

# Meetings

## Histochemistry of Nervous Transmission

An international symposium on the histochemistry of nervous transmission was organized under the sponsorship of the International Histochemical Committee and held in a congress center in Nokkala, some 8 miles west of Helsinki, Finland. At the meeting, held from 11 to 14 August 1970, an appropriate mood was admirably set in the opening address by Marthe Vogt of England, a pioneer in the field of neurotransmitter localization in the brain. She pointed out the necessity of localizing transmitter substances in the brain before endeavoring to understand such complex but important phenomena as sleep, arousal, aggression, pain, and sexual activity, all of which are dependent on synapses whose transmitters can be studied histochemically, physiologically, and pharmacologically.

The first session was dedicated to light-microscopic histochemistry of monoamine transmitter substances. The direct microscopic visualization of these transmitters by fluorescence induced by aqueous formaldehyde solution was discussed by A. K. Sakharova (U.S.S.R.). Refinements of this method have made it possible not only to discriminate between different amines and quantify them, as was shown by Gösta Jonsson of Sweden, but also to suggest the presence in the brain of an hitherto unknown new transmitter, as indicated by Anders Björklund (Sweden). The host couple Olavi and Liisa Eränkö reported spectrophotofluorimetric observations on a new monoamine-rich cell type that has features of both a nerve cell and a chromaffin cell.

The second session dealt with autoradiographic and immunohistochemical observations. Miriam Salpeter (United States) described sites of glutamate uptake by insect muscles. The paper given by Kjell Fuxe of Sweden may be mentioned as another example. He used the fluorescent antibody technique to localize dopamine beta-oxidase, the enzyme that converts dopamine into the trans-

mitter substance noradrenaline, and found it in adrenergic ganglion cell bodies but not in the peripheral nerve fibers or terminals.

A spirited discussion on the fine structural localization of monoamine transmitters dealt with the nature and transmitter content of different types of synaptic vesicles, especially those with a dense core. This was a session which had drawn speakers from widely separated laboratories such as P. H. Hashimoto of Japan, Amanda Pellegrino de Iraldi of Argentina, and Angelo Machado of Brazil.

Original new data on chromogranin, the specific satellite protein of the catecholamine-containing granules, were reported by the well-known authority on amines, Hermann Blaschko, of England, who recently had been able to localize this peculiar protein immunohistochemically in nerve cell cytoplasm. Release, uptake, storage, and metabolism of transmitter substances were discussed by other participants. Also included were observations on adrenal medulla, blood platelets, and mast cells.

A consideration of cholinergic nervous transmission included the subject of the histochemical localization of cholinesterases in nervous tissue, which was reviewed by Ann Silver of England and Peter Robinson of Australia. The possibility of making the transmitter substance—acetylcholine—itself visible in the electron microscope with the use of the Champy-Maillet zinc iodide-osmium technique was discussed by Konrad Akert (Switzerland). Alvin Burt (United States) presented a promising technique for the histochemical demonstration of choline acetyltransferase, the enzyme synthesizing acetylcholine. A lively discussion followed, during which Russell Barnett (United States) pointed out many potential pitfalls in acyl transferase techniques.

The last two sessions were concerned with autonomic innervation patterns, both in normal tissues or after experi-

mental procedures. Rich adrenergic innervation was observed by T. H. Schiebeler (Germany) in the heart valves; sympathetic reinnervation of tissues transplanted into the eye was reported by Torbjörn Malmfors of Sweden; and noradrenaline transport in sympathetic nerves was reported by D. Mayor of England.

The scientific program of the meeting was concluded by a time-lapse film, prepared by Geoffrey Burnstock and his Australian co-workers, on the formation of nerve-muscle relations in tissue cultures of smooth muscle and sympathetic nerves. Visualization of palpation of surrounding cells by the growing sympathetic nerve endings, undulating movements of the Schwann cells, and contractions of the smooth muscle beginning immediately after established nerve-muscle contact were both instructive and entertaining.

ROBERT L. HUNTER

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## Forthcoming Events

### May

16-19. National Conf. on **Breast Cancer**, 2nd annual, Los Angeles, Calif. (R. N. Grant, American Cancer Soc., 219 E. 42 St., New York 10017)

16-19. **Illinois State Soc.**, Arlington Heights. (R. White, ISS, 360 N. Michigan Ave., Chicago, Ill. 60601)

16-19. American **Mining Congr.**, Pittsburgh, Pa. (Meetings Officer, AMC, 1100 Ring Bldg., Washington, D.C. 20036)

16-19. International **Pulp and Paper Instrumentation**, Philadelphia, Pa. (G. G. Eastwood, Engineering Research Dept., Kimberly-Clark Corp., Neenah, Wis. 54957)

16-19. National **Tuberculosis and Respiratory Disease Assoc.**, Los Angeles, Calif. (J. E. Perkins, NTRDA, 1740 Broadway, New York 10019)

16-20. American **Dermatological Assoc.**, Sky Top, Pa. (B. Kennedy, 1542 Tulane, New Orleans, La. 70112)

16-21. **Social Welfare, Human Aspirations and National Priorities**, 98th annual conf., Dallas, Tex. (J. R. Hoffer, Natl. Conf. on Social Welfare, 22 W. Gay St., Columbus, Ohio 43215)

16-22. American College of **Radiology**, 10th intern. congr., San Juan, P.R. (V. A. Marcial, Radiological Soc. of Puerto Rico, Univ. of Puerto Rico, Medical Sciences Campus, School of Medicine, San Juan)

17-19. National **Aerospace Electronics Conf.**, Dayton, Ohio. (P. J. Logus, Technical Program '71 NAECON, 265 Canterbury Dr., Dayton 45429)

17-19. **Instrument Soc. of America**, 14th annual, national power instrumentation symp., New York, N.Y. (P. J. Womel-

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17-19. American **Thoracic Soc.**, Los Angeles, Calif. (L. G. Wayne, ATS, 1740 Broadway, New York 10019)

17-20. Australian **Biochemical Soc.**, Brisbane. (J. N. Mansbridge, Dept. of Biochemistry, Univ. of Queensland, St. Lucia, Q. 4067, Australia)

17-20. Symposium on **Blood Transfusion and Blood Utilization**, 7th annual, Tehran, Iran. (F. Ala, VIIth Congr. of the World Federation of Haemophilia, P.O. Box 13/1438, C.I.C.I. Tehran)

17-20. American Soc. of **Mechanical Engineers**, design engineering conf. and show, New York, N.Y. (A. B. Conlin, ASME, 345 E. 47 St., New York 10017)

17-20. International **Microwave Symp.**, Washington, D.C. (R. V. Garver, Harry Diamond Labs., Washington, D.C. 20438)

17-20. American Inst. of **Mining Metallurgical and Petroleum Engineers** and Metallurgical Soc., spring mtg., Atlanta, Ga. (A. B. Conlin, AIMPE, 345 E. 47 St., New York 10017)

17-20. American **Urological Assoc.**, Chicago, Ill. (R. J. Hannigan, AUA, 1120 N. Charles St., Baltimore, Md. 21201)

17-21. Canadian Congr. of **Applied Mechanics**, 3rd annual, Calgary, Alberta. (L. G. Currie, Dept. of Mechanical Engineering, Univ. of Toronto, Toronto 5, Ont., Canada)

17-21. International Conf. on **Oral Surgery**, 4th annual, Amsterdam, Netherlands. (N. Rowe, Royal College of Surgeons, Lincoln Inn Fields, London, A.C.2, England)

17-21. **Otolaryngological Soc.** of Australia, Adelaide. (D. B. Arnott, 43 Lower Fort St., Sydney, Australia 2000)

17-21. International Symp. on **Remote Sensing of Environment**, 7th annual, Ann Arbor, Mich. (J. J. Cook, Center for Remote Sensing Information and Analysis, Willow Run Labs., P.O. Box 618, Ann Arbor 48107)

18-20. **Computer Conf.**, Atlantic City, N.J. (J. Moshman, Moshman Associates, Inc., 6400 Goldsboro Rd., Washington, D.C. 20034)

18-20. National Conf. on **Environmental Effects on Aircraft and Propulsion Systems**, 10th annual, Trenton, N.J. (R. J. Skeba, Dept. of the Navy, Naval Air Propulsion Test Center, Trenton 08628)

18-21. American Inst. of **Aeronautics and Astronautics** and Canadian **Aeronautics and Space Inst.**, London, England. (Secretary, AIAA, 1290 Ave. of the Americas, New York 10019)

18-21. International **Instruments Electronics and Automation** Exhibition, London, England. (Secretary, Inst. of Physics and Physical Soc., 47 Belgrave Sq., London, S.W.1)

18-21. Society for **Experimental Stress Analysis**, spring mtg., Salt Lake City, Utah. (Secretary, SESA, 21 Bridge Sq., Westport, Conn. 06880)

19-21. American **Helicopter Soc.**, 27th annual, Washington, D.C. (K. B. Amer, Aeronautical Engineering Div., Hughes Tool Co., Aircraft Div., Bldg. 2, T7B, Culver City, Calif. 90230)

19-21. British Congr. of **Obstetrics and Gynecology**, London, England. (J. Alvey, 47 Fitzwilliam Sq., Dublin, Ireland)

19-21. American Soc. for **Quality Control**, Chicago, Ill. (R. W. Shearman, ASQC, 161 W. Wisconsin Ave., Milwaukee, Wis. 53203)

19-22. American Assoc. for **Child Care in Hospitals**, 5th annual, New York, N.Y. (N. Yasumura, Children's Recreation Service of Bellevue Hospital Center, First Ave. and 27 St., New York 10016)

20-21. **Computer-Aided Circuit Analysis and Design**, London, England. (Secretary, Inst. of Physics and the Physical Soc., 47 Belgrave Sq., London, S.W.1)

20-22. International Symp. on **Otophysiology**, Ann Arbor, Mich. (M. Lawrence, Kresge Hearing Research Inst., 1301 E. Ann St., Ann Arbor 48104)

20-23. International Congr. of **Lacustrine Climatology**, Como, Italy. (R. Gualtierotti, Centro di Ricerche di Bioclimatologia Medica, Università di Milano, via Vanvitalli, 32 20129 Milan, Italy)

23-24. American **Laryngological Assoc.**, San Francisco, Calif. (F. D. Lathrop, R.D. 1, Pittsford, Vt. 05763)

23-27. International Congr. of **Cytology**, 4th annual, London, England. (E. von Haam, 410 W. Tenth Ave., Columbus, Ohio)

23-27. Institute of **Food Technologists**, New York, N.Y. (C. L. Willey, IFT, 221 N. LaSalle St., Chicago, Ill. 60601)

23-27. American Assoc. of **Plastic Surgeons**, Williamsburg, Va. (C. W. Monroe, 715 Lake St., Oak Park, Ill. 60301)

24-25. Council of **Biology Editors**, Williamsburg, Va. (K. F. Heumann, Federation of American Societies for Experimental Biology, 9650 Rockville Pike, Bethesda, Md. 20014)

24-26. Joint Meeting of **Operations Researchers in the Federal Government and the Private Research Sector**, 4th annual, Gaithersburg, Md. (R. Herrmann, Dept. of Management Science, George Washington Univ., Room 103, Hall of Government, Washington, D.C. 20006)

24-26. American **Ophthalmological Soc.**, Hot Springs, Va. (S. D. McPherson, 1110 W. Main St., Durham, N.C. 27701)

24-26. **Power Industry Applications**, technical conf., Boston, Mass. (E. T. Voelker, Chas. T. Main Inc., 441 Stuart St., Boston 02116)

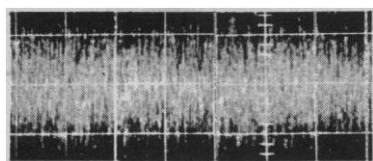
24-28. Australian and New Zealand Assoc. for the **Advancement of Science**, 43rd annual, Brisbane, Australia. (D. Stretton, ANZAAS Congr. Executive Officer, Dept. of Physiology, Univ. of Queensland, St. Lucia 4067, Australia)

24-28. International Congr. on **Combustion Engines**, 9th annual, Stockholm, Sweden. (Secretariat, ICCE, 10 Avenue Hoche, Paris 8, France)

24-28. International Soc. of **Haematology**, Asian-Pacific Div., 2nd annual, Melbourne, Australia. (Haematology Secretariat, P.O. Box 29, Parkville, Victoria, Australia 3052)

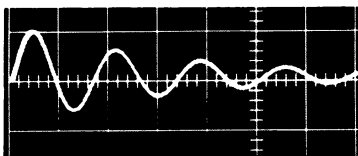
24-28. American **Industrial Hygiene Assoc.**, Toronto, Canada. (G. D. Clayton, AIHA, 25711 Southfield Rd., Southfield Mich. 48075)

25-26. Symposium on **Automation in Heat Treating**, Cleveland, Ohio. (W. M. Mueller, Director of Education, American Soc. of Metals, Metals Park, Ohio 44073)



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25-26. American **Broncho-Esophago-logical** Assoc., San Francisco, Calif. (W. H. Maloney, 2065 Adelbert Rd., Cleveland, Ohio 44106)

25-27. American Acad. of **Facial Plastic and Reconstructive Surgery**, San Francisco, Calif. (C. N. Patterson, 1110 W. Main St., Durham, N.C. 27701)

25-27. **Urban Technology** Mtg. and Technical Display "Cities-1976," New York, N.Y. (L. Craner, Jr., American Inst. of Aeronautics and Astronautics, 1290 Ave. of the Americas, New York 10019)

25-28. National **Microfilm** Assoc., 20th annual, Washington, D.C. (D. Banks, NMA, Suite 1101, 8728 Colesville Rd., Silver Spring, Md. 20910)

26-27. American **Iron and Steel** Inst., New York, N.Y. (E. O. Summer, AISI, 150 E. 42 St., New York 10017)

26-28. British Assoc. of **Paediatric Surgeons**, 18th annual, Genoa, Italy. (J. Lister, BAPS, % Children's Hospital, Western Bank, Sheffield 10, England)

27-29. International **Cardiac Surgery** Conf., Cardiac Soc. of Australia and New Zealand, and Natl. Heart Foundation of Australia, Melbourne. (J. K. Clarebrough, Royal Melbourne Hospital, Victoria, Australia 3050)

28-29. American **Otological** Soc., San Francisco, Calif. (W. H. Bradley, OTS, 1100 E. Genesee St., Syracuse, N.Y. 13210)

30-2. Canadian **Chemical** Conf. and Exhibition, 54th annual, Halifax, N.S. (G. D. MacKay, Dept., of Chemical Engineering, Nova Scotia Technical College, Halifax)

30-3. **Medical Library** Assoc., 70th annual, New York, N.Y. (H. B. Schmidt, MLA, Suite 1601, 919 N. Michigan Ave., Chicago, Ill. 60611)

31-4. **Biological Aspects of Electrochemistry**, Rome, Italy. (Secretary, Inst. of Physics and Physical Soc., 47 Belgrave Sq., London, S.W.1, England)

### June

1-2. **Acoustics Testing** Facilities, Sudbury, England. (Meetings Officer, Inst. of Physics and Physical Soc., 47 Belgrave Sq., London, S.W.1, England)

1-3. **Electrical and Electronic Measurements and Test Instrument** Conf., Ottawa, Ont., Canada. (H. Ashworth, P.O. Box 252, Richmond, Ont.)

1-3. **Lubrication Symp.**, American Soc. of Mechanical Engineers, Miami, Fla. (A. B. Conlin, 345 E. 47 St., New York 10017)

1-4. Bell **Telephone** Labs., Washington, D.C. (D. Herriott, Bell Telephone Labs., Murray Hill, N.J. 17971)

2. National **Oceanography** Assoc. and Ocean Science and Technology Conf., Washington, D.C. (Secretary, Ocean Science and Technology Advisory Committee, Union Trust Bldg., Suite 700, 15th and G Sts., NW, Washington, D.C. 20036)

2-4. **Commercial Development** Assoc., White Sulphur Springs, W.Va. (R. E. Eddy, Commercial Development Dept., Nalco Chemical Co., 180 N. Michigan Ave., Chicago, Ill. 60601)

2-4. **Laser Engineering and Applications** Conf., Washington, D.C. (D. Edgar, Courtesy Associates, 1629 K St., NW, Washington, D.C. 20006)

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2-5. **Tooth Morphology**, 3rd annual intern. symp., Brussels, Belgium. (M. Pourtois, Service de Stomatologie, Hôpital Universitaire Saint-Pierre, rue Haute, 322, 1000 Brussels)

3-4. **Molecular Biology**, 5th annual intern. symp., Baltimore, Md. (C. J. O' Donovan, Miles Laboratories, Inc., Elkhart, Ind. 46514)

3-5. **International Endoscopic Soc.**, Prague, Czechoslovakia. (Secretariat, Czechoslovak Gastroenterological Soc., Sokolska 31 Prague 2)

6-10. **Tissue Culture Assoc.**, Lake Placid, N.Y. (P. H. Kahn, Dept. of Anatomy, Univ. of Michigan, Ann Arbor 48104)

6-11. **Canadian Assoc. of Pathologists**, St. John's, Newfoundland. (D. W. Penner, Winnipeg General Hospital, Winnipeg 3, Manitoba, Canada)

6-11. **European Congr. on Rheumatic Diseases**, 7th annual, Brighton, England. (M. C. C. Andrews, 5 Ave. Tivoli, 1700 Fribourg, Switzerland)

6-12. **Canadian Medical Assoc.**, 104th annual, Halifax, N.S. (D. A. Geekie, Public Relations, CMA House, 1867 Alta Vista Dr., Ottawa 8, Ont., Canada)

7-8. **American Chemical Soc.**, 3rd annual Central regional mtg., Cincinnati, Ohio. (R. S. Macomber, Dept. of Chemistry, Univ. of Cincinnati, Cincinnati 45221)

7-8. **International Seed Testing Assoc.** 16th congr., Washington, D.C. (L. W. Woodstock, Seed Quality Investigations, Market Quality Research Div., Agricultural Research Service, U.S. Department of Agriculture, Beltsville, Md. 20705)

7-9. **Evolution of Genetic Systems**, 23rd annual symp., Upton, N.Y. (H. H. Smith, Dept. of Biology, Brookhaven Natl. Lab., Associated Universities, Inc., Upton 11973)

7-10. **Alaska State Medical Assoc.**, Juneau. (R. G. Ogden, ASMA, 519 W. 8 Ave., Anchorage, Alaska 99501)

7-10. **Symposium on Processes in Estuarine Microbial Ecology**, Columbia, S.C. (L. H. Stevenson, Dept. of Biology, Univ. of South Carolina, Columbia 29208)

7-11. **Society of Automotive Engineers**, Montreal, P.Q., Canada. (W. I. Marble, 2 Pennsylvania Plaza, New York 10001)

7-11. **Mechanical Pulping**, 7th annual intern. conf., Ottawa, Ont., Canada. (D. H. Paterson, Canadian Pulp and Paper Assoc., 2300 Sun Life Bldg., Montreal 110, P.Q.)

7-11. **International Optometric and Optical League**, Amsterdam, Netherlands. (Congr. Secretary, P.O. Box 7205, Amsterdam)

7-11. **Instrument Soc. of America**, 12th annual **Pulp and Paper Instrumentation Symp.**, Philadelphia, Pa. (G. G. Eastwood, Kimberly-Clark Corp., Meenah, Wis. 54957)

8-10. **Conference on Aerospace Antennas**, London, England. (Inst. of Electrical and Electronics Engineers, 2 Savoy Pl., London, W.C.2)

8-11. **National Symp. on Carbon-13**, Los Alamos, N.M. (E. S. Robinson, Los Alamos Scientific Lab., P.O. Box 1663, Los Alamos 87544)

8-11. **Electrostatics**, Albany, N.Y. (A. D. Moore, Dept. of Electrical Engineering,

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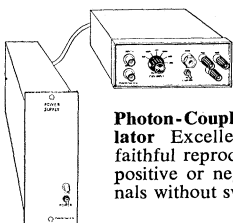
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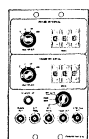
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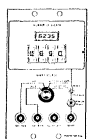
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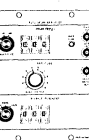
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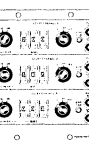
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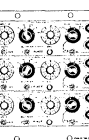
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**Two Channel Ramp Generator Module** Changes slope of leading and/or trailing edge of pulses, and their amplitude. Allows combination of two pulses into complex wave-forms.

**Power Supply Module** (not shown) Works off 115 or 230 VAC, 50-60 Hz lines and provides correct power for all modules.

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9-10. **Biometeorology**, Columbia, Mo. (J. D. McQuigg, ESSA, P.O. Box 941, Columbia 65201)

9-11. **Genetics** Soc. of Canada, Quebec City, P.Q. (W. F. Grant, Genetics Lab., McGill Univ., Ste. Anne de Bellevue 800, P.Q., Canada)

9-11. International Conf. on **Radiation-Induced Voids in Metals**, Albany, N.Y. (J. W. Corbett, Physics Dept., State Univ. of New York, Albany 12203)

9-12. Canadian Soc. of **Microbiologists**, 21st annual, London, Ont. (E. L. Medzon, Dept. of Bacteriology and Immunology, Health Sciences Center, Univ. of Western Ontario, London 72)

9-12. International Federation of Assoc. of **Textiles Chemists and Colourists**, 9th annual congr., Baden-Baden, Germany. (M. Peter, IFATCC, Postfach 94, 4000 Basel 7, Switzerland)

10-11. **Agricultural Meteorology**, 10th annual, Columbia, Mo. (J. D. McQuigg, ESSA, P.O. Box 941, Columbia 65201)

10-11. American **Chemical** Soc., Great Lakes regional, Peoria, Ill. (K. E. Kolb, Dept. of Chemistry, Bradley Univ., Peoria 61606)

10-11. Symposium on **Metabolism and Disease**, Ottawa, Ont., Canada. (R. S. Meldrum, Secretariat, Food and Drug Directorate, Tunney's Pasture, Ottawa)

10-16. American **Rheumatism** Assoc., New York, N.Y. (M. M. Walsh, Arthritis Foundation, 1212 Ave. of the Americas, New York 10036)

12-17. International Federation of **Automatic Control**, 5th annual world congr., Paris, France. (Secretary, AFCET, Assoc. Française pour la Cybernetique Economique et Technique, Centre Universitaire Dauphine, Place du Marechal de Lattre de Tassigny, Paris 16<sup>e</sup>)

13-15. Canadian Soc. of **Plant Physiologists**, Toronto, Ont. (D. S. Fensom, Dept. of Biology, Mount Allison Univ., Sackville, New Brunswick, Canada)

13-16. Canadian **Otolaryngological** Soc., 25th annual, Montreal. (J. D. Baxeter, Royal Victoria Hospital, 687 Pine Ave., W. Montreal, 112)

13-17. American **Electroplates** Soc., 58th annual, Buffalo, N.Y. (R. Leeds, 57 Melmore Gardens, East Orange, N.J. 07017)

13-17. American **Nuclear** Soc., 17th annual, Boston, Mass. (O. J. du Temple, ANS, 244 E. Ogden Ave., Hinsdale, Ill. 60521)

13-18. American Soc. of **Biological Chemists**, San Francisco, Calif. (R. A. Harte, ASBC, 9650 Rockville Pike, Bethesda, Md. 20014)

13-18. International **Hospital** Congr., 17th annual, Dublin, Ireland. (M. F. Carroll, 55 Fitzwilliam Sq., Dublin 2)

13-18. American Soc. of **Medical Technologists**, 39th annual, Las Vegas, Nev. (N. Rasmussen, Suite 1600, Hermann Professional Bldg., Houston, Tex. 77025)

13-19. American Assoc. on **Mental Deficiency**, Houston, Tex. (J. J. Noone, AAMD, 5201 Connecticut Ave., NW, Washington, D.C. 20015)

13-19. World **Petroleum** Congr., 8th annual, Moscow, Russia. (W. N. Seward, American Petroleum Inst., 1271 Ave. of the Americas, New York 10020)

13-20. American Soc. of **Ichthyologists and Herpetologists**, Los Angeles, Calif. (R. Highton, Dept. of Zoology, Univ. of Maryland, College Park 20742)

14-16. **Animal Behavior** Soc., Logan, Utah. (K. L. Dixon, Conf. and Inst. Div., Utah State Univ., Logan 84321)

14-16. International Conf. on **Communications**, Montreal, Canada. (J. A. Mahoney, ICC, P.O. Box 201, Station H, Montreal 107)

14-17. Conference on **Asian Environments**, Ann Arbor, Mich. (Yuh-jao Wu, Inst. for Environmental Quality, Univ. of Michigan, 2200 N. Campus Rd., Ann Arbor 48105)

14-16. American **Neurological** Assoc., 96th annual, Washington, D.C. (K. R. Magee, Dept. of Neurology, University Hospital, Ann Arbor, Mich.)

14-17. International Symp. on **Identification and Measurement of Environmental Pollutants**, Ottawa, Ont., Canada. (M. K. Ward, Natl. Research Council, Ottawa 7)

14-17. American Soc. of **Limnology and Oceanography**, Winnipeg, Manitoba, Canada. (G. W. Saunders, Jr., Dept. of Zoology, Univ. of Michigan, Ann Arbor 48104)

14-17. European Symp. on **Poliomyelitis and Other Virus Diseases**, 15th annual, Helsinki, Finland. (F. Recht, European Assoc. against Polio and Other Virus Diseases, 30 Blvd. General Jacques, Brussels 1050, Belgium)

14-18. **Molecular Structure and Spectroscopy**, 26th annual symp., Columbus, Ohio. (K. N. Rao, Dept. of Physics, 174 W. 18 Ave., Ohio State Univ., Columbus 43210)

14-18. Research Conf. on **Planning for Water Quality and Standards**, Milwaukee, Wis. (G. Karadi, College of Applied Science and Engineering, Univ. of Wisconsin, Milwaukee 53201)

14-18. **Propulsion**, joint specialist conf., 7th annual, Salt Lake City, Utah. (D. B. Waring, Component Technology, Pratt & Whitney Aircraft Div., United Aircraft Corp., 400 Main St., East Hartford, Conn. 06108)

14-18. Geological Soc. of America, Penrose Conf. on **Precambrian Metavolcanic and Plutonic Rocks of Colorado and Northern New Mexico**, Taos, N.M. (R. E. Riecker, Air Force Cambridge Research Labs., Bedford, Mass. 01730)

14-18. **Radiology**, 2nd intern. congr., The Hague, Netherlands. (J. R. von Ronnen, Holland Organizing Center, 16 Lange Voorhout, The Hague)

14-18. **Vacuum Metallurgy** Conf., New York, N.Y. (R. C. Krutenat, Pratt & Whitney Aircraft, Aircraft Rd., Middletown, Conn. 06457)

14-20. American **Therapeutic** Soc., Atlantic City, N.J. (R. T. Smith, 37 Narbrook Park, Narberth, Pa. 19072)

15-16. American Soc. for **Neuroradiology**, San Francisco, Calif. (E. V. Leslie, Edward J. Meyer Memorial Hospital, 462 Grider St., Buffalo, N.Y. 14215)

15-18. Canadian Federation of **Biological Societies**, 14th annual, Toronto, Ont. (K. K. Carroll, Dept. of Biochemistry, Univ. of Western Ontario, London 72)

16. National **Speleological** Soc., Blacksburg, Va. (D. N. Cournoyer, NSS, 2318 N. Kenmore St., Arlington, Va. 22201)



16-17. Symposium on the **Implementation of Contemporary Biology in Dental Curriculum**, Ann Arbor, Mich. (S. S. Han, Univ. Of Mich., Extension Service, 412 Maynard, Ann Arbor 48104)

16-18. **Analytical Chemistry: Key to Progress in National Problem Areas**, 24th annual, Gaithersburg, Md. (R. A. Durst, Room A219, Chemistry Bldg., Natl. Bureau of Standards, Washington, D.C. 20234)

16-18. Conference on **Heat Exchangers**, Paris, France. (Meetings Officer, Inst. of Physics and Physical Soc., 47 Belgrave Sq., London, S.W.1, England)

16-19. **Hemispherectomy and Cerebral Function**, 3rd annual symp.; Coronado, Calif. (L. Smith, Porter Memorial Hospital, 2525 S. Downing, Denver, Colo. 80210)

16-19. Western Soc. of **Malacologists**, 4th annual, Pacific Grove, Calif. (M. D'Aiuto, 804 Fielding Drive, Palo Alto, Calif. 94303)

17. Canadian **Standards Assoc.**, 44th annual, Montreal, P.Q. (Secretary, CSA, 178 Rexdale Blvd., Rexdale, Ont., Canada)

17-19. American Assoc. of **Bioanalysts**, St. Louis, Mo. (D. Birenbaum, AAB, 802 Ambassador Bldg., St. Louis, Mo. 63101)

17-19. **Macromolecules with Regulatory Functions in Development**, Soc. of Developmental Biology, 30th annual symp., Seattle, Wash. (Miss W. S. Badman, SDB, P.O. Box 2782, Kalamazoo, Mich. 49003)

17-19. American Assoc. of **Physics Teachers**, Beloit, Wis. (M. W. Zemansky, American Inst. of Physics, 335 W. 45 St., New York 10017)

17-23. **Plasma Physics and Controlled Thermonuclear Fusion**, 4th annual conf., Madison, Wis. (J. H. Kane, Div. of Technical Information, U.S. Atomic Energy Commission, Washington, D.C. 20545)

18-19. Society for **Vascular Surgery**, Philadelphia, Pa. (R. M. Nelson, Latter Day Saints Hospital, Salt Lake City, Utah 84103)

18-20. Society for **Investigative Dermatology**, Boston, Mass. (J. S. Strauss, Boston Univ. Medical Center, 80 E. Concord St., Boston 02118)

18-22. American Soc. of **Pharmacognosy**, Columbus, Ohio. (J. L. Beal, College of Pharmacy, Ohio State Univ., Columbus 43210)

18-23. International **Dental Federation**, 59th annual, Munich, Germany. (G. H. Leatherman, IDF, 64 Wimpole St., London, W.1, England)

19-20. Society for **Surgery of the Alimentary Tract**, Atlantic City, N.J. (L. M. Nyhus, SSAT, 840 S. Wood St., Chicago, Ill. 60612)

20. American College of **Legal Medicine**, Atlantic City, N.J. (B. Hanna, 1340 N. Astor St., Chicago, Ill. 60610)

20-21. **Data for Science and Technology**, International Council of Scientific Unions, 6th annual symp., Washington, D.C. (C. Schafer, CODATA Central Office, Westendstrasse 19, 6 Frankfurt am Main, Germany)

20-22. American Soc. for **Head and Neck Surgery**, Atlantic City, N.J. (W. M. Tribble, ASHNS, 1234 19 St., NW, Washington, D.C. 20036)

20-23. American Assoc. of **Cost Engineers**, 15th annual, Montreal, P.Q., Canada. (K. K. Humphreys, 219 Mineral Industries Bldg., Morgantown, W.Va. 26506)

20-23. American **Dairy Science Assoc.**, East Lansing, Mich. (C. Cruse, ADSA, 113 N. Neil St., Champaign, Ill. 61820)

20-23. American **Leather Chemists Assoc.**, Mackinac Island, Mich. (W. T. Roddy, Tanners Council Research Lab., Univ. of Cincinnati, Cincinnati, Ohio 45221)

20-23. International Conf. on **Nuclear Reactors and Radioisotopes**, Montreal, Canada. (Secretary, Canadian Nuclear Assoc., 11 Ouest rue Adelaide St., West Toronto 1, Ont.)

20-23. International Symp. on **River Ecology and the Impact on Man**, Amherst, Mass. (C. Percy, Connecticut River Watershed Council, P.O. Box 89, Greenfield, Mass. 01301)

20-24. American Inst. of **Biological Sciences**, Alberta, Canada. (J. R. Olive, AIBS, 3900 Wisconsin Ave., NW, Washington, D.C. 20016)

20-24. Canadian **Botanical Soc.**, Edmonton, Alta. (W. N. Stewart, Dept. of Biology, Univ. of Alberta, Edmonton 7)

20-24. American **Bryological and Lichenological Soc.**, Edmonton, Canada. (B. E. Lemmon, Dept. of Biology, Univ. of Southwestern Louisiana, Lafayette 70501)

20-24. Canadian Soc. of **Laboratory Technologists**, 35th annual, Halifax, Nova Scotia. (Secretary, CSLT, 165 Jackson St., East Hamilton, Ont.)

20-24. American **Medical Assoc.**, Atlantic City, N.J. (E. B. Howard, AMA, 535 N. Dearborn St., Chicago, Ill. 60610)

20-24. National **Industrial Pharmaceutical Research**, 13th annual conf., Land O'Lakes, Wis. (J. R. Arndt, Extension Service in Pharmacy, University Extension, Univ. of Wisconsin, 425 N. Charter St., Madison 53706)

20-24. **Psychological Soc. of America**, Edmonton, Alberta, Canada. (P. L. Walne, Dept. of Botany, Univ. of Tennessee, Knoxville 37916)

20-26. American **Library Assoc.**, Dallas, Tex. (D. H. Clift, ALA, 50 E. Huron St., Chicago, Ill. 60611)

21. Panamerican Congr. of **Psychopharmacology**, Buenos Aires, Argentina. (R. Kertesz, San Jose de Calasanz 431, Buenos Aires)

21-23. **Fluid and Plasma Dynamics**, 4th annual conf., Palo Alto, Calif. (A. Goldberg, Flight Sciences Lab., Boeing Scientific Research Lab., P.O. Box 3981, Seattle, Wash. 98124)

21-23. American College of **Preventive Medicine**, Atlantic City, N.J. (W. Bentley, ACPM, 801 Old Lancaster Rd., Bryn Mawr, Pa. 19010)

21-23. **Social and Economic Aspects of Water Resource Development**, Ithaca, N.Y. (L. B. Dworsky, Water Research and Marine Sciences Center, 468 Hollister Hall, Cornell Univ., Ithaca, N.Y. 14850)

21-24. American Soc. for **Engineering Education**, Annapolis, Md. (L. Hitch, ASEE, Suite 400, 1 Dupont Circle, Washington, D.C. 20038)

21-24. Canadian Assoc. of **Physicists**, Ottawa, Ont. (Secretary, CAP, Suite 903, 151 Slater, Ottawa, Ont.)

21-25. American Assoc. for the **Advancement of Science**, Pacific Div., San


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Diego, Calif. (R. C. Miller, California Acad. of Sciences, Golden Gate Park, San Francisco 94118)

21-25. **Health Physics Soc.**, 16th annual, New York, N.Y. (R. F. Cowing, HPS, 194 Pilgrim Rd., Boston, Mass. 02215)

21-25. **Modern Methods for Industrial and Product Noise Control**, Schenectady, N.Y. (W. L. Weifenbach, Carnegie Hall, Union College, Schenectady 12308)

21-25. **Oil and Colour Chemists Assoc.** 23rd annual, London, England. (Secretary, Wax Chandlers Hall, Gresham St., London, E.C.2)

21-25. **Temperature—Its Measurement and Control in Industry and Science**, 5th annual symp., Washington, D.C. (R. P. Hudson, U.S. Dept. of Commerce, Natl. Bureau of Standards, Washington, D.C. 20234)

21-26. **Theoretical Physics and Biology**, Versailles, France. (Meetings Officer, Inst. of Physics and Physical Soc., 47 Belgrave Sq., London, S.W.1, England)

22-23. **American Diabetes Assoc.**, San Francisco, Calif. (J. R. Connelly, ADA, 18 E. 48 St., New York 10017)

22-25. **American Assoc. of Bioanalysts**, Chicago, Ill. (D. Birenbaum, Suite 805, 411 N. 7 St., St. Louis, Mo. 63101)

22-25. **Data Management Assoc.**, Houston, Tex. (Secretary, Conference Dept., DMA, 505 Busse Hwy, Park Ridge, Ill. 60068)

23-25. **Applied Mechanics Conf.**, American Soc. of **Mechanical Engineers**, Philadelphia, Pa. (A. B. Conlin, 345 E. 47 St., New York 10017)

23-26. **American Optometric Assoc.**, 74th annual congr., Houston, Tex. (G. Allen, AOA, 7000 Chippewa St., St. Louis, Mo. 63119)

24-26. **Endocrine Soc.**, San Francisco, Calif. (Mrs. N. L. Mattox, 1211 N. Shartel, Oklahoma City, Okla. 73103)

25-27. **American Assoc. of Neuropathologists**, San Juan, P.R. (E. P. Richardson, Massachusetts General Hospital, Boston 02114)

27-30. **American Soc. of Agricultural Engineers**, Pullman, Wash. (J. L. Butt, ASAE, P.O. Box 229, St. Joseph, Mich. 49085)

27-1. **Air Pollution Control Assoc.**, Atlantic City, N.J. (W. O. Farley, Director of Public Information, Consolidated Edison Co. of New York, 4 Irving Pl., New York 10003)

27-1. **Design Automation Workshop**, Atlantic City, N.J. (R. B. Hitchcock, IBM, Box 218, Yorktown Heights, N.Y. 10598)

27-2. **Canadian Anaesthetists Soc.**, Quebec City. (Secretary, CAS, 178 St. George St., Toronto 5, Ont.)

27-2. **Conference on Carbon**, 10th annual, Bethlehem, Pa. (H. Leidheiser, Center for Surface and Coatings Research, Lehigh Univ., Bethlehem 18015)

27-2. **National Education Assoc.**, Detroit, Mich. (S. M. Lambert, NEA, 1201 16th St., NW, Washington, D.C. 20006)

27-2. **Forest Products Research Soc.**, Pittsburgh, Pa. (K. E. Huddleston, FPRS, 2801 Marshall Ct., Madison, Wis. 53705)

27-2. **Society of Nuclear Medicine**, Los Angeles, Calif. (Miss M. B. Glos, SNM, 211 E. 43 St, New York 10017)

27-2. **American Soc. for Testing and Materials**, Atlantic City, N.J. (T. A. Mar-

shall, Jr., ASTM, 1916 Race St., Philadelphia, Pa. 19103)

27-3. **International Congr. for Virology**, 2nd annual, Budapest, Hungary. (J. L. Melnick, Dept. of Virology and Epidemiology, Baylor College of Medicine, Houston, Tex. 77025)

28-30. **American Astronautical Soc.**, 17th annual, Seattle, Wash. (J. Vagners, Dept. of Aeronautics and Astronautics, Univ. of Washington, Seattle 98105)

28-30. **Society for Industrial and Applied Mathematics**, Seattle, Wash. (R. K. Windsor, SIAM, 33 S. 17 St., Philadelphia, Pa. 19103)

28-30. **American Soc. of Safety Engineers**, Tampa, Fla. (A. C. Blackman, 850 Busse Highway, Park Ridge, Ill. 60068)

28-1. **Canadian Ophthalmological Soc.**, Montreal. (J. L. Burns, Suite 8, 825 Coxwell Ave., Toronto, Ont. Canada)

28-2. **Biomedical Physics and Biomaterials Science Conf.**, Cambridge, Mass. (H. E. Stanley, Room 13-2122 Physics Dept., Massachusetts Inst. of Technology, Cambridge 02139)

28-2. **World Energy Conf.**, 8th annual, Bucharest, Roumania. (D. E. Hart, Engineers Joint Council, 345 E. 47 St., New York 10017)

28-2. **European Congr. of Neurosurgery**, 4th annual, Prague, Czechoslovakia. (V. Benes, Sokolska 31, Prague)

28-3. **British Council for Rehabilitation of Disabled**, Edinburgh, Scotland. (I. R. Henderson, Tavistock House, Tavistock Sq., London W.C.1, England)

29-1. **Electron Microscopy and Analysis Group**, 25th annual, Cambridge, England. (Meetings Officer, Inst. of Physics and Physical Soc., 47 Belgrave Sq., London, S.W.1, England)

29-1. **Institute of Navigation**, 27th annual, Pasadena, Calif. (R. E. Freeman, IN, Suite 832, 815 15th St., NW, Washington, D.C. 20005)

29-1. **Institute of Nuclear Materials Management**, 12th annual, West Palm Beach, Fla. (L. K. Hurst, INMM, P.O. Box 273, Argonne, Ill. 60439)

29-1. **Trace Substances in Environmental Health**, 5th annual conf., Columbia, Mo. (D. D. Hemphill, Univ. of Missouri, 426 Clark Hall, Columbia 65201)

30. **Acoustic Atmospheric Propagation and Applications**, London, England. (Meetings Officer, Inst. of Physics and Physical Soc., 47 Belgrave Sq., London, S.W.1)

30-4. **Idaho Medical Assoc.**, Sun Valley. (A. L. Bird, 407 W. Bannock St., Boise, Idaho 83702)

## July

1-2. **Effect of Environment on Material Properties in Nuclear Systems**, Intern. conf., London England. (Meetings Officer, Inst. of Physics and Physical Soc., 47 Belgrave Sq., London, S.W.1)

1-3. **European Dialysis and Transplant Assoc.**, 8th annual, East Berlin, Germany. (R. Natusch, 2nd Medical Clinic, Charite, Schumannstrasse 20/21 104 Berlin)

1-3. **Society of Psycho-Neuroendocrinology**, intern. congr., Budapest, Hungary. (K. Lissak, SPN, Motesz, Budapest)