T. Puck (University of Colorado, Denver) discussed studies on the genetic analysis of somatic mammalian cells in vitro. He described techniques for inducing and selecting auxotrophic mutants in stable lines of monosomic hamster cells. Puck stressed that these techniques could be applied now to the testing of mutagenic and oncogenic agents and to the testing of food additives and drugs and other potential environmental pathogens. Using the techniques of cell fusion, he was able to perform complementation analysis on several mutations involving auxotrophy for the amino acid glycine. He discussed the application of these techniques to the study of linkage, to assignment of genes to human chromosomes, and to the investigation of dominant and recessive gene effects.

W. Nyhan (University of California, San Diego) reported studies on a family with hypoxanthine-guanine-phosphoribosyl transferase (HGPRT) deficiency, and X-linked disorder, characterized by choreoathetosis and self-mutilation with hyperuricemia and gout at an early age. Female heterozygotes, carriers for the disease, have normal red blood cell HGPRT enzyme activity. In this particular kindred, glucose-6-phosphate dehydrogenase (G6PD), another Xlinked biochemical marker, was present in heterozygous A/B form. Both electrophoretic types were expressed in fibroblasts, but in the red blood cells only G6PD B was expressed. Cloning of fibroblasts showed that the G6PD A and the HGPRT-deficiency genes were on one X chromosome and that G6PD B and normal HGPRT genes were on the other X chromosome. The most probable explanation for the finding of G6PD B and normal HGPRT activity in red blood cells is that selection occurs against the HGPRT-deficient red blood cells.

J. Seegmiller (University of California, San Diego) described several basic biological processes that have been studied with HGPRT-deficient cells in tissue culture. At high cell density, mutant cells had some enzyme activity, which was due to a process called metabolic cooperation, mediated through physical contact between mutant and normal cells. Cell fusion of a G6PDdeficient fibroblast with an HGPRTdeficient fibroblast yielded clones having both activities, demonstrating that both X chromosomes remained active in the tetraploid hybrid cells. In attempts to transform HGPRT-deficient cells with DNA from normal cells, HGPRT-

positive cells were detectable at a low frequency, but no HGPRT-positive cells could be cloned. These results are interpreted to indicate abortive transformation.

At the close of the meeting, some problems of intrauterine diagnosis by amniocentesis were discussed. It was pointed out that some enzymes in early pregnancy have not reached postnatal or adult levels of activity. It will be necessary to study the ontogenesis of enzyme activity for all enzymes involved in inborn errors of metabolism so that accurate diagnosis at different stages of fetal development will be possible. The need for standardized, well-controlled techniques and for reference laboratories was emphasized.

THOMAS GELEHRTER ARNO G. MOTULSKY GILBERT S. OMENN

Departments of Medicine and Genetics, University of Washington, Seattle

Forthcoming Events

September

21–24. International Conf. on Engineering in the Ocean Environment, Panama City, Fla. (W. E. Burt, U.S. Naval Ship Research and Development Lab., Panama City 32401)

21–25. Intersociety Energy Conversion Engineering Soc., Las Vegas, Nev. (A. Smith, Kirkland Air Force Base, Albuquerque, N.M. 87117)

22–24. Physics and Nondestructive Testing Symp., 10th annual, Chicago, Ill. (W. J. McGonnagle, P.O. Box 554, Elmhurst, Ill. 60126)

22-1. Symposium on the Development and Utilization of Geothermal Resources, Pisa, Italy. (G. R. Robson, United Nations Geothermal Symp., United Nations, New York 10017)

23–24. Electron Device Techniques Conf., New York, N.Y. (M. Gallagher, Hughes Research Labs., 3011 Malibu Canyon Rd., Malibu, Calif. 92265)

23-25. International Symp. on Sporopollenin, London, England. (J. Brooks, c/o Dept. of Geology, Royal School of Mines, Imperial College, London S.W.7)

23–26. Academy of Psychosomatic Medicine, San Francisco, Calif. (E. Dunlop, 150 Emory St., Attleboro, Mass. 02703)

24–26. Federation-Unified Science Education Conf., Portland, Ore. (M. Fiasca, General Sciences Dept., Portland State Univ., P.O. Box 751, Portland 97207)

24-27. American Medical Writers' Assoc., New York, N.Y. (W. W. Curtis, AMWA, 420 Lexington Ave., New York 10017)

26–31. American Fracture Assoc., New York, N.Y. (H. W. Wellmerling, 610 Griesheim Bldg., Bloomington, Ill. 61701) 27–28. Society for Pediatric Radiology, Miami Beach, Fla. (J. L. Quinn, Chil-

dren's Hospital, 4650 Sunset Blvd., Los Angeles, Calif. 94305)

27-30. American Mining Congr., Denver, Colo. (R. W. Van Evera, Ring Bldg., Washington, D.C. 20036)

27-1. International Soc. of **Fat Research**, 10th congr., Chicago, Ill. (F. Bradley, 135 Sharps Lane, Ruislip, Middlesex, England)

27-1. American Oil Chemists' Soc., Chicago, Ill. (C. H. Hauber, AOCS, 35 E. Wacker Dr., Chicago 60601)

27-1. National Therapeutic Recreation Soc., Philadelphia, Pa. (D. C. Park, NTRS, 1700 Pennsylvania Ave., NW, Washington, D.C.)

28-30. Fast Reactor Fuel and Fuel Elements, Karlsruhe, Germany. (K. Wirtz, Univ. of Karlsruhe, Kaiserstrasse 12, 75 Karlsruhe)

28-30. Conference on Immunological Tolerance to Microbial Antigens, New York, N.Y. (H. Friedman, Albert Einstein Medical Center, Philadelphia, Pa.)

28-30. Plastic Papers, 25th conf., Technical Assoc. of the Pulp and Paper Industry, Syracuse, N.Y. (M. A. Burnston, 360 Lexington Ave., New York 10017) 28-30. Thermal Conductivity Conf.,

28–30. Thermal Conductivity Conf., 10th annual, Boston, Mass. (R. P. Tye, Dynatech R/D Co., 17 Tudor St., Cambridge, Mass. 02139)

28-1. Iron and Steel Annual Conv., Cleveland, Ohio. (W. C. Friesel, 1010 Empire Bldg., Pittsburgh, Pa. 15222)

28-2. Gas Chromatography, 8th intern. symp., Dublin, Ireland. (C. H. Maynard, Inst. of Petroleum, 61 New Cavendish St., London W1M 8AR, England)

29-2. National Environmental Pollution Conf. and Exposition, Washington, D.C. (Natl. Environmental Pollution Conf., 1040 Shoreham Bldg., Washington, D.C. 20005)

29-2. **Optical** Soc. of America, Hollywood, Fla. (M. E. Warga, OSA, 2100 Pennsylvania Ave., NW, Washington, D.C.)

29-2. American Roentgen Ray Soc., Miami Beach, Fla. (T. F. Leigh, Emory Univ. Clinic, Atlanta, Ga. 30322)

30-2. Entomological Soc. of America, Eastern Branch, 42nd annual, Washington, D.C. (S. G. Gesell, Dept. of Entomology and Economic Zoology, Rutgers Univ., New Brunswick, N.J. 08903)

October

2-3. Wood Industry Show, West Plains, Mo. (J. P. Slusher, West Plains Chamber of Commerce, West Plains 65775)

2-4. National Conf. on Marine Sciences in Education, 3rd annual, Avalon, Santa Catalina Island, Calif. (R. B. Linsky, Coordinator, Orange County Dept. of Education, 1104 Civic Center Dr. West, Santa Ana, Calif. 92701)

4-8. Prestressed Concrete Inst., Minneapolis, Minn. (W. B. Bennett, 205 W. Wacker Dr., Chicago, Ill. 60606)

4-9. International Union of **Biological Sciences**, 17th conf., Washington, D.C. (F. A. Stafleu, Dept. of Botany, 106 Lange Nieuwstraat, Utrecht, Netherlands)

4-9. Electrochemical Soc., Atlantic City, N.J. (E. G. Enck, ES, 30 E. 42 St., New York 10017)

4-9. Society of Motion Picture and Television Engineers, 108th semiannual,



...measure 1µv to 1000V and enjoy multimeter convenience



Here's the sweetest little performer around in a low-priced, 3½-digit dc multimeter. A new entry

fielded by Keithley, leader in low voltage measurements, the Model 160 sweetens its fantastic $\pm~1~\mu v$ sensitivity with $\pm~0.1\%$ accuracy, true input impedance of 10 megohms, $\pm~1~\mu v/{\rm day}$ stability and high ac rejection.

As an ammeter, it stands alone handling \pm 0.1 nA to \pm 2 amperes full scale, with \pm 0.2% accuracy. Similarly, as an ohmmeter, this versatile performer spans a resistance range from 0.1 ohm to 2000 megohms full scale measured using 2-terminal leads.

Wide capability in measuring voltage, current and resistance make the Model 160 useful on every R & D and production test bench. Conven-

ience features are numerous. A display rate of two readings per second with 100% overranging. When overloaded, the display blanks the last 3 digits for no-error interpretation. Two front panel input terminals handle all functions. Choice of grounded or floating operation. And lots of other sweet features. Including a low price of \$545.

See how sweet it is. Call your Keithley Sales Engineer or contact us direct for details. Get a free "how sweet it is" button, too. (Great for the kids.) Keithley Instruments, Inc., 28775 Aurora Road, Cleveland, Ohio 44139. Or telephone 216/248-0400. In Europe: 14, Ave. Villardin, 1009 Pully, Suisse. Prices slightly higher outside the U.S.A.

KEITHLEY

New York, N.Y. (M. Denison, 9 E. 41 St., New York 10017)

4-9. American Soc. of **Plastic and Reconstructive Surgeons**, Los Angeles, Calif. (P. Randall, 18 Laughlin Lane, Philadelphia, Pa. 19118)

4-9. Water Pollution Control Federation, 43rd, Boston, Mass. (R. E. Fuhrman, Room 302, 4435 Wisconsin Ave., NW, Washington, D.C. 20018)

4-10. International Astronautical Congr., 21st, Constance, Germany. (E. M. Knoernschild, Inst. of Energy Conversion and Electric Propulsion, D.V.1, Allmandstrasse 124, 7 Stuttgart-Vaihingen, Germany)

5-6. **Brain Tumor** Symp., Columbus, Ohio. (W. G. Bingham, Jr., 410 W. Tenth Ave., Columbus 43210)

5-6. Electron Microscope Soc. of America, Houston, Tex. (G. G. Cocks, Olin Hall, Cornell Univ., Ithaca, N.Y. 14850)

5-7. Mervin J. Kelly Communications Conf., Rolla, Mo. (J. R. Betten, Univ. of Missouri, 123 EE Building, Rolla 65401)

5-7. Institute of Electrical and Electronics Engineers, Chicago, Ill. (R. M. Emberson, 345 E. 47 St., New York 10017)

5-7. International Symp. of Facial Nerve Surgery, Osaka, Japan. (H. Hazama, Japan Travel Bureau, 19 Azuchi-Machi, 4-chome, Higashi-ku, 541)

5-7. International Symp. on Gallium Arsenide and Related Compounds, 3rd, Aachen, Germany. (H. Beneking, Technische Hochschule Aachen, 5100 Aachen)

5-7. University Education and Research in the **Nuclear Fuels Cycle**, Norman, Okla. (L. E. Weaver, Univ. of Oklahoma, 202 W. Boyd, Room 107, Norman 73069)

5-7. Symposium on Feature Extraction and Selection in **Pattern Recognition**, Argonne, Ill. (S. S. Yau, Dept. of Electrical Engineering, Northwestern Univ., Evanston, Ill. 60201)

5-8. Canadian Pulp and Paper Assoc., 2nd, Ottawa, Ont. (R. A. Joss, 2300 Sun Life Bldg., Montreal, P.Q., Canada)

5-8. Recent Developments in Research Methods and Instrumentation, Bethesda, Md. (D. R. Watson, Supply Management Branch, Public Health Service, Natl. Inst. of Health, Bethesda, Md. 20014)

5-9. American Dietetic Assoc., Cleveland, Ohio. (R. M. Yakel, ADA, 620 N. Michigan Ave., Chicago, Ill.)

5-9. Electron Microscopy Soc. of America, Houston, Tex. (M. L. Rudee, Rice Univ., 112A Space Science Bldg., Houston 77001)

5-9. Symposium on Economic Integration of Nuclear Power Stations in Electric Power Systems, Vienna, Austria. (J. H. Kane, Div. of Technical Information, U.S. Atomic Energy Commission, Washington, D.C. 20545)

5-9. American Acad. of **Opthalmology** and **Otolaryngology**, Las Vegas, Nev. (C. M. Kos, AAO, 15 Second St., SW, Rochester, Minn. 55901)

5-9. American **Ornithologists** Union, Buffalo, N.Y. (R. C. Banks, Bird and Mammal Labs., National Museum of Natural History, Washington, D.C. 20560)

5-9. Plutonium and Other Actinides, 4th intern. conf., Santa Fe, N.M. (F. W. Schonfeld, Los Alamos Scientific Lab.,

P.O. Box 1663, Los Alamos 87544) 5-9. Research Equipment and Instrument Symp., 20th, Bethesda, Md. (J. B. Davis, Chief, Supply Management Branch, Natl. Inst. of Health, Bethesda, Md. 20014)

5-10. Precision Measurements and Fundamental Constants, Gaithersburg, Md. (L. M. Branscomb, A-363 Physics Bldg., Natl. Bureau of Standards, Washington, D.C. 20234)

5-10. Society for Applied Spectroscopy, 9th, New Orleans, La. (G. G. Guibault, Chemistry Dept., Louisiana State Univ.,

New Orleans)

6-9. Phytochemical Soc. of North America, 10th annual, Beltsville-College Park, Md. (T. C. Tso, Room 104, South Bldg., Plant Industry Sta., Beltsville 20705)

7. California Acad. of Sciences, San Francisco. (G. E. Lindsay, The Academy, Golden Gate Park, San Francisco 94118)

7. High Molecular Weight Plastics, Baltimore, Md. (W. C. McKay, 430 Severnside

Dr., Severna Park, Md. 21146)
7-10. National Council on Family Relations, Chicago, Ill. (Mrs. V. Jewson, NCFR, 1219 University Ave., SE, Minneapolis, Minn. 55414)

7-10. American Soc. of Human Genetics, Indianapolis, Ind. (C. J. Witkop, Univ. of Minnesota, Minneapolis 55455)

7-10. International Microwave Power Inst., 5th annual symp. Scheveningen, Holland. (D. J. Goerz, Jr., Bechtel Lab., 435 Harbor Blvd., Belmont, Calif. 94002)

8-9. American Soc. for Cybernetics, 4th annual, Washington, D.C. (R. Herrmann, Dept. of Management Science, Hall of Government, Room 103, George Washington Univ., Washington, D.C. 20006)

8-10. International Conf. on Cold Forging, 4th, Stuttgart, Germany. (J. Hooper, Inst. of Sheet Metal Engineering, John Adams House, 17-19 John Adams St., London W.C.2, England)

9-10. Midwest Conf. on Thyroid and Endocrinology, 6th, Columbia, Mo. (J. L. Witz, 1004 Elm St., Univ. of Missouri, Columbia 65201)

11-15. Society of American Foresters, Las Vegas, Nev. (H. R. Glascock, Jr., SAF, 1010 16th St., NW, Washington, D.C. 20036)

11-15. American Soc. for Information Science, 33rd annual, Philadelphia, Pa. (E. Garfield, Inst. for Scientific Information, 325 Chestnut St., Philadelphia, Pa. 19106)

12-14. Problems of Drug Resistant Pathogenic Bacteria, New York, N.Y. (E. L. Dulaney, Merck Inst. for Therapeutic

Research, Rahway, N.J.)
12-14. Conference on Electrical Insulation and Dielectric Phenomena, Pocono Manor, Pa. (R. A. Cliffe, Natl. Acad. of Sciences, 2101 Constitution Ave., NW, Washington, D.C. 20418)

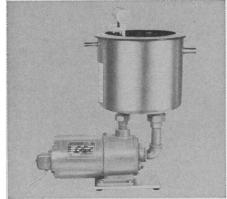
12-14. National Conf. on Goals, Policies and Program of Federal, State and Local Science Agencies, Atlanta, Ga. (J. F. Mock, Georgia Science and Technology, Box 32745, Atlanta 30332)

12-14. Society for Industrial and Applied Mathematics, Boston, Mass. (G. Fix, Dept. of Mathematics, Harvard Univ., Cambridge, Mass. 02138)

12-15. Association of Island Marine Laboratories, Balboa, Canal Zone. (J. B. Lewis, Bellairs Research Inst., McGill Univ., St. James, Barbados)

Is The Pressure **Getting You Down?**

Eliminate the Hazard of Inadequate or Fluctuating Water Pressure which can mean the Loss of Valuable Time and Material!





GET A BUCHLER

DUAL ASPIRATOR **PUMP**

For 110-115V 60 cycle

Raises and holds pressure at 40 psi. • Provides 2 independent and powerful aspirators. • Noiseless operation—continuous duty—minimum maintenance. • Can be installed without plumbing or building alterations. REQUEST BUCHLER BULLETIN NO. S-2-9000



BUCHLER INSTRUMENTS DIVISION NUCLEAR-CHICAGO CORP.

A SUBSIDIARY OF G. D. SEARLE & CO.

1327 SIXTEENTH STREET, FORT LEE, NEW JERSEY, 07024

Circle No. 82 on Readers' Service Card



C-950 UV LASER Features

- · UV output at 337.1 nm. Visible at 540.1 nm
- Pumps dyes efficiently and easily Pulsed operation, repetition rates up to
- High peak power, 100 kW at 337.1 nm.
- Stable operation
- Warranted performance and life
- Most reliable laser in its class For details, circle reader's service number 85.

A laser for interferometry

- · Visible output at 540.1 nm with enough
- energy to expose film in a single pulse Pulsed operation — 3 nanosecond pulse
- 30 cm coherence length
- For details, circle reader's service number 87.

Dial-a-Line Tuneable Wavelength Laser

- · Sealed cells, no cooling or flowing of dyes
- Simple, fast dye cell replacement without mirror changes
- Low operating and maintenance costs
 Laser pumped no flashlamp replacement
- Warranted performance and life
- For details, circle reader's service number 86

A laser for micromachining

- · Can produce slots less than 200 microinches in width
- Can machine most materials
 Pulsed operation, high repetition rates High peak power
 Near Diffraction limited UV output
- Test facility available
- For details, circle reader's service number 87



Write today for complete details or call collect (617) 389-3000 and ask for Dick Neal.

2385 REVERE BEACH PARKWAY: EVERETT, MASSACHUSETTS 02149

HELIUM

in the purities you need...

packaged for greatest convenience

Grade 4.5™ 99.995% minimum Grade 5™ 99.999% minimum Grade 5.5™ 99.9995% minimum Grade 6™ 99.9999% minimum

Airco Helium is available in a variety of cylinder and flask sizes for your convenience. Helium and other high-purity gases are described in Airco's new Rare and Specialty Gases Catalog, the most complete of its kind. Gases, mixtures, and equipment for every application. For a copy of our new catalog, write: Airco Rare and Specialty Gases, 575 Mountain Avenue, Murray Hill, N.J. 07974.





12-15. Association of Official Analytical Chemists, 84th annual, Washington, D.C. (L. G. Ensminger, AOAC, Box 540, Benjamin Franklin Sta., Washington, D.C. 20044)

12-15. American Soc. of Mechanical Engineers, Cincinnati, Ohio. (A. B. Conlin, 345 E. 47 St., New York 10017)

12-15. American Phytopathological Soc., Hot Springs, Ark. (R. J. Green, Jr., Botany and Plant Pathology Dept., Purdue Univ., Lafayette, Ind. 47907)

12-16. Clinical Congr. of the American College of Surgeons, 56th annual, Chicago, Ill. (S. B. Cohen, Communications Div., ACS, 55 E. Erie St., Chicago 60611)

12-16. International **Dairy** Congr., 18th, Sydney, Australia. (G. W. Flowers, 47, Macquirie St., Sydney, N.S.W. 2000)

12-16. Symposium on Small and Medium Power Reactors, Oslo, Norway. (J. H. Kane, Div. of Technical Information, U.S. Atomic Energy Commission, Washington, D.C. 20545)

12-17. International Assoc. of Allergology, Florence, Italy. (U. Serafini, Inst. of Pathology, Universita degli studi di Firenze, Florence)

13-14. Institute of Navigation, natl. Marine mtg., New London, Conn. (R. E. Freeman, ION, Suite 832, 815 15th St., NW, Washington, D.C. 20005)

13-15. International Conf. on Ozone, 2nd, Chicago, Ill. (C. K. Hersh, IIT Research Inst., 10 W. 35 St., Chicago 60616)

13-16. Industrial Research Inst., Washington, D.C. (G. W. McBride, 100 Park Ave., New York 10017)

13-17. Clay Minerals Soc., 7th, and North American Clay Minerals Conf., 19th, Miami, Fla. (W. E. Moody, Ceramic Engineering, Georgia Inst. of Technology, Atlanta, Ga. 30332)

14–15. Technology and Foreign Trade, Washington, D.C. (B. Byers, Natl. Acad. of Sciences–Natl. Research Council, 2101 Constitution Ave., NW, Washington, D.C. 20418)

14-16. Human Factors Soc., San Francisco, Calif. (M. G. Knowles, P.O. Box 1369, Santa Monica, Calif. 90406)

14-16. International Conf. on Management Information Systems, Copenhagen, Denmark. (H. Josefsen, Danish EDP Council, 1 Vesterbrogade, DK 1620 Copenhagen)

14-16. Technical Conf. on Photopolymerization and Photopolymers, 2nd, Ellenville, N.Y. (M. S. Htoo, IBM Corp., Dept. 245, Hopewell Junction, N.Y. 12533)

14-16. Society of Plastic Engineers, Ellenville, N.Y. (M. S. Htoo, 10 Rabbit Trail Rd., Poughkeepsie, N.Y. 12603)

14-17. Symposium on Digital Computer Applications in Engineering Sciences, Istanbul, Turkey. (E. Cetmeli, I.T.U. Elektronik Hesap Merkezi, Taskisla 114, Istanbul)

14-17. American Assoc. of Stratigraphic Palynologists, Toronto, Ont., Canada. (G. Norris, Dept. of Geology, Univ. of Toronto, Toronto 5)

16-17. Environmental Geomorphology Symp., Binghamton, N.Y. (D. R. Coates, Dept. of Geology, State Univ. of New York, Binghamton 13901)

16-17. Midwest Quality Control Conf., 25th annual, Minneapolis, Minn. (D. R. Mittelstadt, UNIVAC, M. S. 4231, 2276

Highcrest Dr., Roseville, Minn. 55113) 16-19. **Diatom Ecology** Symp., Minneapolis, Minn. (J. P. Bradbury, Limnologi-

apolis, Minn. (J. P. Bradbury, Limnological Research Center, Pillsbury Hall, Univ. of Minnesota, Minneapolis 55455)

17-18. Canadian Council for Non-Destructive Technology, Montreal, P.Q. (G. Tietze, United Aircraft, Plant 1, P.O. Box 10, Longueil, P.Q., Canada)

10, Longueil, P.Q., Canada)
17–21. American Soc. of Anesthesiologists, Inc., New York, N.Y. (J. W. Andes, 515 Busse Highway, Park Ridge, Ill. 60068)

17-22. American Acad. of **Pediatrics**, 39th annual, San Francisco, Calif. (Dept. of Public Information, 1801 Hinman Ave., Evanston, Ill. 60204)

18-20. Academy of Aphasia, 8th annual, New Orleans, La. (O. Spreen, Psychology Dept., Univ. of Victoria, Victoria, B.C., Canada)

B.C., Canada)

18-22. American Assoc. of Cereal
Chemists, Minneapolis, Minn. (R. J. Tarleton, AAOC, 1821 University Ave., St.
Paul, Minn. 55104)

18-22. Society for Experimental Stress Analysis, Boston, Mass. (B. E. Rossi, SESA, 21 Bridge Sq., Westport, Conn. 06880)

19-20. Monitoring Birth Defects, and Environment, the Problem of Surveillance, Albany, N.Y. (E. B. Hook, Birth Defects Inst. of New York, State Health Dept., Medical College, Albany)

19-21. International Conf. on Antimicrobial Agents and Chemotherapy, Chicago, Ill. (R. W. Sarber, American Soc. for Microbiology, 115 Huron View Blvd., Ann Arbor, Mich. 48103)

19-21. Canadian Soc. for Chemical Engineering, 20th, Sarnia, Ont. (R. M. Butler, Imperial Oil Ltd., Sarnia)
19-21. Institute of Management Sci-

19-21. Institute of Management Sciences, Los Angeles, Calif. (S. W. Hess, Wharton School, Univ. of Pennsylvania, Philadelphia)

19-21. American Soc. for Microbiology, 10th, Chicago, Ill. (R. W. Sarber, ASM, 115 Huron View Blvd., Ann Arbor, Mich. 48103)

19-21. National Acad. of Sciences, Houston, Tex. (B. Byers, Natl. Acad. of Sciences-Natl. Research Council, 2101 Constitution Ave., NW, Washington, D.C. 20418)

19-21. Spectroscopy Soc. of Canada, 17th symp., Ottawa, Ont., Canada. (R. Ironside, Applied Chemistry, Div., Natl. Research Council, Montreal Rd., Ottawa 7)

19-22. Materials Engineering Congr., Cleveland, Ohio. (W. M. Mueller, American Soc. for Metals, Metals Park, Ohio 44073)

19-23. American Soc. of Civil Engineers, New York, N.Y. (W. H. Wisely, ASCE, 345 E. 47 St., New York 10017)

19-23. Conference and Exhibition on Liquefied Natural Gas, 2nd intern. conf., Paris, France. (B. Schukraft, Inst. of Gas Technology, 3424 S. State St., Chicago, Ill. 60606)

19-23. Industrial Toxicology, Detroit, Mich. (A. L. Reeves, Wayne State Univ., School of Medicine, Detroit 48202)

19-24. Statistical Mechanics, Mexico, D.F. (E. Braun, Comision Nacional de Energia Nuclear, Av. Insurgentes Sur 1079, Apartado Postal No. 27-190, Mexico, 18)

20-23. American Vacuum Soc., 7th annual, Washington, D.C. (Miss D. M. Hoffman, RCA Labs., David Sarnoff Research Center, Princeton, N.J. 08540)

21-23. Society of **Mining Engineers** of the American Inst. of Mining, St. Louis, Mo. (J. C. Fox, 345 E. 47 St., New York

10017)

21-23. Planetarium Teachers, East Lansing, Mich. (V. D. Chamberlain, Michigan State Univ., Talbert and Leota Abrams Planetarium, East Lansing)

21–23. Ultrasonic Symp. (G-SU), San Francisco, Calif. (W. J. Spencer, Bell Telephone Labs., Allentown, Pa. 18103)

21-24. National Assoc. of **Biology Teachers**, Denver, Colo. (J. P. Lightner, NABT, 1420 N St., NW, Washington, D.C. 20005)

21-24. Society of **Photographic Scientists and Engineers**, Washington, D.C. (H. J. Hall, 10 Maguire Rd., Lexington, Mass. 02173)

22–23. National Acad. of Engineering, Washington, D.C. (National Acad. of Engineering, Editorial Office, 2101 Constitution Ave., NW, Washington, D.C. 20418)

22-24. American Soc. for Aesthetics, Boulder, Colo. (J. R. Johnson, ASA, 1150 East Blvd., Cleveland, Ohio 44106)

22-24. **Gerontological** Soc., 23rd annual, Toronto, Ont., Canada. (E. Kaskowitz, GS, 660 S. Euclid, St. Louis, Mo. 63110)

25–28. National **Lubricating Grease** Inst., 38th, Atlanta, Ga. (C. V. Pickell, 4635 Wyandotte St., Kansas City, Mo. 64112)

25-29. Institute of Sanitation Management, Cleveland, Ohio. (H. C. Rowe, 1710 Drew St., Clearwater, Fla. 33515)
25-30. American College of Chest

25-30. American College of Chest Physicians, Los Angeles, Calif. (A. Soffer, ACCP, 112 E. Chestnut St., Chicago, Ill. 60611)

25-30. International Congr. of Internal Medicine, 11th, New Delhi, India. (H. Ludwig Burgerspital Resel Switzerland)

Ludwig, Burgerspital, Basel, Switzerland)
26–27. Interagency Chemical Rocket
Propulsion Group, Pasadena, Calif. (A.
Broido, Pacific Southwest Forest and
Range Experiment Sta., U.S. Forest Service, P.O. Box 245, Berkeley, Calif.
94701)

26-28. Electronic and Aerospace Systems, Washington, D.C. (R. A. Stampfl, Natl. Aeronautics and Space Administration, Washington, D.C.)

26–28. Spectroscopy, 17th symp. and exhibition of instrumentation, 17th, Ottawa, Ont., Canada. (J. L. Dalton, 555 Booth St., Ottawa 4)

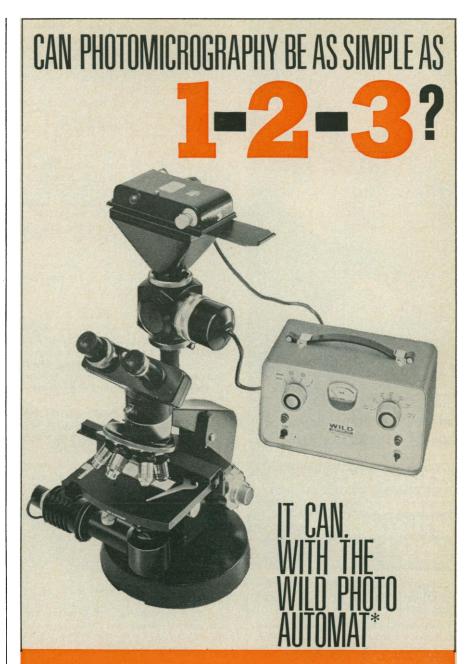
26-29. **Instrument** Soc. of America, Philadelphia, Pa. (H. S. Kindler, ISA, 530 William Penn Pl., Pittsburgh, Pa. 15219)

26-30. Symposium on the Use of Nuclear Techniques in the Measurement and Control of Environmental Pollution, Salzburg, Austria. (J. H. Kane, Div. of Technical Information, U.S. Atomic Energy Commission, Washington, D.C. 20545)

26-30. American College of Preventive Medicine, Houston, Tex. (E. A. Piszcek, 6410 N. Leona Ave., Chicago, Ill. 60646)

26-30. American Public Health Assoc., 98th, Houston, Tex. (B. F. Mattison, 1740 Broadway Ave., New York 10019)

26-30. American Water Resources Conf., 6th, Austin, Tex. (W. S. Butcher,



DIAL: Your illumination method...brightfield or darkfield.

Desired eyepiece power...6x,10x or 15x.

The film speed... 5 to 320 ASA. B/W or color.

Trip the switch and the Wild Photo Automat does the rest. With 35mm film, you can even have automatic film advance. Or use #120 roll, 4×5 ", or 6×9 cm cut film.

*Fits any microscope. This photo shows the Wild M-12 in trinocular arrangement with MKa5 Photo Automat.

WRITE FOR BOOKLET M1-608-12.



WILD HEERBRUGG INSTRUMENTS, INC. FARMINGDALE, NEW YORK 11735

WILD OF CANADA, LTD., 881 LADY ELLEN PLACE, OTTAWA 3, ONTARIO WILD DE MEXICO, SA, LONDRES 256, MEXICO 6, D.F.

Circle No. 29 on Readers' Service Card



... offers an overall light gain of 10° with a typical background of 10^{-10} lumens/cm². (light equivalent input.)

Typical operating voltage for these conditions is 40kV The background indicated is for a tube having bialkali photocathodes,—tubes are also available with a range of S-20 cathodes for use out to 8,000 Angstroms. Input and output windows are flat Zinc crown glass, 50 mm diameter. Type 9693 is available with sapphire input window for use in the UV. Developmental types are now being made with fibre optic windows. All present types are furnished with P-11 phosphors throughout although other types of phosphors are under investigation

Tubes are normally supplied potted in silicon rubber and a number of variations are available. A complete package, including electromagnet, divider chain, high voltage power supply and magnet supply is offered. A permanent magnet is also available

An extensive technical manual, as well as useful application notes, are available on request. Write on your company letterhead to:

GENCOM DIVISION

varian/EMI

80 EXPRESS STREET, PLAINVIEW, N. Y. 11803 TELEPHONE: (516) 433-5900

Circle No. 80 on Readers' Service Card

Civil Engineering Dept., Univ. of Texas, Austin 78712)

27–28. Society of **Plastics Engineers**, Cherry Hill, N.J. (A. E. Whitney, Jr., 31 Alexander Ave., Nutley, N.J.)

27-29. Western Space Congr., 1st, Santa Maria, Calif. (C. E. Ewing, P.O. 1134, Santa Maria 93454)

27-31. Congress of Neurological Surgeons, Inc., 20th, St. Louis, Mo. (J. M. Thompson, 1955 Blossom Way, St. Petersburg, Fla. 33712)

28-30. Electron Devices, Washington, D.C. (Inst. of Electrical and Electronics Engineers, Electron Devices Group, 345 E. 47 St., New York 10017)

28-30. Sociedad Argentina de Investigaciones Bioquimicas, La Plata. (R. R. Brenner, Instituto de Fisiologia, Facultad de Cienias Medicas, Calle 60 y 120, La Plata)

28-30. Meteoritical Soc., Skyland, Va. (L. S. Walter, Planetology Branch, Code 644, NASA/Goddard Space Flight Center, Greenbelt, Md.)

28-30. **Operations Research** Soc. of America, Detroit, Mich. (R. M. Oliver, Dept. of Industrial Engineering, Univ. of California, Berkeley 94720)

28-30. Planetology and Space Mission Planning, 3rd conf., New York, N.Y. (R. D. Enzmann, Raytheon Corp., Bedford, Mass.)

28-1. Federation of Societies for **Paint Technology**, 48th annual, Boston, Mass. (R. W. Matlack, 121 S. Broad St., Philadelphia, Pa. 19107)

29-30. Joint Engineering Management Conf., 18th annual, Chicago, Ill. (G. J. Lukas, Keebler Co., 677 Lank Ave., Elmhurst, Ill. 60126)

29-2. Association of American Medical Colleges, 9th annual, Los Angeles, Calif. (D. E. Mattson, Div. of Educational Measurement and Research, AAMC, 2530 Ridge Ave., Evanston, Ill. 60201)

November

1-4. American Soc. of **Tropical Medicine and Hygiene**, San Francisco, Calif. (M. M. Brooke, P.O. Box 15208, Emory Univ., Atlanta, Ga. 30333)

4-5. American Assoc. for the Study of Liver Diseases, Chicago, Ill. (F. Schaffner, Mount Sinai School of Medicine, Fifth Ave. and 100th St., New York 10029)

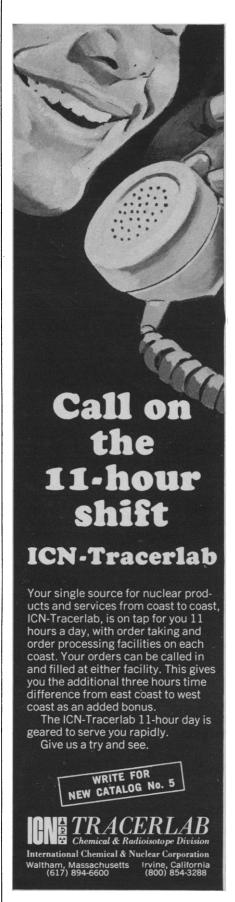
5-7. Symposium on Nutritional and Environmental Problems of the Inner City, Nashville, Tenn. (H. A. Moses, Meharry Medical College, Nashville 37208)

5-8. Italian Soc. of Urology, 43rd congr., Florence, Italy. (M. Rizzo, Instituto di Urologia Universita degli, Studi di Firenze, Firenze)

6-7. Central Soc. for Clinical Research, Chicago, Ill. (J. W. Eckstein, Dept. of Internal Medicine, Univ. of Iowa Hospitals, Iowa City 52240)

6-7. National Conf. on Management of Oclusive Arterial Disease, Nashville, Tenn. (W. A. Dale, 2010 Church St., Nashville 37203)

12-15. American Soc. of **Therapeutic Radiologists**, Phoenix, Ariz. (C. R. Bogardus, 800 NE 13th St., Oklahoma City, Okla. 73104)



Circle No. 79 on Readers' Service Card