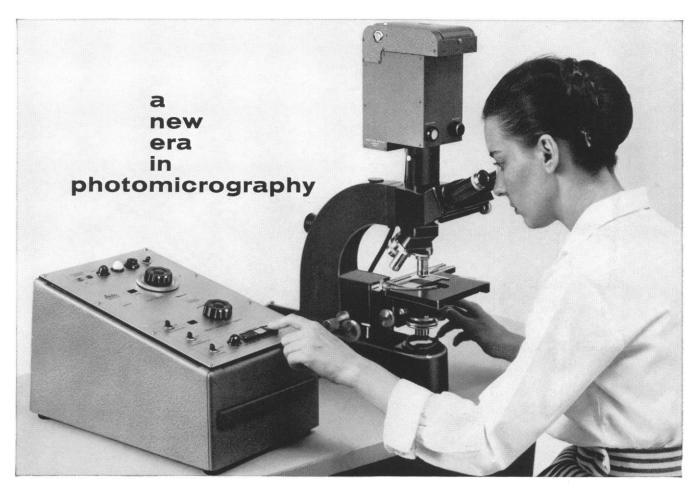
## SCIENCE 15 September 1961 Vol. 134, No. 3481

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE





# LEITZ ORTHOMAT AUTOMATICALLY DETERMINES EXPOSURES FROM 1/100th SECOND TO 1/2 HOUR OR MORE... COMPUTES, SOLVES ANY 35mm MICRO-PHOTO PROBLEM AT THE TOUCH OF A BUTTON!

NEW LEITZ ORTHOMAT...a fully automatic micro-camera attachment that slips onto any modern Leitz microscope in seconds...frees the researcher or lab expert from hours of painstaking trial and error. It permits any type of photomicrography at the touch of a button.

EXCLUSIVE CHOICE OF INTEGRATING OR DETAIL EXPOSURE MEASUREMENT... automatic exposures use integrating light measurements for histological, biological and metallurgical specimens and phase contrast photos; detail measurements are used for sections as small as 1/100th of the field. Faster, more accurate photos of hematological and genetic specimens, individual pollens or diatoms are now possible without time-consuming test exposures. This highly selective control also makes it easier than ever before to achieve absolute exposure accuracy in dark field and fluorescent illumination.

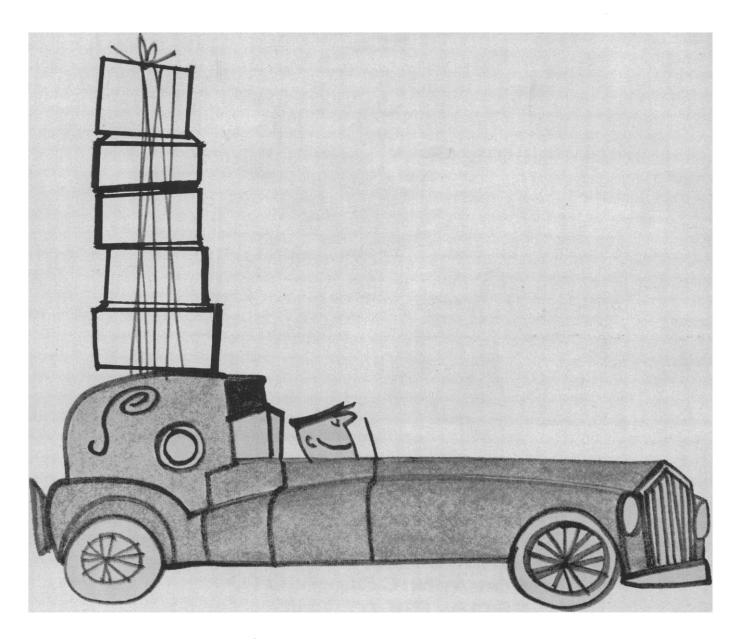
AUTOMATIC EXPOSURE TIMES FROM 1/100th SECOND TO SEVERAL HOURS... a newly designed electromagnetic shutter which, unlike mechanical shutters, is completely free of vibration, makes possible precisely timed automatic exposures from 1/100th second to  $\frac{1}{2}$  hour or more. As an added convenience, lengthy time exposures may be interrupted and resumed as desired.

INSTANT EXPOSURE DURING UNINTERRUPTED OBSERVATION... optical dividers in the ORTHOMAT allow sufficient light for exposures, yet divert enough light into the viewing tube for continuous viewing, even in dark field or fluorescence. This permits individual or repeated exposures at the critical moment without interrupting observation. Electronic flash can be synchronized for live specimens when extremely short exposure times are necessary. Interchangeable film chambers permit alternation between black-and-white and color exposures at any point on the roll.

WRITE FOR COMPLETE DETAILS AND SPECIFICATIONS...of these and many other exclusive ORTHOMAT features, including: image-focusing through binocular tube with automatic compensation for the interpupillary distance • identical perfect focus in eyepiece and film plane • optical image is projected directly onto film plane without use of reflecting surfaces • simple adjustment of automatic controls for ASA values of various films • automatic film transport • film counter on each 35mm film chamber • outlet that accepts timer for automatic release at set intervals (ideal for stop motion) • synchronization for micro-flash equipment • pedal release that leaves both hands free.



E. LEITZ, INC., 468 PARK AVENUE SOUTH, NEW YORK 16, N. Y. Distributors of the world-famous products of Ernst Leitz G. m. b. H., Wetzlar, Germany-Ernst Leitz Canada Ltd. LEICA AND LEICINA CAMERAS · LENSES · PROJECTORS · MICROSCOPES

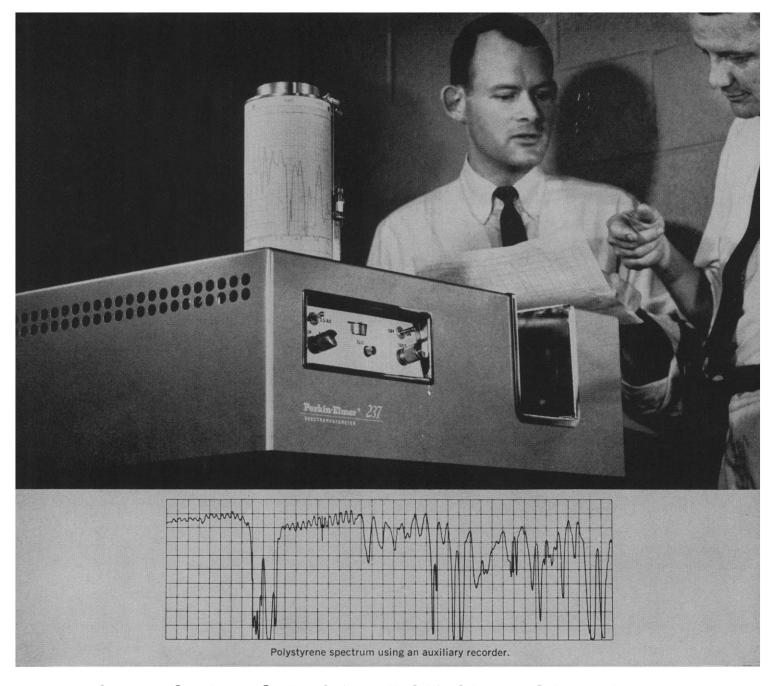


#### N.B.Co. DELIVERS BIOCHEMICALS, NOT EXCUSES!

We confess. We had to rent the Rolls. Because most of our customers don't care about stylish delivery. (Though if they want it, they get it.) Speed is a more important specialty. 24-hour delivery in the U.S.A., slightly longer anywhere else. Care is another. Like you, we're perfectionists. The order that reaches your lab is your order ...checked carefully, shipped accurately. N.B.Co.'s world-wide volume means you buy pure biochemicals at the lowest prices possible. N.B.Co.'s 2600 varieties mean we usually have what

you want. For plain or fancy delivery in a hurry, call MOntrose 2-0214, Cleveland, Ohio. And send for our FREE 2600-item catalogue today. NUTRITIONAL BIOCHEMICALS CORPORATION 21010 Miles Avenue • Cleveland 28, Ohio

Send for our free October, 1961 Catalog of taining more than 2600 items. Fill out cou and mail today for your copy.	
Name	
Organization	Sergicidal XIGAGO II I IMPRILITA
Address	
City	
State	Zone



### NOW...GRATING RESOLUTION OVER FUNDAMENTAL IR RANGE WITH NEW MODEL 237 SPECTROPHOTOMETER

You now can have the advantages of high-resolution analysis over the entire infrared spectral range of fundamental analytical importance—4000 to 625 wavenumbers (2.5 to 16 microns)...even if your budget is limited. The new Perkin-Elmer Model 237 Double-Grating Spectrophotometer, latest in P-E's low-cost Infracord line, makes this possible.

Basic to this high performance at low cost is the Model 237's grating-filter design: the dispersing power of gratings, used only in their first orders, is complemented by filters to eliminate higher orders of radiation. The result is outstanding spectral purity achieved with simplicity and dependability of mechanical operation previously not available.

**Flexible Presentation.** You can specify a Model 237 recording in either linear wavelength or linear wavenumbers, as you prefer. Full wavelength coverage is divided into two

#### SEE PERKIN-ELMER AT ACS AND ISA

The terms Infracord and Perkin-Elmer are registered trademarks of the Perkin-Elmer Corporation.

ranges – 4000-1300 and 2000-625 wavenumbers; or 2.5-7.7 and 5.0-16 microns. The analyst selects the range he desires by the flick of a panel switch, thus assuring maximum legibility of fine structural detail.

Two scanning rates for each range are available: fast (8 minutes) rate for survey scans or spectra of materials with relatively few narrow spectral bands. Slow (24 minutes) rate provides details of very complex spectra. Here, too, a panel switch puts both speeds at the analyst's fingertips.

Optional auxiliary recorders, used above to show polystyrene spectrum, are available to give you continuous spectra at fixed wavelengths or to let you expand or compress ordinate or abscissa. The chart ordinate—a full 15 centimeters—provides maximum accuracy in recording band intensities.

Write for complete information and sample spectra.

Perkin-Elmer Corporation\_

### SCIENCE

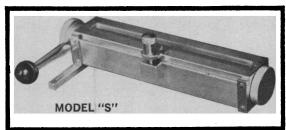
Editorial	Terror and Talks	701
Articles	Reef Building: H. S. Ladd  The growth of living breakwaters has kept pace with subsidence and wave erosion for fifty million years.	703
	Public Education for Science and Technology: A. H. Dupree  What is the role that the universities should play in dispelling popular myths about science?	716
Science and the News	As Interpreter of Soviet Moves, Khrushchev Remains the Best Kremlinologist; Wilderness Bill Passed by Senate	718
Book Reviews	Man's Circuitous Route to the Modern World: R. H. Dyson, Jr.  Mankind, endlessly restless, moves into and out of phases of civilization.	723
	B. Kummel's History of the Earth, reviewed by L. Dryden; other reviews	725
Reports	Generalized Neocortical Responses and Corticospinal Neuron Activity:  D. P. Purpura, B. Cohen, G. Marini	729
	Behavior Studies by Capacitance Sensing: J. L. Kavanau and K. S. Norris	730
	Color Induction and Hue Discrimination: L. W. Bivens	732
	Phototropism in Conidiobolus, Some Preliminary Observations:  R. M. Page and J. Brungard	733
	Antigen Disappearance in Hibernating Ground Squirrels:  B. N. Jaroslow and D. E. Smith	734
	Development of Needle Blight Symptoms on Rooted Cuttings from Diseased White Pine Trees: S. N. Linzon	735
	Transmembrane Action Potentials from Smooth Muscle in Turtle Arteries and Veins:  1. C. Roddie and S. Kirk	736
	Repression of Ornithine Transcarbamylase Protein Formation by Arginine: P. Rogers.	<b>7</b> 37
	Plumage in Lal Munia (Amandava amandava): J. P. Thapliyal and P. D. Tewary	738
	Puromycin-Induced Changes in Uredospores of Puccinia sorghi Schw.:  R. C. Staples, R. Syamananda, R. J. Block	739
	Diurnal Periodicity of Luminescence in Three Basidiomycetes: M. D. Berliner	740
Departments	Letters from W. Carter; J. R. Heirtzler and H. A. Schneider	699
	Forthcoming Events	742
Cover	Silver drinking bowl of Phoenician design found in the tomb of a 7th-century B.C. Etruscan prince. In the outer frieze the prince is seen leaving the palace gates in a chariot, hunting deer, picnicking at midday, being attacked by hairy giants, and being	
	rescued by Astarte, patroness of chariots. Afterward, he returns home. From Dawn of Civilization, reviewed on page 723. [McGraw-Hill, New York, 1961]	

### introducing exclusive

## NEW APPLICATOR for

## THIN LAYER CHROMATOGRAPHY

## THE ONLY CONTROLLED METHOD FOR APPLYING REPRODUCIBLE LAYERS OF VARIABLE THICKNESS



In addition to the previously offered standard applicator for TLC, already used by hundreds of laboratories in the U. S. and Canada, Desaga has now developed a variable thickness instrument — MODEL "S." By means of a micrometer screw setting any layer thickness to 2000  $\mu$  may be applied — the only applicator available which permits the selection and reproduction of a specific layer thickness. This feature not only increases the versatility of the equipment but permits its use with ordinary (high quality) window glass.

Only the new Desaga equipment (after Stahl) offers a complete line of apparatus and adsorbents for TLC. Besides the previously available Silica Gel G, Aluminum Oxide G and Kieselguhr G from Merck (Darmstadt, Germany) we are now introducing two new Cellulose Powders from Macherey, Nagel & Co.—with and without binding agents.

The major advantages of TLC are:

- 1) The speed of separation 20 to 40 minutes.
- 2) The wide quantitative range from less than one microgram to 10 mg on a single glass plate.
- 3) The possibility of using highly aggressive (corrosive) sprays.
- 4) The simplicity of the technique and the limited financial investment necessary for its introduction.

Equipment for TLC may be ordered as complete assemblies or as individual components—all available for immediate delivery from stock. In experience, Desaga TLC puts you ten years ahead. For further information request our NEW TLC BULLETIN.



## BRINKMANN

BRINKMANN INSTRUMENTS. INC., 115 CUTTER MILL ROAD, GREAT NECK, N.Y.

PHILADELPHIA · CLEVELAND · HOUSTON · MIAMI · MENLO PARK, CAL. · ST. LOUIS

#### From reports on the Ann Arbor Science Library

". . . SCIENCE IN THE BEST POSSIBLE SENSE . . . . EVERYTHING IS PLAIN AND THAT IS WHAT MAKES IT SO BEAUTIFUL." —EDWARD TELLER "RECAPTURES THE WONDER AND THE BEAUTY OF SCIENTIFIC DISCOVERY." -ROBERT OPPENHEIMER



Written for the scientist who wants a specialist's knowledge of a field outside his own. The first ten volumes are now available in inexpensive, paperbound editions.

#### THE STARS

By W. Kruse and W. Dieckvoss

Natural History: "An excellent little book ... Along with such stellar matters as direction, brightness and color, there are discussions of variable stars, novae, stellar temperatures and composition, giants and dwarfs.'

208 pages 106 illus.

AAS 501 \$1.95

### ne ants

By Wilhelm Goetsch

The New Yorker: "... says, with perfect clarity, pretty nearly everything there is to say about ants and their ways . . . full of fascinating information."

176 pages 85 illus.

AAS 502 \$1.95

#### the senses

By Wolfgang von Buddenbrock Science Magazine: "The presentation is simple, informal, and lively . . . '

168 pages 55 illus.

AAS 503 \$1.95

#### Visible and Invisible

By Eduard Ruechardt

Science Progress: ". . . presented with . just the right amount of precision and scientific rigour.'

208 pages 137 illus.

AAS 504 \$1.95

By Oskar and Katharina Heinroth

American Scientist: ". . . ranging from how birds communicate with each other, to eating habits, growth, orientation during migration, and to the mental powers of birds . . . The book is . . . a trustworthy and accurate account of the material it represents.

176 pages 91 illus.

AAS 505 \$1.95

#### Ebb and Flow

The Tides of Earth, Air, and Water

By Albert Defant

Natural History: "Will certainly answer any questions a non-hydrographer is ever apt to ask about the tides."

124 pages 64 illus.

AAS 506 \$1.95

#### Animal Camouflage

By Adolf Portmann

Jerold Lanes, Associate Editor Natural History Magazine: ". . . could hardly be bettered." AAS 507 \$1.95

112 pages 101 illus.

PLANET

By Karl Stumpff

Astronautics: "Designed to provide us with a broader understanding of the planet on which we live . . . is deserving of a place in anyone's

EARTH

192 pages 57 illus.

AAS 508 \$1.95

By Wolfhard Weidel

Emilio Weiss, Naval Medical Research Institute: "It is refreshing to find a little book, such as this one, which depicts the science as one which investigates and can decipher some of the innermost secrets of life. This book is well written, fluent, and witty."

160 pages 27 illus.

AAS 509 \$1.95

By Karl Kiepenheuer

Science News Letter: "Concise account for the serious reader of what is known about the sun, 'the only star whose shape and surface can be observed.''

160 pages 76 illus.

AAS 510 \$1.95

Use this coupon to order

To The University of Michigan Press Science Department, Ann Arbor, Michigan.

Please send me.....sets of the ten titles in clothbound reference editions at the special price of \$42.50 per set.

Please send me.....sets of the ten titles in quality paperback edition. \$18.95.

Please send me the Ann Arbor Science Paperbacks whose numbers I have circled.

AAS 507 AAS 508 AAS 501 AAS 504 AAS 510 AAS 502 AAS 505 AAS 506 AAS 503 AAS 509

Bill me... Payment of \$.....enclosed.

name

address

If I am not completely satisfied I may return the books within ten days and receive a full refund.

THE UNIVERSITY OF MICHIGAN PRESS **ANN ARBOR** 

#### GET YOUR ADVANCE COPY

## of the General Program of the AAAS Denver Meeting by first class mail – early in December

The General Program of the 128th Meeting of the AAAS in Denver, 26–31 December 1961, will be available to you, at cost, within the first week in December—whether you can attend the Meeting or not.

#### **Program Content**

- 1. The two-session AAAS General Sessions, "Moving Frontiers of Science," Part I—Speakers: Howard A. Meyerhoff and Arthur R. von Hippel; Harrison Brown, presiding. Part II—Speakers: Halton C. Arp and E. W. Fager; Harrison Brown, presiding.
- 2. The 29th John Wesley Powell Memorial Lecture. Speaker: Glenn T. Seaborg; Paul M. Gross, presiding.
- 3. On "AAAS Day," the four broad, interdisciplinary symposia—Physics of the Upper Atmosphere; Geochemical Evolution—The First Five Billion Years; Existing Levels of Radioactivity in Man and His Environment; and Water and Climate—arranged by AAAS Sections jointly.
- 4. The Special Sessions: AAAS Presidential Address and Reception; Joint Address of Sigma Xi and Phi Beta Kappa by Harrison Brown; the Tau Beta Pi Address; National Geographic Society Illustrated Lecture; and the second George Sarton Memorial Lecture.
- 5. The programs of all 18 AAAS Sections (specialized symposia and contributed papers).
- 6. The programs of the national meetings of the American Astronomical Society, American Society of Criminology, American Nature Study Society, American Society of Naturalists, American Society of Zoologists,

- Beta Beta Biological Society, Biometric Society (WNAR), National Association of Biology Teachers, Scientific Research Society of America, Society for General Systems Research, Society of Protozoologists, Society of Systematic Zoology, and the Society of the Sigma Xi.
- 7. The multi-sessioned special programs of the American Association of Clinical Chemists, American Astronautical Society, American Meteorological Society, American Physiological Society, American Psychiatric Association, Association of American Geographers, Ecological Society of America, National Science Teachers Association, National Speleological Society—and still others, a total of some 70 to 80 participating organizations.
- 8. The sessions of the Academy Conference, the Conference on Scientific Communication, and the Conference on Scientific Manpower.
- 9. The sessions of the AAAS Cooperative Committee on the Teaching of Science and Mathematics, of the AAAS Committee on Science in the Promotion of Human Welfare.
- 10. Titles of the latest foreign and domestic scientific films to be shown in the AAAS Science Theatre.
- 11. Exhibitors in the 1961 Annual Exposition of Science and Industry and descriptions of their exhibits.

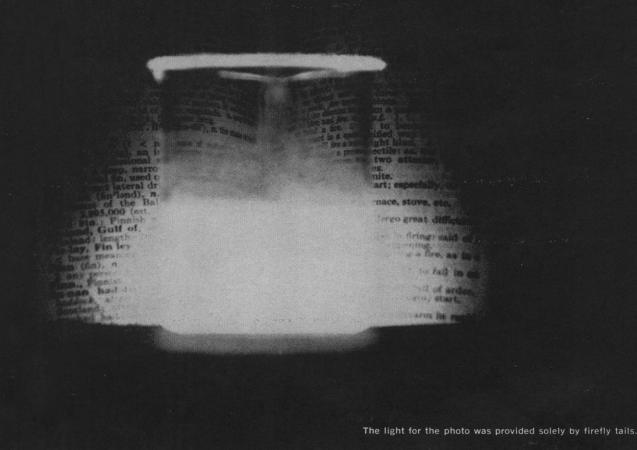
#### **Advance Registration**

Advance registration has these decided advantages: (1) You avoid delay at the Registration Center upon arrival; (2) You receive the *General Program* in ample time to decide, unhurriedly, which events and sessions you particularly wish to attend; (3) Your name is posted in the Visible Directory as the Meeting opens.

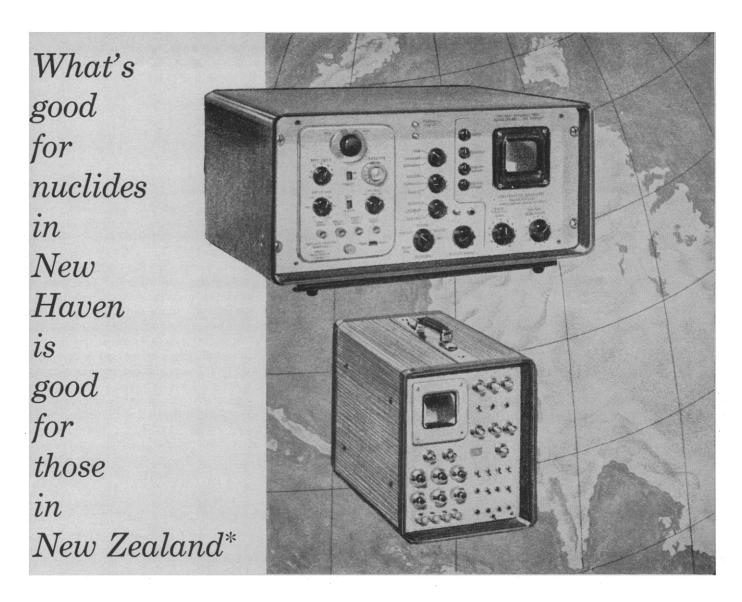
The following coupon may be used both by advance registrants and by those who wish only the advance copy of the General Program.

THIS IS YOUR COUPON FOR AN				
Ia. ☐ Enclosed is \$3.50 for my advance Registration Fe all privileges of the Meeting (50¢ is for first-cla	ee which brings me t ss postage and handli	he $General\ Program$ ing).	, Convention Badge, a	ıd
b.   Enclosed is \$2.50 for only the General Program.  Badge-necessary for the privileges of the Meetin (check Ia or 1b)	(It is understood the ng—will be secured for	nat, if I should atter r \$1.00 more.)	nd the Meeting later, th	ле
2. FULL NAME (Dr., Miss, etc.)		(First)	(Initial)	
3. OFFICE OR HOME ADDRESS				
CITY	ZONE	STATE		•
4. FIELD OF INTEREST				
5. ACADEMIC, PROFESSIONAL, OR BUSINESS CONNECTION				
6. CONVENTION ADDRESS	added later, after arrival)			

Please mail this coupon and your check or money order for the total amount to the AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE 1515 Massachusetts Avenue, NW, Washington 5, D.C. FOR ATP MICROASSAY—DEHYDRATED FIREFLY TAILS—The most sensitive method\* for assaying the minute levels of ATP found in biological systems. Use Schwarz' ATN, crystalline disodium adenosine 5'-triphosphate, to standardize your assay SCHWARZ BIORESEARCH is the primary manufacturer of phosphorylated adenosine compounds including isotopically labeled forms FIREFLY KIT TO DEMONSTRATE BIOLUMINESCENCE—Provides enough dehydrated firefly tails and ATP for 10 dramatic—and convenient—demonstrations.







We think the reason people all over the world buy TMC pulse analyzers is pretty much the same reason they're widely purchased and used here: competently designed, bug-free circuits . . . straightforward operation with the same performance and stability today as yesterday . . . easy access to sub-assemblies and uncomplicated servicing if needed. Another way of putting it is the instruments give the user the information he wants in his work — with predictable behavior—regardless of where his site, lab or plant may be located. Here are two current examples:

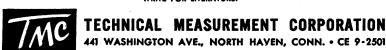
The TMC CN-110 256 channel analyzer offers 7 interchangeable plug-in logics, including pulse height, time of flight, pulsed neutron, multiscaler, mass spectrometer, and coincidence pair. This widely used and thoroughly proven analyzer (over 100 units have been delivered) employs all-transistorized circuitry. Analog, binary, octal and decimal readout may be used.

Data can be recorded on strip chart or X-Y recorders, printed paper tape, punched paper tape, or punched cards.

The Model 404 is a compact, 400-channel analyzer you can use anywhere there's a wall outlet and one square foot to put it down. It has a magnetic core memory that can be used in sub groups of two or four; four separate inputs and associated amplifiers; internal pulse routing circuity; pushbutton data transfer and display overlap; power requirement of only 25 watts, and many "system" advantages. While its versatility is a little less than the CN-110's, so are its size, price and purpose quite different from the 110's. Each does its own job well.

\*Also wherever TMC Pulse Analyzers are used... in Canada, Brazil, Australia, Japan, Yugoslavia, France, Italy, Germany, Belgium, Sweden, Denmark, Switzerland, Israel, Formosa... as well as the United States.

WRITE FOR LITERATURE.





#### AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

#### **Board of Directors**

CHAUNCEY D. LEAKE, Retiring President, Chairman THOMAS PARK, President PAUL M. GROSS, President Elect

HARRISON BROWN
HENRY EYRING
H. BENTLEY GLASS
MARGARET MEAD

DON K. PRICE ALFRED S. ROMER WILLIAM W. RUBEY

MEAD ALAN T. WATERMAN PAUL A. SCHERER, Treasurer

DAEL WOLFLE, Executive Officer

#### Editorial Board

KONRAD B. KRAUSKOPF EDWIN M. LERNER PHILIP M. MORSE H. BURR STEINBACH
WILLIAM L. STRAUS, JR.
EDWARD L. TATUM

#### Editorial Staff

Dael Wolfle Publisher HANS NUSSBAUM Business Manager

#### GRAHAM DUSHANE Editor

Joseph Turner Associate Editor

ROBERT V. ORMES Managing Editor

ELLEN E. MURPHY, Assistant Editor

NANCY TEIMOURIAN, Assistant to the Editor

News: Howard Margolis, Daniel S. Greenberg, Patricia D. Paddock

Book Reviews: SARAH S. DEES

Editorial Assistants: Nancy S. Hamilton, Oliver W. Heatwole, Edgar C. Rich, John E. Ringle, Conrad Yung-Kwai

Staff Assistants: Genevieve M. Kirby, Jean P. D. Pieknik

#### Advertising Staff

EARL J. SCHERAGO, Director

BERNICE SCHWARTZ, Production Manager

Sales: RICHARD L. CHARLES (New York, N.Y., PE 6-1858); C. RICHARD CALLIS (Old Bridge, N.J., CL 4-3680); HERBERT BURKLUND (Chicago, Ill., DE 7-4973); DILLENBECK-GALAVAN (Los Angeles, Calif., DU 5-3991)

SCIENCE, now combined with THE SCIENTIFIC MONTHLY, is published each Friday by the American Association for the Advancement of Science at National Publishing Company, Washington, D.C. SCIENCE is indexed in the Reader's Guide to Periodical Literature.

Editorial correspondence should be addressed to SCIENCE, 1515 Massachusetts Ave., NW, Washington 5, D.C. Manuscripts should be typed with double spacing and submitted in duplicate. The AAAS assumes no responsibility for the safety of manuscripts. Opinions expressed by authors are their own and do not necessarily reflect the opinions of the AAAS or the institutions with which the authors are affiliated. For detailed suggestions on the preparation of manuscripts, see Science 125, 16 (4 Jan. 1957).

Advertising correspondence should be addressed to SCIENCE, Room 1740, 11 West 42 St., New York 36, N.Y.

Change of address notification should be sent to 1515 Massachusetts Ave., NW, Washington 5, D.C., 4 weeks in advance. Furnish an address label from a recent issue. Give both old and new addresses, including zone numbers.

Annual subscriptions: \$8.50; foreign postage, \$1.50; Canadian postage, 75¢. Single copies, 35¢. Cable address: Advancesci, Washington.

Copyright © 1961 by the American Association for the Advancement of Science.

#### Terror and Talks

Through the course of the ugly developments during the past few weeks, the Soviet Embassy in Washington, D.C., has continued to keep its front lawn properly watered. Had the lawn been allowed to lapse into the condition of the desert across the street fronting the National Geographic Society, there would be even greater cause for concern over Soviet policy. We can expect Soviet representatives to remain in Washington for a while. We can expect talks about talks, and even talks.

There is other evidence besides the Embassy lawn that one aim of the resumption by the Soviet Union of atmospheric testing of nuclear weapons is to promote, albeit in a special way, East-West negotiations. In fact, from the very beginning, Khrushchev has made no secret of this aim. In an interview with two members of the British Labor Party shortly after the announcement that there would be renewed testing, Khrushchev said that he hopes, by developing a superbomb with a force of 100,000,000 tons of TNT, to shock the Western powers into negotiations on general disarmament and Berlin. Consider also Khrushchev's 13-page reply to the West's reiteration of its proposal for a treaty banning atmospheric testing. True, after referring to his government's "aching heart" over resuming testing, Khrushchev rejects the proposal, but a man does not bother to reject at such length unless he wishes to give his opponent something more to talk about.

Negotiations based on shock, to be sure, would be on terms more congenial to the Soviet Union than negotiations conducted without shock, such as might otherwise have taken place. As for neutral nations, because of the Soviet move they might now see more clearly than ever before that the Soviet Union is the country threatening world peace. But the gamble, already paying off, is that renewed testing will cause neutral nations to bring pressure on the West to meet Soviet demands, just because world peace is so seriously threatened.

The absence of a great outcry by neutral nations against the Soviet Union has been a source of surprise and chagrin in this country. We continue to learn that judgments rendered by neutral nations upon us and upon the Soviet Union are characterized by a certain lack of symmetry. Nevertheless, our decision to keep postponing the resumption of underground testing, even in the face of the Soviet's blatant reneging on gains that had been achieved at the Geneva talks, still appears to have been exactly right. We are now in an incomparably better position regarding world opinion, even given this lack of symmetry, and regarding our opinion of ourselves, than we would be in if we had announced new underground explosions and the Soviets had immediately responded, as we now see they were prepared to do, with their present testing program.

If one aim of the Soviet resumption of atmospheric testing is to terrorize the rest of the world, then one aim of Kennedy's announcement, after the third Soviet bomb went off, that we would resume testing underground, is to show firmness in the face of this attempt. Here, as in all dealings with Russia, American strategy for minimizing the likelihood of war is to avoid the extremes that characterize Soviet maneuvers. We cannot afford to appear threatening, for that might invite the Soviet Union to strike us out of fear that we are planning a first strike ourselves. At the same time, we cannot afford to appear conciliatory, for that would invite miscalculation of the extent of aggression we can permit.—J.T.

### NEW

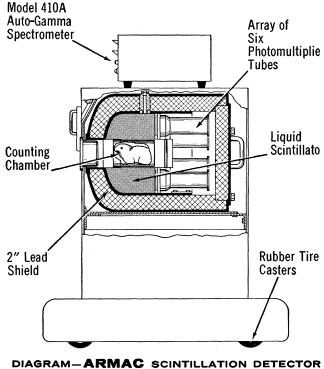
## The PACKARD ARMAC® Scintillation Detector...

A compact, wholly self-contained liquid scintillation detector that can be used as a whole body counter for small animals, as a radioactivity counter for bulk samples of foods, soils and other materials, and as an arm-only counter on humans.

This versatile and economical new instrument enables the research worker to count even natural levels of radioactivity conveniently. Because of the great sensitivity and excellent counting geometry of the ARMAC Detector, high counting rates can be obtained with the administration of very small amounts of radio-nuclides . . . only 1/100 to 1/1000 of maximum permissible levels.

A complete system consists of the ARMAC Detector and a Model 410A Auto-Gamma Spectrometer, both mounted on a mobile housing. Provision is made for addition of automatic data read-out or ratemeter presentation. Complete information can be obtained from your Packard Sales Engineer or by writing direct to the company.





WITH SPECTROMETER

Announcing: 5th Annual Symposium on Advances In Tracer Methodology, Washington, D. C., Oct. 20. Write us for program and advance registration.



#### **BRANCH OFFICES**

CHICAGO • ALBUQUERQUE • ATLANTA • BOSTON • DALLAS
LOS ANGELES • NEW YORK • PHILADELPHIA • PITTSBURGH
SAN FRANCISCO • WASHINGTON, D.C. • ZURICH • HANOVER • PARIS

PACKARD INSTRUMENT COMPANY, INC.

LA GRANGE 54, ILLINOIS, Telephone HUnter 5-6330

For Insecticide Screening

#### **ACETYLCHOLINESTERASE**

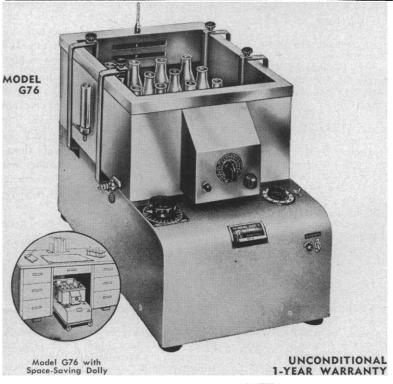
(20,000 units per vial)

Now available for prompt shipment

Winthrop

Special Chemicals Department 1450 Broadway, New York 18, N. Y.







NEW BRUNSWICK SCIENTIFIC CO., INC.

P.O. BOX 606, NEW BRUNSWICK, NEW JERSEY

WRITE FOR CATALOG G76S/9151

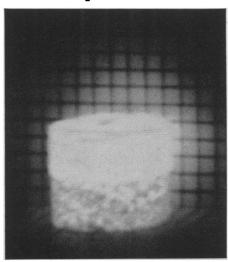
## GYROTORY® WATER BATH SHAKER

For Reproducible Temperature and Agitation

- Variable speed control, from 85 to 285 rpm or 140 to 400 rpm.
- Heats rapidly to pre-set temperatures from ambient to 100° C. within  $\pm 0.5$ ° C.
- Adjustable level device automatically maintains desired water level in the bath.
- Triple-eccentric-shaft drive transmission assures smooth, uniform agitation of all flasks.
- Built with precision for continuous operation.
- Performance is cool, quiet, vibrationless.
- A bench-top unit with interchangeable platforms having large capacity for flasks, tubes, and beakers. Used with gaseous atmospheres.
- Operates under lab benches and desks with space-saving dolly accessory.
- Models available with reciprocating action.

### **ISOTOPES** | Meetings

#### for Your **Development Work**



Oak Ridge National Laboratory offers more than 300 radioactive and stable isotope products.

#### **RADIOISOTOPES**

Processed Solutions — 90 processed radioisotopes may be obtained, including many carrier-free and high specific activity products.

Now Available - Scandium-46 at \$150 a curie; sulfite-free I-131 at \$2 per mc.; technetium (as element or ammonium pertechnetate) \$100 a gram; calcium-47, with less than 5% Ca-45, \$200 per mc.; I-125 in research quantities.

#### STABLE ISOTOPES

More than 200 stable isotopes available from 50 elements....Chemical processing and target fabrication services also offered.... Ultra-high isotopic purity in a number of isotopes.

For information or literature, write to: Isotopes Division, Oak Ridge National Laboratory, P. O. Box X, Oak Ridge, Tennessee.



#### Forthcoming Events

#### October

7-13. American Soc. of Oral Surgeons, 43rd annual, New York-Bermuda cruise, M.S. Bergensfjord. (D. C. Trexler, ASOS, 840 N. Lake Shore Drive, Chicago 11, Ill.)

9-12. Water Pollution Control Federation, 34th annual, Milwaukee, Wis. (R. E. Fuhrman, 4435 Wisconsin Ave., NW, Washington 16)

9-13. American Rocket Soc., space flight meeting, New York, N.Y. (ARS, 500 Fifth Ave., New York 36)

9-13. Luminescence of Inorganic and Organic Systems, intern. conf., New York, N.Y. (Miss G. M. Spruch, New York Univ., Washington Sq., New York 3)

10-12. Nuclear Reactor Chemistry, 2nd conf., and Analytical Chemistry in Nuclear Reactor Technology, 5th conf., Gatlinburg, Tenn. (Oak Ridge National Laboratory, Post Office Box X, Oak Ridge, Tenn.)

10-13. Administration of Research, 15th conf., San Juan, Puerto Rico. (G. F. Anton, Research Center, Univ. of Puerto Rico, Mayaguez, P.R.)

10-20. International Committee for Biological Control, Tunis. [P. Grison, Laboratoire de Biocenotique et de Lutte Biologique, La Miniere, par (S.-et.-0.), France] Versailles

11-13. Gaseous Electronics Conf.. American Physical Soc., Schenectady, N.Y. (C. J. Gallagher, General Electric Research Laboratories, Schenectady, N.Y.)

11-14. Tau Beta Pi Assoc., Cincinnati, Ohio. (R. H. Nagel, Univ. of Tennessee, Knoxville)

11-14. Western Inst. on Epilepsy, 13th annual conf., San Antonio, Tex. (F. Risch, 3097 Manning Ave., Los Angeles, Calif.)

12-13. Congress of Neurological Surgeons, New York, N.Y. (E. Weiford, 4706 Broadway, Kansas City 12, Mo.)

12-29. Pacific Intern. Trade Fair, 2nd, technical meetings, Lima, Peru. (PITF, P.O. Box 4900, Lima)

14-20. International Congr. of Neurological Surgery, 2nd, Washington, D.C. (B. S. Ray, 525 E. 68 St., New York 21)

15. American College of Dentists, Philadelphia, Pa. (O. W. Brandhorst, 4236 Lindell Blvd., St. Louis, Mo.)

15-20. American Inst. of Electrical Engineers, fall general meeting, Detroit, Mich. (E. C. Day, AIEE, 33 W. 39 St.,

New York 18)

15-20. International Congr. of Allergolgy, 4th, New York, N.Y. (W. B. Sherman, 60 E. 58 St., New York 22)

15-21. Pan American Congr. of Endocrinology, 5th, Lima, Peru. (M. San Martin, Av. Central 325, San Isidoro, Lima)

16-17. Engineering Writing and Speech, natl. symp., East Lansing, Mich. (J. D. Chapline, Philco Corp., 3900 Welsh Rd., Willow Grove, Pa.)

16-17. Ionization of the Air, intern. conf., Philadelphia, Pa. (I. C. Kornblueh, American Inst. of Medical Climatology, 1618 Allengrove St., Philadelphia 24)

16-18. American Soc., of Safety Engineers, Chicago, Ill. (A. C. Blackman, 5 N. Wabash Ave., Chicago 2)

16-18. Entomological Soc. of Canada and Entomological Soc. of Quebec, Quebec, Canada. (L. L. Reed, ESC, Neatby Bldg., Carling Ave., Ottawa, Canada)

16-18. Metallurgy of Beryllium, intern. conf., London, England. (Secretary, Inst. of Metals, 17 Belgrave Sq., London,

16-19. American Dental Assoc., Philadelphia, Pa. (H. Hillenbrand, 222 E. Superior St., Chicago 11, Ill.)

16-19. Vacuum Science and Technol-

ogy, 2nd intern. congr., Washington, D.C. (W. M. Welch, Intern. Organization for Vacuum Science and Technology, 1515 Sedgwick St., Chicago 10, Ill.)

16-20. American Ornithologists' Union, Washington, D.C. (H. G. Deignan, U.S. National Museum, Washington 25)

16-20. American Soc. of Civil Engineers, New York, N.Y. (W. H. Wisely, 33 W. 39 St., New York 18)

16-20. Symposium on the Programming and Utilization of Research Reactors, Vienna, Austria. (Intern. Atomic Energy Agency, Room 2249, United Nations, New York, N.Y.)

17-19. Japan Conf. of Radioisotopes,

4th, Tokyo. (R. Suga, Japan Atomic Industrial Forum, Inc., No. 1, 1-Chome, Shiba Tamura-cho, Minato-ku, Tokyo)
17-19. Lubrication Conf., 8th, jointly

by American Soc. of Lubrication Engineers and American Soc. of Mathematical Engineers, Chicago, Ill. (R. L. Johnson, NASA, Lewis Research Center, 21000 Brookpark Rd., Cleveland 35, Ohio)

18-20. Design of Experiments in Army Research, Development, and Testing, 7th conf. (by invitation only), Fort Monmouth, N.J. (F. G. Dressel, Army Research Office (Durham), Box CM, Duke Station, Durham, N.C.)
18-20. Optical Soc. of America, Los

Angeles, Calif. (Miss M. E. Warga, 1155 16 St., NW, Washington 6)

19-20. International Geophysics Assoc., 12th colloquium, Salzburg, Austria. (IGA, Freisaalgasse 31, Salzburg)

19-21. Indiana Acad. of Science, Terre Haute. (E. D. Weinberg, Dept. of Bacteriology, Indiana Univ., Bloomington) 20-21. Shallow Water Research Conf.,

Atlantic Coast, 1st natl., Baltimore, Md. (D. S. Gorsline, Oceanographic Inst., Florida State Univ., Tallahassee)

20-24. American Heart Assoc., annual, Miami Beach, Fla. (AHA, 44 E. 23 St., New York 10)

23-25. International Scientific Radio Union and Inst. of Radio Engineers, fall meeting, Austin, Tex. (Miss H. E. Hart, U.S.A. Natl. Committee URSI, 2101 Constitution Ave., NW, Washington 25)

23-25. Metallurgical Soc. of the American Inst. of Mining, Metallurgical and Petroleum Engineers, fall meeting, Detroit, Mich. (AIME, 29 W. 39 St., New York 18)

23-27. Metal Congr. and Exposition, 43rd natl., Detroit, Mich. (A. R. Putnam, American Soc. for Metals, Metals Park,

Novelty, Ohio)
23–28. Congress of Chemical Engineering, 1st, San Juan, P.R. (R. Munoz, Apartado 47, Estación de Río Piedras, San

24-25. Shallow Water Research Conf., Gulf Coast, 1st natl., Tallahassee, Fla. (D. S. Gorsline, Oceanographic Inst., Florida State Univ., Tallahassee)

24-26. Aerospace Nuclear Propulsion, intern. symp., Las Vegas, Nev. (P. M. Uthe, Lawrence Radiation Laboratory, Univ. of California, Box 808, Livermore)

24-27. American Dietetic Assoc., 44th annual, St. Louis, Mo. (Mrs. T. Pollen, ADA, 620 N. Michigan Ave., Chicago 11, Ill.)

26-27. American Soc. of Tool and Manufacturing Engineers, Toronto, Canada. (A. Cervenka, Vanderbilt Blvd., Oakdale, L.I., N.Y.)

26-27. Instrumentation Facilities for Biomedical Research, symp., Omaha, Neb. (H. G. Beenken, Univ. of Nebraska College of Medicine, 42 and Dewey Ave., Omaha)

26-27. New Mexico Acad. of Science, Albuquerque. (K. G. Melgaard, P.O. Box 546, Mesilla Park, N.M.)

26-28. Professional Group on Electron Devices, annual meeting, Washington, D.C. (I. M. Ross, Technical Program Chairman, Room 2A-329, Bell Telephone Laboratories, Murray Hill, N.J.)

26-30. American Soc. for Aesthetics, Detroit, Mich. (J. R. Johnson, Cleveland Museum of Art, Cleveland 6, Ohio)

27–28. Shallow Water Research Conf., Pacific Coast, 1st natl., Los Angeles, Calif. (D. S. Gorsline, Oceanographic Inst., Florida State Univ., Tallahassee)

27–29. Association of Clinical Scientists, annual, Washington, D.C. (R. P. MacFate, Secretary, ACS, 323 Northwood Rd., Riverside, Ill.)

28. American Mathematical Soc., 583rd meeting, Cambridge, Mass. (E. Pitcher, Lehigh Univ., Bethlehem, Pa.)

29-31. Photoelasticity, intern. symp., Chicago, Ill. (P. D. Flynn, Illinois Inst. of Technology, Chicago 16)

29-1. Marine Biology, intern. conf. (by invitation only), Princeton, N.J. (Mrs. E. Purcell, Interdisciplinary Conference Program, Rockefeller Center, Time & Life Bldg., New York 20)

30-1. American Oil Chemists Soc., Chicago, Ill. (W. O. Lundberg, Hormel Inst., Univ. of Minnesota, 801 16th Ave., NE, Austin)

30-1. Society of Rheology, annual, Madison, Wis. (J. D. Ferry, Univ. of Wisconsin, Madison)

31-2. Interscience Conf. on Antimicrobial Agents and Chemotherapy, 1st, American Soc. for Microbiology, New York, N.Y. (ASM, 19875 Mack Ave., Detroit 36, Mich.)

#### November

1. Rheumatic Fever, symp., New Haven, Conn. (E. A. Sillman, Connecticut Heart Assoc., 65 Wethersfield Ave., Hartford 14)

1-3. Alkaline Pulping, 15th conf., Houston, Tex. (Technical Assoc. of the Pulp and Paper Industry, 360 Lexington Ave., New York 17)

1-3. Experimental Mechanics, 1st intern. congr., New York, N.Y. (Soc. for Experimental Stress Analysis, P.O. Box 168, Central Sq. Station, Cambridge 39, Mass.)

1-3. High Magnetic Fields, intern. conf., Cambridge, Mass. (H. H. Kolm, Lincoln Laboratory, Massachusetts Inst. of Technology, Lexington 73)

1-3. Transplantation, CIBA Foundation

symp. (by invitation), London, England. (CIBA Foundation, 41 Portland Pl., London, W.1)

1-4. American Soc. of Tropical Medicine and Hygiene, Washington, D.C. (R. B. Hill, 3575 St. Gaudens Rd., Miami 33, Fla.)

1-4. Society of Economic Geologists, Cincinnati, Ohio. (E. N. Cameron, Science Hall, Univ. of Wisconsin, Madison 8)

2-3. Cancer Chemotherapy, clinical symp., Washington, D.C. (T. P. Waalkes, Chemotherapy Natl. Service Center, NIH, Bethesda 14, Md.)

2-4. American Soc. for Cell Biology, 1st, Chicago, Ill. (H. Swift, Dept. of Zoology, Univ. of Chicago, Chicago 37)

2-4. Geochemical Soc., Cincinnati, Ohio. (F. R. Boyd, Jr., Geophysical Laboratory, 2801 Upton St., NW, Washington 8)

2-4. Geological Soc. of America, Cincinnati, Ohio. (F. Betz, Jr., GSA, 419 W. 117 St., New York 27)

2-4. Inter-Society Cytology Council, annual, Memphis, Tenn. (P. A. Younge, 1101 Beacon St., Brookline 46, Mass.)

2-4. National Assoc. of Geology Teachers, Cincinnati, Ohio. (D. J. Gare, Principia College, Elsah, Ill.)

2-4. Paleontological Soc., Cincinnati, Ohio. (H. B. Whittington, MCZ, Harvard Univ., Cambridge 38, Mass.)

2-4. Society for Industrial and Applied Mathematics, Washington, D.C. (Chairman, Program Committee, SIAM, P.O. Box 7541, Philadelphia 1, Pa.)

2-5. Mathematical Models in the Social and Behavioral Sciences, conf., Cambria, Calif. (F. Massarik or P. Ratoosh, Mathematical Models Conf., Graduate School of Business Administration, Univ. of California, Los Angeles 24)

3-4. Central Soc. for Clinical Research, Chicago Ill. (J. F. Hammarsten, Veterans Administration Hospital, 921 N.E. 13 St., Oklahoma City 4, Okla.)

4. Society for the Scientific Study of Sex, New York, N.Y. (H. G. Beigel, 138 E. 94 St., New York 28)

5-8. American Speech and Hearing Assoc., Chicago, Ill. (K. O. Johnson, 1001 Connecticut Ave., NW, Washington 6)

5-9. Society of Exploration Geophysicists, 31st annual intern., Denver, Colo. (C. C. Campbell, Box 1536, Tulsa 1, Okla.)

5-11. Stomatology of Peru, intern. congr., Lima, Peru. (A. Rojas, Avenue Pershing 155, San Isidro, Lima)

5-15. Japanese Chemical Engineers Soc., 25th anniversary congr., Tokyo and Kyoto, Japan. (Kagaku-Kogaku Kyokai, Shunichi Uchida, 609 Kojunsha Bldg. No. 4, 6-Chome, Ginza, Chou-Ku, Tokyo)

5-18. Latin American Phytotechnical Meeting, 5th, Buenos Aires, Argentina. (U. C. Garcia, Rivadavia 1439, Buenos Aires)

6-8. Association of Military Surgeons of the U.S., 68th annual, Washington, D.C. (R. E. Bitner, AMSUS, 1726 Eye St., NW, Washington 6)

6-8. Cell in Mitosis, 1st annual symp., Detroit, Mich. (L. Levine, Dept. of Biology, Life Sciences Research Center, Wayne State Univ., Detroit 2)

6-9. Atomic Industrial Forum-9th Hot Laboratories and Equipment Conf., Chicago, Ill. (O. J. Du Temple, American Nuclear Soc., 86 E. Randolph St., Chicago)

StS Reference Sheets on

## Selectacel ION EXCHANGE CELLULOSES

for use in chromatographic columns

New Selectacel Ion Exchange Celluloses have remarkable properties when used with ionic and colloidal materials of high molecular weight,

Such applications include -

- ENZYMES
- LIPIDS
- PROTEINSHORMONES
- NUCLEIC ACIDS

These materials produce separations that far exceed what usually can be accomplished alone by ion exchange resins, chromatography, electrochromatography, or electrophoresis.

There are several kinds of Selectacel Ion Exchange Celluloses:

#### **ANION EXCHANGERS**

	١	1
Type	Grade	Capacity
DEAE	Standard	meq/g
(Diethyl- aminoethyl Cellulose)	20 40	0.9

Separation and purification of proteins, peptides, enzymes, hormones and related materials.

Type ECTEOLA (Epichlorohydrin triethanolamine)	Grade Standard 20 40	Capacity meq/g 0.3
--	-------------------------------	--------------------------

Separation and purification of viruses.

#### **CATION EXCHANGERS**

1		
Type	Grade	Capacity
CM	Standard	meq/g
(Carboxymethyl	20	0.7
Cellulose)	40	

Weakly acidic - most effective at pH's slightly above 4.

Type P (Cellulose Phosphate)	<b>Grade</b> Standard	Capacity meq/g 0.9
------------------------------	--------------------------	--------------------------

Bifunctional – containing both strongly acidic and weakly acidic groups. Relatively high exchange capacities.

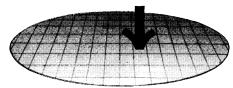


Send for these new free Selectacel Reference Sheets today — no obligation of course.

Carl Schleicher & Schuell Co. Keene, New Hampshire Department S-9

EE Selectacel Reference Sheets.

Send FREE Sele	ectacel Reference Sheets.
NAME	
COMPANY	
ADDRESS	
CITY	STATE
Selectacel is ma	nufactured by Brown Company



## Speaking of Villipore\*

### THE USE OF ENZYMES TO AID FILTRATION OF OROPHARYNGEAL WASHES THROUGH MEMBRANE FILTER

Rinses of the oropharyngeal region, because of their saliva content, are normally difficult to filter through membrane filters without suitable filtration aids. The addition of several crude enzymes to saline rinses used in bacterial studies of the upper respiratory tract (and in tuberculosis and anthrax diagnosis) has been found to substantially improve MF filtration characteristics

Wolochow, H., et. al., 1959, AM, REV, OF TUBERCULOSIS AND PULMONARY DISEASES, 79:4, p. 541, April.

Millipore® filters are available in eleven poresize grades from  $5\,\mu$  down to  $10\,m\mu$ . They retain on their surfaces *all* particles larger than rated pore size.

When writing for technical information please state your fields of interest.

**Willipore** CORPORATION Dept. S, Bedford, Massachusetts



6-9. Southern Medical Assoc., Dallas, Tex. (R. F. Butts, 2601 Highland Ave., Birmingham 5, Ala.)

8. American Acad. of Arts and Sciences, Brookline, Mass. (J. L. Oncley, 280 Newton St., Brookline 46)

8-10. Nondestructive Testing in Electrical Engineering, conf., London, England. (Secretary, Institution of Electrical Enginees, London W.C.2)

8-11. Acoustical Soc. of America, Cincinnati, Ohio. (W. Waterfall, American Inst. of Physics, 335 E. 45 St., New York 17)

8-11. Institute of Management Sciences, San Francisco, Calif. (W. Smith, Inst. of Science & Technology, Univ. of Michigan, Ann Arbor)

8-11. Plasma Physics, American Physical Soc., 3rd annual, Colorado Springs, Colo. (F. Ribe, Los Alamos Scientific Laboratory, P.O. Box 1663, Los Alamos, N.M.)

9-10. Operations Research Soc. of America, 20th, San Francisco. Calif. (P. Stillson, 115 Grove Lane, Walnut Creek, Calif.)

9-11. Gerontological Soc., Pittsburgh, Pa. (R. W. Kleemeier, Washington Univ., Skinker and Lindell, St. Louis 30, Mo.)

9-12. Pacific Coast Fertility Soc., Palm Springs, Calif. (G. Smith, 909 Hyde St., San Francisco 9, Calif.)

9-20. Photography, Cinematography, and Optics, 3rd intern. biennial, Paris, France. (Comité Français des Expositions, 15 rue de Bellechasse, Paris 7)

12-17. Bahamas Conf. on Medical and Biological Problems in Space Flight, Nassau, Bahamas. (I. M. Wechsler, P.O. Box 1454, Nassau)

13-14. Exploding Wire Phenomenon, 2nd intern. conf., Boston, Mass. (W. G. Chace, Thermal Radiation Laboratory, CRZCM, Geophysics Research Directorate Air Force Cambridge Research Laboratories, Bedford, Mass.)

13-16. Magnetism and Magnetic Materials, 7th annual intern. conf., Phoenix, Ariz. (P. B. Myers, Motorola, Inc., 5005 E. McDowell Rd., Phoenix 10)

13-17. American Public Health Assoc., 89th annual, New York, N.Y. (APHA, 1790 Broadway, New York)

13-17. Gulf and Caribbean Fisheries Inst., 14th annual, Miami Beach, Fla. (J. B. Higman, Marine Laboratory, Univ. of Miami, 1 Rickenbacker Causeway, Virginia Key, Miami 49)

13-18. European Conf. on the Control of Communicable Eye Diseases, Istanbul, Turkey. (World Health Organization, Palais des Nations, Geneva, Switzerland)

14-16. American Meteorological Soc., Tallahassee, Fla. (Executive Secretary, AMS, 45 Beacon St., Boston 8, Mass.)

14-17. Corrosion in Nuclear Technology, symp., Paris, France. (European Federation of Corrosion, Société de Chimie Industriells, 28 rue St. Dominique, Paris 7°)

14-18. Puerto Rico Medical Assoc., Santurce. (J. A. Sanchez, P.O. Box 9111, Santurce)

15-17. Eastern Analytical Symp., New York, N.Y. (A. Rekus, EAS, Research Dept., Baltimore Gas & Electric Co., Pratt St., Baltimore, Md.)

15-18. Society of Naval Architects and

Marine Engineers, annual, New York, N.Y. (W. N. Landers, SNAME, 74 Trinity Pl., New York 6)

16-18. American Psychiatric Assoc., Milwaukee, Wis. (J. D. McGucken, 756 N. Milwaukee St., Milwaukee 2)

16-18. Etiology of Myocardial Infarction, intern. symp. (by invitation). Detroit, Mich. (T. N. James, Section on Cardiovascular Research, Henry Ford Hospital, Detroit)

16-18. Southern Thoracic Surgical Assoc., Memphis, Tenn. (H. H. Seiler, 517 Bayshore, Blvd., Tampa 6. Fla.)

16-19. American Anthropological Assoc., Philadelphia, Pa. (S. T. Boggs, 1530 P St., NW, Washington, D.C.)

17-18. Southern Soc. for Pediatric Research, Atlanta, Ga. (W. G. Thurman, Dept. of Pediatrics, Emory Univ. School of Medicine, Atlanta)

17-31. National Soc. for Crippled Children and Adults, annual conv.. Denver, Colo. (NSCCA, 2023 W. Ogden Ave., Chicago 12, Ill.)

19-22. International College of Surgeons, Western regional, San Francisco, Calif. (W. F. James, 1516 Lake Shore Drive, Chicago 10, 111.)

22-27. Automation and Instrumentation, 5th conf., Milan, Italy. (Federezione delle Societa Scientifiche e Techniche di Milano, via S. Tomaso 3, Milan)

22-1. Radioisotopes in Animal Biology and the Medical Sciences, conf., Mexico City, D.F. (International Atomic Energy Agency, 11 Kärntner Ring, Vienna 1, Austria)

23-25. Central Assoc. of Science and Mathematics Teachers, Chicago, Ill. (J. Kennedy, Indiana State Teachers College, Terre Haute)

24-25. American Soc. of Animal Production, Chicago, Ill. (C. E. Terrill, Animal Husbandry Research Div., U.S. Dept. of Agriculture, Beltsville, Md.)

24-25. National Council for Geographic Education, Philadelphia, Pa. (L. Kennamer, Dept. of Geography, Univ. of Texas, Austin)

25-26. American College of Chest Physicians, annual interim session, Denver, Colo. (M. Kornfeld, ACCP, 112 E. Chestnut St., Chicago 11, Ill.)

26. Medical Aspects of Sports, 3rd natl. conf., Denver, Colo. (F. V. Hein, AMA Committee on the Medical Aspects of Sports, 535 N. Dearborn St., Chicago 10, III)

26-1. American Soc. of Mechanical Engineers, winter, New York, N.Y. (L. S. Dennegar, ASME, 29 W. 39 St., New York)

26-1. Radiological Soc. of North America, annual, Chicago, Ill. (R. P. Barden, 713 E. Genesee St., Syracuse 2, N.Y.)

27-28. Agricultural Meteorology, 4th conf., St. Louis, Mo. (K. C. Spengler, American Meteorological Soc., 45 Beacon St., Boston 8, Mass.)

27-29. American Soc. of Hematology, annual, Los Angeles, Calif. (J. W. Rebuck, ASH, Henry Ford Hospital, Detroit 2, Mich.)

27-30. American Medical Assoc., Denver, Colo. (F. J. L. Blasingame, 535 N. Dearborn, Chicago 10, Ill.)

27-30. Entomological Soc. of America, Miami, Fla. (R. H. Nelson, 4603 Calvert Rd., College Park, Md.)

Company,

Address\_

City\_