

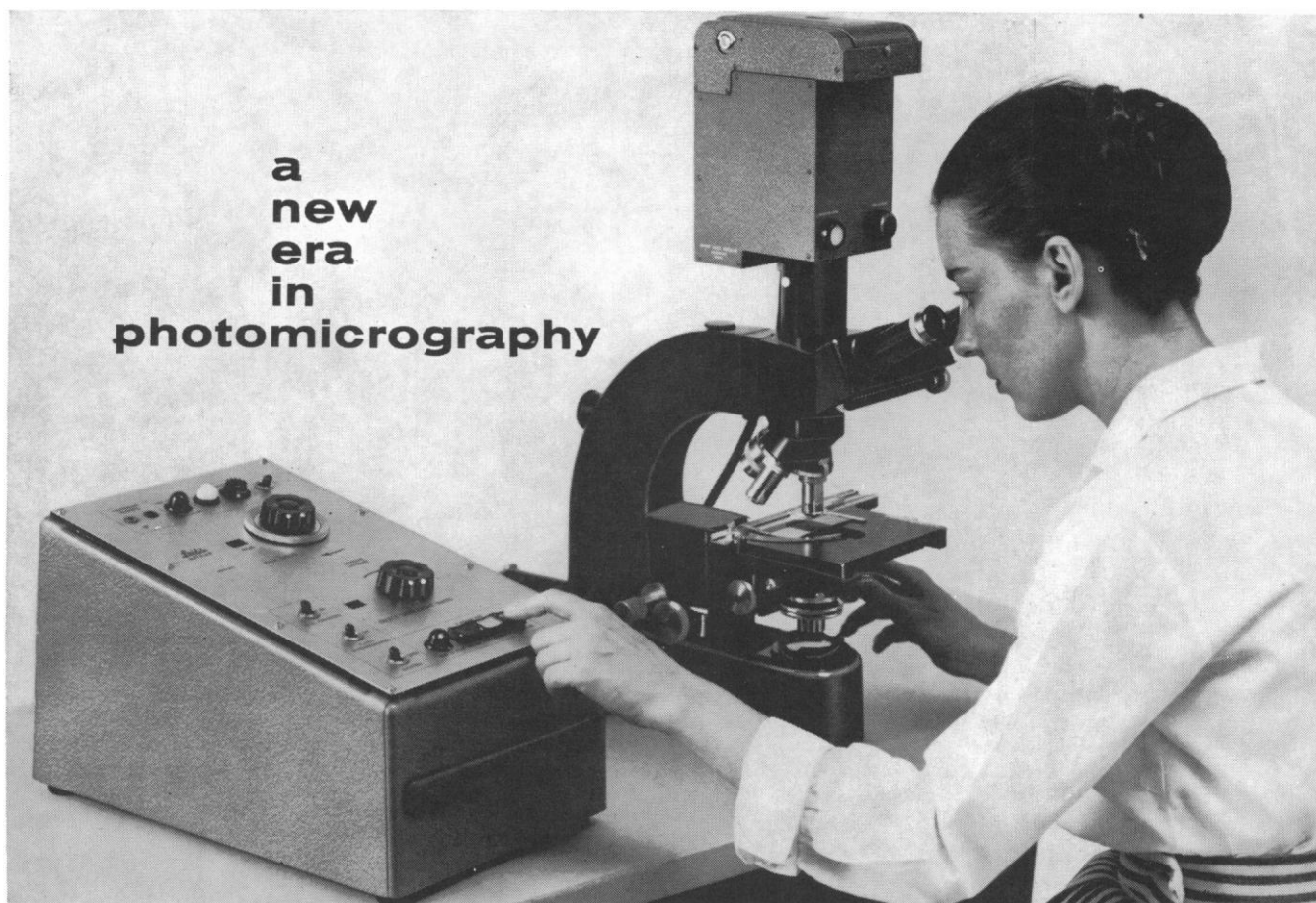
# SCIENCE

1 September 1961

Vol. 134, No. 3479

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE





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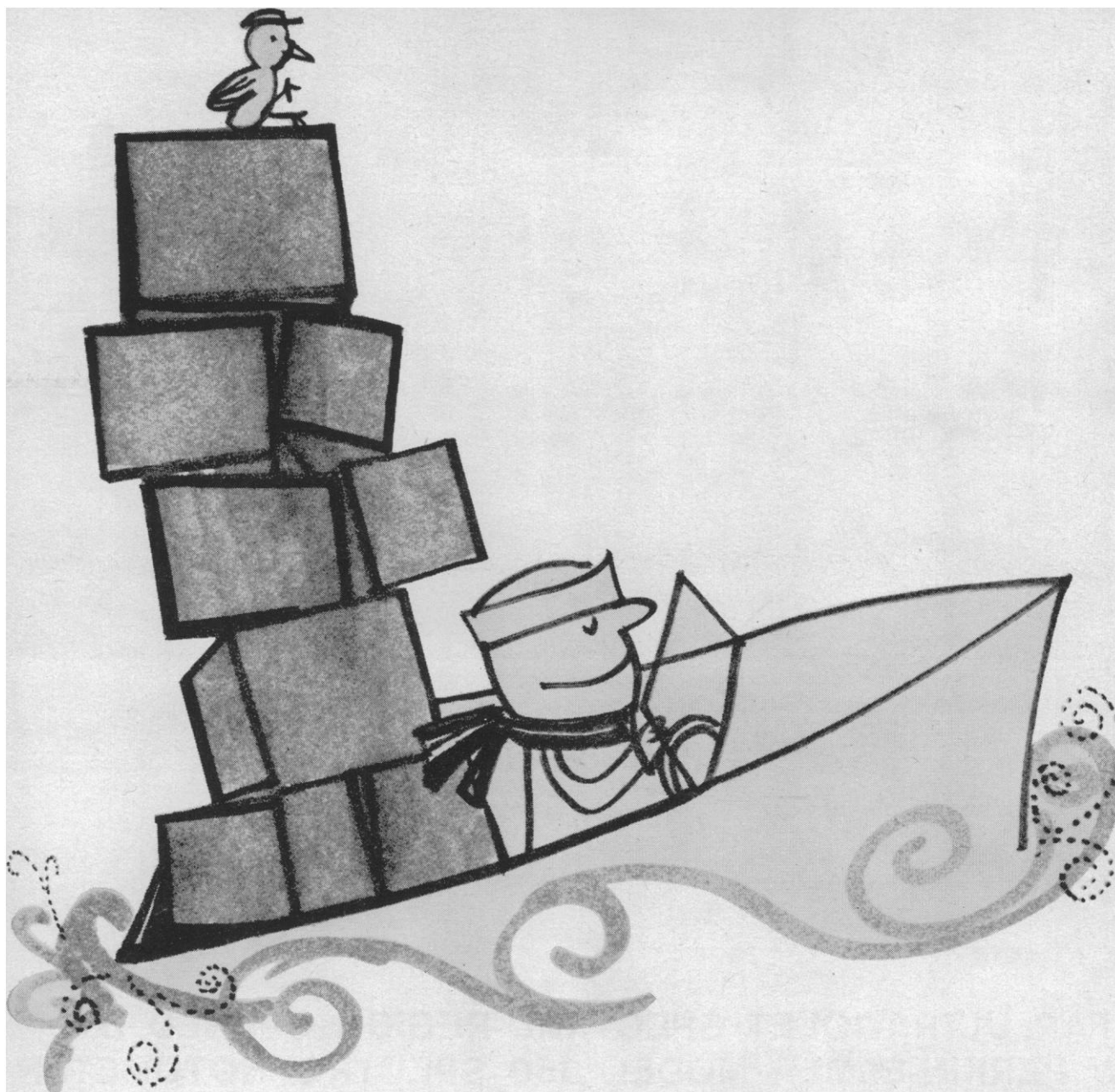
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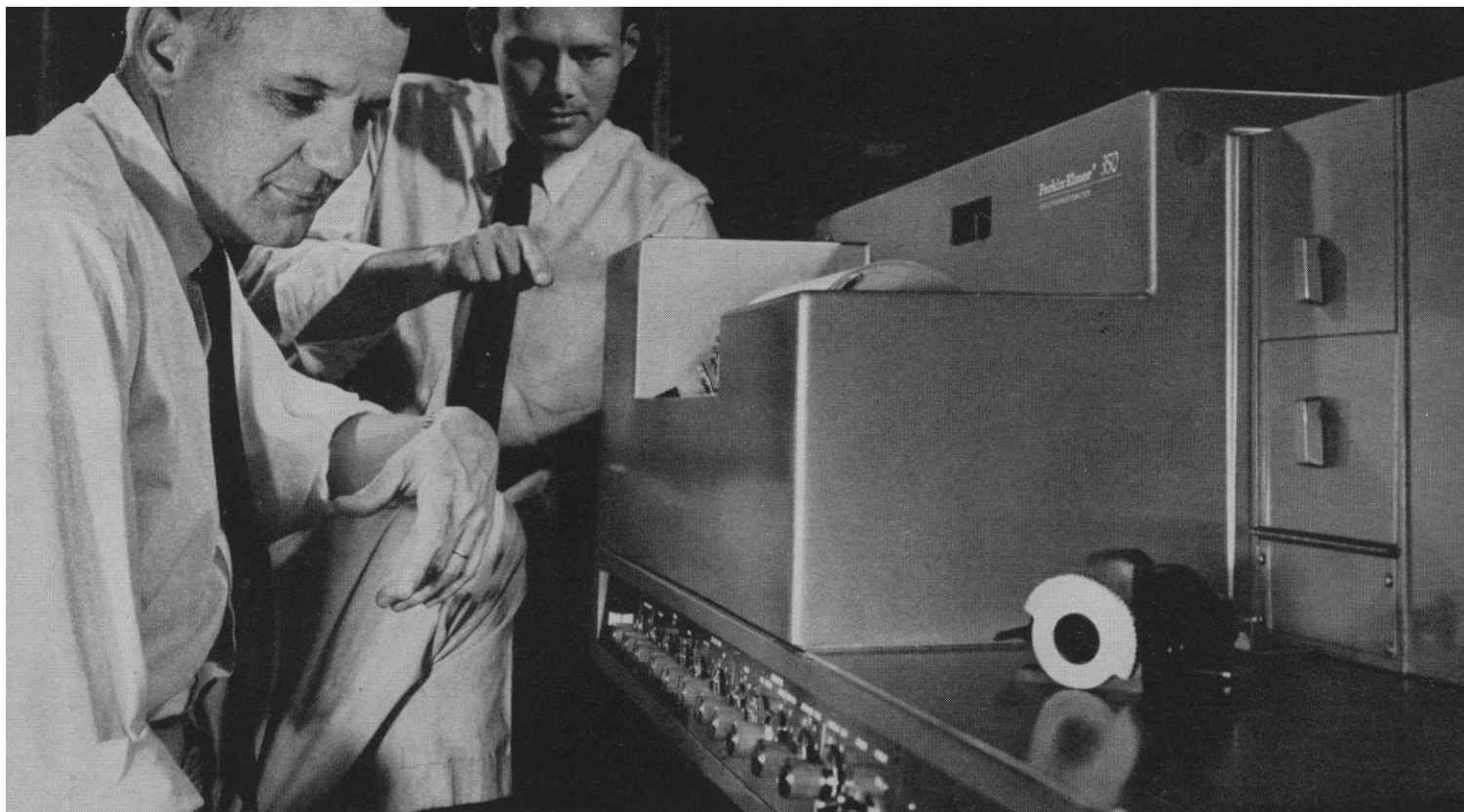
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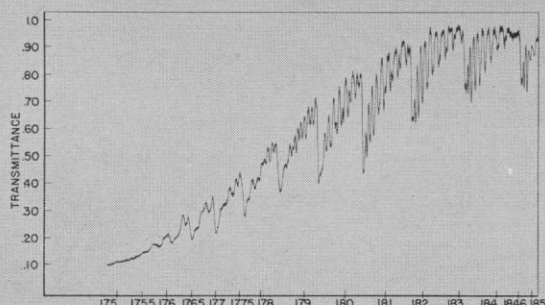
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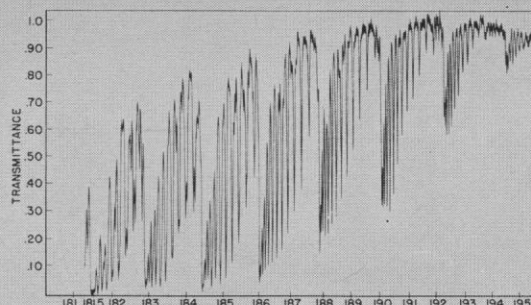




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<b>Cover</b>	Flame pattern in an oil burner, showing the separation of the flame front during pulsation. Pulsation was detected with high-speed movies taken during a combustion chamber test. Measurements taken from the film showed that the pulsing frequency matched the frequency of high-intensity sound waves previously recorded. [Esso Research and Engineering Company]	

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#### Program Content

1. The two-session AAAS General Sessions, "Moving Frontiers of Science," Part I—Speakers: Howard A. Meyerhoff and Arthur R. von Hippel; Harrison Brown, presiding. Part II—Speakers: Halton C. Arp and E. W. Fager; Harrison Brown, presiding.
2. The 29th John Wesley Powell Memorial Lecture. Speaker: Glenn T. Seaborg; Paul M. Gross, presiding.
3. On "AAAS Day," the four broad, interdisciplinary symposia—Physics of the Upper Atmosphere; Geochemical Evolution—The First Five Billion Years; Existing Levels of Radioactivity in Man and His Environment; and Water and Climate—arranged by AAAS Sections jointly.
4. The Special Sessions: AAAS Presidential Address and Reception; Joint Address of Sigma Xi and Phi Beta Kappa by Harrison Brown; the Tau Beta Pi Address; National Geographic Society Illustrated Lecture; and the second George Sarton Memorial Lecture.
5. The programs of all 18 AAAS Sections (specialized symposia and contributed papers).
6. The programs of the national meetings of the American Astronomical Society, American Society of Criminology, American Nature Study Society, American Society of Naturalists, American Society of Zoologists, Beta Beta Beta Biological Society, Biometric Society (W.N.A.R.), National Association of Biology Teachers, Scientific Research Society of America, Society for General Systems Research, Society of Protozoologists, Society of Systematic Zoology, and the Society of the Sigma Xi.
7. The multi-sessioned special programs of the American Association of Clinical Chemists, American Astronautical Society, American Meteorological Society, American Physiological Society, American Psychiatric Association, Association of American Geographers, Ecological Society of America, National Science Teachers Association, National Speleological Society—and still others, a total of some 70 to 80 participating organizations.
8. The sessions of the Academy Conference, the Conference on Scientific Communication, and the Conference on Scientific Manpower.
9. The sessions of the AAAS Cooperative Committee on the Teaching of Science and Mathematics, of the AAAS Committee on Science in the Promotion of Human Welfare.
10. Titles of the latest foreign and domestic scientific films to be shown in the AAAS Science Theatre.
11. Exhibitors in the 1961 Annual Exposition of Science and Industry and descriptions of their exhibits.

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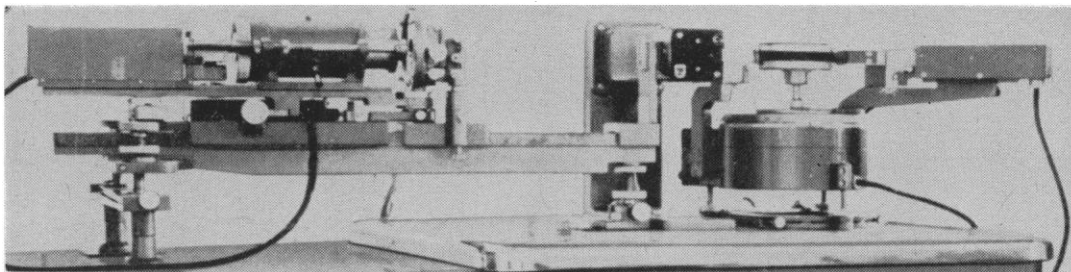
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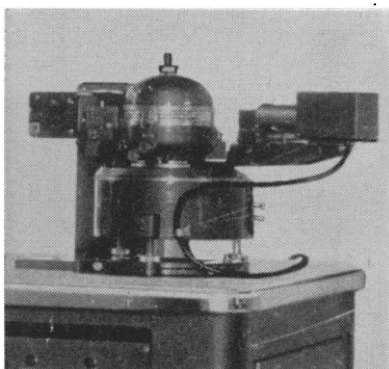


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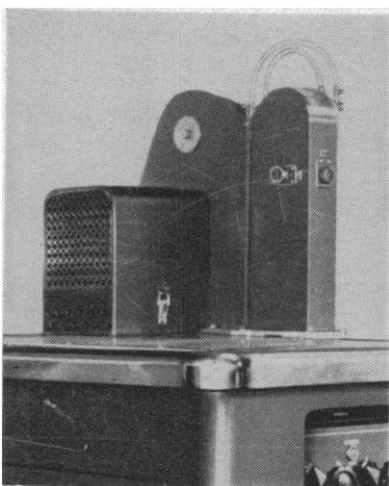
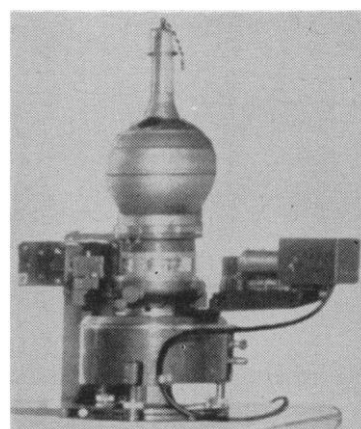
Shown above is the Rigaku Low Angle Scattering Goniometer, one of many fine instruments designed and built by Rigaku Ltd., pioneers in the x-ray diffraction equipment field since 1923. The Low Angle Scattering Goniometer has been designed for use with all standard x-ray diffraction units, to study the size, form, orientation and

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**LEFT** The Rigaku High Temperature Specimen Holder is used for investigations, at high temperatures, of solubility changes as well as structural changes in the test sample. This precision instrument maintains a temperature gradient of plus or minus 5% at temperatures up to 1500°C, in vacuum or with atmospheres such as air or inert gas.

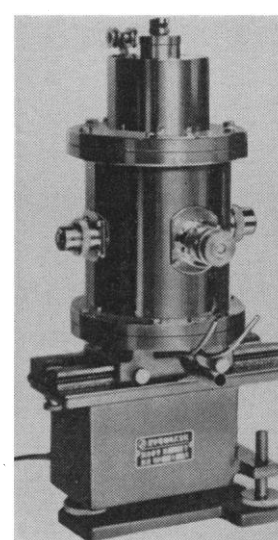
**RIGHT** The Rigaku Low Temperature Specimen Holder is used to investigate, at low temperatures, solubility and crystal structure changes in the specimen under survey. The temperature of the specimen is lowered to -190°C, using liquid nitrogen as the refrigerant. The investigation can be made with the specimen in an atmosphere of air, inert gas, or a vacuum.



**LEFT** The Rigaku Rota Unit provides the high power required for rapid analyses. Current of 100 mA at 50 KV are available from various target materials. The water cooled rotating anode is positively sealed to preclude water leaking into the vacuum. This highly reliable research tool can be used with solids, liquids or gases.

**RIGHT** The Rigaku Continuous High Temperature Camera has been designed to make a continuous record of x-ray diffraction patterns of crystal specimens, in series, on film. The camera has a unique ability to capture ever-changing x-ray diffraction patterns, and features a high vacuum system, high maximum temperature and simplified operation.

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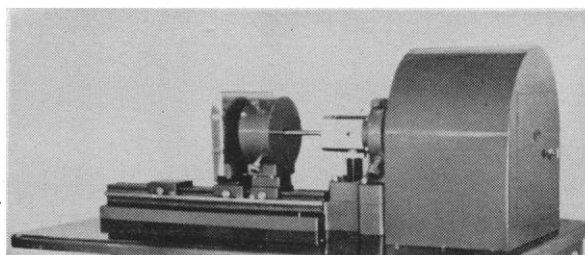
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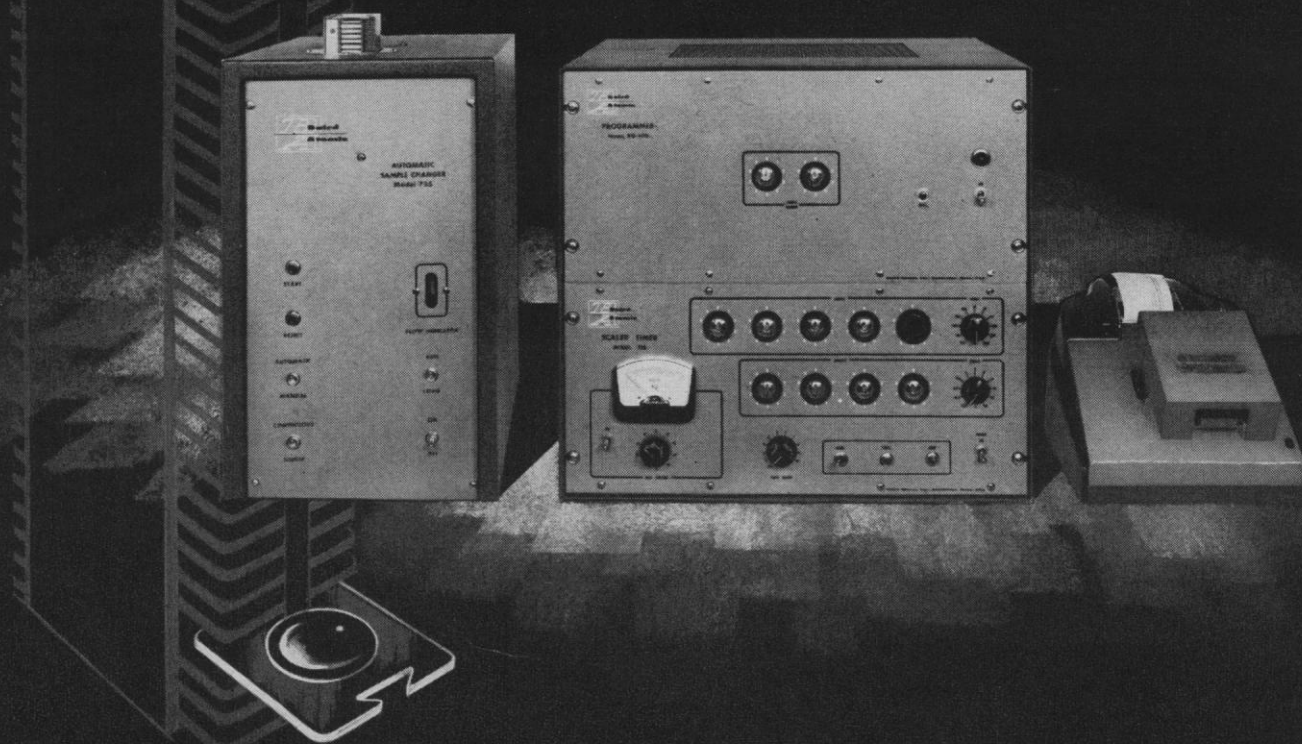
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## On Being Fair though One-sided

If we piece together the different characteristics commonly ascribed to a creative scientist by the general public, and by some scientists, too, we produce the portrait of a person apparently suffering from a split personality. On the one hand, we are told that the creative scientist is distinguished by his objectivity. He is unfeeling, unmoved in his work, busy only with passive observation of phenomena. On the other hand, we are told that the creative scientist is a creature of great passion, a passion for proving his own favorite theories, or a passion for insuring, when the outcome of an experiment bears on public policy, that the outcome supports the policy he considers proper.

These opposing characteristics arise in part out of efforts at mutual correction. Each view is something of an exaggeration offered in an effort to correct the misconceptions promulgated by the opposing view. But a resolution of these apparently conflicting accounts does not consist in saying that a more accurate picture must lie somewhere between the two extremes. The extremes are there. Assuming that the scientific attitude, at least as an ideal, is not one of disharmony, a more accurate picture may be found by showing how scientists can fulfill both descriptions without contradiction.

How this may be done was nicely expressed some years ago by the philosopher and psychologist William James. In his essay "The Will To Believe," first published just before the turn of the century, James sees objectivity in science not as something impersonal and passive, but, like partisanship in behalf of a pet hypothesis, as a kind of passion, the passion not to be deceived. The scientific attitude as an ideal then emerges as the possession of two passions, as zeal in obedience to two commands, the command to gain the truth and the command to shun error.

The two commands, as James goes on to point out, are, in general, independent. Rarely is one confronted with the demand: if you do not believe this, then you must believe that. To deny that there is a pot of gold at the end of the rainbow does not commit you to the hypothesis that the pot contains silver. Occasionally, to be sure, belief in one hypothesis rules out the acceptance of another hypothesis. If you believe that the pot contains only gold, you cannot believe it contains silver. The two rules, then, are independent, and which you choose will determine the flavor of your intellectual life. You may, James continues, devote yourself to guessing the truth, paying little attention to avoiding errors. Or you may be so dedicated to avoiding error that you are prepared to let truth fend for itself.

Any attempt to sum up the scientific attitude in a few tidy phrases may justly be regarded with suspicion. After all, science is diverse both in its subject matter and in its approaches to that subject matter. But some summations are better than others, and the characterization of science as embracing simultaneously both rules strikes close to the mark. In the matter of making discoveries, unconcern is not a promising trait. But the desire to gain the truth must be balanced by an equally strong desire not to be played false.—J.T.

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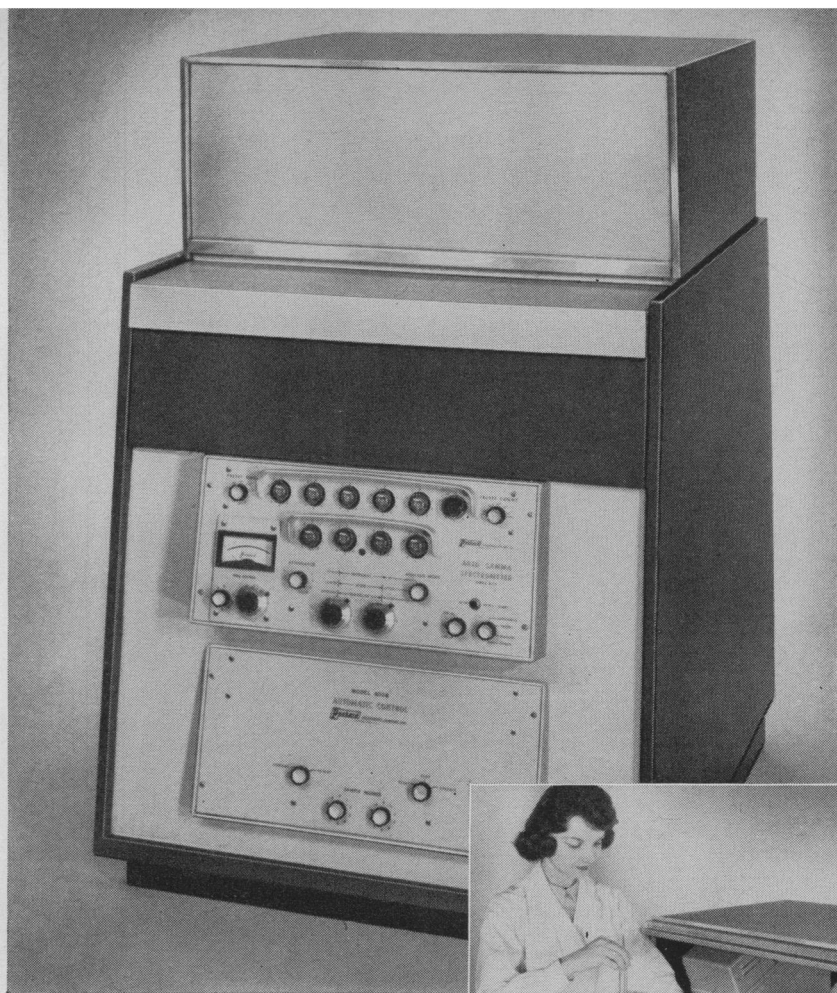
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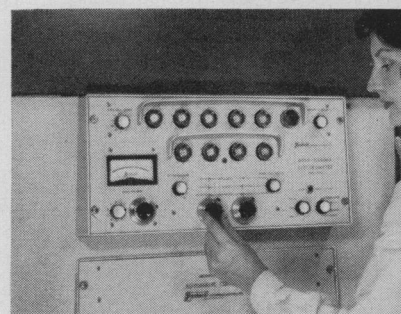
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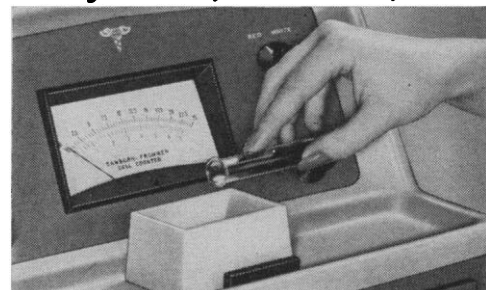


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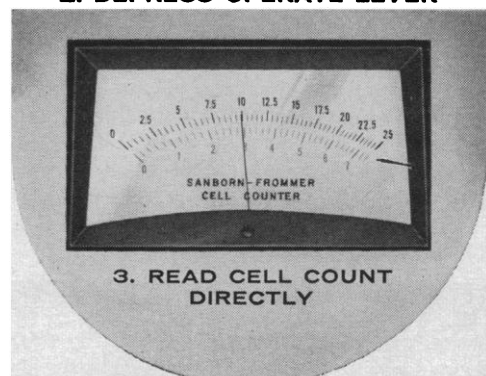
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# Meetings

## Respiratory Tract Diseases

An international congress on respiratory tract diseases of virus and rickettsial origin was held in Prague, Czechoslovakia, from 23 to 27 May 1961. The congress was under the sponsorship of the Czechoslovak Medical Society of J. Ev. Purkyně and the Czechoslovak Academy of Sciences. Karel Sedláček and K. Raska were secretary-general and president, respectively, of the con-

gress. There were delegates from Argentina, Brazil, Czechoslovakia, France, Germany, Great Britain, Hungary, Italy, the Netherlands, Poland, Romania, the Soviet Union, and the United States.

The papers presented dealt with etiology and pathogenesis of virus and rickettsial diseases of the respiratory tract, epidemiology and prevention, and clinical problems. They were of good quality and indicated a keen interest in viral and rickettsial respiratory infections on the part of scientists of Eastern Europe as well as scientists of

Western Europe and the countries of the Western Hemisphere. The subject matter ranged from basic problems of virus composition, virus-cell relationships, and factors of specific and non-specific immunity to the discovery and evaluation of the importance of new respiratory viruses and development of means for controlling infection. Finally, there was considerable discussion of the clinical consequence, in man, of infection with adenoviruses, influenza, and the rickettsiae.

Respiratory viruses and rickettsiae occur throughout the world, with little regard for geographic boundaries. It is important, therefore, that there be maximum exchange of information among scientists of all countries concerning them. The congress in Prague was the first truly international conference on this important health problem. It is to be hoped that this pioneering conference is but the first in a series of congresses on viral respiratory disease, with others to be held throughout the world in the future.

MAURICE R. HILLEMANN

(for the American delegation)

Merck Institute for Therapeutic Research, West Point, Pennsylvania

## Forthcoming Events

### September

19-22. Australian Conf. on Food Technology, Homebush (near Sydney), Australia. (T. B. Partridge, Australian Scientific Liaison Office, 1907 K St., NW, Washington 6)

19-29. International Conf. on Fish Nutrition, Washington, D.C. (FAO, Intern. Agency Liaison Branch, Office of the Director General, Viale delle Terme di Caracalla, Rome, Italy)

20-21. Industrial Electronics, symp., Boston, Mass. (W. M. Trenholme, General Electric Co., West Lynn, Mass.)

21-22. Air Pollution Control Assoc., annual, Louisville, Ky. (R. Bourne, APCA, Room 2, City Hall, Louisville)

21-22. Conference on Radiofrequency Spectroscopy in Solids, Bangor, Wales. (Physical Soc., 1 Lowther Gardens, Prince Consort Rd., London, S.W.7, England)

21-23. French Medical Congr., 33rd, Paris. (C. Laroche, 34 rue de Bassano, Paris 8)

24-27. American Inst. of Chemical Engineers, Lake Placid, N.Y. (E. R. Smoley, 30 School Lane, Scarsdale, N.Y.)

25-29. European Committee of Liaison for Cellulose and Paper, symp., Oxford, England. (British Paper and Board Makers' Assoc., Technical Section, St. Winifred's, Welcomes Rd., Kenley, Surrey, England)

25-30. Magnetism and Crystallography, intern. conf., Kyoto, Japan. (Science Council of Japan, Ueno Park, Tokyo)



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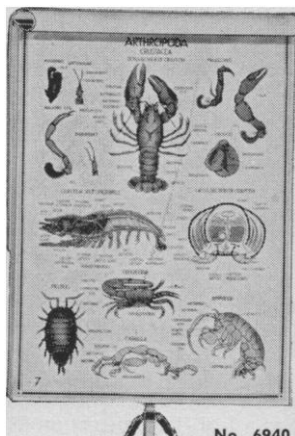
Developed in the Laboratory of Cellular Physiology and Metabolism, National Heart Institute, National Institutes of Health, United States Public Health Service, Bethesda, Maryland. Special thanks are due to Dr. William J. Dreyer, whose co-operation and suggestions are gratefully acknowledged by Gilson Medical Electronics. Ref.—Peptide Separation by Two-Dimensional Chromatography and Electrophoresis, Arnold M. Katz, William J. Dreyer, and Christian B. Anfinsen—*The Journal of Biological Chemistry*, Vol. 234, No. 11, November, 1959.

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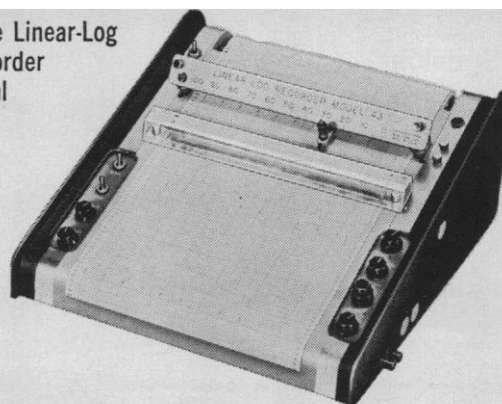
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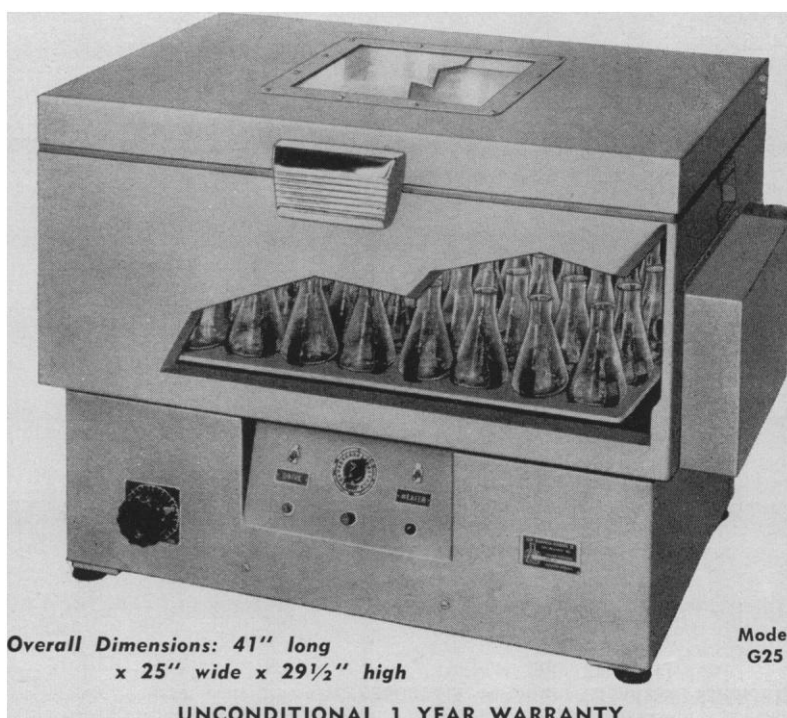
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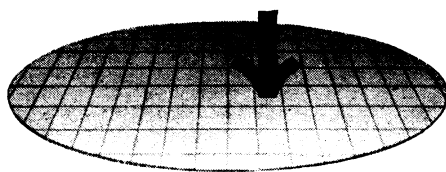
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Tufts, Barbara J., 1959, ANALYTICAL CHEMISTRY, Vol. 31, p. 238, Feb.

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26-30. European Congr. of Aviation Medicine, 6th, Paris, France. (CERMA, 5 bis Avenue de la Porte de Sèvres, Paris)

27-3. International Union of Theoretical and Applied Mechanics, Kiev, U.S.S.R. (Y. A. Mitropolsky, Scientific Committee, Kalinin pl. 6, Mathematical Inst., Kiev)

28-29. European Conf. of Chemical Engineers, Toulouse, France. (Soc. of Industrial Chemistry, 28 rue Saint-Dominique, Paris 7, France)

#### October

1-3. Council for Intern. Organizations of Medical Sciences, Paris, France. (CIOMS, 6 rue Franklin, Paris 16)

1-4. Process Engineers, annual, Vienna, Austria. (Osterreichischer Ingenieur- und Architektenverein, Eschenbachgasse 9, Vienna 1)

1-5. Electrochemical Soc., Detroit, Mich. (ES, 1860 Broadway, New York 23)

1-7. International Special Committee on Radio Interference, plenary session, Philadelphia, Pa. (S. D. Hoffman, American Standards Assoc., 10 E. 40 St., New York 16)

1-8. International Congr. of Industrial Chemistry, 33rd, Bordeaux, France. (Société de Chimie Industrielle, 28 rue Saint-Dominique, Paris 7, France)

2-4. Communications Symp., 7th natl., Utica, N.Y. (R. K. Walker, 34 Bolton Rd., New Hartford, N.Y.)

2-7. Climatic Change, symp., Rome, Italy. (UNESCO, Place de Fontenoy, Paris 7, France)

2-7. International Astronautical Federation, 12th congr., Washington, D.C. (American Rocket Soc., 500 Fifth Ave., New York 36)

2-7. Inter-Regional Leprosy Conf., Istanbul, Turkey. (WHO, Regional Office for Europe and Regional Office for the Eastern Mediterranean, 8 Scherfigsvej, Copenhagen Ø, Denmark)

2-11. International Council for the Exploration of the Sea, 49th annual, Copenhagen, Denmark. (Charlottenlund Slot, Charlottenlund, Denmark)

3-5. Physics and Nondestructive Testing, symp., Argonne, Ill. (W. J. McGonagle, Argonne Natl. Laboratory, 9700 S. Cass Ave., Argonne)

3-8. Aerosol Congr., 3rd intern., Lucerne, Switzerland. (Federation of European Aerosol Assocs., Waisenhausstrasse 2, Zurich, Switzerland)

4-10. Latin American Congr. of Electroencephalography, 5th, Mexico, D.F. (J. Hernandez Paniche, Instituto Mexicano de Seguro Social, Hospital La Raza, Mexico, D.F.)

4-10. Latin American Congr. of Neurosurgery, 9th, Mexico, D.F. (J. H. Mateos, Tonalá No. 15, Mexico 7, D.F.)

6-7. American Medical Writers' Assoc., New York, N.Y. (S. O. Waife, P.O. Box 1796, Indianapolis 6, Ind.)

6-8. Therapeutics, 7th intern. congr., Geneva, Switzerland. (P. Rentchnick, Case Postale 229, Geneva 2)

8-10. Zooplankton Production, symp., Copenhagen, Denmark. (J. H. Frazer, Marine Laboratory, P.O. Box 101, Victoria Rd., Aberdeen, Scotland)

8-11. Society of American Foresters, Minneapolis, Minn. (H. Clepper, SAF, 425 Mills Bldg., Washington 6)

8-13. American Acad. of Ophthalmology and Otolaryngology, Chicago, Ill. (W. L. Benedict, 15 Second St., SW, Rochester, Minn.)

9-11. National Electronics Conference and Exhibition, 17th annual, Chicago, Ill. (NEC, 228 N. La Salle St., Chicago, 1)

9-12. Instrument Symp. and Research Equipment Exhibit, 11th annual, Bethesda, Md. (J. B. Davis, Natl. Institutes of Health, Bethesda 14)

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

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

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

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

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

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

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

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

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

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

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

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

15-20. American Inst. of Electrical Engineers, fall general meeting, Detroit, Mich. (E. C. Day, AIEE, 33 W. 39 St., New York 18)

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

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

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

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

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

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

(See issue of 18 August for comprehensive list)