

SCIENCE

27 April 1962

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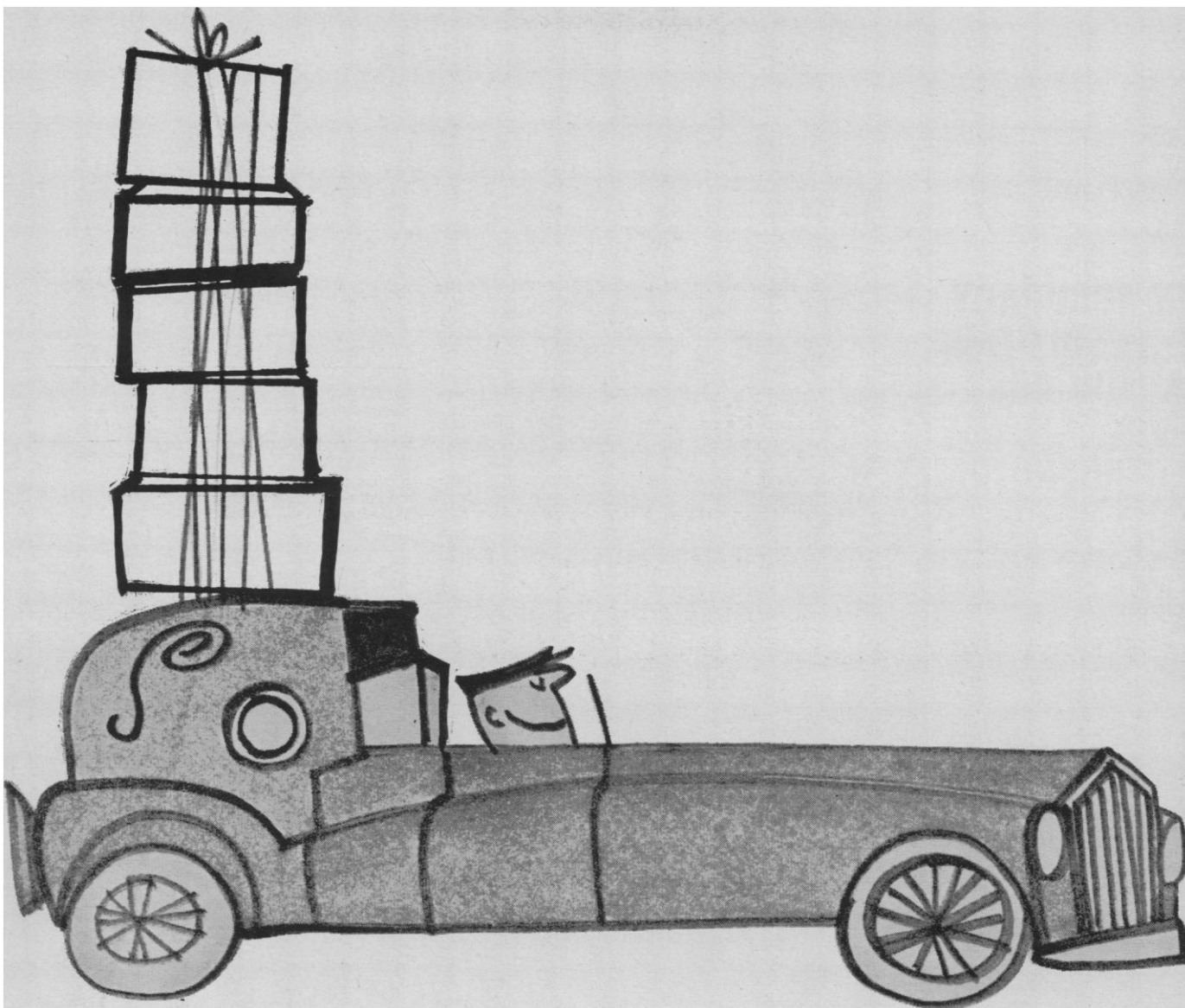
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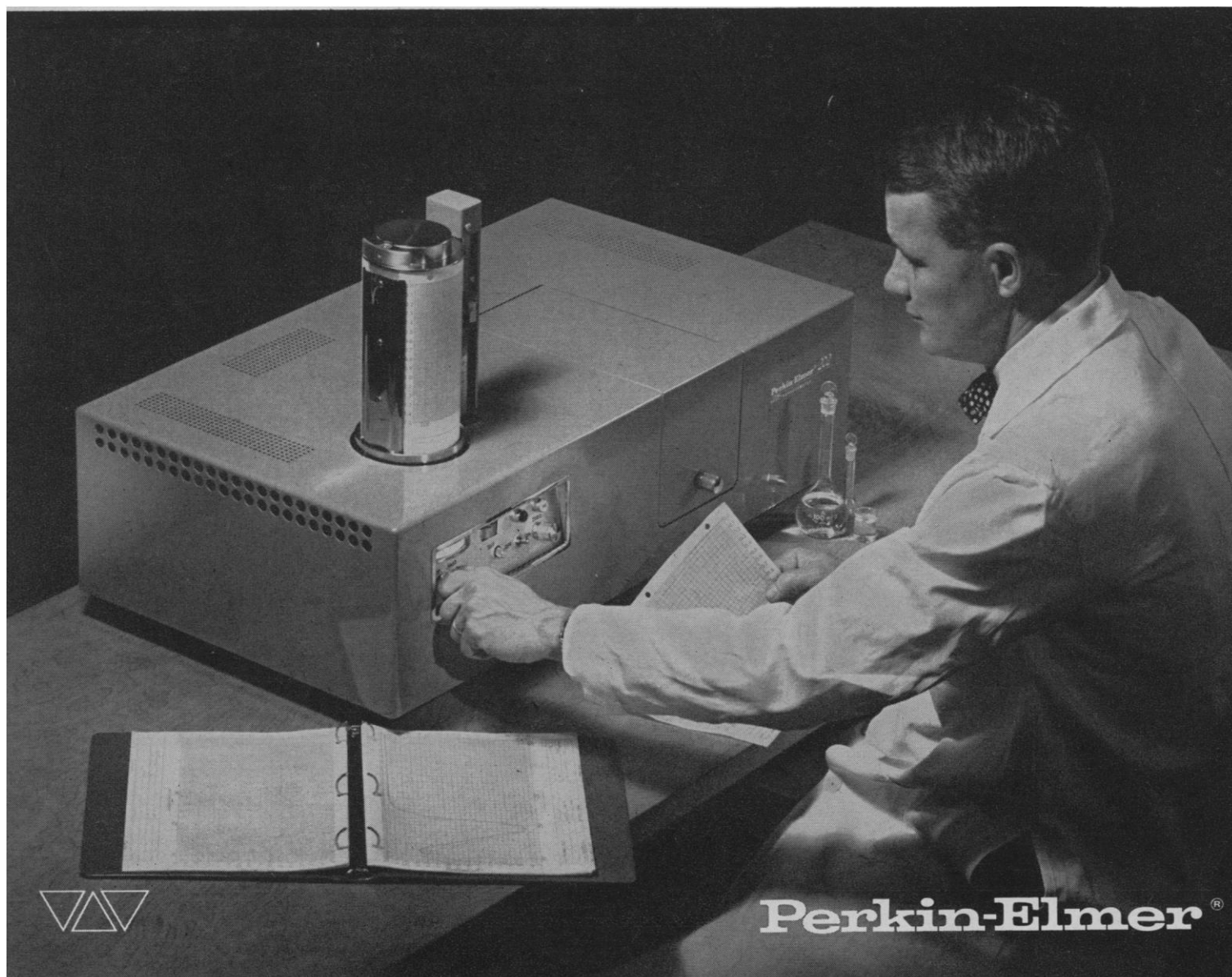
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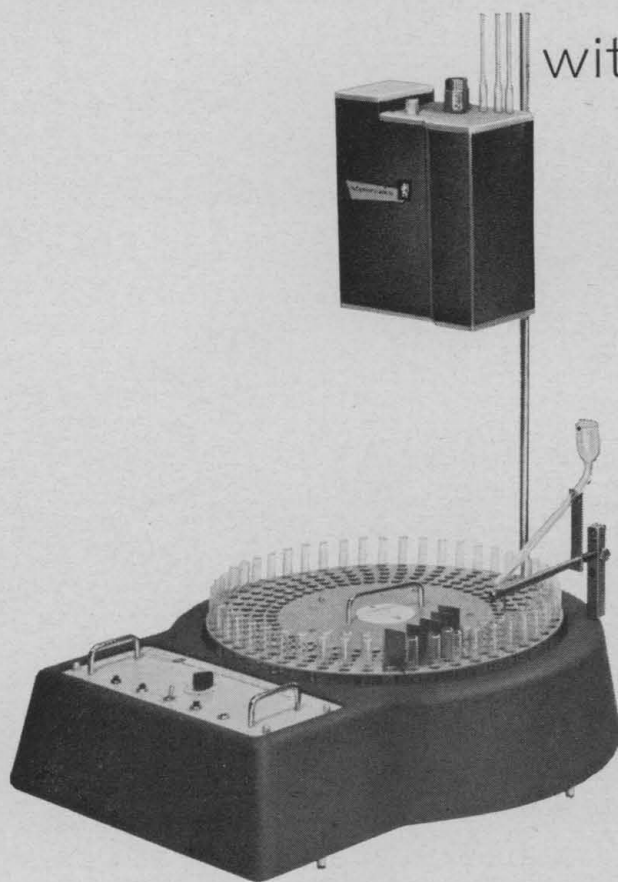
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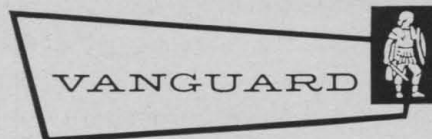


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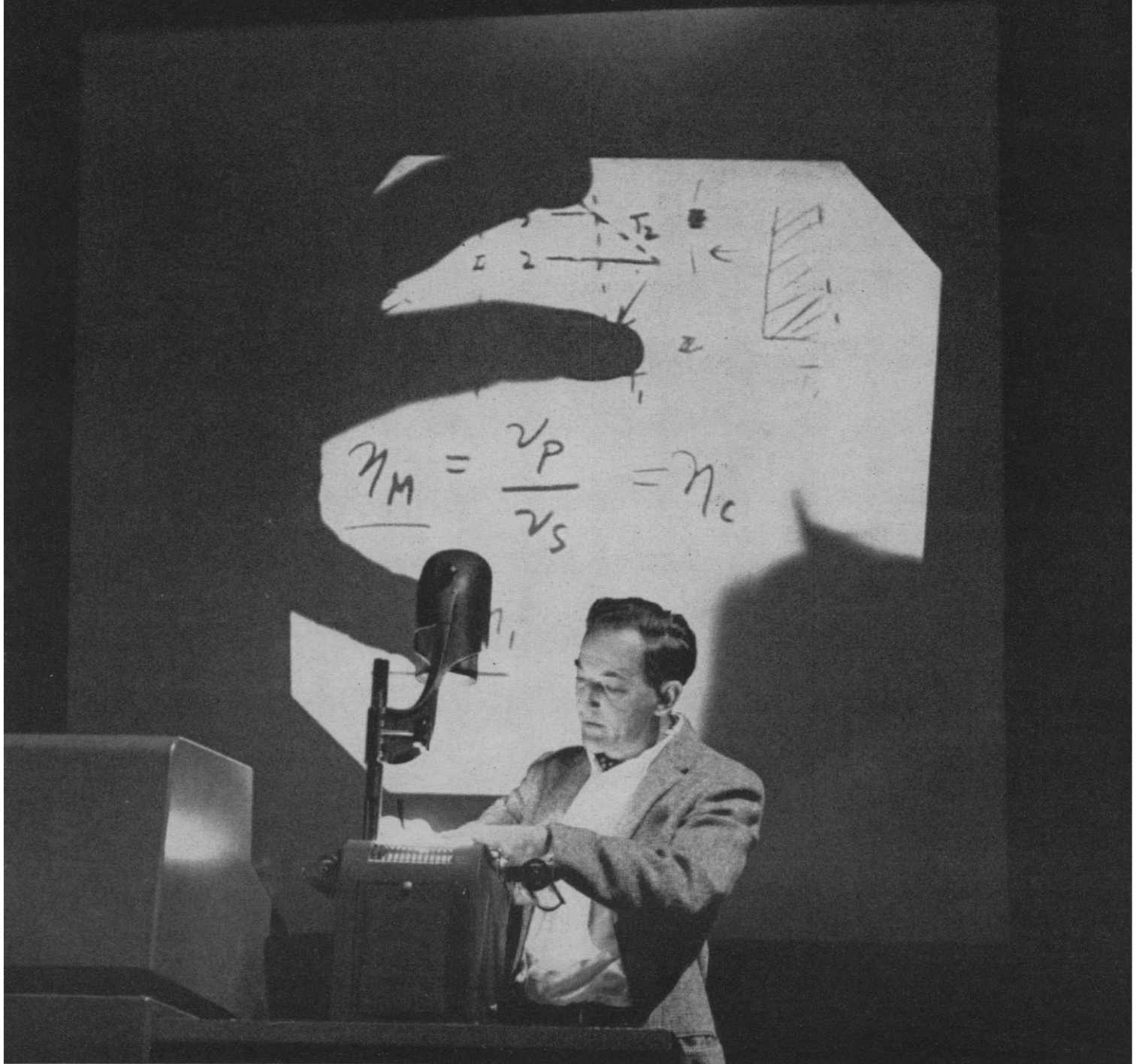
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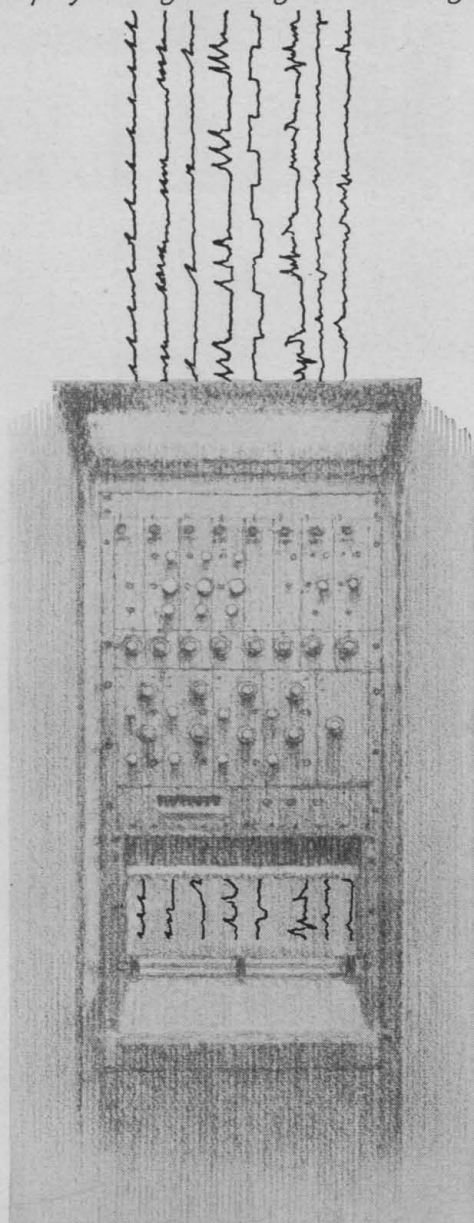
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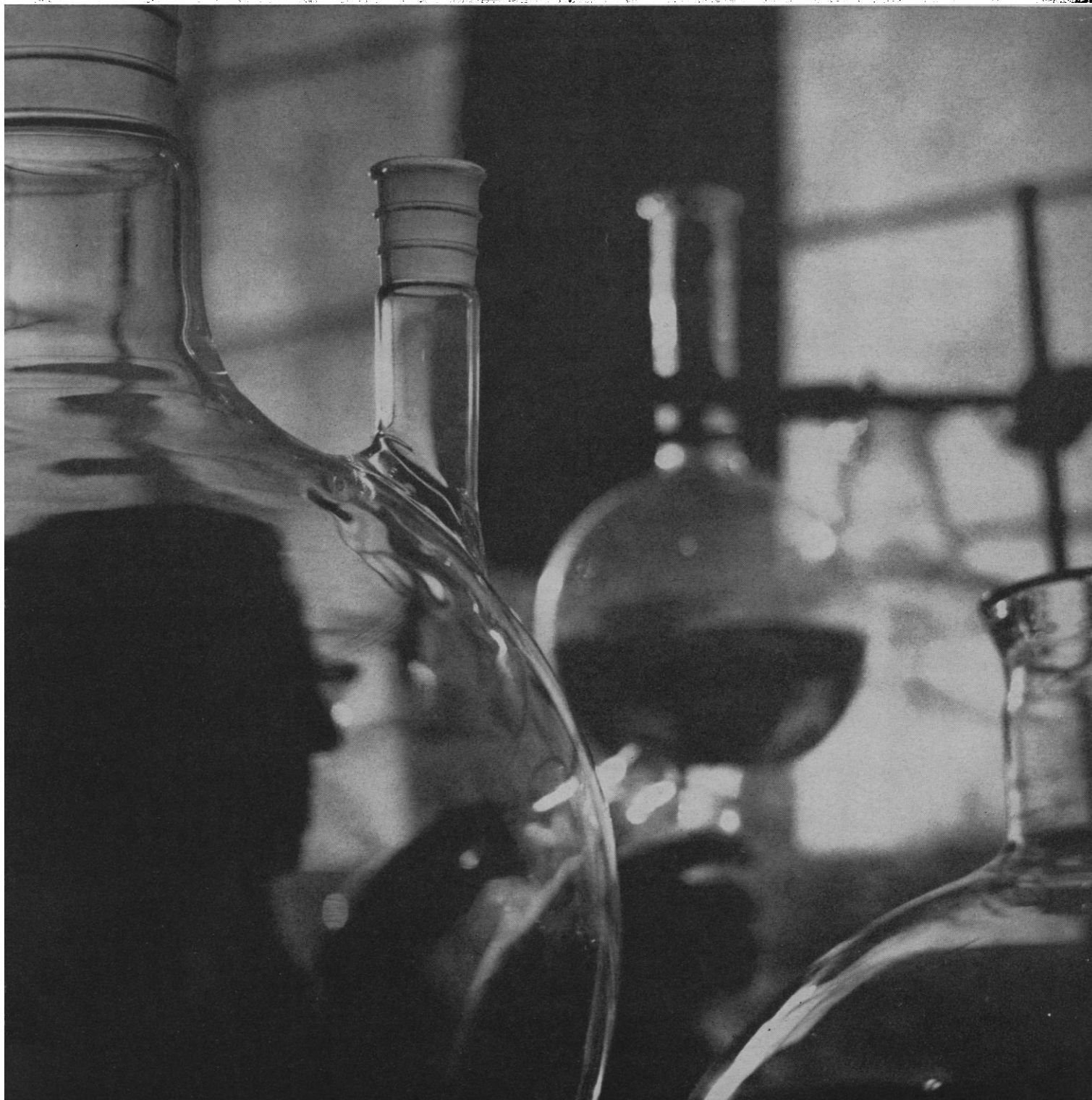
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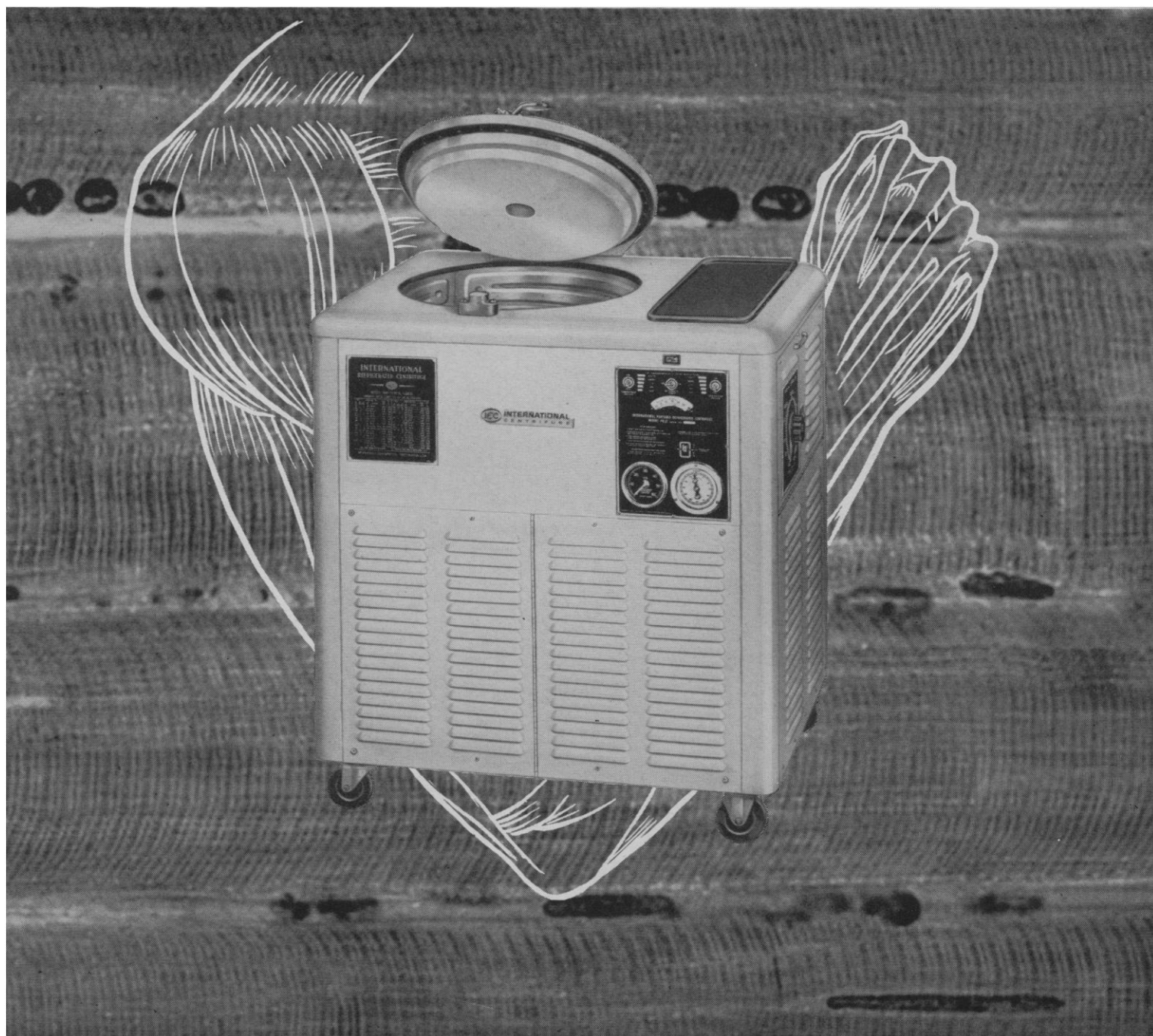
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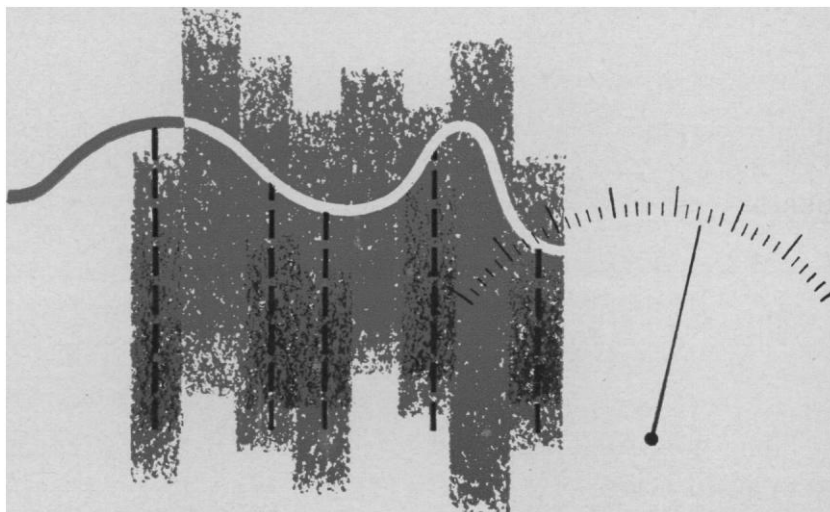
Wrong Question

Among the federal agencies that make grants for the support of scientific research, the Department of Health, Education, and Welfare is the only one that is limited by law to paying a fixed percentage of each grant to cover indirect or overhead costs. Its limit is 15 percent. The National Science Foundation, which is not limited by law, recently raised its rate of payment for indirect costs from 15 to 20 percent. But even 20 percent fails to cover the legitimate indirect costs to universities and other nonprofit organizations.

An NSF study released last Wednesday gives the first solid basis for determining how great a burden the universities and colleges are bearing in doing research for the government. The study, based on analyses for 175 universities and colleges, showed that in 1960 the weighted average for indirect-cost rates for federal research and development grants and contracts was 28 percent of direct costs for large colleges and universities and 32 percent for small colleges and universities. The study estimates that in fiscal 1962 the indirect costs of federally sponsored research and development in educational institutions will be about \$175 million; of this amount, \$83 million represents the indirect costs for grants, and \$92 million represents indirect costs for contracts. The indirect costs for contracts are usually completely covered, but those for grants are not, even by the agencies that have no fixed limitations. Thus, for 1962 approximately \$47 million of the indirect costs for grants will be paid by the government and the remaining \$36 million will be paid by the universities.

Believing that the universities should not be asked to subsidize federally supported research, President Kennedy recently called for the removal of HEW's 15-percent statutory limitation on indirect costs. In spite of this request and in spite of the fact that the House of Representatives recognized the needs of universities by passing legislation to help them put up buildings and equip laboratories, the House, in passing the Department of Defense appropriation act (H.R. 11289) last week, included a provision placing a 15-percent upper limit on indirect costs for research grants. If this provision should pass the Senate and become law, what would happen? Most universities would simply be unable to continue to accept grants from the Department of Defense. The Department, which only recently took the progressive step of awarding grants as well as contracts, would be forced to support all of its outside research by contracts; these are less flexible than grants and are much more suitable for support of development projects than for support of basic research.

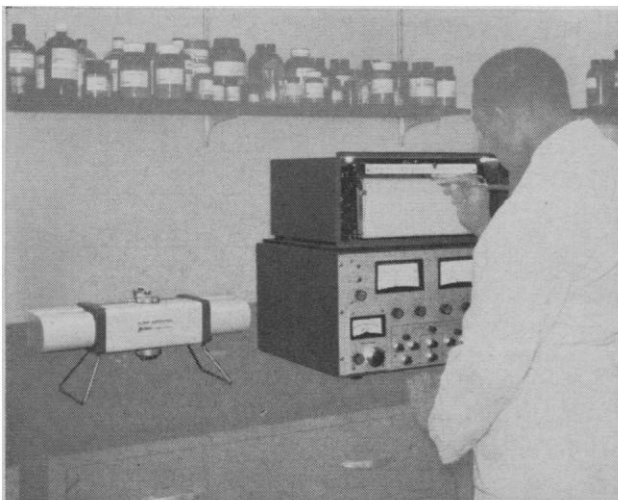
What is more ominous is this: the House Appropriations Committee reports that it is going to add this same limitation to all other appropriation bills—for the Atomic Energy Commission, the National Aeronautics and Space Administration, and so on. Since the government now pays, on the average, a larger proportion of the indirect cost of grants than would be allowed under this proposal, its adoption would shift an additional financial burden to the universities, a burden that will grow larger in dollar amount as the level of research expenditures goes up. The committee members have asked, "Why should the Department of Defense and other agencies exceed the payments made by the Department of Health, Education, and Welfare in this field?" This is the wrong question; what they should ask is, "Why should the hard-pressed universities subsidize the federal government's research?"—G.DuS.



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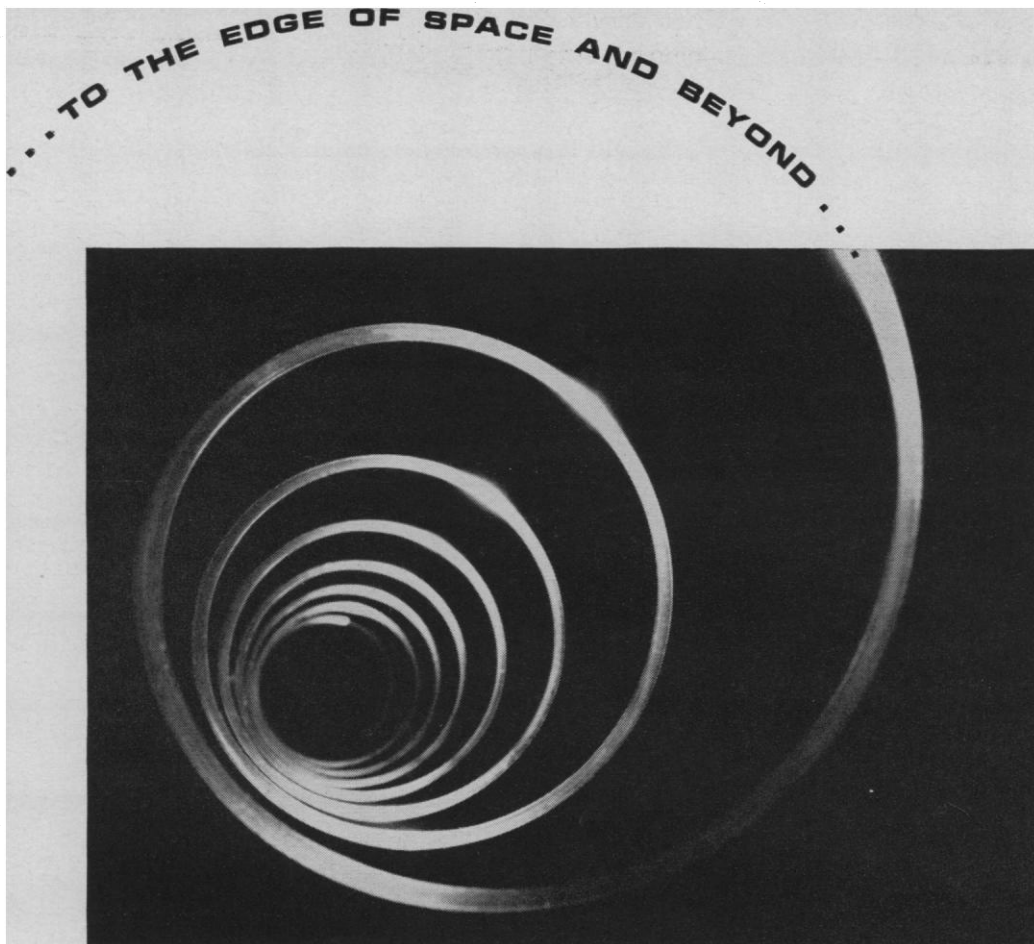


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Chemical Analysis %N <u>19.16</u> %P <u>8.48</u> N/P <u>2.25</u> %H ₂ O <u>4.9</u> H'vy Met. <u>none</u> Clarity test <u>5</u> % Soln. at pH <u>5.0</u> <u>clear</u> at <u>25</u> °C [α] _D ²⁵ _____ ° Conc. = _____ % In _____ Element _____ % _____					Paper Chromatography <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Solvent</th> <th style="width: 20%;">Amount</th> <th style="width: 10%;">R_F</th> <th colspan="3" style="width: 40%;">Other Components</th> </tr> <tr> <th></th> <th></th> <th></th> <th style="width: 10%;">%</th> <th style="width: 10%;">R_F</th> <th style="width: 10%;">Chem</th> </tr> </thead> <tbody> <tr> <td><u>F</u></td> <td><u>200 μ</u></td> <td><u>.65</u></td> <td><u>none</u></td> <td><u>—</u></td> <td><u>—</u></td> </tr> <tr> <td><u>E</u></td> <td><u>200 μ</u></td> <td><u>.61</u></td> <td><u>none</u></td> <td><u>—</u></td> <td><u>—</u></td> </tr> </tbody> </table> UV Absorption <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;">Ratios at pH</th> <th style="width: 20%;">250/260</th> <th style="width: 20%;">280/260</th> <th style="width: 20%;">290/260</th> </tr> </thead> <tbody> <tr> <td><u>7</u></td> <td><u>.78</u></td> <td><u>.16</u></td> <td><u>0</u></td> </tr> </tbody> </table> % by total absorption <u>98.0% AMP</u> pH <u>7</u> mμ <u>257</u>					Solvent	Amount	R _F	Other Components						%	R _F	Chem	<u>F</u>	<u>200 μ</u>	<u>.65</u>	<u>none</u>	<u>—</u>	<u>—</u>	<u>E</u>	<u>200 μ</u>	<u>.61</u>	<u>none</u>	<u>—</u>	<u>—</u>	Ratios at pH	250/260	280/260	290/260	<u>7</u>	<u>.78</u>	<u>.16</u>	<u>0</u>	Miscellaneous Form <u>C₁₀H₁₄O₇N₅P · 1H₂O</u> Mol. Wt. <u>365.2</u> % Purity of Product <u>100</u> from <u>nitrogen</u> anal. Analyzed by <u>DB</u> Approved by <u>JDL</u>				
Solvent	Amount	R _F	Other Components																																											
			%	R _F	Chem																																									
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Note: All analyses on 'as is' basis																																														

*Sample Product Analysis Report for nucleic acid derivatives.



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14 and tritium assay. Compact electronics for these radioactivity monitoring systems are available.—R.L.B. (Packard Instrument Co., Inc., Dept. S140, P.O. Box 428, La Grange, Ill.)

Pneumatic analog computer is designed for use in pneumatic computing-control systems. The functions performed are determined by the manner in which external connections are made. As an analog computer, the unit can add, subtract, multiply, divide, average, integrate, and take the first and second derivatives. By combining a number of units, more complex calculations such as squaring, extracting square root, and ratioing, can be performed. As a controller the unit provides a variety of control actions including proportional, proportional plus reset, proportional plus rate, proportional plus reset plus rate, and floating. Pneumatic signal range is either 3 to 15 or 3 to 27 lb. Gain and set-point adjustments may be made manually, remote manually, or automatically. Frequency response is approximately 2 cy/sec depending on the capacitance into which it works.—J.S. (Bailey Meter Co., Dept. S111, 1050 Ivanhoe Road, Cleveland 10, Ohio)

A new low-background **chromatogram scanner**—said to eliminate the need for mechanical integration, planimetry, or triangulation—has been introduced for scanning of tritium, carbon-14, sulphur-35, and other low-energy, beta-emitting radioisotopes. The scanner features windowless, 4-pi detection with a total background of less than 10 count/min. Two-mode logic function control permits programming to present various parameters of the entire scan while eliminating unwanted data. The system performs qualitative and quantitative assays on the intact strip and presents radioactivity values in direct digital form.—R.L.B. (Vanguard Instrument Co., Dept. S143, P.O. Box 244, La Grange, Ill.)

Electronic stethoscope (Stethosonus) enables the user to detect and understand heart sounds in the same manner as with the conventional acoustical stethoscope, but with greater clarity and distinction. Measuring approximately 1 by 1.5 by 2 inches, the model ICES 255-01 is supplied with a lightweight headset. A low-noise high-gain transistor amplifier delivers 3.5 mw of average undistorted power; up to three head phones may be used at the same time. Electrical filtering is provided to eliminate unwanted high-frequency noise and selection of bell or diaphragm type response. Power for operation is supplied by three mercury hearing aid cells. Rugged construction of the transistor amplifier and microphone makes the system virtually indestructible.—R.L.B. (Texas Instruments, Inc., Dept. S139, 6000 Lemmon Ave., P.O. Box 6015, Dallas 22, Tex.)

Microminiature incandescent lamp has a lens effect built into the lamp which concentrates up to ten times as much light in the direction of the beam to produce a microminiature spot of light. Total light output is 60 millilumens. Dimensions of the lamp are 0.08 inch long by 0.03 inch diameter. Operating voltage is 1.2 v, operating current 12 ma. Life expectancy is said to be 1000 hours.—J.S. (Kay Electric Co., Dept. S118, Pine Brook, N.J.)

Frequency meter (model La-32) is a self-contained, battery-operated, portable instrument, covering the range 125 key to 1000 Mcy/sec. Accuracy is said to be ± 0.01 percent over the ambient temperature range -4° to -125° F. Drift is not greater than 0.0025 percent in 5 minutes and resettability is ± 0.005 percent. Readout is provided by a calibrated film presentation that makes only the frequency band in use visible to the operator.—J.S. (Lavoie Laboratories, Inc., Dept. S159, Morganville, N.J.)

Abrasive cutter (model 10-1030 AB) is designed for totally submerged cutting of metallurgical samples. Coolants are channeled directly onto the cutting area by brushes on both sides of the wheel, thus eliminating air films. Pieces up to 12 feet long can be worked with the use of an extension trough accessory. The unit is powered by a 3-hp motor and features a 10-inch abrasive cutting wheel with 1½-inch cutting capacity.—J.S. (Buehler, Ltd., Dept. S163, 2120 Greenwood St., Evanston, Ill.)

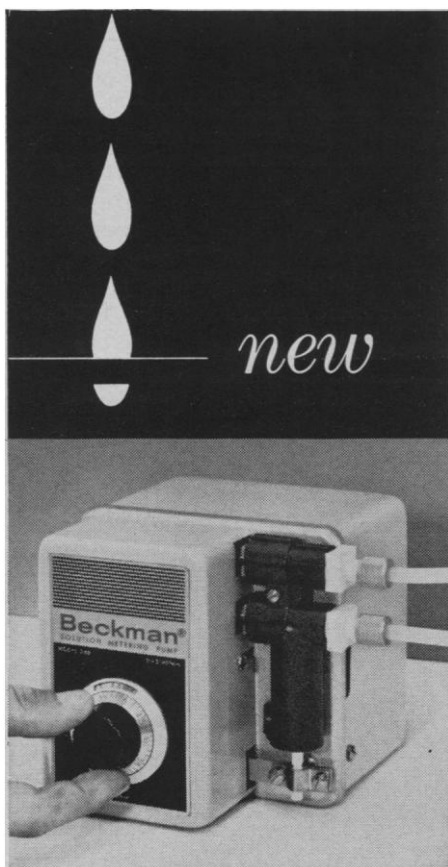
The material in this section is prepared by the following contributing writers:

Robert L. Bowman (R.L.B.), 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).

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Meetings

Audiogenic Seizures

An international colloquium on the psychophysiology, neuropharmacology, and biochemistry of audiogenic seizures was convened in Paris from 6 to 9 November 1961. The colloquium, sponsored by the French Centre National de la Recherche Scientifique, was organized by R. G. Busnel, director of the Laboratory of Acoustic Physiology. The meetings were held in the new and well-equipped headquarters of the Centre on a country estate in Gif-sur-Yvette, a suburb just south of Paris. Participants from France, England, Germany, Czechoslovakia, Belgium, and the United States represented a variety of biological disciplines—neurophysiology, endocrinology, biochemistry, pharmacology, genetics, psychiatry, and animal behavior. The aim of the colloquium was the elucidation of the audiogenic seizure response from these diverse points of view.

An unusual feature of the conference was the circulation in advance to all participants of the papers to be presented. The scientific sessions were therefore devoted primarily to discussion and criticism. Each paper was presented as a 20-minute summary, followed by a 40-minute period of discussion. The multilingual discussions were so lively that they usually exceeded the assigned period.

Papers were presented by the following investigators: René-Guy Busnel, Alice C. Lehmann, P. Laget, M. M. Niauxat, A. Soullairac, and G. Valette, of Paris; Jacques Mercier of Marseilles; M. R. A. Chance of Birmingham, England; C. W. M. Wilson of Liverpool; G. Quadbeck of Homburg; Jan Bures, Zdenek Servit, and J. Sterc, of Prague; Benson E. Ginsburg and Dorothea S. Miller, of Chicago; G. Nellhaus and A. M. Sackler, of New York; N. Plotnikoff of Stanford, California; and Ewart A. Swinyard of Salt Lake City.

The following additional observers participated in the discussions: J. R. Boissier, J. L. Grandjean, B. Halpern, J. Jacob, J. Tuillier, and C. Veil, of Paris; J. Cosnier of Lyon; G. A. Poulter of England; F. Chaillet of Brussels; and S. W. Handford of London.

Although five Russian investigators were on the program, they were unable to attend the colloquium. The paper and film sent by L. V. Kruchinsky were presented by Alice Lehmann.



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The meetings were stimulating, and the hospitality and arrangements were unusually pleasant. Most of the participants were quartered in the same hotel in Paris, with bus transportation provided to and from Gif-sur-Yvette. One morning was set aside for visits to various laboratories in Paris, with an afternoon visit to the host Laboratory of Acoustic Physiology at Jouy-en-Josas. In the evening, the Palace of Versailles was opened and lighted especially for the conferees, and shown by French- and English-speaking guides. The final banquet was held on a *bateau mouche* on the Seine.

An outcome of the conference was the naming of an international commission which will concern itself with matters of common concern, such as the standardization of terminology, definitions, techniques, and experimental animals. The members of this commission are Servit (chairman), Sterc (secretary), Ginsburg, Swinyard, Chance, Wilson, Soullairac, Nellhaus, and Busnel.

The colloquium volume, containing the text of the papers and discussion, will be published by the Centre National de la Recherche Scientifique.

DOROTHEA STARBUCK MILLER
Division of the Biological Sciences,
University of Chicago, Chicago, Illinois

Forthcoming Events

April

27-28. Idaho Acad. of Science, annual, Moscow. (L. M. Stanford, College of Idaho, Caldwell)

27-29. Oklahoma Acad. of Science, Woodward. (A. D. Buck, Northern Oklahoma Junior College, Tonkawa)

27-29. West Virginia Acad. of Science, Bethany. (J. D. Draper, Dept. of Chemistry, West Virginia Univ., Morgantown)

28. Mississippi Acad. of Sciences, Inc., Jackson. (C. Q. Sheely, Mississippi State Univ., State College)

29-2. International Acad. of Pathology-American Assoc. of Pathologists and Bacteriologists, Montreal, Canada. (F. K. Mostofi, c/o Armed Forces Inst. of Pathology, Washington 25)

29-2. National Workshop on Aging, American Home Economics Assoc., Lafayette, Ind. (A. J. Bricker, AHEA, 1600 20th St., NW, Washington 9)

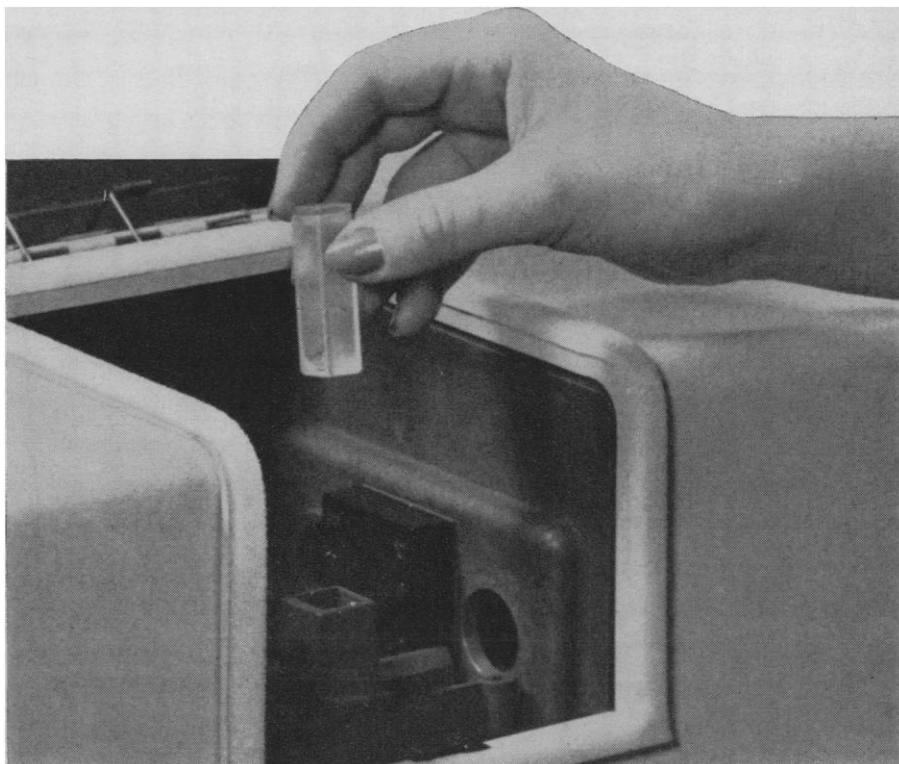
29-3. American Ceramic Soc., annual, New York, N.Y. (C. S. Pearce, ACS, 4055 N. High St., Columbus 14, Ohio)

29-4. Society of Motion Picture and Television Engineers, annual, Los Angeles, Calif. (H. Teitelbaum, SMPTE, 55 W. 42 St., New York 36)

30-1. International Acad. of Pathology, annual, Montreal, Canada. (M. Davis, Intersociety Committee on Pathology Infor-

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mation, 1785 Massachusetts Ave., NW, Washington 6)

30-1. International Acetylene Assoc., annual, Toronto, Canada. (L. Matthews, 30 E. 42 St., New York 17)

30-2. American Soc. of Mechanical Engineers, Design Engineering Div., Philadelphia, Pa. (A. B. Conlin, Jr., ASME, 29 W. 39 St., New York 18)

30-2. Association of Iron and Steel Engineers, Detroit, Mich. (T. J. Ess, AISE, 1010 Empire Building, Pittsburgh 22, Pa.)

30-2. Instrumental Methods of Analysis, natl. symp., Instrument Soc. of America, Pittsburgh, Pa. (E. E. Buckston, Works Engineering Dept., Union Carbide Chemicals Co., P.O. Box 8004, S. Charleston 3, W.Va.)

30-2. Role of Food in World Peace, intern. symp., Columbus, Ohio. (R. M. Kottman, College of Agriculture, Ohio State Univ., Columbus 10)

30-3. Mid-America Spectroscopy, annual symp., Soc. for Applied Spectroscopy, Chicago, Ill. (J. R. Ferraro, Argonne, Natl. Laboratory, 9700 S. Cass Ave., Argonne, Ill.)

30-4. Compressed Air and Hydraulics, intern. conf. and exhibition, London, England. (W. G. H. Chesher, c/o John Trundell and Partners Ltd., St. Richard's House, Eversholt St., London, N.W.1)

30-5. Automobile Technical Congr., intern., London, England. (Automobile Div., Institution of Mechanical Engineers, 1 Birdcage Walk, London, S.W.1)

May

1-3. Biologistics for Space Systems, symp. and workshop, Dayton, Ohio. (Col. A. I. Karstens, Aerospace Medical Research Laboratories, Aeronautical Systems Div., Wright-Patterson Air Force Base, Ohio)

1-3. Joint Computer Conf., San Francisco, Calif. (R. I. Tanaka, Computer Systems-Logical Design, Lockheed Missiles & Space Co., Palo Alto, Calif.)

1-4. Conference on Radiodiagnosis and Radiotherapy, Southern Rhodesia. (P. E. S. Palmer, P.O. Box 958, Bulawayo, Southern Rhodesia)

1-4. Gamma Alpha Graduate Scientific Fraternity, St. Paul, Minn. (W. T. Keeton, Dept. of Entomology, Cornell Univ., Ithaca, N.Y.)

1-4. Permeability, intern. symp., Wageningen, Netherlands. (Centrum voor Plantenfysiologisch Onderzoek, Landbouwhogeschool, Herenstraat 18, Wageningen)

1-5. Latin American Iron and Steel Inst., Buenos Aires, Argentina. (F. A. Tupper, Moneda 1140-6° Piso, Casilla 13810, Santiago, Chile)

2. International Symp. on Crop Protection, Ghent, Belgium. (I. J. Van den Brande, Institut Agronomique de l'Etat, Coupure Gauche 233, Ghent)

2-3. Iron and Steel Inst., annual, London, England. (ISI, 4 Grosvenor Gardens, London, S.W.1)

2-4. American Assoc. of Pathologists and Bacteriologists, annual, Montreal, Canada. (Intersociety Committee on

Pathology Information, 1785 Massachusetts Ave., NW, Washington 6)

2-4. European Corrosion Conf., Paris, France. (Société de Chimie Industrielle, 28, rue St. Dominique, Paris 7°)

2-4. Institute of Management Sciences, Toronto, Canada. (T. Fabian, c/o *Mathematica*, 76 Nassau St., Princeton, N.J.)

2-5. Air Force Systems Command Management Conf., Monterey, Calif. (Office of Information, AFSC, Andrews AFB, Washington 25)

2-5. Midwestern Psychological Assoc., Chicago, Ill. (D. R. Meyer, 1314 Kinnear Rd., Columbus 12, Ohio)

2-5. National Science Fair-International, Seattle, Wash. (Science Service, 1719 N St., NW, Washington 6)

2-6. Film Techniques, conf., Budapest, Hungary. (Hungarian Soc. of Optics, Acoustics and Film Techniques, Szabad-ság tér 17, Budapest V)

2-8. Space Science Symp., intern., Washington, D.C. (Secretary, Committee on Space Research, 28 Nieuwe Schoolstraat, The Hague, Netherlands)

3. Electronic Marketing Seminar, intern., San Diego, Calif. (E. T. Clare, Cohu Electronics, Inc., Box 623, San Diego)

3-4. Human Factors in Electronics, intern., Long Beach, Calif. (C. Hopkins, Hughes Aircraft Co., Culver City, Calif.)

3-5. Institute of Hospital Administrators, annual, Cardiff, Wales, England. (J. F. Milne, 75 Portland Pl., London, W.1, England)

3-5. Kansas Acad. of Science, Pittsburgh. (G. A. Leisman, Dept. of Biology, Kansas State Teachers College, Emporia)

3-5. Ohio Acad. of Science, Toledo. (G. W. Burns, 505 King Ave., Columbus 1, Ohio)

3-5. Society for American Archaeology, Tucson, Ariz. (J. B. Wheat, Univ. of Colorado Museum, Boulder)

3-5. University Computing Centres, intern. conf., Mexico, D.F., Mexico. (Centro Electrónico de Cálculo, Universidad Nacional Autónoma de México, México, D.F.)

3-7. German Soc. of Metallurgy and Mining, Berlin. (Gesellschaft Deutscher Metallhütten und Bergleute, Schliessfach 51, Clausthal-Zellerfeld, Germany)

4. North Carolina Acad. of Science, Winston-Salem. (J. A. Yarbrough, Meredith College, Raleigh, N.C.)

4-5. Colorado-Wyoming Acad. of Science, Greeley, Colo. (R. G. Beidleman, Zoology Dept., Colorado College, Colorado Springs)

4-5. Minnesota Acad. of Science, annual, Winona. (J. P. Emanuel, 206 E. Howard, Winona)

4-5. North Dakota Acad. of Science, Fargo. (B. G. Gustafson, Box 573, Union Station, Grand Forks, N.D.)

4-5. Population Assoc. of America, Madison, Wis. (K. B. Mayer, Dept. of Sociology and Anthropology, Brown Univ., Providence, R.I.)

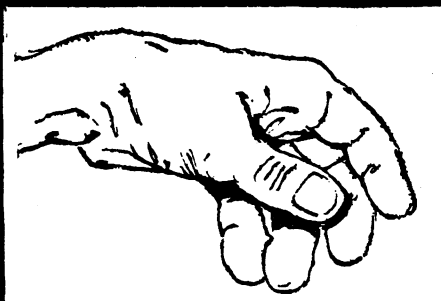
4-5. South Dakota Acad. of Science, Vermillion. (T. Van Bruggen, Dept. of Botany, Univ. of South Dakota, Vermillion)

4-6. Protides of the Biological Fluids, colloquium, Bruges, Belgium. (H. Peeters, Sint Jans Hospitaal, Bruges)

4-6. Wisconsin Acad. of Sciences, Arts

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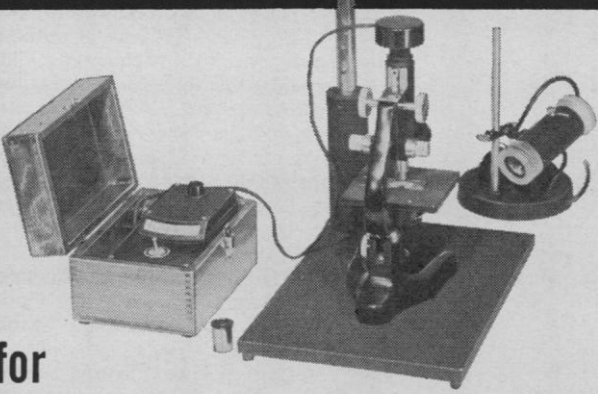
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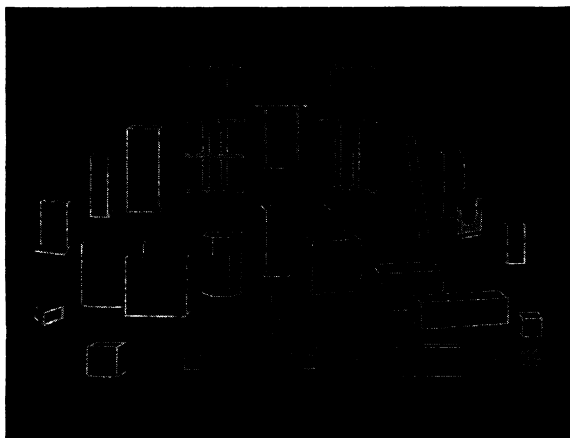
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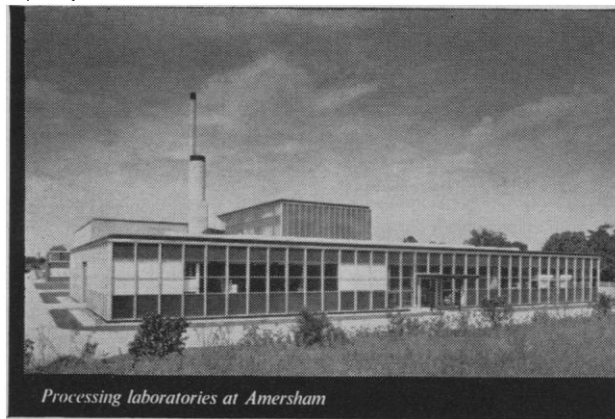
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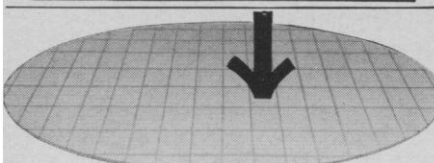
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and Letters, La Crosse. (T. J. McLaughlin, Univ. of Wisconsin, 3203 N. Downer Ave., Milwaukee 11)

5-6. Academy of Psychoanalysis, annual, Toronto, Canada. (J. H. Merin, 125 E. 65 St., New York 21)

5-6. Society of Biological Psychiatry, annual, Toronto, Canada. (G. N. Thompson, 2010 Wilshire Blvd., Los Angeles 57, Calif.)

5-7. International Congr. of Medical Laboratory Technologists, Cologne, Germany. (M. Gesundheitsverwaltung, Intern. Assoc. of Medical Laboratory Technologists, Cologne)

6-9. Bockus Alumni Intern. Soc. of Gastroenterology, annual, Geneva, Switzerland. (J. L. A. Roth, Graduate Medical Bldg., Suite 302, 419 S. 19 St., Philadelphia 46, Pa.)

6-9. National Power Instrumentation Symp., Fort Worth, Tex. (C. W. Macune, Westronics, Inc., 3605 McCart, Fort Worth 10)

6-10. American Soc. for Microbiology, annual, Kansas City, Mo. (P. Gerhardt, Dept. of Bacteriology, Univ. of Michigan, Ann Arbor)

6-10. Electrochemical Soc., annual, Los Angeles, Calif. (R. K. Shannon, 1860 Broadway, New York 23)

6-10. French Soc. of Ophthalmology, Paris. (M. A. Dollfus, FSO, 27, rue du Faubourg-Saint-Jacques, Paris 16^e)

6-12. World Congr. of Gastroenterology, Munich, Germany. (G. A. Martini, Martinstr. 52, Hamburg 20, Germany)

7. League against Trachoma, annual, Paris, France. (J. Sédan, Ligue contre le Trachoma, 94, rue Sylvabelle, Marseilles, France)

7-8. American Inst. of Mining, Metallurgical and Petroleum Engineers, Soc. of Petroleum Engineers' Secondary Recovery Symp., Wichita Falls, Tex. (E. O. Kirkendall, AIME, 29 W. 39 St., New York 18)

7-9. American Oil Chemists' Soc., annual, New Orleans, La. (W. O. Lundberg, Hormel Inst., Univ. of Minnesota, 801 16 Ave., NE, Austin)

7-9. Implications of Organic Peroxides in Radiobiology, intern. symp., Argonne, Ill. (R. N. Feinstein, Div. of Biological and Medical Research, Argonne Natl. Laboratory, Argonne)

7-9. National Watershed Congr., annual, Columbus, Ohio. (C. R. Gutermuth, Wildlife Management Inst., Washington, D.C.)

7-11. American Psychiatric Assoc., Toronto, Canada. (C. H. H. Branch, 156 Westminster Avenue, Salt Lake City, Utah)

7-11. American Soc. of Tool and Manufacturing Engineers, annual convention and tool exposition, Cleveland, Ohio. (A. Cervenka, Vanderbilt Blvd., Oakdale, N.Y.)

7-11. Radiation Damage in Solids and Reactor Materials, symp., Intern. Atomic Energy Agency, Venice, Italy. (IAEA, 11 Kärntner Ring, Vienna 1, Austria)

7-11. Society of Photographic Scientists and Engineers, annual, Boston, Mass. (E. S. Cobb, Box 1609, Main Post Office, Washington, D.C.)

7-12. International Conf. of Marine Engineers, London, England. (Inst. of Ma-

rine Engineers, Memorial Bldg., 76 Mark Lane, London, E.C.3)

7-12. International Seed Testing Assoc., annual congr., Lisbon, Portugal. (A. F. Schoorel, ISTA, Binnenhaven 1, Wageningen, Netherlands)

8. American Soc. of Safety Engineers, Chicago, Ill. (A. C. Blackman, ASSE, 5 N. Wabash Ave., Chicago 2)

8. World Health Assembly, annual, Geneva, Switzerland. (World Health Organization, Palais des Nations, Geneva)

8-10. American Soc. of Lubrication Engineers, annual, St. Louis, Mo. (A. E. Cichelli, Bethlehem Steel Co., 701 E. Third St., Bethlehem, Pa.)

8-10. World Commission on Vocational Rehabilitation, annual, Washington, D.C. (D. Warms, Intern. Soc. for Rehabilitation of the Disabled, 701 First Ave., New York 17)

8-19. Latin American Meeting on Higher Agricultural Education, Medellín, Colombia. (Intern. Agency Liaison Branch, Office of Director General, U.N. Food and Agriculture Organization, Viale delle Terme di Caracalla, Rome, Italy)

9-11. Conference on Mucous Secretions, New York, N.Y. (S. Jakowska, Natl. Cystic Fibrosis Research Foundation, 521 Fifth Ave., New York 17)

9-11. Operations Research Soc. of America, Washington, D.C. (G. D. Shellard, New York Life Insurance Co., 51 Madison Ave., New York 10)

9-12. Glass Technology Conf., Baden-Baden, Germany. (Deutsche Glastechnische Gesellschaft, Bockenheimerlandstr. 126, Frankfurt am Main)

9-12. Science Writers Seminar, intern., Seattle, Wash. (Intern. Press Inst., Münster-gasse 9, Zurich 1, Switzerland)

9-12. Virginia Acad. of Science, Norfolk. (P. M. Patterson, Hollins College Branch, Roanoke)

9-19. Prediction of Volcanic Eruptions and the Relationship between Magmas and the Nature of Volcanic Eruptions. symp., Tokyo, Japan. (Secretary, Organizing Committee, c/o Science Council of Japan, Ueno Park, Tokyo)

10-12. Meetings on Diabetes, University of Paris, Paris, France. (M. Rathery, Hotel-Dieu, Paris)

10. Glass Container Technology, seminar, New York, N.Y. (Packaging Inst., 342 Madison Ave., New York 17)

10. Vitamins and Transplantation Immunity, Assoc. of Vitamin Chemists, Chicago, Ill. (H. S. Perdue, Abbott Laboratories, N. Chicago)

10-11. American Inst. of Chemists, Inc., Chicago, Ill. (J. Kotrady, c/o AIC, 60 E. 42 St., New York 17)

10-12. Food Protection, intern. symp., Ames, Iowa. (J. C. Ayres, Dept. of Dairy and Food Industry, Iowa State Univ., Ames)

12. International College of Surgeons, clinical meeting, London, England. (Secretary, ICS, 1516 Lake Shore Dr., Chicago 10, Ill.)

13-16. American Acad. of Dental Medicine, annual, Baltimore, Md. (P. Block, 36 N. Luzerne Ave., Baltimore)

13-16. Transfer of Calcium and Strontium across Biological Membranes, conf., Ithaca, N.Y. (R. H. Wasserman, Dept.

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of Physical Biology, New York State Veterinary College, Cornell Univ., Ithaca)
13-17. American Industrial Hygiene Assoc., conf., Washington, D.C. (W. S. Johnson, Bethlehem Steel Co., Bethlehem, Pa.)

14-16. National Aerospace Electronics Conf., Dayton, Ohio. (Inst. of the Aerospace Sciences, 2 E. 64 St., New York 21)

14-16. Technical Assoc. of the Pulp and Paper Industry, coating conf., annual, Cincinnati, Ohio. (TAPPI, 155 E. 44 St., New York 16)

14-18. American Soc. of Civil Engineers, convention, Omaha, Neb. (W. H. Wisely, 345 E. 47 St., New York 17)

14-18. Hormonal Steroids, intern. congr., Milan, Italy. (L. Martini, Istituto de Farmacologia e Terapia, 21 Via A. del Sarto, Milan)

14-19. International Office of Epizootics, Paris, France (Office Internationale des Epizooties, 12, rue de Prony, Paris)

15-16. Council on Medical Television, annual, Bethesda, Md. (J. F. Huber, CMT, Inst. for Advancement of Medical Communication, 33 E. 68 St., New York 21)

15-16. Injury, Inflammation, and Immunity, intern. symp., Elkhart, Ind. (L. Thomas, Dept of Medicine, New York Univ., Bellevue Medical Center, New York, N.Y.)

15-17. World Food Forum, Washington, D.C. (J. K. McClarren, U.S. Dept. of Agriculture, 409 Administration Bldg., Washington 25)

15-19. International College of Surgeons, European federation, surgical congr., Amsterdam, Netherlands. (J. Blazenburg, ICS Netherlands Section, A. Perkstraat 57, Hilversum, Netherlands)

16. Design of Talking and Writing Machines for the Rehabilitation of Communication Disabilities, conf., New York, N.Y. (C. Berkeley, Foundation for Medical Technology, 2 E. 63 St., New York 21)

16-17. Navy Medical-Dental TV Workshop, Bethesda, Md. (Inst. for Advancement of Medical Communication, 33 E. 68 St., New York 21)

16-18. Conference on Dust, Scheveningen, Netherlands. (Fachgruppe Staubtechnik, Prinz-Georg-Str. 77/79, Düsseldorf 10, Germany)

16-18. Noise Abatement, intern. congr., Salzburg, Austria. (Österreichischer Arbeitsring für Lärmbekämpfung, Stubenring 1, Vienna 1, Austria)

16-26. Large Electric Systems, intern. conf., Paris, France. (ICLES, 112 Boulevard Haussmann, Paris 8°)

17-18. Regional Implications of Space Research, symp. (by invitation), Durham, N.C. (C. E. Whitefield, Bureau of Public Information, Duke Univ., Durham)

17-19. American Inst. of Industrial Engineers, annual, Atlantic City, N.J. (W. J. Jaffe, Newark College of Engineering, Newark, N.J.)

17-19. Eccrine, Apocrine, and Holocrine Glands, symp., Madison, Wis. (Div. of Postgraduate Medical Education, University of Wisconsin Medical School, Madison 6)

17-19. Nepiology, intern. conf., Catania, Sicily. (S. Rapisardi, Via Mavilla 37, Catania)

17-19. Paralanguage and Kinesics, conf.,

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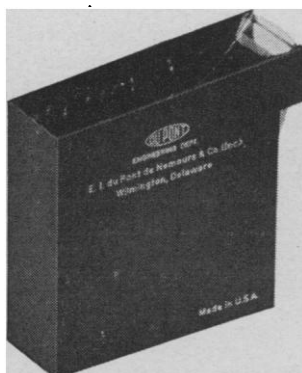
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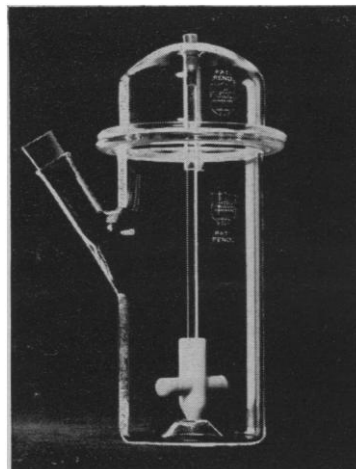
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April 1960

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Bloomington, Ind. (T. A. Sebeok, Research Center in Anthropology, Rayl House, Indiana Univ., Bloomington)

17-20. International Medical Soc. of Endoscopic Photocinematography, Television and Radiocinematography, Louvain, Belgium. (J. M. Dubois de Montreynaud, Société Médicale Internationale d'Endoscopie et de Radiocinématographie, 4, rue du Général-Baratier, Rheims, France)

17-31. Special Libraries Assoc., Washington, D.C. (J. B. North, Missile and Space Div., Lockheed Aircraft Corp., 50-14, Palo Alto, Calif.)

18. Problems of Finding and Using the Chemical Literature, symp., Columbus, Ohio. (B. S. Youngblood, Columbus Section, Amer. Chemical Soc., 2835 Pontiac Ave., Columbus 11)

18-19. Indiana Acad. of Science, Mitchell. (W. W. Bloom, Valparaiso Univ., Valparaiso, Ind.)

18-29. European Plastics and Rubber Conf., Paris, France. (Du Mont Publicity Co., 18 Queensberry Place, London, S.W.7, England)

19-20. International Assoc. for the Study of the Liver, Munich, Germany. (G. A. Martini, c/o Universitäts Krankenhaus, Eppendorf, Hamburg, Germany)

20-23. American Inst. of Chemical Engineers, natl., Baltimore, Md. (F. J. Van Antwerpen, AICE, 345 E. 47 St., New York 17)

20-23. Humidity and Moisture, intern. symp., Washington, D.C. (W. A. Wildhack, Office of Basic Administration, Natl. Bureau of Standards, Washington 25)

20-23. Radiation Research Soc., annual, Colorado Springs, Colo. (E. L. Powers, RRS, Argonne Natl. Laboratory, Argonne, Ill.)

20-24. Air Pollution Control Assoc., annual, Chicago, Ill. (D. A. Sullivan, APCA, 4400 Fifth Ave., Pittsburgh, Pa.)

20-24. American Assoc. of Cereal Chemists, Saint Louis Park, Minn. (B. S. Miller, Dept. of Flour and Feed Milling, Kansas State Univ., Manhattan)

21-22. Society of American Military Engineers, annual, Washington, D.C. (SAME, 808 Mills Bldg., Washington 6)

21-23. National Aerospace Instrumentation Symp., Washington, D.C. (C. Creveling, Goddard Space Flight Center, Greenbelt, Md.)

21-24. Air Pollution Instrumentation Symp., Chicago, Ill. (D. F. Adams, Div. of Industrial Research, Washington State Univ., Pullman)

21-25. Max Planck Inst. for the Advancement of Science, general assembly, Düsseldorf, Germany. (MPIAS, Kaiserswerther Str. 164, Düsseldorf)

21-25. Plastic and Reconstructive Surgery of the Eye and Adnexa, intern. symp., New York, N.Y. (R. Troutman, Manhattan Eye, Ear & Throat Hospital, 210 E. 64 St., New York 21)

21-25. Thermodynamics of Nuclear Materials, symp., Vienna, Austria. (Intern. Atomic Energy Agency, 11 Kärntner Ring, Vienna 1)

21-26. Ceramic Congr., intern., Copenhagen, Denmark. (Arbejdsgivere, Indenfor de Keramiske Industrier, Nørre Voldgade 34, Copenhagen K)

21-26. Rubber Technology Congr., annual, London, England. (Secretary, Institution of the Rubber Industry, 4, Kensington Palace Gardens, London, W.8)

22-24. National Microwave Theory and Techniques, symp., Inst. of Radio Engineers, Boulder, Colo. (L. G. Cumming, IRE, 1 E. 79 St., New York 21)

22-25. Self-Organizing Systems, conf., Chicago, Ill. (G. T. Jacobi, Armour Research Foundation, 10 W. 35 St., Chicago 16)

22-25. Rationalizing Consumption of Electric Power, intern. symp., Warsaw, Poland. (Ministry of Mines and Power, Krucza 36, Warsaw)

22-25. Rubber Technology Conf., Scarborough, England. (Institution of the Rubber Industry, 4 Kensington Palace Gardens, London, W.8)

22-26. Disposal and Utilization of Solid Domestic and Industrial Wastes, intern. congr., Essen, Germany. (Haus der Technik, Schliessfach 668, Essen)

22-26. International Medico-Athletic Federation, congr., Santiago, Chile. (G. La Cava, Via A. Serra, 104, Rome, Italy)

23-24. Forming and Testing of Sheet Metal, intern. colloquium, Düsseldorf, Germany. (J. Hooper, Intern. Deep Drawing Research Group, John Adam St., Adelphi, London, W.C.2, England)

23-25. American Soc. for Quality Control, annual, Cincinnati, Ohio. (A. W. Wortham, Texas Instruments, Inc., P.O. Box 5474, Dallas 22)

24-26. Institute of Radio Engineers, conf. on space communications, Seattle, Wash. (IRE, 1 E. 79 St., New York 21)

24-26. International Assoc. for Bronchology, Bruges, Belgium. (R. Pannier,



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c/o Service de Pneumo-Phtisologie, Hôpital Saint-Jean, Bruges)

26-30. International Federation for Hygiene and Preventive Medicine, intern. congr., Vienna, Austria. (E. Musil, IFHPM, Mariahilfer Strasse 177, Vienna)

27-30. Chemical Inst. of Canada, annual conf. and exhibition, Edmonton. (CIC, 48 Rideau St., Ottawa 2, Ont.)

27-2. International Federation of Pre-stressing, 4th congr., Rome, Italy. (IFP, 6, rue Paul Valéry, Paris, 16^e)

28-30. American Assoc. for Contamination Control, 1st annual, San Francisco, Calif. (D. M. Petersen, Central Vacuum Corp., 3008 E. Olympic Blvd., Los Angeles 23, Calif.)

28-30. Biology of the Transuranic Elements, symp., Richland, Wash. (R. C. Thompson, Hanford Biology Laboratory, General Electric Co., Richland)

28-30. Heavy Water Reactors, Canadian Nuclear Assoc., annual conf., Ottawa, Ont., (CNA, 19 Richmond St. West, Toronto 1)

28-30. International Discussion on Heat Treating, Lausanne, Switzerland. (Institut für Härterei-Technik, Postfach 13, Bremen-St. Magnus, Germany)

28-1. Modern Techniques of Computation and Industrial Automation, colloquium, Paris, France. (Assoc. Française de Régulation et d'Automatisme, 19, rue Blanche, Paris 9^e)

28-2. International Ophthalmic Optical Congr., Berlin, Germany. (G. H. Giles, Intern. Optical League, 65 Brook St., London, W.1, England)

28-2. United Nations Scientific Committee on the Effects of Atomic Radiation, New York, N.Y. (UN, New York)

29-2. American College of Cardiology, Inc., Denver, Colo. (I. Brotman, 1746 K St., NW, Washington, D.C.)

29-22. World Meteorological Organization, congr., Geneva, Switzerland. (WMO, 41, Avenue Giuseppe Motta, Geneva)

29-31. Tissue Culture Assoc., annual, Washington, D.C. (R. E. Stevenson, Natl. Cancer Inst., Bethesda 14, Md.)

31-3. European Symp. on Fresh Water from the Sea, Athens, Greece. (P.O. Box 1199, Omonoia, Athens)

31-3. German Bunsen Soc. for Physical Chemistry, general assembly, Münster. (F. Vorländer, Varrentrappstr. 40-42, Frankfurt am Main, Germany)

31-7. Television Conf., intern., London, England. (Secretary, Institution of Electrical Engineers, Savoy Place, London, W.C.2)

June

1-2. European Acad. of Allergy, Prague, Czechoslovakia. (C. Herscheimer, Theyss-Str. 23, Berlin, Germany)

3-8. American Soc. for Testing and Materials, Committee on Mass Spectrometry, annual, New Orleans, La. (G. Crable, Physics Dept., Geneva College, Beaver Falls, Pa.)

4-6. Association of Iron and Steel Engineers, Colorado Springs, Colo. (T. J. Ess, AISE, 1010 Empire Bldg., Pittsburgh 22, Pa.)

4-6. Chemistry and Technology of Chlorine and Chloroderivatives, mtg., Szczecin. Polish Chemical Soc. (A. Z. Zielinski, Politechnika Szczecinska, U1. Pułaskiego 10, Szczecin 3)

4-6. Edison Electric Inst., annual, Atlantic City, N.J. (A. B. Morgan, EEI, 750 Third Ave., New York 17)

4-6. International Water Study Sessions, Liège, Belgium. (CEBEDEAU, 2, rue Armand Stévant, Liège)

4-7. Nuclear Congr. and Intern. Atomic Exposition, biennial, New York, N.Y. (Engineers Joint Council, 29 W. 39 St., New York 18)

4-8. Medical Library Assoc., annual, Chicago, Ill. (D. Washburn, American Dental Assoc., 222 E. Superior St., Chicago 11)

4-8. Modern Thermal and Hydraulic Power Plants, intern. study days, Liège, Belgium. (Secretary, Assoc. des Ingénieurs Electriciens sortis de l'Institut Electrotechnique Montefiore, rue Saint-Gilles, 31, Liège)

4-8. Society of Chemical Industry, overseas section, annual, Stockholm, Sweden. (G. P. Armstrong, c/o Distillers Co. Ltd., 21 St. James Sq., London, England)

4-8. Society of Physical Chemistry, annual, Paris, France. (O. Emschwiller, Ecole Supérieure de Physique et de Chimie, 10 rue Vauquelin, Paris 5^e)

4-10. Corrosion of Reactor Materials, conf., Intern. Atomic Energy Agency, Salzburg, Austria. (IAEA, 11 Kaerntnering, Vienna 1, Austria)

5-6. International Neurological Meeting, Paris, France. (J. Sigwald, Société Française de Neurologie, 68, Boulevard de Courcelles, Paris 17^e)

5-8. Microwave Communication, Budapest, Hungary. (G. Bognár, Hungarian Acad. of Sciences, Akadémia utca 2, Budapest V)

5-8. Group for the Advancement of Spectrographic Methods, annual congr., Paris, France. (Groupement pour l'Avancement des Méthodes Spectrographiques, 1, rue Gaston-Boissier, Paris 15^e)

6-8. American Scientific Glassblowers Soc., annual symp. and exposition, Washington, D.C. (G. A. Sites, ASGS, 309 Georgetown Ave., Wilmington 3, Del.)

6-8. Canadian Federation of Biological Societies, annual, Quebec. (A. H. Neufeld, Dept. of Pathological Chemistry, Univ. of Western Ontario, London, Ont., Canada)

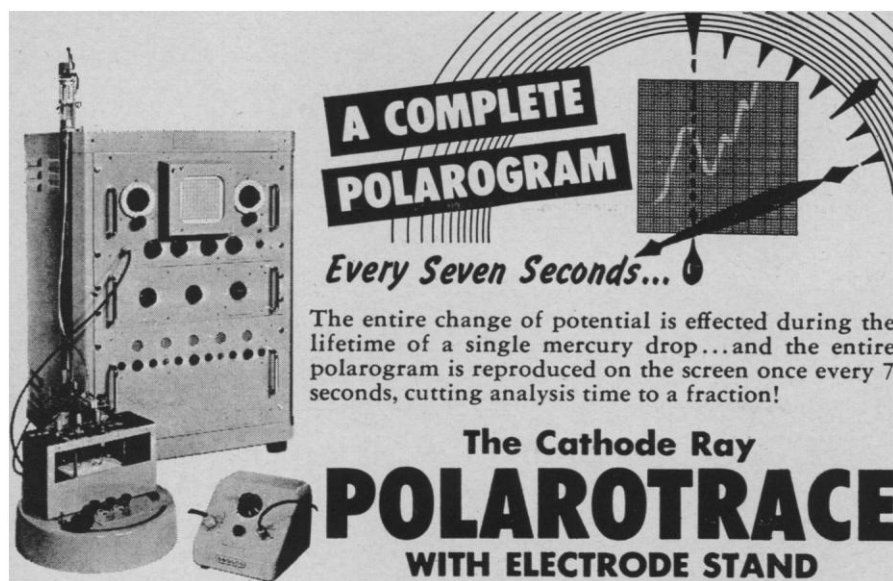
6-9. International Assoc. for Cereal Chemistry, Vienna, Austria. (F. Schweitzer, Maurer, Heudöfelgasse 41, Vienna 23)

7-9. Manufacturing Chemists' Assoc., Inc., White Sulphur Springs, W.Va. (R. D. Lambert, MCA, 1825 Connecticut Ave., NW, Washington 9)

7-9. U.N. Food and Agriculture Organization-Intern. Union of Forest Research Organizations, Joint Committee on Bibliography, Freiburg, Switzerland. (Intern. Agency Liaison Branch Office of Director General, FAO, Viale delle Terme di Caracalla, Rome, Italy)

8-9. Nutrition Soc. of Canada, annual, Quebec City. (E. V. Evans, Dept. of Nutrition, Ontario Agricultural College, Guelph, Ont., Canada)

10-14. Institute of Food Technologists, Miami Beach, Fla. (C. L. Willey, 176 W. Adams St., Chicago 3, Ill.)



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