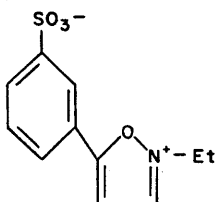


INDEX TO ADVERTISERS—9 July 1965

Ace Glass Inc.	221	Hyland Laboratories	215	Phipps & Bird, Inc.	215
Ainsworth, Wm., & Sons, Inc.	129	Instrumentation Specialties Co.	215	Photovolt Corp.	216
Allied Chemical	115	International Equipment Co.	108	Pilot Chemicals, Inc.	232
Beckman Instruments, Inc., Scientific and Process Instruments Div.	127, 137	JEOLCO (U.S.A.), Inc.	210, 211	Princeton Applied Research Corp.	118
Bendix Corp.	130, 131	Kirschner Manufacturing Co.	230	Professional Tape Co., Inc.	228
Blackstone Ultrasonics, Inc.	225	Klett Manufacturing Co., Inc.	230	Radiochemical Centre	225
Borden Chemical Co.	233	Labindustries	216	Scientific Industries, Inc.	212
Chemical Rubber Co.	212	Leeds & Northrup	114	Siemens America Inc.	122, 123
Consolidated Electrodynamics	116	London Co.	110	Sorvall, Ivan, Inc.	128
Coors Porcelain Co.	229	Mallinckrodt Chemical Works	124, 125	Standard Scientific Supply Corp.	228
Corning Glass Works	136	Manostat Corp.	214	Teachers Insurance and Annuity Association	231
Custom Scientific Instruments, Inc.	226	McDonnell Employment	235	Technical Measurement Corp.	106
Durrum Instrument Corp.	223	Mechanical Enterprises, Inc.	224	Technicon	109
Eastman Chemical Products, Inc.	107	Melabs	219	Thermolyne Corp.	226
Edmund Scientific Co.	220	Miles Chemical Co.	230	Torsion Balance Co.	213
Electronic Associates, Inc.	102	Millipore Filter Corp.	224	Tracerlab, Div. of Laboratory For Electronics, Inc.	134
Fisher Scientific Co.	224	Monroe, Div. of Litton Industries	222	Vanguard Instrument Corp., a subsidiary of Technical Measurement Corp.	126
Four Continent Book Corp.	226	Nalge Co., Inc.	227	Warner-Lambert Pharmaceutical Co., General Diagnostics Div.	111
Graphic Controls Corp.	121	Nuclear-Chicago, Div. of Nuclear-Chicago Corp.	223, 236	Williams & Wilkins Co.	229
Hamilton Co., Inc.	226	Nutritional Biochemicals Corp.	103	Yellow Springs Instrument Co.	214
Harvard Apparatus Co., Inc.	230	Optics Technology Inc.	220		
Hewlett-Packard	112, 113	Packard Instrument Co., Inc.	140		
High Voltage Engineering Corp.	138	Philbrick Researches, Inc.	132		
Hofman Laboratories, Div. of Air Reduction Co., Inc.	117				

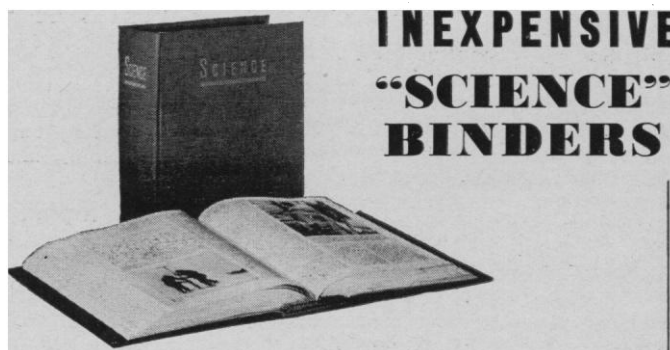
A new Peptide-former N-ETHYL-5-PHENYLISOXAZOLIUM- 3'-SULFONATE (Woodward's Reagent K)

Woodward's Reagent K, manufactured by PILOT, functions as a peptide bond former by combining with the acid group of one amino acid or peptide to form an active ester. This ester bond is then broken by the amino group of a second amino acid or peptide ester with concurrent formation of a peptide and a water-soluble by-product. The new procedure is simple and fast, gives exceptionally high yields of very pure peptides free from by-products and without appreciable racemization. Also available from PILOT are synthetic polypeptides. For more information, write to S-622



PILOT CHEMICALS, INC.

36 Pleasant St., Watertown 72, Mass.



Keep your copies of **SCIENCE** always available for quick, easy reference in this attractive, practical binder. Simply snap the magazine in or out in a few seconds—no punching or mutilating. It opens **FLAT**—for easy reference and readability. Sturdily constructed, this maroon buckram binder stamped in gold leaf will make a fine addition to your library.

Starting with January 1962, **SCIENCE** Binders hold one three-month volume of **SCIENCE**. They now have a 3-inch back and 13 flat fasteners. \$3.25 each. Four binders, \$12.00.

For six-month volumes, through December 1961, **SCIENCE** binders with 4-inch back and 26 flat fasteners are available. \$3.25 each.

Add 50¢ for orders outside the U.S. Name of owner, 75¢ extra; year of issues, 50¢ extra.

SCIENCE • 1515 Massachusetts Ave., NW,
Washington, D.C. 20005

EPIDEMIOLOGY OF MENTAL DISORDER

AAAS Symposium
Volume No. 60

Edited by Benjamin Pasamanick

A symposium organized by the American Psychiatric Association to commemorate the centennial of the birth of Emil Kraepelin; cosponsored by the American Public Health Association.

... pioneering interdisciplinary studies by investigators from biostatistics, genetics, obstetrics, pediatrics, psychiatry, psychology, public health and sociology.

December 1959, 306 pp., \$6.50
AAAS members' cash orders, \$5.75

English Agents: Bailey Bros. & Swinfen, Ltd.
48 Upper Thames Street
London E.C.4, England

**American Association
for the Advancement of
Science**

1515 Massachusetts Ave., NW
Washington, D.C. 20005

New AAAS Symposium Volumes

Spermatozoan Motility

Edited by David W. Bishop. 322 pages. 113 illustrations. References. Index. 28 tables. August 1962. \$7.50 (\$6.50 prepaid for AAAS members).

Great Lakes Basin

Edited by Howard J. Pincus. 320 pages. 92 illustrations. 46 tables. Abstracts. References. Index. August 1962. \$7.50 (\$6.50 prepaid for AAAS members).

Fundamentals of Keratinization

Edited by E. O. Butcher and R. F. Sognnaes. 202 pages. 136 illustrations. Summaries. References. Index. May 1962. \$6.50 (\$5.75 prepaid for AAAS members).

Biophysics of Physiological and Pharmacological Actions

Edited by Abraham M. Shanes. 612 pages. 212 illustrations. References. Index. December 1961. \$13.50 (\$11.75 prepaid for AAAS members).

Order today from

AMERICAN ASSOCIATION FOR THE
ADVANCEMENT OF SCIENCE

1515 Mass. Ave. NW, Washington, D.C. 20005

YOUR RESEARCH DESERVES THE BEST REAGENTS

Check these major
classifications in Dajac's
latest catalog:

Biological Stains
Buffer Solutions
Stabilized Diazonium Salts
Enzyme Substrates
and Reagents
Fluorescent and
Scintillation Reagents
Ribonucleosides and 5'-
Nucleotides
Tetrazolium Salts
Special Reagents and
Custom Syntheses

Send for free catalog Dept. S-75

Dajac LABORATORIES

The Borden Chemical Company
5000 Langdon Street • Box 9522
Philadelphia 24, Pa.

PERSONNEL PLACEMENT

CLASSIFIED: Positions Wanted. 25¢ per word, minimum charge \$4. Use of Box Number counts as 10 additional words. Payment in advance is required.

COPY for ads must reach SCIENCE 2 weeks before issue date (Friday of every week).

DISPLAY: Positions Open. Rates listed below—no charge for Box Number. Rates net. No agency commission allowed for ads under 4 inches. No cash discount. Minimum ad: 1 inch. Ads over 1 inch will be billed to the nearest quarter inch. Frequency rate will apply only to repeat of same ad. No copy changes. Payment in advance is required except where satisfactory credit has been established. Send copy for display advertising to SCIENCE, Room 1740, 11 West 42 St., New York 36.

Single insertion \$65.00 per inch
4 times in 1 year 60.00 per inch

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

Replies to blind ads should be addressed as follows:

Box (give number)
SCIENCE
1515 Massachusetts Ave., NW
Washington, D.C. 20005

POSITIONS WANTED

Animal Nutritionist Ph.D. Physiology and biochemistry minors. Seek teaching/research position. Box 211, SCIENCE. X

Biochemist, Ph.D. Two years of independent research experience. Desires challenging academic research and teaching position. Box 210, SCIENCE. X

POSITIONS WANTED

(a) **Microbiology Ph.D.** June 1965; seeks clinical or research position. (b) **Biochemistry Ph.D.;** clinical, research, teaching experience; prefers hospital or university appointment. For details write Woodward Medical Personnel Bureau, 185 North Wabash Avenue, Chicago, Illinois 60601. X

POSITIONS OPEN

MEDICAL SCIENTISTS OF AUSTRALIAN NATIONALITY

Riker Laboratories, an international pharmaceutical company, will shortly establish a research and development installation at its manufacturing laboratory near Sydney, N.S.W. The Australian research division will be run by its own independent Director who will report to the Managing Director of Riker Laboratories Australia (Pty) Ltd. The director sought may be medically, pharmacologically, or physiologically oriented but must be well experienced in animal or experimental clinical research. Industrial laboratory experience will be an asset but not requisite. Australian nationality is essential.

The mature scientist with strong creative bent and deep interest in development of new medicinal agents may find this a challenging opportunity to pursue his ideas by application of integrated teams of co-workers of his own selection.

Salary and perquisites, as well as nature of the physical facility, size of budget, etc. are to be tailored to the successful candidate. Please request questionnaire from address below. Personal interviews will be arranged where indicated. **Riker Laboratories (Pty) Ltd.** co 19901 Nordhoff Street, Northridge, California.

POSITIONS OPEN

MICROBIOLOGIST

Challenging position for Ph.D. microbiologist on staff of young, rapidly growing Research Institute. Primary responsibility would be to develop research programs in fermentation microbiology and related fields. Position allows considerable flexibility in development of research directions.

Send résumé in confidence, with salary requirements and availability, to:

**Professional Personnel Manager
NORTH STAR RESEARCH AND
DEVELOPMENT INSTITUTE
3100 - 38th Avenue South
Minneapolis, Minnesota 55406
An Equal Opportunity Employer**

RESEARCH VIROLOGIST

Background and interest in virology and immunology of cancer. Medical Microbiologist can qualify. Graduate students expecting degree in near future will be considered. Interested persons write to Mr. Stanley Sawczuk, Research Personnel.

MERCK & COMPANY, Inc.
West Point, Pa.
An Equal Opportunity
Employer

Biometrician or Bio Statistician

B. S. degree (Biological Science or Chemistry preferred), Master degree in Statistics (minimum) or EQUIVALENT EXPERIENCE. Male.

Works with professional, scientific, and technical people in any department of the plant (Research, Development, Production, Sales) in the planning of investigations and/or experiments involving statistical technique or the statistical approach to problems. Must be able to carry out statistical design and analysis, and must be able to understand the plant application and assist professional, scientific, and technical staffs in making statistical results useful. Works under the direct supervision of the Director of Statistics.

Please send complete resume including salary requirements, in confidence, to: Manager of Employment

Bristol Laboratories

Division of Bristol-Myers Company

P. O. Box 657, Syracuse, N. Y. 13201

An equal opportunity employer

Postdoctoral position in Blood Program research laboratory for work with Dr. G. A. Jamieson on structure of serum glycoproteins. One year appointment, possibility of extension. Salary at least \$7500 yearly, depending upon qualifications.

Reply: Director of Personnel, American National Red Cross, Washington, D.C.

An Equal Opportunity Employer

MUSEUM CURATOR

Background in geology-paleontology basic requirement; some astronomy and knowledge of electronics desired.

Salary dependent on qualifications.

Apply: Director, Dayton Museum of Natural History, Dayton, Ohio 45414. X

PHARMACOLOGIST-TOXICOLOGIST

An administrative (not research) position exists for a M.S.- or Ph.D.-level pharmacologist, three years minimum, to evaluate the results of cosmetic and drug testing for medical safety prior to product release. Experience in dealing with F.D.A. and new drug applications helpful.

Mrs. Maletz

PROFESSIONAL STAFFING SERVICES
422 Washington Building
Washington, D.C. 20005

Placement Services for Scientists and Scientific Organizations

Predoctoral Assistantships and Traineeships in Physiology

Excellent opportunities for graduate students leading to the Ph.D. Ample stipends and free tuition. Training and research in endocrinology, muscle, water and electrolyte metabolism, cardiovascular, gastrointestinal, sensory physiology and biophysics. Write for details to: Head, Department of Physiology, University of Illinois at the Medical Center, P.O. Box 6998, Chicago, Illinois 60680.

ZIP

After 31 December 1966 addresses used for second-class mail must include the zip code. If this copy of *Science* does not show your correct zip code, please insert the code on your addressing label and send it to

AAAS-ZIP

1515 Massachusetts Ave., NW
Washington, D.C. 20005

The Market Place

BOOKS • SERVICES • SUPPLIES • EQUIPMENT

DISPLAY: Insertions must be at least 1 inch in depth. Weekly invoices will be sent on a charge account basis—provided that satisfactory credit is established.

Single insertion	\$65 per inch
4 times in 1 year	60 per inch
13 times in 1 year	50 per inch
26 times in 1 year	50 per inch

PROOFS: If copy is to be set, and proofs submitted for approval, complete copy and cuts must be received 4 weeks in advance of issue date (Friday of each week); complete plates no later than 3 weeks in advance of issue date.

BOOKS AND MAGAZINES

WRITERS

N. Y. publisher wants books on all subjects, fiction, nonfiction. No fee for professional opinion. FREE: Brochures that show how your book can be published, publicized, sold; tips and article reprints on writing, publishing, contracts. Write Dept. 756

EXPOSITION 386 Park Ave. So., N.Y. 16

Proceedings of a conference by
NAS—NRC Committee on Photobiology

PHOTOPERIODISM AND RELATED PHENOMENA IN PLANTS AND ANIMALS

922 pp., 256 illus., 1959 \$14.75
\$1250 cash orders from AAAS members

AAAS

1515 Massachusetts Ave., NW
Washington 5, D.C.

AUTHORS WANTED BY NEW YORK PUBLISHER

Your book can be published, promoted, distributed by a reliable company on a subsidized basis. Fiction, non-fiction, poetry, scholarly, scientific and even controversial manuscripts welcomed. For Free Booklet write Vantage Press, Dept. SC, 120 W. 31 St., New York 10001.

SUPPLIES AND EQUIPMENT

1919-1965

LaMotte Chemical

Chestertown, Maryland, U.S.A.

Specialists in

Colorimetric Techniques

Reagents-Standards-Comparators

Send for illustrated Controls Handbook

Dept. H

SPRAGUE-DAWLEY, INC.

Pioneers in the development of the
STANDARD LABORATORY RAT.

P.O. Box 4220

Madison, Wisconsin

CE 3-5318

SHATTERPROOF

LINE-O-VISION CAGE SIGNS

for all animal cages



Eye-level reading.

Rustproof. Changeable.

Withstands hot water,
detergents, chemicals.

HOLLISTER 835 N. Orleans, Chicago, Ill. 60610



Your gift speaks for America
when you feed hungry people
with \$1 Food Crusade packages
through CARE, New York 10016.

THE BUSINESS PRINCIPLES OF AN AEROSPACE INDUSTRY

These statements of policy were presented at an Engineering Forum by Vice President of Engineering at McDonnell, Mr. Kendall Perkins. If you, as an engineer are encouraged to follow these principles in your work, you will gain. If you are successful in the pursuit of these goals, the Nation will gain.

"... Organizations, like people, have personality and character. The things which make an organization distinctive are the ways in which it differs from other organizations. These generally stem from subtle differences in the principles which guide it and the practices it has learned to follow. What then are the guiding principles at McDonnell?"

"We believe it is a good business principle, for example, to give high priority to anticipating and doing our best to meet the needs of the customer—those needs which are really sound and will not change tomorrow. This often means passing up the easy-to-get contract, or the quick and easy solution to a problem, or even the approbation of a customer representative who may have become oversold on a particular project or a particular solution to a problem. Anticipating real and lasting customer needs often means creating something the customer hasn't yet asked for and doesn't yet want to buy—and then developing it and presenting it in such a way that the need becomes sufficiently apparent and pressing to open the door to a contract."

"We're not always right in what we believe the customer should have but we've found that timely and energetic effort to find what he needs, and to find an optimum solution, pays off handsomely in the long run. It was this principle which led us to start work on a manned orbiting spacecraft more than a year before the NASA asked for bids on Mercury. The same principle led us to undertake the design of an unusually versatile, high performance fighter for the Navy more than a year before our first Navy contract for Phantom II's. Thus it might be said that our largest current contracts have stemmed from the practice of anticipating customer needs. We still look forward to sizable production contracts for products conceived several years ago and actively developed since."

"We believe it is a good business principle to give high priority to meeting the needs of the individuals who make up our organization. This means many things in addition to a fair salary. It means treating people as they should want to be treated—with fairness and understanding. It means

defining responsibilities and necessary constraints, but not blocking initiative. It means opportunities for personal development by training, and freedom to transfer to other kinds of work. It means opportunities to contribute to attainment of worthy objectives. It means opportunities to advance to positions of responsibility and recognition, depending primarily on such contributions. It means the fairest and most thoughtful attention to adjustments in position and salary."

"We're not always right in our treatment of people but it's not for lack of trying at all levels. Our record has been outstanding in that we have close to the highest morale and close to the lowest percentage of terminations in the aerospace industry."

"We believe it is a good business principle to effectively foster cooperation between people. It may sound corny to talk about team action as much as we do. But nowhere in industry is there so great a need for cooperation—internal and external—as in the aerospace industry. Few other industrial products are as complex or as dependent upon such advanced engineering as a manned spacecraft or high performance aircraft. Few require so many kinds of engineering talent interacting toward the solution of so many kinds of problems. Few products require reconciling so many requirements expressed by so many people in so many documents. In short, there is a demand for effective coordination in the thinking of great numbers of people unmatched in any other industry."

"There is no such thing as an expert in all phases of an airplane, a missile, or a spacecraft. Successful systems of this complexity are developed only by employing the combined efforts of a team of people engaged in a wide variety of engineering and other activities. Technical areas are as far apart as chemistry and UHF radiation, hypersonic aerodynamics and gyroscope design, exotic high temperature materials and computer technology. No single brain can firmly grasp all these areas. Hence there is no substitute for an effective team—one whose members have learned to work together in harmony and mutual respect. The man who would lead

such teams must be capable of grasping what is told by others and appreciating the implication, but he must be modest enough to depend on the abilities and judgment of others and delegate responsibility whenever he safely can. Advanced systems development cannot be successfully run in a high-handed manner."

"I feel we have been successful at McDonnell in creating a harmonious atmosphere and minimizing non-constructive controversy. I believe we have built a team where there is a real sense of pride in group accomplishment and, at the same time, recognition of individual accomplishment. There is acceptance of necessary constraints without undue loss of individual spontaneity. We in management do our level best to provide a climate where these things can happen."

"The process of fully considering inputs from, and working in close harmony with so many other people calls for a type of organization and a set of skills and habits not ordinarily taught in school. It calls for keeping our viewpoints as broad as we can. It calls for changing our minds when the logic of the situation demands. It calls for keeping the best interest of the customer and the company ahead of our own immediate desire. It calls for recognizing that the other fellow's opinion can validly differ from our own without signifying either poor judgment or questionable motives on his part. It calls for keeping our heads when those about us are losing theirs and blaming it on us. It calls for these and many other practices in good human relations."

"We believe it is a good principle to make important decisions with the most meticulous care. In comparing our company with others it strikes me that we are more careful than most about reaching our decisions. We have learned the importance of examining all alternatives, digging up all the pertinent facts, fully analyzing results, and being objective and thorough in our judgments. This has tended to become a habit, exasperating at times, but well worth it on balance. It began when the company was formed and, in my opinion, has had more to do with our success than any other single practice."

Engineers, Scientists, Physicists and Mathematicians with energy, enthusiasm, and great creativity are needed for projects in the national interest underway at McDonnell. If you would like to work where the business principles outlined above are corporate policy and where the pursuit of excellence is a permanent corporate goal, we urge you to complete and mail the brief resume form below.

MCDONNELL An Equal Opportunity Employer.

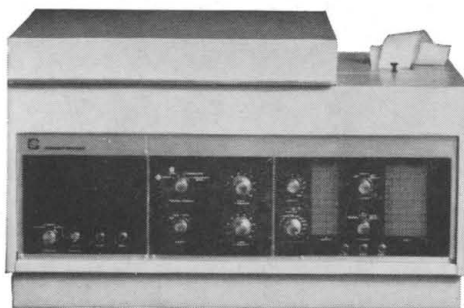
Mail This Form To: W. R. Wardle, McDonnell Employment, Dept. ZZ-79 Box 516, St. Louis, Mo., 63166

Name _____ Home Address _____
 City & State _____ Phone _____ Age _____
 Education: BS _____ MS _____ Ph D _____ Major Field: _____
 Date _____ Date _____ Date _____
 Primary Experience Area: _____
 _____ Number of Years _____

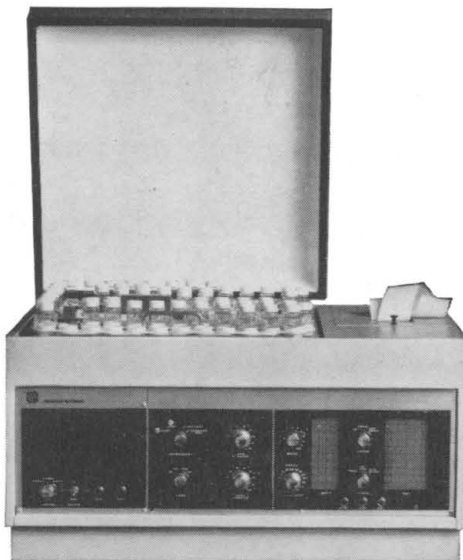


Present Position: _____
 _____ I would like to receive application form ☐

What's new and great about our bench-top system for routine liquid scintillation counting?



**Size? Performance?
Simplicity? Price?**



Yes.

Nuclear-Chicago's Model 6850 Unilux™ System measures only 19 in. high x 31 in. wide x 23 in. deep. It offers convenient, highly accurate counting of up to 100 samples—automatically. This workhorse of the laboratory can be set up for counting in less than five minutes and costs about half as much as many conventional systems. Get complete information on the 6850. Consult your Nuclear-Chicago sales engineer or write to us.

NUC:B-5-222



NUCLEAR-CHICAGO

A DIVISION OF NUCLEAR-CHICAGO CORPORATION
349 Howard, Des Plaines, Ill. 60018 U.S.A.

In Europe: Donker Curtiusstraat 7
Amsterdam W, The Netherlands

Scientists and engineers interested in challenging career opportunities are invited to contact our personnel director.