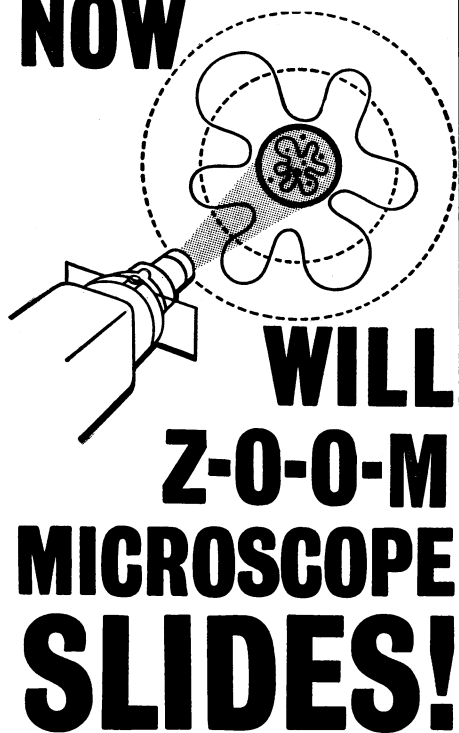
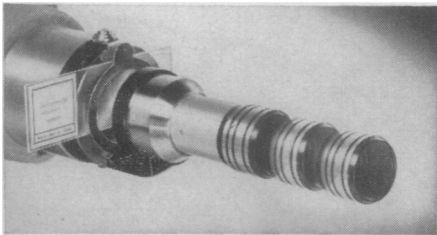


# YOUR 35 mm PROJECTOR NOW



- New f1.5 Elgeet Zoom Microtar Attachment converts your projector for continuously variable magnification of slides
- Focus at any magnification—zoom image stays sharp
- Zoom magnification dramatizes the projected image for lectures, demonstrations
- True, variable iris controls field size for concentration of interest on select areas
- Positive lock spring device secures slide
- Adapters fit unit to most popular 35mm slide projectors; unit removes instantly for normal projector use
- Complete Elgeet Zoom Microtar Attachment—with appropriate adapter for your projector—\$64.50



When ordering, please specify make and model of projector you will be adapting. For further details or for orders, write to: DEPT. SN-4

SCIENTIFIC INSTRUMENT DIVISION

## Elgeet

Elgeet Optical Co.  
838 Smith Street,  
Rochester, N. Y.  
CL-60

## BIOCHEMISTRY

# Blood Enzyme Fingerprints

► DISEASES of the heart, liver and other body organs may be detected by a study of the enzyme "fingerprints" of the blood.

One of the enzymes found in the blood, lactic dehydrogenase (LDH), regulates several important chemical processes in the body, Dr. Kenneth F. Gregory of Ontario Agricultural College, Guelph, Ont., Canada, reported to the American Chemical Society meeting in St. Louis.

Dr. Gregory worked with Dr. Felix Wroblewski of the Sloan-Kettering Institute for Cancer Research, New York.

Whenever a body organ is damaged by disease, its enzymes are released into the blood stream. Each body organ has its distinctive mixture of the five forms (isoenzymes) of LDH. The LDH isoenzyme in the blood serves to identify the damaged organ in much the same way fingerprints identify persons.

Since the isoenzymes of LDH differ markedly in their resistance to heat, the amount of enzyme destroyed by heating at different temperatures is used to identify the mixture. A large amount of LDH destroyed by heating the blood serum at a relatively low temperature indicates liver disease. If a large amount of the LDH is not destroyed by heating at a relatively high temperature, heart damage is indicated.

The multiple nature of LDH is expected to be of value in the study of evolution and genetic relationships. Only one of the isoenzymes of LDH is reported to be present in birds; two in fish, amphibia, and reptiles; and up to five in mammals.

• Science News Letter, 79:212 April 8, 1961

## Chemicals Used in Drugs

► CHEMICALS that hold, move or remove metals in the body are now being used in medicine, scientists were told at the American Chemical Society meeting in St. Louis.

Some metals are essential for the normal functioning of animal and plant tissues, Dr. Harold Hardman, Marquette University School of Medicine, Milwaukee, said.

Chemicals called chelating agents can combine with these metals. This ability can be used to benefit mankind, Dr. Hardman told a symposium on chelating agents in medicine.

Drugs that function as chelating agents can modify the activity of living cells when they combine with metals normally present in living organisms, Dr. Hardman said. One possibility is the removal of essential metals with a resulting change in growth and metabolism. This type of action may account for the anti-bacterial action of certain antibiotics.

Metals such as mercury and lead are not essential and may be harmful to animal tissues. They also can be combined and removed from the body by chelating agents.

High concentrations of a metal in a particular organ or tissue can be removed by chelating agents, Dr. Hardman said. Wilson's disease is characterized by unusually high concentrations of copper in liver and brain. The disease can be considerably modified by chelating agents that remove copper from the involved organs.

These agents may also be used to transfer heavy metals to an organism, for such ailments as iron deficiencies in plants or animals, Dr. Hardman said. The biological effect of a metal can be intensified when taken by the organism in the form of a chelate.

This appears to be a promising area for further research in the treatment of metal deficiencies in agriculture and medicine, Dr. Hardman concluded.

Chelating agents can also modify the effects of radiation, Dr. Jack Schubert of the Argonne National Laboratory, Lemont, Ill., reported.

• Science News Letter, 79:212 April 8, 1961

## SCIENCE NEWS LETTER

VOL. 79 APRIL 8, 1961 NO. 14

Edited by WATSON DAVIS

The Weekly Summary of Current Science, published every Saturday by SCIENCE SERVICE, Inc., 1719 N St., N.W., Washington 6, D. C., North 7-2255. Cable Address: SCIENSERV.

Subscription rates: 1 yr., \$5.50; 2 yrs., \$10.00; 3 yrs., \$14.50; ten or more copies in one package to one address, 7/2 cents per copy per week; single copy, 15 cents, more than six months old, 25 cents. No charge for foreign postage.

Change of address: Three weeks notice is required. When ordering a change please state exactly how magazine is addressed. Your new address should include postal zone number if you have one.

Copyright © 1961 by Science Service, Inc. Reproduction of any portion of SCIENCE NEWS LETTER is strictly prohibited. Newspapers, magazines and other publications are invited to avail themselves of the numerous syndicated services issued by Science Service. Science Service also publishes CHEMISTRY (eight times a year) and THINGS of Science (monthly).

Printed in U.S.A. Second class postage paid at Washington, D. C. Established in mimeograph form March 13, 1922. Title registered as trademark, U. S. and Canadian Patent Offices. Indexed in Reader's Guide to Periodical Literature, Abridged Guide, and the Engineering Index. Member Audit Bureau of Circulation.

## SCIENCE SERVICE

The Institution for the Popularization of Science organized 1921 as a non-profit corporation.

Board of Trustees—Nominated by the American Association for the Advancement of Science: William W. Rubey, University of California at Los Angeles; Wallace R. Brode; Douglas Whitaker, Rockefeller Institute for Medical Research. Nominated by the National Academy of Sciences: Harlow Shapley, Harvard College Observatory; Philip Bard, Johns Hopkins University; Henry Allen Moe, John Simon Guggenheim Memorial Foundation. Nominated by the National Research Council: Leonard Carmichael, Smithsonian Institution; John R. Dunning, Columbia University; Benjamin H. Willier, Johns Hopkins University. Nominated by the Journalistic Profession: Michael J. Ogdan, Providence Journal-Bulletin; O. W. Riegel, Washington and Lee University; Lee Hills, Detroit Free Press. Nominated by the Scripps Estate: Edward J. Meeman, Memphis Press-Scimitar; Frank Ford, Washington, D. C.; Charles E. Scripps, Cincinnati, Ohio.

Officers—President, Leonard Carmichael; Vice President and Chairman of Executive Committee, Charles E. Scripps; Treasurer, Wallace R. Brode; Secretary, Watson Davis.

Staff—Director: Watson Davis. Writers: Gloria Ball, Ann Ewing, Lillian Levy, Faye Marley, Jane Marye, Tove Neville, Marjorie Van de Water, Judy Viorst, Burrell Wood. Science Youth Division: Joseph H. Kraus, Shirley Moore, Dorothy Schriver, Leslie Watkins. Photography: Fremont Davis. Production: Priscilla Howe, Marcia Nelson. Syndicate Sales: Hallie Jenkins. Librarian: Margit Friedrich. Interlingua Division in New York: Alexander Gode, 80 E. 11th St., GRamercy 3-5410. Advertising Manager: Fred A. Moulton, METropolitan 8-2562.