

City University), S. Wada (Tohoku University), and K. Kasamo (University of Tokyo) all reported on physical or metabolic changes in elongating tissues in response to auxin treatment.

T. Nakamura (Japan Women's University) described the effects of GA treatment on nucleic acid metabolism in elongating pea seedling epicotyls, and concluded that GA may bind in some way to DNA, increasing its capacity for further DNA or RNA synthesis. H. Shibaoka (University of Tokyo) exhibited electron microscopic evidence purporting to show that gibberellins stimulate elongation of Azuki bean epicotyls by changing microtubule orientation. Colchicine, which depolymerizes microtubules, appears to inhibit specifically the GA₃-induced longitudinal expansion of these cells while not influencing auxin-induced elongation.

Other reports on the nature of cell elongation involved analyses of external environmental influences. Red-light inhibition of *Avena* mesocotyl elongation was studied by T. Yamaki (University of Tokyo). He presented a theory of light inhibition which related concentrations of tissue nicotinamide adenine dinucleotide phosphate (NADP) to reduced auxin transport into the mesocotyl as well as a more direct inhibitory effect of red light on cell-wall extensibility. Such light effects are complex, compounded of a series of multiple interacting systems. M. Furuya (University of Tokyo) examined the NADP content of bean hypocotyl tissue after red and far-red illumination. He found that a reversible phytochrome-dependent reduction of NADP occurred in the particulate fraction of these cells. This light-mediated reduction of NADP was coupled specifically to glucose-6-phosphate dehydrogenase.

Another cell process that received attention was the control of mitosis and cell division. Y. Yamada (Kyoto University) reported both qualitative and quantitative changes in proteins specifically associated with tissue proliferation, which resulted in bud formation in cultured callus tissues of *Nicotiana*. Kinetin treatment of unorganized callus elicited the formation of new proteins and accompanying shoot initiation. K. Syōno (Kitasato University) also working with tobacco callus tissue, developed different strains of tissue with respect to exogenous hormone requirements. A tissue requiring both exogenous auxin and cytokinin was established from stem pith tissue. Later a tissue

strain developed which required only auxin. When this strain was cultured in the presence of high concentrations of cytokinin (1 part per million of kinetin) it grew without added auxin. Analysis showed that this tissue was able to form its own auxin which was shown to be indoleacetic acid and two other auxins not characterized.

A most elegant system for the study of cell division in plant cells was described by M. Wada (University of Tokyo) in the gametophytes of the fern *Adiantum*. Protonemata cultured under continuous red light when transferred to dark divide transversely within 36 hours. Far-red light before dark delayed the division several hours, and the effect was reversed by red light. Brief exposure to blue light before the dark treatment induced cell division earlier. Transfer to continuous white light after continuous red light caused two transverse divisions followed by a longitudinal division. The plane of the longitudinal division was parallel to the direction of the incident light. Thus, using appropriate irradiation treatments, it was possible to control precisely the orientation and timing of cell division in the apical cells of the fern protonemata.

One of the highlights of the meeting was a comprehensive review by I. Takebe and T. Nagata (Institute for Plant Virus Research, Chiba) of the recent developments in the techniques of isolation and culture of protoplasts from tobacco leaves. Both the biochemical and developmental capabilities of the chloroplast-containing protoplasts derived by enzymatic treatment from leaf mesophyll tissue were studied. The RNA precursors were readily incorporated, first into the nucleus; protein synthesis proceeds in both the cytoplasm and in the chloroplasts. Virus production by isolated, infected protoplasts was analyzed by bioassay, immunological methods, and electron microscopy. Cell-wall synthesis was followed by means of a cellulose-specific fluorescent wall stain and light and electron microscopy. Early wall formation was observed by 3 days, mitoses on day 4, with daughter cell formation. Continued proliferation of cell colonies from protoplasts depended on appropriate hormonal conditions in the medium. Wall formation and cell division were dependent on the kind and concentration of auxin; naphthaleneacetic acid served better than 2,4-D and indoleacetic acid was ineffective. The auxin antagonist, 2,4,6-trichlorophenoxyacetic acid antagonized

the wall-promoting effect of 2,4-D. Under appropriate hormonal conditions cell colonies gave rise to callus tissues in which shoots and roots were found which could be transplanted and brought to flowering and seed formation, showing normal genetic constitution. High plating efficiencies (up to 67 percent) for cell colony formation make these protoplasts a useful tool for genetic work.*

American participants included R. Cleland (University of Washington, Seattle), M. Crispeels (University of California at La Jolla), L. Dure (University of Georgia, Athens), R. Jones (University of California at Berkeley), J. Shen-Miller (Argonne National Laboratory), J. Torrey (Harvard University), and J. Zeevaart (Michigan State University, East Lansing).

JOHN G. TORREY
Cabot Foundation, Harvard University,
Petersham, Massachusetts 01366

* A more detailed summary of the meeting is available upon request.

Forthcoming Events

October

14-17. American Chemical Soc., 5th Northeast regional, Rochester, N.Y. (P. Tingle, Bldg. 81, Room 254, Research Labs., Eastman Kodak Co., Rochester 14650)

14-17. Association of Life Insurance Medical Directors, New York, N.Y. (A. E. Brown, ALIMD, 501 Boylston St., Boston, Mass. 02117)

14-18. American Inst. of Ultrasound in Medicine, Ann Arbor, Mich. (M. A. Wainstock, Dept. of Ophthalmology, Univ. of Michigan Medical Center, Ann Arbor 48105)

14-19. Society of Motion Picture and Television Engineers, New York, N.Y. (D. A. Courtney, SMPTE, 9 E. 41 St., New York 10017)

14-20. Allergology, 8th intern. congr., Tokyo, Japan. (Japanese Soc. of Allergology, c/o Dept. of Microbiology and Immunology, Nippon Medical School, 1-1 Sendagi, Bunkyo-ku, Tokyo)

14-20. World Medical Assoc., Munich, Germany. (A. Z. Romualdez, WMA, 10 Columbus Circle, New York 10019)

14-21. International Congr. on Tropical Medicine and Malaria, 9th, Hellenic Ministry of Social Services and Hellenic Ministry of Culture and Sciences, Athens, Greece. (J. Papavassiliou, ICTMM, P.O. Box 1373, Athens)

15-16. Environmental Geologic Mapping Colloquium, Austin, Tex. (E. G. Wermund, Bureau of Economic Geology, Univ. of Texas, Box X, University Station, Austin 78712)

15-17. National Electronics Conf., Inst. of Electrical and Electronics Engineers,

Chicago, Ill. (IEEE, 345 E. 47 St., New York 10017)

15-17. **Energy Resources Symp.**, Royal Soc. of Canada, Ottawa, Ont. (Executive Secretary, RSC, 395 Wellington, Ottawa, K1A0 N4)

15-17. **National Noise Control Engineering Conf.**, Washington, D.C. (R. Cohen, Ray W. Herrick Labs., School of Mechanical Engineering, Purdue Univ., Lafayette, Ind. 47907)

15-17. **Soil Microcommunities Conf.**, 3rd, Syracuse, N.Y. (D. L. Dindal, Dept. of Zoology, College of Environmental Sciences and Forestry, State Univ. of New York, Syracuse 13210)

15-18. **Estuarine Research Federation**, 2nd intern. conf., cosponsored by American Soc. of Limnology and Oceanography, Myrtle Beach, S.C. (A. B. Williams, Systematics Lab., Natl. Marine Fisheries Service, U.S. Natl. Museum, 10th and Constitution Ave., NW, Washington, D.C. 20560)

15-18. **Instrument Soc. of America** 28th mtg., Houston, Tex. (H. S. Kindler, ISA, 400 Stanwix St., Pittsburgh, Pa. 15222)

15-18. **Lubrication Conf.**, American Soc. of Mechanical Engineers and American Soc. of Lubrication Engineers, Atlanta, Ga. (ASME, United Engineering Center, 345 E. 47 St., New York 10017)

15-18. **American Inst. of Ultrasound in Medicine**, 18th annual, Detroit, Mich. (M. Wainstock, Dept. of Ophthalmology, Univ. of Michigan Medical School, Ann Arbor 48105)

15-19. **American College of Surgeons**, 59th annual clinical congr., Chicago, Ill. (E. W. Gerrish, ACS, 55 E. Erie St., Chicago 60611)

15-19. **Youth in a World of Change**, World Psychiatric Assoc. and Australian and New Zealand College of Psychiatrists, Sydney, Australia. (Congress Secretary, Box 475, G.P.O., Sydney, New South Wales 2001)

15-20. **International Soc. of Radiology Congr.**, 13th, Madrid, Spain. (J. Bonmati, ISRC, Lagasca 27, Madrid 1)

16-18. **Society of Automotive Engineers**, aerospace engineering and manufacturing mtg., Los Angeles, Calif. (A. J. Favata, SAE, 2 Pennsylvania Plaza, New York 10001)

16-19. **American Chemical Soc.**, rubber chemistry mtg., Denver, Colo. (F. M. O'Connor, Harwick Standard Chemical Co., 60 S. Seiberling St., Akron, Ohio 44305)

16-19. **Society for Experimental Stress Analysis**, Indianapolis, Ind. (B. E. Rossi, SESA, 21 Bridge Sq., Westport, Conn. 06880)

16-19. **Human Factors Soc.**, Washington, D.C. (M. G. Knowles, HFS, P.O. Box 1369, Santa Monica, Calif. 90406)

16-20. **American Assoc. of Stratigraphic Palynologists**, 6th annual, Anaheim, Calif. (K. N. Piel, Union Oil Research, P.O. Box 76, Brea, Calif. 92621)

16-21. **American Soc. of Clinical Hypnosis**, 16th annual, Toronto, Ont., Canada. F. D. Nowlin, ASCH, 800 Washington Ave., SE, Minneapolis, Minn. 55414)

17-20. **American Soc. of Human Gen-**

etics, Atlanta, Ga. (W. E. Nance, Medical Genetics, Univ. of Indiana, 1100 W. Michigan St., Indianapolis 46202)

18-19. **Oklahoma Education Assoc.**, 83rd annual, Oklahoma City. (M. Leyerle, OEA, 323 East Madison, Oklahoma City 73105)

18-19. **Endocrinology and Metabolism**, 9th Midwest conf., Columbia, Mo. (A. D. Kenny, Dalton Research Center, Univ. of Missouri, Columbia 65201)

18-20. **Symposium on Low Altitude Rocketry**, U.S. Air Force Acad. and Southwest Research Assoc., U.S. Air Force Acad., Colo. (R. A. Golobic, Frank J. Seiler Research Lab., U.S. Air Force Acad. 80840)

18-20. **Central Neuropsychiatric Assoc.**,

Chicago, Ill. (D. W. Sprague, CNA, 1417 Marlowe Ave., Lakewood, Ohio 44107)

18-20. **Central Assoc. of Obstetricians and Gynecologists**, Scottsdale, Ariz. (C. P. Goplerud, University Hospitals, Iowa City, Iowa 52240)

18-21. **American Acad. of Child Psychiatry**, Washington, D.C. (E. Bogan, AACP, 1700 18th St., NW, Washington, D.C. 20009)

18-21. **Phi Delta Kappa**, Houston, Tex. (L. C. Rose, PDK, 8th and Union Sts., P.O. Box 789, Bloomington, Ind. 47401)

19. **American Pharmaceutical Assoc.**, 13th annual Eastern regional (Industrial Pharmacy section), Morristown, N.J. (A. J. Scarpone, Pharmaceutical Product



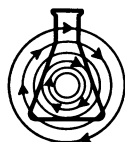
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20-23. Institute of **Electrical and Electronics Engineers**, electron devices mtg., Washington, D.C. (Office of the Technical Activities Board, IEEE, 345 E. 47 St., New York 10017)

20-24. American Acad. of **Pediatrics**, 42nd annual, Chicago, Ill. (E. Kittrell, AAP, 1801 Hinman Ave., Evanston, Ill. 60204)

21-24. American College of **Apothecaries**, White Sulphur Springs, W.Va. (D. C. Huffman, Jr., 5291 Rock Ridge Rd., Memphis, Tenn. 38128)

21-25. American College of **Chest Physicians**, 39th fall scientific assembly, Toronto, Ont., Canada. (A. Soffer, ACCP, 112 E. Chestnut St., Chicago, Ill. 60611)

21-25. Society of **Exploration Geophysicists**, Mexico City, Mexico (H. Breck, P.O. Box 3098, Tulsa, Okla. 74101)

21-25. American Soc. for **Information Science**, Los Angeles, Calif. (H. R. Koller, ASIS, 1140 Connecticut Ave., NW, Washington, D.C. 20036)

21-26. Association of **Engineering Geologists**, 16th annual, North Hollywood, Calif. (C. A. Yelverton, AEG, Suite 506, 201 S. Lake Ave., Pasadena 91101)

21-26. American Assoc. for **Hand Surgery**, Hollywood, Fla. (K. K. Lie, 27500 Hoover Rd., Warren, Mich. 48093)

21-26. American Soc. of **Plastic and Reconstructive Surgeons**, Hollywood, Fla. (D. F. Whaley, ASPRS, 29 E. Madison, Chicago, Ill. 60602)

21-26. American Congr. of **Rehabilitation Medicine**, Washington, D.C. (C. C. Herold, 30 N. Michigan Ave., Chicago, Ill. 60602)

21-26. American **Water Resources** Assoc., 9th, Seattle, Wash. (S. P. Gessel, Dean of the College of Forestry, University of Washington, Seattle 98105)

21-27. American College of **Gastroenterology**, Los Angeles, Calif. (D. Weiss, ACG, 299 Broadway, New York 10007)

22-24. International **Pollution Engineering** Congr., 2nd, Philadelphia, Pa. (Clapp & Poliak, Inc., 245 Park Ave., New York 10017)

22-25. **Civil Aviation Medical** Assoc., Guadalajara, Mexico. (A. Carriere, 801 Green Bay Rd., Lake Bluff, Ill. 60044)

22-26. American **Dietetic** Assoc., Denver, Colo. (R. M. Yakel, ADA, 620 N. Michigan Ave., Chicago, Ill.)

22-26. Symposium on **Effects on Neutron Irradiation upon Cell Function**, Intern. Atomic Energy Agency, Neuherberg near Munich, Federal Republic of Germany. (L. B. Sztanyik, Radiation Biology Section, Div. of Life Sciences, IAEA, Karnthnering 11-13, P.O. Box 590, A-1011 Vienna, Austria)

23-25. American College of **Emergency Physicians**, 5th scientific assembly, Dallas, Tex. (ACEP, 241 E. Saginaw, East Lansing, Mich. 48823)

23-25. International Symp. on **Immunoglobulin A System**, 25th, Birmingham, Ala. (F. W. Kraus, Box 103, University Station, Birmingham 35294)

23-26. International Conf. on **Environmental Health**, American Medical As-

soc., Primosten, Yugoslavia. (Dept. of Environmental, Public and Occupational Health, AMA, 535 N. Dearborn St., Chicago 60610)

24-25. International Technico-Economical Symp. on **Environmental Chemistry**, Intern. Business Contact Club, Brussels, Belgium. (IBCC, Nieuwelaan, 65, B-1820-Strombeek, Belgium)

24-25. International Symp. on **Gonorrhea**, Health Protection Branch, Dept. of Natl. Health and Welfare, Ottawa, Ont., Canada. (J. R. Renaud, Food and Drug Bldg., Room 105, Health Protection Branch, NHW, Tunney's Pasture, Ottawa K1A 0L2)

25-26. **Vehicle Emission Control** Programs Conf., Madison, Wis. (K. Sparks, Engineering Dept., Univ. of Wisconsin-Extension, 432 N. Lake St., Madison 53706)

25-27. Indiana **Acad. of Science**, Indianapolis. (J. J. Nisbet, Biology Dept., Ball State Univ., Muncie, Ind. 47306)

25-27. Academy of **General Dentistry**, Houston, Tex. (R. G. O'Donnell, AGD, 211 E. Chicago Ave., Chicago, Ill. 60611)

25-28. **Atherosclerosis**, 3rd intern. symp., West Berlin, Germany. (G. Schettler, Bergheimer Str. 58, D69 Heidelberg, Germany)

25-28. Society for **Psychophysiological Research**, Galveston, Tex. (P. J. Lang, Dept. of Psychology, Univ. of Wisconsin, Madison 53706)

25-28. Society for the **Scientific Study of Religion**, San Francisco, Calif. (W. V. D'Antonio, SSSR, Box U68A, Univ. of Connecticut, Storrs 06268)

25-30. **Radiological Soc. of North America**, Chicago, Ill. (H. L. Baker, Jr., Room 604, 713 E. Genesee St., Syracuse, N.Y. 13210)

26. Utah Acad. of **Sciences, Arts, and Letters**, Ogden. (H. Buchanan, Dept. of Botany, Weber State College, Ogden 84403)

27-28. American College of **Dentists**, Houston, Tex. (R. J. Nelsen, 7316 Wisconsin Ave., Bethesda, Md. 20014)

28-1. American **Dental Assoc.**, Houston, Tex. (C. G. Watson, ADA, 211 E. Chicago Ave., Chicago, Ill. 60611)

29-31. **Electrical Insulation and Dielectric Phenomena** Conf., National Acad. of Sciences, Varennes, P.Q., Canada. (N. T. Grisamore, NAS, 2101 Constitution Ave., NW, Washington, D.C. 20418)

29-2. International Conf. on **Atomic Spectroscopy**, 4th, Toronto, Ont., Canada. (C. L. Chakrabarti, Dept. of Chemistry, Carleton Univ., Ottawa K1A 5B6, Ont., Canada)

29-2. American Soc. of **Civil Engineers**, New York, N.Y. (E. Zwayer, ASCE, 345 E. 47 St., New York 10017)

30-1. American Assoc. for the **Study of Liver Diseases**, Chicago, Ill. (F. Schaffner, Mount Sinai Hospital, Fifth Ave. and 100 St., New York 10029)

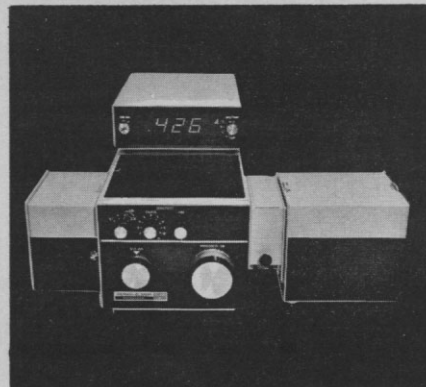
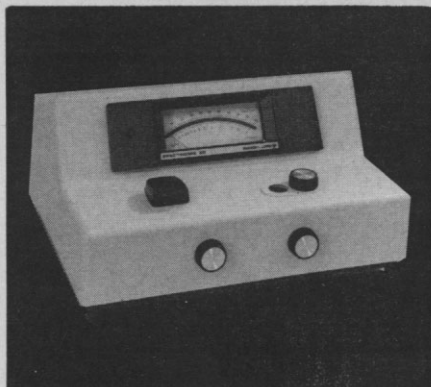
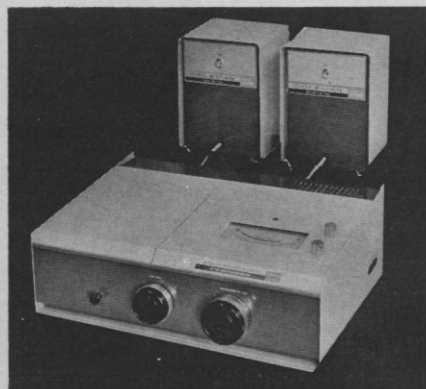
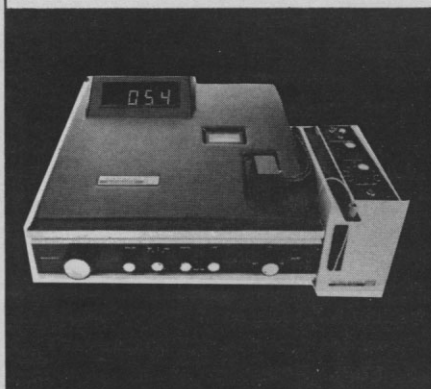
30-2. **Acoustical Soc. of America**, Los Angeles, Calif. (B. H. Goodfriend, ASA, 335 E. 45 St., New York 10017)

30-2. American **Ceramic Soc.**, Nuclear Div., 26th, San Francisco, Calif. (J. M. Leitnaker, Bldg. 4500-S, Room A-156, Oak Ridge Natl. Lab., Oak Ridge, Tenn. 37830)

30-4. American **Physical Soc.** plasma

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physics div., Philadelphia, Pa. (W. W. Havens, Jr., 335 E. 45 St., New York 10017)

31-2. **Entomological Soc. of America**, Eastern branch, 45th annual, New York, N.Y. (D. J. Sutherland, Dept. of Entomology and Economic Zoology, Rutgers-The State Univ. of New Jersey, P.O. Box 231, New Brunswick 08903)

November

1. **American Pancreatic Study Group**, Chicago, Ill. (P. D. Webster, Dept. of Medicine, Medical College of Georgia, Augusta 30902)

1-3. **Association for Academic Surgery**, Rochester, N.Y. (J. Cerilli, Ohio State Univ. Hospital, 410 W. Tenth Ave., Columbus, Ohio 43210)

1-3. **West Coast Allergy Soc.**, Honolulu, Hawaii. (E. D. Lynch, 2164 SW Park Place, Portland, Ore. 97205)

1-3. **American Chemical Soc.**, 9th Western regional, San Diego, Calif. (D. Pettitt, Kelco Research, 8225 Arrow Dr., San Diego 92106)

1-3. **Central Soc. for Clinical Research**, Chicago, Ill. (G. G. Bole, Room 4669, Kresge Bldg., Univ. of Michigan Medical Center, Ann Arbor 48105)

1-3. **National Council for Geographic Education**, Washington, D.C. (L. S. Mitchell, NCGE, Room 1226, 111 W. Washington St., Chicago, Ill. 60602)

1-3. **American Physical Soc.**, Nuclear Physics Div., Bloomington, Ind. (M. W. W. Havens, APS, 335 E. 45 St., New York 10017)

1-3. **Psychonomic Soc., Inc.**, St. Louis, Mo. (F. A. Mote, Psychology Dept., Psychology Bldg., Univ. of Wisconsin, Madison 53706)

1-4. **Association of Clinical Scientists**, Washington, D.C. (F. W. Sunderman, Jr., Univ. of Connecticut School of Medicine, Box G, Farmington, Conn. 06032)

1-4. **American Folklore Soc.**, Nashville, Tenn. (R. Bauman, Folklore Dept., Room 306, Social Work Bldg., Univ. of Texas, Austin 78712)

2-3. **Frontiers in Neurology and Neuroscience Research Symp.**, Toronto, Ont., Canada. (G. E. MacDonald, Dept. of Psychology, Univ. of Toronto, Toronto M58 1A1)

2-4. **Association of American Medical Colleges**, Washington, D.C. (J. A. Cooper, 1 Dupont Circle, NW, Washington, D.C. 20036)

3-4. **Pediatric Anesthesia Conf. on Pediatric Emergencies**, Toronto, Ont., Canada. (D. J. Steward, Hospital for Sick Children, 555 University Ave., Toronto 2)

4-7. **Industrial Pharmacy Management Conf.**, Fontana, Wis. (K. W. Kirk, Extension Services in Pharmacy, Univ. of Wisconsin, 425 N. Charter St., Madison, 53706)

4-8. **American Assoc. of Cereal Chemists**, St. Louis, Mo. (R. Tarleton, AACC, 1821 University Ave., St. Paul, Minn. 55104)

4-8. **Conf. on Engineering in Medicine and Biology**, Institute of Electrical and Electronics Engineers, Minneapolis, Minn. (Technical Activities Board, IEEE, 345 E. 45 St., New York 10017)

4-8. **Research in Medical Education**,

12th conf., 84th mtg., Assoc. of American Medical Colleges, Washington, D.C. (RIME Conf., AAMC, Suite 200, 1 Dupont Circle, NW, Washington, D.C. 20036)

4-9. **International and Civil Affairs Health Soc.**, San Francisco, Calif. (J. P. Pappas, CAHS, 960 E. Third St., Chattanooga, Tenn. 37403)

4-10. **Symposium on Oriental Entomology**, Univ. of Calcutta and the Zoological Soc., Calcutta, India. (D. N. Raychaudhuri, Dept. of Zoology, Univ. of Calcutta, 35 Ballygunge Circular Rd., Calcutta 700 019)

5-7. **Sonics and Ultrasonics Symp.**, Inst. of Electrical and Electronics Engineers, Monterey, Calif. (J. de Klerk, Westinghouse Research & Development Center, Beulah Rd., Pittsburgh, Pa. 15235)

5-7. **Thermal Conductivity**, 13th intern. conf., Lake of the Ozarks, Rolla, Mo. (R. L. Reisbig, Extension Div., Univ. of Missouri-Rolla, Rolla 65401)

5-9. **Symposium on Environmental Surveillance around Nuclear Installations**, Intern. Atomic Energy Agency, Warsaw, Poland. (J. H. Kane, Office of Information Services, Atomic Energy Commission, Washington, D.C. 20545)

5-9. **American College of Obstetricians and Gynecologists**, Honolulu, Hawaii. (ACOG, Suite 1016, 2222 Kalakaua Ave., Honolulu 96815)

5-9. **American Public Health Assoc.**, 101st, San Francisco, Calif. (T. R. Hood, APHA, 1740 Broadway, New York 10019)

6-9. **Engineering Problems of Fusion Research**, 5th symp., American Nuclear Soc., Princeton, N.J. (R. G. Mills, Plasma Physics Lab., Box 451, Princeton 08540)

6-9. **American Soc. of Tropical Medicine and Hygiene**, Houston, Tex. (G. R. Healy, Box 15208, Emory Univ., Atlanta, Ga. 30333)

6-11. **American Soc. of Clinical Hypnosis**, Toronto, Ont., Canada. (F. D. Nowlin, 800 Washington Ave., SE, Minneapolis, Minn. 55414)

7-8. **Michigan Pesticide Assoc.**, Lansing. (A. J. Lemin, Upjohn Co., Kalamazoo, Mich. 49001)

7-8. **Symposium on Possible Relationships between Solar Activity and Meteorological Phenomena**, Greenbelt, Md. (W. R. Bendeen, Meteorology Program Office, Code 120, Goddard Space Flight Center, Greenbelt 20771)

7-9. **Pittsburgh Diffraction Soc.**, 31st annual conf., Pittsburgh, Pa. (R. J. Kadlec, Dept. of Biochemistry, Univ. of Pittsburgh, Pittsburgh 15213)

7-9. **Radiologic and Other Biophysical Methods in Tumor Diagnosis**, 18th conf., Houston, Tex. (J. Brandenberger, M. D. Anderson Hospital and Tumor Inst., Houston 77025)

7-9. **International Symp. on Thermal Expansion of Solids**, Lake of the Ozarks, Rolla, Mo. (R. L. Reisbig, Extension Div., Univ. of Missouri-Rolla, Rolla 65401)

7-10. **American Soc. of Cytology**, Salt Lake City, Utah. (W. R. Lang, 7112 Lincoln Dr., Philadelphia, Pa. 19119)

7-10. **Gerontological Soc.**, Miami Beach, Fla. (E. Kaskowitz, GS, Suite 520, 1 Dupont Circle, NW, Washington, D.C. 20036)

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7-10. American **Medical Women's** Assoc., Palm Beach, Fla. (G. Conroy, 1740 Broadway, New York 10019)

7-10. Society for **Neuroscience**, 3rd mtg., San Diego, Calif. (B. C. Nichols, SN, 9650 Rockville Pike, Bethesda, Md. 20014)

8-10. **School Science and Mathematics** Assoc., Des Moines, Iowa. (D. M. Shafer, Lewis House, Indiana Univ. of Pennsylvania, Indiana 15701)

8-10. American **Social Health** Assoc., New York, N.Y. (E. G. Lippincott, ASHA, 1740 Broadway, New York 10019)

8-11. American **Heart** Assoc., 46th scientific session, Atlantic City, N.J. (A. Salerno, AHA, 44 E. 23 St., New York 10010)

8-12. American Assoc. for **Cancer Education**, Honolulu, Hawaii. (R. F. Bake-meier, Univ. of Rochester School of Medicine, 260 Crittendon Blvd., Rochester, N.Y. 14620)

9-11. Society for **Computer Medicine**, Denver, Colo. (M. Laney, 1515 Spencerville Rd., Spencerville, Md. 20868)

9-11. American **Medical Curling** Assoc., Wilmette, Ill. (T. G. Brown, 447 S. Main St., Hillsboro, Ill., 62049)

11-15. American Inst. of **Chemical Engineers**, 66th annual, Philadelphia, Pa. (A. S. West, Rohm & Haas Research Labs., 5000 Richmond St., Philadelphia 19137)

11-15. American Soc. of **Mechanical Engineers**, 94th annual, Detroit, Mich. (A. B. Conlin, Jr., ASME, 345 E. 47 St., New York 10017)

11-15. Academy of **Pharmaceutical Sciences**, San Diego, Calif. (W. C. Roemer, APS, Room 924, 211 E. Chicago Ave., Chicago, Ill. 60611)

11-16. American Soc. of **Agronomy**, Las Vegas, Nev. (M. Stelly, ASA, 677 S. Segoe Rd., Madison, Wis. 53711)

11-16. American Assoc. of **Blood Banks**, Bal Harbour, Fla. (L. J. James, AABB, Suite 608, 1828 L St., NW, Washington, D.C. 20036)

11-16. Latin American Congr. of **Gerontology and Geriatrics**, Buenos Aires, Argentina. (Congr. Secretary, Marcelo T. de Alvear 2149, 50 piso A. Buenos Aires)

11-16. American **Nuclear** Soc., San Francisco, Calif. (O. J. DuTemple, ANS, 244 E. Ogden Ave., Hinsdale, Ill. 60521)

11-20. **Reliability Engineering and Management** Inst., 11th annual conf., Tucson, Ariz. (D. Kececioglu, Aerospace and Mechanical Engineering Dept., Univ. of Arizona, Tucson 85721)

12-14. **Geochemical** Soc., Dallas, Tex. (E. E. Angino, Dept. of Geology, Univ. of Kansas, Lawrence 66044)

12-14. **Geological** Soc. of America, Dallas, Tex. (E. B. Eckel, GSA, P.O. Box 1719, Boulder, Colo. 80302)

12-14. **Operations Research** Soc. of America, 44th mtg., San Diego, Calif. (J. V. Ravenis, Research and Advanced Technology, MS7-15, General Dynamics Electronic Dynamics Div., Box 127, San Diego 92112)

12-14. **Paleontological** Soc., Dallas, Tex. (W. O. Addicott, U.S. Geological Survey, 345 Middlefield Rd., Menlo Park, Calif. 94025)

12-16. Conference on **Hemoglobins: Comparative Molecular Biology Models**

for the Study of Disease, New York Acad. of Sciences, Silver Spring, Md. (S. Sinaian, NYAS, 2 E. 63 St., New York 10021)

12-16. Symposium on the Physical Behaviour of Radioactive Contaminants in the Atmosphere, Intern. Atomic Energy Agency and World Meteorological Organization, Vienna, Austria. (J. H. Kane, Office of Information Services, Atomic Energy Commission, Washington, D.C. 20545)

12-17. Society of Photographic Scientists and Engineers, Tokyo, Japan. (F. W. Gerretson, SPSE, Bywater Rd., Annapolis, Md. 21401)

13-15. Eastern Analytical Symp., American Chemical Soc., New York, N.Y. (L. Brancone, Lederle Labs., American Cyanamid Co., Pearl River, N.Y. 10965)

13-16. Magnetism and Magnetic Materials Conf., 19th, Inst. of Electrical and Electronics Engineers, Boston, Mass. (IEEE, 345 E. 47 St., New York 10017)

14. Viruses in the Environment and Their Potential Hazards Conf., Burlington, Ont., Canada. (B. J. Dutka, Microbiology Labs., Canada Centre for Inland Waters, P.O. Box 5050, Burlington, K7R 4A6)

14-16. Applied Remote Sensing of Arid Lands Resources and Environment, 4th conf., Tucson, Ariz. (M. A. Peel, Jr., Div. of Continuing Education, Univ. of Arizona, Tucson 85721)

14-16. Society for Applied Spectroscopy, New York, N.Y. (R. F. Hirsch, Chemistry Dept., Seton Hall Univ., South Orange, N.J. 07079)

14-16. International Conf. on Health Technology Systems, Soc. for Advanced Medical Systems and Operations Research Soc. of America, San Francisco, Calif. (M. F. Collen, 3779 Piedmont Ave., Oakland, Calif. 94611)

14-16. Nuclear Science Symp., Inst. of Electrical and Electronics Engineers, San Francisco, Calif. (Technical Activities Board, IEEE, 345 E. 47 St., New York 10017)

14-17. American Assoc. for Automotive Medicine, Oklahoma City, Okla. (A. Carriere, 801 Green Bay Rd., Lake Bluff, Ill. 60044)

14-17. American Acad. of Neurological Surgery, Pasadena, Calif. (R. H. Patterson, Jr., AANS, 525 E. 68 St., New York 10021)

14-17. Western Surgical Assoc., Houston, Tex. (W. P. Mikkelsen, WSA, 1127 Wilshire Blvd., Los Angeles 90017)

14-18. American Anthropological Assoc., Houston, Tex. (E. J. Lehman, AAA, 1703 New Hampshire Ave., NW, Washington, D.C. 20009)

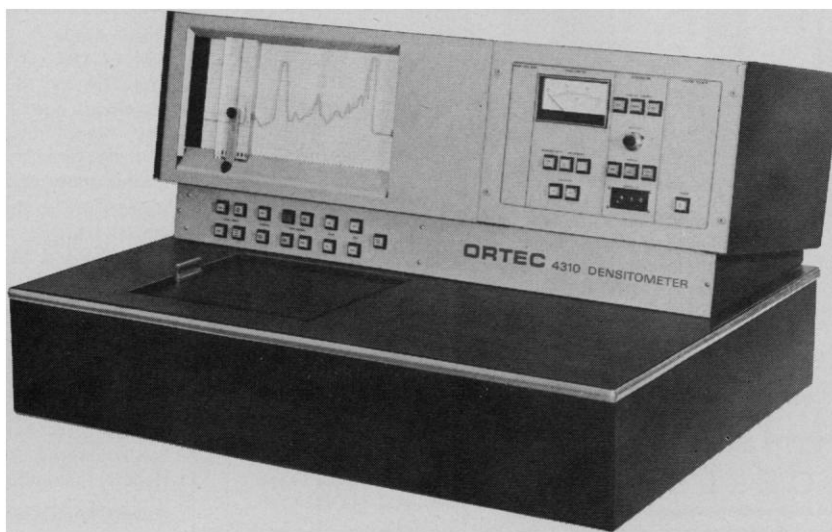
14-18. American Assoc. of Psychiatric Services for Children, Chicago, Ill. (AAPSC, 1701 18th St., NW, Washington, D.C. 20009)

15. Symposium on Fatigue Behaviour of Composite Materials, Inst. of Physics, London, England. (Meetings Officer, IP, 47 Belgrave Sq., London SW1X 8QX)

15-16. Symposium on Childhood Obesity, New York, N.Y. (M. Winick, Inst. of Human Nutrition, Columbia Univ., 511 W. 166 St., New York 10032)

15-16. Electron Diffraction for the Investigation of Structure Conf., Inst. of Physics, London, England. (Meetings

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15-16. Society of Naval Architects and Marine Engineers, 81st annual, New York, N.Y. (SNAME, 74 Trinity Pl., New York 10006)

15-17. American Soc. for Cell Biology, Miami Beach, Fla. (G. D. Pappas, Dept. of Anatomy, Albert Einstein College of Medicine, 1300 Morris Park Ave., Bronx, N.Y. 10461)

16. American Geographical Soc., New York, N.Y. (B. W. Adkinson, AGS, Broadway at 156 St., New York 10032)

16-17. Oklahoma Acad. of Science, Oklahoma City. (J. Lovell, Biological Sciences Dept., Southwestern State College, Weatherford, Okla. 73096)

16-17. Tennessee Acad. of Science, Nashville. (J. D. Caponetti, Dept. of Botany, Univ. of Tennessee, Knoxville 37916)

17-20. American Assoc. of Gynecological Laparoscopists, New Orleans, La. (J. M. Phillips, 11239 S. Lakewood Blvd., Downey, Calif. 90241)

18-21. Academy of Psychosomatic Medicine, Williamsburg, Va. (K. Shannon, Jr., 813 River Rd., Shreveport, La. 71105)

19-21. American Physical Soc., Fluid Dynamics Div., New Haven, Conn. (W. W. Havens, APS, 335 E. 45 St., New York 10017)

19-22. International Conf. on High Voltage DC and/or AC Power Transmission, Institution of Electrical and Radio Engineers, London, England. (IERE, 8-9 Bedford Square, London WC1B, 3RG)

19-24. Philippine Acad. of Ophthalmology and Otolaryngology, Manila. (G. D. Lim, PAOO, P.O. Box 1510, Manila)

20-22. European Conf. on Research into Management of Information Services and Libraries, Assoc. of Special Libraries and Information Bureaus, Paris, France. (E. Lowry-Corry, ASLIB, 3 Belgrave Sq. London, SW1X 8PL, England)

24-25. National Federation of Catholic Physicians Guilds, Anaheim, Calif. (R. H. Herzog, NFPCG, 2825 N. Mayfair Rd., Milwaukee, Wis. 53222)

25-28. Association of Military Surgeons of the U.S., 80th annual, Washington, D.C. (W. Welham, AMSUS, 8502 Connecticut Ave., NW, Chevy Chase, Md. 20015)

26-28. Chemical Marketing Research Assoc., St. Louis, Mo. (C. C. Harvey, Ethyl Corp., 451 Florida St., Baton Rouge, La. 70801)

25-30. Radiological Soc. of North America, Chicago, Ill. (J. W. Beeler, RSNA, 713 E. Genesee St., Syracuse, N.Y. 13210)

26-29. Entomological Soc. of America, Dallas, Tex. (W. P. Murdoch, 4603 Calvert Rd., College Park, Md. 20740)

26-29. Conference on Na⁺, K⁺ ATPase Complex, New York Acad. of Sciences, New York, N.Y. (S. Sinanian, NYAS, 2 E. 63 St., New York 10021)

26-30. International Symp. on the Earth's Gravitational Field and Secular Variations in Position, Australian Acad. of Science and Intern. Assoc. of Geodesy, Sydney. (R. S. Mather, School of Surveying, Univ. of New South Wales, P.O. Box 1, Kensington, NSW 2033)

27-28. Divers' Gas Purity Symp., Columbus, Ohio. (P. S. Riegel, Battelle-

Columbus Labs., 505 King Ave., Columbus 43201)

27-29. Symposium on Wildlife in an Urbanizing Environment, Springfield, Mass. (D. R. Progulsk, Dept. of Forestry and Wildlife Management, Univ. of Massachusetts, Amherst 01002)

27-2. Society for Clinical and Experimental Hypnosis, Newport Beach, Calif. (M. Kenn, SCEH, 140 West End Ave., New York 10023)

28-30. International Symp. on Recycling and Corporate Goals: A New Environmental Technology or a New Economic Priority?, Rüschlikon/Zurich, Switzerland. (R. Brun, Gottlieb Duttweiler Inst. for Economic and Social Studies, CH-8803 Rüschlikon/Zurich)

28-30. Intra-Science Research Foundation, 7th mtg., Santa Monica, Calif. (S. M. Pokras, ISRF, P.O. Box 430, Santa Monica 90406)

28-2. American Anthropological Assoc., New Orleans, La. (E. J. Lehman, AAA, 1703 New Hampshire Ave., NW, Washington, D.C. 20009)

29-30. Effectiveness of On-Line Biomedical Computing, 2nd natl. conf., Advancement of Medical Instrumentation, Rosslyn, Va. (J. Skillin, AAMI, Suite 417, 1500 Wilson Blvd., Arlington, Va. 22209)

29-30. Conference on the Managua Earthquake, Earthquake Engineering Research Inst. and the Ministry of Public Works of Managua, San Francisco, Calif. (C. Rojahn, U.S. Geological Survey, Room 7067, 390 Main St., San Francisco 94105)

30-3. American Psychoanalytic Assoc., New York, N.Y. (S. Goodman, APA, 1 E. 57 St., New York 10022)

December

1-2. National Federation of Catholic Physicians' Guilds, Anaheim, Calif. (R. H. Herzog, 2825 N. Mayfair Rd., Milwaukee, Wis. 53222)

1-4. American Soc. of Hematology, Chicago, Ill. (S. Tobin, Beth Israel Hospital, Boston, Mass. 02215)

1-5. American Medical Assoc., Anaheim, Calif. (E. B. Howard, AMA, 535 N. Dearborn St., Chicago, Ill. 60610)

1-6. American Acad. of Dermatology, Chicago, Ill. (D. P. Compton, AAD, 2250 Northwest Flanders St., Portland, Ore. 97210)

2-4. Technology of Water Quality Conf., American Water Works Assoc., Cincinnati, Ohio. (AWWA, 2 Park Ave., New York 10016)

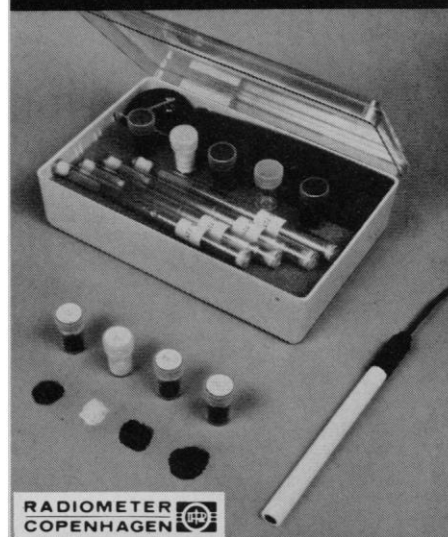
2-6. American Acad. for Cerebral Palsy, Washington, D.C. (J. E. Bryan, AACP, 1255 New Hampshire Ave., NW, Washington, D.C. 20036)

2-6. Interdisciplinary Symp. on Advanced Concepts and Techniques in the Study of Snow and Ice Resources, U.S. Natl. Committee for the Intern. Hydrological Decade, Monterey, Calif. (H. S. Santeford, Jr., USNC/IHD, Natl. Acad. of Sciences, 2101 Constitution Ave., NW, Washington, D.C. 20418)

2-10. International Union for Quaternary Research, Christchurch, New Zealand. (J. M. Sons, University of Canterbury, Christchurch, N.Z.)

3-5. Southern Surgical Assoc., Hot Springs, Va. (D. C. Sabiston, Duke Univ. Medical Center, Durham, N.C. 27710)

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4-8. Central American **Medical Congr.**, 15th, San José, Costa Rica. (G. Jiménez, Colegio de Medicos, San José)

5-7. **Electric Furnace Conf.**, American Inst. of Mining, Metallurgical & Petroleum Engineers and Metallurgical Soc., Cincinnati, Ohio. (C. Moore, AIMPE, 345 E. 47 St., New York 10017)

6-7. American College of **Chemosurgery**, Chicago, Ill. (R. S. Moraites, ACC, 7721 Montgomery Rd., Cincinnati, Ohio 45236)

6-8. International Study Group for **Steroid Hormones**, 6th, Rome, Italy. (C. Conti, ISGSH, Istituto di Patologia Medica II, Policlinico Umberto I, Università di Roma, Rome)

6-11. American Acad. of **Optometry**, San Francisco, Calif. (C. C. Koch, AAO, 214-215 Foshay Tower, Minneapolis, Minn. 55402)

7-9. American Acad. of **Psychoanalysis**,

New York, N.Y. (J. Barnett, AAP, 40 Gramercy Park N., New York 10024)

9-13. American Soc. of **Hospital Pharmacists**, 8th, New Orleans, La. (J. A. Oddis, ASHP, 4630 Montgomery Ave., Bethesda, Md. 20014)

10-12. **Sensing of Environmental Pollutants**, 2nd conf., American Inst. of Aeronautics and Astronautics and Inst. of Electrical and Electronics Engineers, Washington, D.C. (AIAA, 1290 Avenue of the Americas, New York 10019)

10-14. American Soc. of **Agricultural Engineers**, Chicago, Ill. (J. L. Butt, ASAE, P.O. Box 229, St. Joseph, Mich. 49085)

10-14. American Geophysical Union, Section on **Hydrology**, San Francisco, Calif. (R. Lee, Div. of Forestry, 337 Percival Hall, West Virginia Univ., Morgantown 26506)

11-14. International Symp. on **Biomembranes**, Madurai, India. (J. Jayaraman,

ISB, Dept. of Biological Sciences, Madurai Univ., Madurai 625021)

12-15. Latin American Federation of **Parasitologists**, 3rd congr., Medellin, Colombia. (M. Restrepo, Dpto. de Microbiologia y Parasitologia, Facultad de Medicina, Apartado aero 883, Medellin)

12-16. American **Psychoanalytic Assoc.**, New York, N.Y. (M. A. Berezin, 90 Forest Ave., West Newton, Mass. 02165)

17-19. Conference on **Computers in Spectroscopy**, Soc. for Analytical Chemistry and Inst. of Physics, London, England. (Meetings Officer, IP, 47 Belgrave Sq., London, SW1X 8QX)

17-21. Association of **Engineers and Architects in Israel**, 3rd world congr., Tel-Aviv. (AEAI, Engineers Inst., 200 Dizengoff Str., POB 3082, Tel-Aviv)

17-21. **Marine Waste Disposal**, 2nd intern. congr., Assoc. Nazionale di Ingegneria Sanitaria, San Remo, Italy. (Istituto di Ingegneria Sanitaria, del Politecnico di Milano, Segreteria per 1 Convegni Intern., Piazza Leonardo da Vinci, 32 Milano, Italy)

17-23. International Assoc. for **Medical Research and Cultural Exchange**, Yaounde, Cameroun. (IAMR, 4, rue de Seze, 75 Paris 9^e, France)

26-30. Society for the **History of Technology**, San Francisco, Calif. (M. Kranzberg, Dept. of Social Sciences, Georgia Inst. of Technology, Atlanta, Ga. 30332)

27-30. **Animal Behavior Soc.**, Houston, Tex. (N. M. Jessop, Dept. of Biology, U.S. International Univ., San Diego, Calif. 92106)

27-30. **Biometric Soc.**, Eastern North American region, New York, N.Y. (F. B. Cady, Biometric Unit, 337 Warren Hall, Cornell Univ., Ithaca, N.Y. 14850)

27-30. Institute of **Mathematical Statistics**, New York, N.Y. (L. Katz, Statistical Lab., Michigan State Univ., East Lansing 48823)

27-30. Western Society of **Naturalists**, San Diego, Calif. (D. H. Montgomery, Dept. of Biological Sciences, California Polytechnic State Univ., San Luis Obispo 93401)

27-30. Society of **Protozoologists**, Houston, Tex. (D. M. Hammond, Dept. of Zoology, Utah State Univ., Logan 84321)

27-30. American **Statistical Assoc.**, New York, N.Y. (J. W. Lehman, ASA, 806 15th St., NW, Washington, D.C. 20005)

27-30. American Soc. of **Zoologists**, Houston, Tex. (C. J. Goodnight, Dept. of Biology, Western Michigan Univ., Kalamazoo 49001)

28-29. **Industrial Relations Research Assoc.**, New York, N.Y. (D. B. Johnson, 7114 Social Science Bldg., Univ. of Wisconsin, Madison 53706)

28-30. **Archaeological Inst. of America**, St. Louis, Mo. (E. A. Whitehead, AIA, 260 West Broadway, New York 10013)

28-30. American **Economic Assoc.**, New York, N.Y. (R. Fels, 1313 21st Ave. S., Nashville, Tenn. 37212)

28-30. **History of Science Soc.**, San Francisco, Calif. (R. H. Stuewer, School of Physics and Astronomy, Univ. of Minnesota, Minneapolis 55455)

28-30. **Linguistic Soc. of America**, San Diego, Calif. (T. A. Sebeok, LSA, Room 800, 1717 Massachusetts Ave., NW, Washington, D.C. 20036)

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