

The American Biology Teacher

VOL. 3

OCTOBER, 1940

NO. 1

Objective Animal Experiments - - - - Fletcher J. Proctor	5
A Third of a Century in Biology Teacher Education - - - - O. P. Dellinger	9
Opaque Projection in Biology - - - - W. Hugh Stickler	11
Arousing Interest in Senior High School Biology - John E. Shoop	14
The Biology Exchange Idea - - - - Willis W. Collins	17
President's Message - - - -	20
Editorials - - - - - - - -	21
Laboratory Methods and Teaching Aids - - - - -	23
Biological Briefs - Ruth Sherman	27
Notes and News - - - - -	28
Books - - - - - - - - -	31

PUBLISHED BY

The National Association of Biology Teachers



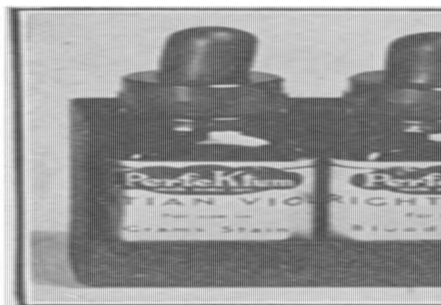
PerfeKtum

An Always Reliable Source of Supply

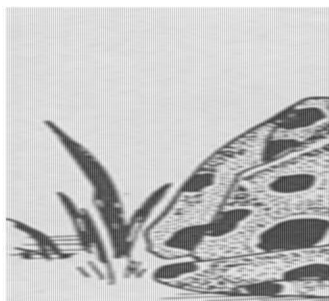
A COMPLETE LINE OF
COVER GLASSES MICRO-SLIDES
STAIN PACKETS ANALYSIS UNITS
BIO-CHEMICAL SOLUTIONS
REAGENTS & STAINS

You are always assured of value, reliability and products of uniform high quality when they bear the name of PerfeKtum. Remember PerfeKtum as a dependable, complete source of supply for all the products listed above.

Send for New Complete Catalog
PerfeKtum Products Co.
300 Fourth Avenue, New York City



LIVE FROGS



We carry in stock throughout the year a large supply of healthy, live frogs, *free from red-leg*. Specimens are shipped to us from our station at least once a week, so that fresh frogs are procurable at all times.

Our cultures of Amoeba, Paramoecium, Euglena, Hydra, Planaria, etc., are in excellent condition. You furnish the delivery date and we will guarantee safe arrival.



New York Scientific Supply Co.
(Formerly N. Y. Biological Supply Co.)
111-113 E. 22nd St., New York, N. Y.

SERVING

HIGH SCHOOL BIOLOGY

Now Is The Time To Requisition:

1. Insect Collecting and Storage Equipment.
2. Specially Prepared Collections and Life Histories of Insects.
3. Ward's Animal Kingdom Survey Collection.
4. Models for Physiology, Hygiene and Biology.
5. Micro-slides and Specimens for Biology.

Consult H392, High School Science, for the material you will need this semester and specify:—



THE FRANK A. WARD FOUNDATION OF NATURAL SCIENCE OF THE UNIVERSITY OF ROCHESTER

Please mention THE AMERICAN BIOLOGY TEACHER when answering advertisements.

MEIER AND SHOEMAKER ESSENTIALS OF BIOLOGY

NEW EDITION

This standard high-school biology provides ample material for an entire year's work for students in secondary schools.

Looking Forward

Make The New Essentials Of Biology Your Basal Text

It definitely reflects the views of our leading educators.

"The NEW ESSENTIALS OF BIOLOGY appeals to me more than any of the several books I examined. Your section on erosion is splendid, and the material on injurious plants is very fine. You are to be commended for your excellent presentation of classification."

J. A. Trent, *Kansas State Teachers College, Pittsburg, Kan.*

It definitely reflects the views of progressive superintendents of schools.

"I like the plan of The NEW ESSENTIALS OF BIOLOGY. I am in favor of studying living things in their relation to each other and to man. I think you have one of the best on the market, if not THE BEST."

Cullen B. Sweet, *Superintendent of Schools, Barry, Ill.*

It definitely reflects the views of progressive biology teachers.

"The NEW ESSENTIALS OF BIOLOGY challenges the student's curiosity, his understanding, and his ability to think constructively and scientifically. I expect to use two or three leading texts instead of one. I assure you, your text will be on the list."

Ben Reed, *Community High School, Pittsfield, Ill.*

"I like The NEW ESSENTIALS OF BIOLOGY in every respect and hope I may have the pleasure of using it, at least, in some of my classes, and if possible in all."

Ramond M. Freed, *Olney High School, Philadelphia, Pa.*

Let your pupils explore the science of living things with the aid of a course that is preëminently modern, understandable, and enjoyable.

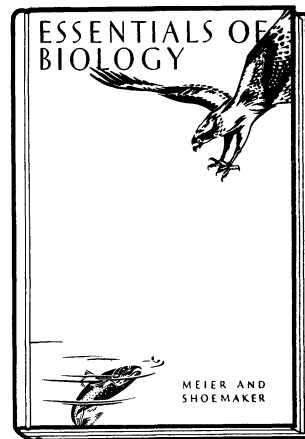
Where else can you find another biology textbook of 725 pages, with 464 illustrations, with such modern text material, excellent printing, and superior binding for only \$1.80?

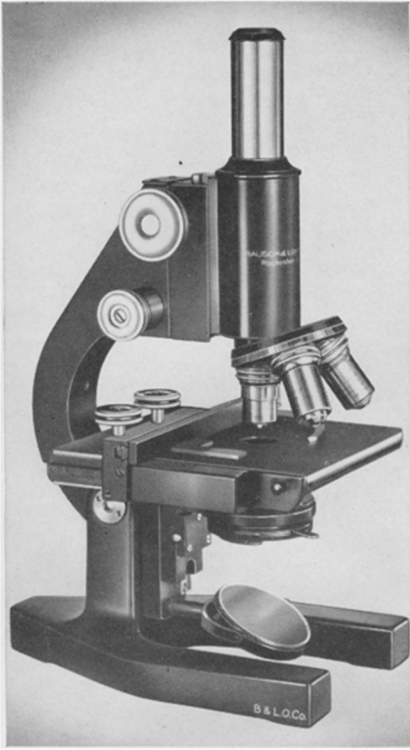
THE MEIER AND SHOEMAKER NOTEBOOK. It may be used with any biology textbook or in schools where two or more textbooks are in use. It is adaptive for use in community high schools, township high schools or senior high schools. In addition to the material commonly found in the ordinary workbook it gives directions for field work, suggestions for the study of living materials in the laboratory with spaces for notes, and it serves as a course of study. \$0.84.

Prices are subject to discount.

GINN AND COMPANY

BOSTON · NEW YORK · CHICAGO · ATLANTA · DALLAS
COLUMBUS · SAN FRANCISCO





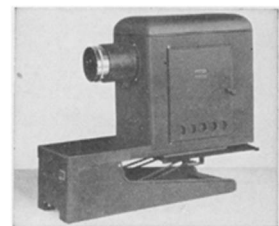
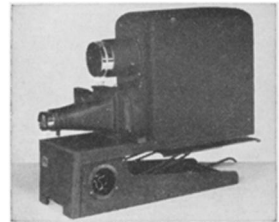
The proper training

FOR BIOLOGY STUDENTS

BECAUSE B&L Type H Microscopes are similar in all operating essentials to the microscopes used in science and industry, they are invaluable in familiarizing the biology student with the technique he will use in his future professional life. That is why students should be trained with B&L Type H Microscopes.

Type H Microscopes are available with various equipment and will accommodate all accessories for advanced work. For complete details write for Booklet D-185 to Bausch & Lomb Optical Co., 718 St. Paul St., Rochester, N. Y.

Bausch & Lomb have redesigned the LRM and ERM Balopticons to provide greater ease of operation and better still, projection performance. Whether you use slides or opaque objects or both, it will amply repay you to investigate these two new Balopticons. Ask for folder #E-132.



BAUSCH & LOMB

FOR YOUR EYES, INSIST ON BAUSCH & LOMB EYEWEAR, MADE FROM BAUSCH & LOMB GLASS TO BAUSCH & LOMB HIGH STANDARDS OF PRECISION



Please mention THE AMERICAN BIOLOGY TEACHER when answering advertisements.

JEWELL MODELS FOR BIOLOGY



In this photo, taken in our laboratory, are shown just a few of our Jewell Models for Biology. Dr. Wiley W. Crawford, Professor of Biology at Blackburn College, is demonstrating the structure of the earthworm with the aid of our large Earthworm Dissection model. Other models for Botany, Zoology and Embryology are also shown.

MADE IN AMERICA

Jewell Models are wholly American in their conception, development and manufacture, which can be said of no other comparable line of models. Their success is largely due to the cooperation, suggestions and criticism of American biology teachers.

Patriotism, however, has nothing to do with the teaching value of Jewell Models. We make no such appeal for your consideration, for they have proved their worth on their own merits—scientific accuracy, skill of workmanship and the finest quality materials.

AMERICAN SCHOOLS

The college or university in the United States that does not have one or more Jewell Models is the exception. Every year thousands of students are helped to a clearer understanding of biological principles through the use of our models. More and more, Jewell Models are becoming standard equipment wherever biology is taught.

FOREIGN SCHOOLS

It is a long way to South Africa and Australia, but Jewell Models are used in their universities. They are also used in China, India and Thailand; in Tasmania and New Zealand; in England, Scotland and other countries. In the schools of many lands you will find Jewell Models in the role of silent teachers, real assistants, if you please, in the study of biology.

Use Jewell Models in *your* biology classes. You will find them a worth-while investment that will yield returns in better teaching for years to come. Write for our catalog today.

JEWELL MODELS, CARLINVILLE ILLINOIS

THE AMERICAN BIOLOGY TEACHER

Publication of The National Association of Biology Teachers.

Issued monthly eight times during the school year from October to May.

Publication Office—N. Queen St. and McGovern Ave., Lancaster, Pennsylvania.

Correspondence concerning manuscripts may be addressed to any of the Associate Editors or directly to the Editor-in-Chief. Books and pamphlets for review should be sent to the Editor-in-Chief. Subscriptions, renewals, and notices of change of address should be sent to P. K. Houdek, Secretary-Treasurer, Robinson, Ill.

Association Officers

President: George W. Jeffers, State Teachers College, Farmville, Virginia.

President-elect: Homer A. Stephens, Ingalls Junior-Senior High School, Atchison, Kansas.

First Vice President: Miss Helen Trowbridge, Glenbard Township High School, Glen Ellyn, Illinois.

Second Vice President: M. A. Russell, Highland Park High School, Highland Park, Michigan.

Secretary-Treasurer: P. K. Houdek, Township High School, Robinson, Illinois.

Editorial Staff

Editor-in-Chief

Edward C. Colin
Chicago Teachers College
Office, 306 West 66th Street
Chicago, Illinois

Managing Editor

Alexander A. Fried
Christopher Columbus High School
New York City

Assistant Managing Editor

Charles B. Price
Englewood High School
Chicago, Illinois

Associate Editors

Herman C. Arneson
Bemidji High School
Pelican Rapids, Minnesota

Peter A. Blate
109 Hyde Park Pl.
Tampa, Florida

F. Martin Brown
Cheyenne Mountain Museum
Colorado Springs, Colorado

Brother H. Charles
Saint Mary's College
Winona, Minnesota

Willis W. Collins
Idabel High School
Idabel, Oklahoma

L. C. Dingess

Yuma High School
Yuma, Arizona

Ruth A. Dodge

Johnstown High School
Johnstown, New York

Philip E. Foss

Hartford Public High School
Hartford, Connecticut

Philip Goldstein

Walton High School
Bronx, New York City

Elwood D. Heiss

State Teachers College
East Stroudsburg, Pennsylvania

Melvin A. Hintz

South Milwaukee High School
South Milwaukee, Wisconsin

Charles C. Herbst

Beverly Hills High School
Beverly Hills, California

Ray Kennelty

Du Bois High School
Du Bois, Pennsylvania

M. C. Lichtenwalter

Lane Technical High School
Chicago, Illinois

Laura T. McVey

Von Steuben High School
Chicago, Illinois

Thomas F. Morrison

Milton Academy
Milton, Massachusetts

Alan A. Nathans

Christopher Columbus High School
New York City

M. A. Russell

Junior High School
Highland Park, Michigan

Ruth Sherman

David Starr Jordan High School
Los Angeles, California

J. L. Sloanaker

North Central High School
Spokane, Washington

J. A. Trent

State Teachers College
Pittsburg, Kansas

Helen Trowbridge

Glenbard Township High School
Glen Ellyn, Illinois

B. Bernarr Vance

Kiser High School
Dayton, Ohio

Guy F. Williams

Colby Junior College
New London, New Hampshire

Advisory Staff

E. V. Cowdry

Washington University
St. Louis, Missouri

W. C. Curtis

University of Missouri
Columbia Missouri

B. C. Gruenberg

Sub-Treasury Bldg.
New York City

I. Alex. Herskowitz

Christopher Columbus High School
New York City

George W. Hunter

Claremont College
Claremont, California

Paul B. Mann

Evander Childs High School
800 Gun Hill Rd., New York City

D. F. Miller

The Ohio State University
Columbus, Ohio

Oscar Riddle

Carnegie Institution
Cold Spring Harbor, Long Island

Edmund V. Sinnott

Yale University
New Haven, Connecticut

The Robert Morris Hotel

at 17th and Arch Streets and the
Parkway

Within walking distance
to everything important

Single Rooms **Double Rooms**
from \$2.50 from \$4.00

All rooms outside with running ice water,
radio, bath and all beds equipped with box
springs and inner-spring hair mattresses.

COMPLETE BANQUET
SERVICE

Headquarters
National Assoc. of Biology Teachers

Breakfast from 35¢
Luncheon from 30¢
Dinner from 60¢
In Our Main Dining Room

LOUIS E. PIKE, *Manager*

Hydroponics

The science of growing plants without soil is rapidly growing in popularity and is now included in the laboratory courses of many secondary schools and colleges. In these experiments the necessary food elements in the form of pure chemicals, are added to water to form nutrient solutions. The spectacular results warrant the effort on the part of any science teacher.

Complete water-culture outfits, sets of chemicals and detailed directions are made up for the biology teacher.

Ask for the *free Turtox bulletin* on Hydroponics.

GENERAL BIOLOGICAL SUPPLY HOUSE
Incorporated
761-763 EAST SIXTY-NINTH PLACE
CHICAGO

Our new, comprehensive catalog of

BOTANICAL MATERIALS

will be ready for distribution by October first. No progressive biology instructor can afford to be without a copy. If your name is not on the mailing list for *El Palo Alto News*, a postal request will secure a copy.

Have you examined slides stained by our new quintuple method? They are a revelation. A sample will be sent on receipt of 10 cents to any instructor writing on official school stationery.

CALIFORNIA BOTANICAL MATERIALS COMPANY

787 Melville Avenue

Palo Alto, California