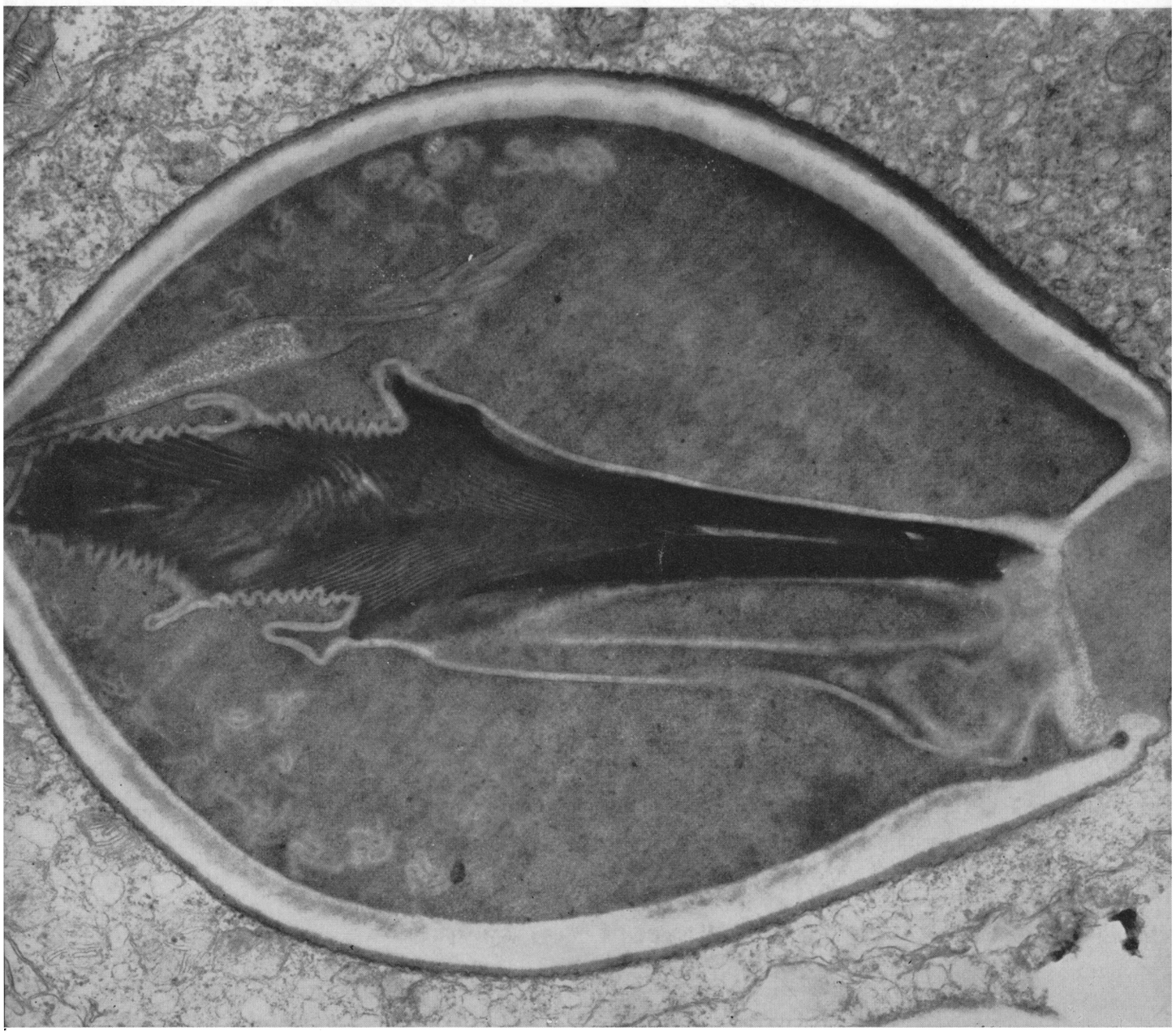
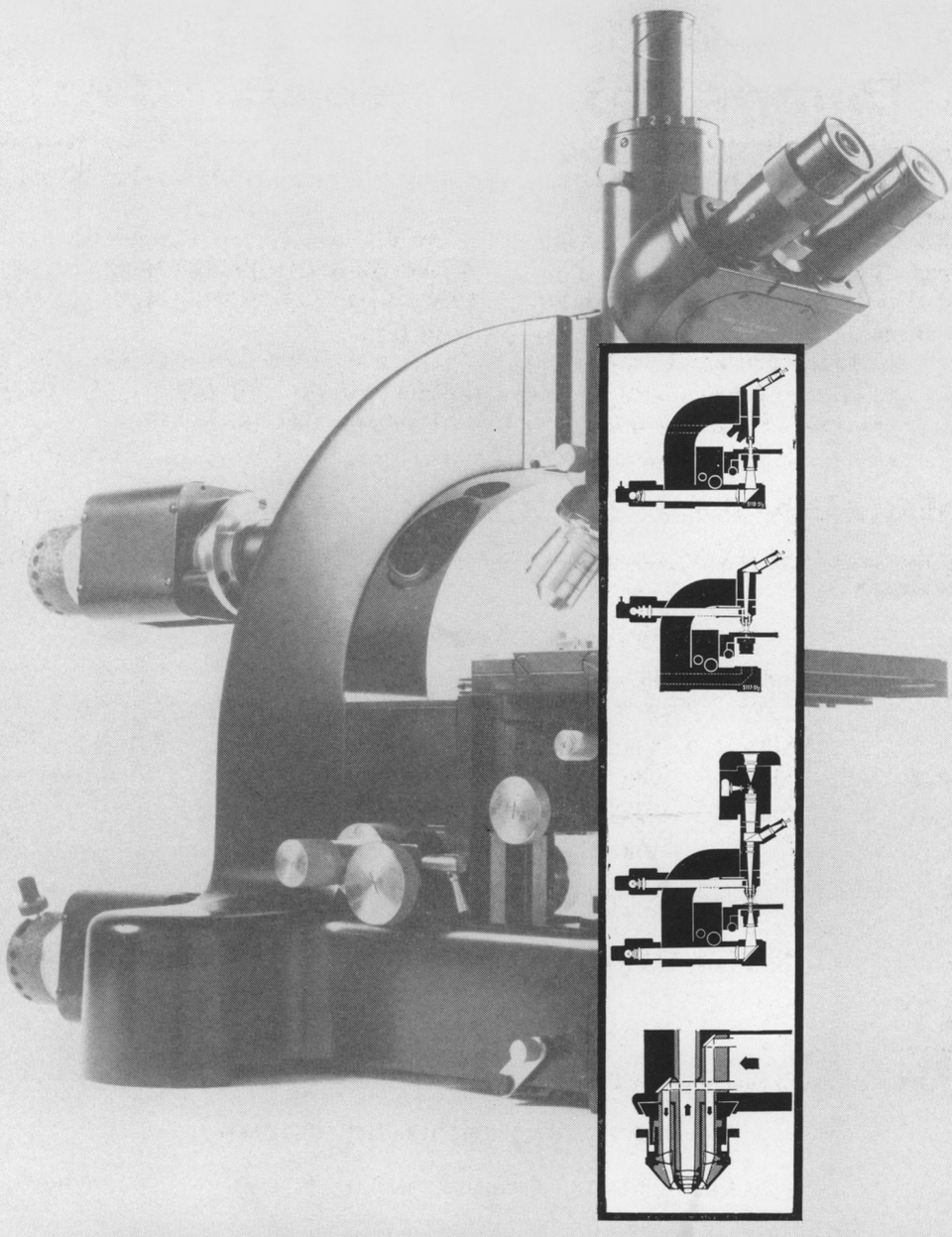
SCIENCE

15 December 1961

Vol. 134, No. 3494

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE





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Denver, 26–31 December 1961

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For a list of the headquarters of each participating society and section, see page 197, *Science*, 21 July. The Hilton is the AAAS headquarters hotel.

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Hotel	Single for one	Double for one	Double for two	Twin Beds for one	Twin Beds for two	Studio Twins	Suites
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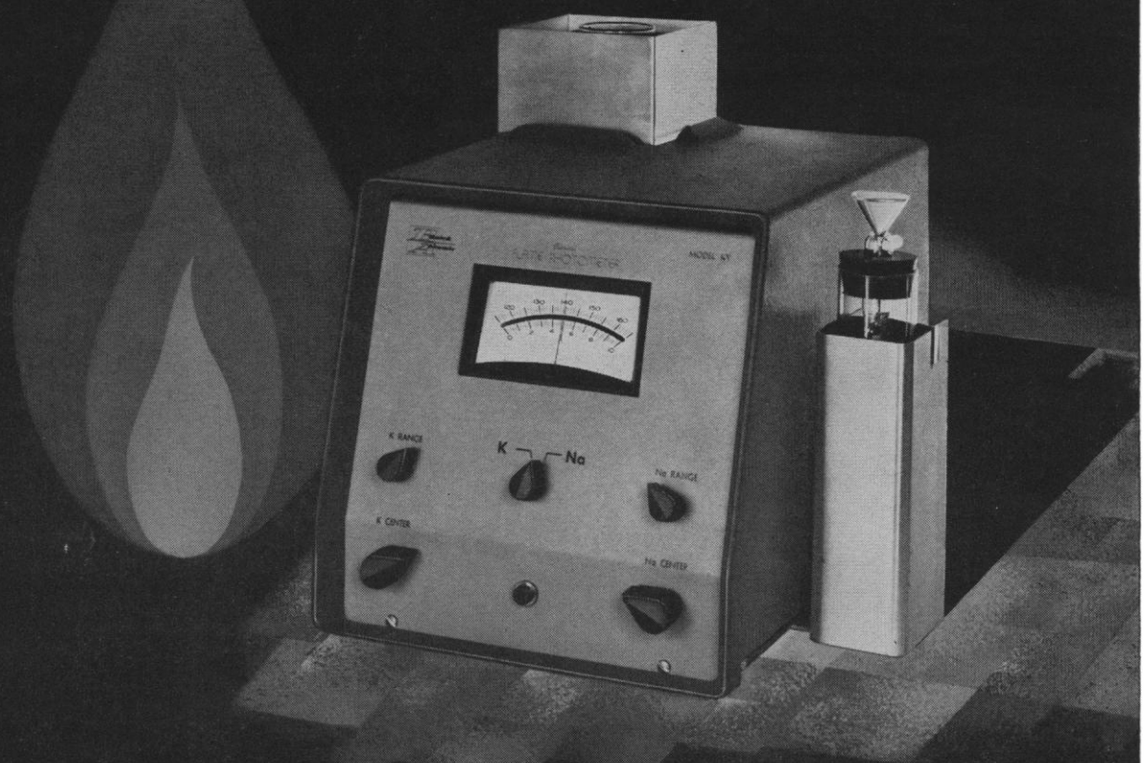

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15 December 1961, Volume 134, Number 3494 **SCIENCE**

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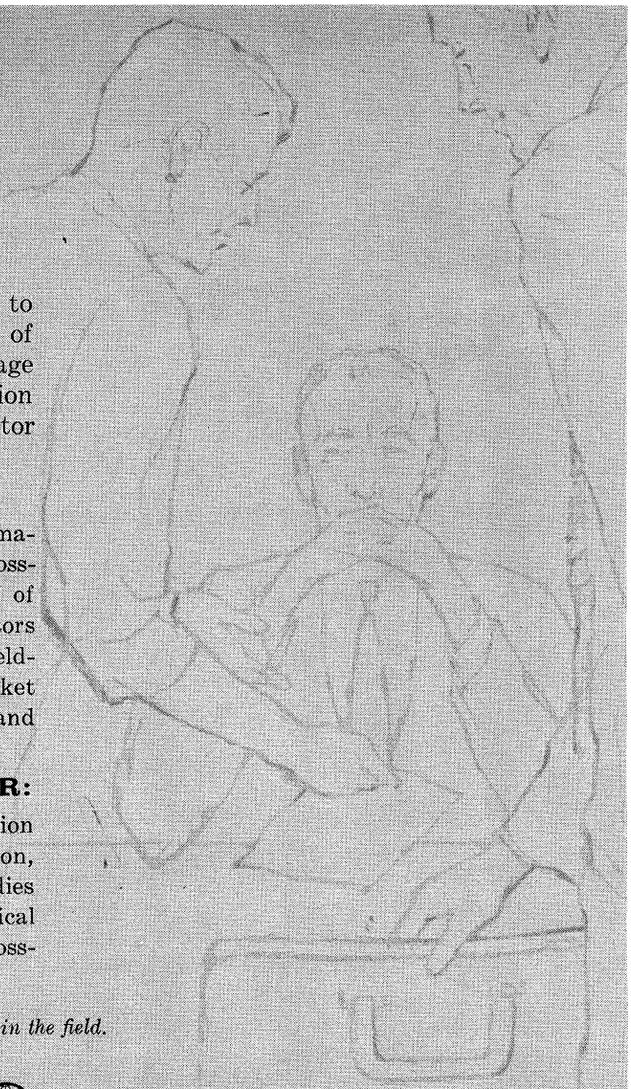

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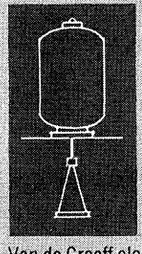

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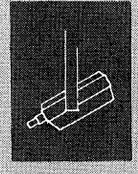

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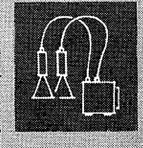

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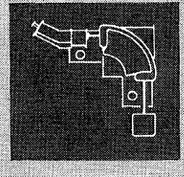

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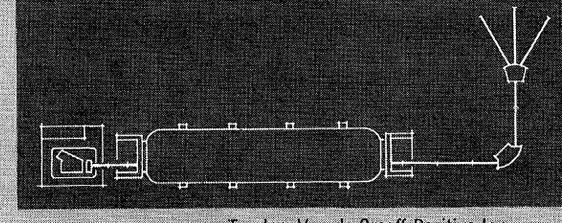

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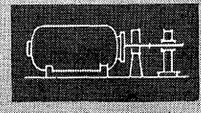

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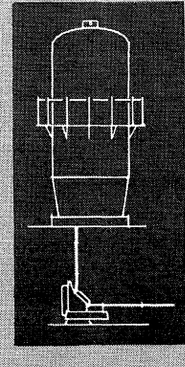

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15 December 1961, Volume 134, Number 3494

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Better Nothing Than Something?

One argument that has been directed against present civil defense efforts is that the program, by giving us a false sense of security, will increase the likelihood of atomic war. Admittedly, the various statements and actions by various people in the government are at such odds that we are forced to wonder just what our civil defense program really is. But if we understand the basic objectives of the program to be those set forth by President Kennedy in his special message last May—a fair assumption—then this particular argument against civil defense is not convincing.

In the message, the President draws a distinction between deterrence and insurance. Our deterrent policy depends on a potential enemy responding rationally to the fact that, if his attack means our utter devastation, it also means his utter devastation at the hands of our retaliatory forces. But suppose another country acts irrationally, miscalculates, or launches an attack by accident? The civil defense program is conceived as insurance against this contingency. A shelter program, for example, could protect a part of the population against fallout, should the attack be of the kind that produces this hazard.

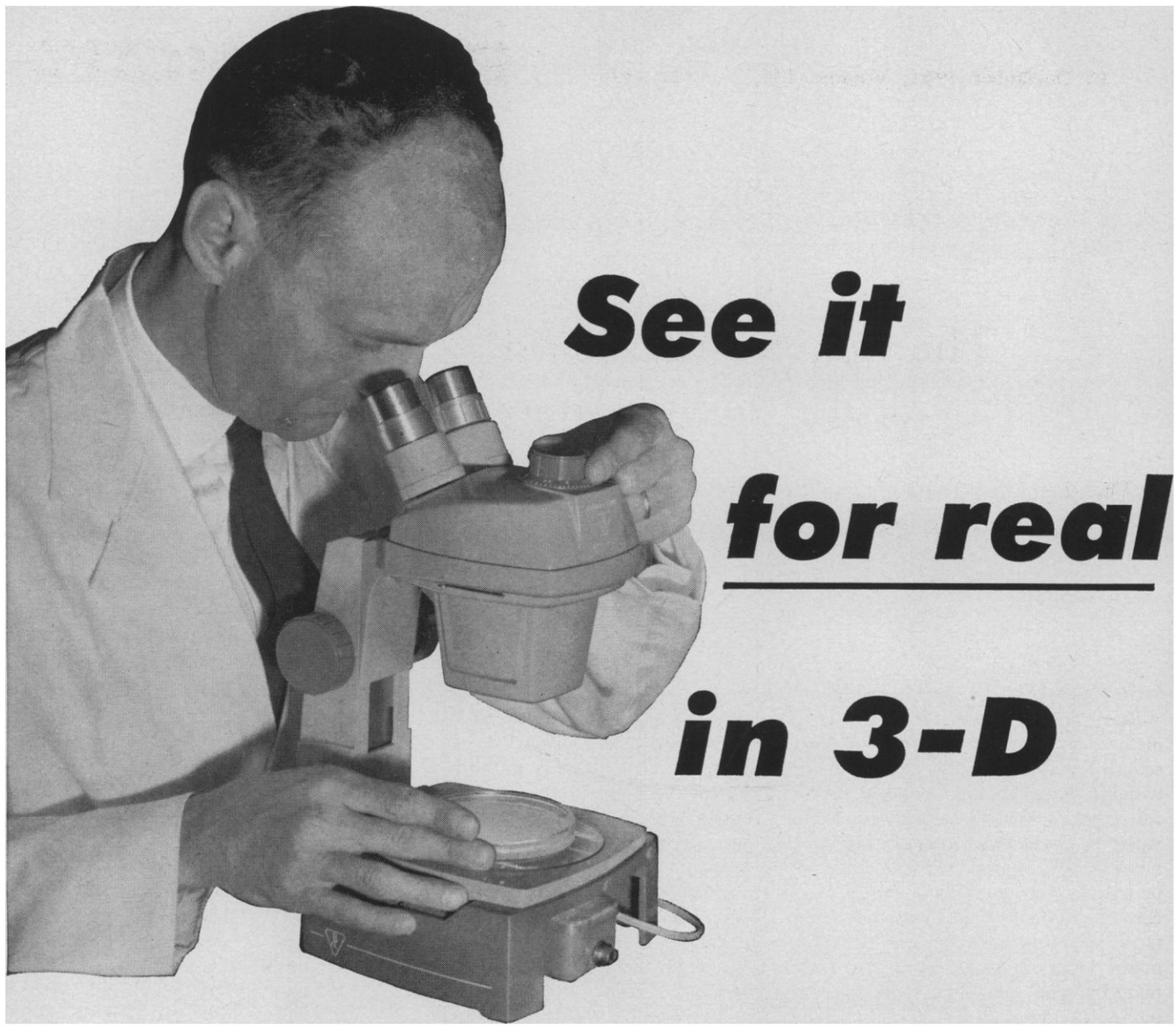
The argument that the present civil defense program will increase the likelihood of war seems to hinge on the supposition that the scope of the program will be misunderstood in a special way. The misunderstanding will be to attribute greater security to the program than it provides. This false sense of security will then lead us to indulge in a greater degree of brinkmanship than we would otherwise risk. With all the comfortable hustle and bustle that goes with carrying out civil defense, people will forget that the protection offered is only for a limited portion of the population, for the barest sort of survival, and against only certain kinds of attack.

There is plenty of evidence that the implications of the civil defense program have not been fully understood by the man in the street or, for that matter, by the New Frontiersmen responsible for getting the program going. In support of the latter contention, consider the delay in producing the famous booklet that was promised to explain everything. The delay can only mean that the policies for carrying out the basic objectives have not been worked out. The problem of preparing the booklet cannot simply be one of translating government jargon into English.

But because we are not doing well in the program, it does not follow that we cannot do better. Is the distinction beween insurance and deterrence really so hard to grasp? It would seem to be comprehensible to any reader of one of the popular news weeklies. The basic ideas are not so foreign to us. When we take out accident insurance we do not regard our policy as a deterrent to motorists who might otherwise run us down. Why, then, if we are told that atomic war could mean the destruction of our civilization, should we forget that fact as soon as we are also told that a modest number of people who might otherwise perish could possibly be saved if we take proper precautions now?

It may be that civil defense will give us a false sense of security, but an equally good hunch is that once the program is fully under way its psychological impact will be somewhat different. It may make many people look squarely for the first time at the consequences of atomic war.

—J.T.



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AAAS Symposium Volume 63

CONGENITAL HEART DISEASE

Allen D. Bass and Gordon K. Moe, Editors June 1960

Presented at the AAAS Washington meeting, December 1958.

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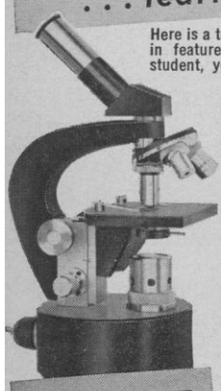

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surrounding each animal. This delicate interplay between the organism, microenvironment, and macroenvironment was also shown to affect differentiation in other organisms. The second paper reported apparent rhythmicities of sexual differentiation and stressed the possible role of intrinsic as well as extrinsic factors in controlling these developmental phenomena.

During the last day of the symposium papers were presented on regeneration and budding. It seemed especially fitting that such papers should be given because hydra were the first animals in which these two processes were studied. The symposium reports emphasized a chemical approach to these problems. One line of attack involved study of the effects of chemical agents on regeneration. Interestingly, it was proposed that the vitamin lipoic acid exerts its inhibitory effects on regeneration by inhibiting DPN-malic dehydrogenase. Next, the control of regeneration, growth, and cell migration were discussed in relation to postulated growth-stimulating and growth-inhibiting factors. Finally, the finding of a high DNA to protein ratio in buds as compared to the parent hydra was discussed in relation to cell growth.

One of the most refreshing aspects of this meeting was the *espirit de corps* generated among all those who took part. The participants were as follows: P. Broberg, R. Bryden, A. Burnett, G. Chapman, D. Claybrook, S. Crowell, R. Eakin, D. Fawcett, C. Fulton, G. Gauthier, T. Goreau, C. Hand, A. Hess, E. Kline, C. Lane, H. Lenhoff, Y. Li, W. Loomis, P. Lunger, C. Lytle, G. Mackie, E. Martin, L. Muscatine, E. Palincsar, H. Park, L. Passano, J. Phillips, D. Ross, D. Slautterback, D. Spangenberg, B. Strehler, S. Wainwright, E. Wangersky, J. Welsh, and R. Wood.

The proceedings and discussions of the symposium are being published by the University of Miami Press.

Forthcoming Events

December

26–31. American Assoc. for the Advancement of Science, annual, Denver, Colo. (R. L. Taylor, AAAS, 1515 Massachusetts Ave., NW, Washington 5)

The following 45 meetings are being held in conjunction with the AAAS annual meeting.

AAAS Cooperative Committee on the Teaching of Science and Mathematics (J. R. Mayor, AAAS, 1515 Massachusetts Ave., NW, Washington, D.C.). 27 Dec.

AAAS Southwestern and Rocky Mountain Div. (M. G. Anderson, New Mexico State Univ., University Park). 26–30 Dec.

Academy Conf. (J. G. Arnold, Jr., Loyola Univ., New Orleans, La.). 27–28 Dec.

Alpha Epsilon Delta (N. F. Witt, Univ. of Colorado, Boulder). 28–29 Dec.

American Astronautical Soc. (M. Pitkin, Martin-Denver Co., Denver, Colo.). 28–29 Dec.

American Astronomical Soc. (H. J. Smith, Yale Observatory, 135 Prospect St., New Haven, Conn.). 26–30 Dec.

American Economic Assoc. (K. E. Boulding, Univ. of Michigan, Ann Arbor). 26 Dec.

American Educational Research Assoc. (D. D. Feder, San Francisco State College, San Francisco, Calif.). 30 Dec.

American Nature Study Soc. (S. G. Baldwin, Danville, Ill.). 27–30 Dec.

American Physiological Soc. (R. E. Smith, Univ. of California, Los Angeles). 29 Dec.

American Political Science Assoc. (J. Korbel, Social Science Foundation, Univ. of Denver, Denver, Colo.). 27 Dec.

American Psychiatric Assoc. (D. A. Hamburg, Stanford Medical Center, Palo Alto, Calif.). 27 Dec.

American Soc. of Criminology (G. H. Barker, Dept. of Sociology, Univ. of Colorado, Boulder). 29–30 Dec.

American Soc. of Naturalists (E. W. Caspari, Univ. of Rochester, Rochester, N.Y.). 27 Dec.

American Soc. of Zoologists (R. L. Watterson, Univ. of Illinois, Urbana). 27–30 Dec.

American Sociological Assoc. (C. Taeuber, Bureau of the Census, Washington, D.C.) 29 Dec.

American Statistical Assoc. (J. A. Niederjohn, Ideal Cement Co., Denver, Colo.). 29–30 Dec.

Association of American Geographers (M. J. Loeffler, Univ. of Colorado, Denver). 26–28 Dec.

Association for Computing Machinery (W. F. Cahill, Goddard Space Flight Center, Greenbelt, Md.). 28 Dec.

Beta Beta Beta Biological Soc. (Mrs. F. G. Brooks, Box 515 Ansonia Station, New York 23). 26–27 Dec.

BIO (Biomedical Information-Processing Organization) (R. S. Ledley, Natl. Biomedical Research Foundation, Silver Spring, Md.). 27 Dec.

Biometric Society, WNAR (F. Graybill, Statistical Laboratory, Colorado State Univ., Fort Collins). 28 Dec.

Committee on Desert and Arid Zones Research, Southwestern and Rocky Mountain Div. of AAAS (T. L. Smiley, Univ. of Arizona, Tucson). 30 Dec.

Conference on Scientific Communication (C. D. Leake, Ohio State Univ., Columbus). 30 Dec.

Conference on Scientific Manpower (T. J. Mills, Natl. Science Foundation, Washington, D.C.). 27 Dec.

Ecological Soc. of America (R. S. Miller, Univ. of Saskatchewan, Saskatoon, Canada). 27–29 Dec.

Institute of Management Sciences (M. M. Flood, Mental Health Research Inst., Univ. of Michigan, Ann Arbor). 29 Dec.

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Instruments and Applications

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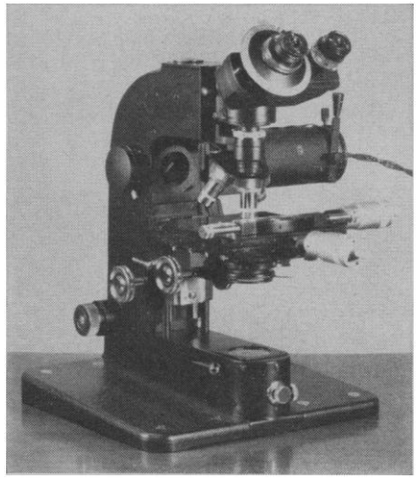
The M4005 microscope was originally designed to meet the needs of nuclear physicists who are concerned with the microscopy of charged particles in photographic emulsions. However, this instrument's facilities for precise positioning and measurement of the object are of special advantage also in the general fields of planimetry and high-power microspectrophotometry.



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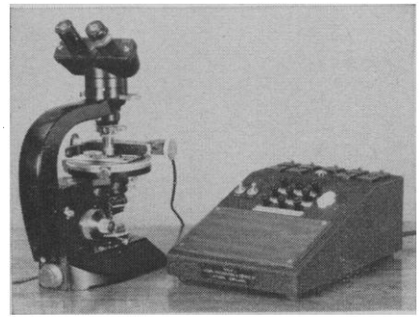
A speed procedure for area analyses and particle counts

In these routine quantitative procedures involving the microscope, speed and efficiency are major factors. Operator fatigue in this exacting work is an important consideration. It can result on the one hand in substantial inaccuracies or, if allowed for in planning the tests (with expense here also a consideration), may compromise results by limiting the number of samples examined.

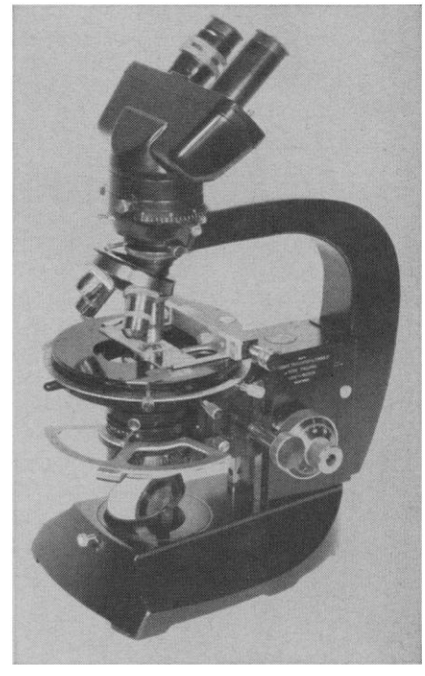
Improved conditions for recording counts can be obtained by use of the Cooke Point and Particle Counter. A special mechanical stage is designed to move the object through a series of fixed intervals, the stage being connected electrically with a counter unit of standard type. Thus, in an area analysis of a micro-section 20x30 mm. with stage intervals 0.1 mm. apart and traverses 1 mm. apart, a total of 6000 points would be semi-automatically recorded. Up to twelve points per second can be recorded, but there will be delays as the counter unit is switched to count a different constituent or grain.



The instrument may also be used manually for speedy routine counting and sizing work. It is shown here with the Cooke Universal Polarizing Microscope, set up for the area analysis of a mineralogical specimen.

Biologists polarizing microscope

Many biological objects such as nerve, muscle, many plant fibres, etc., are moderately or even strongly bi-refringent. These objects can be studied with an ordinary polarizing microscope. Some specimens, however, particularly dividing cells, show only very weak bi-refringence. In order to study these specialized equipment is necessary. Very perfect extinction must be obtained and a special elliptic compensator employed.



In the Cooke Biologists Polarizing microscope a special $\lambda/20$ mica plate compensator is built into the substage, capable of rotation by an extended arm against an arc graduated from 0–120°, with a vernier reading in tenths of a degree. Special high-extinction polars are fitted to the microscope stand. With this equipment it is possible to measure with reasonable accuracy retardations down to $\lambda/1500$ (3.3A°) and to detect them down to $\lambda/3000$ (1.7A°). The mica plate compensator can be swung out of the optical train, allowing normal examination and measurement techniques when these are desired.

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Mathematical Assoc. of America, Committee on Undergraduate Program in Mathematics (R. J. Wisner, Michigan State Univ., Oakland, Rochester). 30 Dec.

Metric Assoc. (R. P. Fischelis, 502 Albee Bldg., NW, Washington, D.C.). 27–30 Dec.

National Assoc. of Biology Teachers (Miss M. Beuschlein, Chicago Teachers College, Chicago, Ill.). 27–30 Dec.

National Assoc. for Research in Science Teaching (Miss E. M. Selberg, Colorado State College, Greeley). 27–30 Dec.

National Assoc. of Science Writers (H. B. Nichols, U.S. Geological Survey, Washington, D.C.). 27 Dec.

National Geographic Soc. (R. Gray, National Geographic Soc., Washington, D.C.). 30 Dec.

National Science Teachers Assoc. (Miss M. Gardner, Natl. Science Teachers Assoc., Washington, D.C.). 27–30 Dec.

National Speleological Soc. (W. R. Halliday 1117 36 Ave., East, Seattle, Wash.). 29 Dec.

Philosophy of Science Assoc. (C. W. Churchman, Univ. of California, Berkeley). 29 Dec.

Scientific Research Soc. of America (D. B. Prentice, 51 Prospect St., New Haven, Conn.). 29 Dec.

Sigma Delta Epsilon (Miss E. B. Thurman, Natl. Institutes of Health, Bethesda, Md.). 28 Dec.

Society for General Systems Research (R. L. Meier, Univ. of Michigan, Ann Arbor). 29 Dec.

Society for Industrial and Applied Mathematics (D. L. Thomsen, Jr., I.B.M. Corp., White Plains, N.Y.). 29 Dec.

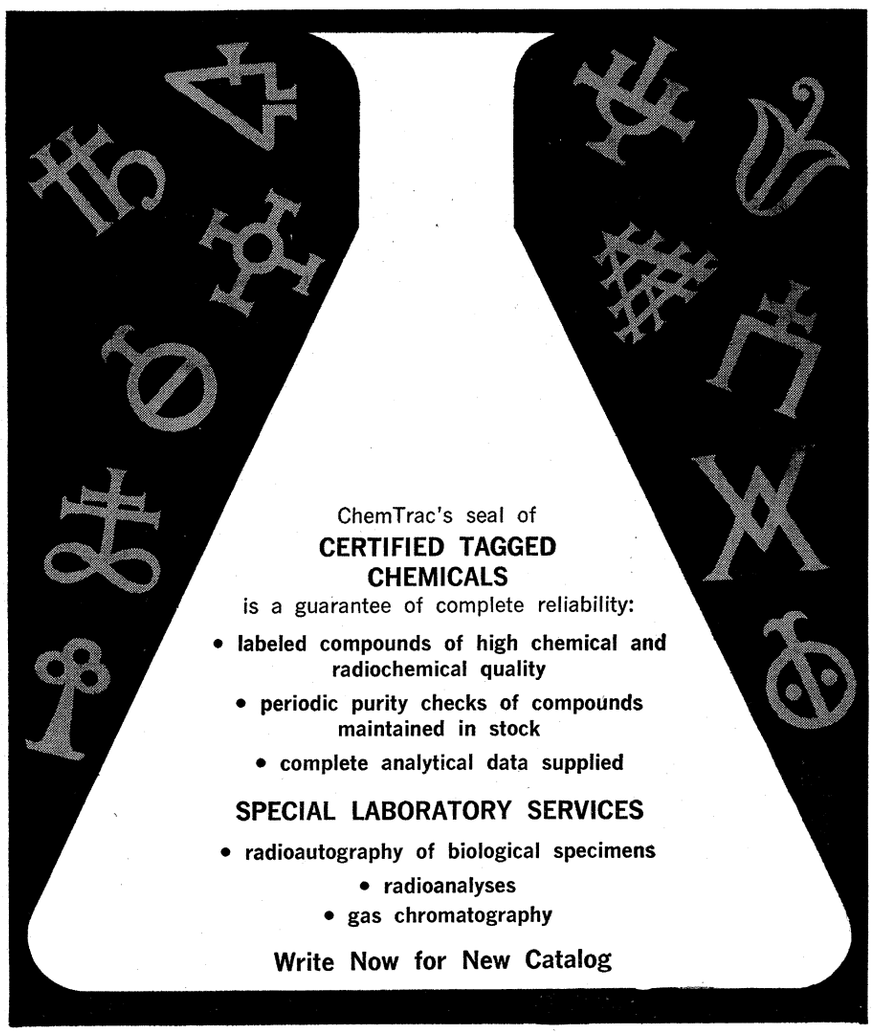
Society of Protozoologists (N. D. Levine, College of Veterinary Medicine, Univ. of Illinois, Urbana). 27–30 Dec.

Society of the Sigma Xi (T. T. Holme, 51 Prospect St., Yale Univ., New Haven, Conn.). 29 Dec.

Society of Systematic Zoology (C. F. Lytle, Tulane Univ, New Orleans, La.). 27–30 Dec.

Tau Beta Pi Assoc. (R. H. Nagel, Univ. of Tennessee, Knoxville). 29 Dec.

United Chapters of Phi Beta Kappa (C. Billman, 1811 Q St., NW, Washington 9). 29 Dec.



CERTIFIED TAGGED CHEMICALS

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27–29. American Economic Assoc., New York, N.Y. (J. W. Bell, AEA, Northwestern Univ., Evanston, Ill.)

27–29. American Folklore Soc., Cincinnati, Ohio. (T. P. Coffin, 110 Bennett Hall, Univ. of Pennsylvania, Philadelphia 4, Pa.)

27–29. American Geophysical Union, 1st western natl., Los Angeles, Calif. (A. N. Sayre, U.S. Geological Survey, Washington 25)

27–29. American Physical Soc., Los Angeles, Calif. (K. K. Darrow, 538 W. 120 St., New York 27)

27–29. Western Soc. of Naturalists, Eugene, Ore. (I. A. Abbott, Hopkins Marine Station, Pacific Grove, Calif.)

27–30. Institute of Mathematical Statistics, annual, New York, N.Y. (D. C. Riley, American Statistical Assoc., 1757 K St., NW, Washington 6)

28–29. American Chemical Soc., Div. of Industrial and Engineering Chemistry, Newark, Del. (Scientific Liaison Office, Natl. Research Council, Sussex Dr., Ottawa, Canada)

28–29. Linguistic Soc. of America, annual, Chicago, Ill. (A. A. Hill, Box 7790 University Station, Austin 12, Texas)

28–29. Northwest Scientific Assoc., Spokane, Wash. (E. J. Larrison, Univ. of Idaho, Moscow)

28–30. Archaeological Inst. of America, Detroit, Mich. (L. A. Campbell, 5 Washington Square N., New York 3)

28–30. Phi Delta Kappa, Bloomington, Ind. (R. S. Merkel, Indiana Central College, Indianapolis 27)

January

2–3. California Assoc. of Chemistry Teachers, San Luis Obispo, Calif. (R. Major, 1736 N. Sierra Bonita Ave., Hollywood 46, Calif.)

8–12. International Heat Transfer Conf., Institution of Mechanical Engineers, London, England. (Secretary, IME, 1 Birdcage Walk, Westminster, London, S.W. 1, England)

8–12. Society of Automotive Engineers, annual, Detroit, Mich. (R. W. Crory, SAE, 485 Lexington Ave., New York 17, N.Y.)

8–13. Central Treaty Organization, Role of Science in Natural Resources, Lahore, Pakistan. (Office of Intern. Conferences, Dept. of State, Washington 25)

9–11. Reliability and Quality Control, 8th natl. symp., Institute of Radio Engineers and American Inst. of Electrical Engineers, Washington, D.C. (Scientific Liaison Office, Natl. Research Council, Sussex Dr., Ottawa, Ont., Canada)

9–12. Radioactive Isotopes in Clinical Medicine and Research, 2nd symp., Bad Gastein, Austria. (R. Höfer, Garnisongasse 13, Vienna IX, Austria)

9–19. Synoptic Meteorology Code Problems, World Meteorological Organization,

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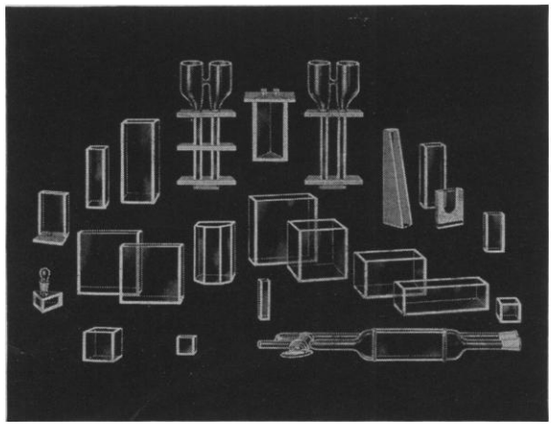

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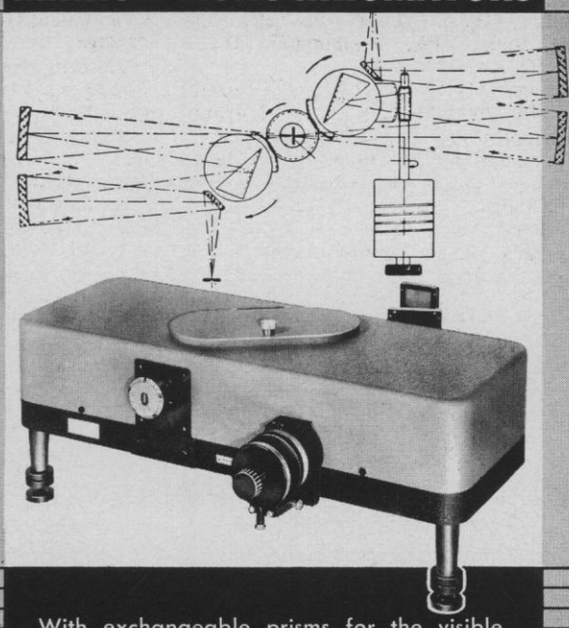

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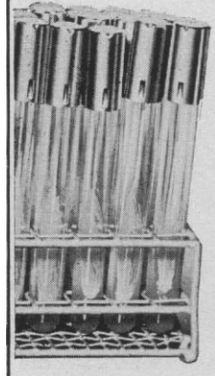

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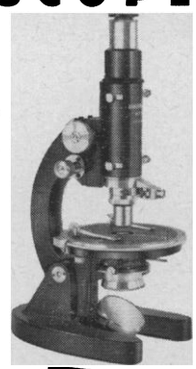

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11. Role of Hormones in Protein Synthesis, Assoc. of Vitamin Chemists, Chicago, Ill. (H. S. Perdue, Abbott Laboratories, N. Chicago)

15–17. American Pomological Soc., Toronto, Canada. (G. M. Kessler, Dept. of Horticulture, Michigan State Univ., E. Lansing)

17–19. Instrument Soc. of America, winter conf. and exhibit, St. Louis, Mo. (W. H. Kushnick, ISA, 313 Sixth Ave., Pittsburgh 22, Pa.)

18–31. Tropical Cyclones, inter-regional seminar, World Meteorological Organization, Tokyo, Japan. (WMO, 41 Avenue Giuseppe Motta, Geneva, Switzerland)

22. American Ethnological Soc., New York, N.Y. (N. F. S. Woodbury, Arizona State Museum, Univ. of Arizona, Tucson)

22–23. Symposium on Perspectives in Virology III, New York, N.Y. (M. Pollard, Univ. of Notre Dame, Notre Dame, Ind.)

22–24. Institute of the Aerospace Sciences, 30th annual, New York, N.Y. (IAS, 2 E. 64 St., New York 21)

22–26. American Mathematical Soc., annual, Cincinnati, Ohio. (AMS, 190 Hope St., Providence 6, R.I.)

23. Conference on Cardiac and Vascular Surgery, New York Heart Assoc., New York, N.Y. (R. Ober, NYHA, 10 Columbus Circle, New York 19)

23–25. American Soc. of Safety Engineers, Philadelphia, Pa. (A. C. Blackman, 5 N. Wabash Ave., Chicago 2, Ill.)

23–25. Obstetrics and Gynaecology, 2nd Asiatic congr., Calcutta, India. (S. Mitra, 4 Chowringhee Terrace, Calcutta 20)

24–26. Mathematical Assoc. of America, 45th annual, Cincinnati, Ohio. (H. M. Gehman, Univ. of Buffalo, Buffalo, N.Y.)

24–26. Thermophysical Properties, symp., American Soc. of Mechanical Engineers, Princeton, N.J. (E. F. Lype, ASME, c/o Thompson Ramo Wooldridge, 23555 Euclid Ave., Cleveland, Ohio)

24–27. American Physical Soc., annual, New York, N.Y. (K. K. Darrow, 538 W. 120 St., New York 27)

25–26. Western Spectroscopy Assoc., 9th annual, Pacific Grove, Calif. (D. G. Rea, WSA, Univ. of California Space Sciences Laboratory, Berkeley 4)

25–27. Western Soc. for Clinical Research, 15th annual, Carmel-by-the-Sea, Calif. (H. R. Warner, WSCR, Latter-day Saints Hospital, Dept. of Physiology, Salt Lake City 3, Utah)

26–29. Man and Civilization: Control of the Mind—II, San Francisco, Calif. (S. M. Farber, Univ. of California San Francisco Medical Center, San Francisco 22)

28–3. American Inst. of Electrical Engineers, New York, N.Y. (R. S. Gardner, AIEE, 33 W. 39 St., New York 18)

28–3. Pan American Assoc. of Ophthalmology, interim congr., Lima, Peru. (J. M. McLean, 525 E. 68 St., New York 21)

29–30. Carbohydrates, Cellulose, and Cellulose Industries, symp., Council of Scientific and Industrial Research, Ahmedabad, India. (Director, Ahmedabad Textile Industry Research Assoc., Ahmedabad-9)

(See issue of 1 December for comprehensive list)

New Products

The information reported here is obtained from manufacturers and from other sources considered to be reliable. Neither Science *nor the writer assumes responsibility for the accuracy of the information. All inquiries concerning items listed should be addressed to the manufacturer. Include the department number in your inquiry.*

Microbalance (Fig. 1), manufactured by Sartorius-Werke (Germany), is a self-balancing instrument with electrical indication. The beam of the balance consists of two quartz arms fused onto a quartz ring. The ring carries a wire coil wound on its inside surface, and is suspended by platinum-iridium torsion wires that also serve as current leads to the coil. The coil surrounds a cross-magnetized ceramic magnet that supports another coil through which a 480-kcy/sec current flows. When the balance is at equilibrium, the beam coil is not exposed to the high-frequency field. If the beam deviates from the equilibrium position because of a weight change, a 480-kc/sec signal is induced in the beam coil. This is used as an error signal to generate a counteracting current that is applied to the beam coil to return the coil to its equilibrium position. The counter torque is proportional to the current that produces it, so that the latter is a measure of the torque acting on the beam. At maximum sensitivity, 1 μa is equivalent to 1 μg.

The object to be weighed is placed on a small pan or suspended by wire from a hook on the stirrup. Preliminary zeroing is achieved by adjusting a counterweight that compensates for that portion of the sample weight in excess of the selected range. Final correction is made by dials controlling the torsion wire.

Stability of the balance depends on