SCIENCE

28 August 1964

Vol. 145, No. 3635

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

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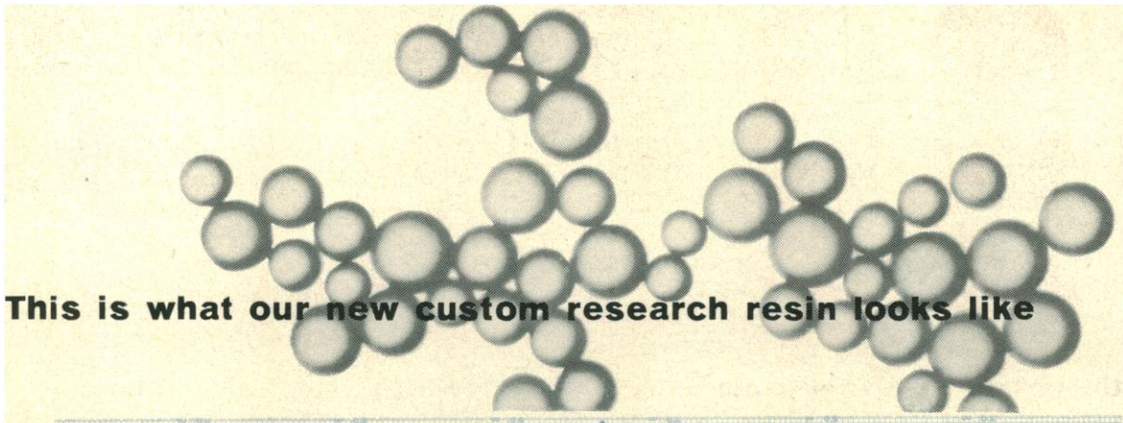

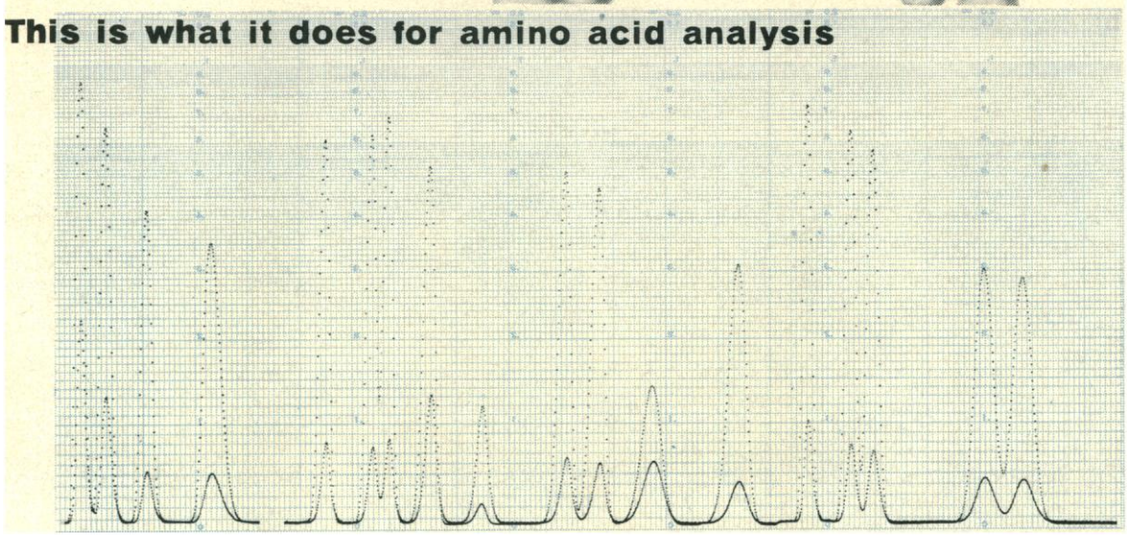

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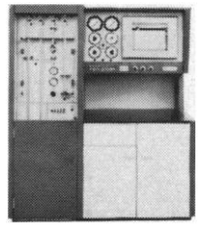

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COVER

Parts of a 15th-century Eskimo kayak, including bow piece, deck crosspieces, and spear or paddle guards. A unique and homogeneous far-northern culture existed from Alaska and northeastern Siberia across the top of North America to eastern Greenland. Excavations in northwestern Alaska show that the Eskimo way of life dates to at least 3000 B.C., and that it appears to have developed in the region of the Bering Sea. See review of *The Archeology of Cape Denbigh*, page 913. [Brown University Press]

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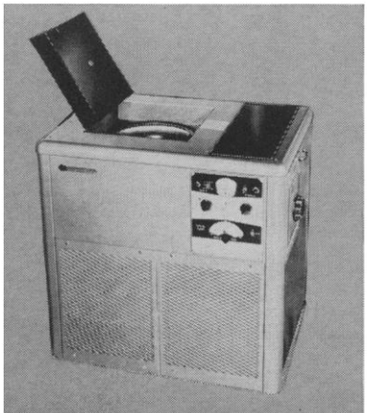

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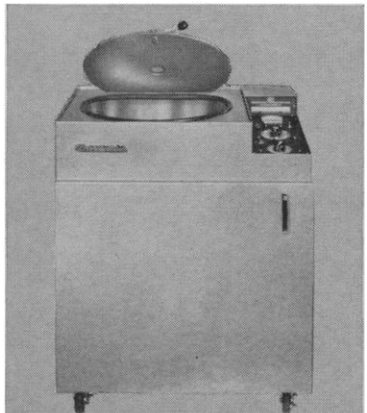

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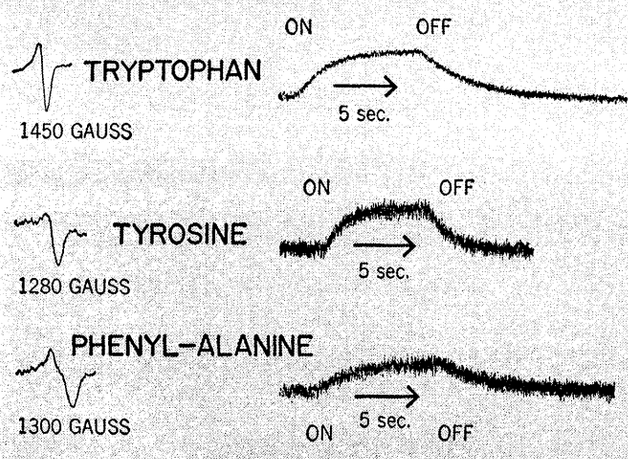

Phosphorescence of proteins was first observed as early as 1952.(1) This phosphorescence generally originates from the aromatic amino acids such as tyrosine and tryptophan. The triplet character of this phosphorescence has now been established by electron paramagnetic resonance.

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(1) P. Debye and J. O. Edwards
Science **116**, 143 (1952)

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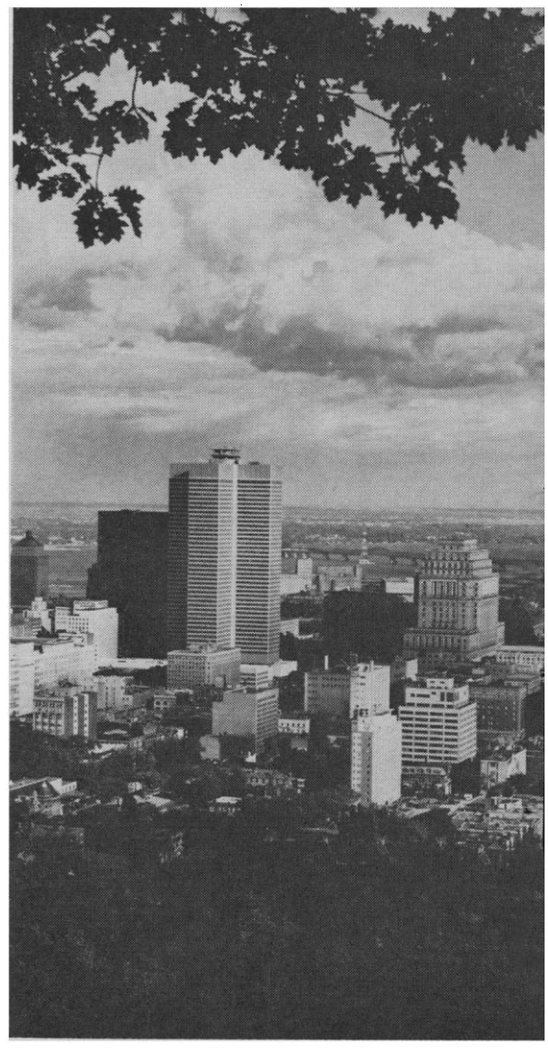

Program Highlights

Moving Frontiers of Science V. C. Wynne-Edwards on self-regulating systems in animal populations; J. M. Harrison on nonrenewable world resources; Philip Morrison, "New Channels in Astronomy"; and Clement L. Markert on role of genes in embryonic development.

Interdisciplinary Symposia Possible meteoric or lunar influences on meteorological phenomena; basic concepts of biochemical differentiation; medical geology and geography; history of the popularization of science.

Special Sessions AAAS Presidential Address by Alan T. Waterman; the Joint Address of Sigma Xi and Phi Beta Kappa by René Dubos; the George Sarton Memorial Address by Lloyd G. Stevenson; the National Geographic Society Illustrated Lecture; and the AAAS Distinguished Lecture by Lord Brain, retiring president, British AAS.

International Conference on Primate Behavior Three AAAS sections and the combined ESA and ASZ Section on Animal Behavior and Sociobiology are sponsors. Six sessions, open to the public, will include 37 speakers from four continents.

AAAS Committees Sessions of the AAAS Committee on Meetings, including two sessions on the sociology of science arranged and chaired by Robert K. Merton; and the Commission on Science Education.

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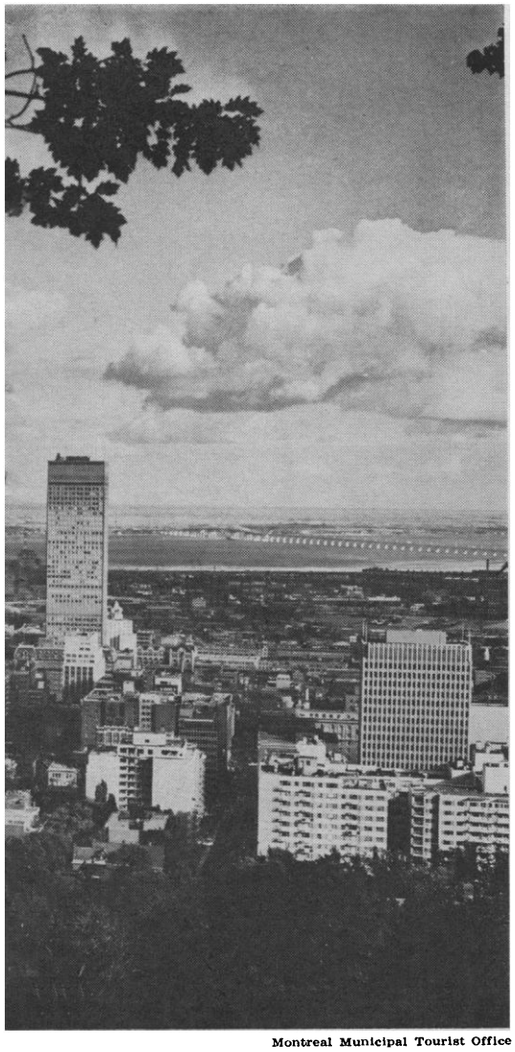

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Make sure you have the accommodations you prefer. A list of headquarters hotels of participating societies appears on page 299, 17 July, SCIENCE. The AAAS headquarters is the Queen Elizabeth.

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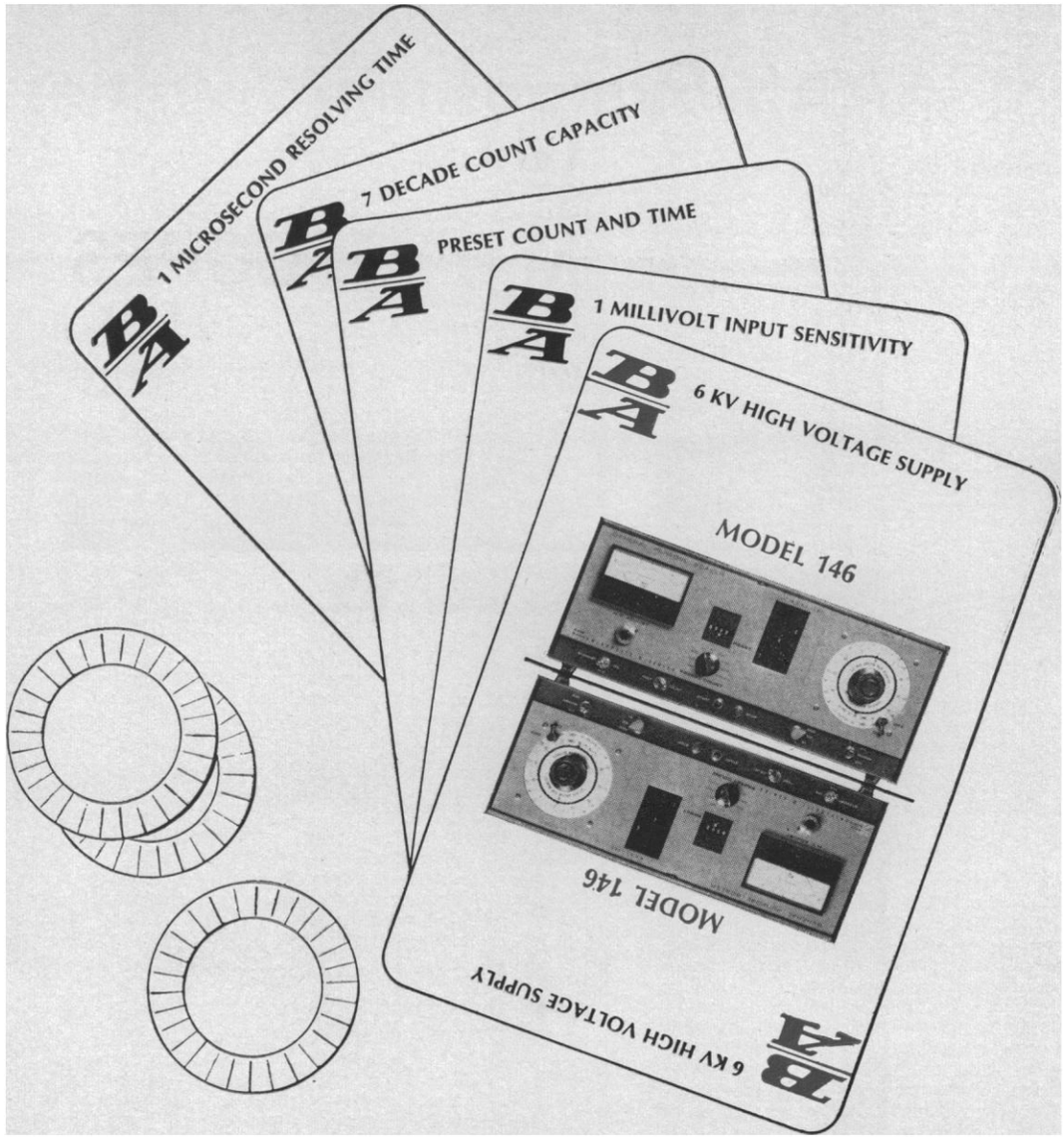

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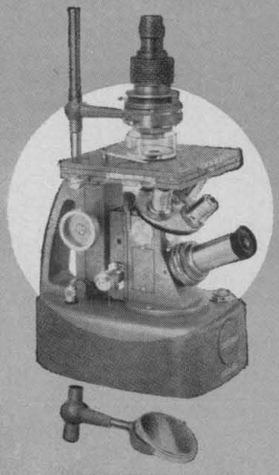

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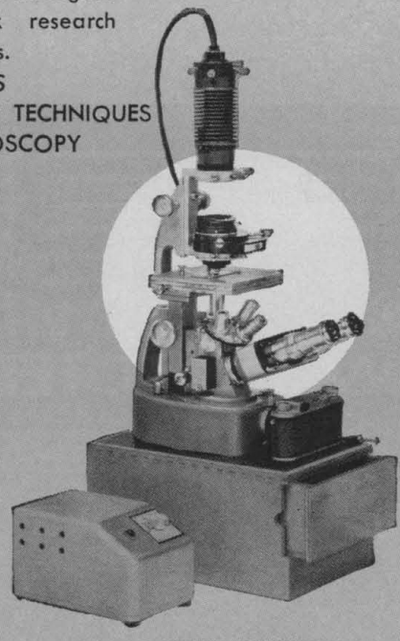

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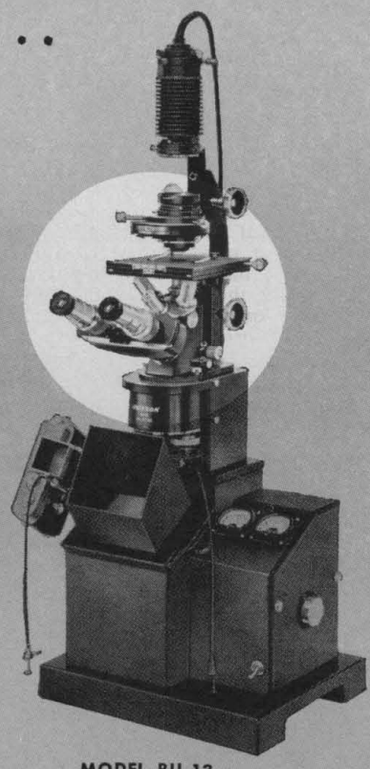

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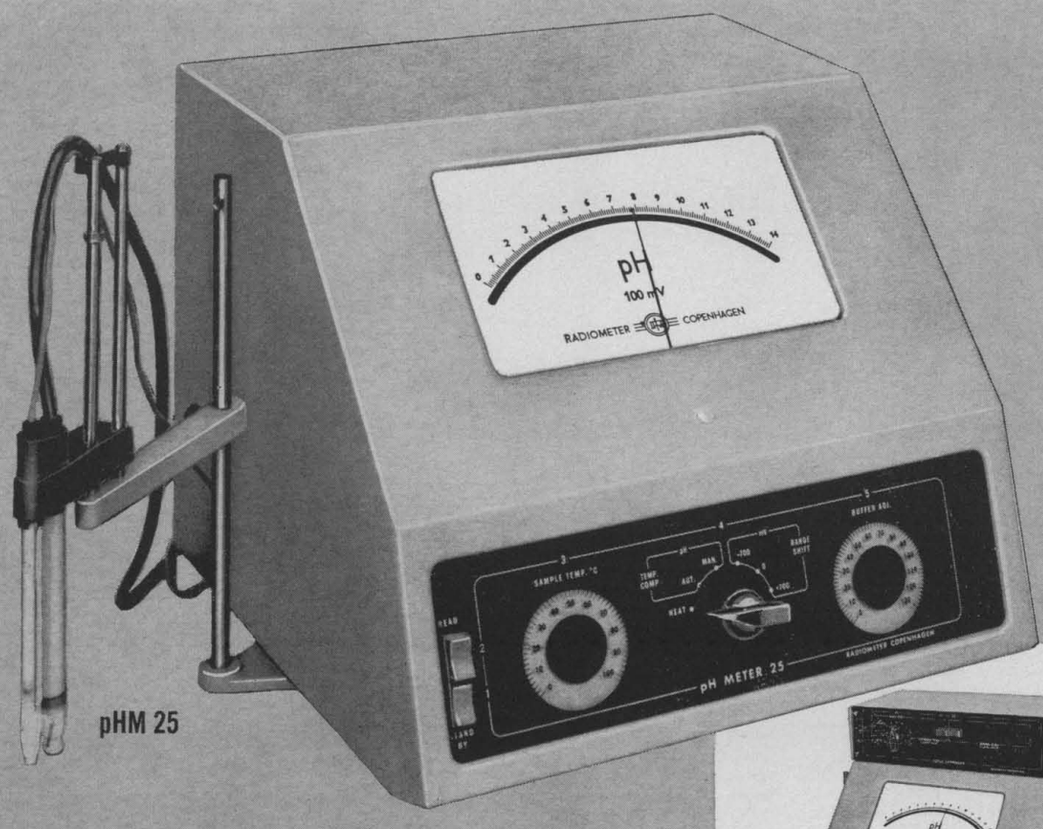

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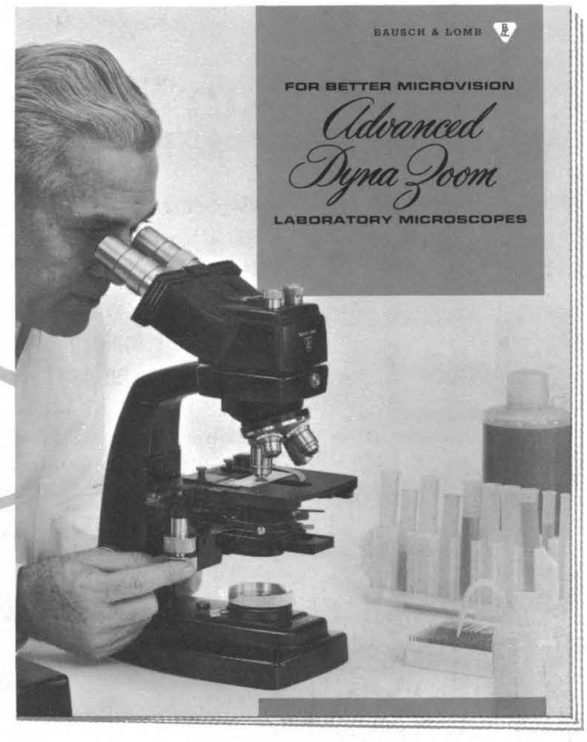

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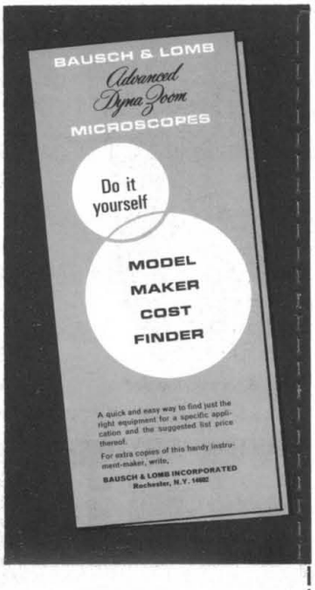

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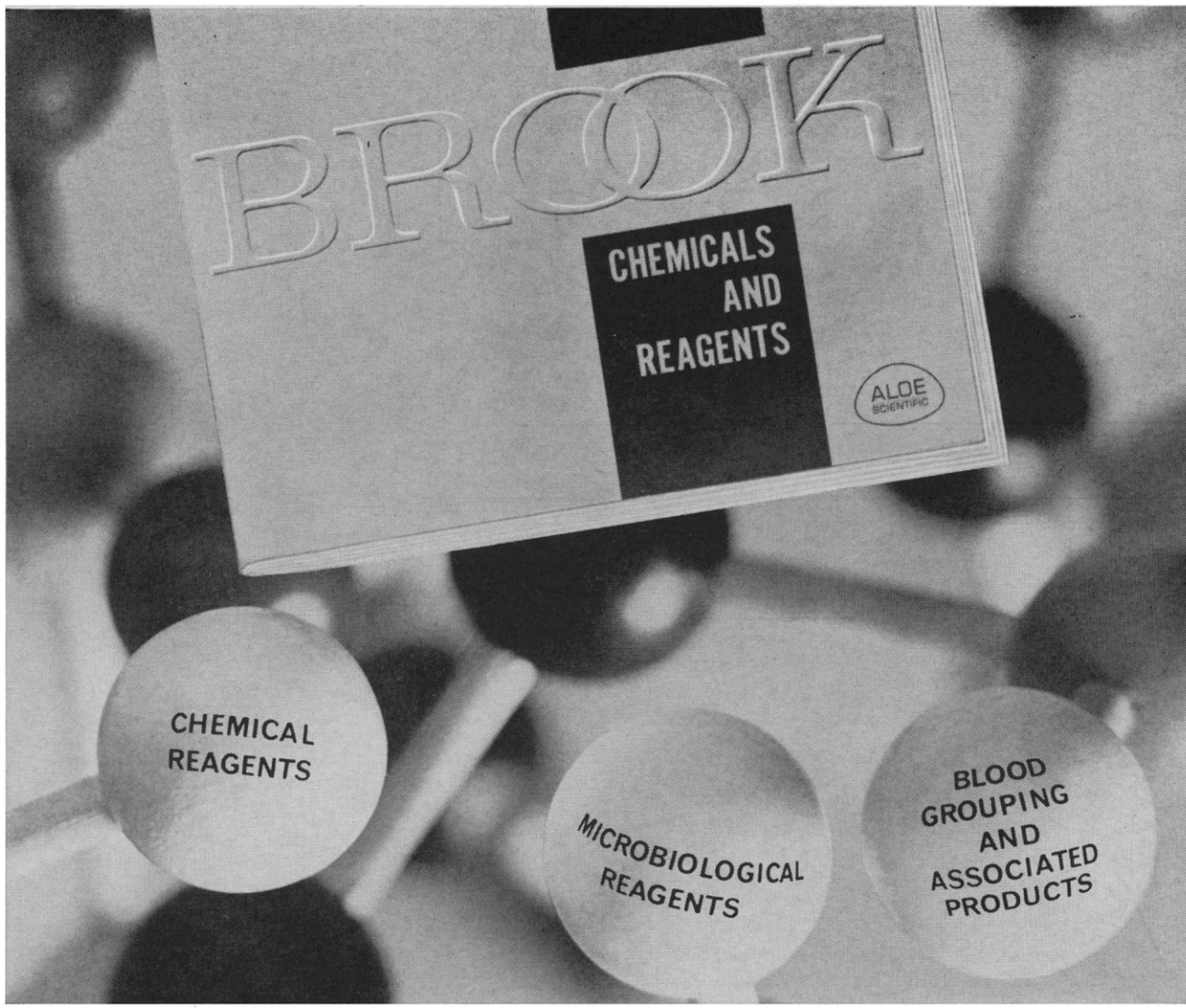

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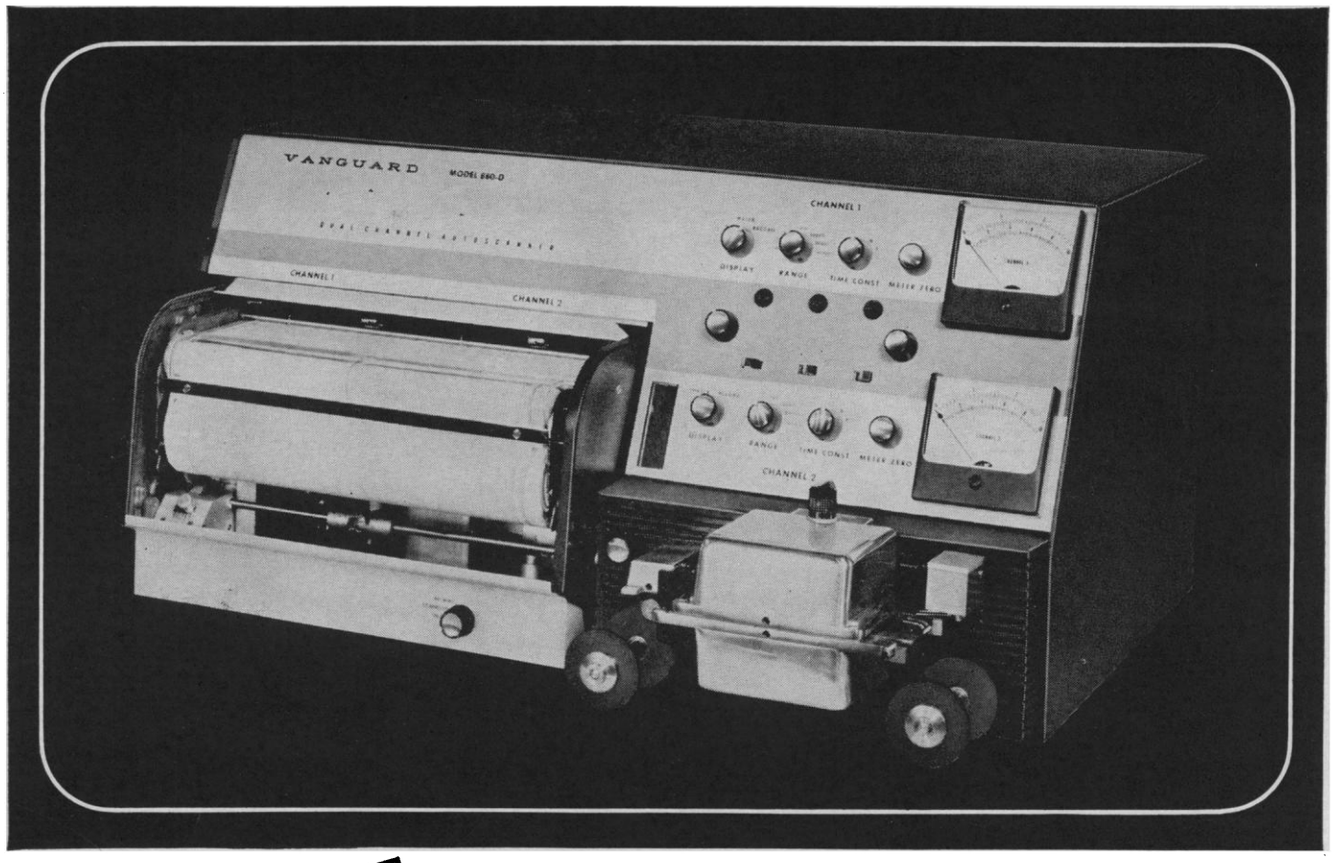

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versities to their primary function as centers of learning. Too long have we allowed the public to look upon our universities as factories where scientists are hired to split atoms so that there will be cheaper power, or where biological research goes on so that "cures" may be found. Laudable as these aims and efforts are, they are not the primary function of a university. . .

We should make it clear that we are not exceptions but forerunners, not the elite but the first lucky ones, and that we will not rest until all mankind enjoys the blessings of the cybernetic revolution and of surplus capital. . . .

PHILIP SIEKEWITZ
Rockefeller Institute, New York 10021

The Abuse of Words

New words are coined almost daily in science, and most of them are absolutely necessary. An explicative and descriptive science, if it is to be precise, must as it grows continually enlarge and make more specific its terminology. And this expansion understandably creates a good many problems—problems to which most scientists are certainly not insensitive.

But why complicate the situation unnecessarily? Why, if the problems are apparent, add to them by insensitive and careless practices? It seems to me that a community confronted with very real problems of communication must do everything possible to restrict these problems to those that are the inevitable result of its new needs.

Two examples will illustrate the unnecessary complication of scientific terminology today. The word *ambient* is not synonymous with *room*; that is, "ambient temperature" and "ambient conditions" do not mean "room temperature" and "conditions prevailing in the standard laboratory room" unless the term is specifically so defined. If *ambient* is to be used, exactly what the surrounding (*ambient*) conditions are must be described.

Aliquot means an integral factor. One cannot, therefore, take a 3-ml "aliquot" from a 10-ml sample. Unless the experimental procedure is a strictly quantitative one, and unless, further, integral factors are indeed involved, the words *sample, portion, fraction* are correct, not *aliquot*. (It is distressing to note that because of its frequency this misusage has been admitted to the new edition of *Webster's* Unabridged.)

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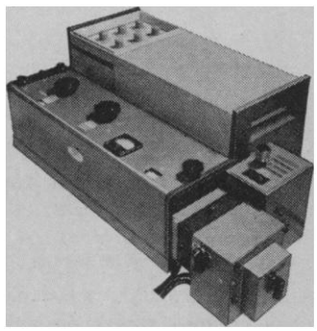

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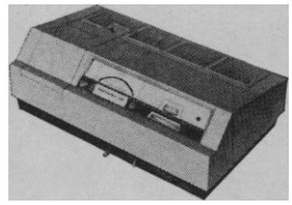

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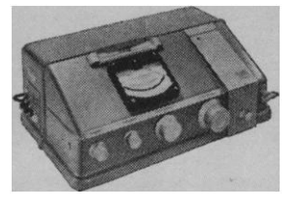

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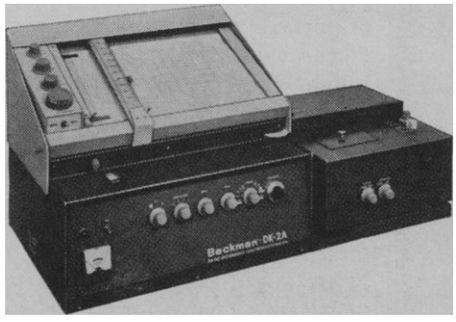

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These two examples are symptomatic of an alarming disregard today of preciseness and of the dangers in the use of laboratory jargon and literary affectations. There is enough inevitable ambiguity in the literature already. The attempt must be made, as a first step in improving intra- and interdisciplinary communication, to limit the problems to those arising from necessity, not from scientific pompousness and literary shoddiness.

ED SHAW
Antioch College, Yellow Springs, Ohio

Economics: Public Policy and Theory

John Kenneth Galbraith's views on matters of social policy ("Economics and the quality of life," 10 July, p. 117) are widely known and taken seriously in high places. I myself am sympathetic to the view that in a rich society efficiency narrowly conceived is of only minor interest for public policy. Development economists have challenged the traditional efficiency concept as a useful policy criterion even for poor nations. They recommend instead "efficient sequences" leading to given ends. Since "development" is an ongoing exploration of the unknown at all times and all places, close calculation of costs and benefits is, in any event, impossible. Our national allocations in space, health, and education are commitments based more on a vague sense of significance than on a precise knowledge of their consequences.

What makes the economist's viewpoint persuasive—a point which Galbraith seems to have missed—is the existence of objective indicators of economic health backed by a vast body of theory explaining the character of the essential relations. The great achievement of macroeconomics is the concept of gross national product. One of the more significant recent efforts by economists has been the attempt to build "education"—which had been regarded purely as a "social value"—into the grand matrix of economic theory by treating it as a form of "investment in human beings." Something is surely lost in this process of logical reduction, but it has now become respectable to advocate educational programs as an element of *economic* policy, and this is no small gain.

There is, unfortunately, nothing on "the other side" to correspond to national income accounting. City planners work in a theoretical near-vacuum. Esthetics is important, but there are no final arbiters of taste in our society. The "quality of life" is a ringing phrase, but we have no satisfactory way of measuring it. The debate regarding the good life is lively, as indeed it should be, but it is also inconclusive. The great intellectual effort that is therefore needed is the elaboration of a theoretically sound framework of comprehensive social accounts that will include, but go beyond, the income accounts of the economist. Some efforts along these lines are being made, notably by Bertram M. Gross of Syracuse University, but the challenge is to the social sciences as a whole. When we can point to the behavior of social account indices to signify changes in the "quality of life," a sound basis for social policy will have been laid.

JOHN FRIEDMANN
Department of City and Regional Planning, Massachusetts Institute of Technology, Cambridge, 39

In his recommendation that economists "accommodate" their theory to changes in economic phenomena, Galbraith seems to be asking little enough of his colleagues. In my own science, we attempt to explain changes and are even expected to predict them.

MORTON G. WURTELE
Department of Meteorology, University of California, Los Angeles

Darwin-Bates Letters

I am editing with the plan of publishing the correspondence between Charles Darwin and Henry Walter Bates, the author of *The Naturalist on the River Amazons.* I own many of Darwin's letters to Bates and have photocopies of the Bates letters to Darwin in the Cambridge University Library. In an effort to make this project as significant as possible, I ask for information about the existence of other material and seek the opportunity to examine other letters, pertinent documents, and personal or private information. I would also welcome information about Bates and the names and the places and dates of birth, marriage, and death, of his family—children and further descendants.

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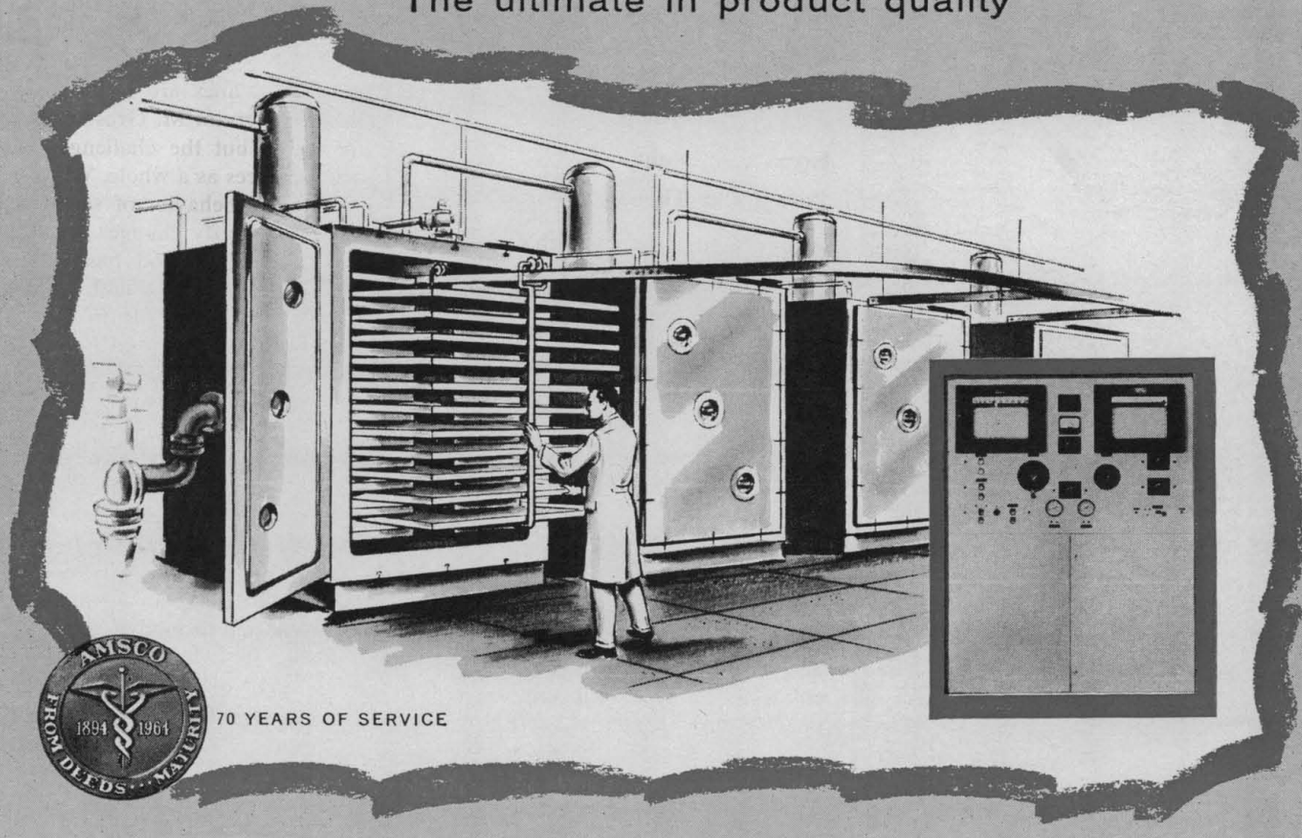

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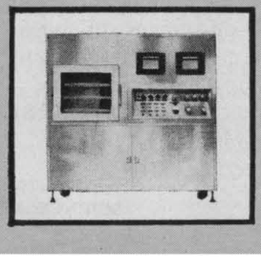

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Copyright Revisions

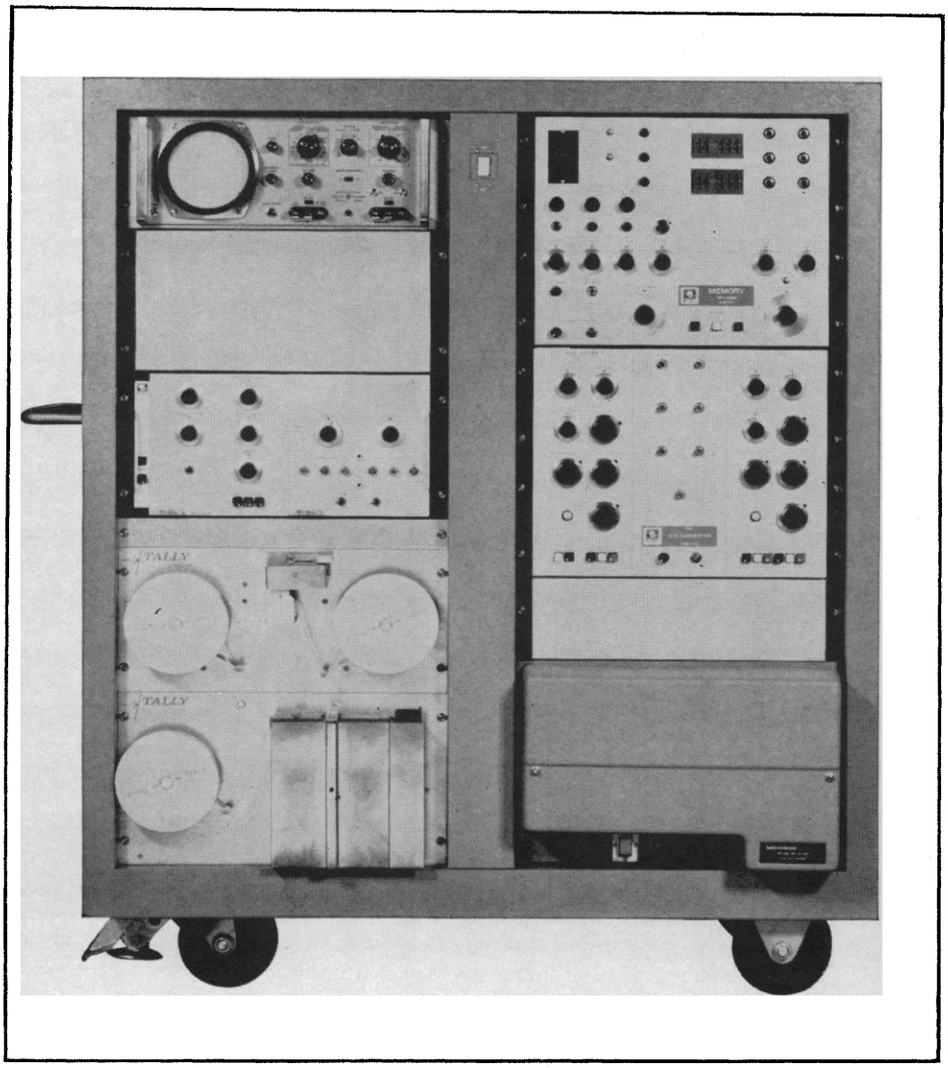
Scientists are both producers and users of much copyrighted material. Their rights in both capacities will be substantially altered by a sweeping reform of U.S. copyright law that is planned for enactment next year. The U.S. Copyright Office has prepared a comprehensive new bill that has been introduced into Congress as H.R. 11947 and S. 3008. As the first wholesale revision in over half a century, the new bill sweeps away distinctions between copyright and literary rights and the confusion arising from varying practices under common law and state laws. It covers not only written material but also films, sound recordings, and works of art.

An equitable copyright law must balance the rights of authors and the rights of users. The author needs reasonable protection for his creation. The user needs access to that work without undue restriction. The proposed law would clarify both sets of rights and would extend materially the protection authors enjoy under current provisions.

As examples: (i) copyright would exist from the time of creation of the new work, whether published or not and whether registered or not; (ii) copyright would endure for the lifetime of the author plus 50 years, instead of for the present maximum of 56 years; (iii) if the work were published in a collective work—such as an issue of *Science*—the copyright would clearly belong to the author, not to the publisher; and (iv) an author could transfer his copyright to someone else, but the transfer would not be permanent, for he (or his heirs or legal representatives) could terminate the transfer after 35 years.

Most authors will like these favorable provisions, but controversy will arise over other provisions, for publishers, printers, purveyors, and users will also be affected, and their interests are not always the same as the authors'. One section on which lively debate has already started is the "fair use" provision, concerning the right to make copies of copyrighted material. It is clear that one can copy or can quote copyrighted material "to the extent reasonably necessary or incidental to a legitimate purpose such as criticism, comment, news reporting, teaching, scholarship, or research." But can he make several copies for use by students? A number of educational organizations fear that the proposed rule would prohibit even limited reproduction for teaching purposes and would greatly restrict educational broadcasting privileges. They are therefore advocating liberalization of this provision. On the other hand, some publishers contend that educational groups are seeking such unrestricted freedom to reproduce copyrighted material in quantity as to threaten established publishing practices and the incentives for authors and publishers on which those practices are based.

The purpose of introducing the bill into Congress now is to invite comment on its debatable aspects. Early next year the present version will be replaced by a bill modified to take account of the advice, criticisms, and suggestions that the Registrar of Copyrights receives this year.—DAEL WOLFLE



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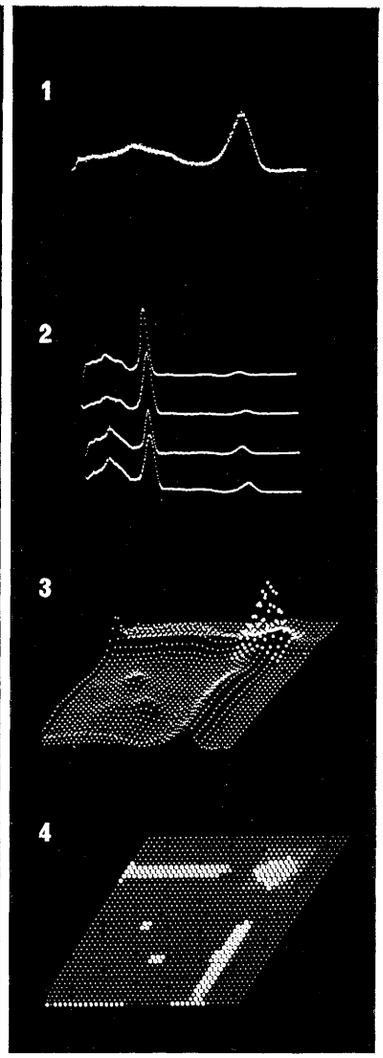

Pictured at right are four of a number of display and operating modes with sodium-22 spectra: **1.** *Single-parameter analysis mode provides resolution consistent with most solid-state detectors.* **2.** *Typical multiple single-parameter application—shown here is 2 x 400 coincidence simultaneously with 2 x 400 anticoincidence. Dual 2 x 800 mode is also available.* **3.** *Multiparameter 40 x 40 coincidence operation with Region of Interest intensification. Other multiparameter coincidence groups are 16 x 100, 8 x 200, 4 x 400, 2 x 800. System can also be used to monitor data for computer input and analysis.* **4.** *Unique peak* volume *integration provided by two-parameter Region of Interest selectors and data level controls which intensify and define area (x and y) in which peak lies and count level above which integration will be performed.*

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be considerably smaller. Adhesion between solids actually depends on the viscosity of the medium between them or the transfer of charge between the solid surfaces or both. Long-time pressing will result in mutual diffusion, sintering, or recrystallization; separation cannot be achieved without cohesional break of one of the solids.

C. M. Adams, Jr. (Massachusetts Institute of Technology) offered a new concept for spreading of a liquid metal on a solid surface and developed equations which strongly indicated the similarity in the thermodynamics of wetting and penetration. In partial wetting, there will be no spreading. If the interfacial energy is low enough for spreading, it certainly will be low enough for penetration. Observed velocities of a pure copper liquid spreading on a solid copper surface are in the range of several hundred centimeters per second. Low velocities of spreading were observed in the system liquid tin on solid copper. This system is controlled by "surface" diffusion. For example, an alpha solid solution of tin and copper has to be formed before reasonable spreading can be observed. In addition, Adams reported, it was found that the process depends on the presence of a very small concentration of oxygen, which seems to be vital for this type of wetting. A complete absence of oxygen inhibits wetting. This was somewhat contrary to our customary belief that oxygen is detrimental to some processes, such as brazing.

After the formal presentation of the papers, a discussion developed about the value of a meeting of this type and how much stimulation the theoretical papers gave to speakers who discussed more practical aspects of surface phenomena. The majority of the audience and the authors stated the definite need for this type of meeting. Several hours' discussion among the speakers and between the speakers and the audience indicated that a symposium of this kind cannot only be informative but also extremely useful, as it tends to formulate definitions and clarify theoretical aspects of this field.

A symposium volume is being prepared. Requests for this volume should be addressed to Ilikon Corporation, Natick, Massachusetts.

L. J. Bonis

Ilikon Corporation
Natick, Massachusetts

H. H. Hausner

Brooklyn Polytechnic Institute,
Brooklyn, New York

Forthcoming Events

September

1–4. **AAAS, Alaska Div.,** College. (G. Dahlgren, Dept. of Chemistry, Univ. of Alaska, College)

1–4. **Aerospace Power Systems,** 3rd biennial conf., Philadelphia, Pa. (American Inst. of Aeronautics and Astronautics, 2 E. 64 St., New York, N.Y. 10021)

1–4. **Gas,** 9th intern. conf., The Hague, Netherlands. (R. H. Touwaide, General Secretary, Intern. Gas Union, 4, Avenue Palmerston, Brussels, Belgium)

1–5. **Biological Standardization,** 9th intern. congr., Lisbon, Portugal. (C. de Oliveira, c/o Inst. Bacteriologico Camara Pestana, Rua do Instituto Bacteriologico, Lisbon)

1–5. American Soc. of **Ichthyologists and Herpetologists,** Morehead City, N.C. (J. R. Bailey, Dept. of Zoology, Duke Univ., Durham, N.C.)

1–5. **Nuclear Magnetic Resonance and Relaxation in Solids,** intern. conf., Louvain, Belgium. (L. Van Gerven, Naamsestraat 61, Louvain)

1–8. **Photographic and Spectroscopic Optics,** conf., Tokyo and Kyoto, Japan. (H. Kubota, Science Council of Japan, Ueno Park, Tokyo)

2–4. Structure and Properties of **Coordination Compounds,** Bratislava, Czechoslovakia. (Czechoslovak Chemical Soc., Hradcanske nam. 12, Prague 1)

3–5. Czechoslovak **Orthopedic** Congr., Prague. (M. Jaros, Libuslna 5, Prague 2)

3–8. International Soc. of **Blood Transfusion,** 10th biennial congr., Stockholm, Sweden. (C. Högman, P.O. Box 434, Stockholm 1)

4–5. Great Basin **Anthropological** Conf., Reno, Nev. (W. L. d'Azevedo, Desert Research Inst., Univ. of Nevada, Reno)

4–6. **Gout and Uric Lithiasis,** intern. congr., Evian, France. (R. J. Réveillaud, 4 Boulevard de la Bastille, Paris 12)

4–6. **Parapsychological** Assoc., 7th annual, Oxford, England. (K. R. Rao, 6847 College Station, Durham, N.C.)

4–6. American **Philosophical** Assoc., Pacific Div., Seattle, Wash. (L. E. Hahn, Dept. of Philosophy, Southern Illinois Univ., Carbondale)

4–9. American **Psychological** Assoc., Los Angeles, Calif. (A. H. Brayfield, 1333 16th St. NW, Washington, D.C.)

6. **Spacesuits and Human Performance,** symp., Soc. of Engineering Psychologists, Los Angeles, Calif. (N. M. Molesko, 4918 Castana Ave., Lakewood, Calif.)

6–7. International Acad. of the **History of Medicine,** Basel, Switzerland. (N. Poynter, c/o Wellcome Historical Medical Library, 183 Houston Rd., London, N.W.1, England)

6–11. **Physical Medicine,** 4th intern. congr., Paris, France. (J. P. Held, French Natl. Soc. of Physical Medicine, 15, rue de l'Ecole de Medicine, Paris 6e)

6–13. **Animal Reproduction and Artificial Insemination,** 5th intern. congr., Trento, Italy. (T. Bonadonna, Via Monte Ortigara 35, Trento)

7–9. **Psychometric** Soc., Los Angeles, Calif. (W. G. Mollenkopf, Procter and Gamble, P.O. Box 599, Cincinnati 1, Ohio)

7–10. **High-Energy Electrons**, symp., European Assoc. of Radiology, Montreux, Switzerland. (P. L. Cova, Casa di Cura S. Ambrogio, Via Faravalli 16, Milan, Italy)

7–11. **Coordination Chemistry**, 8th intern. conf., Vienna, Austria. (V. Gutmann, Verein Osterreichischer Chemiker, 1 Eschenbachgasse 9, Vienna 1)

7–11. **Magnetism**, intern. conf., Nottingham, England. (Deputy Secretary, Inst. of Physics and the Physical Soc., 47 Belgrave Sq., London, S.W.1, England)

7–11. **Microwaves, Circuit Theory, and Information Theory**, intern. conf, Tokyo, Japan. (K. Morita, Inst. of Electrical Communication Engineers of Japan, 2–8 Fujimicho, Chiyoda-ku, Tokyo, Japan)

7–12. **Astronautics**, 15th intern. congr., Warsaw, Poland. (Intern. Astronautical Federation, 250 rue St. Jacques, Paris 5e, France)

7–12. **Laurentian Hormone** Conf., Bolton Landing, N.Y. (J. C. Foss, 222 Maple Ave., Shrewsbury, Mass. 01545)

7–12. **Odontological** Federation of Central America and Panama, 7th congr., Guatemala City, Guatemala. (E. Estrada H., Apartado Postal 513, Guatemala City)

7–12. **Pharmaceutical Sciences**, 24th intern. congr., Amsterdam, Netherlands. (Congress Secretariat, 4 Sint Agnietenstraat, Amsterdam-C)

7–12. **Surface Active Substances**, 4th intern. congr., Brussels, Belgium. (Secretary General, The Congress, 49, Square Marie-Louis, Brussels 4)

7–19. **Photogrammetry**, 10th intern. congr., Lisbon, Portugal. (A. Paes Clemente, Intern. Soc. for Photogrammetry, c/o Instituto Geografico e Cadastral, Praça da Estrela, Lisbon)

8–10. **Gas Chromatography**, 5th intern. symp., Brighton, England. (Organizing Office, 61 New Cavendish St., London, W.1, England)

8–10. **Nonsteroidal, Antiinflammatory Drugs**, intern. symp., Milan, Italy. (S. Garattini, Instituto di Richerche Farmacologische "Mario Negri," Via Eritrea 62, Milan)

9–11. **Applied Spectroscopy and Analytical Chemistry**, 11th symp., Ottawa, Ontario, Canada. (Chemical Inst. of Canada, 48 Rideau St., Ottawa 2)

9–11. Kinetics of **Pyrolytic Reactions**, Ottawa, Ontario, Canada. (K. J. Laidler, Dept. of Chemistry, Univ. of Ottawa, Ottawa 2)

9–11. European Organization for **Quality Control**, 8th conf., Baden-Baden, Germany. (Secretariat, Weena 700, Rotterdam 3, Netherlands)

9–11. International College of **Surgeons**. North American Federation, congr., Chicago, Ill. (Secretariat, 1516 Lake Shore Dr., Chicago 60610)

9–12. Society of **General Physiologists**, Woods Hole, Mass. (R. Milkman, Dept. of Zoology, Syracuse Univ., Syracuse, N.Y. 13210)

9–12. American **Political Science** Assoc., annual, Chicago, Ill. (The Association, 1726 Massachusetts Ave., NW, Washington, D.C. 20036)

10–13. **General Practice**, 6th intern. congr., Salzburg, Austria. (K. Engelmeier, Intern. College of Medical Practice, Lange Str. 21a, 474 Oelde, Germany)

11–12. **Diseases Common to Animals and Man**, annual West-Northcentral conference, Omaha, Nebr. (N. G. Miller, College of Medicine, Univ. of Nebraska, Omaha 5)

11–12. Scandinavian **Neurosurgical** Soc., 18th annual, Oslo, Norway. (K. Kristiansen, Neurosurgery Dept., Ulleval Sykehus, Oslo)

11–14. German Soc. of **Metallurgy and Mining**, general assembly, Hanover. (Gesellschaft Deutscher Metallhütten und Bergleute, Paul-Ernststr. 10, Clausthal-Zellerfeld, Germany)

13–16. **Electrical Insulation**, conf., New York, N.Y. (J. Lenkey, Anaconda Wire and Cable Co., 605 Third Ave., New York, N.Y. 10016)

13–16. American **Fisheries** Soc., Atlantic City, N.J. (E. A. Seaman, 1404 New York Ave., Washington, D.C.)

13–17. **Power**, World conf., Lausanne, Switzerland. (U.S. Natl. Committee, World Power Conf., c/o Engineers Joint Council, 345 E. 47 St., New York 10017)

14–15. **Chromatography**, 3rd intern. symp., Brussels, Belgium. (Belgian Soc. of Pharmaceutical Sciences, rue Archimede 11, Brussels 4)

14–15. **Nutrition**, Canadian-U.S. conf., Toronto, Ont., Canada. (J. M. R. Beveridge, Dept. of Biochemistry, Queen's Univ., Kingston, Ont.)

14–16. **Military Electronics** (MIL-E-CON 8), intern. conf., Inst. of Electrical and Electronics Engineers, Washington, D.C. (H. M. O'Bryan, Bendix Corp., 1730 K St., NW, Washington, D.C. 20006)

14–17. International Assoc. of **Milk and Food Sanitarians**, Hartford, Conn. (H. L. Thomasson, Box 437, Shelbyville, Ind.)

14–18. **Aeronautical Research and Development**, NATO advisory group, 14th general assembly, Lisbon, Portugal. (The Assembly, 64, rue de Varenne, Paris 7°, France)

14–18. **Analogue Computation**, 4th intern., Brighton, England. (E. L. Harder, Westinghouse Electric Corp., East Pittsburgh, Pa.)

14–18. **Aviation and Space Medicine**, intern. congr., Dublin, Ireland. (S. O'Quigley, Aer Lingus–Irish International Airlines, Dublin Airport, Dublin, Ireland)

14–18. **Mass Spectrometry**, intern. conf., Paris, France. (Secretariat, Groupement pour l'Avancement des Méthodes Spectrographiques, 1, rue Gaston-Boissier, Paris 15°)

14–18. **Microwave Tubes**, 5th intern. congr., Paris, France. (Secretariat, B.P. No. 20, Bagneux, Seine, France)

14–18. **Operational Research and the Social Sciences**, intern. conf., Cambridge, England. (Operational Research Soc., 64 Cannon St., London, E.C.4, England)

14–18. **Radio Meteorology**, world conf., Boulder, Colo. (J. W. Herbstreit, Central Radio Propagation Laboratory, National Bureau of Standards, Boulder 80301)

14–18. **Weather Radar**, 11th conf., Boulder, Colo. (J. W. Herbstreit, Central Radio Propagation Laboratory, National Bureau of Standards Boulder Research Laboratories, Boulder)

14–19. **Ceramics**, 9th intern. congr., Brussels, Belgium. (European Assoc. for Ceramics, 13, rue des Poissoniers, Brussels 1)

14–19. **Instruments and Measurements**, 6th intern. conf., Stockholm, Sweden. (RESO Congr. Service, Stockholm 1)

15–17. **Armed Forces Management** Assoc., 11th natl. conf., Detroit, Mich. (The Association, P.O. Box 7603, Washington, D.C.)

15–17. **Luminescence**, conf., Hull, Yorkshire, England. (G. F. J. Garlick, Physics Dept., Univ. of Hull, Hull)

15–17. **Chemical Reaction Engineering**, 3rd European symp., Amsterdam, Netherlands. (J. G. van de Vusse, c/o Kon. Shell Laboratorium, Badhuisweg 3, Amsterdam)

15–18. **Nuclear Photography**, intern. conf., Geneva, Switzerland. (Scientific Conf. Secretariat, European Organization for Nuclear Research, Geneva 23)

15–19. **Industrial Chemistry**, 35th intern. congr., Warsaw, Poland. (Secretariat, Rydgiera 8, Warsaw 86)

16–18. American Assoc. of **Medical Clinics**, annual, Bal Harbour, Fla. (The Association, Box 58, Charlottesville, Va.)

17–18. **Computing**, 7th annual Northwest conf., Seattle, Wash. (R. K. Smith, Northwest Computing Assoc., Box 836, Seahurst, Wash.)

17–18. **Engineering Management**, conf., Cleveland, Ohio. (Inst. of Electrical and Electronics Engineers, Box A, Lenox Hill Station, New York, N.Y. 10021)

17–18. **Polypropylene Fibers**, symp., Southern Research Inst., Birmingham, Ala. (W. C. Sheehan, SRI, 2000 Ninth Ave. S., Birmingham, Ala. 35205)

17–19. **Cancer**, 5th natl. conf., Philadelphia, Pa. (American Cancer Soc., 219 E. 42 St., New York, N.Y. 10017)

17–19. British Assoc. of **Urological Surgeons**, annual, Sheffield, England. (Joint Secretariat, 47 Lincoln's Inn Fields, London, W.C.2, England)

17–20. **Science Education**, intern. conf., Banff, Alberta, Canada. (S. Trieger, Faculty of Education, Univ. of Alberta, Edmonton, Canada)

18. Hungarian **Chemical** Soc., Tihany. (M. T. Beck, Szabadsag ter 17, Budapest 5, Hungary)

19–26. **Gynecology and Obstetrics**, 4th world congr., Buenos Aires, Argentina. (R. Lede, Primera Catedra de Ginecología, Hospital de Clínicas, Córdoba 2149, Buenos Aires)

19–27. **Scientific Films** Assoc., 18th intern. congr., Athens, Greece. (SFA, 38, Avenue des Ternes, Paris 17°, France)

20–23. **Ceramic-Metal Systems**, American Ceramic Soc., French Lick, Ind. (ACS, 4055 North High St., Columbus, Ohio)

20–23. American Inst. of **Chemical Engineers**, Las Vegas, Nev. (F. J. Van Antwerpen, 345 E. 47 St., New York, N.Y. 10017)

20–24. American Soc. of **Oral Surgeons**, Chicago, Ill. (E. W. Gilgan, 119 North Michigan Ave., Chicago 11)

20–25. **Neuroradiology**, 7th symp., New York, N.Y. (J. M. Taveras, Neurological Inst., Columbia-Presbysterian Medical Center, New York, N.Y. 10032)

20–26. **Anaesthesiology**, 3rd world congr., São Paulo, Brazil. (L. Rodrigues Alves, Caixa Postal 330, São Paulo)

21–24. **Agricultural Engineering**, intern. congr., Lausanne, Switzerland. (P. Regamey, Etat de Vaud, 14. Cite-Devant, Lausanne)

21–24. German Soc. for **Psychology**, 24th congr., Vienna, Austria. (J. Rohracher, Deutsche Gesellschaft für Psychologie, Am Hof le, 5300 Bonn, Germany)

21–25. **Animal Care Panel,** 15th annual New York, N.Y. (ACP, P.O. Box 1028, Joliet, Ill. 60434)

21–26. **Documentation**, 30th intern. conf., The Hague, Netherlands, (Intern. Federation for Documentation, 7 Hofweg, The Hague)

21–26. **Electrochemical Thermodynamics and Kinetics**, intern., London, England. (M. Fleischmann, Dept. of Physical Chemistry, Univ. of Newcastle upon Tyne, England)

21–26. **Parasitology**, 1st intern. congr., Rome, Italy. (A. Corradetti, Instituto di Parassitologia, Citta Universitaria, Rome)

22–24. **Many-Body Problems** in Physics and Chemistry, conf., Manchester, England. (Administration Assistant, Inst. of Physics and the Physical Soc., 47 Belgrave Sq., London, S.W.1, England)

22–25. Middle East **Neurological** Soc., Ankara, Turkey. (N. Avman, c/o Hacettepe Tip Fakültesi, Ankara)

22–25. **Soil Micromorphology**, 2nd intern., Arnhem, Netherlands. (A. Jongerius, Stichting voor Bodenmartering, Postbus 10, Bennekom, Netherlands)

22–28. **Radiology**, 11th intern, congr., Rome, Italy. (L. Turano, Instituto de Radiologia, Univ. of Rome, Rome)

23–26. British Assoc. for **Cancer Research**, annual, Edinburgh, Scotland. (J. G. Bennette, Courtauld Inst., Middlesex Hospital, London, W.1, England)

23–26. Viral Diseases of **Poikilothermic Vertebrates**, New York, N.Y. (S. P. Snieszko, Eastern Fish Disease Laboratory, Leestown, P.O. Kearneyville, W.Va 25430)

24–27. **American Medical Writers'** Assoc., annual, Philadelphia, Pa. (American Medical Writers Assoc., 2000 P St., NW, Washington, D.C.)

25–26. **Communications,** 3rd Canadian symp., Montreal, Quebec. (F. G. R. Warren, P.O. Box 802, Station B, Montreal)

27–30. Society of American **Foresters**, 64th annual, Denver, Colo. (SAF, Mills Bldg., Washington, D.C. 20006)

27–1. **Water Pollution Control** Federation, 37th annual, Bal Harbour, Fla. (WPCF, 3900 Wisconsin Ave., Washington, D.C. 20016)

27–2. Society of **Motion Picture and Television Engineers**, 96th technical conf., New York, N.Y. (SMPTE, 619 W. 54 St., New York, N.Y. 10019)

28–30. **Circuit and System Theory**, conf., Monticello, Ill. (W. R. Perkins, Dept. of Electrical Engineering, Univ. of Illinois, Urbana)

28–2. Society for **Applied Spectroscopy**, 3rd natl. conf., Cleveland, Ohio. (E. Yeager, Dept. of Chemistry, Western Reserve Univ., Cleveland 44106)

29–1. Physics of **Failure in Electronics**, 3rd annual symp., Chicago, Ill. (M. Goldberg, IIT Research Inst., 10 W. 35 St., Chicago 60616)

29–1. **Physics and Nondestructive Testing**, symp., Dayton, Ohio. (W. J. McGonnagle, Southwest Research Inst., P.O. Box, 2296, San Antonio, Tex. 78206)

29–1. American College of **Preventive Medicine**, New York, N.Y. (R. E. Coker, Jr., Box 1263, Chapel Hill, N.C.)

29–1. Technical Assoc. of the **Pulp and Paper** Industry, 1964 testing conf., Portsmouth, N.H. (TAPPI, 360 Lexington Ave., New York, N.Y. 10017)

29–2. American **Roentgen Ray** Soc., 65th annual, Minneapolis, Minn. (C. A. Good, Mayo Clinic, Rochester, Minn.)

30–2. **American Council on Education**, 47th annual, San Francisco, Calif. (L. Wilson, ACE, 1785 Massachusetts Ave., NW, Washington, D.C. 20006)

30–2. **Earth Sciences**, intern. conf., Cambridge, Mass. (H. G. Houghton, Dept. of Meteorology, Massachusetts Inst. of Technology, Cambridge)

30–2. **Standards Engineers** Soc., 13th annual, New York, N.Y. (SES, 170 Livingston Ave., New Providence, N.J.)

30–2. **Vacuum**, 11th natl. symp., Chicago, Ill. (G. H. Bancroft, Bendix-Balzers Vacuum, Inc., 1645 St. Paul St., Rochester, N.Y. 14621)

30–4. **Spectroscopy**, 11th intern. conf., Belgrad, Yugoslavia. (Sekretarijat, Prorodno-matematicki fukultet, Fizickochemijsky zavod Belgrad, Studeniski trg., 16, Bloc C, Yugoslavia)

October

1–2. Emission of **Electrons** from Solids, conf., Univ. of Keele, Keele, England. (Inst. of Physics and the Physical Soc., 47 Belgrave Sq., London, S.W.1, England)

1–3. American Assoc. for **Surgery of Trauma**, Chicago, Ill. (S. R. Gaston, 18 Fort Washington Ave., New York 10022)

2–3. Council for International **Organizations of Medical Societies**, 6th general assembly, Brussels, Belgium. (P. A. Messerli, 6 rue Franklin, Paris 16e, France)

2–3. **Psychotherapy of the Family**, symp., Milwaukee, Wis. (B. C. Burris, Milwaukee Psychiatric Hospital, Milwaukee 53213)

2–9. **Radiology**, 8th inter-American congr., Caracas, Venezuela. (R. Merenfeld, Apartado Postal 9362 Candelaria, Caracas)

3–4. New England Intercollegiate **Geological** Conf., Yale Univ., New Haven, Conn. (J. Rodgers, Dept. of Geology, Yale Univ., New Haven 06520)

3–4. **Medical Radiobiology**, 7th natl. congr., Pisa, Italy. (Segreteria, Inst. di Radiologia dell'Università, Spedali Riuniti de "S. Chiara," Pisa)

3–13. **Weights and Measures**, 12th conf., Paris, France. (Intern. Bureau of Weights and Measures, Pavillon de Breteuil, Sèvres, Seine-et-Oise, France)

4–9. American College of **Surgeons**, clinical congr., Chicago, Ill. (American College of Surgeons, 55 East Erie St., Chicago 60611)

5–6. **Enzyme Regulation**, 3rd intern. symp., Indianapolis, Ind. (G. Weber, Indiana Univ. School of Medicine, Indianapolis)

5–7. Association of **Medical Illustrators**, annual, Los Angeles, Calif. (C. Bridgman, Dept. of Anatomy, UCLA Center for Health Sciences, Los Angeles)

5–7. **Radiation Effects on Electronics**, natl. meeting, American Nuclear Soc., Syracuse, N.Y. (ANS, 244 East Ogden Ave., Hinsdale, Ill.)

Dissymmetries

The convenience and reliability of Brice-Phoenix Differential Refractometers (DR) for measuring small differences in the refractive index between solvents and solutions is generally recognized. The quantity most often evaluated from such measurements is the refractive index increment, dn/dc. There are literally hundreds of papers in the literature reporting the values of this quantity for a great variety of materials and conditions, primarily in connection with light scattering studies. Several recent papers deal with various modifications of our standard model DR, extending its usefulness to shorter wavelengths and high temperatures.

REFRACTOMETRY IN THE NEAR-ULTRAVIOLET

W. R. Krigbaum, P. Smith, and F. G. Mark, of the Department of Chemistry, Duke University, Durham, N. C., [J. Appl. Phys. *34*, 3218 (1963)], in connection with their studies of the near-ultraviolet scattering of light in polymer solutions, have modified the Brice-Phoenix DR for the determination of dn/dc at the wave-length of 313 mμ. This wavelength was isolated from the mercury arc spectrum by means of an ultraviolet grating monochromator. Glass components were replaced by those made of quartz. A visible image was obtained by mounting a fluorescent glass screen in the focal plane of the micrometer microscope. In this way, the standard procedure of detecting image displacement as in the visible part of the spectrum was maintained.

POLYETHYLENE SOLUTIONS AT HIGH TEMPERATURES

Although the Brice-Phoenix DR has been adapted repeatedly for high-temperature work on solutions of polyethylene [see e.g., T. A. Trementozzi, J. Polymer Sci., *36*, 113 (1959); and L. H. Tung, J. Polymer Sci., *36*, 287 (1959)], we would like to refer at this point to a very recent and extensive study by E. E. Drott and R. A. Mendelson of the Plastics Division, Monsanto Chemical Co., Texas City, Texas [J. Polymer Sci.—Polymer Letters, *B2*, 187 (1964)]. In their work the constant temperature (up to 140° C) was maintained by means of an electrical heater and proportional temperature controller. The values of dn/dc were determined for six samples of polyethylene (molecular weight range from 1600 to 420,000) in tetrahydronaphthalene at 81° and 105° C for two wavelengths. There was no dependence of dn/dc on the molecular weight and all results were self-consistent. The standard deviation of these measurements was approximately 1%.

With reference to polyethylene and refractive index determination at high temperatures, two papers of not quite recent origin should be mentioned. An investigation of crystal growth in polyethylene, based on light scattering and density measurements has been performed by F. P. Price of General Electric Research Laboratory, Schenectady, N. Y. ("Growth and Perfection of Crystals," Wiley, 1958, p. 533). Such measurements yield information about the size, shape, and number of crystallites formed during the crystallization. Interpretation of light scattering data requires the knowledge of dn/dc due to crystallites formed from the melt of polyethylene. The values of dn/dc were calculated from the specific volume and refractive index data as a function of temperature. The technique for determining the refractive index of molten and partially crystalline samples of polyethylene (in the temperature range from 90° to 154° C), using a modified Brice-Phoenix DR, had been described by J. P. Bianchi, W. G. Luetzel, and F. P. Price [J. Polymer Sci., *27*, 561 (1958)].

PRECISION

The high degree of precision attainable with a DR was demonstrated recently in the case of 12-tungstosilicic acid. Three laboratories have reported dn/dc values of this inorganic compound in connection with light scattering studies on its solutions [see M. J. Kronman and S. N. Timasheff, J. Phys. Chem., *63*, 629 (1959); J. S. Johnson, K. A. Kraus, and G. Scatchard, J. Phys. Chem., *64*, 1967 (1960); and M. Kerker, J. P. Kratohvil, R. H. Ottewill, and E. Matijevic, J. Phys. Chem., *67* 1097 (1963)]. The values of dn/dc obtained at 436 mμ and 25° C were, respectively, 0.1065, 0.1063, and 0.1066 ml/g.

W. H. Orttung of the Department of Chemistry, Stanford University, Stanford, Cal. [J. Phys. Chem., *67*, 1102 (1963)], in a study of the polarizability and radius of glycine from density and refractive index measurements, noted that the standard deviation in refractive index determination with the Brice-Phoenix DR over a wide range of cencentrations was 4.6×10^{-6} refractive index units, which compares favorably with the limiting precision of the apparatus (3×10^{-6}).

Inquiries concerning the Brice-Phoenix Differential Refractometer or continuous-flow automatic recording models may be directed to the **Phoenix Precision Instrument Co.**, 3803 N. Fifth Street, Philadelphia, Pa. 19140, and will receive prompt reply.

New Products

Programmed ratio metering pump utilizes a photoelectric curve follower to enable the reproduction of a desired *p*H or ionic strength gradient. The gradient to be reproduced is drawn on paper, cut, and fastened to the drum of the curve follower. In operation, the latter follows the pre-cut curve and actuates the pump to reproduce the curve in the form of a gradient in *p*H or ionic strength. Curves can be removed from the drum and stored for future use. Rotational speed of the drum can be adjusted for a complete revolution in 24, 12, or 2 hours. Repeated runs can be made without resetting or refilling of reservoirs, since the gradient curve is in the form of a continuous loop. The pump unit is fabricated of stainless steel, as are all fittings and lines. Rate of delivery is adjustable from 0 to 120 ml/hr and discharge pressures up to 1000 lb/in.^{2} are accommodated. —J.S. (Phoenix Precision Instrument Co., Inc., 3803-05 N. Fifth St., Philadelphia, Pa., 19140)

Circle 1 on Readers' Service card

Refrigerated incubator employs a dual control system which can be set to heat or to heat and cool alternately when working in the range near room temperature. Two sensitive hydraulic thermostats regulate the heating and cooling units. Forced draft circulation through special duct work is controlled by a motor-driven blower so as to provide even heating and cooling throughout the incubator. Temperature range of the unit is +5° to 50°C and control is good to within ±0.5° at 20°C. Dimensions are 28 by 28 by 60 inches outside, and 18½ by 15½ by 36 inches inside. Controls are mounted externally on the top and include selection dials and indicator lights for heating and cooling, a separate blower switch, and a dial thermometer which indicates internal temperature. The unit should find use in laboratory applications such as low temperature incubation of gelatin plates, fruit fly cultivation, and general incubator needs requiring close temperature regulation.—D.J.P. (Central Scientific Co., 1700 Irving Rd., Chicago, Ill. 60613)

Circle 2 on Readers' Service card

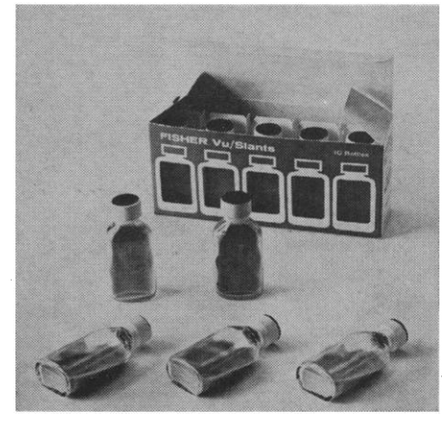
Automatic programmer (model TM5) is designed for control of laboratory tests. A program is designated manually by positioning 34 tabs, each of which has 100 possible positions. The programmer provides a d-c output voltage that follows the set curve of the program as a function of time. An indicator keeps the operator informed of the progress of the program along the set curve. A dual-channel version of the programmer, the model TM5-2, is available to provide synchronized control of two independent test procedures such as strain versus time and temperature versus time. The cycle time of the program is continuously adjustable over a 200-to-1 range, starting with a shortest cycle time of 100 seconds. A speed control dial is used for setting sweep rate. The program can be stopped at the end of the cycle or it can be indefinitely repeated.—J.S. (MB Electronics, Div. of Textron Electronics, Inc., 781 Whalley Ave., New Haven, Conn. 06508)

Circle 3 on Readers' Service card

Called the Isodensitracer, this **two-dimensional microdensitometer** adapts the Joyce Loebl microdensitometer to a successive scanning mode of operation. To accomplish this, an additional writeout pen is added that changes its mode of writing whenever the density increases or decreases by a small, preset amount. As the density along a scan decreases, the pen lays down a segment of solid line until the limit of the discrete density interval is reached. It then prints a series of equally spaced dots for the next density increment and leaves a blank for the third increment. This pattern is repeated as long as the density is decreasing. When the density increases, the pattern of the trace is reversed, so that no ambiguity exists in the final record. From a series of parallel scans covering a sample, an isodensity contour map can be drawn by connecting neighboring points at which dots turn into lines, lines into blanks, and blanks into dots. The instrument can also operate in the normal way, producing a single trace of density versus displacement. The isophotometer attachment consists of a programmer, a specimen table, a recording table, and a pen. Automation of the densitometer operation is accomplished by the programmer. This permits selection of scan spacing, horizontal magnification, and recording speed. From 1 to 31 steps can be delivered to either the pen advance or specimen table. The specimen table is advanced by a stepping motor in increments of 1.25 and 25.0 μ per step. The back-and-forth motion of the recording table can be adjusted between 2 and 10 inches. The recording and specimen tables are linked by a ratio arm that permits magnifications of from 1 : 1 to 2000 : 1 in ten steps. The pen is advanced in steps of 125 μ. —J.S. (Technical Operations Research, Burlington, Mass.)

Circle 4 on Readers' Service card

Bacteriological culture media: the nutrient is supplied on one side of flat form bottles that provide about 5 percent more area than the usual test tube slants. Paper cartons have two rows of five bottles positioned behind win-



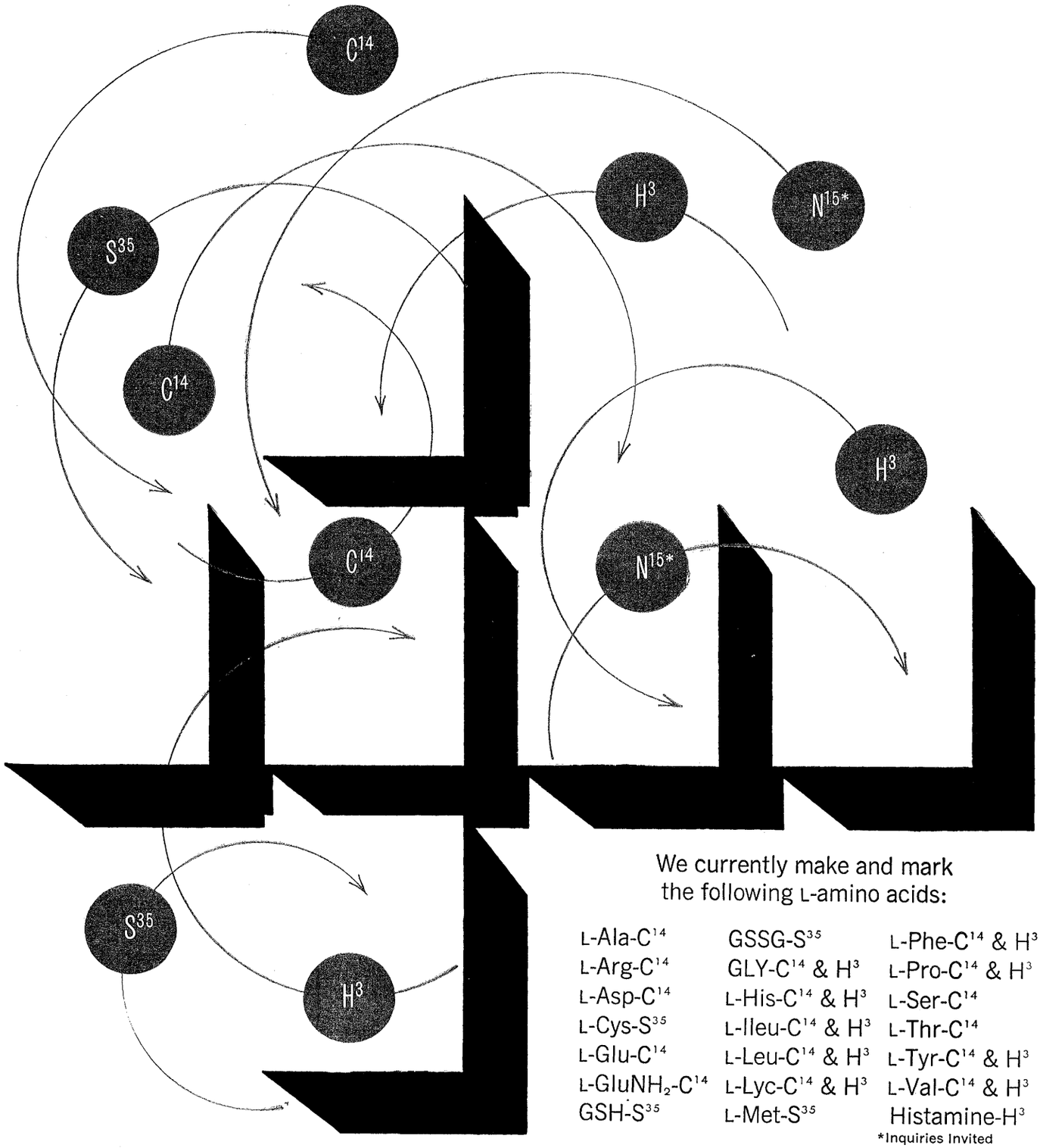
The material in this section is prepared by the following contributing writers:

Robert L. Bowman (R.L.B.), with the assistance of Denis J. Prager (D.J.P.), Laboratory of Technical Development, National Heart Institute, Bethesda 14, Md. (medical electronics and biomedical laboratory equipment).

Joshua Stern (J.S.), Basic Instrumentation Section, National Bureau of Standards, Washington 25, D.C. (physics, computing, electronics, and nuclear equipment).

The information reported here is obtained from manufacturers and from other sources considered to be reliable. Neither *Science* nor the writers assume responsibility for the accuracy of the information. A Readers' Service card for use in mailing inquiries concerning the items listed is included on pages 869 and 967. Circle the department number of the items in which you are interested on this card.

Labeled L-amino acids



We currently make and mark the following L-amino acids:

L-Ala-C^{14}	GSSG-S^{35}	L-Phe-C^{14} & H^3
L-Arg-C^{14}	GLY-C^{14} & H^3	L-Pro-C^{14} & H^3
L-Asp-C^{14}	L-His-C^{14} & H^3	L-Ser-C^{14}
L-Cys-S^{35}	L-Ileu-C^{14} & H^3	L-Thr-C^{14}
L-Glu-C^{14}	L-Leu-C^{14} & H^3	L-Tyr-C^{14} & H^3
L-GluNH_2-C^{14}	L-Lyc-C^{14} & H^3	L-Val-C^{14} & H^3
GSH-S^{35}	L-Met-S^{35}	Histamine-H^3

*Inquiries Invited

SCHWARZ BIORESEARCH, INC. Orangeburg, New York

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dows in the cartons for easy viewing. The pack of ten provides a package that is convenient to stack and handle. Use of Vu/slants instead of tubes is said to occupy 30 percent less incubator space. Available in the new Vu/slants are Loeffler blood serum, Lowenstein-Jensen medium, Middlebrook 7H10 agar, Petragnani medium, Sabouraud maltose agar, and tryptone glucose yeast agar.—R.L.B. (Fisher Scientific Co., 415 Fisher Bldg., Pittsburgh, Pa. 15219)

Circle 5 on Readers' Service card

Microflash equipment for photomicrography supplies short, intense flashes of light for use in photographing the detailed movements of living matter, changing states in chemical substances, and moving objects in fluid flow, as viewed under the microscope. The flash unit delivers flashes with energies of 36 watt/sec or 18 watt/sec, a color temperature of 6000°K, and a duration of 1/1000 second at intervals of about 3 seconds. The energies of 36 or 18 watt/sec are sufficient to uniformly illuminate the object and provide light output not only for bright ground but dark ground, phase contrast, and polarized light work. The 6000°K color temperature permits use of daylight film and eliminates color distortion in all ranges without conversion filters. The control unit contains an automatic relay system which maintains flash energy constant throughout the life of the tube. Flash energy is selected by a switch on the front panel and the tube is ready for flashing within 8 seconds of being turned on. The flash is normally triggered through the synchronizing contact on the camera shutter, but a button on the control unit can be used to trigger when the multiflash method is used. Flash tube life is 1200 flashes at full power (36 watt/sec) and 3000 flashes at half power (18 watt/sec). The flash tube holder also carries a 15-watt low-voltage lamp for pilot illumination before and after the exposure. An optical system produces a virtual image of this lamp at the location of the flash tube so that, in practice, the illumination points of the two sources coincide. When Köhler illumination has been obtained with the low-voltage lamp in the standard manner, the flash tube is automatically adjusted to the same position to produce sharp photographs without further manipulation. The tube holder can be supplied to fit any existing Reichert microscope, but

the LUX-FN1 illuminator and stand can be used with those of other manufacturers. Because of variations in the optical combination of the microscope, specimen, photograph size, illumination method, and film speed, it is necessary to reduce the light output of the flash in order to achieve optimum film exposure. To do this, the flash equipment incorporates a series of neutral filters which cover seven exposure steps. An exposure meter for determining proper filter choice is available as an accessory although it is not an essential item.—D.J.P. (Wm. J. Hacker & Co. Inc., P.O. Box 646, W. Caldwell, N.J. 07007)

Circle 6 on Readers' Service card

Hydrogen maser (model H-10) is designed for laboratory use in the high-precision measurement of frequency and time. Stability of the hydrogen maser is said to be better than 5 parts in 10^{13} when averaged over measuring intervals of 1 hour or longer and better than 1 part in 10^{13} averaged over 10-second measuring intervals. According to the manufacturer, observations of two hydrogen masers during a period of 1 year have not revealed any long-term drift of either with respect to the other. The maximum long-term fractional frequency difference, including resettability, is 2 parts in 10^{12}. Operation of the hydrogen maser is based upon the magnetic hyperfine structure in the electronic ground state of the hydrogen atom. The very high stability results from the long storage period during which the energy of the active hydrogen atoms is extracted. This storage takes place in a quartz bulb, the walls of which are coated to prevent disturbances during collision with the wall. In the hydrogen maser, atoms are separated and formed into a beam that is directed upward through the apparatus. The beam passes through a six-pole permanent magnet that selects the high-energy atoms and allows them to continue into the storage bulb where the atoms interact with a microwave field for periods approaching 1 second. The cavity in which the microwave field is generated is tuned to the 1420 Mcy/sec frequency of the hydrogen atoms. Energy is withdrawn from the cavity to serve as the useful signal. The instrument is delivered ready for operation and is installed by connection to a 115-volt supply.—J.S. (Varian Associates, 611 Hansen Way, Palo Alto, Calif.)

Circle 7 on Readers' Service card

(Continued from page 907)

duality, family associations, and homemade connotations. They wanted a bread that afforded them status because it was the most desirable bread emotionally as well as nutritionally.") At every counter, further passions are aroused: "oranges and grapefruits are supercharged with excitement," "sugar is a conflict product," "soup is a profoundly emotion-charged food," "mystery surrounds the cheese," and the "truly modern cereal" must combine "all the warmth and affection of the substantial old-fashioned cereal with the fun, lightness and convenience of the modern dry cereal." Not only that, but people are afraid of raisins: ". . . raisins cooked in a sauce represent to many people an unpleasant sudden discovery. One explanation of this reaction is fear of the unknown. . . . Discovery of a raisin, different in consistency, texture, and often temperature from the rest of the cake or sauce seems to represent a threat."

The world outside the market is filled with hazards of its own. Vacuum cleaners can be either "friend or foe," depending on how secure a woman feels about her virtues as a housekeeper. Homeowners, insecure in their taste about wallpaper and bewildered by the amplitude of designs, should be "permitted" by wallpaper advertisers to combine paper with the more popular paint. Too much leniency, however, is bad for sales: iced coffee—another item of limited appeal—should not be permitted to be a simple reflection of hot coffee but should have its own personality. If you have trouble classifying your male friends, a useful method is to look into their shampoo habits: "Secure males are easy to distinguish from both other groups [of male hairwashers—"masculine rebels" and "resentful conformists"] in that their choice of a hair cleanser is not determined by inner psychological needs."

Heavy psychic burdens also fall on the shopkeepers of our society. Consider the man who sells shoes to women: "He must be an understanding, sympathetic father or brother figure and he must accept her needs without question. He must be a guardian protecting her from any error in judgement and reassuring her of the rightness of her decision. Finally, he must be the lover demonstrating by his words, appearance, tone of voice, and

and the way he looks at her that she is an attractive woman." The butcher is "the biblical Esau in modern dress. He is the primordial hunter, the real man. The modern housewife admires him. He is the only one who is allowed to flirt with the female. He can throw the good piece of prey her way or he can cheat her." Because many people apparently have the feeling that all major brands of gasoline are alike, the psychological "extras" may make an important difference; thus, "the gas station must play a more active role in helping to fulfill some of the very real psychological needs of the motorist." And "the job for the gasoline company that wants to conquer the market is one of helping the motorist to achieve a mature relationship with the gas station." Even our instructors in recreation are not immune from responsibility. With skiing representing "a sort of defloration—a raping of the virgin snow," the ski instructor becomes a dangerous threat to home and hearth. His role "involves a parallel to traditional voyeurdom. It is almost as if you were taking a public course in sexual intercourse, the skiing instructor giving you lessons and everybody watching." In this, the ski instructor has something in common with the cigarette lighter (as well as with asparagus), because the lighter is "bound up with the idea of sexual potency." Such is the modern version of the oneness of things.—ELINOR LANGER

Announcements

Purdue University has established a new **political science** department that will concentrate on the relationship between public policy and the sciences. The department will offer the same type of undergraduate political science courses that had been presented in the department of history, government, and philosophy. Graduate work, however, will aim to meet the need for persons trained in both science and government. The head of the department is Boyd R. Keenan, a former political science professor at Marshall University, Huntington, West Virginia, and associate director of the Committee on Institutional Cooperation, an independent organization based at Purdue.

The formation of the **National Council on Radiation Protection and Measurements** (NCRP) was announced recently. The organization aims to "col-

lect, analyze, develop, and disseminate scientific information and recommendations about protection against radiation and about radiation measurement." NCRP was chartered by Congress through Public Law 88-376, which gives formal status to the former National Committee on Radiation Protection and Measurements, begun in 1929. Lauriston S. Taylor, associate director of the National Bureau of Standards, was elected president of the council.

Scientists in the News

James E. Bennett, formerly director of the plastic surgery division at the Ohio State University college of medicine, has been named professor of surgery and director of the plastic surgery section at Indiana University medical school.

Richard Vanderwarker has become president and chief executive officer of the Memorial Sloan-Kettering Cancer Center, succeeding **J. R. Heller,** who has retired. Vanderwarker had been vice president of the center since 1960.

Helene Wallace Toolan, formerly an associate member of the Sloan-Kettering Institute for Cancer Research, New York, has been appointed director of the Putnam Memorial Hospital's institute for medical research, Bennington, Vermont, and associate professor of experimental pathology at the University of Vermont college of medicine.

The Atomic Energy Commission has appointed **Lester R. Rogers** scientific representative in South America. He has been assistant director for materials in the AEC's division of safety standards.

Robert S. Green, associate dean of the engineering college and executive director of the engineering experiment station at Ohio State University has left for a 2-year term in India as head of the Indian Institute of Technology, in Kanpur. The institute is operating under an AID-sponsored program with the help of professors from nine U.S. institutions.

Willard Cochrane, director of agricultural economics at the U.S. Department of Agriculture, has resigned to return to the University of Minnesota as professor of agricultural economics. He will be replaced at USDA by **John A. Schnittker**, a staff economist at the Department and former associate professor of economics at Kansas State University.

Washington University's new chemistry department head is **David Lipkin**, professor of chemistry at the university.

The National Academy of Sciences–National Research Council has named new chairmen for three of its divisions:

Behavioral sciences: **George P. Murdock**, professor of anthropology at the University of Pittsburgh;

Chemistry and chemical technology: **Franklin A. Long**, chemistry professor, Cornell;

Mathematics: **G. A. Hedlund**, mathematics professor, Yale University.

Edwin M. Vaughan, former chairman of the physics department, St. Ambrose College, Davenport, Iowa, has been appointed physical science administrator in the research office, R&D Directorate, U.S. Army Weapons Command, Rock Island, Ill.

The recently elected president of the American Society for Engineering Education is **Elmer C. Easton**, dean of the college of engineering at Rutgers.

Recent Deaths

Marion K. Fort, Jr., 43; chairman of the mathematics department, University of Georgia; 2 August.

Robert D. Glasgow, 85; former New York State entomologist; 15 July.

Eugene C. Loomis, 50; research biochemist at Parke, Davis & Company; 23 July.

Earl C. Slipher, 81; director of the Lowell Observatory, Flagstaff, Arizona; 7 August.

Vladimir Vinogradov, 82; Soviet physician, teacher at Moscow's Second Medical Institute, consultant to the Ministry of Public Health, and a member of the Soviet Academy of Medicine; 29 July.

Erratum: In the report "Physiological studies on fruit development by means of ovule transplantation in vivo" by V. L. M. Melnick, L. Holm, and B. E. Struckmeyer (7 August, p. 609), reference *4* should read: R. N. Chopra and P. S. Sabharwal, in *Plant Tissue and Organ Culture*, Proc., Symp. held at Univ. of Delhi, India, P. Maheshwari and R. Swami, Eds. (Intern. Soc. Plant Morphol., 1963).

Erratum: In the review of *Marine Bio-Acoustics*, W. N. Travolga, Ed. (24 July, p. 379), the American publisher of the book was erroneously given as John Wiley and Sons. Actually, the book is distributed in the United States by the Macmillan Co.