Meetings

Arachnology

With the recent revival of interest in whole animals, two concurrent meetings in Paris, 8-13 April 1968, were organized: the Fourth European and International Congress of Arachnology sponsored by the Centre International de Documentation Arachnologique and the First International Congress of Myriapodology. Although about 100 arachnologists from 21 countries attended, including many from Great Britain and several with French aid from Poland, Yugoslavia, Rumania, and Czechoslovakia, only two arachnologists from the United States succeeded in participating (on their personal or institutional funds, both having been denied the use of travel funds from federal grants).

The daily sessions were supplemented by two evenings of movies on arachnids. Two excellent new teaching films made in France were shown—one on the scorpion *Buthus occitanus* by M. Auber, the other on pseudoscorpions. J. A. L. Cooke showed 4 of 12 teaching films on spiders made by G. H. Thompson and E. R. Skinner (Oxford University) on prey capture and on courtship and mating. Of even greater interest were the research films.

Although social spiders were reported in the literature almost 100 years ago, there had been no further investigation until now. B. Krafft reported on and showed movies of Agelena socialis from Gabon, South Equatorial Africa, a colony of which is kept in Krafft's laboratory in Strasbourg. B. Kullmann (University of Bonn) illustrated his talk on the social eresid spider Stegodyphus sarasinorum from West Pakistan with movies; he passed around to the members of the audience a colony of the spiders built in a frame. Spiders peeked at the arachnologists out of nooks in the webs. Kullmann's film showed an insect thrown into the web being attacked from all sides and subdued by spiders which then fed on it communally, numerous animals sitting around the captured prey. The last spider left

feeding removed the remains from the web. In the Krafft movie, Agelena socialis hunting together on their communal sheet web could recognize each other's movements. The hunting resembled a pack of wolves closing in on large prey. The spiders do not fight as long as they have enough room. Numerous Stegodyphus colonies may be interconnected, the individuals moving from one colony to another. They leave their communal web if it is invaded by mice. Eggsacs are made only in wellestablished communities. The social Stegodyphus has 40 eggs in a sac, whereas a related nonsocial species has 400 to 600. Colonies may be initiated by as few as three or four individuals.

The wolf spider Arctosa variana has the ability to orient itself astronomically both by day and night. Using mirrors, P. Tongiorgi (University of Pisa) changed the direction of the moonlight and, with it, the landward flight direction of the spider on water, and showed us that the spiders orient by moonlight. The importance of polarized moonlight has not been demonstrated.

Slit sense organs found on the surface of appendages of arachnids are now all believed to be mechanoreceptors according to the neurophysiologist G. Barth (University of Munich). Electrophysiological experiments indicated that a single-slit sense organ on the tarsus is sensitive to sound. The structure differs from the lyriform organ on the distal tip of the metatarsus in having a nerve ending at the outer membrane. In the lyriform organ the nerve ends on the side of the slit. While this explains the function of these organs, we still do not know the location of the olfactory sense of spiders. Behavior would indicate that the acute olfactory sense organs are found in the leg tips, but there is at present no experimental evidence for this. At various times in the past the slit sense organs have been described as olfactory; no evidence for this exists.

The scanning electron microscope was used by B. Kullmann to examine the spigots of the cribellum, the spin-

ning plate of cribellate spiders. Each half has 20,000 spigots, which under the microscope look like slightly contracted tubes having five pleats. Each cribellate silk thread is thus made up of 40,000 elements.

A contribution to the question of phylogeny of cribellate spiders was made by L. Glatz (University of Göttingen), who has studied the behavior and anatomy of certain cribellate spiders in relation to their closest ecribellate relatives. Glatz has indicated that the tiny cribellate Oecobiidae are related to the larger ecribellate Urocteidae, a family limited to the Old World. He reported at the meeting on the behavior and anatomy of two uloborid spiders which, although they make orb webs, may not be as closely related to the Araneidae as previously thought because they lack poison glands. They compensate for this deficiency by thickly wrapping their prey with silk. A study of the mouthparts of the Uloboridae and other families showed that these structures, as might be expected, are correlated with the spiders' feeding habits. These results strongly counter recent work done in Finland in which the cribellum is disregarded as a character of phylogenetic importance.

The congress papers will be made available in a publication of the Muséum National d'Histoire Naturelle. The next congresses are planned together in Brno, Czechoslovakia for 1971.

HERBERT W. LEVI

Museum of Comparative Zoology, Harvard University,

Cambridge, Massachusetts 02138

C. D. DONDALE

Canada Department of Agriculture Research Institute, Belleville, Ontario

Calendar of Events

National Meetings

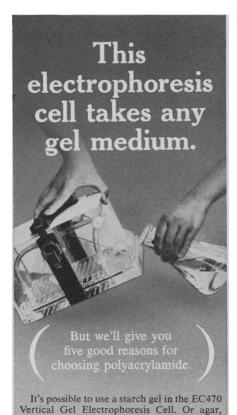
October

7. Industrial Pharmaceutical Technology, 7th mtg., Chicago, Ill. (J. Ellis, Abbott Labs., North Chicago, Ill. 60064)

7-10. Thermal Conductivity, 8th, Lafayette, Ind. (W. H. Shafer, Thermophysical Properties Research Center, 2595 Yeager Rd., West Lafayette, Ind. 47906)

7-11. Activation Analysis Conf., 3rd, Gaithersburg, Md. (National Bureau of Standards, Office of Technical Information and Publications, Room A500/101, Washington, D.C. 20234)

7-11. Instrument Symp. and Research Equipment Exhibit, 18th, Bethesda, Md. (J. B. Davis, National Institutes of Health, Bethesda 20014)



or silica, for that matter. But if you'll set those fussy recipes aside for a moment, consider polyacrylamide.

Polyacrylamide gel doesn't take

- Polyacrylamide gel doesn't take sophisticated cookery. It doesn't require heat at all. Just prepare stock gel solutions. Then, polymerize by adding catalyst before pouring into the cell.
- Polyacrylamide gel allows a range of pore size for optimum sieving of your sample. That's because it forms a useful gel over a wider concentration range than starch. You can also create two-dimensional variations of pore size for further molecular size information.
- Polyacrylamide gel achieves superior resolution. Partly, that's because there are no ionized groups, therefore no electroosmosis. Thus, the site of application is at the true zero of the mobility scale,
- Polyacrylamide gel has a clear, colorless background after destaining. Since there is no intermediate slicing and clearing as with starch gel, there are fewer errors in transmission densitometry.
- Polyacrylamide gel is strong and longlasting. Wrap it in Saran Wrap; you can keep it for years.

Sorry we made it seem so easy. We'd just like to see you spend less time preparing the gels and more time using them. And you'll be happier with the results.

Telephone collect for full details on this system. Ask for Technical Service at (215) 382-9100. Or write for detailed information on "Vertical Gel Electrophoresis." E-C Apparatus Corporation, 755 St. Marks Street, University City, Philadelphia, Pa. 19104.



E-C helps you sort things out.

Circle No. 116 on Readers' Service Card

7-11. Armed Forces Inst. of Pathology, Washington, D.C. (Director, MEDEM-PG, Armed Forces Inst. of Pathology, Washington, D.C. 20305)

8-10. Conference on Analytical Chemistry in Nuclear Technology, 12th, Gatlinburg, Tenn. (L. J. Brady, Oak Ridge Natl. Lab., P.O. Box X, Oak Ridge, Tenn. 37830)

8-13. American Soc. of Clinical Hypnosis, Chicago, Ill. (F. D. Nowlin, 800 Washington Ave., SE, Minneapolis, Minn. 55414)

9-11. American Ceramic Soc., Bedford, Pa. (C. R. Kurkjian, Bell Telephone Labs., Murray Hill, N.J. 07974)

9-11. Meteoritical Soc., 31st., Cambridge, Mass. (U. B. Marvin, Smithsonian Astrophysical Observatory, 60 Garden St., Cambridge 02138)

9-11. American Physical Soc., Athens, Ga. (L. W. Seagondollar, Dept. of Physics, North Carolina State Univ., Raleigh 27607)

9-12. Optical Soc. of America, Pittsburgh, Pa. (M. E. Warga, Optical Soc. of America, 2100 Pennsylvania Ave., NW, Washington, D.C. 20037)

10-11. Symposium on Applications of Ferroelectrics, Washington, D.C. (H. L. Stadler, Ford Motor Co., Dearborn, Mich.)

10-12. American Thyroid Assoc., Washington, D.C. (W. McConahey, 200 First St., SW, Rochester, Minn. 55901)

11-13. Midwest Forum on Allergy, Chicago, Ill. (D. B. Frankel, 111 N. Wabash Ave., Chicago 60602)

Ave., Chicago 60602)

11-13. Philosophy of Science Assoc.,
Pittsburgh, Pa. (G. J. Massey, Michigan
State Univ., East Lansing)

11-18. American Soc. of Clinical Pathologists, New York, N.Y. (Administrative Secretary, 445 N. Lake Shore Dr., Chicago, Ill. 60611)

13-16. Rare Earth Research, 7th conf., San Diego, Calif. (J. F. Nachman, Applied Science Dept., Solar, San Diego 92112)

14-17. Association of Official Analytical Chemists, Washington, D.C. (L. G. Ensminger, P.O. Box 540, Benjamin Franklin Sta., Washington, D.C. 20014)

14-17. Clay Minerals Soc., Bloomington, Ind. (J. B. Droste, Dept. of Geology, Indiana Univ., Bloomington 47401)

14-17. Conference on Plasma Instabilities in Astrophysics, Pacific Grove, Calif. (P. A. Sturrock, Inst. for Plasma Research, Via Crespi, Stanford Univ., Stanford, Calif. 94305)

14-17. Metallurgical Soc., Detroit, Mich. (C. K. Carlson, American Inst. of Mining, Metallurgical and Petroleum Engineers, 345 E. 47 St., New York 10017)

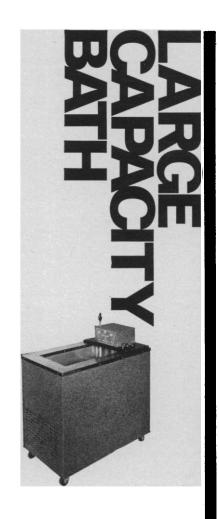
14-18. American Soc. of Civil Engineers, Pittsburgh, Pa. (W. H. Wisely, American Soc. of Civil Engineers, 345 E. 47 St., New York 10017)

14-18. American College of Surgeons, Atlantic City, N.J. (Director, 55 E. Erie St., Chicago, Ill.)

15-16. Industrial Hygiene Foundation, 33rd, Pittsburgh, Pa. (R. T. P. deTreville, Industrial Hygiene Foundation, 4400 Fifth Ave., Pittsburgh 15213)

15-18. American Dietetic Assoc., 51st, San Francisco, Calif. (The Association, 620 N. Michigan Ave., Chicago, Ill.)

17. Animal Nutrition Research Council,



Precisely controlled temperatures make this Lo-Temp Bath ideal for determining physical constants, for bio-chemical procedures and as a reaction site for organic synthesis.

Cooling coils are embedded in the walls for uniform heat transfer, faster cooling or heating. The ½ H.P. hermetically sealed compressor and the heating element provide temperatures from -30° to +50°C.

Since no room is lost to coil or diffuser panel, entire 29" x 14" x 10" deep chamber is available for tests.

#884 —Waco Refrigerated Bath, 115 volt, 60 cycle **\$1090.00**

#884-1—Same as #884, but with built-in centrifugal pump, delivering 5 g.p.m. at zero head. \$1125.00

Order direct or write for Bath Bulletin.

Laboratory Supplies and Equipment

wilkens-anderson co.

4525 W. Division St., Chicago, III. 60651 Circle No. 102 on Readers' Service Card Washington, D.C. (L. Michaud, Merck Sharp & Dohme Research Labs., Rahway, N.J. 07065)

17-18. National Fluid Power Assoc., Chicago, Ill. (W. R. Smith, 3300 S. Federal St., Chicago 60616)

17-19. California Assoc. of Criminalists, 32nd semiannual, Lake Tahoe. (The Association, Box 2172, Redwood City, Calif. 94064)

17-19. Central Neuropsychiatric Assoc., Oklahoma City, Okla. (C. S. Hoekstra, 8215 Westchester Dr., Dallas, Tex. 75225)

17-19. American Assoc. for the Surgery of Trauma, Montreal, P.O., Canada. (S. R. Gaston, 180 Fort Washington Ave., New York, N.Y.)

19-23. American Soc. of Anesthesiologists Inc., Washington, D.C. (Assistant Executive Secretary, 515 Busse Highway, Park Ridge, Ill.)

19-24. American Acad. of **Pediatrics**, Chicago, Ill. (The Academy, Dept. of Public Information, 1801 Hinman Ave., Evanston, Ill. 60204)

20-21. American Assoc. of **Poison Control Centers**, 11th, Chicago, Ill. (C. A. Walton, Drug Information Center, Univ. of Kentucky Medical Center, 800 Rose St., Lexington)

20-24. American Soc. for Information Science, 31st., Columbus, Ohio. (J. B. Fox, Chemical Abstracts Service, Ohio State Univ., Columbus 43210)

21-23. Interscience Conf. on Antimicrobial Agents and Chemotherapy, 8th, New York, N.Y. (American Soc. for Microbiology, 115 Huron View Blvd., Ann Arbor, Mich. 48103)

21-23. Solar Energy Soc., Palo Alto, Calif. (The Society, Arizona State Univ., Tempe 85281)

21-24. Society for Industrial and Applied Mathematics, Philadelphia, Pa. (B. R. Agins, Courant Inst. of Mathematical Sciences, New York Univ., 251 Mercer St., New York 10012)

21-25. American Assoc. for Lab. Animal Science, 19th, Las Vegas, Nev. (J. J. Garvey, Box 10, Joliet, Ill. 60434)

22-24. Shock and Vibration Symp., Monterey, Calif. (W. W. Mutch, Code 6020, Shock and Vibration Information Center, Naval Research Lab., Washington, D.C. 20390)

23. American Oil Chemists Soc., New York, N.Y. (C. H. Hauber, The Society, 35 E. Wacker Dr., Chicago, Ill. 60601)

23-24. Helium Applications Symp., Washington, D.C. (L. A. Gutkind, 725 Liberty, Pitsburgh, Pa. 15222)

23-25. American Ceramic Soc., Pasadena, Calif. (H. L. Hedrick, Southern Counties Gas Co., 720 W. 8 St., Los Angeles, Calif. 90017)

23-25. IEEE Nuclear Science Symp., Montreal, Canada. (O. L. Tiffany, Bendix Corp., Aerospace Systems Div., 3300 Plymouth Rd., Ann Arbor, Mich. 48107)

24-25. Metropolitan Engineers Council on Air Resources, New York, N.Y. (R. A. Fox, P.O. Box 270, Mount Vernon, N.Y. 10550)

24-26. Association for Research in Ophthalmology, Chicago, Ill. (Dept of Ophthalmology, Univ. of Florida College of Medicine, Gainesville 32601)

24-26. Society for the Scientific Study of



Quick relief for budget headaches

Noble J. Thriftright is Aldrich's price setter, and he's had his light-handed way with our new catalog.

Aldrich's 1969-70 catalog, (the budget-stretcher), lists over 8200 organic chemicals. Some are rare, hard-to-come-by compounds, others are everyday laboratory materials. All of them are listed alphabetically by class of compound, by empirical formula, and by structure. You'll be able to find what you need in a hurry.

We'll deliver in a hurry too, from one of three stocking points across the country. Whatever quantities you need...gram or ton lots, Aldrich's kind-to-the-budget prices apply.

Aldrich Chemical Company, Inc.

CRAFTSMEN IN CHEMISTRY



STOCKING POINTS: Milwaukee Wisconsin 53210

2371 N. 30th St. Dial (414) 374-4620 TWX 910-262-3052 TELEX 26 843 Cedar Knolfs, New Jersey 07927 10 Ridgedale Ave. P 0 Box AA Dial (201) 539-9494 TWX 710-986-7480 Gardena, California 90247 Witshire Chemical Co. 15324 South Broadway Dial (213) 323-9232 TWX 910 346 6722

Take II or III...BIOSONIK® that is!



BIOSONIK® III the ultrasonic probe that converts into an ultrasonic cleaner

- ▶ 300 WATTS OF ENERGY AT THE TIP ... 93% conversion efficiency Sturdy ceramic transducer provides high energy at 20 kh. Fully automatic tuning, solid state generator circuitry with stepless power control, even an integral probe support ... simple, fool-proof operation.
- POWER CONTROL COLOR-CODED TO ACCESSORIES...Just the panel dial to correspond to the color index of a specific accessory...allows attenuation of ultra-high power to assure . Just set maximum tip life.
- NEW ACCESSORIES AND VERSATILITY, BROADEN USEFULNESS

 Among them: Heated 2½ gallon cleaning tank with many lab applications; syphoned ultrasonic pipet cleaner; and a variety

 of durable titanium tips for macro, micro and high intensity
- FOR ULTRASONIC CLEANING . . . Disconnect probe from the generator and plug in the cleaning tank or pipet cleaner. Then you can use your ultrasonic system for cleaning chores as well... another reason for a Biosonik III in your laboratory.

Your Bronwill Dealer Will Arrange a Demonstration. Or Write Bronwill Scientific, Dept. S-9/6, 277 N. Goodman St., Rochester, New York 14607



Circle No. 48 on Readers' Service Card

Religion, Montreal, P.Q., Canada. (S. Z. Klausner, 3800 Locust St., Philadelphia, Pa. 19104)

25-26. Orton Soc., Inc., New York N.Y. (M. B. Rawson, Orton Soc., Inc., Box 153, Pomfret, Conn. 06258)

26-27. American College of Dentists, Miami Beach, Fla. (O. W. Brandhorst, 4236 Lindell Blvd., St. Louis, Mo. 63108)

26-27. Southern Electroencephalographic Soc., Birmingham, Ala. (G. S. Ferriss, 1542 Tulane Ave., New Orleans, La. 70112)

27-30. Computer Aided Circuit Design and Analysis, St. Charles, Ill. (Natl. Electronics Conf., Inc., Oakbrook Executive Plaza No. 2, 1211 W. 22 St., Oak Brook, Ill. 60521)

27-1. American Acad. of Ophthalmology and Otolaryngology, Chicago, Ill. (W. L. Benedict, 15 Second St., SW, Rochester, Minn. 55901)

27-1. American Soc. of Plastic and Reconstructive Surgeons, New Orleans, La. (P. P. Pickering, 2850 Sixth Ave., Suite B, San Diego, Calif. 92103)

28-29. Conference on Evaluation of Safety of Cosmetics, Washington, D.C. (AMA Committee on Cutaneous Health and Cosmetics, 535 N. Dearborn St., Chicago, Ill. 60610)

28-29. International Conf. on Materials, Pittsburgh, Pa. (R. B. Barnhart, Conf. Manager, Warner Hall 111, Carnegie-Mellon Univ., Pittsburgh)

28-30. Hybrid Microelectronics Symp., Chicago, Ill. (J. English, Cozzens and Cudahy, 9501 W. Devon Ave., Rosemont, III. 60018)

28-31. American Assoc. of Blood Banks, Washington, D.C. (L. J. James, 30 N. Michigan Ave., Chicago, Ill. 60602)

28-31. Instrument Soc. of America, New York, N.Y. (H. S. Kindler, The Society, 530 William Penn Pl., Pittsburgh, Pa. 15219)

28-1. Society for Experimental Stress Analysis, San Francisco, Calif. (The Society, 21 Bridge Sq., Westport, Conn. 06880)

29-31. Conference and Workshop on Applied Climatology, Asheville, N.C. (H. T. Harrison, Route 1, Box 266, Weatherville, N.C. 28787)

31-1. Educational Conf., 33rd, New York, N. Y. (W. S. Litterick, Educational Records Bureau, 21 Audubon Ave., New York 10032)

31-1. Entomological Soc. of America, 40th, Philadelphia, Pa. (J. P. Johnson, Connecticut Agricultural Experiment Sta., Box 1106, New Haven 06504)

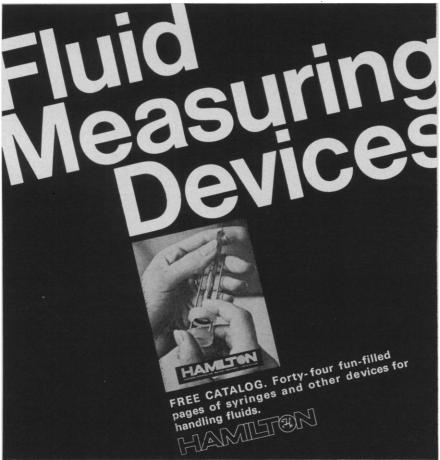
31-2. Gerontological Soc., Denver, Colo. (The Society, 660 S. Euclid, St. Louis, Mo. 63110)

31-1. American Soc. for Microbiology, 8th, New York, N.Y. (R.W. Sarber, 115 Huron View Blvd., Ann Arbor, Mich.)

31-1. Symposium on Social Behavior, 2nd, Oxford, Ohio. (R. A. Hoppe, Dept. of Psychology, Miami Univ., Oxford 45056)

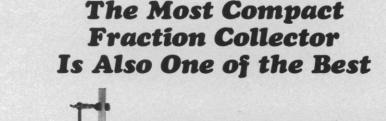
31-1. American Soc. of Tropical Medicine and Hygiene, Atlanta, Ga. (G. M. Jeffery, P.O. Box 295, Kensington, Md.)

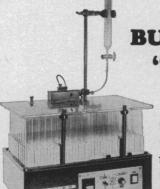
31-2. Society of Photographic Scientists and Engineers, Washington, D.C. (R. A. Jones, Papers Chairman, Mail Sta. 68, Perkin-Elmer Corp., Norwalk, Conn. 06852)



HAMILTON COMPANY, P.O. Box 307-K, Whittier, Calif. 90608

Circle No. 103 on Readers' Service Card





BUCHLER INSTRUMENTS'
"FRACTOMETTE 200"

Buchler Instruments' new "Fractomette 200" is the most compact 200 tube (18 mm diameter) linear fraction collector. Only $11\frac{1}{2}$ " wide, the "Fractomette 200" saves valuable bench space, yet offers features not found in many of the larger units on the market. It provides drop, time and volume (syphon

or photoelectric) collection directly into tubes preventing cross-contamination. Other features include: operation in a refrigerator or cold room as well as in

normal temperature; drop-stop to prevent stray drops or loss of samples; shuts off after predetermined number of tubes are collected. ☐ Now available: Fractomette "400" with 400 tubes. For complete information write Buchler Instruments, Inc., 1327 16th St., Fort Lee, N. J. 07024.



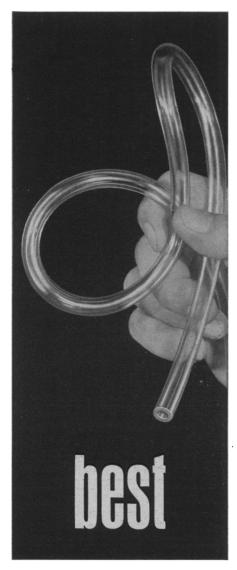
For further information request Technical Bulletin S3-4300

BUCHLER • LABORATORY APPARATUS and PRECISION INSTRUMENTS

1-2. Central Soc. for Clinical Research, Chicago, Ill. (J. Eckstein, Dept. of Internal Medicine, Univ. of Iowa Hospitals, Iowa City 52240)

November

- 1-3. National Council for Geographic Education, 54th, Kansas City, Mo. (E. Eiselen, The Council, Room 1532, 111 W. Washington St., Chicago, Ill. 60602)
 1-4. Research in Medical Education,
- 1-4. Research in Medical Education, 7th conf., Houston, Tex. (P. J. Sanazaro, Assoc. of American Medical Colleges, 2530 Ridge Avenue, Evanston, Ill. 60201)
- 6-8. Conference on Composition and Dynamics of the Upper Atmosphere, El Paso, Tex. (J. E. Morris, P.O. Box 26065, El Paso 79925)
- 6-8. Diffraction Conf., 26th, Pittsburgh, Pa. (S. Diamond, U.S. Steel Corp., Applied Research Lab., Monroeville, Pa. 15146)
- 6-8. Northeast Electronics Research, Mtg., Boston, Mass. (A. Uhlir, Inst. of Electrical and Electronics Engineers, NEREM-68, 31 Channing St., Newton, Mass. 02158)
- 6-8. International Spi Cellular Plastics Conf., New York, N.Y. (S. Steingiser, Monsanto Research Corp., Station B, Box 8, Dayton, Ohio 45407)
- 6-9. American Ceramic Soc., Pittsburgh, Pa. (The Society, 4055 N. High St., Columbus, Ohio 43214)
- 6-9. Operations Research Soc. of America, 34th, Philadelphia, Pa. (J. H. Engel, c/o Center for Naval Analysis, 1401 Wilson Blvd., Arlington, Va. 22209)
- 6-9. Conference on Respiratory Therapy, Boston, Mass. (M. J. Nicholson, 605 Commonwealth Ave., Boston 02215)
- 7-9. American Soc. of Cytology, Cleveland, Ohio. (W. R. Lang, 1025 Walnut St., Philadelphia, Pa. 19107)
- 7-10. Association of Clinical Scientists, Washington, D.C. (R. P. MacFate, 300 N. State St., Chicago, Ill. 60610)
- 8-11. American **Physical** Soc., Plasma Physics Div., Austin, Tex. (W. E. Drummond, Physics Bldg. 330, Univ. of Texas, Austin 78712)
- 10-15. American Soc. of Agronomy, New Orleans, La. (M. Stelly, c/o The Society, 677 S. Segoe Rd., Madison, Wis. 53711)
- 10-15. Crop Science Soc. of America, New Orleans, La. (Secretary, 677 S. Segoe Rd., Madison, Wis.)
- 10-15. American Assoc. for Inhalation Therapy, Houston, Tex. (M. T. Bowers, 4075 Main St., Riverside, Calif. 92501)
- 11-13. Soc. of Engineering Science, 6th technical mtg., Princeton, N.J. (A. C. Eringen, Dept. of Aerospace and Mechanical Sciences, Engineering Quadrangle, Princeton Univ., Princeton 08540)
- 11-13. Genetics Soc. of America, Boston, Mass. (B. Wallace, Dept. of Genetics, Cornell Univ., Ithaca, N.Y.)
- 11-14. American Nuclear Soc., Washington, D.C. (Executive Secretary, 244 E. Ogden Ave., Hinsdale, Ill. 60521)
- 11-15. American College of **Preventive** Medicine, Detroit, Mich. (E. A. Piszcek, 6410 N. Leona Ave., Chicago, Ill. 60646)
- 11-15. American Public Health Assoc., 96th, Detroit, Mich. (Executive Director, 1790 Broadway, New York, N.Y.)
 - 13-15. Eastern Analytical Symp., New



Day in and day out, the reliability, long life and versatility of Tygon flexible plastic Tubing proves over and over that it's your best laboratory tubing

TYGON[®] Tubing

Crystal-clear **Flexible** Chemically inert Non-oxidizing 74 standard sizes

At laboratory supply houses everywhere, or write Plastics & Synthetics Division, U. S. Stoneware, Inc., Akron, Ohio 44309.

NORTON U.S. STONEWARE INC.

Circle No. 115 on Readers' Service Card

York, N.Y. (L. M. Brancone, Lederle Labs., Pearl River, N.Y. 10965)

13-16. National Easter Seal Soc. for Crippled Children and Adults, Boston, Mass. (Natl. Easter Seal Soc., 2023 W. Ogden Ave., Chicago, Ill. 60612)

14-16. Southern Thoracic Surgical Assoc., San Juan, Puerto Rico. (H. H. Seiler, 517 Bayshore Blvd., Tampa, Fla. 33606) 15–16. American **Psychiatric** Assoc.,

Chicago, Ill. (L. Rudy, Illinois Psychiatric Inst., 1601 W. Taylor St., Chicago 60612)

17-19. Fluid Controls Inst., Oak Brook, Ill. (The Institute, P.O. Box 1485, Pompano Beach, Fla. 33061)

17-20. Academy of Pharmaceutical Sciences, 5th, Washington, D.C. (S. W. Goldstein, 2215 Constitution Ave., NW, Washington, D.C. 20037)

18-20. Institute of Electrical and Electronics Engineers, 7th, Cocoa Beach, Fla. (L. E. Williams Aerospace Corp., P.O. Box 4007, Patrick Air Force Base, Fla. 32925)

18-20. American Petroleum Inst., Chicago, Ill. (Secretary, Program Commission, 1271 Avenue of the Americas, New York 10020)

18-21. Symposium on Basic Mechanisms of the Epilepsies, Colorado Springs, Colo. (J. K. Penry, Section on Epilepsy, Room 8A-03, Bldg. 31, National Inst. of Neurological Diseases and Blindness, National Institutes of Health, Bethesda, Md.

18-21. Conference on Engineering in Medicine and Biology, Houston, Tex. (W. T. Maloney, Suite 620, 6 Beacon St., Boston, Mass. 02108)

18-21. Conference on Magnetism and Magnetic Materials, 14th, New York, N.Y. (D. T. Teaney, IBM Thomas J. Watson Research Center, Box 218, Yorktown Heights, N.Y. 10598)

18-22. Society of the Plastics Industry, Inc., Chicago, Ill. (The Society, 250 Park Ave., New York 10017)

18-22. American Water Resources Conf., 4th, New York, N.Y. (P. Cohen, U.S. Geological Survey, 1505 Kellum Place, Mineola, N.Y. 11501)

19. Air Pollution Control, Columbia, Mo. (Extension Div., Whitten Hall, Univ. of Missouri, Columbia)

19-20. Council on Arteriosclerosis of the American Heart Assoc., Bal Harbour, Fla. (Dept. of Councils and International Program, American Heart Assoc. Natl. Office, 44 E. 23 St., New York 10010)

19-21. Photovoltaic Specialists Conf., 7th, Pasadena, Calif. (R. E. Fischell, Applied Physics Lab., Johns Hopkins Univ., 8621 Georgia Ave., Silver Spring, Md. 20910)

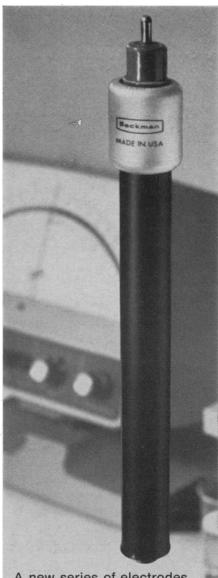
19-22 Acoustical Soc. of America, Cleveland, Ohio. (The Society, 133 E. 45 St., New York 10017)

20-22. National Soc. for the Prevention of Blindness, Inc., New York, N.Y. (J. W. Ferree, 79 Madison Ave., New York 10016)

20-22. Microelectronic Packaging and Interconnection Conf., Palo Alto, Calif. (D. H. O'Neill, Soc. of Automotive Engineers, 485 Lexington Ave., New York 10017)

20-24. Society for Clinical and Experimental Hypnosis, 20th, Chicago, Ill. (The Society, 353 W. 57 St., New York 10019)

21–22. Chemical Kinetics Symp., Chapel



A new series of electrodes. Ready for immediate use. Long term stability. Fast response.

Beckman introduces the SelectIon™ **Electrode**

Types available: Solid Ion exchanger, for use in detecting and monitoring Calcium Ion in the pH range of 2.5 to 11. Solid State Crystal, for detecting anions; Fluoride, Sulfide, Bromide, Chloride and lodide. Specially Formulated Glass for Sodium Ion measurements and for detecting monovalent cations. Write for Data File #8.

Beckman®

INSTRUMENTS, INC. SCIENTIFIC INSTRUMENTS DIVISION

FULLERTON, CALIFORNIA . 92634

INTERNATIONAL SUBSIDIARIES: GENEVA; MUNICH; GLENROTHES, SCOTLAND,

Circle No. 112 on Readers' Service Card

Hill, N.C. (L. Pedersen, Dept. of Chemistry, Univ. of North Carolina, Chapel Hill

21-24. American Anthropological Assoc., Seattle, Wash. (Executive Secretary, 1530 P St., NW, Washington, D.C. 20005)

25-27. American Physical Soc., Miami, Fla. (Executive Secretary, 538 W. 120 St., New York 10027)
29-30. Membrane Proteins Symp., New

York, N.Y. (J. Newkirk, New York Heart Assoc., 2 E. 64 St., New York 10021)

29-30. National Federation of Catholic Physicians' Guild, Miami Beach, Fla. (R. H. Herzog, 2825 N. Mayfair Rd., Gelman. Wiley, New York, 1968. xiv + Milwaukee, Wis. 53222)

International and Foreign Meetings

October

7-9. International Gel Permeation Chromatography Seminar, 6th, Miami Beach, Fla. (Chairman, The Seminar, % Waters Associates, Inc., 61 Fountain St., Framingham, Mass. 01701)

7-11. International Federation for Preventive Medicine and Hygiene, 5th, Rome, Italy. (Via Filippo Civinni 37, Rome)

7-11. Rheology, 5th intern. congr., Kyoto, Japan. (M. Horio, Dept. of Polymer Chemistry, Kyoto Univ., Kyoto)

7-16. International Council for the Exploration of the Sea, 56th, Copenhagen, Denmark. (H. Tambs-Lyche, Charlottenlund Slot, Charlottenlund, Denmark)

13–19. International Astronautical Congr., 19th, New York, N.Y. (Intern.

Astronautical Federation, 250, rue Saint-Jacques, Paris 5, France)

18-20. International Congr. on Higher Nervous Activity, 1st intern., Milan, Italy. (G. F. Goldwurm, Clinica Psichiatrica della Universita, Via G. F. Besta, 1, Milan, Italy)

21-23. Spectroscopy Symp. of Canada, Toronto, Ont. (B. St. George, B-A Research and Development Co., Ontario, Canada)

21-25. Symposium on Advanced and High-Temperature Gas-Cooled Reactors, Julich, Germany. (M. A. Khan and D. S. Briggs, Div. of Nuclear Power and Reactors, Intern. Atomic Energy Agency, Karntner Ring 11, 1010 Vienna, Austria)

21-28. International Symp. on Physicochemical Mechanisms of Carcinogenesis, Jerusalem, Israel. (E. D. Bergmann, Dept. of Chemistry, Hebrew Univ., Jerusalem, Israel, or B. Pullman, Institut de Biologie Physico-Chimique, 13, rue Pierre Curie, Paris 53, France)

31-1. Symposium on Artificial Limbs, London, England. (Public Relations Officer, Institution Soc. of America, 530 William Penn Pl., Pittsburgh, Pa. 15219)

November

3-8. Israel Surgical Soc., 8th congr., Jerusalem. (Organizing Committee, 8th Congr. of the Israel Surgical Soc., P.O. Box 7276, Jerusalem)

4-8. Symposium on the Use of Nuclear Techniques in the Prospecting and Development of Mineral Resources, Lima, Peru. (S. Eklund, Intern. Atomic Energy Agency, Karntner Ring 11, A-1010 Vienna, Aus-

4-9. Canadian Heart Foundation, Canadian Cardiovascular Society, Vancouver, B.C. (Secretary, Canadian Heart Foundation, 1130 Bay St., Toronto 5, Ont.)

11-13. Geochemical Soc., Mexico City, Mexico. (E. C. T. Chao, c/o U.S. Geological Survey, Washington, D.C.)

11-13. Geological Soc. of America, Mexico City, Mexico. (R. C. Becker, The Society, Colorado Bldg., P.O. Box 1719, Boulder, Colo. 80302)

11-13. Society of Economic Geologists, Mexico City, Mexico. (R. A. Laurence, P.O. Box 1549, Knoxville, Tenn. 37901)

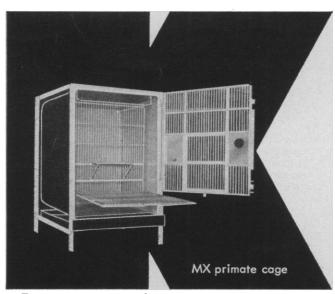
11-13. Mineralogical Soc. of America, Mexico City, Mexico. (I. J. Holmes, Dept. of Geology, Columbia Univ., New York, 10027)

11-13. Paleontological Soc., Mexico City, Mexico. (R. L. Langenheim, c/o Dept. of Geology, Univ. of Illinois, Urbana)

13-15. International Reinforced Plastics Conf., London, England. (British Plastics Federation, Reinforced Plastics Group, 47-48 Piccadily, London, W.1)

18-23. International Seed Testing Assoc., 15th, Palmerston, New Zealand. (The Association, Binnenhaven 1, Wageningen, Netherlands)

19-20. Symposium on Tribology in Railways, London, England. (Public Relations Officer, Institution of Mechanical Engineers, 1, Birdcage Walk, Westminster, S.W.1. London)



dog & primate cages

Molded seamless construction of rugged fiber glass reinforced plastics... minimum effort required to clean and disinfect...maximum animal comfort... extremely strong doors with fool proof catches...economical to purchase and maintain....For further information

write:
Department KS

Vashon, Washington

Klett Summerson Photoelectric Colorimeter



KLETT COLONY MARKER and TALLY

This instrument takes the drudgery and error out of the counting of bacterial colonies.



MANUFACTURING CO., INC., 179 East 87th Street, New York, 28, N.Y.