PARK ROAD • CHICAGO 13, ILLINOIS
CHICAGO NEWARK BOSTON WASHINGTON DETROIT SAN FRANCISCO
SANTA CLARA LOS ANGELES TORONTO MONTREAL VANCOUVER OTTAWA

May 15, 1953
A NEW AAAS SYMPOSIUM

INDUSTRIAL SCIENCE—PRESENT AND FUTURE

Subjects treated include

Five leading Industries:
Petroleum—Steel—Communications—Chemicals—Pharmaceuticals

There are contributions on

Horizons of Industrial Science
from the viewpoint of the:
Consultant—Educator—Research Director—Government—Scientist

Public Aspects of Industrial Science
are covered by these papers:
The Contributions of Industry to Scientific Education
Industrial Science and Community Health

The New Industry and the Community
Industrial Science and its Public Relations

Authors who collaborated to make this book an auspicious inauguration of the new AAAS Section on Industrial Science (P)

Allen T. Bonnell, Vice President
Drexel Institute of Technology
Lillian M. Gilbreth, President
Gilbreth, Inc.
James Creese, President
Drexel Institute of Technology
Frank C. Croxton, Assistant Director
Battelle Memorial Institute
Alan T. Waterman, Director
National Science Foundation
Robert E. Wilson, Chairman of the Board
Standard Oil Company of Indiana

Hiland G. Batcheller, Chairman of Board
Allegheny Ludlum Steel Corporation
J. B. Fisk, Director of Research,
Physical Sciences, Bell Telephone Laboratories
Norman A. Shepard, Chemical
Director
American Cyanamid Company
Ernest H. Volwiler, President
Abbott Laboratories
C. L. Emerson, Vice President
Georgia Institute of Technology

Edward R. Weidlein, President
Mellon Institute of Industrial Research
Charles L. Dunham, Chief, Medical Branch, Division of Biology and Medicine
U. S. Atomic Energy Commission
Robert A. Neary, Public Relations Department
Aluminum Company of America
G. Edward Pendray, President
Pendray and Company

6 x 9 inches, paperbound, 160 pages, price $2.00
Orders for 10 or more copies, $1.60 per copy
Both Industrial Science and Soviet Science, $3.00

Mail your order now
TO: AAAS PUBLICATIONS
1515 Massachusetts Avenue, N.W.
Washington 5, D. C.

Please accept my order for ....... copies of Industrial Science.
Please accept my order for ....... copies of Soviet Science.
My check or money order in the amount of $........... is enclosed.

Name ..........................................................
Address ................................................................
City ........................................ Zone ........ State ..........................
Cut from machine drawn
flat strips of precision
controlled thickness

NOW OFFERED AT REDUCED
PRICES BECAUSE OF LOWER
PRODUCTION COSTS

NON-CORROSIVE, RED LABEL
MICRO COVER GLASSES

Cut, selected and packed in Philadelphia from the same excellent Chance micro sheet sold by us with great satisfaction continuously since 1902, improved from time to time, but now mechanically drawn in strips, which method of production offers the advantages of flatness and precision controlled thickness as compared with former method of hand blowing. Offered from stock in a wide variety of thicknesses, sizes and shapes—see pp. 887 and 888 of our catalogue. Outstanding characteristics are:

- High resistance to attack by moisture
- Freedom from brittleness
- Flatness
- Precision controlled uniformity of thickness

<table>
<thead>
<tr>
<th>Product</th>
<th>Per oz.</th>
<th>Per oz. in 6 oz. carton</th>
<th>Per oz. in 144 oz. assortments</th>
</tr>
</thead>
<tbody>
<tr>
<td>7020. SQUARES, No. 1, 18 mm, 22 mm and 25 mm</td>
<td>1.96</td>
<td>1.76</td>
<td>1.47</td>
</tr>
<tr>
<td>Ditto, No. 2</td>
<td>1.64</td>
<td>1.48</td>
<td>1.23</td>
</tr>
<tr>
<td>7022. CIRCLES, No. 1, 18 mm, 22 mm and 25 mm</td>
<td>3.12</td>
<td>2.81</td>
<td>2.34</td>
</tr>
<tr>
<td>Ditto, No. 2</td>
<td>2.68</td>
<td>2.41</td>
<td>2.01</td>
</tr>
<tr>
<td>7024. RECTANGLES, Small, No. 1, 22 x 30 mm up to and including 22 x 50 mm</td>
<td>1.96</td>
<td>1.76</td>
<td>1.47</td>
</tr>
<tr>
<td>Ditto, No. 2</td>
<td>1.64</td>
<td>1.48</td>
<td>1.23</td>
</tr>
<tr>
<td>7024. RECTANGLES, Large, No. 1, 24 x 50 mm and 24 x 60 mm</td>
<td>1.98</td>
<td>1.78</td>
<td>1.49</td>
</tr>
<tr>
<td>Ditto, No. 2</td>
<td>1.66</td>
<td>1.49</td>
<td>1.25</td>
</tr>
<tr>
<td>7024. RECTANGLES, Large, No. 1, 35 x 50 mm up to and including 48 x 60 mm</td>
<td>2.52</td>
<td>2.27</td>
<td>1.89</td>
</tr>
<tr>
<td>Ditto, No. 2</td>
<td>1.98</td>
<td>1.78</td>
<td>1.49</td>
</tr>
</tbody>
</table>

* One size, shape and thickness only.
The Reco ELECTRIC DESALTER
For the removal of inorganic salts from organic and amino acid solutions to be chromatographed.

The Reco CHROMATOCAB
For two dimensional paper chromatography, using standard filter paper sheets 18¾ by 22½ in., or smaller.

RACKS
Stainless steel or glass for one dimensional chromatography.

INDICATOR SPRAYS
For application of indicators to chromatograms.

CLIPS
All stainless steel spring clips for holding chromatograms to glass rods.

SOLVENT TROUGHS
For use in chromatocabs or one-dimensional racks.

ALSO AVAILABLE:
Densitometers . . . for quantitative determinations on paper
Ultraviolet Lamps
Pyrex Disc Chambers
Micro Pipets
Drying Ovens


KLETT ELECTROPHORESIS
CUSTOM MADE

TOOL FOR THE ANALYSIS OF COMPLEX COLLOID SYSTEMS, AND FOR THE CONTROL OF PRODUCTION OF PURIFIED PROTEINS, ENZYMES, HORMONES

KLETT MANUFACTURING CO.
179 EAST 87TH STREET
NEW YORK, N. Y.
YOUR ad here reaches over 32,000 scientists, including foremost scientists in leading educational institutions, industrial laboratories and research foundations in 77 countries—at a very low cost.

**CLASSIFIED: $1/4 per word, minimum charge $3.60. Use of Box Number counts as 10 additional words.**

**DISPLAY:** Rates listed below—no charge for Box Number. Monthly invoices will be sent on a charge account basis—provided that satisfactory credit is established.

- **Single insertion:** $19.50 per inch
  - 7 times in 1 year: $17.50 per inch
  - 13 times in 1 year: $16.00 per inch
  - 26 times in 1 year: $14.00 per inch
  - 52 times in 1 year: $12.50 per inch

For PROOFS on display ads, copy must reach Science 4 weeks before date of issue (Friday of every week).

---

**POSITIONS WANTED**

**Anatomist,** Ph.D. Summer 1953, M.S. in Physiology. Desires teaching position with opportunity for research. Anatomy or Zoology Department. Five years university teaching experience. Box 94, SCIENCE.

**Bacteriologist,** Ph.D. Biochemistry minor. Five years teaching experience. Prefer North central. Available June 1, 1953. Box 91, SCIENCE.


**Champlain College** Closing—The campus of this Liberal Arts College of the State University of New York at Plattsburgh, N. Y. is to be taken over by the Air Force. All faculty members have been notified of termination of appointments on June 30. Information concerning experienced teachers in Biology and Chemistry available for new positions to be filled. Please write Dr. F. H. Wilson and C. Max Hull, respective heads of these departments.

**Organic Chemist,** Ph.D. 20 years in pharmaceutical research laboratories, now in Government Laboratory about to be discontinued. Chemistry and isolation of natural compounds, alkaloids, sulfur compounds, Teaching experience, languages. Desires position in academic, industrial research or teaching. Part time considered. X.Y.C. preferred, but will relocate. Box 95, SCIENCE.

(a) **Parasitologist:** Ph.D.; (Minor: Nutrition, Biochemistry); five years' teaching, research. (b) **Biologist:** Ph.D., nine years' university teaching; present rank: professor of biology; capable administrator. For further information, please write Science Division, Medical Bureau (Burneice Larson, Director) Palmolive Building, Chicago.

**Pharmacologist,** Ph.D., teaching and research experience including chemotherapy and tissue respiration studies. Box 93, SCIENCE.

**Physiologist,** Ph.D., Mammalian and General physiology. Age 28, married, two children. Experienced in teaching and research. One year postdoctoral research. Publications. Desires permanent academic position. Box 97, SCIENCE.

(1) **Plant Physiologist:** Ph.D.; experienced teaching and research, physiology and nutrition, and isolation studies in biology; publications. (2) **Biochemist:** Ph.D.; desires research or teaching appointment. West. Please write Scientific Personnel Service, 122 South Michigan Ave., Chicago.

**Writer—Chemist** wants free-lance writing, editorial, advertising work; M.S. chemistry, writing, newspaper experience. Box 91, SCIENCE.

**Zoology—Comparative Anatomy,** Master's, Man. 31. Four years University teaching. Will continue toward Ph.D. summers. Interested Zoology, Comparative Anatomy, Parasitology. Box 86, SCIENCE.


---

**THE WEIZMANN INSTITUTE OF SCIENCE**

**REHOVOTH, ISRAEL**

There are several vacancies for physicists to work on nuclear induction and in related fields. Starting salary will be between 200 and 300 L.L. per month according to qualifications, experience, etc. This includes a cost-of-living allowance which will vary according to the cost-of-living index.

Further particulars may be obtained from the undersigned to whom applications should be submitted not later than June 15th, 1953.

Applications should be accompanied by an account of the applicant's scientific career and the names of not more than three referees.

Please address Dr. Joseph Gillis, replies to: Academic Secretary, Weizmann Institute of Science, Rehovoth, Israel.

---

**THE MARKET PLACE**

**BOOKS • SERVICES • SUPPLIES • EQUIPMENT**

**CLASSIFIED:** 25¢ per word, minimum charge $6.00. Use of Box Number counts as 10 additional words. Correct payment to SCIENCE must accompany ad.

**DISPLAY:** Rates listed below—no charge for Box Number. Monthly invoices will be sent on a charge account basis—provided that satisfactory credit is established.

- **Single insertion:** $19.50 per inch
  - 7 times in 1 year: $17.50 per inch
  - 13 times in 1 year: $16.00 per inch
  - 26 times in 1 year: $14.00 per inch
  - 52 times in 1 year: $12.50 per inch

For PROOFS on display ads, copy must reach SCIENCE 4 weeks before date of issue (Friday of every week).

**LANGUAGES**

**LINGUAPHONE MAKES LANGUAGES EASY**

At home, learn to speak Spanish, Italian, French, German, Norwegian, Russian, Japanese, any of 29 languages by quick, easy Linguaphone, World's Standard Conversational Method. Save time, work and money. Send for FREE book TODAY. LINGUAPHONE INSTITUTE, 8405 Mezz., Rock Plaza, New York 20, N. Y.
The MARKET PLACE

BOOKS  SERVICES  SUPPLIES  EQUIPMENT

WANTED TO PURCHASE . . .

SCIENTIFIC PERIODICALS and BOOKS

Sets and runs, foreign and domestic. Entire libraries and smaller collections wanted.

WALTER J. JOHNSON  125 East 23rd St., New York 10, N. Y.

Your sets and files of scientific journals are needed by our library and institutional customers. Please send us list and description of periodical files you are willing to sell at high market prices. Write Dept. A35, J. S. CANNER, INC., Boston 19, Massachusetts.

SCIENTIFIC BOOKS and PERIODICALS WANTED

Complete libraries—Sets and runs—Single titles

Also, please send us your want list.

STEBERT - HAFNER, INC.
31 East 10th St., New York 3

BACK NUMBER PERIODICALS —— Bought and Sold

Tell us what you want!—What have you to offer?

Abrahams Magazine Service
Established 1889  NEW YORK 3, N. Y.

- AMERICAN POLYNESIA
- and the
- HAWAIIAN CHAIN,
- by E. H. Bryan, Jr.

Laboratory Services

Project research and consultation in Biochemistry, Chemistry, Bacteriology and Entomology.

Amino acid assays and biological protein evaluations  Vitamin and antibiotic assays  Chick feeding tests  Toxicity studies  Phenol coefficient determinations

Specific immune sera.

WISCONSIN ALUMNI RESEARCH FOUNDATION
P. O. BOX 2039  MADISON 1, WISCONSIN

PROFESSIONAL SERVICES

A NATIONAL SERVICE

ALBERT

TEACHERS

AGENCY

and COLLEGE

BUREAU

RELIABLE and

PERSONAL SERVICE

. . . to Colleges and Universities of the Nation and their Personnel. Originated and continued by three generations of the Albert family.

Member N.A.T.A.
25 E. Jackson Blvd. Chicago 4, Illiona

LOOKING FOR A PUBLISHER?

Write for Free Booklet SC telling how we can publish your book. All subjects considered. New authors welcome.

VANTAGE PRESS, Inc. 120 W. 31 St., New York 1.
In Calif.: 6356 Hollywood Blvd., Hollywood 28

PROFESSIONAL SERVICES

GBI CATALOG No. 677

Lists more than 300 items for Research—Biological, Microbiological, Bacteriological, Biochemical, Nutritional. Write

GENERAL BIOCHEMICALS, INC.
7E LABORATORY PARK  CHAGrin FALLS, OHIO

SUPPLIES AND EQUIPMENT

STAINS

STARKMAN Biological Laboratory
461 Bloed St., W. Toronto, Canada

FIELD FINDER

Loveinstruments

Lovins Engineering Company
Silver Spring, Md.

LABORATORY ANIMALS

Dogs  Rats  Rabbits  Cats  Pigeons

Mice  Poultry  Guinea Pigs

Reasonably priced  Dependable service

Labine

Stainless steel beaters


Lanco

No. 21-43-S

Approx.  Weight  Each  Ea.

Size  Wt.  37 gm  66 gm  125 gm  250 gm  600 gm  1200 gm  2000 gm  3000 gm  4000 gm

50 ml  900  1.55  1.35  1.80  1.40  2.75  3.40  4.25  4.75  5.45

125 ml  86 gm  1.55  1.35  1.80  1.40  2.75  3.40  4.25  4.75  5.45

250 ml  125 gm  2.10  1.80  2.75  3.40  4.25  4.75  5.45

600 ml  242 gm  2.75  3.40  4.25  4.75  5.45

1200 ml  325 gm  3.40  4.25  4.75  5.45

2000 ml  446 gm  4.20  3.80  4.75  4.90

3000 ml  586 gm  4.75  4.25  4.75  4.90

4000 ml  691 gm  5.45  4.90

Arthur S. LaPine and Company
3001 S. Knox Ave., Chicago 29, Ill.

Analytical and Research Laboratory, Inc.
148 Islip Ave.
Islip, N. Y.
### Custom Chemical Laboratories

2054 N. Cicero Ave., Chicago 39, Ill.

<table>
<thead>
<tr>
<th>Product</th>
<th>25 g</th>
<th>50 g</th>
<th>100 g</th>
<th>250 g</th>
<th>500 g</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ninhydrin</td>
<td>$6.00</td>
<td>$11.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cyclopropylcyanide</td>
<td>$8.00</td>
<td></td>
<td>$15.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,4-Dinitrofluorobenzene</td>
<td>$4.25</td>
<td>$8.50</td>
<td>$15.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2-Hydroxy-3-naphthoic Acid Hydrazide

For Separation of Conjugated Steroids and Histochemical Demonstration of Ketosteroids

Descriptive Literature and Prices on Request

**DAJAC LABORATORIES**

511 Lancaster St., Leominster, Mass.

---

### Laboratory Animals

**MANOR FARMS • STAATS-BURG NEW YORK**

Purity of Strain Guaranteed

**SPRAGUE-DAWLEY, INC.**

Pioneers in development of the standard laboratory Albino rat

Box 2071 • Madison 5, Wisconsin • Phone 35318

**MICE • RATS**

**FOR LABORATORY USE**

Write for prices.

**BLUE SPRUCE FARMS, R.F.D. #2, ALTAMONT, N. Y.**

(Phone-4461)

---

**1953 DIGEST**

of

CARGILE LABORATORY AIDS

Just write for Digest SM

R. P. CARGILLE LABORATORIES, INC.

117 Liberty St. • New York 6, N. Y.

---

**For CONSISTENT Rats**

- **BUDD MT. RODENT FARM**
- **CHESTER, N. J.**

Breeders of a recognized strain of Wistar.

---

**Are YOU seeking**

a new position, or new personnel?

41 replies received from ONE classified ad in SCIENCE . . .

Your ad here will get results!

Send your ad NOW!
Autotechnicon saves everyone's time, right down the line. Its automatic processing gets tissues through faster, does them better. The pathologist can issue prompter reports. The surgeon, getting earlier information, can proceed with greater sureness. The technician is relieved of a fretsome, time-consuming chore. Faster handling throughout results in significant savings in bed-days.

Everybody benefits.
Having Difficulty

Selecting the RIGHT

MICROSCOPE ILLUMINATOR?

Every microscope user has different needs, different likes and dislikes in illuminators. But whatever type you prefer . . . remember, best results are assured only when the quality matches that of your microscope.

Despite the diversity in type, function, and appearance, there are certain characteristics you will find in all AO Spencer Microscope Illuminators . . . sturdy, precision construction . . . highest quality optics . . . brilliant, even illumination . . . proper heat dissipation for cool, comfortable operation.

AO distributors or representatives will welcome the opportunity to make recommendations or discuss illumination problems with you. Just write Dept. S3

A. BUILT-IN SUBSTAGE LAMP
B. PORTABLE SUBSTAGE LAMP
C. ADJUSTABLE LABORATORY LAMP
D. ADVANCED LABORATORY LAMP
E. UNIVERSAL MICROSCOPE LAMP
F. CHALET TABLE LAMP

American Optical
INSTRUMENT DIVISION
BUFFALO, NEW YORK