

SCIENCE

1 June 1962

Vol. 136, No. 3518

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE



*New
developments
in the*
**ANALYTICAL
ULTRACENTRIFUGE...**

A Sharper Eye in the UV

Biochemists measuring molecular properties with the ultracentrifuge usually select either schlieren optics or interference optics to record the behavior of molecules in the centrifugal field.

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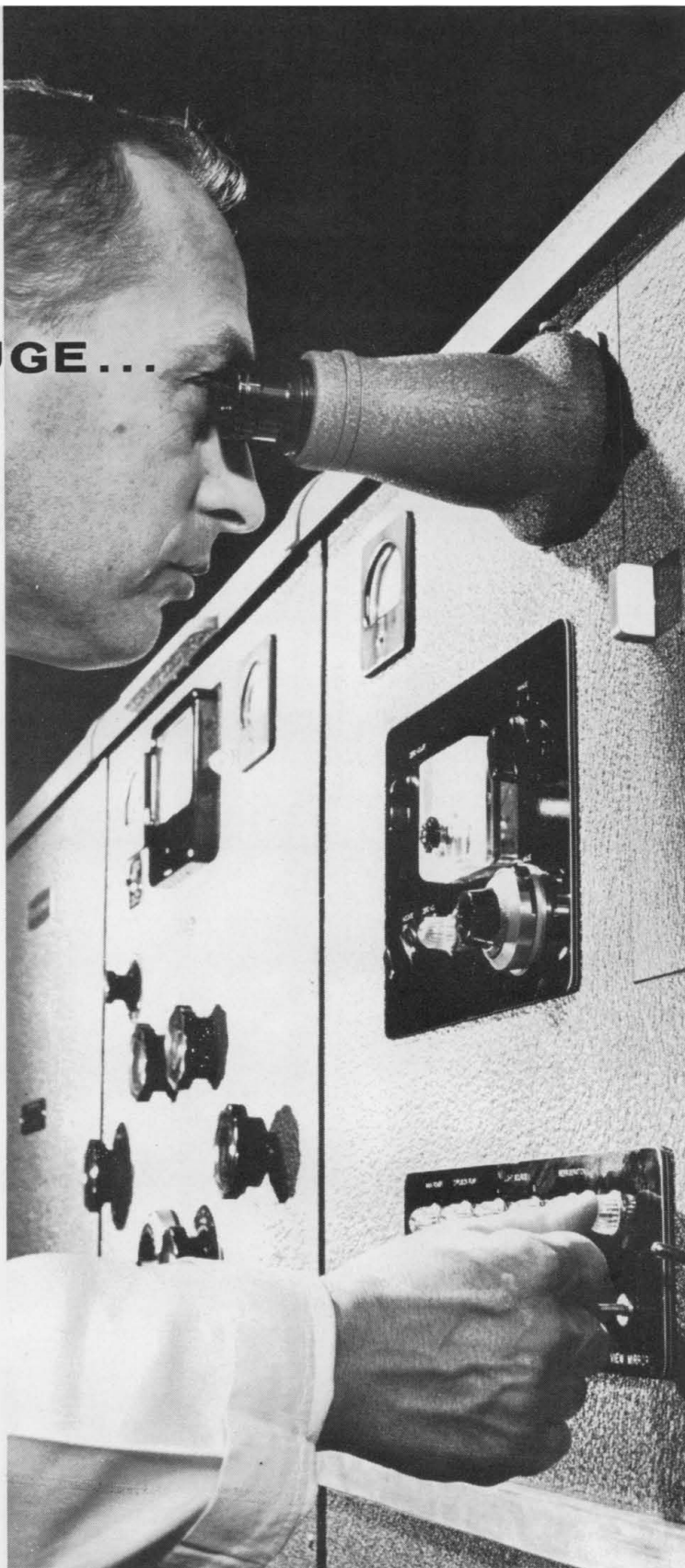
Absorption optics, having come of age, promise to be increasingly useful in molecular research with the ultracentrifuge.

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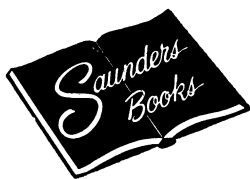


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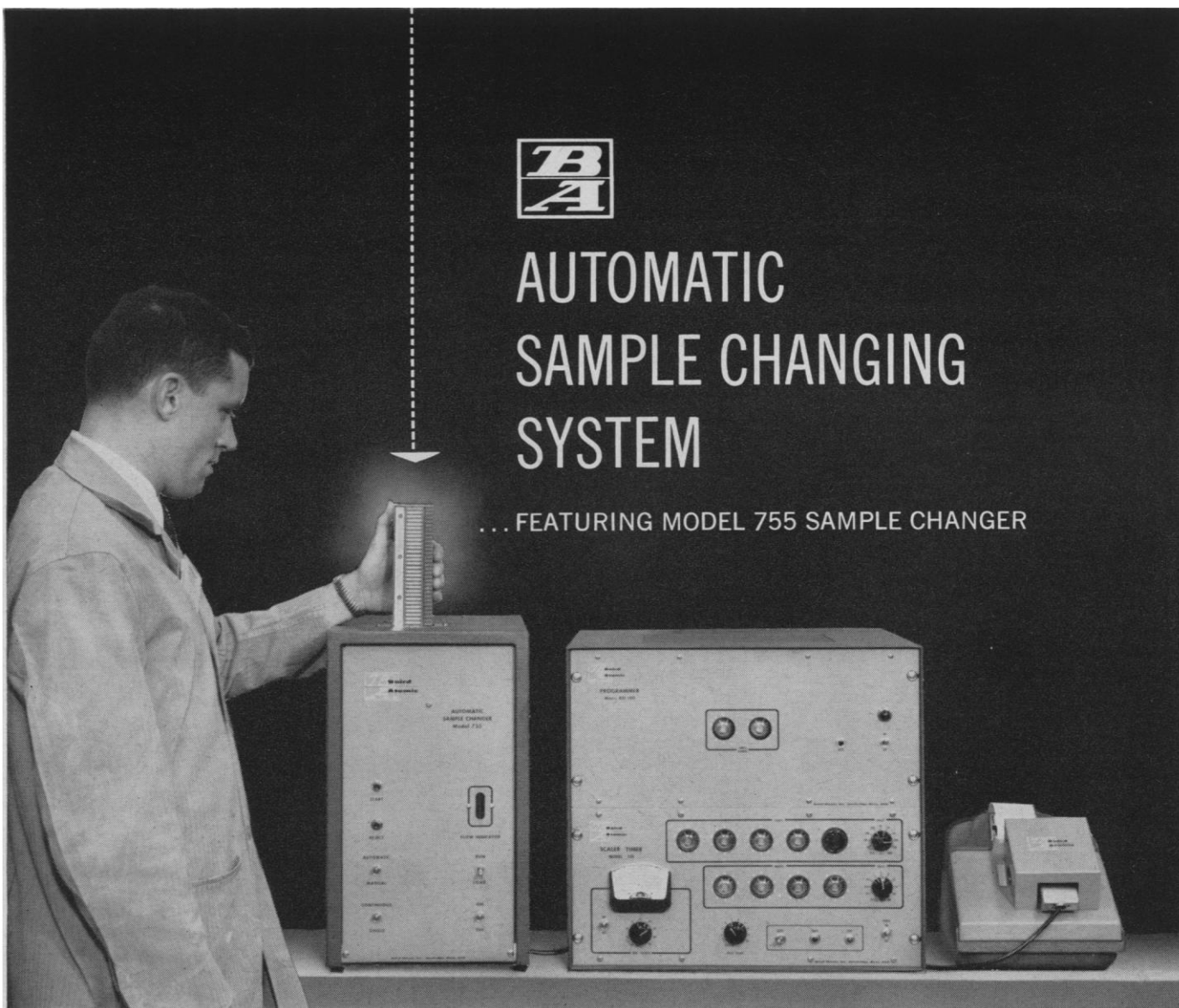
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NEW!



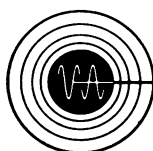
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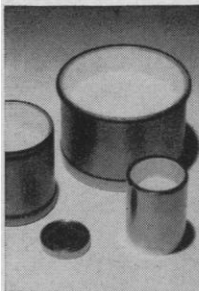
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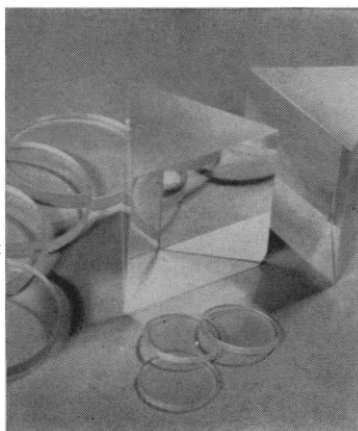
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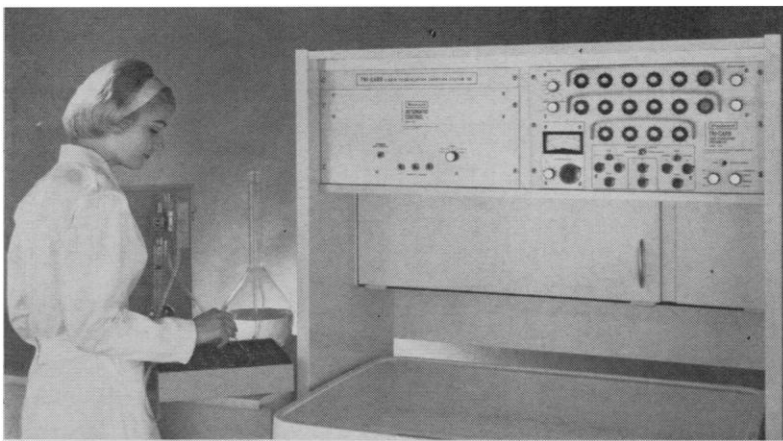
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SCIENCE, now combined with THE SCIENTIFIC MONTHLY, is published each Friday by the American Association for the Advancement of Science at National Publishing Company, Washington, D.C. SCIENCE is indexed in the *Reader's Guide to Periodical Literature*.

Editorial correspondence should be addressed to SCIENCE, 1515 Massachusetts Ave., NW, Washington 5, D.C. Manuscripts should be typed with double spacing and submitted in duplicate. The AAAS assumes no responsibility for the safety of manuscripts. Opinions expressed by authors are their own and do not necessarily reflect the opinions of the AAAS or the institutions with which the authors are affiliated. For detailed suggestions on the preparation of manuscripts, see *Science* 125, 16 (4 Jan. 1957).

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New Institute for Biological Studies at San Diego

Science is an accumulative enterprise. That is a reason why the various branches of science experience their major developments successively rather than simultaneously.

A certain amount of mathematical reasoning had to occur before mechanics could progress. Much advance had to be made in the more mechanical aspects of physics before electrical theories could go forward. A great deal of mathematics and physics and chemistry had to be developed before the biological sciences could emerge out of their more descriptive stages into the present stage.

It is not difficult to understand why the whole range of the physical sciences experienced such a dramatic forward surge over the century from 1850 to 1950. For the same basic reasons it is clear that the century beginning in 1950 will see the conquering forward surge of biology.

The beginning of this biological era has already, and unquestionably, occurred. We have gained marvellous new knowledge, much of it at the level of molecular detail, of what goes on inside individual cells. We are beginning to analyze the interrelations between enzymology, genetics, and immunology. We can see vaguely ahead the way into an understanding of the functioning of the central nervous system.

It is not possible to overestimate the promise and power of the knowledge that will be gained in the next 50 years concerning the basic character of life processes. In the most practical terms, our position vis-à-vis disease of all sort should be as different, 50 years from now, as intercontinental telephony is different from a whispered voice.

Even more significant than practical results of this sort, moreover, will be the contribution to man's inner life of the mind and the spirit. For at last man will begin to understand his own nature, his place in the total universe of living and nonliving matter, his essential oneness with the star, the cell, and the atom.

These triumphs will not be brought about by setting up "projects" or by financing crash programs. They will be brought about by giving flexible freedom to scholarly scientists, by encouraging them to undertake imaginative basic research on the essential nature of the life processes, however long-range, however "impractical," these studies may appear to be.

This kind of science, moreover, ends up by being something more than science. For as the biological nature of man becomes discernible, the closer and more fruitful will become the interconnections with humanistic, philosophical, artistic, and ethical ideas.

These are, in brief, the reasons why this is a good moment to expand and intensify biological research. A new Institute for Biological Studies, however, is justified only if it offers a quality of opportunity not to be gained by the expansion of existing facilities. Those responsible for planning the new institute now being built are determined to create an atmosphere of unparalleled freedom and flexibility, within which the controls will rest with the scholar-scientists but without any burden of administrative duties, without any handicap of outmoded departmental structure, and with the closest association between scientists who are humanists, and humanists with an informed appreciation of science.—WARREN WEAVER, *Alfred P. Sloan Foundation, New York*

(Erratum: The figure given in the editorial of 11 May for the minimum salary of a full professor at Harvard, \$18,750, is an average salary. The minimum salary, including fringe benefits, is \$13,860.)

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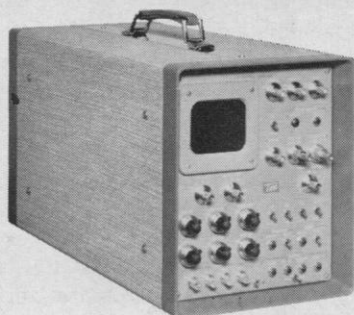
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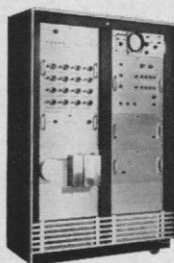
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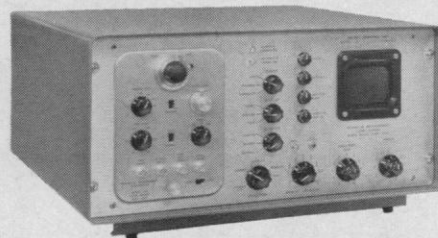
Model 500 Paper Tape Printer; Model 510 Typewriter Drive Unit; Model 530 IBM Computer Typewriter; Model 550 Paper Tape Reader plus various readout control units. Also, auxiliary equipment such as the Model 561 Visual Readout Indicator; Model 566 5" Oscilloscope Display Unit; X-Y plotters, null detectors, and character printers are all available as 400 series accessories.



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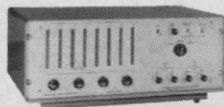


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Meetings

Forthcoming Events

June

25-30. Electromagnetic Theory and Antennas, symp., Copenhagen, Denmark. (Symp. Secretary, Øster Voldgade 10G, Copenhagen K.)

25-20 July. National Science Foundation, Summer Conf. for College Teachers of the History of Mathematics, Ann Arbor, Mich. (P. S. Jones, Dept. of Mathematics, Univ. of Michigan, Ann Arbor)

26-28. American Assoc. of Physics Teachers, Northfield, Minn. (R. P. Winch, Dept. of Physics, Williams College, Williamstown, Mass.)

26-28. American Meteorological Soc., general meeting, Fairbanks, Alaska. (J. E. Miller, Dept. of Meteorology and Oceanography, New York Univ., University Heights, New York 53)

26-29. American Home Economics Assoc., Miami Beach, Fla. (D. S. Miller, 3705 Van Buren Ave., Corvallis, Ore.)

26-29. Poultry Science Assoc., Urbana, Ill. (C. B. Ryan, Texas A & M College, College Station)

26-30. Rarefied Gas Dynamics, intern. symp., Paris, France. (L. Talbot, Dept. of Aeronautical Sciences, Univ. of California, Berkeley)

26-4. German Chemical Engineering

Congr. and Exposition, Frankfurt am Main. (J. J. Doheny, American Chemical Soc., 86 E. Randolph St., Chicago 1, Ill.)

27-28. Computers and Data Processing, symp. annual, Estes Park, Colo. (W. H. Eichelberger, Denver Research Inst., Univ. of Denver, Denver 10, Colo.)

27-30. Society of Nuclear Medicine, annual, Dallas, Tex. (S. N. Turiel, SNM, 430 N. Michigan Ave., Chicago 11, Ill.)

28-29. Radio Frequency Interference, natl. symp., San Francisco, Calif. (R. G. Davis, Dept. 58-25, Lockheed Missile & Space Co., P.O. Box 504, Sunnyvale, Calif.)

28-30. Joint Automatic Control Conf., annual, New York, N.Y. (A. S. Robinson, Kollsman Instrument Corp., 80-08 45th Ave., Elmhurst 73, N.Y.)

28-30. Secondary Fungus Infections, intern. conf., Durham, N.C. (E. W. Chick, Veterans Administration Hospital, Durham)

30-7. International Conf. on Health and Health Education, Philadelphia, Pa. (Conf. Secretariat, ICHHE, 800 Second Ave., New York 17)

July

1-4. European Chest Surgery Congr., annual, Stockholm, Sweden. (C. Crafoord, Karolinska Institutet, Stockholm 60)

1-4. European Soc. of Cardiovascular Surgery, Stockholm, Sweden. (G. Arnuff, 1, pl. Gaillon, Lyons, France)

1-4. Oral Surgery, intern. conf., Lon-

don, England. (D. C. Trexler, American Soc. of Oral Surgeons, 840 N. Lake Shore Dr., Chicago 11, Ill.)

1-5. Operational Research, intern. conf., Oslo, Norway. (Sir A. Goodeve, International Federation of Operational Research Societies, 11 Park Lane, London, W.1, England)

1-7. Rehabilitation, European natl. conf. and course, Cambridge, England. (I. R. Henderson, British Council for Rehabilitation, Tavistock House, Tavistock Sq., London, W.C.1)

1-7. Science in General Education, conf., Basutoland, S. Africa. (Institute of Education, Univ. College of Pius XII, Basutoland)

2-4. High-Resolution Nuclear Magnetic Resonance Spectroscopy, symp., Boulder, Colo. (M. T. Rogers, Dept. of Chemistry, Michigan State Univ., East Lansing)

2-4. Structure of Solid Metallic Solutions, intern. colloquium, Orsay, France. (Prof. Guinier, National Scientific Research Center, 16 rue Pierre Curie, Paris 5^e, France)

2-5. International Federation of Societies of Cosmetic Chemists, London, England. (A. Herzka, Pressurized Packaging Consultants, Ltd., Ashbourne House, Alberon Gdns., London, N.W.11)

2-6. Biological Effects of Ionizing Radiation at the Molecular Level, symp., Brno, Czechoslovakia. (International Atomic Energy Agency, 11 Kaerntnerring, Vienna 1, Austria)

2-6. Ionosphere, conf., London, England. (Administrative Assistant, Institute of Physics and Physical Soc., 47 Belgrave Sq., London, S.W.1)

2-6. Northern Forest Congr., Oslo, Norway. (T. Austin, Nordiske Skogkongress, Akersgaten 42, Oslo)

2-7. Magnetic and Electric Resonance and Relaxation, intern. conf., Eindhoven, Netherlands. (D. J. Kroon, Philips Research Laboratories, Eindhoven)

2-7. National Education Assoc. of the United States, Denver, Colo. (W. G. Carr, 1201 Sixteenth St., NW, Washington 6, D.C.)

2-11. South African Chemical Institute, Johannesburg, S. Africa. (Secretary, SACI, P.O. Box 3361, Johannesburg)

2-14. Biology of Tuna and Related Species, intern. mtg., U.N. Food and Agriculture Organization, La Jolla, Calif. (J. L. McHugh, Bureau of Commercial Fisheries, Washington 25, D.C.)

3-7. Acta Endocrinologica Congr., Geneva, Switzerland. (R. Borth, Laboratoire de la Maternité, Hôpital de Genève, Geneva)

3-13. Malariology, inter-African conf., Yaounde, Cameroun, Africa. (World Health Organization, Palais des Nations, Geneva, Switzerland)

4-11. High-Energy Physics, intern. conf., Geneva, Switzerland. (E. W. D. Steel, CERN, Geneva 23, Switzerland)

5-12. Health and Nutrition Education, inter-African semin., Point Noire, Congo Republic. (Commission for Technical Cooperation in Africa South of the Sahara, Pvt. Mail Bag 2359, Lagos, Nigeria)

7-14. International Dental Congr., Cologne, Germany. (R. Braun, Universitätsstr. 73, Köln-Lindenthal, Germany)

8-12. Pan American Tuberculosis Congr., Guatemala City, Guatemala. (Ho-

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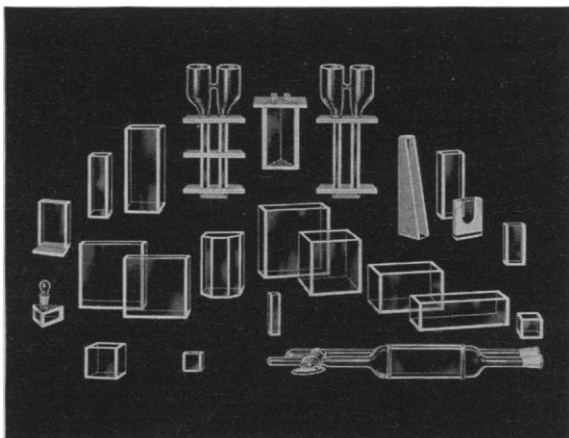
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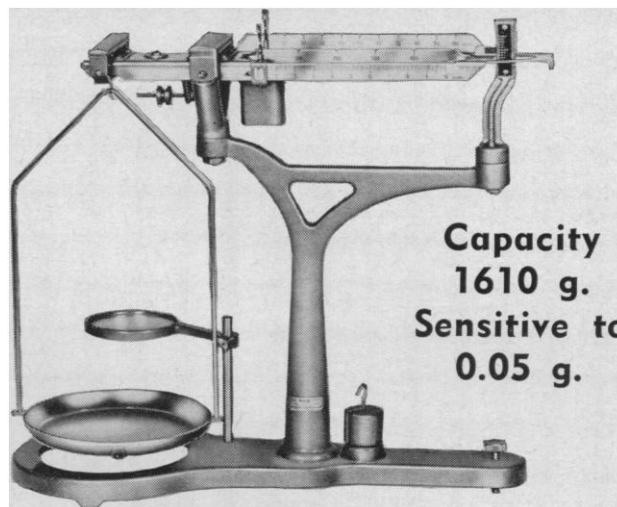
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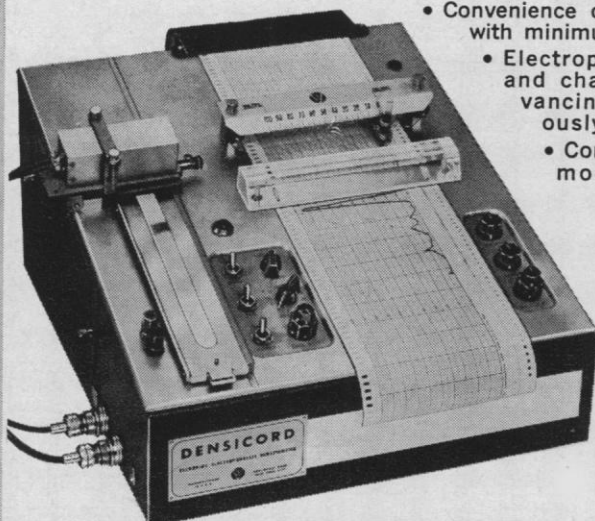
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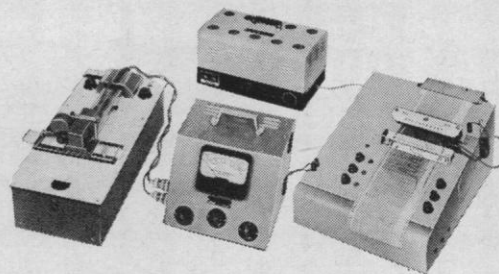
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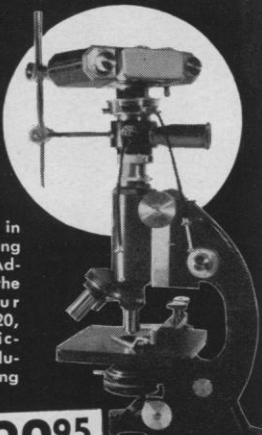
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8-12. Psychosomatic Medicine and Childbirth, 1st intern. congr., Paris, France. (L. Chertok, Société Française de Médecine Psychosomatique, 54, av. de la République, Villejuif [Seine], France)

8-15. International Assoc. of Dental Students, congr., Düsseldorf, Germany. (D. H. Clark, Royal Dental Hospital, Leicester Sq., London, W.C.2, England)

8-15. International Council of Scientific Unions, Abstracting Board, Moscow, Russia. (G. A. Boutry, 292 rue Saint-Martin, Paris 3°, France)

9-10. Sonar Systems, symp., Birmingham, England. (British Institution of Radio Engineers, 9 Bedford Square, London, W.C.1)

9-11. Astrophysics, intern. symp., Liège, Belgium. (P. Swings, Institute of Astrophysics, Cointe-Sclessin, Belgium)

9-11. NATO Advisory Group for Aeronautical Research and Development, Paris, France. (NATO, 64 rue de Varenne, Paris 17°)

9-13. European Forestry Commission, session on torrent control, avalanche protection, and watershed management, Italy. (International Agency Liaison Branch, Office of Director General, Food and Agriculture Organization, Viale delle Terme di Caracalla, Rome, Italy)

9-13. International Academy of Pathology, congr., Zurich, Switzerland. (F. K. Mostofi, Armed Forces Institute of Pathology, Washington 25, D.C.)

9-13. Reticulo-Endothelial System and Immunity, intern. colloquium, Gif-sur-Yvette, France. (Prof. Halpern, National Scientific Research Center, 16 rue Pierre Curie, Paris 5°, Fr.)

9-14. Glass, intern. congr., Washington, D.C. (C. H. Hahner, Glass Section, National Bureau of Standards, Washington 25)

9-15. Clinical Aviation and Aerospace Medicine, mtg., NATO Advisory Group for Aeronautical Research and Development, Paris, France. (NATO, 64 rue de Varenne, Paris 17°)

9-27. Commission for Agricultural Meteorology, World Meteorological Organization, Toronto, Canada. (WMO, Geneva, Switzerland)

11-12. Bird Control, natl. seminar, Bowling Green, Ohio. (W. B. Jackson, Dept. of Biology, Bowling Green State Univ., Bowling Green)

11-21. South Pacific Conf., Utulei, American Samoa. (Secretary General, South Pacific Commission, P.O. Box 9, Nouméa, New Caledonia)

12-15. French Congr. of Anesthesiology, Montpellier, France. (J. du Cailar, Clinique Saint-Elio, Centre Hospitalier Universitaire, Montpellier)

15. International Soc. of Psychopathology of Expression, congr., Antwerp, Belgium. (ISPE, Cept. d'Art Psychopathologique, Centre Psychiatrique Sainte-Anne, 1 rue Cabanis, Paris 14°, France)

15. Psychosomatic Aspects of Odontostomatology, intern. symp., Milan, Italy. (B. Acht, Piazzetta Umberto Giordano 2, Milan)

16-18. Instrumentation, intern. conf., Hamburg, Germany. (Conference Secretariat, CERN, Geneva 23, Switzerland)

16-18. Instrumentation for High-Energy Physics, intern. conf., Geneva, Switzerland. (E. W. D. Steel, CERN, Geneva 23)

16-19. Novae, Novoids, and Supernovae, intern. colloquium, Lyons, France. (J. Dufay, Faculté des Sciences, Université de Lyons, 30 rue de Cavenne, Lyons)

16-20. Carbohydrate Chemistry, intern. symp., Birmingham, England. (General Secretary, Chemical Soc., Burlington House, London W.1)

16-20. Paramagnetic Resonance, 1st intern. conf., Jerusalem, Israel. (W. Low, Hebrew Univ. of Jerusalem)

16-20. Physics of Semiconductors, intern. conf., Exeter, England. (Administrative Assistant, Institute of Physics and Physical Soc., 47 Belgrave Sq., London, S.W.1)

16-25 Aug. Theoretical Physics, semin., Trieste, Italy. (International Atomic Energy Agency, 11 Kaerntnerring, Vienna 1, Austria)

17-18. Data Acquisition and Processing in Medicine and Biology, conf., Rochester, N.Y. (K. Enslein, Brooks Research, Inc., P.O. Box 271, E. Rochester)

17-19. Lunar Missions, mtg., American Rocket Soc., Cleveland, Ohio. (J. J. Harford, ARS, 500 Fifth Ave., New York 36, N.Y.)

17-20. Fluorine Chemistry, intern. symp., Estes Park, Colo. (D. N. Gray, Denver Research Institute, Denver 10, Colo.)

17-21. American Nuclear Soc., natl. mtg., Boston, Mass. (O. J. Du Temple, ANS, 86 E. Randolph St., Chicago 1, Ill.)

18-10. Water and Soil Utilization, intern. semin., Brookings, S.D. (I. B. Johnson, Dept. of Animal Husbandry, South Dakota State College, Brookings)

21-28. Institute on Religion in an Age of Science, annual summer conf., Star Island, N.H. (IRAS, 280 Newton St., Brookline 46, Mass.)

22-26. AAAS Alaska Division, Juneau, Alaska. (A. Sosnkowski, Alaska State Museum, Box 2051, Juneau)

22-28. Cancer, intern. congr., Moscow, U.S.S.R. (L. Shabad, Academy of Medical Sciences of the U.S.S.R., 14 Solyanka, Moscow)

22-28. Latin American Congr. of Gynecology and Obstetrics, Bogotá, Colombia. (R. Camero, Apartado No. 2463, Bogotá)

27-31. Psychoanalysis, intern. forum, Amsterdam, Netherlands. (L. Salzman, 1610 New Hampshire Ave., Washington 9, D.C.)

27-31. Recent Advances in Experimental and Theoretical Methods of Crystal Structure Research, symp., Munich, Germany. (F. Bopp, Institut für Theoretische Physik, Universität München, Schellingstrasse 4-8, Munich)

28-4. International Geographical Association (Esperantist), Odense, Denmark. (P. Thorsen, Dyblandsvangen 7, Copenhagen, Denmark)

30-10. Recent Advances in Clay Mineralogy, semin., University Park, Pa. (College of Mineral Industries and Continuing Education, Pennsylvania State Univ., University Park)

(See 18 May issue for comprehensive list)