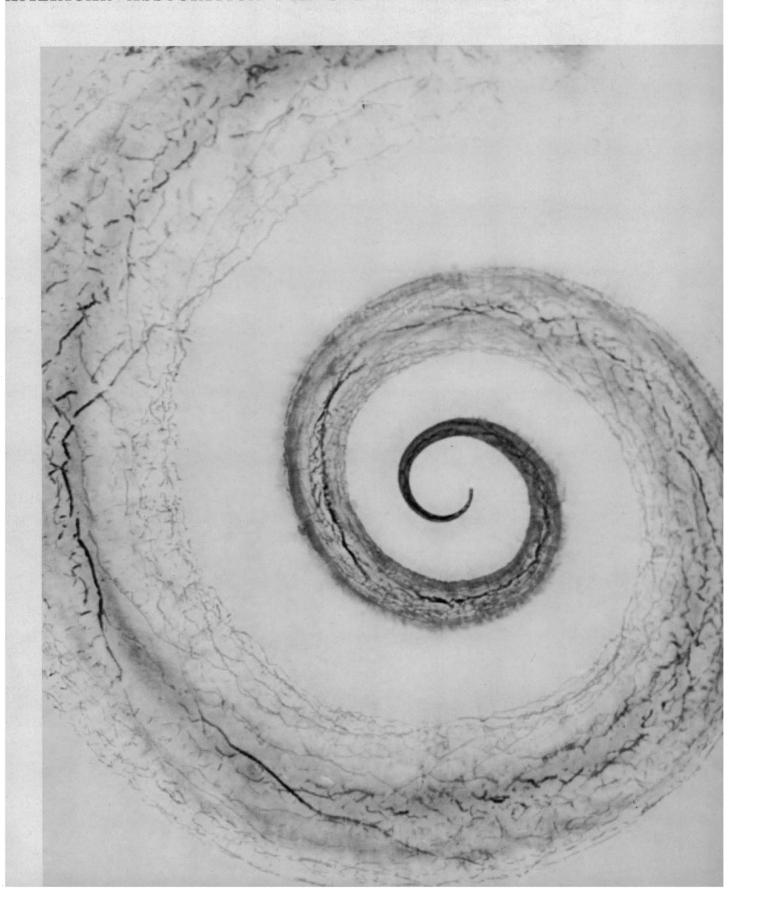
## SCIENCE

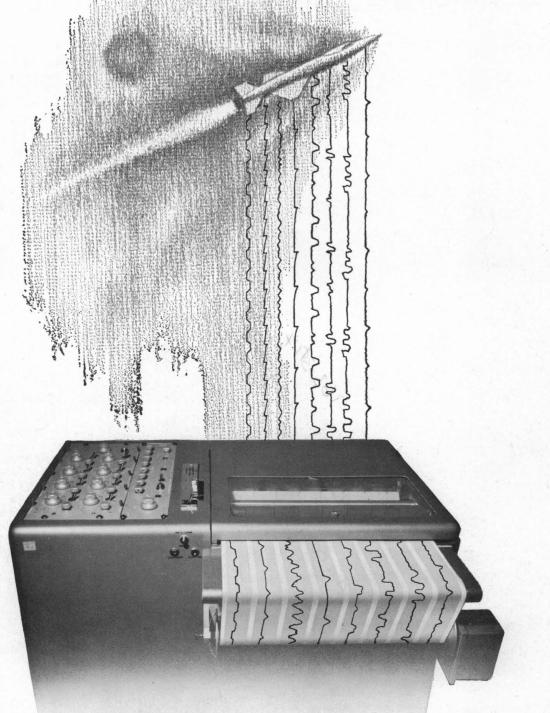
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Vol. 137, No. 3525

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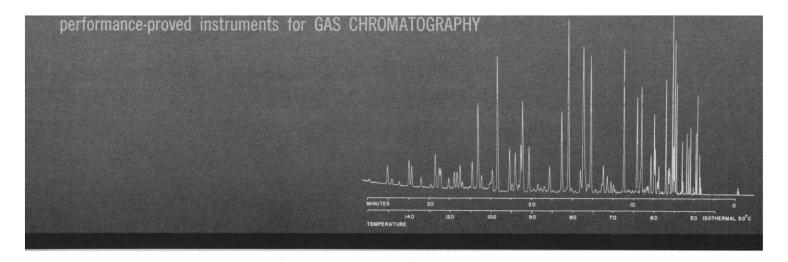
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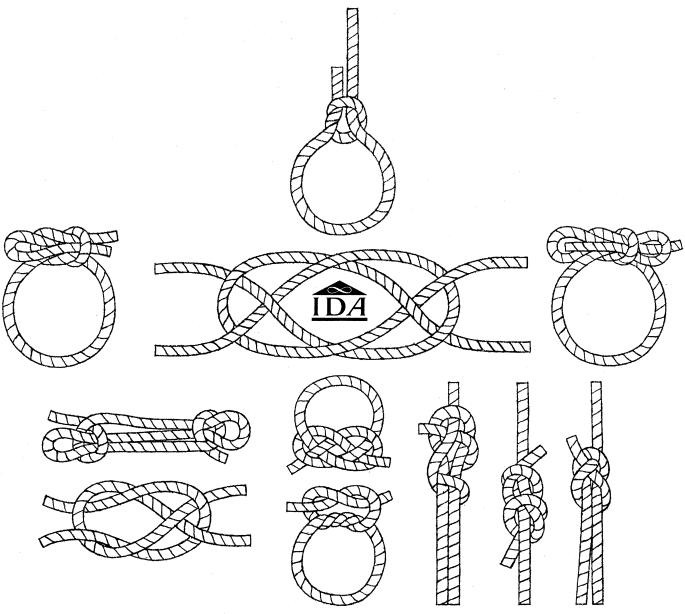
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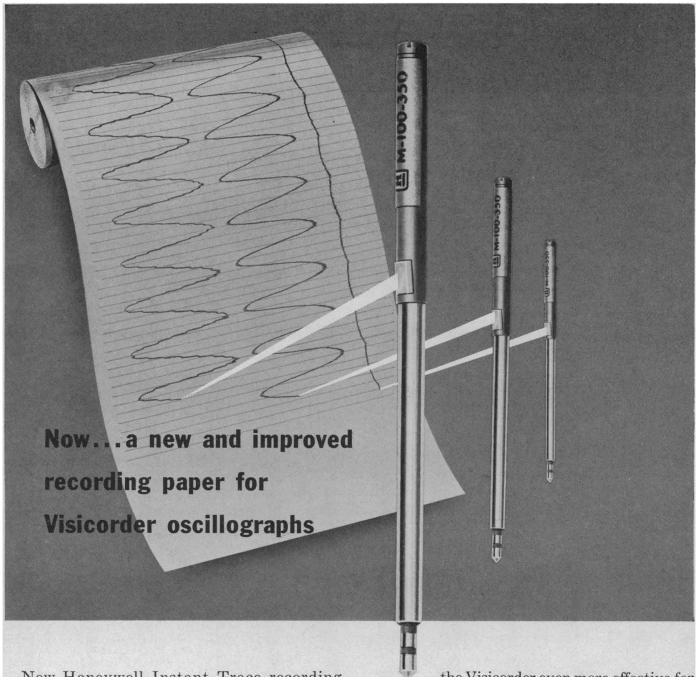
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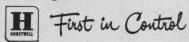
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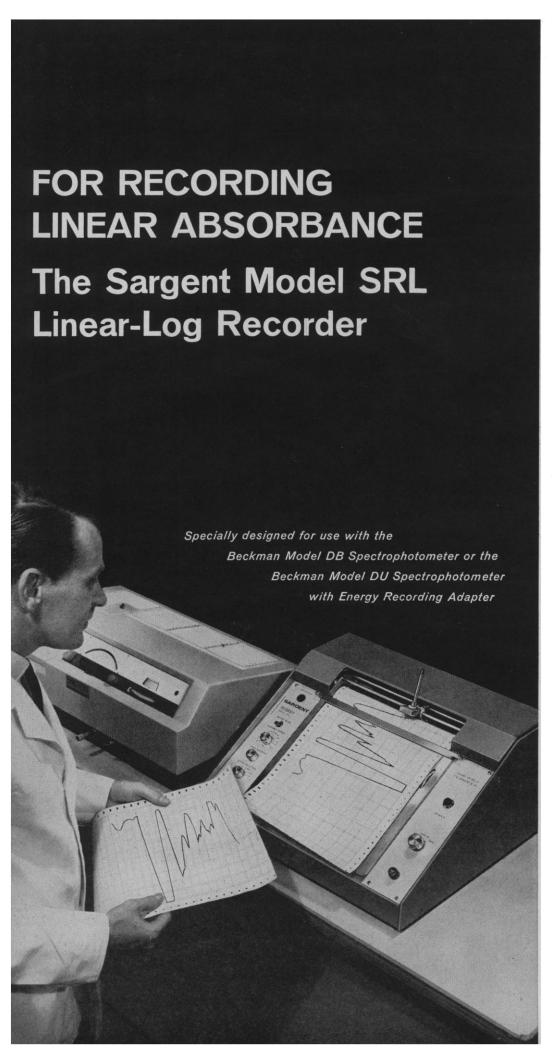
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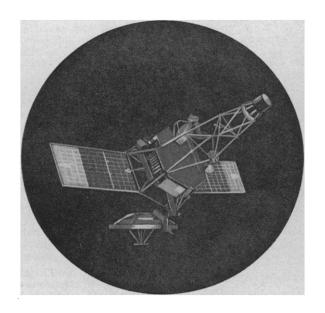


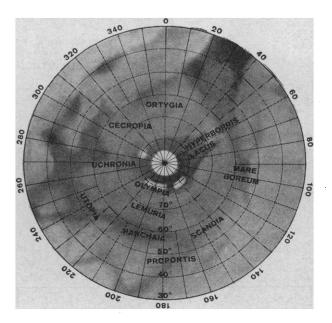
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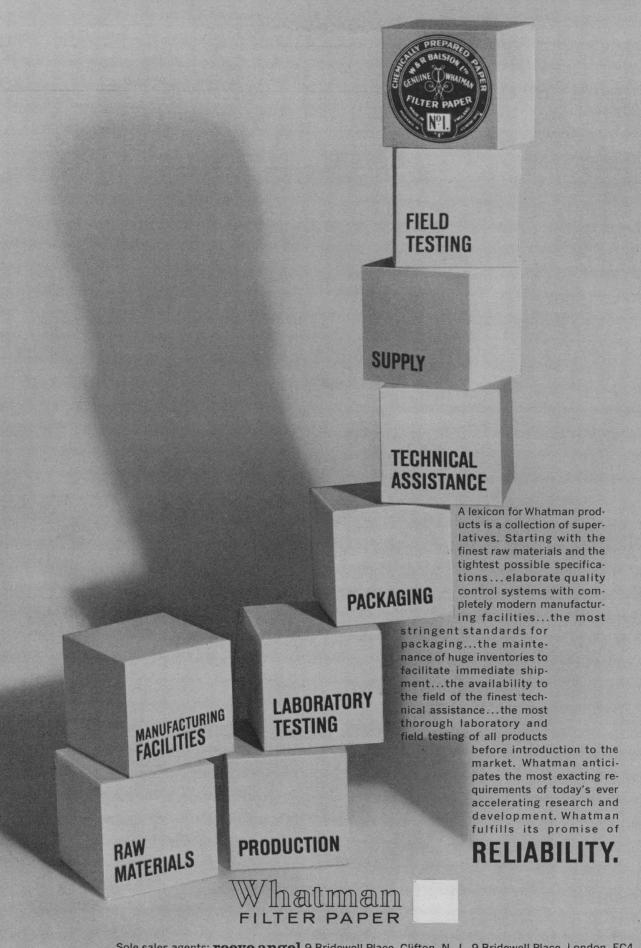
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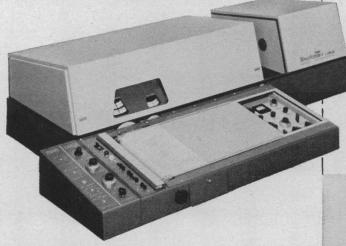
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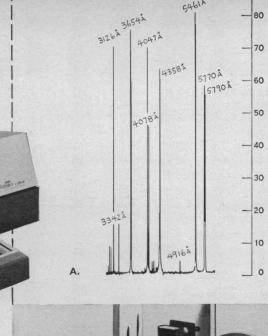
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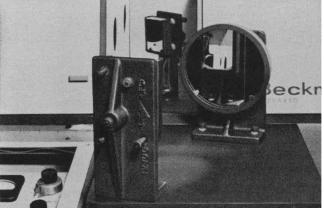


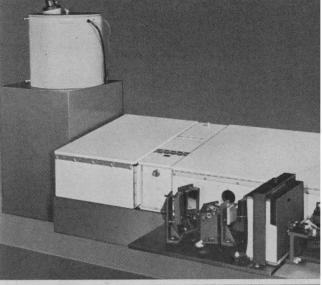
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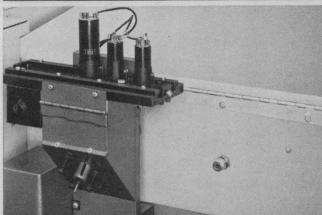
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#### Letters

#### Wind Fluctuations in the Troposphere

"Upper-air wind fields can undergo large fluctuations in short periods of time," W. M. Protheroe wrote in a recent article [Science 134, 1593 (1961)]. "For example, on one night when multiple balloon soundings were made at Bedford, the wind underwent a vector change of 25 meters per second in the tropospheric region in 52 minutes."

No further information was offered by Protheroe, but study of the soundings furnished him reveals no such rapid changes in wind at any one level. During April 1958 and April and May 1959, two or more soundings were made on each of eight nights; a total of 20 soundings were made, to a height of 9 kilometers. These were made at L. G. Hanscom Field, Bedford, Massachusetts (20 miles northwest of Boston), by an Air Force detachment in support of Protheroe's research contract with the Geophysics Research Directorate, under which scintillation of starlight was studied as possible indicator of upper wind speed and turbulence.

Protheroe selected the wind at the level of maximum shear for correlating with scintillation observations. On the two soundings begun 52 minutes apart on 9 April 1958 from which he obtained a "vector change of 25 meters per second," the winds reported at the tops of the layers of maximum shear (marked with an asterisk in the values given below) and at corresponding levels on the companion sounding were as follows:

2256 EST \*9079 m 300° 50 m/sec 2340 EST 8919 m 300° 48 m/sec 2259 EST 9909 m 310° 72 m/sec 2343 EST \*9867 m 310° 75 m/sec

Thus, while the wind speed at the top of the layer of maximum shear increased by 25 m/sec in 47 minutes, this layer itself was found almost 800 meters higher on the second sounding than on the first.

At a fixed height of 9 kilometers above sea level the wind decreased by 2 m/sec, while at 9.9 kilometers it increased by 3 m/sec, both in 44 minutes. These differences are of the same order of magnitude as the instrumental and observational errors in the reported wind speeds; the change of 10° in wind direction is unimportant, since direc-

tions are reported only to the nearest 10°.

Much greater wind changes at fixed levels in short time periods are revealed by a week-long series of hourly soundings made at Bedford in April 1960 for the specific purpose of studying such variability. Details of this unique series, including wind speeds averaged over 1, 2, 3, and 4 minutes and temperatures and heights at standard pressure surfaces, are offered in Geophysics Research Directorate Research Note 60, which is available on request.

Of the 168 scheduled soundings, 161 provided usable wind information, but because of instrumental and other difficulties, only 119 differences at 1-hour intervals were available at the 12kilometer level, where the greatest variability was expected to occur. The synoptic situation during the week of observation was conducive to abnormally large variability in wind speed. The greatest 1-hour change was 39 m/sec, the mean vector change was zero, and the root mean square vector change was 13 m/sec; such a standard deviation implies that the mean absolute change was 10 m/sec.

Protheroe's statement concerning the general variability of upper wind fields is correct, and the figure that he cites is not unreasonable. But rather than being typical, it is 2½ times the mean absolute change at a level of great variability during a week of great wind variability. At this level during such conditions, less than 5 percent of the 1-hour changes would be as great as 25 m/sec.

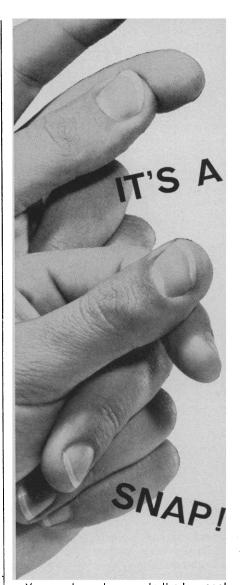
ARNOLD COURT ROBERT W. LENHARD, JR. Geophysics Research Directorate, Air Force Cambridge Research Laboratories, Bedford, Massachusetts

#### **Resumption of Testing**

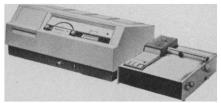
We agree completely with the sentiments expressed by Henry S. Kaplan in his letter to V. Zhdanov of the Soviet Union, reprinted in *Science* [135, 997 (16 Mar. 1962)]. However, we assume that Kaplan is already boycotting American cancer meetings, since this country has exploded more atmospheric nuclear devices than the Soviet Union and plans to resume such testing.

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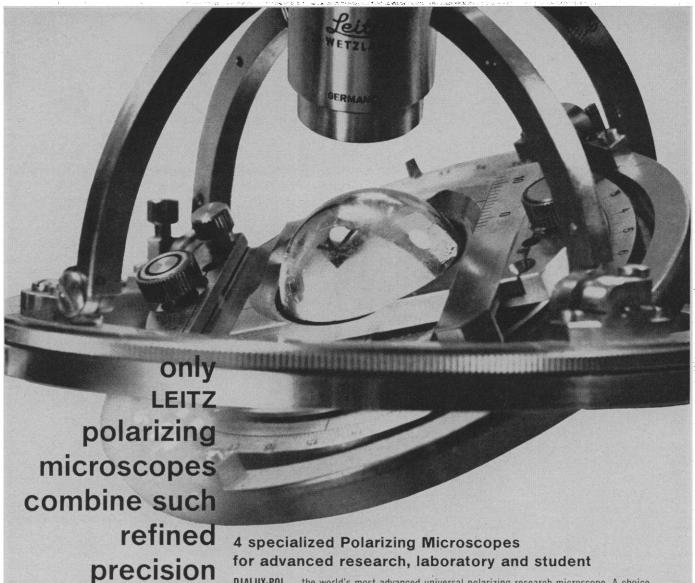


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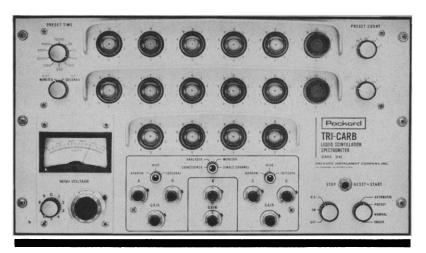
#### The Prophetic Quality

What is the prophetic quality? The word prophet, as used in the ancient language, did not refer to a man who merely predicted the future. It invariably carried with it overtones of action and reform. The soothsayer or the fortune teller was closer to many of those who in our time apply themselves to projections or to the spelling out of existing trends. But the fortune tellers had something which added a special note of their own: they saw the intervention of accident and fate; they dealt with contingency in a way that many of our modern calculators do not. These fortune tellers may have been wrong as often as not, but they did keep alive in the prediction of human affairs the sense that some things would happen unexpectedly. It was the prophet, however, who synthesized in the grand manner the past and the future, the life of action and the life of thought. The prophet called men not merely to foresee the future but to so live in the present that the future might be transformed.

The modern world with its rapidity and depth of change requires this approach, yet among its scholars or within its great institutions finds it too seldom. There is often a tendency to speak as if everything which is now going on would continue along charted lines. There may be a recognition that two lines on the graph of the future will deflect one another or will cross, thus setting in motion new forces. Even such awareness is hardly adequate to the nature of the modern world. We have learned in the past century or so that the past does not repeat itself; we are not inclined, in the manner of certain ancient philosophers, to search for cyclical repetitions, nor like lawyers to stand on precedent. What we must now gain is something more radical and difficult: a realization that the present does not repeat itself. It cannot be extended by analogy nor projected by mathematical measurements so as to make a future in which we shall be easily at home. The new age will be new in every sense; it can be entered into only by an act of the will and the imagination.

This is not the imagination of dreams and reveries; this act is not an intellectual exercise, but the positive comprehension of the world in its full nature and dimension, as it is and as it is becoming. Seeing the world thus with the eye of the prophet (and perhaps also with the eye of the poet), we cannot assume that the future will be made by the play of blind forces, by technological imperatives or scientific compulsions. For we are not merely isolating trends and envisioning more of the same. We are envisioning a process of change in which men—men with their desires and needs and values-play a determining part. What we are at any given moment shapes the moment to be born. And the "we" includes us all—the observer, the detached scholar, along with those who are being observed and studied.

In one sense, of course, men have always been concerned with the future. For the present was fleeting, and the past had vanished; and what was significant, even in the quietest epochs, was to have a sense of the way in which their lives and their children's lives would be spent. They could find in what had been, or in what surrounded them, a mirror of what was to be. The past still contains the present—as the present, if looked at deeply enough, contains the future. What is perhaps most new today is the degree of depth to which our understanding must penetrate, the necessity to reach down to levels of the common life which could once be left unplumbed. Seen in this way, the challenge of "looking ahead" can give to all research a fresh sharpness and scope. -August Heckscher, Director, The Twentieth Century Fund. [This editorial is based upon Mr. Heckscher's Annual Report for 1961]



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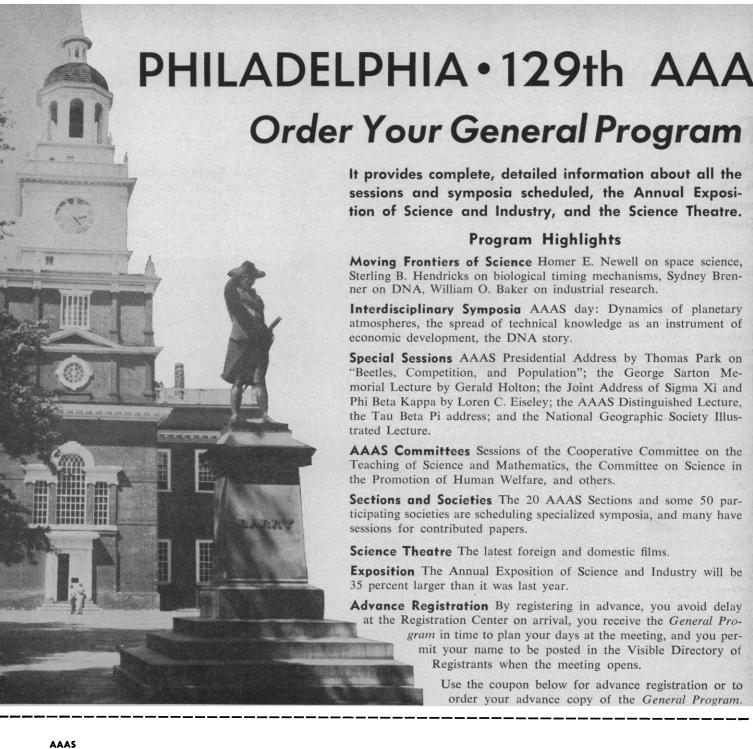
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# AAAS 1515 Massachusetts Ave., N.W. Washington 5, D.C. (Check 1a or 1b) 1a. Enclosed is \$3.50 Advance Registration Fee. This brings me the General Program and Convention Badge. 1b. Enclosed is \$2.50 for the General Program. (if I attend the meeting, the badge, which I need to obtain the privileges of the meeting, will cost me \$1.00 more.) 2. FULL NAME (Dr., Miss, etc.). (Please print or typewrite) (Last) (First) (Initial) 3. OFFICE OR HOME ADDRESS (For receipt of General Program) 4. ACADEMIC, PROFESSIONAL, OR BUSINESS CONNECTION CITY ZONE STATE 5. FIELD OF INTEREST 6. CONVENTION ADDRESS

#### **IEETING • 26-30 DECEMBER**

#### Reserve Your Hotel Room

Make sure you have the accommodations you prefer. A list of headquarters hotels of participating societies appears on page 235. The AAAS headquarters is the Sheraton.

The hotels for the AAAS Philadelphia meeting have established special, low flat rates and have reserved large blocks of rooms for the meeting.

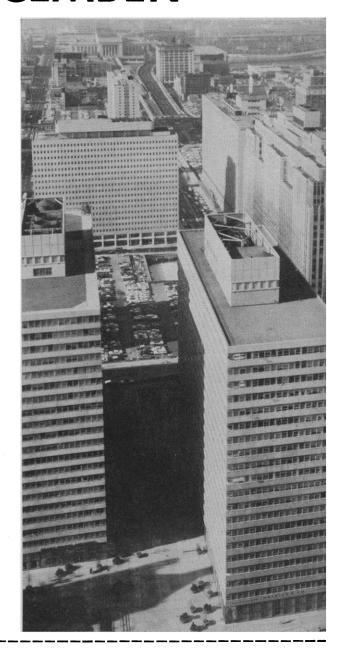
Use the coupon below to make your hotel reservation in Philadelphia. Send your application to the AAAS Housing Bureau in Philadelphia, not to any hotel. Give a definite date and estimated hour of arrival, and also probable date of departure. The Housing Bureau will make the assignment and send you a confirmation in two weeks or less.

A rollaway bed can be added to any room at \$3.00 per night. Mail your application now to secure your first choice of accommodations.

#### HOTEL RATES\* AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

For a list of the headquarters of each participating society and section, see page 235, Science, 20 July.

Hotel	Single Bed	Double Bed	Twin Beds	Suites
Sheraton**	\$8.50		\$14.00	\$35.00—\$45.00
Bellevue Stratford**	8.50		14.00	32.00— 60.00
Warwick**	8.50		14.00	30.00— 65.00
Franklin Motor Inn	8.50		14.00	
Robert Morris	5.50-7.50	\$9.00\$11.00	10.00-11.00	
Sylvania	7.50	11.00	12.00	
Adelphia	7.50	11.00	12.00	
Benjamin Franklin	8.50	12.00	14.00	32.00— 60.00
* All rooms are subj ** Hotels with session	ect to a 4% F s.	Pennsylvania sta	ite sales tax.	



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While it would be both presumptuous and naive to assume that the EM-200 is the ultimate in design, the instrument represents a pronounced advance in the development of electron microscopy - a step which passes a new challenge to the microscopist and theorist: a challenge which requires new methods of specimen preparation or a new basis in theory before any further advance beyond this maxima is possible.

For more detailed information write to:

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of the American Rocket Society and American Astronautical Society, whose sessions will be held there.

A detailed list of the headquarters of each section and society appears later in this report.

Beginning with this issue, the advertising pages of *Science* will carry, at frequent intervals, announcements of hotel accommodations and rates, together with a coupon to be filled out and sent, *not* to any hotel directly, but to the AAAS Housing Bureau in Philadelphia. The coupon or other evidence that one is attending the AAAS meeting is necessary to secure the special flat rate.

All applications for hotel rooms will be filled in the order of receipt. Those who apply early are assured of accommodations in the hotel of their first choice. Expenses can be reduced if two people share a room, or if three or more people share a suite. Upon request, all hotels will place comfortable rollaway beds in rooms or suites, at a cost of \$3 per night.

#### Registration

Both the technical, or program, sessions and the special sessions are open to all interested persons. Although registration for these sessions is not mandatory, undoubtedly all who attend will wish to pay the AAAS registration fee of \$3 and thus contribute their proportionate share toward the heavy expenses of the meeting. (The registration fee for the husband or wife of a registrant, if a second General Program is not required, is \$1.)

Each registrant receives the *General Program*, convention literature, a listing in the Visible Directory of Registrants, and a convention badge; the latter assures him all privileges of the meeting. The badge is required for admission to the large-scale exhibits and the AAAS Science Theatre.

In general, since the exhibits and films are at professional and adult levels, the Exposition is open only to registrants. Children under 16 are neither registered nor admitted (except in special instances, and then a parent or other adult must agree to accompany the child throughout).

Advance registration (\$3.50, since postage is included) has some decided advantages: delay at the registration desk upon arrival is eliminated; the advance registrant can determine at his leisure which events and sessions he

particularly wishes to attend, since the General Program is sent out by first-class mail early in December; and the registrant's name is posted in the Visible Directory of Registrants as the meeting opens (the hotel room may be added later, by the registrant himself).

An announcement on advance registration, with a coupon, will also be found in the advertising pages of this issue, and in later issues.

A detailed list of the headquarters for the various sections and participating organizations follows.

#### Hotel Headquarters in Detail

AAAS sections are listed alphabetically, and societies are listed alphabetically within each discipline.)

Sheraton (1000 rooms), 1725 Pennsylvania Boulevard.

AAAS; AAAS Office; AAAS Press-

AAAS Main Registration-Information Center; Visible Directory of Registrants; AAAS Annual Exposition of Science and Industry; AAAS Science Theatre.

AAAS Business Sessions (Board of Directors, Council, Section Officers), General Events, and Special Sessions.

AAAS Committee on Desert and Arid Zones Research; AAAS Committee on Meetings; AAAS Committee on Science in the Promotion of Human Welfare.

AAAS Sections B-Physics, D-Astronomy, F-Zoological Sciences, N-Medical Sciences, Nd-Dentistry, P-Industrial Science, and T-Information and Communication.

- (B) American Astronautical Society, American Meteorological Society, American Rocket Society, Sigma Pi Sigma.
- (C) American Association of Clinical Chemists.
  - (D) Astronomical League.
- (E) National Geographic Society, National Speleological Society.
- (F) American Society of Zoologists, Herpetologists' League, Society of Systematic Zoology.
- (FG) American Society of Eugenics, American Society of Naturalists, Biomedical Information-Processing Organization, Ecological Society of America, Mountain Lake Biological Station, Nature Conservancy, Society for the Study of Evolution.
  - (M) Tau Beta Pi Association.
- (N) Academy of Psychoanalysis, Alpha Epsilon Delta, American Physiological Society.

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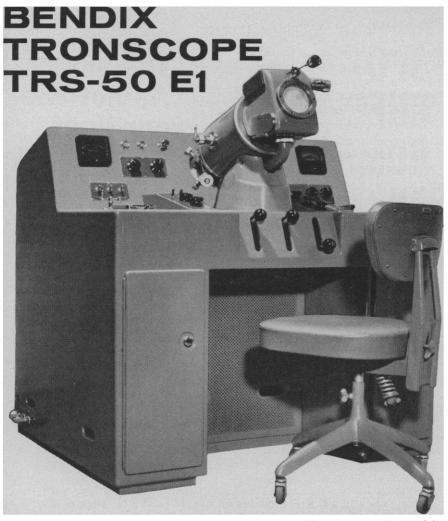
Your investigations are carried to a point where capability exists for one of the Engineering Departments to embark on delivery of the item. The results of your participations in such projects will frequently be of sufficiently high level to warrant publication.

The Laboratory provides sufficient assistance from service groups to enable you to pursue theoretical and experimental work free from the problems of production, administration and red tape. The well-equipped experimental facilities include a computer in full-time service.

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easy-to-operate Tronscope. Fully warranted against defects in materials and workmanship; service is available from any of our regional Sales-Service Offices. For details, write to The Bendix Corporation, Cincinnati Division, Dept. F-7, Wasson Road, Cincinnati 8, Ohio. In Canada: Computing Devices of Canada, Ltd., P.O. Box 508, Ottawa 4, Ontario.

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#### Cincinnati Division



- (Nd) American College of Dentists; American Dental Association; International Association for Dental Research, North American Division.
- (T) National Association of Science Writers.
- (X) American Geophysical Union, Scientific Research Society of America, Sigma Delta Epsilon, Society of the Sigma Xi, United Chapters of Phi Beta Kappa.

Bellevue Stratford (750 rooms), Broad and Walnut Streets.

AAAS Cooperative Committee on the Teaching of Science and Mathematics.

AAAS Sections A-Mathematics, E-Geology and Geography, H-Anthropology, K-Social and Economic Sciences, L-History and Philosophy of Science, M-Engineering, Np-Pharmaceutical Sciences, O-Agriculture, Q-Education, and U-Statistics.

- (A) Association for Computing Machinery, Committee on the Undergraduate Program in Mathematics of the Mathematical Association of America, Society for Industrial and Applied Mathematics.
- (E) Association of American Geographers, Middle Atlantic Division; Geological Society of America.
- (K) American Economic Association, American Political Science Association, American Society of Criminology, American Sociological Association, Institute of Management Sciences, Metric Association, National Institute of Social Behavioral Science, Population Association of America.
- (L) Conference on Science Manuscripts, History of Science Society, Philosophy of Science Association, Society for General Systems Research, Society for the History of Technology.
- (N) American Psychiatric Association.
- (Np) American Association of Colleges of Pharmacy; American College of Apothecaries; American Pharmaceutical Association, Scientific Section; American Society of Hospital Pharmacists; National Association of Boards of Pharmacy.
- (P) Institute of Management Sciences.
- (Q) American Educational Research Association, American Nature Study Society, Council for Exceptional Children, National Association of Biology Teachers, National Association for Research in Science Teaching, National Science Teachers Association, Science Service.
  - (U) American Statistical Associa-

tion; Biometric Society, Eastern North American Region.

(X) Academy Conference, Conference on Scientific Manpower, National Academy of Sciences-National Research Council, National Science Foundation, Scientific Manpower Commis-

Warwick (900 rooms), Locust and 17th Streets.

AAAS Sections C-Chemistry, G-Botanical Sciences, and I-Psychology.

- (C) American Chemical Society, Delaware Valley Sections.
- (G) Botanical Society of America, Philadelphia Botanical Club.
- (I) Society for Research in Child Development.

The following hotels provide additional convenient sleeping accommodations.

Robert Morris (200 rooms), 17th and Arch Streets.

Franklin Motor Inn (300 units).

Sylvania (400 rooms), Locust Street near Broad Street.

Adelphia (400 rooms), 13th and Chestnut Streets.

Benjamin Franklin (1200 rooms), 9th and Chestnut Streets.

Guests in these hotels should register for the AAAS meeting at the Sheraton or Bellevue Stratford.

#### Meetings

#### Forthcoming Events

#### September

1-3. Astronomical League, Albuquerque, N.M. (H. C. Sehested, 3223 Westcliff Rd. W., Fort Worth, Tex.)

1-7. Wilderness Soc., Mt. McKinley Natl. Park, Alaska. (H. Zahniser, 2144 P St., NW, Washington 7)

2-5. Neuropsychopharmacology, intern. congr., Munich, Germany. (P. Deniker, c/o Hôpital Sainte-Anne, 1 rue Cabanis, Paris 14°, France)

2-7. AAAS Laurentian Hormone Conf., Quebec, Canada. (G. Pincus, 222 Maple Ave., Shrewsbury, Mass.)

2-7. Information Theory, intern, symp., Brussels, Belgium. (M. Selleslags, Université Libré, 50 Avenue Franklin D. Roosevelt, Brussels)

2-8. Brain Edema, symp., Austria. (P. Bailey, c/o NINDB, Institut Bunge, Berchem-Antwerp, Belgium)

2-9. Prophylactic Medicine and Social Hygiene, intern. congr., Bad Aussee, Austria. (E. Berghoff, Piaristengasse 41, Vienna VIII, Austria)

3-5. Psychometric Soc., St. Louis Mo. (W. G. Mollenkopf, Procter & Gamble Co., P.O. Box 599, Cincinnati 1, Ohio)

3-6. Alpine Meteorology, intern. congr., Sauze d'Ouix-Sestriere, Italy. (M. Bossolasco, Società Italiana di Geofisica e

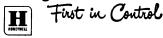


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Meteorologia, P.O. Box 3145, Genoa,

3-7. Advanced-Technology Management, natl. conf., Seattle, Wash. (Inst. of Radio Engineers, 1 E. 79 St., New York 21)

3-7. Alcohol and Road Traffic, intern. conf., London England. (R. F. Borkenstein, Dept. of Police Administration, Indiana Univ., Bloomington)

3-7. Anesthesiology Congr., Vienna, Austria. (R. Kucher, Postgraduate Medical School, Alserstr. 4, Vienna IX)

3-7. Antarctic Biology, symp., Paris, France. (R. Carrick, c/o Antarctic Div., D.S.I.R., P.O. Box 6022, Wellington, New Zealand)

3-7. Institute of Management Sciences, Dublin, Eire (T. Fabian, c/o Mathematica, 76 Nassau St., Princeton, N.J.)

3-7. International College of Experimental Phonology, congr., Padua, Italy. (B. Vallancien, 16 rue Spontini, Paris 16°, France)

3-7. Microwave Tubes, intern. congr., Delft, Netherlands. (Congress Office, P.O. Box 62, Eindhoven, Netherlands)

3-7. Passivity, intern. symp., Toronto, Ont., Canada. (Mr. Cohen, Natl. Research Council of Canada, Ottawa, Canada)

3-7. Transsonicum Symp., Aachen, Germany. (K. Oswatitsch, c/o Institut für Theoretische Gasdynamik, Theaterstr. 13, Aachen)

3-7. Water Pollution Research, intern. conf., London, England. (J. E. Holmstrom, Scientific Conf. Center, Headington Hill Hall, Oxford, England)

3-8. Chemical Machinery, Engineering, and Automation, intern. congr., Brno, Czechoslovakia. (F. Brabec, Czechoslovak Scientific and Technical Soc., Siroka 5, Prague I, Czechoslovakia)

3-8. Corpuscular Photography, intern. symp., Munich, Germany. (H. Fireser, Inst. for Scientific Photography of the Munich Inst. of Technology, Munich)

3-8. Intern. Dairy Federation, intern. congr., Copenhagen, Denmark. (K. Frederiksen, Raadhuspladsen 3, Aarhus, Denmark)

3-8. Neohippocratic Medicine, intern. congr., Montpellier, France; Cos, Greece; and Salerno, Italy. (M. Martiny, 10 rue Alfred-Roll, Paris 17°, France)

4-6. Practical Methods of Assisting Radiotherapy Centers in Less-Developed Areas, Montreal, Canada. (World Health Organization, Palais des Nations, Geneva, Switzerland)

4-7. Association for Computing Machinery, natl. conf. and exhibit, Syracuse, N.Y. (R. S. Jones, Sylvania Electric Products, Inc., Camillus, N.Y.)

4-7. Problems of Exercise Metabolism, intern. seminar, Milan, Italy. (R. Margaria, Inst. of Physiology, Univ. of Milan, Milan)

4-8. Syphilis and Other Treponematoses, intern. forum, Washington, D.C. (W. Griggs, Communicable Diseases Center, U.S. Public Health Service, Atlanta, Ga.)

5-6. Blood Transfusion, intern. seminar, Mexico, D. F., Mexico (Comité Intern. de la Croix-Rouge, Geneva, Switzerland)

5-7. High-Polymer Science, annual forum, Windsor, Ont., Canada. (L. Breitman, Research and Development Div., Polymer Corp. Ltd., Sarnia, Ont.)

5-7. Measurement of Thermal Radiation Properties of Solids, symp., Dayton, Ohio. (C. R. Andrews, Univ. of Dayton, Dayton 9)

5-7. Temperature Acclimation, intern. symp., Leiden, Netherlands. (A. Nixon, Organizing Committee, 9650 Wisconsin Ave., Washington 14)

5-8. American Political Science Assoc., Washington, D.C. (E. M. Kirkpatrick, APSA, 1726 Massachusetts Ave., NW, Washington 6)

5-8. Internal Medicine, intern. congr., Munich, Germany. (H. Ludwig, Buergerspital, Basel, Switzerland)

5-9. International Soc. of Audiology, congr., Leiden, Netherlands. (A. Spoor, Ear-Nose-Throat Dept., Academisch Ziekenhuis, Leiden)

5-11. International Council for Building Research Studies and Documentation, Cambridge, England. (General Secretariat, c/o Bouwcentrum, 700 Weena, P.O. 299, Rotterdam, Netherlands)

6-7. Honor Soc. of Phi Kappa Phi, Madison, Wis. (L. R. Guild, 3839 Wilshire Blvd., Los Angeles 5, Calif.)

6-7. Problems in Chemistry and Physics of Non-Metallic Solids, symp., Quebec City, P.Q., Canada. (P. A. Giguere, Dept. of Chemistry, Laval Univ., Quebec City, P.Q., Canada)

6-8. Acclimation to Cold and Heat, symp., Leiden, Holland. (Executive Officer, Federation of American Societies for Experimental Biology, 9650 Wisconsin Ave., Washington, D.C.)

6-8. Pacific Slope Biochemical Conf., annual, Seattle, Wash. (P. E. Wilcox, Biochemistry Dept., Univ. of Washington, Seattle 5)

6-8. Parapsychological Assoc., annual, Durham, N.C., (G. R. Schmeidler, 17 Kent Ave., Hastings-on-Hudson, N.Y.)

6-11. International Soc. of Blood Transfusion, biennial congr., Mexico, D.F., Mexico. (R. Medina, Avenue Chapultepec 522, Mexico 20)

6-16. International Institution for Production Engineering Research, The Hague, Netherlands. (IIPER, 233 Boulevard Raspail, Paris 14°, France)

7-8. Anthropology, annual conf., Carson City, Nev. (R. Shutler, Jr., Dept. of Archaeology, Nevada State Museum, Carson City)

7-9. International Geographical Union, commission on national atlases, Budapest, Hungary. (K. A. Salishchev, Univ. of Moscow, Moscow, Leninskije Gory, U.S.S.R.)

7-10. American Statistical Assoc., Minneapolis, Minn. (D. C. Riley, ASA, 1757 K St., NW, Washington 6)

7-10. Institute of Mathematical Statistics, Minneapolis, Minn. (G. E. Nicholson, Jr., Dept. of Statistics, Univ. of North Carolina, Chapel Hill)

7-12. Crystal Lattice Defects, intern. conf., Kyoto, Japan. (R. R. Hasiguti, Univ. of Tokyo, Bunkyo-ku, Tokyo, Japan)

8-11. Institute of Management Sciences, Ann Arbor, Mich. (T. Fabian, c/o Mathematica, 76 Nassau St., Princeton, N.J.)

9-12. Society of Mining Engineers, fall meeting, Gatlinburg, Tenn. (SME, 345 E. 47 St., New York 17)

9-14. American Chemical Soc., natl. 20 JULY 1962

meeting, Atlantic City, N.J. (A. T. Windstead, Natl. Meetings Dept., ACS, 1155 Sixteenth St., NW, Washington 6)

9-14. American Congr. on Surveying and Mapping—American Soc. of Photogrammetry, St. Louis, Mo. (Convention Headquarters, ACSM, Box 2731, Soulard Station, St. Louis 4)
9-14. Homeopathic Medicine, intern.

9-14. Homeopathic Medicine, intern. congr., Bad Godesberg, Germany. (W. Schwarzhaupt, Sachsenring 73, Cologne, Germany)

9-14. Illuminating Engineering Soc., Dallas, Tex. (C. L. Amick, Day Brite Lighting, Inc., P.O. Box 141, St. Louis 66, Mo.)

9-14. International College of Surgeons, biennial, New York, N.Y. (H. E. Turner, 1516 Lake Shore Dr., Chicago 11, Ill.)

9-15. Dermatology, intern. congr., Washington, D.C. (E. D. Osborne, 71 North St., Buffalo, N.Y.)

9-15. International Soc. of Hematology, congr., Mexico, D.F., Mexico (L. Sánchez-Yllades, c/o Instituto de Estudios Médicos y Biológicos, Apartado postal 25228, México 20, D.F.)

9-15. Paediatrics, intern. congr., Lisbon, Portugal. (M. Cordeiro, Clinica Pediatrica Universitoria, Hospital Santa Maria, Avenue 28 de Maio, Lisbon 4, Portugal)

9-23. Technical Science in the Service of Progress and Peace, intern. trade fair, Brno, Czechoslovakia. (Embassy of the Czechoslovak Socialist Republic, 2349 Massachusetts Ave., NW, Washington 8)

10-12. Geochemical Soc., organic geochemistry group, Milan, Italy. (U. Colombo, G. Donegani Research Inst., Montecatini Co., Via del Lavoro 4, Novara, Italy)

10-12. Technical Assoc. for Waste Water, annual, Wiesbaden, Germany. (Abwassertechnische Vereinigung, Berthavon-Suttner-Platz 8, Bonn, Germany)

10-14. Applied Meteorology, natl. conf., Hampton, Va. (D. A. Lea, Navy Weather Research Facility, Naval Air Station, Norfolk 11, Va.)

10-14. Inelastic Scattering of Neutrons in Solids and Liquids, symp., Chalk River, Canada. (Intern. Atomic Energy Agency, 11 Kärntner Ring, Vienna 1, Austria)

10-15. Analog Computation Applied to Aeronautics, seminar, London, England. (S. C. Redshaw, Civil Engineering Dept., Univ. of Birmingham, Edgbaston 15, Birmingham, England)

10-15. International Assoc. of Game, Fish, and Conservation Commissioners, Moran, Wyo. (IAGFCC, 16413 Canterbury Dr., Hopkins, Minn.)

10-15. International Gravimetric Bureau, general assembly, Paris, France. (J. J. Levallois, Intern. Assoc. of Geodesy, 19 rue Auber, Paris 8°)

10-15. Molecular Structure and Spectroscopy, intern. symp., Tokyo, Japan. (Secretary, Organizing Committee, Science Council of Japan, Ueno Park, Tokyo)

10-15. Research in Mammary Tumours, World Health Organization scientific group, London, England. (WHO, Palais des Nations, Geneva, Switzerland)

(See 13 July issue for comprehensive list)

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METALLIC ELECTRODES for millivolt measurements and the full range of electrometric titrations.

#### FEATURES:

Screw base electrodes thread directly into electrode head of any Coleman pH meter; sample requirement is only 3.5 ml.

Plunger-type liquid junction permits instantaneous renewal of the liquid junction; ideal even for slurries and viscous liquids. Threaded replaceable glass elements for reference electrodes cut electrode replacement costs. Versatility . . . adapters permit Coleman electrodes to be used with almost any modern pH meter.

Overall economy—electrodes cost approximately one-third less than comparable units.

Write for complete information. Request the Coleman Electrode Bulletin SB-282.

Liquid junction easily established with new plunger method.



COLEMAN INSTRUMENTS, INC., MAYWOOD, ILL.