CONTENTS

ACTIONS TAKEN AT SPRING MEETING

April 14-18, 1975

ELECTIONS - The results of the election of Officers (conducted by mail according to a recent Amendment of Bylaws) was announced as follows:

President-Elect - Dr. Ewald E. Selkurt, to take office July 1, 1975.

Councillors - Dr. William F. Ganong for a four-year term beginning July 1, 1975.

Dr. Walter C. Randall to complete the unexpired term of Dr. Peter F. Curran (deceased) through June 30, 1975.

All candidates for membership and associate membership nominated by Council were elected to membership. These new members include those nominated by Council at this Spring Meeting according to the provisions of the new Bylaws as discussed below. (See Newly Elected Members.)

AMENDMENT TO BYLAWS - An Amendment to the Bylaws proposed and publicized in the November 1974 issue of The Physiologist providing for expedited election procedures was passed by a near-unanimous show of hands at the Business Meeting held on April 15, 1975.

An Amendment to the Bylaws proposed and publicized in the November 1974 issue of The Physiologist providing for the establishment of a category of Corresponding Members was defeated by a 2/3 majority at the Business Meeting held on April 15, 1975.

(As previously published in The Physiologist, Vol. 18, No. 1, Feb., 1975, these two amendments had been subjected to a membership attitude survey by mail. Both had received a preponderance of favorable response to this survey.)

Subsequent to the defeat of the Amendment on Corresponding Membership, Council amended the conditions of Associate Membership to allow optional membership in FASEB for APS Associate Members upon payment of the Federation assessment (currently $12.00).

HARWOOD S. BELDING AWARD IN ENVIRONMENTAL PHYSIOLOGY

The Harwood S. Belding Award in Environmental Physiology has been established and administered by the Temperature Regulation Group of the American Physiological Society.

A group of donors has provided sufficient funds so that for approximately ten years an award of $150 can be given to a graduate student each year to honor the classic work of Harwood S. Belding (1909-1973).

The first of the awards for an outstanding paper delivered at the Federation Meetings was presented to Berry Pinshow of Duke University at the Temperature Regulation Dinner on April 15, 1975.

Highlights of Dr. Belding's career are: Born 1909 in Simsbury, Connecticut; A. B. Wesleyan 1931; Ph. D. Stanford 1938; Harvard Fatigue Laboratory 1942-1946; Director, Climatic Research Laboratory 1946-1950; Professor of Environmental Physiology, University of Pittsburgh 1951-1973.

ANNOUNCEMENT OF PORTER FELLOW AWARDS

The Porter Development Committee has granted Porter Fellowship Awards for the year, September 1, 1975 to August 31, 1976 to the following:

Mrs. Loraine Miller, Stanford Univ.
Miss Pamela Gunter, Emory Univ.
Miss Karen Green, Tulane Med. Sch.
Miss Raclaire E. Wells, Tulane Med. Sch.

REACTION TO POSTER SESSIONS AT FASEB MEETINGS

APS participated in the use of poster sessions as an alternative to 10-minute slide sessions for presentation of contributed papers at the FASEB meeting, April 14-18, 1975.

Questionnaires were available for authors to express their reaction to this form of presentation. This is an analysis of the responses to that questionnaire.

APS scheduled 251 papers in poster sessions, approximately 25% of contributed papers programmed. Of these, 53, approximately 20%, returned questionnaires.

Of returned questionnaires, 50 (94.3%) felt this method of presentation was effective. The estimated audience per presentation varied between 10 and 200. 47 of the respondents (88.7%) felt the duration and poster space allocated were sufficient.

Of additional comments on the questionnaire, 21 (65%) were unqualifiedly favorable, 8 (25%) offered constructive suggestions, and 3 (10%) were negative.

The most frequent suggestions made were:

1. Provide identification of speaker. (So he's not lost in the crowd.)
2. Post copy of the abstract.
3. Require greater uniformity of posted material (size of type, etc.)
4. Do not schedule poster sessions on Friday morning.

In view of the overwhelmingly enthusiastic response to this form of presentation, opportunity for poster sessions will be provided at the APS Fall Meeting in San Francisco, October 5-10, 1975.

JOURNAL PRODUCTION

The Society's Publications Office has provided the following data comparing the number of articles and text pages published through May of 1974 and 1975. The staff should be commended for their efforts.

Number of Articles Published

	1974	1975	Increase
American Journal of Physiology	198	250	26%
Journal of Applied Physiology	126	176	40%
Journal of Neurophysiology	37	49	30%

Number of Pages Published

	1974	1975	Increase
American Journal of Physiology	1263	1626	29%
Journal of Applied Physiology	635	953	50%
Journal of Neurophysiology	572	734	28%

SYMPOSIUM CO-SPONSORED BY THE SOCIETY FOR NEUROSCIENCE AND THE AMERICAN PHYSIOLOGICAL SOCIETY

A Symposium entitled "Role of Calcium in Excitable Tissues: Membranes and Synapses and Excitation-Contraction Coupling" co-sponsored by the Society for Neuroscience and the APS will be presented at the annual meeting of the Society for Neuroscience, November 2-6, 1975 at the New York Hilton Hotel in New York City. The Organizing Chairman is Dr. Toshio Narahashi, Dept. of Physiology & Pharmacology, Duke University Medical Center.

For further information contact: Society for Neuroscience, 9650 Rockville Pike, Bethesda, Maryland 20014.

MEMBERSHIP STATUS

April 1, 1975

Regular Members	3,802
Retired Members	304
Honorary	13
Associate	492
Retired Associate	1
	4,612

SUSTAINING ASSOCIATES

Abbott Laboratories
Ayerst Laboratories
Burroughs Wellcome Co.
CIBA-GEIGY Corp.
Grass Instrument Co.
Hoechst Pharmaceutical Co.
Hoffman-LaRoche, Inc.
Eli Lilly and Co.
Merck Sharp & Dohme Research Laboratories
Norwich Pharmacal Co.
Pfizer, Inc.
A. H. Robins Co., Inc.
Smith, Kline and French Laboratories
Warner-Lambert Research Institute
Williams & Wilkins Co.
Wyeth Laboratories, Inc.

DEATHS SINCE 1974 FALL MEETING

Rubert S. Anderson - 10/16/74 -
James H. Birnie - 12/10/74 - Smith, Kline & French Labs., Phila.
Peter F. Curran - 10/16/74 - Prof. of Physiol., Yale University
Samuel Gelfan (R) - 3/16/75 - Prof. of Neurophysiology, New York Medical College
Charles Gruber (R) - 11/19/74
Harold E. Himwich (R) - 3/5/75 - Dir., Research Division, Galesburg State Research Hospital
Evelyn Howard - 8/1/74 - Assoc. Prof. Emeritus Physiology, Johns Hopkins School of Medicine
Paul E. Howe (R) - 9/27/74 - Nutrition Consultant
Edwin C. Jungck - 7/18/74 - Asst. Clinical Prof. Endocrinology, Medical College of Georgia
Melvin H. Knisely (R) - 3/30/75 - Chrmn, Medical University of South Carolina, Dept. of Anatomy
Edward Larson (R) - 10/5/74 - Prof. Emeritus Physiology and Zoology, University of Miami
Henry Laurens (R) - 7/19/74 -
B. J. Luyet (R) - 3/30/74 -
Walter S. McClellan (R) - 10/27/74 -
Bryan A. Michaelis (Assoc.) - 7/23/74
Clarence A. Mills (R) - 9/17/74 - Prof. Emeritus Experimental Medicine, University of Cincinnati
I. Arthur Mirsky (R) - 9/16/74 - Distinguished Physician, VA Hosp., Brentwood
Edgar M. Neptune, Jr. - 7/27/74 - Director, Dept. of Surgery, University of Maryland Hospital

Elliot V. Newman - 9/24/73 - Prof. Experimental Medicine, Vanderbilt University Hospital
Benjamin B. Ross - 9/18/74 - Prof. of Physiology, University of Oregon
Nelson J. Wade - 11/2/74 - Prof. Emeritus Biology, St. Louis University
H. H. Weber (Hon.) - 6/12/74 - Max-Planck Inst. for Medical Research, Heidelberg, Germany

50-YEAR MEMBERS

Edward F. Adolph
Walter C. Alvarez
William R. Amberson
Olaf Bergeim
Charles H. Best
Harold C. Bradley
McKeen Cattell
Hallowell Davis
Lester M. Dragstedt
Carl H. Greene
Esther M. Greisheimer
Frederick R. Griffith, Jr.
Alrick B. Hertzman
Harold L. Higgins
Andrew C. Ivy
Dennis E. Jackson
Norman M. Keith
Nathaniel Kleitman
Theodore Koppanyi
Chauncey D. Leake
David Marine
Jesse F. McClendon
Grayson P. McCouch
Walter R. Miles
Frederick R. Miller
Ann S. Minot
Stuart Mudd
Jean Redman Oliver
Samuel E. Pond
David Rapport
Alfred C. Redfield
Curt P. Richter
Andrew H. Ryan
Wilbur W. Swingle
Joseph T. Wearn
George H. Whipple
Harvey L. White
Rosalind Wulzen

NEWLY ELECTED MEMBERS

The following, nominated by Council, were elected to membership in the Society at the Spring Meeting, 1975.

ALVARADO, Ronald H.: Prof., Oregon State University, Corvallis
AMOSS, Max St. C., Jr.: Asst. Prof., Salk Inst., San Diego
ARENDSHORST, William J.: Asst. Prof., Univ. of North Carolina
ARONSON, Ronald S.: Fellow Cardiology, Duke Univ. Med. Ctr.
BANERJEE, Chandra M.: Assoc. Prof., Jefferson Medical College
BATTARBEE, Harold D.: Asst. Prof. Physiol. & Biophys., Louisiana State Univ. Med. Ctr., Shreveport
BECK, Nama: Asst. Prof. Med., University of Pittsburgh Sch. Med.
BECKMAN, Alexander L.: Asst. Prof., Univ. of Pennsylvania
BERGMAN, Richard N.: Asst. Prof. Biomed. Eng., USC, Los Angeles
BEVAN, John A.: Prof. Pharmacol., UCLA Ctr. for Health Sci.
BLAINE, Edward H.: Asst. Prof., Univ. of Pittsburgh Sch. Med.
BOULANT, Jack A.: Asst. Prof. Physiol., Univ. So. Florida, Tampa
BRACE, Robert A.: Instr. Physiol. & Biophys., Univ. of Mississippi Med. Ctr.
BROOKS, Barbara A.: Asst. Prof., Physiol., Univ. of Texas Health Sci. Ctr., San Antonio
BROWN, Paul B.: Asst. Prof., West Virginia Univ. Med. Ctr.
BRUCE, David S.: Assoc. Prof., Wheaton Coll., Wheaton, Illinois

BURCH, Robert E.: Prof. Med., Creighton Univ., & VA Hosp., Omaha
BURKE, Thomas J.: Asst. Prof. Physiol., Univ. of Colorado Med. Ctr.
BURNS, John W.: Res. Physiologist, USAF Sch. Aerospace Med., Brooks AFB, Texas
CHANG, Hsin-Kang: Asst. Prof. Civil Eng., SUNY, Buffalo, N.Y.
CHAUDRY, Irshad H.: Asst. Prof. Surg., Jewish Hosp. of St. Louis
CHEVALIER, Peter A.: Res. Asst. Physiol. & Biophys., Mayo Clinic
CHEY, William Y.: Prof. Med., Univ. of Rochester
CORRADINO, Robert A.: Sen. Res. Assoc. Dept. Physical Biol., Cornell Univ., Ithaca
CUNNINGHAM, David A.: Asst. Prof. Physiol., Univ. of Western Ontario
D'ALECY, Louis G.: Asst. Prof. Physiol., Univ. of Michigan Med. Sch.
DAMATO, Anthony N.: Chief Cardiovascular Prog., USPHS Hosp., Staten Island, N.Y.
DAVIDOFF, Robert A.: Prof. Neurol., Univ. of Miami Sch. Med.
DAWSON, David C.: Asst. Prof. Physiol. & Biophys., Univ. of Iowa
DEEN, William M.: Asst. Prof. Physiol., Univ. of California
DeFELICE, Louis J.: Asst. Prof. Anat., Emory Univ., Atlanta
DEMETRESCU, Mihai C.: Asst. Prof. Physiol., Univ. Calif., Irvine
DENNEY, Donald D.: Assoc. Prof. Psychiat., Univ. of Oregon
DOBSON, James G., Jr.: Asst. Prof. Physiol., Univ. of Massachusetts
DOWNEY, H. Fred: Asst. Prof. Physiol., Univ. of Texas, Dallas
DOWNEY, James M.: Asst. Prof. Physiol., Univ. of So. Florida, Tampa
DURRANT, John D.: Asst. Prof., Temple Univ. Health Sci. Ctr., Phila.
ECKBERG, Dwain L.: Asst. Prof. Int. Med., Univ. Hosp., Iowa City
ENGEL, Jerome, Jr: Asst. Prof. Neurol., Albert Einstein Coll. Med.
EVANS, Gary W.: Res. Chemist, USDA Human Nutr. Lab., Grand Forks
FALK, John L.: Prof. Psychol., Rutgers Univ., New Brunswick
FALSETTI, Herman L.: Assoc. Prof. Int. Med., Univ. of Iowa Hosp.
FARBER, Jay P.: Asst. Prof. Physiol. & Biophys., Univ. of Iowa
FELDMAN, Elaine B.: Prof. Med., Medical College of Ga., Augusta
FERRIER, Gregory R.: Res. Sci., Masonic Med. Res. Lab., Utica
FIELDS, Howard L.: Asst. Prof. Neurol. & Physiol., Univ. of Calif., San Francisco
FORSYTH, Ralph P.: Assoc. Prof. Psychol., Univ. Calif., San Francisco
FRANKLIN, Renty B.: Asst. Prof. Physiol. & Biophys., Howard Univ., Washington, D.C.
FRAZIER, Loy W., Jr.: Asst. Prof. Physiol., Baylor Coll. Dent., Dallas
FRIEDMANN, Naomi: Asst. Prof. Physiol., Univ. Texas Med. Sch.
GABEL, Ronald A.: Asst. Prof. Anesthesia, Peter Bent Brigham Hosp.
GOERKE, Rudolph J.: Asst. Prof. Physiol., Univ. Calif., San Francisco
GOLDMAN, Michael D.: Res. Assoc. Physiol., Harvard Sch. Publ. Hlth.
GOLDMAN, Stephen S.: Lab. Neurochem., NINDS, NIH, Bethesda, Md.
GONZALEZ, Norberto C.: Assoc. Prof. Physiol., Univ. of Kansas
GORDON, Allen R.: Asst. Prof. Physiol., Univ. So. Alabama, Mobile
GREENLEAF, James F.: Consultant, Physiol. & Biophys., Mayo Fndn.
GREENWOOD, Mary Rita C.: Res. Assoc. Human Nutr., Columbia Univ.
HALL, Zach W.: Assoc. Prof. Neurobiol., Harvard Med. Sch., Boston
HAMOSH, Margit: Res. Assoc. Anat., Georgetown Univ., Washington, D.C.
HARMS, Paul G.: Asst. Prof. Animal Sci., Texas A & M, College Station
HOFFERT, Jack R.: Assoc. Prof. Physiol., Michigan State Univ.
HOLMES, Kenneth R.: Asst. Prof. Physiol., Southern Illinois Univ.

HOLSINGER, James W., Jr.: Asst. Prof. Med., VA Hosp., Newington, Connecticut, and Univ. of Connecticut
HORSTMAN, Donald H.: Res. Physiologist, US Army Res. Inst., Env. Med., Natick, Mass.
HOUPT, Katherine A.: Dept. Physiol., Biochem., & Pharmacol., N.Y. State Vet. Coll., Cornell Univ., Ithaca
JOHNSON, Jeffery L.: Asst. Prof. Physiol., Univ. of South Dakota
JOYNER, William L.: Asst. Prof. Physiol. & Biophys., Univ. of Nebraska, Omaha
KERBER, Richard E.: Asst. Prof. Int. Med., Univ. Hosps., Iowa City
KIM, Hyun Dju: Asst. Prof. Physiol., Univ. of Arizona, Tucson
KIRCHBERGER, Madeleine A.: Asst. Prof., Mount Sinai Sch. Med., New York, N.Y.
KODAMA, Arthur M.: Asst. Res. Physiol., White Mountain Res. Sta., Berkeley, Calif.
KOOTSEY, Joseph M.: Asst. Prof. Physiol., Duke Univ. Med. Ctr.
KREISMAN, Norman R.: Asst. Prof. Physiol., Tulane Univ. Med. Sch.
KROEGER, Edwin A.: Asst. Prof. Physiol., Univ. of Manitoba
KRONGRAD, Ehud: Asst. Prof., Dept. Pediatrics, Columbia Univ.
KUROKAWA, Kiyoshi: Asst. Prof. Med., USC Sch. Med., Los Angeles
LAWSON, David M.: Asst. Prof. Physiol., Wayne State Univ., Detroit
LECHENE, Claude P.: Vis. Prof. Physiol., Harvard Med. Sch., Boston
LEE, Jen-Shih: Assoc. Prof. Biomed. Eng., Univ. of Virginia Med. Ctr.
LIN, Boniface J.: Assoc. Prof. Physiol., Univ. of Toronto
LONGCOPE, Christopher: Sr. Scientist, Worcester Fndn. for Exptl. Biol. & Med., Shrewsbury, Mass.
LUDENS, James H.: Prof. Med., Univ. of California, San Diego
MALIK, Asrar B.: Asst. Prof. Physiol., Albany Medical College
MALIK, Kafait U.: Assoc. Prof. Pharmacol., Med. Coll. of Wisconsin, Milwaukee
MANDEL, Lazaro J.: Asst. Prof. Physiol., Duke Univ. Med. Ctr.
MARSHALL, Garland R.: Assoc. Prof. Physiol. & Biophys., Washington Univ., St. Louis
MASIAK, Stanley J.: Asst. Prof. Physiol. & Biophys., State Univ. N.Y., Stony Brook, N.Y.
MAUDERLY, Joe L.: Vet. Physiol., Lovelace Fndn. for Med. Res. & Ed., Albuquerque, N.M.
MAYERLI, Earl: Asst. Prof. Physiol., Univ. Calif., San Francisco
McCUTCHEON, Ernest P.: Assoc. Prof. Physiol. & Biomed. Eng., Ames Res. Ctr., Moffett Field, Calif.
MEISS, Richard A.: Asst. Prof. Physiol. & OB/GYN, Indiana Univ. Med. Ctr.
MENDEL, Verne E.: Assoc. Prof. Physiol., Univ. of Calif., Davis
MEYER, Edward C.: Dir. Surg., Mercy Catholic Med. Ctr., Darby, Pa.
MILLER, Thomas B., Jr.: Asst. Prof. Biochem., Univ. of Mass.
MITZNER, Wayne A.: Asst. Prof. Env. Med., Johns Hopkins Sch. Hyg. & Public Health
MOBLEY, Bert A.: Asst. Prof. Physiol., Univ. Calif., Los Angeles
MOHLER, John G.: Assoc. Prof. Med., Univ. So. Calif., Los Angeles
MOULTON, Bruce C.: Asst. Prof. OB/GYN, Univ. of Cincinnati
MULLER, Kenneth J.: Teaching Fellow Embryol., Carnegie Inst. of Washington, Baltimore, Md.
MUSTAFA, Syed J.: Prof. Pharmacol., Univ. of So. Alabama, Mobile

NEEDLEMAN, Philip: Assoc. Prof. Pharmacol., Washington Univ., St. Louis
NELLANS, Hugh N.: Res. Asst. Prof. Physiol., Univ. of Pittsburgh
NISWENDER, Gordon D.: Assoc. Prof. Physiol. & Biophys., Colorado State Univ., Fort Collins
OSCAI, Lawrence B.: Assoc. Prof. Phys. Ed., Univ. of Illinois at Chicago Circle, Chicago
OSTROW, J. Donald: Assoc. Prof. Med., Univ. of Pennsylvania
OXENDER, Wayne D.: Assoc. Prof. Large Animal Surg. & Med., Michigan State Univ., East Lansing
PAPPE, Max J.: Res. Leader in Physiol., USDA, Beltsville, Md.
PASLEY, James N.: Assoc. Prof., Dept. Physiol. & Biophys., Univ. of Arkansas Med. Ctr., Little Rock, Ark.
PATTON, John F.: Res. Physiol., U.S. Army Res. Inst. Env. Med., Natick, Mass.
PENNEY, David G.: Asst. Prof. Biol. Sci., Univ. of Illinois at Chicago Circle, Chicago
PEPELKO, William E.: Res. Physiol., USAF Sch. Aerospace Med.
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PIERSON, Richard N., Jr.: Dir., Div. Nuclear Med., St. Luke's Hosp. Ctr., New York, N.Y.
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PREWITT, Russell L., Jr.: Asst. Prof. Physiol. & Biophys., Univ. of Tennessee Ctr. for Health Sci., Memphis
PRITCHARD, John B.: Asst. Prof. Physiol., Medical Univ. of South Carolina, Charleston
PUSZKIN, Elena G.: Assoc. Prof., Albert Einstein Coll. Med., Res. Assoc., Montefiore Hosp. & Med. Ctr., Bronx, N.Y.
RAAB, Jacob L.: Asst. Prof. Zool. & Physiol., Rutgers Univ., Newark
RAICHLE, Marcus E.: Asst. Prof. Radiation Sci., Washington Univ., St. Louis
RAND, Peter W.: Dir. Res. Dept., Main Med. Ctr., Portland, Me.
RAYMOND, Lawrence W.: Diving Physiol. Div., NMRI, NNMC, Bethesda
REBUCK, Anthony S.: Assoc. Prof. Med., McMaster Univ., Hamilton
REDWOOD, William R.: Asst. Prof. Med. & Biochem., New Jersey Med. Sch., Newark
REID, Ian A.: Asst. Prof. Physiol., Univ. of Calif., San Francisco
RENAUD, Leo P.: Asst. Prof. Neurol. & Neurosurg., Montreal Gen. Hosp.
RITMAN, Erik L.: Consultant, Mayo Foundation, Rochester, Minn.
ROGUS, Ellen M.: Asst. Prof. Physiol., Johns Hopkins Med. Sch.
ST. JOHN, Walter M.: Postdoc. Fellow, Pharmacol., Columbia Univ.
SCHONFELD, Gustav: Assoc. Prof., Lipid Res. Ctr., Washington Univ., St. Louis
SCHRAMM, Lawrence P.: Asst. Prof. Biomed. Eng., Johns Hopkins Univ. Sch. Med., Baltimore
SHINE, Kenneth I.: Assoc. Prof. Med., UCLA, Coronary Care Unit
SHOUKAS, Artin A.: Asst. Prof. Biomed. Eng., Johns Hopkins Univ.
SIEGMAN, Marion J.: Assoc. Prof. Physiol., Jefferson Med. Coll., Philadelphia

SILBERGLEIT, Allen: Asst. Prof. Physiol., Wayne State Univ. Sch.Med.
SPENNEY, Jerry G.: Asst. Prof. Med., Univ. of Alabama, Birmingham
SPRING, Kenneth R.: Postdoc. Fellow Physiol., Yale Univ. Sch. Med.
SRIVASTAVA, Prakash N.: Asst. Prof. Biochem., Univ. of Georgia, Athens
TAYLOR, Ann G.: Res. Assoc. Med., Stanford Univ. Sch. Med.
TURGEON, Judith L.: Asst. Prof. Physiol., Univ. of Maryland Sch. Med., Baltimore
VEALE, Warren L.: Assoc. Prof. Med. Physiol., Univ. of Calgary
VERMA, Om P.: Asst. Prof. Physiol. & Pharmacol., Sch. Vet. Med., Tuskegee Inst., Alabama
VISEK, Willard J.: Prof. Animal Sci., Cornell Univ., Ithaca
WAGNER, William C.: Prof., Vet. Med. Res. Inst., Iowa State Univ., Ames
WEINER, Michael W.: Asst. Prof. Med., Univ. of Wisconsin, Madison
WEINER, Richard I.: Asst. Prof. OB/GYN, Univ. of California
WEISS, George B.: Assoc. Prof. Pharmacol., Univ. Texas S.W. Med. Sch., Dallas
WELSCH, Clifford W.: Assoc. Prof. Anat., Michigan State Univ.
WELTY, Joseph D., Jr.: Prof. Physiol., Univ. of South Dakota
WHITE, Stephen H.: Asst. Prof. Physiol., University of Calif., Irvine
WIEDERHOLD, Michael L.: Neurobiol. Dept., Armed Forces Radiobiol. Res. Inst., NNMC, Bethesda, Md.
WILEY, James S.: Asst. Prof. Med., Hosp. of Univ. of Pennsylvania
WILLERSON, James T.: Assoc. Prof. Med., Univ. of Texas S.W., Med. Sch., Dallas
WILLIAMS, Bill A.: Res. Sci., Biotechnology Div., NASA/Ames Res. Ctr., Moffett Field, Calif.
WILLOWS, Arthur O.: Assoc. Prof. Zool., Friday Harbor Labs., Friday Harbor, Wash.
WILSON, Kenneth M.: Asst. Prof. Anesthesiol., Johns Hopkins Univ.
WILSON, Theodore A.: Prof. Aerospace Eng., Univ. of Minnesota
WOODSON, Robert D.: Asst. Prof. Hematology, Univ. of Washington, Seattle
YASHON, David: Assoc. Prof. Surg., Ohio State Univ. Hosp., Columbus
YIPINTSOI, Tada: Asst. Prof. Physiol. & Med., Montefiore Hosp. & Med. Ctr., Bronx, N.Y.
YOUNG, David B.: Asst. Prof. Physiol. & Biophys., Univ. of Mississippi, Jackson
ZUCKER, Irving H.: Asst. Prof. Physiol. & Biophys., Univ. of Nebraska Med. Ctr., Omaha

ASSOCIATE MEMBERS

BARMAN, Susan M.: NIH Predoct. Trainee, Dept. Physiol., Loyola Univ., Stritch Sch. Med., Maywood, Ill.
BEAVER, William L.: Guest Lect., Biomed. Eng., Harbor Gen. Hosp.
BOOTH, Frank W.: Postdoct. Fellow, Preventive Med., Washington Univ., St. Louis
CHESKY, Jeffrey A.: Res. Instr., Dept. Physiol. & Biophys., Univ. of Miami Sch. Med.
CHOI, Sook C.: Asst. Prof. Biol., Upsala College, East Orange, N.J.
DOBRY, Peggy J.: 2232 East Cork St., Kalamazoo, Mich.

DOWELL, Russell T.: Asst. Prof. Marine Biomedical Inst., Univ. of Texas Med. Br., Galveston
ELAHI, Dariush: Dept. Physiol., Louisiana State Univ., New Orleans
FALESCHINI, Richard J.: Instr. Physiol., Calif. Coll. Podiatric Med.
GEE, Marlys H.: Postdoc. Fellow, Cardiovascular Res. Inst., Univ. of Calif., San Francisco
GRIFFEY, Michael A.: Instr. Physiol. & Biophys., Univ. of Arkansas, Little Rock
GUIMOND, Robert W.: Asst. Prof. Biol., Boston State College
HALL, Richard E.: Dept. of Physiol., Bowman Gray Sch. Med.
HANSEN, Feona M.: Postdoct. Fell., Tropical Metab. Res. Unit, Univ. of West Indies, Kingston, Jamaica
HIKAWYJ, Inia I.: Instr. Physiol., Louisiana State Univ., New Orleans
HOHENLEITNER, Frank J.: Assoc. Prof. Physiol. & Biophys., Temple Univ. Hlth. Sci. Ctr., Philadelphia
INNES, David L.: Asst. Prof. Physiol. & Biophys., Temple Univ. Sch. of Dentistry, Philadelphia
JAFFE, Eric A.: Asst. Prof. Med., New York Hosp.-Cornell Med. Ctr., New York, N.Y.
KAMINSKI, Donald L.: Asst. Prof. Surg., St. Louis Univ. Sch. Med.
KENDALL, Francis M.: Asst. Prof. Physiol. & Biophys., Temple Univ. Sch. Dentistry, Philadelphia
KERR, Janet S.: Asst. Prof. Physiol., Rutgers Univ., New Brunswick
KREULEN, David L.: Dept. Physiol., Wayne State Univ. Sch. Med.
KUMARESAN, Perianna: Hormonal Labs of OBS/GYN, Coney Island Hosp., Brooklyn, N.Y.
LASTER, Danny B.: U.S. Meat Animal Res. Ctr., USDA, Clay Center, Nebraska
LEWIS, Steven M.: 1905 N. 55th St., Seattle, Washington
LIU, Maw-Shung: Instr., Dept. Physiol., Louisiana State Univ. Med. Ctr., New Orleans
LOMBARD, Julian H.: Grad. Student Physiol., Med. Coll. of Wis., Milwaukee
MAY, James D.: Res. Physiologist, Mississippi State
McCAFFREY, Thomas: Res. Assoc. Physiol., Loyola Univ., Stritch Sch. Med., Chicago
McDOUGAL, Barbara A.: Dept. Med., Univ. of Kansas Med. Ctr.
MESSINA, Edward J.: Instr. Physiol., New York Med. Coll., Valhalla
MILANESI, Albert A.: Med. Student, Autonoma Univ., Guadalajara, Mexico
MINOR, Judith G.: Asst. Prof. Biol., Univ. of Missouri, Kansas City
MUNRO, Donald W.: Prof. Biol., Houghton College, Houghton, N.Y.
NORRIS, Jeanne E.: Assoc. Prof. Physiol., George Williams College, Downers Grove, Ill.
ODESSEY, Richard: Postdoct. Fellow, Dept. Physiol., Harvard Med. Sch., Boston
OTT, Cobern E.: Res. Fellow, Dept. Physiol., Mayo Grad. Sch. Med.
PARKER, Paul E.: NIH Postdoct. Res., Methodist Hosp. of Dallas
PETROFSKY, Jerrold S.: Postdoct. Fellow, Dept. Physiol., St. Louis Univ.
PRAZMA, Jiri: Asst. Prof. Surg., Univ. of North Carolina, Chapel Hill
RINEHART, John S.: Grad. Asst. Physiol., St. Louis Univ. Sch. Med.
ROBERTSON, R. Paul: Clin. Invest., VA Hosp., Seattle, Wash.

ROSENFELD, Leonard M.: Asst. Prof. Physiol., Jefferson Med. Coll., Philadelphia
RYAN, James P.: Asst. Prof. Physiol., Temple Univ. Sch. Med.
SCARPACE, Philip J.: Postdoct. Fellow, Dept. Radiation Biol. & Biophys., Univ. of Rochester Med. Ctr.
SESTIER, Francois: Res. Fellow, Cardiovascular Div., Royal Victoria Hosp., Montreal
SETLER, Paulette E.: Res. Pharmacologist, Smith Kline & French Labs., Philadelphia
SOLIMAN, Karam F.: Asst. Prof. Physiol. & Pharmacol., Sch. Vet. Med., Tuskegee Institute, Alabama
SOLOMON, Travis E.: Consultant, Prog. in Physiol., Univ. of Texas Med. Sch., Houston
SOMA, Lawrence R.: Prof. Anesthesia, Sch. of Vet. Med., Univ. of Pennsylvania, Philadelphia
STIFFLER, Daniel F.: NIH Postdoct. Trainee, Dept. Physiol., Univ. of Oregon Med. Sch., Portland
STUESSE, Sherry L.: Pstdoct. Fellow Physiol., Case Western Reserve Med. Sch.
SWANSON, George D.: Asst. Prof. Anesthesiology, Univ. of Calif., Ctr. for Health Sci., Los Angeles
TIGCHELAAR, Peter V.: Asst. Prof. Physiol., Indiana State Univ., Ctr. for Med. Education, Terre Haute
TRUBATCH, Janett: Asst. Prof. Physiol., New York Med. Coll., Valhalla
TULENKO, Thomas N.: Instr. Physiol., Temple Univ. Sch. Med.
VANJONACK, William J.: Dairy Husbandry Dept., Univ. of Missouri, Columbia
VINEGAR, Allen: Asst. Prof. Biol., Wilmington College, Wilmington, Ohio
VREIM, Carol E.: Asst. Res. Physiologist, Cardiovascular Res. Inst., Univ. of California, San Francisco
WASS, John A.: Immunohematologist, Dept. Clin. Lab. Med., VA Hosp., Downey, Ill.
WHITTY, Albert J.: Chief, Physiol. Sect., Sinai Hosp. of Detroit
WILEN, Saul B.: Res. Med. Officer, USAF Sch. Aerospace Med., Brooks AFB, Texas
WILLEMS, William J.: Predoct. Student, Dept. Physiol., Med. Coll. of Wisconsin, Milwaukee
WOLFE, Robert R.: Res. Assoc., Dept. Physiol., Louisiana State Univ. Med. Ctr., New Orleans, La.

RAY G. DAGGS AWARD

The 2nd Daggs Award was presented to Dr. Maurice B. Visscher by Dr. Arthur Guyton on April 15, 1975.

The following letter was received from Dr. Visscher:

May 1, 1975

To the Officers and the Council of the American Physiological Society

Dear Colleagues:

Having just returned to my home base from attendance at a series of meetings on the East coast, I wish to take this early opportunity to express my genuine appreciation of your action in presenting me with the Daggs Award. As I said in accepting the award, no recognition is as heartwarming as the expression of approval of a lifetime of endeavor by one's peers in one's own discipline.

I wish to comment particularly on the very dignified and artistic manner in which the award statement was put together for presentation. You may be interested in knowing that when I showed it to my wife, Gertrude, she said, "Well, this is the only citation or award that you have received that I would like to see hanging on the wall of your study as it was presented."

I mention this only to encourage you to make future presentations to others in somewhat the same way. This is not to say that it was not the sentiments expressed that most pleased both Gertrude and me.

I cannot refrain from expressing to all of you my appreciation of the thoughtful way in which President Arthur Guyton made the presentation, and was especially pleased that he referred to my activities not only within the Society itself but in our international cooperative ventures and in promoting the objectives of the National Society for Medical Research. Every physiologist ought to be, and I believe most are, deeply concerned with maintaining a milieu in which experimental physiology can flourish.

Sincerely,

Maurice B. Visscher

1974 FISCAL REPORTS

The Bylaws of the Society (Article VII) identify the three principal funds which are used for the fiscal management of the Society's affairs. The behavior of these funds during the year 1974 are summarized below.

SOCIETY OPERATING FUND

This fund is used for direct services to members through arrangement of meetings, programs, etc.; the expenses and activities of Council and its committees (other than publications); the generation and distribution of educational materials; and the supervision of the business affairs of the Society.

INCOME:

Membership Dues	$113,806	(63%)
Sustaining Associates Contributions	6,000	(3%)
Reimbursement for Services rendered in connection with Fed. Spring Meeting	42,625	(23%)
Interest (on advance monies received)	12,053	(7%)
Other Income (sale of educational and other materials, etc.)	6,944	(4%)
Total Income	$181,428	

EXPENSES:

Salaries and Benefits	$45,116	(23%)
Dues to Fed. and other Organizations	46,946	(24%)
Office Rental (Paid to Fed.)	7,369	(4%)
Travel and Subsistence for Officers and Committees (other than publications)	11,927	(6%)
Education Committee and Office	34,533	(17%)
Cost of Member Physiologist Subscr.	23,669	(12%)
Daggs Award	500	-
Bowditch Lecture	500	-
Mail, Telephone, Supplies & Misc.	8,390	(4%)
Program Committee	4,630	(2%)
Task Force	1,626	(1%)
New Delhi Congress	1,216	(1%)
Business Office Expenses (10.5%)	12,090	(6%)
Total Expenses	$198,512	

Excess of Expenses over Income (Deficit)	($17,084)
Subsidy from Savings to Cover Deficit	18,799

PUBLICATIONS OPERATING FUND

This fund represents the functions of the Society as a publisher of scientific journals.

INCOME:

Subscriptions	$776,197	(77%)
Sale of Reprints (Net)	39,865	(4%)
Sale of Back and Single Issues	20,704	(2%)
Page Charges	107,065	(11%)
Advertising (Net)	13,361	(1%)
Interest (on advance subscriptions, etc.)	39,519	(4%)
Royalties	4,418	-
Miscellaneous	6,296	(1%)
Total Income	$1,007,425	

EXPENSES:

Printing and Engraving	$571,185	(56%)
Salaries and Benefits	205,645	(20%)
Mail, Telephone, Supplies, etc.	72,646	(7%)
Office Rental (Paid to Fed.)	14,226	(1%)
Section Editor Expenses & Professional Services	70,758	(7%)
Travel & Subsistence for Officers, Committee, and Editors	16,084	(2%)
Miscellaneous	1,493	
Business Office Expenses(67.6%)	77,839	(7%)
Expenses Transferred to Handbooks	(18,000)	
Total Expenses	$1,011,876	
Net Deficit	($4,451)	

PUBLICATIONS CONTINGENCY AND RESERVE FUND

This is a reserve fund which the Society has accumulated over many years. Its existence is dictated by prudent business practice, in case of any severe reversals, etc. the journals can continue to be published for at least one year following such reversals. The Society has very few tangible, salable assets that could be used as collateral for borrowing money. The fund's size should be from one to two times the annual operating costs of the publication operations, including the Handbooks. It is held in long term investments managed by an investment counselor. Its uses are carefully spelled out in Article VII, Section 3 of the Society Bylaws.

Balance Dec. 31, 1973 (market value)	$1,084,962
Dividend and Interest paid to APS in 1974	55,302
Balance Dec. 31, 1974 (market value)	870,243
Loss in market value during 1974	($214,719)

HANDBOOK OF PHYSIOLOGY
ENDOCRINOLOGY, ADRENAL GLAND

Volume VI of the Handbook of Physiology, Section Endocrinology, will be available in June 1975. In this volume, Adrenal Gland, the two types of secretory tissue that compose the adrenal gland are compared and contrasted. Emphasis is placed on how work on the intricacies of hormones has significance for physiology.

The first part of the volume clearly shows the ubiquity of actions of the secretions of the adrenal cortex - all phases of organic and electrolyte metabolism - and the variety of target organs and cells involved, including the cardiovascular system, the nervous system, the lymphocyte, and connective tissue.

The second part of the volume, which covers the medulla, emphasizes the advances in our knowledge of adrenergic mechanisms that stem from two main sources: first, the insights that followed upon the recognition of the catecholamines as neural transmitter substances, as well as hormones, and second, the enormous gains in physiology and medical practice from increased understanding of biochemical processes.

The volume should serve as a foundation upon which researchers, teachers, and students can build a better understanding of the function of the adrenal gland. George Sayers was editor of the chapters on the adrenal cortex and Hermann Blaschko and A. David Smith of those on the adrenal medulla.

This volume of 754 pages and 266 figures will sell for $75.00. However, members of the American Physiological Society may purchase copies at a discount if they order directly from the Business Office, 9650 Rockville Pike, Bethesda, Maryland 20014. The price to members is $60.00.

PRESIDENT'S REPORT

I would like to discuss for a few moments the present status of our Society as well as some of its major problems and the attempts of Council to solve these. The American Physiological Society is the largest of all the constituent societies of FASEB, it is financially healthy, it publishes some of the most respected journals in the world, it has a strongly developing education program, and in large measure we have meetings that satisfy the needs of many if not most of our members. Yet we must still ask ourselves whether or not there might be many ways in which we are not contributing all that would be expected of the major physiological society of the world. Especially must we note that many physiologists drop away from participation in the American Physiological Society each year in search of more suitable forums for their energies. Most notable in recent years has been an almost total desertion of the American Physiological Society by the neurophysiologists; but others who must not be forgotten are the biomedical engineers, the microcirculationists, and, in the not too distant past, the biophysicists. Then, too, we must not forget the many other physiologists who have either never participated in the activities of the American Physiological Society or at most have participated only peripherally, including many comparative physiologists, general physiologists, clinical physiologists, and others.

We have asked ourselves again and again why it is we have not been able to provide an attractive and healthy and desirable place within the American Physiological Society for those many physiologists who now choose not to participate in our activities. Though the answer to this question is not entirely a simple one, it probably can be summed up in a simple statement: because we simply do not meet their needs. In attempting to delineate the special factors that make large fragments of our Society break away and form new societies, I (and to a certain extent the entire Council of the Society as well) have made a continuing survey for the past few years and have come to several definitive conclusions that I would like to pass on to the members of the American Physiological Society.

It is my belief, and a belief supported in most instances by specific evidence, that three factors of overriding importance combine in different degrees to force the fragmentation of our Society with subsequent formation of new splinter societies. These are: 1) failure to find satisfactory programming outlets within the program format of our Society, 2) failure to find publication outlets within the publications of our Society, and 3) failure of our Society to respond to specific needs for interactions among persons with similar interests but still within the framework of the American Physiological Society.

Programming has been difficult for all of us, not merely for those with special interests. We can immediately call to mind our perennial disaffection with the single-mindedness of most of the programming of the FASEB Spring meetings, namely, the ten-minute papers. Also the versatility of all types of programming has been seriously hampered, if not devastated, by the fact that every time we offer alternate programming methods, we simultaneously decrease our number of meeting rooms for the voluntary

contributions, this in turn leading to various means for limiting the number of presentations. However, the versatility of programming for specialized groups has been even further hampered in a unique way: most of these groups have had an honest and continuing desire to bring into their programming fabric not only members of the American Physiological Society but also non-members with interests of major importance to them, though perhaps not interests of concern to the entirety of our Society members. A specific instance of this in recent years was the desire of the neurophysiologists to bring to their programs major components of neuroanatomy, neurochemistry, clinical neurology, psychology, and psychiatry. This was effectively disallowed under the programming conventions of the FASEB meeting constraints, but it has been achieved to the great satisfaction of everyone concerned under the umbrella of the Society for Neurosciences. A similar difficulty has arisen in the case of both the biomedical engineers and the microcirculationists, the first of these wishing to bring into their programming activities a large body of engineers and the second wishing to be strongly associated with microanatomists and rheologists.

The problem of publication outlet has also been a serious one. One of the most important considerations in the formation of the Biomedical Engineering Society was to achieve such an outlet, and it is open knowledge that this desire came about mainly because our own publications rarely accepted papers concerned with such topics as "Systems Analysis" and other biomedical engineering problems. In this context, we must also recognize that the development of expanding physiological fields requires as well the development of expanding publications, or otherwise one would expect the splinter groups to go elsewhere. Our own journals have had no significant expansion in almost two decades, and, indeed, the number of pages published in the American Journal of Physiology is actually less than was published a half dozen years ago. Yet, in the process of forming the new splinter societies the totality of publications in physiological fields has expanded markedly, including the Annals of Biomedical Engineering, The Biophysical Journal, and the developing new publication interests of the Society for Neurosciences. The simple difference has been that these expansions have been outside our Society rather than within our Society. As a consequence, many of our former members now owe their allegiances to other scientific societies.

Finally, there are specific needs for personal interactions among physiologists with similar interests, and an enlarging American Physiological Society is likely not to provide these special interactions. New and smaller societies can provide them, which often is the most important contribution that a society has to make.

Now, after stating some of the important reasons for the splinter phenomenon, how do we address ourselves to it? First we must ask whether we wish to consider splintering and fragmentation of our Society to be a problem and more importantly whether we wish to take any action. The view that I take, and also the view of Council, is that loss of numbers of members is not a matter that should concern us, because there are reasons anyway for not becoming too large. On the

other hand, each time we lose from our programs, our publications, and our interactions a great body of physiologists who are needed in our ranks because their contributions constitute an essential part of physiology without which the rest of us cannot healthily survive, then it is worth taking forceful corrective steps; and, indeed, the Council is pursuing an active course to keep within our Society those elements that are necessary to our own well-being. Hopefully, also, we can bring into the Society still other elements of equal desirability. These steps are:

First, a series of negotiations has been initiated between the American Physiological Society and FASEB to bring about more satisfactory programming opportunities for the American Physiological Society within the Spring meetings of FASEB. These negotiations began with a task force study of the relationship of the American Physiological Society with FASEB several years ago, and they were greatly accelerated by the action taken by the American Society of Biochemistry to remove that Society from participation in the FASEB meetings every other year. A reorganization will hopefully be achieved within the next year or two that will allow an almost infinite variety of programming opportunities for the American Physiological Society. Among the possible suggestions are: 1) more than one FASEB meeting a year, with different ones of the FASEB constituent societies involved in the respective meetings; 2) an extended duration of the FASEB Spring convention, with the American Physiological Society meeting during the first five days of the convention along with those societies most important to it while other societies will meet during the latter portion of the convention; and 3) a remote possibility that the American Physiological Society might wish to meet separately from the FASEB meetings at periodic intervals in the same way that the American Society of Biochemistry now does.

Second, relative to our publications, the Publications Committee has decided to publish not only our present journals but also to collect the papers of the American Journal of Physiology and the Journal of Applied Physiology into appropriate sections and to publish these sections separately as well. It is hoped that these sections will eventually have their own editors, their own editorial boards, and to some extent even their own editorial policies. Thus it is hoped that new varieties of publication avenues can be explored and developed. In addition the Publications Committee has decided to implement a monograph series as still a new avenue for publication outlet.

Third, to provide new means for interactions within specialty interests in our Society, new specialty groups have recently been organized within our Society rather than outside its domain. A new section on clinical physiology of the American Physiological Society has begun a definitive program to promote additional activity by the clinical physiologists. This is manifest primarily by the intent and preliminary planning for an annual symposium in some field of clinical physiology to be presented at each Spring meeting of the American Physiological Society. In addition, a series of clinical physiological topics has been added to the session lists for the Spring meeting.

Similar activities have also been instituted on behalf of those neurophysiologists who wish to remain associated with the American Physiological Society. An annual social gathering of the neurophysiologists has been instituted. One or more annual neurophysiological symposia will be organized for each Spring meeting of the society. A special series of sessions will be promoted in those topic areas that interface neurophysiology with other areas of physiology. And, finally, there is the probability of instituting a series of didactic lectures in the field of neurophysiology.

In addition to the clinical physiologists and neurophysiologists, others with specialty interests are invited to explore with the Council of the American Physiological Society any and all ways in which the Society can meet their special interests. Most importantly, the Council invites new methods for programming in the special interest areas.

In many less obvious ways, the Council is exploring and activating still other avenues for promoting the well-being of physiology in America. In the back of the minds of the Council members in all of these promotions has always been two dominating goals: 1) the achievement of the most desirable forum possible for the Society's members, and 2) the achievement of an organization that truly represents physiology in North America.

Arthur C. Guyton

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DR. GUYTON HONORED

Dr. Arthur C. Guyton, University of Mississippi, Jackson, and President of the American Physiological Society, 1974-1975, was the recipient of an Honorary Fellowship in the American College of Cardiology at ceremonies held February 12, 1975 in Houston, Texas.

Shown above are: Henry D. McIntosh, M.D., Houston, President of the College; Dr. Guyton; and George R. Meneely, M.D., a member of APS, Louisiana State University, Shreveport, Louisiana, Marshal for Dr. Guyton.

84 NEW MEMBERS CHOSEN BY THE NATIONAL ACADEMY OF SCIENCES

The National Academy of Sciences announced the election of 84 new members in recognition of their distinguished and continuing achievements in original research.

Election to membership in the National Academy of Sciences is considered to be one of the highest honors that can be accorded to an American scientist or engineer.

The National Academy of Sciences is a private organization of scientists and engineers dedicated to the furtherance of science and its use for the general welfare. The Academy was established in 1863 by a Congressional Act of Incorporation signed by Abraham Lincoln which calls upon the Academy to act as an official adviser to the federal government, upon request, in any matter of science or technology. This provision accounts for the close ties that have always existed between the Academy and the government.

Five APS members who were recipients of this honor are:

John R. Brobeck, Professor of Medical Sciences, Univ. of Pennsylvania Sch. Med.

Chandler M. Brooks, Professor, Dept. of Physiology, State Univ. of New York, Downstate Medical Center, Brooklyn

Carl W. Gottschalk, Professor of Medicine and Physiology, Univ. of North Carolina

Manual F. Morales, Cardiovascular Research Institute, University of California, San Francisco Sch. Med.

Rosalyn S. Yalow, Senior Medical Investigator, VA Hosp., Bronx

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A REPORT FROM THE USA NATIONAL COMMITTEE FOR THE INTERNATIONAL UNION OF PHYSIOLOGICAL SCIENCES

This committee is the mechanism through which the National Academy of Sciences enables American physiologists to be represented in the affairs of the IUPS. Its members are nominated by the American Physiological Society, the Society for General Physiologists and the Comparative Physiology Section of the American Society of Zoologists. From these nominations, appointments are made by the President of the National Academy of Sciences who also appoints an Academy representative to the Committee. Americans who are elected officers of the IUPS are ex-officio members of the committee. The committee nominates the five American delegates to the triennial General Assembly of the IUPS, provides American viewpoints on questions confronting the Executive and Council of the IUPS, and encourages the participation of American physiologists in the triennial international congresses sponsored by the IUPS. (Committee members (to July 1975) are identified at the end of this report.)

INTER-CONGRESS ACTIVITIES OF THE COMMITTEE

Planning:

In the interval since the XXV International Congress of the Physiological Sciences in Munich, the committee has been kept informed about the plans for the XXVI International Congress in New Delhi. Its members have been involved, both here and abroad, in conferences with the representatives of the Organizing Committee concerning arrangements and program. Through these exchanges, the committee has had the opportunity to assist the Organizing Committee in the identification of people and topics for consideration by those who arranged the program for the congress.

Travel Grant Program:

As it has for prior congresses, the committee sought financial assistance from numerous sources to enable it to provide travel grants for attendance at the XXVI International Congress. The site of the congress in New Delhi coupled with the general economic picture in this country made this a particularly difficult task during this period. Nevertheless, over $100,000 was made available to the committee for this purpose. Applications were solicited and, on the basis of carefully constructed criteria, a selection subcommittee identified 85 people from a total of 271 applicants for the receipt of transportation expenses from their point of origin to New Delhi and return, including stopovers permitting participation in IUPS-sponsored satellite symposia. In this context, it is important to note that the self-assessment of American physiologists prior to the 1968 congress in Washington, D.C. is still providing benefits. The unspent balance of funds used by the US Organizing Committee now constitutes an investment fund in the custody of the APS. The committee is most grateful that the accumulated income from that fund was made available for the support of the committee's triennial travel program.

Free Circulation of Scientists:

During the summer of 1974, the Government of India determined that nationals of several countries would not be issued visas for entrance into India. Since this would influence attendance at the congress in New Delhi, the committee vigorously expressed its serious concern over this departure from the principle of free circulation of scientists at international scientific meetings. It supported the IUPS protest to the ICSU Standing Committee on Free Circulation of Scientists. Through the offices of the National Academy of Sciences, its disapproval was expressed to the US Indian Embassy for transmittal to the Indian Office of Foreign Affairs. It encouraged and supported the very vigorous efforts on the part of the Organizing Committee in New Delhi to obtain a reversal of this decision insofar as scientists registered for the congress were concerned. These various activities resulted in a partial but incomplete lifting of the restrictions on attendance at the congress.

ACTIONS AT THE GENERAL ASSEMBLY OF THE IUPS - NEW DELHI, 1974

Reports:

The Assembly received the reports of the President, Y. Zotterman (Sweden), the Secretary, R. Hunsperger (Switzerland) and the Treasurer, E. Neil (UK). The Secretary noted the formation of nine new commissions surveying the fields of Environmental Physiology, the Physiology of Food and Fluid Intake, Cardiovascular Physiology, Gravitational Physiology, Motor Control, Muscle Physiology, Oral Physiology, Renal Physiology and Somatosensory Physiology.

Dues:

The Assembly approved unanimously the addition of two new dues categories in the amounts of US $150 and $1500.

New Members:

On the recommendation of the Membership Committee (P. Bishop, Chm.) the Brazilian Society of Physiology, the Indonesian Physiological Society and the Physiological Society of New Zealand were elected to full membership in IUPS, and the National Science Council of Sri Lanka was elected to associate membership in the IUPS.

Elections:

The Assembly received the report of the Nominating Committee (K. Lissak, Chm.) and elected the following officers: E. Neil (UK), President; R. Hunsperger (Switzerland), 1st Vice-President; N. Bechtereva (USSR), 2nd Vice-President; A. Kovach (Hungary), Secretary; J. Brookhart (USA), Treasurer.

Six Council members were re-elected for additional terms and four new Council members were elected.

ICSU Affairs:

In reporting on the recent meetings of the General Assembly of ICSU, the Secretary related the actions taken by that body re-affirming the principle of the free circulation of scientists. The Assembly then received, debated upon, and accepted in revised form the resolution on this issue introduced by the USA National Committee for the IUPS. The Secretary also noted the discussion by ICSU delegates of recent UNESCO actions related to the Academy of Sciences of the People's Republic of China, the new designation of the Academy of Sciences, Taiwan and the actions taken by the ICSU General Assembly on this matter. On the recommendation of Council, the Assembly agreed that the minutes of its meeting would not be approved until the delegate from Taiwan had had the opportunity to record his vote by mail.

Future Congresses:

The Assembly accepted unanimously the final invitation from France to hold the XXVII International Congress in that country in 1977. It also received preliminary invitations from Australia, Hungary and Israel for the XXVIII International Congress in 1980. The Assembly voted to accept the preliminary invitation from Hungary.

Congress Sponsorship:

The final action of the Assembly was to delegate power to the IUPS Council to withdraw IUPS sponsorship of any International Congress at which the principle of free circulation of scientists is violated.

THE XXVI INTERNATIONAL CONGRESS OF PHYSIOLOGICAL SCIENCES, NEW DELHI, 1974

Attendance:

In its acceptance of the preliminary invitation from India in 1968, and in its final acceptance in 1971, the IUPS expressed the principle that every third congress should be convened in some part of the world where the concentration of physiologists is significantly smaller than that characteristic of Europe and North America. The purpose of this pattern is to improve the opportunity for personal contacts between physiologists from all over the world and scientists isolated by distance from Europe and North America. This purpose was fulfilled by the Congress in New Delhi. Registrants for the congress originated from 60 countries. Of the total of almost 2000 scientists who attended the congress, over 25% originated from Near, Middle and Far East countries exclusive of Australia and New Zealand. In addition, between 150 and 200 medical students in New Delhi provided supporting services and were permitted to attend all sessions. Thus, ample advantage was taken by Asian scientists of the opportunity to meet and exchange scientific and cultural views with their colleagues from far off lands. (A detailed count of attendance is provided at the end of this report.)

Program Structure:

The program of the congress offered a rich choice of activities from which selections could be made. Each of the five working days of the congress offered six symposia, six invited lectures by leading physiologists, and 16 sessions of volunteer communications, each section comprising 10-12 papers. Each day's activities were terminated by a plenary lecture on a general topic of interest to all delivered by world-respected scientists.

Program Content:

The program content covered the entire spectrum of physiology. It was, however, weighted in favor of topics particularly relevant to the major problems of the area. Thus, emphasis was laid on topics such as reproductive physiology related to population control; the physiology of nutrition and food, water and mineral balance; environmental physiology with emphasis on temperature regulation and high altitude adaptations. Teaching workshops were offered on two mornings during the week and all day Sunday after the closing of the congress. These provided the opportunity to review audio-visual aids such as those developed by the Education Committee of the APS and to exchange ideas and procedures about student laboratory exercises.

Program Quality:

Given such a massive program, it could not be expected that all offerings would be of uniformly high quality. Nevertheless, a survey of those assisted by travel grants from the USA National Committee for the IUPS revealed that all but seven considered that the scientific quality of the congress ranged from "good" to "superb." The Congress Symposia and Invited Lectures were singled out as most valuable because of the broader perspective they provided on the subject area as well as the opportunity taken by many speakers to engage in constructive syntheses. Several of the responding scientists expressed surprise that the material presented by some investigators at Satellite Symposia was simply repeated in the form of a free communication in New Delhi.

Benefits of the Congress:

Although there are obvious problems with quantification of personal reactions, the respondents to the survey recognized several kinds of benefits which accrued to them as a result of their participation. Instances of overlap and duplication of efforts by people in different parts of the world were identified and decisions could be made to minimize this where desirable. Facilitatory actions took place which had two effects. On the one hand they provided the basis for the activation of new directions of effort; on the other hand they provided the basis for planning the kinds of replicative observations so essential to the progress of science. These personal exchanges also afforded the opportunity for making value judgements about the quality of science in various parts of the world in a manner difficult or impossible to achieve simply through study of scientific literature. It is reasonable to suppose that

the sum of these varied benefits to numerous scientists will be reflected in an overall improvement in the quality of their combined efforts in the future.

Several people expressed disappointment at the number of papers which had to be cancelled because the speakers did not attend the sessions at which they were scheduled. In part this was due to the time lapse between registration and congress, and to the distance many people had to travel. Of the 2090 pre-registrants, 309 were unable to come. The 109 new registrants brought the total in attendance to 1971 but the late registrants presumably did not contribute to the program. It is highly probable that some of the "no shows" took advantage of once-in-a-lifetime opportunities to experience some of the attractions of an ancient and fascinating Asian land.

Satellite Symposia:

During the week prior to and the week following the meeting in New Delhi, many of those attending the congress also participated in congress-sponsored satellite symposia. There were twenty such symposia in various parts of India. Sixteen satellite symposia were convened in Japan, Australia, Indonesia, Iran, Israel, USSR, Czechoslovakia, Hungary and Poland. To some degree, these sharply focussed gatherings overlapped some of the congress programs in subject coverage. The wide distribution of those occurring outside India added significantly to the transportation expenses of those who participated in them. It is felt by some that the necessity for and desirability of these satellite symposia should be carefully evaluated in relation to future congresses.

Congress Arrangements:

The physical arrangements at the congress were certainly up to the expectations generated through earlier contacts with the Organizing Committee. All meeting sessions were held in the Ashoka Hotel in its newly created facilities for such large meetings. This made for a minimum time loss in transit between meetings and facilitated contacts between colleagues. Food service through the several hotel restaurants was supplemented by a noon time cafeteria in the shade of a large awning on the hotel grounds where numerous varieties of native foods were available.

One of the basic reasons why the running of the congress was smooth and effective deserves particular notice here. The younger medical students in Delhi and New Delhi formed themselves into an Association of Volunteers to provide the services so essential to a meeting of this kind. They manned the registration, program and information desks. They provided operators for all slide and moving picture projectors. They surveyed each meeting room prior to meetings to ensure the availability of chalk, blackboard and pointers. They checked out and operated the public address systems. Throughout they were enthusiastic, attractive, pleasant, and no job was too big for them. Their support was invaluable.

Cultural Events:

Our Indian hosts made highly successful efforts to provide an introduction to their culture, history and art. Congress delegates enjoyed a tea in the impressive gardens of the Presidential Palace at the invitation of the President and his wife. Numerous guided tours to historical relics in Delhi and the immediate surround were both instructive and esthetically valuable. A program of two contrasting classical styles of Hindu dance was provided by two highly talented and beautiful dancers. The end of the Muslim religious period of Ramadhan was the occasion for a thrilling evening of dancing, music and fireworks in a public coliseum. On the final night of the Congress, the expansive lawns of the hotel were the site of a typical Hindu village fair replete with varieties of food, clowns, acrobats, jugglers, country dances and music, and even a highly decorated elephant whose photographic image now rests in slide collections all over the world. These events, coupled with pre- and post-congress tours to other parts of India, provided those who attended the congress with a rich cultural counterpoise to the rich scientific value of the meeting.

April 1975 John M. Brookhart

USA NATIONAL COMMITTEE FOR IUPS

A. Clifford Barger, M.D. (APS)

John R. Brobeck, Ph.D. (APS)

John M. Brookhart, Ph.D. Chairman (APS)

John E. Dowling, Ph.D. (SGP)

Arthur C. Guyton, M.D. (APS)

Joseph F. Hoffman, Ph.D. (SGP)

Knut Schmidt-Nielsen, Ph.D. (ASZ)

THE XXVI INTERNATIONAL CONGRESS OF PHYSIOLOGICAL SCIENCES

Distribution of Registrants from 60 Countries

Country	Pre-registration	Attended
USA	508	468
India	466	442
UK	142	140
FRG	125	101
Japan	108	97
USSR	102	52
France	77	75
Canada	64	56
Italy	40	27
Australia	37	35
Sweden	34	30
Hungary	32	30
Israel	31	12
Netherlands	30	26
Mexico	28	20
Poland	27	20
Czechoslovakia	25	16
Spain	20	14
Romania	18	1
Switzerland	18	12
Norway	14	13
Iran	10	6
Venezuela	10	9
27 countries <10	127	80

Total pre-registrants	2090
Total pre-registrants attending	1781
Late registrants attending	190
Total attending	1971

Student guests 150-200

Near, Middle and Far East countries

Registrants	657
Attending	582

SAN FRANCISCO OPERA DURING THE FALL APS MEETING

Opera lovers coming to San Francisco for the Fall Meeting might like to know of the performances scheduled for that period by the San Francisco Opera Association. Seats for the Grand Tier, Dress Circle, and Boxes are always sold out to series subscribers, but a few individual tickets are sometimes available in the Orchestra and Balcony. Out of state applicants are given preference for these. Those interested should send their order and check promptly to San Francisco Opera, War Memorial Opera House, San Francisco, CA 94102, listing their preferences with alternatives for both performances and seating. Orders are acknowledged on receipt. Tickets are mailed in August.

*8 PM Fri. Oct. 3	Il Trovatore
*8 PM Sat. Oct. 4	L'Elisir d'Amore
2 PM Sun. Oct. 5	Der Fliegende Holländer
8 PM Tue. Oct. 7	L'Elisir d'Amore
*8 PM Fri. Oct. 10	L'Elisir d'Amore
*8 PM Sat. Oct. 11	Norma
2 PM Sun. Oct. 12	L'Elisir d'Amore
8 PM Tue. Oct. 14	Norma
8 PM Wed. Oct. 15	Pique Dame

Ticket Prices	Tue, Wed, Sun.	*Fri. *Sat.
Orchestra	$18.50	$19.50
Balcony Circle	13.00	14.00
Balcony A-E	9.50	10.50
Balcony F-H	7.00	8.00
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NINETEENTH BOWDITCH LECTURE

Ionic Pores and Gates in Nerve Membranes

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Anyone who offers to lecture on a subject that he has never explicitly worked on must have an apology ready to hand. In justification, I have found the speculations outlined here to be amusing, sometimes useful, and very helpful in providing a framework for introducing students to cellular electrical properties.

The existence of a resting membrane potential, and the ability of a cell to alter membrane potential (V_m) by variations of membrane permeability have given to cells a remarkable variety of capabilities. Neurons have evolved the ability to transmit signals at a velocity of up to 100 m/sec. Receptor cells have transducer properties, and can transform light, mechanical, or chemical stimuli into electrical impulses. By virtue of synapses, a cell can sum up information (in the form of electrical impulses) from many different sources. A change of membrane voltage is the trigger for contraction in muscle cells. And the electrical system of the heart provides a timing mechanism to set the heart rhythm, a mechanism that is responsive to hormonal changes. But why did membrane potentials develop in the first place? It seems too much to expect that even nature could have foreseen this remarkable potential for development in the days of the first cells.

To answer this let us start by defining a cell simply as something with an outside, which is exposed to the environment, and an inside, which is separated from it. The whole point of such an arrangement is to make the inside different from the outside, that is to put inside the cell substances that are rare or absent from the outside. Here a difficulty arises. (For an excellent summary of this problem, see Tosteson, 1964). If a cell membrane is impermeable to one or several substances sequestered inside, but is permeable to all other substances, e.g. the electrolytes in the external medium, the cell can be in osmotic equilibrium only if the hydrostatic pressure inside the cell is higher than outside. Animal cells have extremely tenuous membranes which are unable to withstand significant hydrostatic pressure differences, and the pressure differences arising from osmotic imbalance are enormous, 22 atmospheres/osmole. This means that an osmotic imbalance of, say 5 m M requires a hydrostatic pressure difference of .11 atm to offset it, which is equivalent to a water column almost four feet tall. Clearly if cells with fragile fluid membranes were to be developed a way had to be found to save substances inside a cell, and achieve osmotic equilibrium without the necessity for a hydrostatic pressure difference.

The answer was 1) the sodium-potassium pump, 2) a cell membrane more permeable (in the resting state) to potassium ion than to sodium ion, and 3) a negative charge, on the substances saved within the cell.

With this arrangement, $[Na]$ inside the cell is low, $[K]$ is high, and $[Cl]$ inside is low. For electroneutrality, the positive charge of the K ions is equaled by the negative charge of the saved substances, with a small contribution from Cl. There is a membrane potential, negative inside, and V_m is close to the equilibrium potential (V_K) for K ions, which is given by the Nerst equation for K,

$$V_K = \frac{RT}{F} \ln \frac{[K]_{out}}{[K]_{in}}$$

Or, stated another way K ion is almost in electrochemical equilibrium, but has a tendency to leak out of the cell. Na+, on the other hand, is far from equilibrium: both the electrical gradient and its concentration gradient tend to drive it into the cell. The tendency of K^+ to leak out and Na^+ to leak in is compensated for by the pump, which drives Na^+ outward and K^+ inward. In the simplest case Cl^- is presumed to be in electrochemical equilibrium, but it is pumped in some cells.

Without resorting to equations, there are two qualitative ways to see how this situation resolves the osmotic problem. One way is to say that the osmotic effect of the saved substances inside is countered by Na^+ outside, which is effectively impermeant thanks to the working of the pump. The other aspect is that exchanging K^+ for Na^+ in the cell interior gives rise to a large negative V_m, thanks to the higher permeability of the membrane to K than to Na, and this drives Cl^- out of the cell, reducing the number of osmotic particles inside.

Having solved the osmotic problem for cells with fluid walls, free mobility of the cell or of organisms made of many cells became possible, and there arose a new problem: coordination of the various parts of the cell or organism. Coordination requires a signal, a means of transmitting it, and a mechanism for receiving the signal. A means of generating a signal was inherent in the solution of the osmotic problem. Sodium ion is not in electrochemical equilibrium, and if the membrane becomes more permeable to sodium than to potassium, Na^+ ions will rush into the cell, reversing the usual voltage by making the inside positive to the outside. Perhaps the earliest form of mechanoreception was destruction of the membranes selective permeability to K^+ at some point by mechanical disruption.

How can a signal generated in this way be transmitted over the cell or organism? A means of transmission is inherent in the geometry of a cell. The cell membrane is a good insulator which separates two conductors, the internal electrolyte and the external electrolyte. Electrical current that enters the cell at one point (due to an inflow of Na ions) spreads down the cell for some distance before leaking out, with the result that a voltage change initiated at one point spreads for some distance along a cell. This makes a perfectly adequate system for transmitting voltage signals over short distances. A measure of this spreading tendency is given by the length constant (λ) of a cell

$$\lambda = \sqrt{\frac{r_m}{r_{ax}}}$$

In this formula r_m is the membrane resistance (in units of ohm cm) and r_{ax} is the resistance to flow of current through the cell cytoplasm (in units of ohm/cm). λ can be increased, by increasing membrane

resistance, r_m, or by decreasing r_{ax}. Nature has used both means of improving the cable properties of nerve cells. The more primitive solution, development of giant axons, decreases r_{ax}, but is not very economical. Myelination increases r_m, and has the added advantage that it reduces capacitance, making propagation of a signal along an axon much faster than it would be in the absence of myelin.

For communicating over large distances the cable properties of cells are inadequate, even when improved in these ways. Even in the best case a signal originating at one point decays to a small fraction of its original value a centimeter away, and some means is needed to boost it back to full size. It is convenient to think of two patches of membrane that communicate by virtue of the cell's cable properties. If the first patch is depolarized, depolarization spreads to the second patch with a decrement. The second patch must (i) detect the depolarization, and (ii) boost it back to full size. These functions are performed in excitable cells by the sodium pores which open in response to a depolarization, causing an increase of sodium permeability that further depolarizes the axon. The cable properties remain an essential element for transmission, but they must be supplemented by the booster system provided by the sodium pores.

It is perhaps best to stop here for a moment and describe axon membrane in final, fully evolved form. No great violence is done to existing data if one pictures a sodium channel as a small hole through the membrane, guarded by two gates, activation and inactivation, near the inner end of the hole. At the outer end is a receptor which binds the poison tetrodotoxin (TTX) with high affinity. Between the TTX receptor and the gates is a relatively narrow region, the selectivity filter, probably lined with oxygens and about 3 x 5A in cross section (Hille, 1971). When both of the gates are open, ions pass through the pore, Na ions most readily, K ions about 10 to 12 times less well. Each pore is usually pictured as all-or-none (open or closed), but there is no evidence to exclude a number of states with different conductance.

Membrane potential of an axon can be altered at will by means of a voltage clamp, a useful tool for observing the behavior of the gates of a sodium pore. At the resting potential the activation gate of a typical sodium channel is closed, the inactivation gate open. If V_m is changed to 0 mV for example, the activation gate opens quickly, and the inactivation gate closes slowly. The result is a transient increase of the sodium permeability. Functionally the transient nature of P_{na} is important, for the decay of P_{na} makes it easy to repolarize the axon (a task which is accomplished by the potassium permeability) and get the membrane ready for the next signal. The existence of two gates on the sodium pores has been confirmed by experiments involving internal perfusion with pronase, a proteolytic enzyme. Pronase selectively destroys inactivation, but leaves activation intact.

This, in brief, is the machinery that has evolved for detecting a small membrane voltage change and amplifying it. It is important to realize that this machinery responds to only one stimulus, a change in membrane voltage. This gives an important clue to the basic

mechanism: the voltage sensing structure of the sodium channel must be electrically charged, for only a charged structure can sense the membrane field. (A rapidly changing membrane field could be detected by its magnetic effects, but rate of change of the field is unimportant in nerve membrane.) This line of reasoning led Hodgkin and Huxley (1952) to predict that membrane permeability in nerve is governed by charged structures that move in response to membrane field changes. A necessary consequence is that a current must be associated with opening and closing of the ionic pores, produced by movement of the charged gating structures. Because no stored energy is expended in the operation of the gating structures (axon membrane can undergo many action potentials with no energy source other than the ionic gradients, and these can be altered or reversed without affecting gating), movement of gating charge must passively follow changes of the membrane field: charge movement following a depolarization, (when the gates open) must be outward, and it must be inward when the gates close on repolarization.

A current that has many of the properties expected of gating current can be seen using special techniques and solutions in solution where the usual ionic currents (Na^+ and K^+) are small or absent. This current is illustrated in Figure 1. Trace A shows the current recorded in a solution with much reduced Na^+. Potassium current is absent, because internal K^+ has been replaced with the impermeant ion Cs^+.

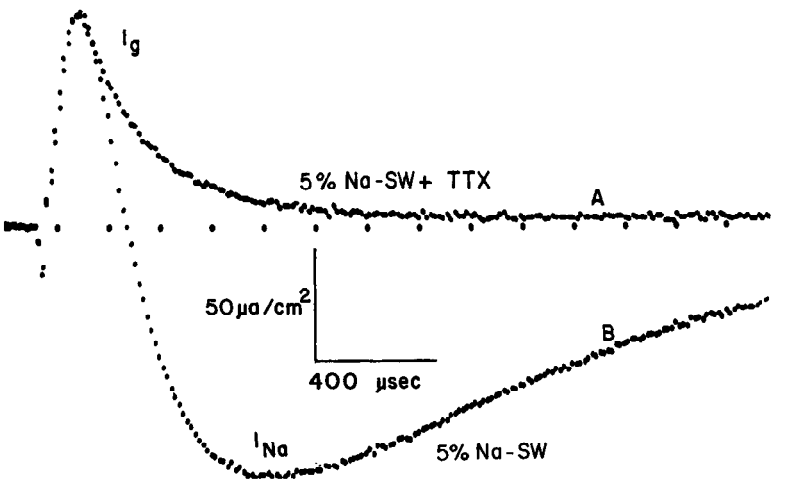

Fig.1. Sodium current and gating current recorded from a voltage-clamped squid giant axon. The axon was in a sea water solution containing only 5% of the normal sodium concentration (replaced by tris ion), and was internally perfused with cesium fluoride. Both trace A and trace B are the sum of the current following ten positive and ten negative steps of 90 mV amplitude from a holding potential of -70 mV. Tetrodotoxin (TTX) eliminates I_{Na}, but leaves I_g (gating current) unaffected.

Sodium current (I_{Na}) is preceded by a small outward current (I_g) which is unaffected by tetrodotoxin (Trace B). A number of experiments show that this current is closely associated with the opening of the sodium channels and it has consequently been named gating current (Armstrong and Bezanilla, 1973, 1974; Bezanilla and Armstrong, 1974; Keynes and Rojas, 1974). Existing evidence indicates that gating current is capacitative in origin, and not due to movement of ions across the membrane. That is, the current is caused by rotation of charged or dipolar molecules that are fixed within the membrane.

It is not my purpose here to review all of the evidence regarding gating current and its origin, but rather to speculate about the origin of excitability and the importance of membrane field effects on dipolar molecules as a general physiological control mechanism. It is not difficult to imagine a mild degree of membrane disruption produced by rotation of a dipolar molecule; disruption sufficient to increase P_{Na} relative to P_K and depolarize the cell. The depolarization produced in this way could propagate indefinitely, if the membrane were everywhere seeded with the appropriate dipolar molecules. An impulse would be initiated electrically, by a change in the membrane field, caused, perhaps by the primitive mechanoreception mechanism mentioned above; i.e. mechanical disturbance of the cell membrane. Clearly evolution would favor cells that had a mechanism for (i) repairing mechanical breaks in cell continuity, and (ii) "inactivating" the P_{Na} increase caused by rotation of a dipolar molecule. A cell that lacked either mechanism would swell uncontrollably, since volume control depends on K selectivity of the membrane.

At present only two other cases come readily to mind in which physiological processes are apparently affected by orientation of charged or dipolar molecules in the membrane field. One example is the current described by Schneider and Chandler (1973), which is probably related to excitation - contraction coupling in muscle. This current seems to be associated with the still mysterious process which links depolarization of the surface membrane to release of calcium from the sarcoplasmic reticulum. A second example is from the work of Magleby and Stevens (1972) on the acetylcholine receptor at the neuromuscular junction. These ionic channels are chemically excitable (and not electrically excitable) and there is no a priori reason for thinking a dipolar molecule is in any way involved. A corollary is that junctional membrane need not have a gating current, as it senses chemical changes, not voltage changes. According to Magleby and Stevens a component of the receptor may nonetheless have a dipole moment which has the effect (paraphrasing somewhat) of lengthening the lifetime of the acetylcholine-receptor complex at negative membrane voltages, and shortening it at positive membrane voltages. This phenomenon has a clear functional utility since the acetylcholine-receptor complex breaks down quickly following depolarization, allowing quick repolarization; but the complex and the attendant permeability increase last longer if depolarization is slow for any reason, thus multiplying the effectiveness on an acetylcholine molecule.

As a concluding thought I would like to suggest that not three or four but a great many physiological processes may be affected or controlled by orientation of charged or dipolar molecules in the membrane field. After all, dipolar molecules are extremely common, and membrane potentials must be as ancient as the animal cell.

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THE FIRST MEDICAL PHYSIOLOGISTS AT THE UNIVERSITY OF WISCONSIN

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Dr. Joseph Erlanger became the first chairman of the Department of Physiology in the newly established University of Wisconsin Medical School in 1906. Although Erlanger remained in Madison for only four years he brought Dr. Walter J. Meek into the department. Also it was at Wisconsin that Herbert Gasser came under Erlanger's influence, and this led subsequently to Gasser's move to Washington University, St. Louis, to collaborate with Erlanger in the studies which won for them the Nobel Prize.

An autobiographical account of Erlanger appeared in Annual Review of Physiology (4) and this was reprinted in "The Excitement and Fascination of Science." Also, a brief biography of Erlanger as the 11th President of the American Physiological Society appeared in The Physiologist in 1968 (5). Dr. Gasser wrote, in the third person, a short autobiography which was published, with a preface by Dr. Joseph Hinsey, in the Journal of Experimental Neurology (7).

The studies of Erlanger and Gasser for which they received the Nobel Prize in 1944 are summarized in the monograph entitled "Electrical Signs of Nervous Activity" (6) published by the University of Pennsylvania Press in 1937 and reprinted in 1968 with the addition of a complete bibliography of each of the authors. Erlanger's first paper (1901) dealt with a metabolic problem; and all except one or two of the next 68 papers in his bibliography, including 11 co-authored with Gasser during the period from 1918-1920, were concerned with cardiovascular problems. Erlanger had an outstanding reputation as a cardiovascular research physiologist before he began neurophysiological studies. His contributions included the first estimate of the speed of conduction in the His-Purkinje system. According to MacLean, Waldo and James (8) Erlanger was the first to espouse the view that delay, i.e., relatively slow conduction, of the cardiac electrical impulse occurs at the atrio-nodal junction (3). Also, Erlanger had developed a device for indirectly determining systolic and diastolic arterial blood pressure by oscillometry. George Bishop (a Ph.D. graduate in Zoology from the University of Wisconsin) collaborated with Erlanger and Gasser, beginning in 1923, and 8 papers which carried the three names appeared in the period from 1925 to 1927. (For a description of further studies by Bishop see "Life Among the Axons")(1).

Gasser graduated at the then Normal School at Platteville, Wisconsin in 1907. This was a two-year course and he came to the University to work toward the A.B. degree, with a major in Zoology. He was permitted to take advanced courses in Zoology, despite what was considered to be inadequate preparation, with the understanding that he would withdraw and enter an elementary course if the "deficiency in preparation could not be surmounted." At the end of the two years, Gasser took the

lecture course in physiology taught by Erlanger in the newly organized medical school. He says (7) "the subject matter differed so widely from what was anticipated that it amounted to a revelation. Gasser listened to the lectures with bewilderment and felt he was getting only a feeble grasp of their content." During the next year he completed requirements for an A.M. degree in Anatomy and was "surprised to find that he had completed most of the courses in the preclinical years in medicine." Following this year he was appointed to a full-time Instructorship in Physiology. However, the Wisconsin Medical School was then only a two-year school and soon he decided to complete his medical education. Gasser's choice of Johns Hopkins was not surprising since, in his words, "the heritage from Hopkins was strong at the new school at Wisconsin. Erlanger, Eyster, Loevenhart, Bunting and the Dean (Bardeen) had all come from there."

At Johns Hopkins, according to Gasser, "the curriculum in the clinical years prepared students less for coping immediately after graduation with the exigencies of medical practice than did the curricula provided at that time in other medical schools. The course was designed to impart in a scholarly atmosphere, a basic training leading to a life-long study and self-development in accord with individual interests and capacities." He took elective work at Hopkins with W. H. Howell, who at that time was one of the leading professors of physiology in the United States and author of the best known textbook of medical physiology.

After receiving the M.D. degree at Hopkins, Gasser was offered an instructorship there but felt that he should return to Wisconsin to accept an instructorship in Pharmacology under Dr. Loevenhart. However, in 1917 Erlanger enticed Gasser to join him in physiology at Washington University. This move coincided with the entry of the U.S. into the first World War, hence the reason for the series of studies by Erlanger and Gasser on shock is evident. Soon, however, (1920) their neurophysiological studies were initiated.

Erlanger (4) gives an account of discussing with Howell the first offer which he had received from Wisconsin. He was offered an Associate Professorship at a salary of $2500 per year. Howell advised him to decline saying, "If they want you they would make a better offer." The next year (in April 1906) the University of Wisconsin offered Erlanger the professorship of Physiology and Physiological Chemistry with a starting salary of $3000 per year and the option of selecting a professor of Physiological Chemistry. He accepted this and shortly selected Dr. Harold Bradley who subsequently became chairman of physiological chemistry when it was made a separate department. Bradley served on the faculty for 42 years and at the age of 95 is the only living person who was a member of this early group at Wisconsin.

Erlanger states that his first two years in Madison were devoted largely to organization. The space allocated for the department was on the second floor and in the attic of the old Chemical Engineering building. He had a year before he offered physiological chemistry in the first semester of the first year of the new medical school and

physiology in the second semester of that year. Erlanger writes (4), "To assist me with organization of, and the teaching in the laboratory during my third year of residence (1908), Walter J. Meek was called, with the rank of instructor; he came from Penn College (Iowa), where his title had been professor of biology." Shortly, Erlanger was offered the chairmanship of Physiology in the newly reorganized four year medical school at Washington University. He went to St. Louis in 1910, and remained there until his retirement. In the 1940's it was a privilege and pleasure for my wife and me to become well acquainted with Dr. and Mrs. Erlanger, since they regularly visited their daughter, Mrs. Harry Swinney, in Portland, Oregon. Dr. Erlanger was a very modest, unassuming person; and the winning of the Nobel Prize had no apparent effect on his ego or attitudes. Dr. and Mrs. Erlanger insisted that their friends call them Joe and Amy.

When Erlanger resigned from his position at Wisconsin in 1910 the vacancy which was created was filled by J. A. E. Eyster, who had received the M.D. at Hopkins and was professor of pharmacology at the University of Virginia. Dr. Eyster's primary interest in research and Dr. Meek's skill as an administrator soon led to an exchange of the chairmanship and Dr. Meek served in that capacity until he retired in 1948 when Eyster again became chairman and served until his retirement in 1952.

Eyster and Meek collaborated in studies of the cardiovascular system for a period of over 30 years. Their first joint publication was in 1912, and the prominence which they achieved in research is evident from the fact that Howell, one of the founders of Physiological Reviews, solicited them to provide an article for the first issue of that journal. They accepted and the article entitled "The Origin and Conduction of the Heart Beat" may be found in Volume 1, Number 1, Page 1, 1921. Correspondence between Hooker, the editor, and Eyster reveals that they were a little late in getting the article ready. Eyster and Meek correctly are credited (8) along with Wybauw, and Sir Thomas Lewis with performing the experiments which established that the sinoatrial node is the site of impulse formation in the mammalian heart (dog). Furthermore, Eyster and Meek, in studies utilizing a series of cuts around the sinoatrial node of the dog concluded that there were functionally significant specialized atrial pathways conducting the impulse to the atrioventricular node. According to MacLean, Waldo and James (8) "Sir Thomas Lewis cast doubt on these findings and continued to teach that the sequence of atrial activation from the sinus node was radial and nonselective. Lewis' enormous influence on electrocardiography led most cardiologists to accept his radial activation theory, even to the present time. In view of the continually mounting evidence to the contrary today, however, the more useful question is no longer whether specialized atrial pathways exist, but exactly what role they perform in normal and abnormal rhythms."

Eyster held steadily to studies of cardiac action potentials and lectured on cardiovascular physiology in the course for medical and graduate students until his retirement in 1952. One of his graduate students, Paul Cranefield, who is currently editor of the Journal of General Physiology, has continued such studies until the present. Another one of

Eyster's research assistants, Dr. Warren Gilson now heads the well known medical instrument manufacturing company in Middleton. Meek, in addition to his association with Eyster in experimental work, initiated studies of gastrointestinal reflexes in collaboration with R. C. Herrin. When I came to Wisconsin as a graduate student in 1935 I became involved in studies which were based on foundations laid by them, and results of these and subsequent studies are described in a monograph (10).

One of Dr. Meek's most clinically relevant contributions was the discovery, in collaboration with Seevers and Waters, that catecholamines cause ventricular fibrillation in dogs anesthetized with cyclopropane. Further studies of the effect of catecholamines on ventricular irritability, in collaboration with Orth, Murphy, Stutzman and Allen provided information concerning mechanisms of this action and identified epinephrine congeners which do not produce serious increases in ventricular irritability. Some of these studies were summarized by Dr. Meek in a Harvey Lecture (9). We had this work in mind when we chose phenylephrine (11, 12) as the best vasopressor agent to try to determine if a rise in blood pressure would revert paroxysmal atrial tachycardia.

Dr. Paul Clark's book on the history of the University of Wisconsin Medical School (2) provides a perceptive analysis of the attitudes and attributes of Meek and Eyster based on his association with them and conversations with their students. Eyster was unexcelled in his dedication to research in cardiovascular physiology and was noted for his kindly, gentlemanly treatment of everyone. Meek was outstanding as an inspirational classroom teacher and skillful administrator. His many activities as a member of the American Physiological Society, included Secretary, President, first Chairman of the Board of Publication Trustees, and finally Historian. However, to those who worked closely with him, possibly Dr. Meek's most unusual trait was his ability to achieve rapport with students at all levels. For many years he taught the most elementary college course in human physiology and lectured on the nervous and muscular system in the course for medical students. Despite his great interest in the cardiovascular system, these lectures were given by Eyster. As adviser of premedical students and assistant Dean, and later associate Dean, he was the person most directly concerned with selecting students for admission to medical school. This meant that he had to spend several full days advising students at the beginning of each semester. Thus, it is not surprising that some of the most promising medical students became teaching assistants in physiology and later achieved important academic positions.

The first students to receive Ph.D. degrees from the Department of Physiology at Wisconsin (in 1923) were K. K. Chen, Chauncey D. Leake, and Ethel Ronzoni (Mrs. George H. Bishop), and by 1952, 38 persons had received the Ph.D. in Physiology. A list of their names for 1923 to 1950 is included in Clark's book (2). It is noteworthy that at least 13 of these also earned the M.D. degree; 16 became Professors; 8 became chairmen of departments; 6 became Directors of Research or Vice Presidents in charge of research for pharmaceutical companies; 4 served as presidents of the American Society for Pharmacology and Experimental Therapeutics (Chen, Leake, Beyer, Bain), and one of these also (Leake) was president of the American Association for Advancement of Science.

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NEW COMMITTEE ON EDUCATION AND EMPLOYMENT OF WOMEN IN SCIENCE AND ENGINEERING

Lilli S. Hornig, Executive Director of Higher Education Resource Services, has been named chairperson of the new Committee on the Education and Employment of Women in Science and Engineering within the Commission on Human Resources of the National Research Council.

Dr. M. Elizabeth Tidball, member of APS will serve as Executive Secretary for the Committee. Dr. Tidball is Professor of Physiology at the George Washington University Medical Center, currently on sabbatical leave at the Commission on Human Resources. Neena Schwartz, APS member, is a member of the Committee.

The Committee has been established to examine broadly the social, structural, and institutional constraints that limit the participation of women in science and engineering, giving special attention to problems of sex discrimination in education and employment. Through its sponsorship of conferences and publication of studies, it will attempt to increase official and public understanding of these issues and serve as a focus for efforts to improve the opportunities for women in science and engineering and to make available to the nation a largely untapped reservoir of talent.

REQUEST FOR INFORMATION ON DECEASED MEMBERS

The APS Office is not always officially notified of the death of a member; it is unfortunate that such a lack of information delays extending Society condolences to the families involved. To avoid such delays, all members are requested to notify the Executive Secretary whenever they learn that a fellow member has died. Newspaper clippings and other available information will be appreciated, particularly the name and address of the next of kin.

NEWS FROM SENIOR PHYSIOLOGISTS

The following are recent replies to birthday greetings:

Joe Schiller wrote Hy Mayerson from Paris:

Thank you for the unexpected and charming letter and kindly accept my apologies for the delayed answer. My only excuse is that I was away hunting for unpublished documents and participating in conferences and seminars.

So, Mother American Physiological Society thinks of her children no matter how gray their hair is. It goes without saying that Mother is entitled to all information about the adventurous life of her offspring. There are two questions I have to answer: 1) What am I doing now: 2) Have I any words of wisdom to pass on to the younger colleagues. The two are interrelated and I leave it to you and other colleagues to decide whether wisdom has any share.

My starting point was that science is imperishable while scientists, with very few exceptions, perish within five years of their latest publication. Even a new publication is a temporary rebirth with hopeless perennial duration, luckily for science, which marches on. Consequently, I decided to look into the problem and find what makes science last and scientists go to heaven or elsewhere depending on the final decision of the forthcoming Last Judgment. In other words I became a historian, more exactly a historian of physiology. I went back to school to learn methods in historiography because I realized that scientific background alone will not suffice to go under the skin of the mentality of the past centuries. It took some time and I got the degree to the astonishment of the teaching staff who considered me an old fool fooling around with history. Then I started working and in a few years I acquired a reputation which has nothing to envy anyone in the field. Articles and books were published and one copy of my Claude Bernard and the Scientific Problems of His Time was sent in 1968 to the Physiological Society (The Physiologist did not mention it). Apparently the book was "extraordinarily stimulating and provocative" (see ISIS page 352, 1968 and Quarterly Review of Biology, June 1969, page 213, etc.). Two books are now in press to be out before the end of the year: 1) Physiology and Classification. Historical Relations; 2) Henri Dutrochet. Le Materialisme mecaniste et la physiologie generale (in French, the publication is supported by the family of the discoverer of osmosis). I have also been invited to teach for one academic year at Oxford University (Fellow of All Souls College) and three years ago I was invited by Indiana University to a conference which they consider to be important on the genesis and structure of the experimental method in 19th century physiology. I travelled to various countries giving conferences and seminars. Conclusion: never a dull moment. The most historical aspect of the story is that The Physiologist is at the bottom of this new turn in my life. Indeed, I was asked to write a paper on Claud Bernard and the cell (The Physiologist, 1961, Vol. 4) I got so interested in history that I could not resist the temptation of following the new road. It will amuse you to know that this article is mentioned in William Coleman's book:

Biology in the Nineteenth Century (John Wiley, 1971, p. 182), probably the only time that The Physiologist is mentioned in a book on the history of science. Now that I have covered myself with flowers of wisdom (who else would do it) I have to answer another question: am I available? The answer is yes for any work related to the history of physiology (biology) as there is a lot of work to be done and I have important projects in mind. To all who read this letter, greetings. I apologize I never read over my letters. History is in a hurry.

Hi Essex to Maurice Visscher:

Thanks for your greetings and note. It really is heartwarming to hear from good friends when one reaches the four score and two stage in life. Really I don't feel much different than I did at three score and ten. It seems that the days go by with greater speed than they did twenty or thirty years ago. I keep busy with the things I enjoy doing at the farm and in my study and "studio" - a nice name for my basement where I paint.

Bill Buchbinder to Maurice:

I want to thank you much for the remembrances. It was kind of you.

Tom Magath to Hy:

It was so nice of you to send me your congratulations on my reaching the age of discrimination. I do appreciate your doing so. I still enjoy life and have a garden, but I am afraid my garden is just under 14 inches of snow! However, we are just back from Florida where we spent the winter and spring will be showing up soon here.

Andrew Ivy to Hy:

It was a real pleasure to hear from you on the occasion of my birthday. It was quite a party, over 200 people were present. I told them about the results of "Carcalon Product" on C#H mice with breast tumor. Dr. L. C. Strong of San Diego Cancer Foundation and Drs. Blitznakov and Heller of the New England Medical Research Institute, Richfield, Connecticut, Box 308, have made the same observations that I have. They extract the liver and I have extracted both the liver and blood plasma.

Harry Goldblatt to Hy:

Thank you for the good wishes on my birthday. I am still carrying on - at 84 - and feel greatly privileged, but I am planning to bow out at the end of this year. If I do, we shall move closer to one of our two sons - either Rochester, N.Y., or Hartford, Connecticut. It gave me great pleasure to hear from you.

Sam Pond to Hy:

Have just written Orr Reynolds offering some of my stock in trade (historical physiology texts, journals, etc.) as I'm finding it difficult to adequately handle collections from back yonder (by the way: I have Steinmetz's Radiation (Section on physiology problems 1907 lectures at Brooklyn Polytech) if you know anyone interested - a hard cover in good shape. Sort of a denoument here, lakeside camp in rural central Maine, but cozy - beautiful winter - good health. My wife and I enjoying relaxing mostly. Helping local and state lake associations - on chemical quality, testing, monitoring, etc., and county watershed problems. Augusta General Hospital has acquired new echocardiograf for "internal" exploitations. Lots o' fun ahead.

Isaac Starr to Hy:

It is always a pleasure to hear from you even if you have to be stimulated by Bruce Dill. Yes, I go on in much the same fashion. It is hard to remember when I last brought you up to date but I have recently published in a French journal with a French collaborator and also in the British Heart Journal. I have a paper which should appear very soon in the American Heart Journal. It was accepted last August. I have accepted an invitation to give a lecture in Amsterdam next month and they talk as if they had a medal for me! So you see things are still moving.

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Mrs. Charles M. Gruber wrote recently about the death of her husband November 19, 1974 in his 88th year. He was a celebrated physiologist who sought and found second and even third careers. After his compulsory retirement at Jefferson in 1953 at age 66 he was appointed Professor of Pharmacology at Loma Linda in the same year. After four years there he became a visiting professor of biology at Redlands University. Mrs. Gruber writes that "a group of doctors from the Loma Linda Medical Center sat together at the Memorial Service. They had been his students... He worked on a doll house for the Day Nursery only 36 hours before he died. It was to have been his Christmas present to the 150 two to five year olds. The doll house was finished by a friend in time for Christmas." His distinguished career included a Ph.D. at Harvard and an M.D. at Washington University. His many honors include terms as President of the American Pharmacology Society in 1954 and of the Philadelphia Physiological Society in 1948.

The death of Melvin H. Knisely on March 30, 1975 was recorded in the bulletin of the Medical University of South Carolina. Dr. Knisely was an eminent member of the faculty. During his graduate years at Chicago he devised a fused quartz rod for examining tissues and organs in vivo. After receiving his Ph.D. at Chicago in 1935 he continued postdoctoral research there and under Krogh at Copenhagen. As Chairman of the Department of Anatomy he demonstrated the closed circulation through the spleen and the functional anatomy of the liver lobule. He also determined the characteristics of circulating blood in normal animals and man. He is best known to many for his studies of the phenome-

non which he called "blood sludge." He and his co-workers demonstrated that in many diseases and injuries such as burns, red blood cells stick together and impede the flow of blood. In recognition of his achievement, he was awarded the honorary degrees of Doctor of Medicine in December 1970 by the University of Gothenburg in Sweden and of Doctor of Humane Letters in December 1974 by the Medical University of South Carolina.

Bruce Dill learned of the recent deaths in their 8th decade of two long-time friends: Ernst Simonson and Leigh Chadwick.

Ernst Simonson died in Minneapolis, December 7, 1974 at age 76. Our acquaintance dated to 1929 when he was head of Industrial Physiology in the University of Frankfurt/Main. He anticipated troubled times in Germany and moved to Kharkov where he held a similar post in the University, 1930-1937. He once told me that in the 1937 purge while he was waiting for an exit visa former friends would cross the street in order to avoid speaking to him. After two years in Prague, Ancel Keys brought him to Minneapolis where his productive career is well known to physiologists. I consider his greatest contribution to the Society was the leading role he played in establishing the Journal of Applied Physiology. His most recent honor was the presentation of the Honor Award by the American College of Sports Medicine at the 1974 meeting in Knoxville. Readers of The Physiologist will recall having read many excerpts of letters from him. Much of his life story has been told in Proceedings of the Ernst Simonson Conference, Charles C Thomas, 1969.

Leigh Chadwick

In 1946 when I became scientific director of the Medical Laboratories at what was then called Army Chemical Center I found Col. John Wood had recruited an exceptional group of scientists to direct the search for treatment of chemical warfare casualties: one of the most eminent was Leigh Chadwick, head of the Entomology Branch. Leigh was a Harvard Ph.D. and was assistant to Wallace Fenn during the war. He was eminent both as leader and scholar. His leadership is evident from the fact that several of his young assistants have achieved eminence. Recognizing his scholarship, I was glad of the opportunity to join Wallace in supporting Leigh's election to membership in the American Academy of Arts and Sciences. After leaving us for a professorship at Urbana his health began failing and continued to fail during his retirement years in Maine. Readers of The Physiologist will recall that despite his illness he translated from the German, Linsenmaier's "Insects of the World." One of his former associates, Charlie Hassett, wrote recently of Leigh's terminal illness and added, "Ironically, I received but a few weeks ago notice of publication of the second book which he had translated from the German. The first, Linsenmaier's "Insects of the World" is a magnificent volume, distinguished both for the text and the remarkable illustrations, all by the author. The second is a translation of von Frisch's "Dance Language and Orientation of Bees," just published by the Harvard Press. Leigh died February 4, 1975, at age 70.

Dr. Samuel Gelfan, Emeritus Professor of Neurophysiology at New York Medical College died at his home in Ossining, N.Y., March 16, 1975. A biographical note about Dr. Gelfan was supplied by Dr. Irving Goodman. Born in Russia in 1903 he came to this country as a child. He received his Ph.D. at Berkeley where in 1926 he developed the silver-silver chloride micro-electrode for use in single muscle cells. As a Donnelley Research Fellow at Chicago he was in A. J. Carlson's department. In 1932 as a Guggenheim Fellow he worked at Cambridge University with E. D. Adrian. From 1946 to 1951 he was Director of Research of the Aero Medical Laboratory in the Department of Physiology of high altitude flight. During that period, November 1949, he was a member of a group of about 20 scientists invited to represent the United States at an international symposium on "Biology of High Altitude" held at Lima, Peru.

Dr. Harold E. Himwich, famed Mental Health Researcher and an active member of the Society since 1925, died March 4, 1975 at the age of 80.

A brilliant psychiatrist, he attracted world-wide attention on Galesburg State Research Hospital with his work on the causes of schiozophrenia. The Thudichum Research Laboratory which he helped establish in 1951 became known throughout the scientific world. His wife, Dr. Williamina Himwich was an important member of the Thudichum Lab staff.

Among the awards bestowed on Dr. Himwich were the Gold Medal Award for pioneer research in biological psychiatry from the Society of Biological Psychiatry and the Nikolai Pavlovich Kravkov Memorial Medal from the Institute of Pharmacology and Chemotherapy of the Russian Academy of Medical Sciences for services to the development of pharmacology. He was author of more than 558 scientific articles, editor of seven books, and the subject of feature articles in Newsweek and the New York Times. He was graduated from City College of New York in 1915 and obtained his M.D. degree from Cornell University in 1919. He was also associated throughout his career with Christian Albrecht University, Kiel, Germany, Harvard School of Public Health, Yale University, Army Medical Corps in Maryland, and the University of Illinois Medical School.

Dr. Thomas Tourlentes, an associate and friend of Dr. Himwich remarked, "Even during his illness, he was thinking of unfinished research rather than himself. I think this characteristic of the man."

BRUCE DILL CELEBRATES 84th BIRTHDAY

To the Editor, Boulder City News:

I take this opportunity to express my affection for friends in Boulder City who took part in the celebration of my 84th birthday. One memorable event was the interruption of bowling in our Friday-Nighters league with a happy birthday song, the presentation of birthday cards from all the bowlers and a marvelous birthday cake baked by our capable secretary, Geri Grissette. Then there was another party in the laboratory Saturday morning that included a birthday cake baked by one of our Seniors, Mary Greeley. In the words of the psalmist, "The lines have fallen unto me in pleasant places: yea I have a goodly heritage."

Bruce Dill

Dr. Dill also remarked: "My bowling isn't good but the company is tops."

GASTROENTEROLOGY-LIVER DISEASE TEACHING MATERIALS AVAILABLE

The American Gastroenterological Association, utilizing a grant from the National Fund for Medical Education, has produced resource materials for basic science and clinical courses involving gastroenterology and liver disease. Faculty members from 35 different medical schools are participating in the development of 14 separate units covering different aspects of the pathophysiology of digestive disease. Each unit contains an outline of important concepts, 50 to 125 slides for use by the faculty to illustrate the concept, slides of disease examples, clinical problem-solving case examples, test questions and bibliography.

The units currently available for distribution are:

Unit I-A: Bile Salts and Gallstones (Martin C. Carey, M.D., Boston University and Harvard University)
115 slides - $80.32

Unit V: Lipid Digestion and Absorption (Alan F. Hofmann, M.D., Mayo Medical School)
75 slides - $57.89

Unit VIII: Gut Ecology and Immunology (Sherwood Gorbach, M.D., UCLA)
79 slides - $54.67

Unit XII: Integrative Response to a Meal (Frank P. Brooks, M.D., University of Pennsylvania)
50 slides - $45.83

Units can be ordered through:

AGA Educational Materials
c/o Milner-Fenwick, Inc.
3800 Liberty Heights Avenue
Baltimore, Maryland 21215
(Checks or purchase orders to: Milner-Fenwick)

For more specific information, please contact the project director:

Theodore M. Bayless, M.D.
Gastroenterology Division
Johns Hopkins Hospital
Baltimore, Maryland 21205

EDITORS NOTE: The above materials were recently reviewed by the appropriate panel of the Education Committee of APS and were given high ratings. The results of these reviews will be included in a subsequent publication of reviews of educational units evaluated during the past year.

PURDUE DEFIBRILLATION CONFERENCE

The Biomedical Engineering Center of Purdue University will hold a conference in Lafayette, Indiana from October 1 to 3, 1975 covering the practical and clinical aspects of cardiac defibrillation. The speakers have been selected based upon their positions as leaders in their respective fields. The topics to be discussed include clinical, basic science, and engineering aspects of electrical defibrillation as it pertains to the needs of physicians, nurses, emergency medical personnel, hospital engineers, equipment manufacturers, and research scientists. The state-of-the art of defibrillation techniques will be presented and examined critically and a major goal of this three-day conference will be to integrate all available technology for optimization of ventricular defibrillation. The registration fee of $95 includes proceedings and two luncheons. For further information, please contact:

Division of Conferences and
Continuation Services
Stewart Center, Purdue University
West Lafayette, Indiana 47907

Phone: (317) 749-2533

BOOK OF ABSTRACTS AVAILABLE

The International Biophysics Corporation announces the availability of a book of abstracts offered at no charge, providing a ready reference to those interested.

Abstracts of 31 papers, speeches, items, and private communications have been compiled to show the wide applicability of in vivo oxygen measurements. Continuous long term arterial measurements are described for neonatal and adult care. Tissue oxygen monitoring during, and post, large vessel surgery is described. The advantages of CSF PO_2 monitoring are discussed by several physicians. Both clinical and research data have been condensed for quick reference. For your book of abstracts, write or call:

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NATIONAL RESEARCH COUNCIL SURVEY

In 1973 there were 226, 800 doctoral scientists and engineers employed in the United States, while approximately 2, 600 - 1.2 percent of the doctoral labor force - were unemployed and seeking employment. Educational institutions were the largest employers, with 58 percent of the working doctoral scientists and engineers. Over 41 percent of the working doctoral scientists and engineers were engaged primarily in research and development, including its administration, with an additional 37 percent engaged primarily in teaching.

This information, as well as other employment data such as salary and field, were obtained from a survey conducted by the National Academy of Sciences-National Research Council, under the sponsorship of the National Science Foundation, and is the first data produced from the Roster of Doctoral Scientists and Engineers. The Roster is one of several sources of information about the scientific and engineering population in the U.S. which the National Science Foundation integrates into the Manpower Characteristics System.

In 1975 a follow-up survey to gather current employment information on a stratified sample of 62, 000 doctoral scientists and engineers will be conducted. The purpose of the survey is to obtain current data on the status of the Nation's human resources in the sciences and engineering at the doctoral level for use in developing national manpower policies and programs.

INTERNATIONAL COLLOQUIUM ON LIPOPROTEINS AND HYPERLIPIDEMIES

An International Colloquium on Lipoproteins and Hyperlipidemies will be held in Lisbon, Portugal on September 3-6, 1975. The principal themes of the meeting will be: Structure and Metabolism of Lipoproteins; Methods of Study of Lipoproteins; Classification of Hyperlipidemies; Primary and Secondary Hyperlipidemies; Risk Factors - a Biochemical Approach; Free Themes. It is hoped that this meeting will aid communication between specialists on these topics and offer opportunities for contact with new scientific and technical advances in this field. A full program for members and associate members is also being planned. All correspondence related to the meeting should be addressed to:

Prof. M. J. Halpern
Dept. of Biochemistry
Faculty of Medicine of Campo Santana
Lisbon, Portugal

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF TENSION CONTROL

The second meeting of the American Association for the Advancement of Tension Control will be held in Chicago, Illinois at the Bismarck Hotel on October 25-26, 1975. For information write F. J. McGuigan, Ph.D., Executive Director, A.A.A.T.C., P.O. Box 7512, Roanoke, Virginia 24019.

DR. BARD ARTICLE

The article about Dr. Philip Bard which appeared in the February 1975 issue of The Physiologist (pp. 1-5) was written by Dr. Vernon B. Mountcastle, Dept. of Physiology, The Johns Hopkins University School of Medicine.

We regret the omission of Dr. Mountcastle's name as author of Dr. Bard's biography.

ERRATA

The February issue of The Physiologist contained a list of APS members designated to serve in the National Correspondents Network.

Among those listed was the name of Dr. Robert M. Burton at Brooks Air Force Base, Texas. The name should have been that of Dr. Russell R. Burton. We regret any confusion this error may have caused.