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ACTIONS TAKEN AT SPRING MEETING

April 8-12, 1974

ELECTIONS - Bodil M. Schmidt-Nielsen was elected to the position of President-Elect. James O. Davis was elected to a full four-year term on Council.

Peter F. Curran was elected to fill the unexpired term (one year) of Dr. Schmidt-Nielsen.

All candidates nominated by Council were elected to membership (See Newly-Elected Members.)

AMENDMENT TO BYLAWS - An Amendment to the Bylaws proposed and publicized in the February 1974 issue of The Physiologist providing for election of officers by mail was passed by a 79% majority at the Business Meeting held on April 9, 1974.

APS FALL MEETING - ALBANY, NEW YORK

AUGUST 12-16, 1974

The 25th Annual Fall Meeting of the American Physiological Society will be held jointly with the Division of Comparative Physiology and Biochemistry of the American Society of Zoologists. All scientific activities will be held on the campus of the State University of New York at Albany. The Meeting is being hosted by the State University of New York at Albany and the Albany Medical College.

The refresher course, which is scheduled for Monday, August 12th is being organized by Dr. Myron L. Wolbarsht on the subject "The Structure and Function of the Visual System."

On Tuesday there will be an ASZ Symposium on the "Neural Control of Respiration." The morning session will cover the vertebrates, and during the afternoon the invertebrates will be discussed.

On Wednesday morning, symposia topics include "Recent Advances in Renal Physiology" and "Sensory Neurons: Specificity of Growth and Trophic Functions." In the afternoon the topic will be "Host Defense and Metabolic Alterations Following Injury and Shock."

The symposia topics for Thursday morning are "Comparative Physiology of Plasticity in the Nervous System" and "Isotonic Water Movement." The topic for the afternoon is "Neurogenic Control of Cerebral Circulation."

On Friday, a satellite symposium in memorial to Dr. Richard A. Lende will be held at the Albany Medical Center. It is sponsored by the Local Committee for the Fall meeting and the Division of Neurosurgery of the Albany Medical College.

At the Federation meetings in the Spring the APS has often organized a symposium on some aspect of the teaching of physiology. Speakers at such sessions have been invited. At this year's Annual Fall Meeting a similar session has been organized on teaching, but composed of papers which are volunteered. Members have been invited to submit an abstract of their planned ten minute presentation. The subject matter might relate to equipment, description of a demonstration, a new approach to a subject, or methods to evaluate the effectiveness of teaching. The only restriction is that the subject is related to the teaching of physiology. Contribution of an abstract to the Teaching Session does not disqualify a member from submitting an abstract for the scientific sessions.

The traditional scientific sessions with ten minute presentations will begin on Tuesday, August 13th and end at noon on Friday.

MEMBERSHIP STATUS

April 1, 1974

Regular Members	3,638
Retired Members	255
Honorary Members	15
Associate Members	434
	<hr/> 4,342

SUSTAINING ASSOCIATES

Abbott Laboratories	Norwich Pharmacal Company
Ayerst Laboratories	Pfizer, Inc.
Burroughs Wellcome Co.	A. H. Robins Company
CIBA-GEIGY	Smith Kline and French
Gilson Medical Electronics	Laboratories
Grass Instrument Co.	Warner-Lambert Research
Harvard Apparatus Co., Inc.	Institute
Hoechst Pharmaceuticals, Inc.	Waverly Press-Williams &
Hoffman-LaRoche, Inc.	Wilkins Co.
The Lilly Research Laboratories	Wyeth Laboratories
Merck Sharp & Dohme Research Laboratories	

DEATHS SINCE 1973 FALL MEETING

Joseph C. Aub - 12/30/73 - Prof. Emeritus Res. Med., Harvard Univ.
Percival Bailey - 8/10/73 - Dir. Res., Dept. Mental Health, State of
Illinois
George H. Bishop - 10/11/73 - Prof. Emeritus Neurophysiol., Washing-
ton University
Leonard Carmichael - 9/16/73 - Vice Pres. Res. & Exploration, Natl.
Geographic Society
E. S. Castle - 5/19/73 - Prof. Emeritus, Harvard University
R. D. Dripps - 10/30/73 - Vic. Pres. Health Affairs, Univ. Pennsylvania
Abraham Edelman - 8/8/73 - Dir., Div. Radiation Biol., Allegheny
Hospital
D. J. Edwards - 6/30/73 - Prof. and Dean, Cornell Med. Coll.
Mabel P. FitzGerald - 8/24/73
R. W. Gerard - 2/17/74 - Dean Graduate Div., Univ. of Calif., Irvine
C. L. Hansen - 8/10/73 - Assoc. Dean, Regional Med. Program,
Jefferson Medical College
W. R. Hess - 8/12/73 - Ascona, Switzerland
A. G. Hills - 6/18/73 - Prof. Physiol. & Med., Med. Coll. of Ohio
J. J. Izquierdo - 1/16/74 - Prof. Emeritus, Dept. of Faculty of Med.,
Mexico City
J. G. Jue - 10/9/73
R. A. Lende - 11/20/73 - Head, Neurosurgery, Albany Medical College
G. D. Ludwig - 11/24/73 - Chmn. Dept. Med., Med. Coll. of Ohio
E. M. Mackay - 10/30/73
S. J. Martin - 8/21/73 - Dept. Anesthesiol., St. Francis Hosp, Hartford
A. F. Rieck - 11/25/73 - Prof. Med., Medical College of Wisconsin

F. S. Robscheit-Robbins - 12/18/73 - University of Rochester
 H. O. Singher - 8/25/73 - Dir., Research Diagnostic, Ortho Pharmaceutical Corp.
 Robert Steele - 1/18/74 - Sr. Biochem. Dept. of Biology, Brookhaven National Laboratory
 Louis G. Welt - 1/13/74 - Prof. Dept. Internal Med., Yale Univ.

50-YEAR MEMBERS

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

NEWLY ELECTED MEMBERS

The following, nominated by Council, were elected to membership in the Society at the Spring Meeting, 1974.

REGULAR MEMBERS

BARROW, Emily M.S.: Assoc. Prof., Univ. of North Carolina
 BARROW, Robert E.: Asst. Prof., Univ. of Texas Med. Branch
 BURNS, Barry: Asst. Prof., Johns Hopkins Univ., Sch. Hygiene and Public Health
 CAMERON, James N.: Asst. Prof., University of Alaska
 CARDEILHAC, Paul T.: Faculty Member, Univ. of Florida
 CASTELL, Donald Overton: Assoc. Prof., U.S. Naval Hospital, Philadelphia
 CLARENBURG, Rudolf: Assoc. Prof., Kansas State University
 CLAYBAUGH, John R.: Res. Physiologist, Tripler Army Med. Ctr.
 COHEN, Jules: Assoc. Prof., Univ. of Rochester Sch. Med. & Dent.
 COLBY, Howard D.: Asst. Prof., West Virginia University
 EPSTEIN, Murray: Asst. Prof., Univ. of Miami
 EXTON, John H.: Prof., Vanderbilt University
 FARA, John William: Asst. Prof., State Univ. of New York, Stony Brook
 FERGUSON, James H.: Prof., Univ. of Texas

- FERNANDEZ, Leonardo A.: Research Assoc., Henry Ford Hospital
FLAMENBAUM, Walter: Asst. Chief, Walter Reed Army Inst. of Res.
GISOLFI, Carl V.: Asst. Prof., University of Iowa
GLASER, Edmund M.: Prof., Univ. of Maryland Sch. Med.
GOLDSTEIN, Robert E.: Senior Investigator, NIH
GONZALEZ, Richard R.: Asst. Prof., Yale Sch. of Med.
GOODRICH, Cecile A.: Asst. Prof., Cleveland State Univ.
GOYAL, Raj K.: Assoc. Prof., Baylor Coll. of Med.
GRANGER, Harris J.: Asst. Prof., Univ. of Mississippi Med. Ctr.
GUGGENHEIM, Stephen J.: Asst. Prof., Univ. of Colorado Med. Ctr.
HALMAGYI, Denis F.J.: Assoc. Prof., Columbia Univ., Coll. P & S
HALPERN, William: Asst. Prof., Univ. of Vermont
HASCHEMEYER, Audrey E.V.: Assoc. Prof., Hunter College
HEMMINGSEN, Edvard A.: Assoc. Res. Physiologist, Scripps Inst. of Oceanography
HOMSHER, Earl: Asst. Prof., Ctr. for Health Sciences, UCLA
JULIAN, Fred J.: Sr. Staff Scientist, Boston Biomedical Res. Inst.
KENT, Barbara B.: Res. Asst. Prof. of Surg., Mt. Sinai Sch. Med.
KING, Richard Joe: Asst. Res. Biophysicist, Univ. of Calif., S.F.
KRONENBERG, Richard S.: Asst. Prof., Univ. of Minnesota
LEVITSKY, Sidney: Assoc. Prof., Univ. of Illinois Coll. Med.
LEVY, Mortimer: Asst. Prof., McGill University
LIANG, Chang-seng: Asst. Prof., Boston University Sch. Med.
LOGIC, Joseph R.: Assoc. Prof., Univ. of Tennessee
McAFEE, Donald A.: Asst. Prof., University of Miami Med. Sch.
McMANUS, Thomas J.: Assoc. Prof., Duke University Med. Ctr.
MARTIN, Duncan W.: Assoc. Prof., University of Arkansas
MARTIN, Joseph B.: Asst. Prof., McGill University
NICHOLS, Wilmer W.: Instructor, Johns Hopkins Sch. Med.
POPOVTZER, Mordecai M.: Assoc. Prof., Univ. Colorado Med. Ctr.
PRASAD, Anada S.: Prof., Wayne State University
RANDALL, David C.: Asst. Prof., Johns Hopkins Univ. Sch. Med.
RILLEMA, James A.: Asst. Prof., Wayne State Med. Sch.
SCHWARTZ, Ernest: Chief, Metabolic Unit, VA Hospital, Bronx
SHADE, Robert E.: Asst. Prof., Univ. of Tennessee Med. Units
SHEPHERD, Albert P., Jr.: Asst. Prof., Calif. Coll. Med., Irvine
SINHA, Arabinda K.: Asst. Prof., Rutgers Medical School
SLAYMAN, Clifford L.: Assoc. Prof., Yale School of Medicine
SMITH, Thomas C.: Asst. Prof., Univ. of Texas Med. Sch.
SNELLEN, Jan W.: Memorial University of Newfoundland
STEPHENSON, John L.: Biomathematician, NHLI, NIH
STROMBECK, Donald R.: Asst. Prof., Univ. of Illinois Coll. Med.
STROMBERG, Don D.: Asst. Prof., Univ. of Washington
TAEUSCH, H. William, Jr.: Asst. Prof., McGill University
VEGHT, James H.: Chief, Biothermal Environ. Br., Aerospace Med. Res. Lab., Wright-Patterson AFB
WAGNER, Peter D.: Asst. Prof., Univ. of California, San Diego
WALSH, Peter N.: Asst. Prof., Temple Univ. Health Science Ctr.
WEICK, Richard Fred: Asst. Prof., Univ. of Western Ontario
WELLS, Charles H.: Asst. Prof., Univ. of Texas Med. Br.
WHITFIELD, Carol. F.: Asst. Prof., Pennsylvania State Univ., Hershey
WILMORE, Jack H.: Asst. Prof., Univ. of California, Davis
WILSON, David F.: Asst. Prof., Miami University

WOLTHUIS, Roger A.: Principle Res. Scientist & Proj. Leader, NASA
 ZEHR, John E.: Asst. Prof., University of Illinois
 ZIMMERMAN, Irwin D.: Assoc. Prof., Medical Coll. of Pennsylvania

ASSOCIATE MEMBERS

BANDICK, Neal R.: Asst. Prof., Oregon Coll. Education, Monmouth
 BING, Oscar H. L.: Asst. Prof. of Med., Harvard University
 BISSONNETTE, John M.: Asst. Prof., University of Oregon
 BOCKMAN, Emma Lou: Postdoctoral Fellow, University of Virginia
 CARLSEN, Richard C.: Res. Assoc., Duke University
 GATZ, Randall N.: Sci. Asst., Max-Planck Inst., West Germany
 HANSEN, Timothy R.: Grad Student, Teaching Fellow, Univ. Michigan
 HERLIHY, Jeremiah T.: Postdoctoral Fellow, Univ. of Virginia
 JACKIM, Eugene H.: Res. Biochemist, Natl. Marine Water Quality
 Lab., West Kingston
 MAGEE, Winfred: Asst. Prof., Meharry Med. College
 MARTIN, Henry F. III: Postdoctoral Fellow, Univ. of Washington
 MARTIN, Loren G.: Asst. Prof., Temple Univ. Sch. Med.
 MASTROPAOLO, Joseph A.: Prof., California State University
 MILLECCHIA, Ronald J.: Asst. Prof., West Virginia University
 NAHRWOLD, Michael L.: Instructor, Univ. of Colorado
 OZA, Narendra B.: Assoc. Res. Staff, Henry Ford Hospital
 PFEFFER, Marc A.: Postdoctoral Fellow, Univ. of Oklahoma
 PITTMAN, Roland N.: Postdoctoral Fellow, Univ. of Virginia
 POUTALA, Arnold C.: Graduate Trainee, University of Oregon
 POWASER, Mary M.: Asst. Prof., University of Wisconsin
 PUROHIT, Ram C.: Grad. Res. Asst., Auburn University
 REED, Dwain J.: Grad. Trainee, University of Oregon
 REYNOLDS, Patrick J.: Asst. Prof., University of Oregon
 ROSEN, Arthur L.: Asst. Prof., Hektoen Inst. for Med. Res., Chicago
 SANDERS, Tommy M.: Postdoctoral Res., Univ. of Southern California
 SNOW, Jerry A.: Asst. Prof. Med., George Washington University
 SPATH, James A., Jr.: Postdoctoral Fellow, Univ. of Virginia
 TERJUNG, Ronald L.: Asst. Prof., University of Illinois
 WARING, Dennis W.: Res. Assoc., Johns Hopkins University
 WASSERSTRUM, Nathan: Res. Assoc., Harvard Medical School
 WATSON, Lloyd S.: Sr. Res. Fellow, Merck Inst. Therapeutic Res.
 WINTER, Henry F.: Assoc. Prof., Washington Univ., St. Louis
 WOOD, Phillip G.: Postdoctoral Fellow, Max Planck Inst. Biophysics
 YARGER, William E.: Asst. Prof., Duke University Med. Ctr.

GRANT AWARDED BY NATIONAL FUND FOR
MEDICAL EDUCATION TO THE
AMERICAN PHYSIOLOGICAL SOCIETY

EVALUATION OF INNOVATIVE AUDIOVISUAL MATERIALS

The Society has been informed by Howard Corning, Jr., Executive Vice-President of the National Fund for Medical Education, that its proposal for evaluation of innovative audiovisual materials has been approved by the Board of Directors.

During the year 1972-1973 the Education Committee of the American Physiological Society cooperated with the National Library of Medicine and the National Medical Audiovisual Center in a critical review of the vast backlog of audiovisual material pertaining to physiology that has been circulating in the academic community. Peer review panels winnowed 1,000 audiovisuals to obtain 263 which rated adequate or better. During the ensuing year more audiovisuals became available and the Education Office of the Society received many requests for evaluation of new audiovisuals. As a result, application was made to the National Fund for Medical Education for an additional year's support. The approved grant will begin July 1, 1974.

Recently the Association of American Medical Colleges accepted responsibility for a continuing review and evaluation of audiovisual material used throughout the medical school curriculum, but it may require a year's time to fully implement this program. It is hoped that the NFME grant to the Society will allow the AAMC and APS programs to be brought into synchronization. At that time continued review of physiological audiovisual material would also be subsumed under the auspices of AAMC.

The long range purpose of this work is to enable doctors to give better care to people; for by improving their education, more knowledge and skill may be brought to bear on the patient's problems. The rapid expansion of knowledge has made it apparent that more efficient teaching methods are essential if the future doctor is to learn all that he must know to give first-rate care to his patients. One way of improving the quality and efficiency of his training is by sifting the gold from the dross in the mountain of audiovisuals available.

This grant will make possible the evaluation and classification of new audiovisual material over the next year. The field of physiology will be divided into ten subdisciplines and panels will be organized to conduct reviews. Ratings will indicate recommended audience, educational purpose, and scientific content and the information will be made available to faculties of all medical schools.

William De Hart
Educational Administrator

1973 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 1973 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	\$92,346	(58%)
Sustaining Associates Contributions	5,725	(4%)
Reimbursement for Services rendered in connection with the Fed. Spring meeting	48,441	(30%)
Interest (on advance monies received)	6,756	(4%)
Fall Meeting (net)	598	-
Other Income (sale of educational and other material, etc.)	5,872	(4%)
Total Income	<u>\$159,738</u>	

EXPENSES:

Salaries and Benefits	\$42,240	(22%)
Dues to Fed. and other Organizations	33,335	(18%)
Office Rental (Paid to Fed.)	5,805	(4%)
Travel and Subsistence for Officers and Committees (other than publications)	10,323	(5%)
Education Committee and Office	39,994	(21%)
Cost of Member Physiologist Subscr.	32,162	(17%)
Bowditch Lecture	500	-
Mail, Telephone, Supplies & Misc.	5,890	(3%)
Business Office Expenses (10.9%)	18,681	(10%)
Total Expenses	<u>\$188,930</u>	

Excess of Expenses over Income (deficit)	(\$ 29,192)
Subsidy for Education and Physiologist	
1/73 from Savings	<u>25,000</u>
Actual Deficit	<u>(\$ 4,192)</u>

PUBLICATIONS OPERATING FUND

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

INCOME:

Subscriptions	\$679,108	(72%)
Sale of Reprints (net)	54,772	(6%)
Sale of Back and Single Issues	16,211	(2%)
Page Charges	141,205	(15%)
Advertising (net)	13,684	(1%)
Interest (on advance subscriptions, etc.)	26,416	(3%)
Royalties	7,601	(1%)
Miscellaneous	4,266	-
Total Income	<u>\$943,263</u>	

EXPENSES:

Printing and Engraving	\$504,834	(57%)
Salaries and Benefits	149,766	(17%)
Mail, Telephone, Supplies, etc.	60,858	(7%)
Office Rental (Paid to Fed.)	13,948	(1%)
Section Editor Expenses & Professional Services	69,771	(8%)
Travel & Subsistence for Officers, Committee, and Editors	15,402	(2%)
Miscellaneous	873	-
Business Office Expenses (81.2%)	69,172	(8%)
Total Expenses	<u>\$884,624</u>	
Net Income	\$58,639	

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, 1972 (market value)	\$1,358,307
Dividend and Interest paid to APS in 1973	48,799
Balance Dec. 31, 1973 (market value)	1,084,962
Loss in market value during 1973	(273,345)

ANNOUNCEMENT

THE JOHN F. PERKINS, JR. MEMORIAL AWARDS

The American Physiological Society invites applications for the John F. Perkins, Jr. Memorial Fellowships. The fund is designed to provide supplementary support for the families of foreign physiologists who have arranged for fellowships to carry out scientific work in the United States. Applications by U.S. physiologists, who require supplementary assistance to work abroad will also be considered.

It is the interest of the Perkins Fund to develop the full potentialities for cultural benefit associated with scientific exchange. Preference will be given to physiologists working in the fields of respiratory physiology, neurophysiology and temperature regulation.

Each application will be made by both the visiting scientist and his host. Ordinarily, the joint applicants will have made financial arrangements for the visiting scientist before applying to the Perkins Fund for family support. The application will contain an account of these arrangements together with a description of the proposed scientific work, and a brief account of how the visitor and his family intend to make use of the cultural benefits.

The amount available for each award will be in the range of \$2,000-\$5,000, depending upon the estimated needs of the family over and above the amount already available to the visiting scientist. Ordinarily, 2-4 awards will be available in any one year.

Application forms for host and visiting scientist may be obtained from Dr. Orr Reynolds, Executive Secretary, American Physiological Society, 9650 Rockville Pike, Bethesda, Maryland 20014, U.S.A.

REPORT OF THE PRESIDENT

To the Members of the American Physiological Society

Dear Colleagues:

In keeping with the custom established in the November 1973 issue of *The Physiologist*, I write to report on the activities of your Council during the period from the Fall Meeting held in Rochester in August of 1973 through the Annual Meeting in Atlantic City in April of 1974.

Several matters mentioned in my letter in the November issue have developed further. First, the amendment to the bylaws concerning the election of President-Elect and Councilmen was passed by a two-thirds majority of members present and voting at the Annual Meeting of the Society. Under this new bylaw, officers of the Society will be elected, in the future, by mail ballot.

Second, the Task Force on Neurophysiology was formed under the chairmanship of Dr. E. V. Evarts and charged with the responsibility of providing advice about how the APS can better represent the concerns and interests of neurophysiologists. This Task Force met and Dr. Evarts presented the results of their deliberations to membership at the Annual Meeting. A copy of their report is printed elsewhere in this issue of *The Physiologist*.

Third, the suit brought by the Association of American Medical Colleges (AAMC) against the Executive Branch of the U.S. Government for failing to spend funds appropriated by Congress to NIH for support of biomedical research and research training was also mentioned in my last letter. Council was informed that the courts ruled in favor of the AAMC which led to the release of the "impounded" funds. The APS is a member of the Council of Academic Societies, a component of the AAMC.

At its Spring Meeting in Atlantic City, Council received reports from most of the standing committees of the Society. A number of these reports are published elsewhere in this issue. These include comments, from the Committees on Finance, Publication, Education, Program, Animal Care and Experimentation, and from the Task Force on Women in Physiology.

Council discussed at some length the desirability of increasing the breadth of representation of members on the various committees of the Society. The Task Force on Women in Physiology suggested to Council that it might be appropriate to establish a Committee on Committees to accomplish this end. After considering several alternatives, Council agreed unanimously to form a Committee on Committees consisting of six members, two of whom are appointed each year for a three year term. In order to assure an appropriate composition of this Committee on Committees, Dr. Orr Reynolds, Executive Secretary of the Society, is contacting each of the specialty groups (i.e. circulation, respiration, endocrine, G.I., exercise, renal, red cell) as well as representatives of

the Porter Physiology Development Program and the Task Force on Women in Physiology. These same groups will be asked to supply to the Committee on Committees nominations for membership on the committees of the Society, particularly the Program Committee and the Membership Committee.

At its Spring meeting, Council considered in some detail the general issue of more adequate representation of specialty groups within the Society. The assets and liabilities of establishing formal groups with relatively independent governance procedures within the Society were noted. After careful examination of several alternatives, a majority of Council favored the idea of seeking to strengthen specialty group representation within the existing governance structure. In particular, each of the specialty groups noted above will be asked to form an ad hoc committee on program. This ad hoc committee will advise the APS Program Committee on the development of programs in that specialty area. Council also noted that the future development of the idea of sectionalization of the Society journals (see report of Publications Committee) will have an important bearing on the matter of representation of specialty group interests.

Council received a visit from Dr. Robert Stone, Director of the National Institutes of Health. Dr. Stone spent two hours in a free exchange of ideas about the future development of support for biomedical research and research training by NIH. Special attention was given to the issue of the relative emphasis on small, investigator-initiated research projects as over against large program-project or center grants. The appropriate role of research contracts was also discussed. Dr. Stone indicated forcefully that he intends to maintain support for investigator-initiated research. He responded sympathetically to the expressions of concern by several members of Council about the length of time required to process research grant and research fellowship applications. He indicated a desire to meet periodically with Council. Accordingly, he was invited to attend the Council meeting which will take place in Albany in August, 1974.

If you have any suggestions or comments about matters which should be included in these regular reports, please write me or to Orr Reynolds.

Sincerely,

Daniel C. Tosteson

MINUTES MEETING OF THE FINANCE COMMITTEE

E. B. BROWN, JR.
Chairman

The Committee met at the APS Headquarters at 9:00 A.M. on February 20. Those present were: E. B. Brown, Jr., Chairman, Charles Code, and John Brobeck. Ex Officio members present were: Dan Tosteson, President; Arthur Guyton, President Elect; Orr E. Reynolds, Secretary; Walt Sonnenberg, Business Manager; Peter Curran, Chairman, Publications Committee.

The first item on the agenda was a discussion of the investment portfolio of our publications contingency reserve fund. A review of the Wood, Struthers & Winthrop Report generated considerable discussion concerning the general operating guidelines under which Wood, Struthers & Winthrop invests and operates this fund. There is general satisfaction with the excellent manner in which the fund has been handled and the growth of the fund to date. In the depressed market of the last couple of years the fund has held up reasonably well.

The question of whether or not instructions to Wood, Struthers & Winthrop (investment brokers) concerning the fund should be changed was raised. Specifically, should an increased percentage of the fund be invested in high income producing bonds rather than common stocks? At the present time Wood, Struthers & Winthrop is investing 30-40% in high-income bonds and 60-70% in common stocks. There was general agreement that

1. The contingency reserve fund should be at a level of 1.0 to 1.5 times the current operating budget of the Society. In order to accomplish this goal the fund must grow at a rate equal to the rate of growth of the Society annual budget.
2. When the value of the fund falls below the annual operating budget of the Society, the income from the fund should be reinvested to increase the value of the fund.

Motion was made, seconded, and passed to ask the Chairman of the Finance Committee to have a discussion with the Wood, Struthers & Winthrop managers relative to these matters; specifically, what are the views of our investment counsellors concerning the relative distribution of our funds between high-income bonds and common stocks? What is the best approach to keeping our fund in the 1.0 to 1.5 bracket with respect to our current operating yearly budget? At the present time we are below the 1.0 lower limit and by our general guidelines should be reinvesting the income in order to build up the fund.

The motion was made, seconded and passed to reemphasize the guideline that when the market value of the contingency

reserve fund falls below the annual operating expenses of the Society (excluding the Handbooks and contractual arrangements), that it will be the objective of the Finance Committee to recommend reinvestment of the income from the reserve fund.

The International Union of Physiological Sciences investment portfolio was reviewed and the report approved.

The Perkins Fund report was reviewed, and it was moved, seconded and passed to direct Mr. Sonnenberg to reinvest \$15,000 of income. It was the opinion of the Finance Committee that the balance of cash in this fund should be adequate to cover the fellowship requests for the current year.

The next item on the agenda was the review of the auditors report for 1973. It was very gratifying to the Committee to see that the Society had made it through the year with \$97,531 excess income over expenses. Dr. Curran pointed out that \$58,639 of this excess was from the publications general fund. He was complimented for this excellent showing of the financial picture of the publications venture.

Dr. Code raised a question about the level of the cash balances in our accounts, referring to the fact that on December 31, there was an amount equal to \$736,533 in this item. Of this amount \$500,000 was in certificates of deposit. Mr. Sonnenberg pointed out that an audit is an expression of the condition of an organization at one point in time; namely, midnight December 31, 1973 for the audit under scrutiny. He was pressed to tell the Committee what the average amount of money in the cash balance is, and he emphasized that it moves up and down with the time of year, since the money comes in in blocks and is spent in a rather steady fashion. He was asked specifically for the minimum balance that is found in this fund at any one time during the year. He said this was about \$300,000.

Mr. Sonnenberg was complimented for the manner in which he handles these funds for maximal income. The income from investment of these funds in high interest certificates of deposit was about \$37,000 for 1973. There was considerable feeling that some portion of these funds should be added to the investment portfolio. Particularly would this be true if the income from these certificates of deposit should drop to a much lower level. It appears very likely that this question will be raised at future meetings of the Committee.

After detailed discussion and adjustment of some items the budget was recommended and approved with the following considerations:

1. The projected deficit would be \$40,475.
2. Since the current market value of the Publications Reserve Fund is below the annual operating budget, under the previously stated guidelines we should now be reinvesting the income from our reserve fund to increase the principal of that fund.
3. If this principle were to be followed, an increase in Society dues would be necessary now.
4. However, the Committee did not wish to recommend an increase in Society dues for 1974.
5. The Committee recommended reinvestment of \$15,000 of the 1973 income on the reserve funds.
6. The Committee recommended that the balance of that income (\$33,799) be applied to the projected deficit of \$37,205 in the Society Operating Fund. This would leave a projected deficit of \$3,406 in the Society Operating Fund and \$3,270 in the Publications Operating Fund.

As a final note the Finance Committee wished Council to recognize that if the Society is to continue to give the service which is now provided to members, and if we are to maintain a sound financial picture within the guidelines, an increase in dues at some future time must be anticipated.

At the meeting of Council on April 6, Society dues were increased from \$25 to \$35 for Regular Members and from \$10 to \$15 for Associate Members beginning July 1, 1974. Since dues are collected on a July 1 to June 30 basis, one-half of the first year's increase will apply to our fiscal year 1974 budget. The new projection will be as follows:

Additional income	
3,700 Regular Members @\$10	\$37,000
450 Associate Members @\$5	2,250
Total increase	<u>\$39,250</u>
1/2 applicable to fiscal year 1974	\$19,625
Anticipated deficit in fiscal year 1974 budget	\$40,475
Available from increase in dues	<u>19,625</u>
Current anticipated deficit	<u>\$20,850</u>
Available from income on Publications Reserve Fund	\$48,799
Apply to deficit	\$18,799
Reinvest	\$30,000

This would leave us with a proposed deficit in our current budget of approximately \$2,000 (\$20,850-\$18,799) and permit reinvestment of \$30,000 in the Wood, Struthers & Winthrop account.

95 NEW MEMBERS CHOSEN BY THE NATIONAL ACADEMY OF SCIENCES

The National Academy of Sciences announced the election of 95 new members in recognition of their distinguished and continuing achievements in original research. A 96th person was elected posthumously.

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.

Nine APS members who were recipients of this honor are:

Lloyd M. Beidler, Professor of Physiology, Florida
State University

Eugene Braunwald, Hersey Professor and Head Dept.
of Medicine, Harvard Medical School

John A. Clements, Cardiovascular Research Institute,
Univ. of California, San Francisco

Horace W. Davenport, Professor of Physiology, Univ.
of Michigan

Clement A. Finch, Professor of Medicine, Univ. of
Washington, Seattle

Roger C. L. Guillemin, Resident Fellow, Salk Institute,
La Jolla

Eric R. Kandel, Professor of Physiology and Psychiatry,
New York Univ. Sch. of Medicine

C. Ladd Prosser, Professor of Physiology & Biophysics,
University of Illinois, Urbana

Glenn W. Salisbury, Director, Agriculture Experiment
Station, University of Illinois, Urbana

RESPONSE TO PROPOSAL TO SECTIONALIZE THE AMERICAN JOURNAL OF PHYSIOLOGY AND THE JOURNAL OF APPLIED PHYSIOLOGY

PETER F. CURRAN
 Chairman, Publications Committee

The Publications Committee has recently asked Society members to express their opinions regarding our proposal for sectionalizing the American Journal of Physiology and the Journal of Applied Physiology. I would like to summarize briefly the results of this survey. We are pleased to report that as of April 1, nearly 1700 members had responded indicating an impressive degree of interest in the publications of the Society. As indicated in Table I over 50% of those who replied favored sectionalization of the journals. Those favoring no change or favoring merging of the two journals with papers arranged by section were about equally divided. The results from other portions of the questionnaire are summarized in Tables II, III and IV.

TABLE I. ORGANIZATION OF JOURNALS

Questionnaires returned*	1666
Sectionalize and abstracts	899
No change**	442
Merge and arrange by sections	415
<u>Other</u>	60

* April 1, 1974

** Subscribers predominate in this group

TABLE II. NUMBER OF SECTIONS TO WHICH RESPONDERS WOULD SUBSCRIBE

One section	509
Two sections*	197
Three sections	46
<u>More than three sections</u>	8

* Most frequently Heart & Circulation plus Respiration

TABLE III. SECTIONS TO WHICH RESPONDERS WOULD SUBSCRIBE

Heart & Circulation	287	Environmental Physiology	104
Respiration	179	Physiological Chemistry	193
Transport	205	General Subjects	22
Muscle	101	Other	64

TABLE IV. RESPONDERS PRESENTLY SUBSCRIBE TO:

AJP only	309
JAP only	166
AJP and JAP	164
Neither	992

In view of these results, the Committee has now begun to explore the implications of sectionalization in more detail. We have asked the Publications staff in Bethesda to obtain information on the financial implications of such a change, including estimates of probable subscription prices to individual sections and to the whole journal. We will also give more detailed consideration to the optimal number of sections and to the most appropriate content of the sections.

In addition, we have considered an alternative arrangement that will also be explored by the Publications staff. In this arrangement, the American Journal of Physiology and the Journal of Applied Physiology would be merged into a single journal to be published in toto monthly or bimonthly. Papers would be arranged by sections and subscriptions to individual sections would be available to those who wish them. Such an arrangement represents something of a compromise that might be more acceptable to our institutional subscribers than complete sectionalization. However, it also would make individual sections available to the substantial number of Society members who have expressed interest in them.

The Committee will clearly have to consider these alternatives with care in an effort to recommend an appropriate course of action. I hope that Society members who have further thoughts on these matters will communicate them to the Committee.

ACTIVITIES OF THE EDUCATION COMMITTEE OF THE AMERICAN PHYSIOLOGICAL SOCIETY*

JACK L. KOSTYO
Chairman, Education Committee

The American Physiological Society has had a long-standing interest in education. In the mid-nineteen forties a survey of the membership revealed that one of the major concerns of most professional physiologists was the teaching of physiology and the problems associated with this endeavor at all academic levels. As a consequence of this early survey, showing a growing interest on the part of the membership, the first Teaching Session was held at the annual meeting of the Society in 1951. Interestingly, this year's session in Atlantic City was strikingly similar to that first Teaching Session, in that it consisted of voluntarily contributed papers by members on educational problems and innovations. All subsequent Teaching Sessions consisted of structured programs and invited papers. In planning this year's Teaching Session the Education Committee was quite proud of itself for coming up with the "innovation" of an entirely contributed session, until we were reminded of the history of the Teaching Sessions.

Shortly after the institution of the Teaching Sessions, the Society made a more formal commitment to education by forming a Standing Committee on Education. E. F. Adolph served as the first chairman of this Committee. Through the work of that first Committee and its successors over the last two decades, the Society has made many contributions towards upgrading the quality of education in physiology at many levels. Besides the Teaching Sessions, the Society has sponsored annual Refresher Courses at the Fall Meetings for its membership in various areas of physiology, a biennial refresher course in physiology for physicians in association with the College of Physicians, and prepared extensive literature describing career opportunities in physiology, which have been widely distributed to students and counselors. Many of the past educational activities of the Society have been focused on helping college teachers to improve the teaching of physiology to undergraduates. Workshops for college teachers were organized by members and held at colleges and universities in a number of areas of the United States, visiting lecturers traveled to college campuses throughout the country, summer research opportunities were arranged for college teachers, and two comprehensive sets of laboratory experiments were prepared for college students in the areas of general physiology and human physiology. Many sets of these laboratory exercises have been distributed over the years.

The next major development in the Societies' commitment to education came in 1970, when the Office of Education was established within the Societies' table of organization, and Dr. Orr Reynolds was appointed as Education Officer. This move assured that the Societies' programs in education would not only maintain momentum but could grow in size and achievement. The Education Office has developed extensively under Dr. Reynold's excellent leadership and serves as the vital link in the implementation of the programs developed by the Education Committee in response to suggestions from the membership.

*Taken from the introductory remarks given at the Teaching Session at the 1974 Federation Meetings.

Like the past education programs of the Society, the current one is quite broad and concerns education in physiology at all academic levels. Since a significant proportion of our membership is involved in medical education, it is natural that a portion of our program should be devoted to aiding and hopefully, improving the quality of physiology education in this area. There is a continuing commitment to graduate education, and particularly, to the recruitment of young people for careers in physiology. The current program, like those of the past, is concerned with ways to up-grade education in physiology at the college level. Finally, we are attempting to extend the educational efforts of the Society to the general public, where we feel that, as physiologists, we can make a positive contribution to the quality of life and health of the American people. I should now like to describe the specific projects and plans that the Society has in each of these areas.

In 1972, the Education Committee launched a major project to help improve the quality of medical and graduate educations in physiology. This was a project involving the review and evaluation of existing audiovisual materials in the field of physiology as well as the production of new audiovisual aids. This project was prompted largely by a growing concern on the part of many physiologists teaching in medical schools that the student:faculty ratio, in their institutions, would soon be less than optimal for a quality educational program, particularly if classes continued to grow in size without appropriate financial support for growth of the faculty. Because of the uncertain state of federal funding for medical education, this concern is still very much with us. It seemed reasonable to the Education Committee that a faculty member might make more effective and efficient use of his time, if his teaching program could be supplemented and enriched with high quality audiovisual and self-instructional materials. The problem was to identify those materials of high quality that were currently available, and then to produce new audiovisuals to fill in areas not covered by existing materials. The Society received a contract from the National Medical Audiovisual Center to carry out this work.

Existing audiovisual materials in the field of physiology were collected from commercial distributors and individual physiologists by the staff of the APS Education Office. In all, over a 1,000 films, film-loops and slide-tape presentations were collected. Then 14 review panels were established each consisting of 3-5 experts in the various sub-specialties of the field. These panels met individually at the FASEB Audiovisual Center in Bethesda during the following year to view and evaluate the collected materials for scientific accuracy, level of presentation and technical quality. Approximately 260 of the audiovisuals examined were judged to be adequate or better as teaching devices for use in physiology courses for medical students, beginning graduate students, and advanced college students. The summaries of these reviews were published last year as a supplement to The Physiologist entitled "Audiovisual Aids Useful in the Teaching of Physiology." Many have found this list of available audiovisuals useful in their teaching efforts. Unfortunately, many existing audiovisual materials covering physiological topics were not evaluated during that first full-scale review, since we either could not obtain them from distributors or their producers, or we did not know of their existence

at the time. Also, in the interim new materials have been produced. The Education Committee feels that it would be of considerable value to have the expert panels evaluate the audiovisuals that were missed during the first review and to make this information available to teachers of physiology. The National Fund for Medical Education has awarded the Society a grant of \$18,500 to enable us to do just that. In July we shall once again begin the evaluation of audiovisual materials in our field, and you may expect to receive resumé's of these reviews in the near future.

The Education Office has received a number of requests from members of the Society for help in obtaining the good audiovisuals listed in the supplement to The Physiologist. Some of you have found it virtually impossible to obtain some of these materials, at least at the time that you need them for your students. We are working on a plan that may ease this situation somewhat. The plan is to establish a reference library of audiovisual materials at the Education Office in Bethesda. The purpose of this library would be two-fold. First it would be a repository of most of those audiovisual materials that the American Physiological Society has rated highly in its peer review process. Audiovisuals in the form of movie film or videotape would be transcribed and stored on videotape. These materials would be available at the Education Office for anyone interested in previewing them. Also, copies of these materials would be brought to the annual meetings of the Society, to make them more readily available to members for preview and examination. The second purpose of the library would be to duplicate audiovisuals on 3/4 inch videotape cassettes upon the request of a potential user. A nominal cost would be charged for this service, and the revenue would be used to support the library. Hopefully, it could become self-supporting in time. We have considered the 3/4 inch videotape cassette as the form in which the materials would be copied, because it is not only relatively inexpensive, but many feel it will soon be a standard form of audiovisual material used by educational institutions across the country. We have considered the copyright problem and found that a very large portion of the materials that would be deposited in the library are either not covered by copyright or we believe that permission might be obtained to make copies. We have estimated that the library might have as many as 1,000 holdings at the end of a three year period. The Education Committee is now seeking means of financial support to establish the library, with the hope that eventually the copy service would substantially support the operation.

The review of existing audiovisual materials in the field of physiology was only preliminary to the main purpose of the project, namely to provide high quality audiovisuals in areas not now covered adequately by existing materials. The Society received a second contract from the National Medical Audiovisual Center in June of 1973, providing funds for the production of 16 slide-tape productions on physiological topics. This contract has amounted to nearly \$150,000 over a 15-month period. It was clear from our earlier review of existing materials that high quality audiovisuals in the areas of renal physiology, cardiac physiology and temperature regulation among others were not available. Therefore the decision was made to prepare slide-tapes in these areas. A mechanism was established for the development of the slide-tapes, for their production and for their extensive review both by professional physiologists and

by students. We are making excellent progress on the slide-tape productions. Eight will be in the area of renal physiology, five in the area of cardiac physiology and three on temperature regulation. Four of the presentations on renal physiology are nearly complete at this point. After these 16 slide-tapes have been evaluated by students and approved and accepted by the National Medical Audiovisual Center, they will be available for sale probably for nine - twelve dollars by the General Services Administration of the federal government. We will be certain to notify you when copies become available for sale and exactly how you go about ordering them.

I would like to mention a few words about the way in which we plan to evaluate the teaching value of these slide tape presentations. This will be done by a number of evaluation centers established in physiology departments in various parts of the country. Last Spring, the Education Committee solicited volunteers for the evaluation centers through letters sent to chairmen of departments of physiology. Four departments were initially selected. These are at Georgetown University, Meharry Medical College, Medical College of Virginia and Wayne State University. Subsequently, seven other departments joined the group. These are: New York Medical College, University of Florida College of Medicine, Medical University of South Carolina, University of Hawaii, the University of Pennsylvania, the University of Utah, and the University of Washington. Representatives of the four primary centers met at Society headquarters early last Fall to select 25 audiovisuals from our reviewed and approved list to be used during the current academic year at their institutions in order to work out the details of the evaluation process. This group has subsequently developed guidelines and methods for the evaluation of these materials by their students, and they are now in the process of testing these methods with the 25 selected audiovisual materials, which include films and slide-tapes.

We are planning to continue to produce additional slide-tape presentations in the future, and hopefully financial support for this work will come from the federal government and private sources. For the immediate future, we hope to finish the series of presentations on renal physiology, and produce some on the mechanical properties of the cardiovascular system and a series on the special senses (vision and hearing).

On behalf of the Education Committee, I would like to extend our sincere thanks to the many members of the Society who have given so much of their time to the panel or production work needed to make this project a reality. Considering the number of members that have been involved one way or another, it has truly been a Society-wide project.

Specifically in the area of graduate education, the Committee has been working on the revision of career information for prospective students. Some years ago, the Society prepared an excellent series of brochures describing career opportunities in physiology, and these received wide distribution over the years. A revision of these brochures was long overdue. Last year, a new brochure entitled "Careers in

Physiology" was finally completed with the generous help of a number of members of the Society. Copies of this brochure were distributed to the membership at the Spring business meeting. Generally, comments regarding the brochure have been complimentary and some have found them useful in their recruiting activities. Single copies of the brochure are sent free by the Education Office to prospective students, counselors or professional organizations upon request. Copies of the brochure are available to departments of physiology or others for a cost of \$50 for 100 copies. So far we have sold a substantial number of copies and the financial returns have helped to off-set the initial cost of production of the brochure.

We are now in the process of preparing an additional career leaflet that will list the specific undergraduate and graduate training opportunities in physiology, by specialty, that are offered by physiology, biology and zoology departments around the country. This information was compiled from a mail survey made a few months ago by the Education Office, thus the information is quite current. The leaflet will be available from the Education Office on request and will be updated every three years.

The Education Committee has also continued the long-standing interest of the Society in improving the quality of undergraduate education in physiology. For example, we have continued to organize Refresher Courses for the Fall Meetings of the Society. Since college teachers frequently attend the Fall Meeting, it is believed that the Refresher Course helps them to organize and improve their course offerings in physiology. This year, the Refresher Course to be given at the Fall Meeting will cover the subject "Vision." Dr. Myron Wolbarsht is the organizer of the Course.

We have also continued to sponsor workshops for college teachers in various areas of the country. These workshops are funded to a modest extent by Society funds, primarily to help off-set the costs of preparing materials for distribution at the sessions. The last regional workshop sponsored by the Society was held at the University of North Carolina at Chapel Hill last Fall. The workshop was organized by Dr. John B. Anderson and emphasized the teaching of environmental physiology. The faculty for the workshop was recruited from the universities and agencies in the Research Triangle area. College teachers from the south-eastern area attended. If any one wishes to organize such a workshop in your area, the Committee would be greatly pleased to provide information and assistance in launching the project.

The other main project that the Committee has had in the collegiate area has been the publication of The Physiology Teacher. This is a quarterly newsletter directed primarily at college teachers of physiology and their problems. It contains detailed descriptions of experiments that can be conducted in most college settings, and information about equipment and books of interest and value to college teachers. However, most of us who teach primarily professional students, have also found much of interest and value in The Physiology Teacher. In the two years of its existence, this publication has been essentially self-supporting from its very modest subscription fee and from limited advertising.

We hope that this will continue to be the case, since from all reports, it has proven to be quite useful to teachers in the field. If you do not have a subscription to The Physiology Teacher, we believe that you would find the investment of three dollars well worth the price.

Lastly, I would like to share some of the current plans and thinking of the Education Committee in the area of education for the general public. I think we would all agree that physiology consists of information, much of which should be part of the common knowledge of every individual. Certainly every individual is entitled to have a basic understanding of how his or her body works, but unfortunately, we know that the average citizen has little understanding of how his body functions. This is primarily due to the deplorable state of public school education in human biology and health. Either no program exists in many school systems, or the program is carried out with inadequate instructional materials and poorly prepared or disinterested teachers. For some time, the Education Committee has felt that the American Physiological Society could make a positive contribution to the solution of this problem. It could make this contribution by playing an active role in the development of a new curriculum or educational package in human biology and health education at the public school level. The Education Committee has been interacting with the Biological Sciences Curriculum Study for the purpose of developing a proposal for the production of a new educational package in human biology and health education. As many of you know, BSCS produced the educational packages being used currently in teaching of biology in many high schools across the country. The joint APS/BSCS proposal to develop this new educational package has gone through several drafts during the past year and is soon to be finalized for presentation to the Council of the Society. The essence of the proposal is that APS would provide the scientific expertise necessary to produce the new package, and BSCS would provide the education specialists and the technical machinery for the job. A substantial amount of money will be required to mount this project if it is approved by the Society. We have had informal discussions with officials of the Health Services Administration of the federal government, and it is possible that funding for the project could come from federal sources. The Education Committee is very enthusiastic about this project. It would provide a way for the Society to make an important contribution to the welfare of the general public. Further, it would give many members of the APS direct input into the educational activities of the Society.

I hope that this summary of our activities has given you a feeling of the scope of our educational program. The role of the Education Committee is to be receptive to your ideas and problems in the area of physiology education and to work toward the realization of those ideas and the solution of your education problems. We welcome your ideas and comments.

REPORT OF THE PROGRAM COMMITTEE

FRANS F. JÖBSIS
Chairman

The Program Committee of the American Physiological Society met on Friday February 22nd to plan the program for the 1975 Spring FASEB meeting and to consider the general approach to the program of the 1975 Fall APS meeting in San Francisco. The following points were agreed upon for presentation to Council on Saturday April 6, 1974.

A. Spring meeting 1975

Symposia (tentative titles and chairmen)

Interstitial Pressure and Dynamics of Bloodflow
Arthur Guyton

Stimulus - Secretion Coupling
William Douglas

Potassium fluxes in the CNS
R. Katzman

Physiological and Biochemical Aspects of Circadian Rhythms
M. Menaker (APS) and J. W. Hastings (ASBC) co-chairmen

Prostaglandins in Vascular Homeostasis
G. Kaley

Physiology of the Pineal Gland
L. C. Ellis

In addition the cardiovascular group will arrange for their symposia.

B. The following suggestions for innovations in the program of the Fall Meeting of 1975 were made.

1. Emphasis on involvement of the APS in the contemporary culture. Two approaches seemed useful.
 - a. Discussion of current topics and of public affairs impinging on the realm of physiology in the form of symposia, workshops or round table conferences with action in the form of recommendations or resolutions. These would be presented to the membership for approval before publication. The subjects for discussion could range from Benefits and Limits of Physical Exercise, and Physiology of Transcendental Meditation and EEG Training to Support of Physiology and Physiological Training by Government and Non-Government Sources and Evaluation of Environmental Disturbances on the Basis of Ecological Physiology.

- b. Organization of programs with clinical relevance. If it is true that Physiology has contributions to make to the understanding of disease processes, then part of the national mission of APS is the creation of opportunities for professionals in the health fields to benefit from our knowledge and insight. In order to make attendance of such programs more attractive, it might be worthwhile to arrange for credit in the way of continuing education requirements. A special committee should perhaps be appointed to look after this activity.
2. Greater emphasis on professional duties of physiologists aside from research. This probably comes down mainly to approaches and techniques of teaching physiology. The Education Committee would be in charge of optimizing the planning of this aspect.
3. Review of developments in other fields having more than average, current importance in the general area of one of the symposium topics by invitation of outstanding outside speakers. The idea would be that such a speaker would lecture on the day preceding the symposium. Truly eminent scientists of proven ability in presenting their topic clearly would be selected.
4. Even greater attempts to schedule concurrent meetings with specialty societies. Because of needs for long term planning, this suggestion, if approved by Council, should be implemented by immediate communication with such societies. Even so, such arrangements can probably not be made for any meeting before 1976 or 1977.
5. A well planned social activity on an afternoon and evening in the middle of the week of the meeting. No professional sessions should be scheduled at this time.

A general form which such a meeting would take follows:

Symposia (3 hrs. each):

Fetal circulation
 Advances in Pulmonary Physiology and
 Early Detection and Prevention of Pulmonary Disease -
 Clinical, Physiological Program
 Physiology of Bicarbonate (lung & renal)
 Physiology in Contemporary Society
 Neurophysiology Studied in Man

Outside Speaker Topics:

Cellular Biology of Pulmonary Tissues
 Enzymatic Effects of disruptions of the acid-base Balance
 Neurological Prostheses

REPORT FROM THE COMMITTEE ON ANIMAL CARE AND EXPERIMENTATION

HAROLD R. PARKER
Chairman

The APS Committee on Animal Care and Experimentation has been utilized mostly to evaluate manuscripts describing methods used in animal experiments which were questioned by referees as to whether they conformed to the APS Guiding Principles in the Care and Use of Animals. When reviewing these manuscripts one is given the impression that some investigators are not aware of the serious threat facing biological research which requires animal subjects. For a number of years physiologists have been required to satisfy guidelines established by APS, and this requirement has served to assure humane treatment of most experimental animals.

All investigators must now conform to legal as well as moral guidelines. The Animal Welfare Act of 1970 specifically defines the ways animals must be handled in research laboratories. Failure to comply will result in loss of license to conduct research by the laboratory and parent institution. It behooves all investigators to become familiar with the law. A copy may be obtained from the U.S. Department of Agriculture veterinarian assigned to the Capitol City of each state.

Even though the present laws are restrictive, an even more serious threat exists in proposed legislation which would require daily release of dogs from cages into runs. The basis for such mandatory release would be for the animals "psychological" health. This regulation would apply to all random source dogs (dogs not raised for research), and possibly to cats. Few investigators experienced in handling dogs would disagree with requirements that dogs have cage space which is sufficiently large for free movement. Hearings have produced no evidence that once the above requirement is satisfied release from confinement will further improve the animal's health or physiological condition as determined by objective measurements. The added expense of conforming to laws which would require cages tall enough for animals to stand on their hind legs and also make it mandatory that dogs and cats be released from confinement into runs at least once daily would be prohibitive. The so-called animal welfare adherents are fully aware of this fact and are attempting to use this clever ruse to restrict research using dogs and cats.

The members of the American Physiological Society could help their cause immensely by writing to congressmen advising them of their concern regarding the possibility that restrictive legislation may be enacted which is based on hearsay and emotion rather than objective evidence.

Physiologists could also help their cause by providing to the National Society for Medical Research (NSMR) objective information which would help convince congressmen that caged dogs and cats can be kept healthy without being released into runs. These data should be sent to Dr. Harry E. Kingman, Jr., Executive Director, NSMR, 1330 Massachusetts Ave., N.W., Suite 103, Washington, D.C. 20005 or to the Chairman of the APS

Committee on Animal Care and Experimentation who will forward it to Dr. Kingman.

The Executive Committee of NSMR has asked APS and other large Society members to increase their financial support in view of the rising costs of service nationwide and the need for more legislative and educational activity to counter pressure to restrict research by antivivisection groups. The APS Executive Secretary has referred this request to the Committee on Animal Care and Experimentation for its recommendation. Before making a recommendation the Committee will review the role of APS in NSMR and the advantages of this relationship to APS in view of alternative ways financial outlay can best serve the interests of members of the Society. A full report and recommendation will be presented to Council at the Fall Meetings.

INTERNATIONAL CONGRESS OF PATHOLOGICAL PHYSIOLOGY

The International Congress of Pathological Physiology will be held in Prague from July 8 - 11th, 1975. The program will concern mainly the general conception of clinical and pathological physiology and the teaching of this discipline in various countries. Specific problems are to concern the regulation mechanisms of metabolism, erythropoiesis, respiration, the nervous system and the cardiovascular system.

For further information please contact: Doc. Dr. F. Paleček, CSc, Scientific Secretary of the Congress, Ke Karlovu 2, 121 09 Praha 2, Czechoslovakia.

REPORT OF THE TASK FORCE ON WOMEN IN PHYSIOLOGY*

M. ELIZABETH TIDBALL
Chairperson

Background

In January 1973, Dr. Elizabeth Tidball wrote to Dr. Robert Berne, then President of the American Physiological Society, requesting the establishment of a Committee on Women Physiologists. The idea had developed as a result of occasional meetings by women physiologists to discuss factors related to the education of women and career achievement of women. Regularly participating in these discussions were: Drs. Elizabeth Tidball, Esther Hardenberg, Louise Marshall, Florence Millar, Willie Smith, and Marion Webster.

In response to this suggestion, after some deliberation the Council established a Task Force on Women in Physiology at its meeting in April 1973. A meeting was held in March 1974. A report of the meeting follows.

First I should like to say that I am pleased to have been asked to make a report on the Task Force; more importantly, I am pleased that the Task Force has been busy enough so that I have material on which to base a report at this time!

The Task Force on Women in Physiology was approved by Council at its meeting here a year ago. The membership for the Task Force was approved by Council at the Fall Meetings in Rochester last August, and by December the Task Force was finally constituted. I shall tell you who the members are but first I would like to relate a brief anecdote. Not long ago a male colleague asked me to name the Task Force members. After I did he said, "I never heard of any of the women." This points up one of the difficulties of our women members quite clearly, and one very obvious reason for the need to have such a Task Force. For the women of the Task Force are by no means newcomers to the Society: they have attended meetings regularly, presented papers, published, and voted at business meetings for a collective total of 66 years. But you still don't know who we are! So I shall help remedy that situation right now. The members of the Task Force are:

Dr. June Barker of the Institute of Rehabilitation Medicine, NYU
Dr. Virginia Fiske, Professor of Biological Sciences, Wellesley College
Dr. Elizabeth Gerst, formerly of Columbia University, but currently raising three young sons
Dr. Florence Millar of the National Cancer Institute
Dr. Elizabeth Tidball, Professor of Physiology, George Washington University Medical Center, and our erstwhile male member,
Dr. Ray G. Daggs, retired Executive Secretary-Treasurer of APS

*Presented at the Business Meeting on April 11, 1974 in Atlantic City.

Our first project, already underway, is that of identifying just who women physiologists are. Of some 3988 members of the APS, only 272 are women. Where are the rest of us? In an attempt to find out, we are mailing post card questionnaires to women members of the Zoological Society and the Society of General Physiologists; to women listing themselves as physiologists with the FASEB Placement Service and for the Scientific Manpower Commission's last survey. In addition, everyone who receives The Physiology Teacher and The Physiologist will find a card enclosed in this issue. We would like each of you to help distribute these cards to women who are physiologists but not members of the APS - faculty, graduate students, women physiologists in biology and other departments. We are counting on you to turn up women we would not otherwise be able to find.

You might legitimately wonder what we intend to do with the replies. We have several things in mind. First, quite simply, it is important for many individuals and institutions to have an estimate of the pool size of women physiologists. In the last two weeks alone I have had three telephone requests from Chairmen of physiology departments for this information as they proceed to fulfill their affirmative action responsibilities in recruiting and hiring new staff. The Society needs this information as well. Second, we plan to issue a subsequent questionnaire to the women who reply in order to gain a more complete picture of the activities, interests and accomplishments of women physiologists. We expect that these replies will provide general information for publications on women in the profession as well as specific information about women APS members in order to assist in bringing names of qualified women to the attention of Council.

Another project is the development of a reference file of articles relating to the professional development of women, particularly women scientists. This will help to keep us informed, provide bibliographic materials for our own publications, and serve as a general resource. If, in your reading, you come across an article which you feel would be useful for the Task Force in its work, please send the reference, or a copy of the paper, to me at the APS office. The more of us who participate in this activity, the more informed we will all be, and from time to time we will make available to you some suggested reading materials. Ms. Mary Dittbrenner will circulate abstracts of the articles to the Task Force.

In the immediate future, at the Fall meetings of the APS in Albany, we will be holding a round-table discussion on opportunities and problems relating to women physiologists in teaching and research. Dr. Charles Edwards, a Co-Chairman of the Local Committee, is cooperating with us in this venture. While we do not appear on the preliminary announcement, you will find us listed in the Program. We urge you to come, to ask questions, to make comments, and to interact with us in matters which concern us all.

Finally, there is a Task Force on Women in Physiology, after some four years of gestation and a few sharp birth pains. But we have come into existence, and we see many tasks awaiting our attention. To a very

large measure we believe our success, in terms of service to the Society and to the wider scientific community, will rest on your active support and participation in our projects. We are not a committee exclusively of women or for women; we are, rather, a Task Force of the APS and for the APS. We urge you to join us fully in our efforts, and we look forward to our productive association.

FOURTH INTERNATIONAL SYMPOSIUM ON INHALED PARTICLES AND VAPORS

The British Occupational Hygiene Society intends to hold a Fourth International Symposium on Inhaled Particles and Vapors in Edinburgh, September 22-26, 1975.

The aim will again be to present the results of the latest research into the inhalation and retention of harmful (or therapeutic) dusts, mists, gases or vapors, the way they are handled by the body, and their effects; emphasis will be on basic mechanisms rather than on case histories or general toxicology.

Further details and copies of Forms are available to interested persons and may be obtained from: Dr. J. Burns, or Mr. J. Dodgson at the British Occupational Hygiene Society, Institute of Occupational Medicine, Roxburgh Place, Edinburgh EH8 9SU, Scotland.

1974 GRADUATE SUMMER SESSION IN EPIDEMIOLOGY

The Ninth Graduate Summer Session in Epidemiology sponsored by the Epidemiology Section of the American Public Health Association and the Association of Teachers of Preventive Medicine will be presented at the University of Minnesota in Minneapolis through the School of Public Health, Health Sciences Center and the Nolte Center for Continuing Education during the three-week period from June 23 to July 13, 1974.

These summer graduate sessions are designed primarily for teachers in medical schools, but post-doctoral fellows, graduate students and residents in departments of preventive medicine and other medical school departments may qualify. Similarly teachers, post-doctoral fellows and graduate students in schools of public health, dentistry and veterinary medicine are eligible as are qualified personnel of federal, state and local health agencies.

Further information and application forms for the 1974 session may be obtained by writing to Dr. Leonard M. Schuman, Director, Graduate Summer Session in Epidemiology, University of Minnesota School of Public Health, A1-117 Unit A Health Sciences Building, Minneapolis, Minnesota 55455.

IV INTERNATIONAL SYMPOSIUM OF RUMINANT PHYSIOLOGY

The IV International Symposium of Ruminant Physiology will be held in Sydney, Australia on August 19-23, 1974. Nine major sessions will be held and each session will include a symposium of about four lectures of 15-30 minutes each by invited speakers. There will be opportunities for general discussion of each presentation. There will be two evening sessions concerned with Australian macropod marsupials, which have many physiological attributes in common with ruminants, and the second dealing with some of the relations between man and the ruminants.

For further information please contact:

Secretariat
IV International Symposium of
Ruminant Physiology
P. O. Box 391
Darlinghurst, N.S.W., Australia 2010

REPORT OF TASK FORCE ON NEUROPHYSIOLOGY

EDWARD EVARTS

Chairman

Recommendations

I. Meetings

The Task Force proposes that a problem-oriented session in the area of neurobiology be held each year in connection with the Spring FASEB meeting. Creation of a formal Section on Neurophysiology within the APS to plan this session was not felt to be advisable. Instead, the Task Force proposes that an ad hoc subcommittee of the APS Program Committee be established and that this subcommittee be responsible for establishing communication with potentially interested neurobiologists both within and outside the APS. It is anticipated that the subcommittee would consider holding conferences in addition to the one proposed to be held at the time of the FASEB Spring meeting, though the initial assignment to the subcommittee would be specifically in relation to the FASEB meeting in April 1975.

In connection with the creation of this subcommittee, the President of the American Physiological Society is advised to select a member of the APS Program Committee who will be charged with organizing and chairing a subcommittee whose function will be to arrange conferences in neurobiology. The chairman should be free to select members of the subcommittee as he sees fit.

The Task Force suggests that the subcommittee look into the possibility of sponsoring free standing meetings, and that there be consideration of the probable effectiveness of three sorts of sessions: 1) sessions held during the Spring FASEB meeting, 2) free standing conferences held at a time quite separate from either Spring or Fall APS meetings, 3) conferences held a day or so before or after the Fall meeting of the APS.

II. Publications

The Task Force recommends that the Publications Committee of the APS proceed with the changes which it is contemplating in connection with the Journal of Neurophysiology. Coupled with this recommendation was the suggestion that discussions with the Society for Neuroscience continue, so that if at some time in the future the Society for Neuroscience wishes to undertake joint sponsorship, the matter can be reopened.

III. Education

It was suggested that the APS might make an important contribution by directing its educational efforts in neuroscience to individuals at relatively early stages in their careers, perhaps at undergraduate or graduate levels.

A meeting of the Task Force on Neurophysiology took place on March 2, 1974. In attendance were: John Brookhart, Kenneth Cole, Edward Evarts, Elwood Henneman, Murdoch Ritchie, Louis Sokoloff, Daniel Tosteson, Stephen Geiger, and Carolyn Terrell. Members of the Committee who were unable to attend were: Irving Diamond, William Ganong, and Rodolfo Llinas.

In his letter of invitation to Task Force members, Dr. Tosteson had outlined reasons for creation of the Task Force, stating "As you know, there has been a dramatic increase in the intensity and scope of research in neurophysiology during the past decades. These developments have blurred the traditional distinction between neuroanatomy, neurochemistry, and neurophysiology and have led to the more global concept of the neurosciences. This concept has been expressed in the elaboration of new societies and new modes of publication. At the same time, most neurophysiologists continue to recognize that the nervous system is a component of the organism as a whole and wish to retain some meaningful relationship to physiologists working on other organs or systems. With these considerations in mind, the Council of the American Physiological Society has concluded that it is an appropriate time to re-examine the role of the APS in serving its members who are particularly interested in Neurophysiology. To this end, Council has unanimously recommended the formation of a Task Force to generate advice on how the meetings, publications, and education programs of the APS can be changed to meet more effectively the needs of neurophysiologists."

In his opening statement to Task Force members on March 2, Dr. Tosteson emphasized that it was not the aim of the APS Council that any steps be taken to combat the formation of new societies in the area of neurobiology. For better or worse, it seems that the formation of these new societies is inevitable. The purpose of the Task Force is to make sure that neurophysiology retains its proper place within the meetings, publications, and educational programs of the American Physiological Society.

Meetings

Discussion of ways in which the neurophysiological content of APS meetings might be enhanced centered on three possible approaches:

1. The arrangement of problem-oriented sessions in the area of neurobiology to be held in association with the Spring FASEB meeting.

2. The arrangement of Fall meetings in which the APS and other groups might meet consecutively or simultaneously.
3. The organization of free standing conferences which might take place in association with Fall meetings of the APS or perhaps quite independently of any regular annual meeting.

1. Problem-oriented Sessions in the Area of Neurobiology Held in Association with the FASEB Spring Meeting

An example for problem-oriented sessions in neurobiology is provided by the Conference on Membranes, Ions and Impulses held this Spring in Atlantic City. After discussion of the format of this particular conference and review of possible other areas in which such conferences might be held, it was the unanimous view of the Task Force that annual meetings such as this would be inherently worthwhile to the neural people who participate and more generally to express the continuing interest of the APS in serving the needs of neurally-oriented members and that an effort should be made to hold such meetings in future years. Given this decision there was then discussion of ways in which such meetings might be arranged: 1) It seemed possible that a Section on Neurophysiology within the APS could be created and given the responsibility for organizing the conferences. 2) Alternatively, it seemed that an ad hoc subcommittee of the Program Committee of the APS could be formed and given the responsibility for planning the conferences.

There was considerable discussion of the first alternative, that is, the possibility of creating a Section on Neurophysiology within the APS. Initially there was opinion both pro and con, but as discussion progressed it seemed to become clear that the formation of a Section on Neurophysiology would create more problems than it would solve. Following this discussion the Task Force reached the following conclusion:

The Task Force recommends that one step to be taken to enrich the APS Spring meeting in the area of neurobiology should be the arrangement of annual problem-oriented sessions in the area of neurobiology. A formal Section on Neurophysiology within the APS is not felt by the Task Force to be advisable. Instead, the Task Force proposes that there be an ad hoc committee of the APS Program Committee and that this ad hoc committee should seek to establish communication with a large body of neurobiologists both within and outside the APS. It is proposed that this ad hoc group would consider meetings and conferences in addition to the FASEB Spring meeting, though its initial assignment would be specifically in relation to arranging a session to be held at the Spring FASEB meeting in 1975.

2. Fall Meetings in which the APS and Other Groups Might Meet Consecutively or Simultaneously

Having completed discussion of conferences to be held in association with the FASEB Spring meeting, the group proceeded to discuss the possibility of having Fall meetings in which APS and other groups (e.g., Neurochemistry, Neuroscience, Psychonomic, etc.) might meet consecutively or simultaneously. The discussion of this matter was brief and there was universal agreement that attempts to arrange meetings of two separate Societies either simultaneously or successively involved a great deal of work with rewards being rather slight. The experience of Task Force members who have participated in such efforts did not lead them to have favorable views as to the outcome of such arrangements. It was the unanimous view of the Task Force that efforts to arrange such meetings would not be profitable.

3. Free Standing Meetings

While the Task Force was pessimistic about value of simultaneous or consecutive meetings with other societies, the Task Force did feel optimistic about the potential value of free standing meetings.

The Task Force would thus recommend that the proposed ad hoc committee of the APS Program Committee should look into the possibility of sponsoring free standing meetings.

These meetings could involve a variety of different areas of neurophysiology. It was pointed out that many of the most successful and productive meetings which are held take the form of such conferences which do not necessarily recur year after year but are one-shot activities programmed in relation to a currently important topic. It was pointed out that in the past the APS has been relatively inactive in this area, and the Task Force thought that one way of enriching the neurophysiological content of APS meetings would be to have such special free standing meetings in areas of neurobiology.

In connection with these free standing meetings it was felt that it would be worthwhile to compare the possible value of the free standing meetings occurring at a different time and place from regular annual meetings versus conferences which started one day before the annual Fall meeting of the APS.

It was proposed that the ad hoc committee consider and compare the effectiveness of three sorts of special problem-oriented sessions in neurobiology: 1) sessions held during the Spring FASEB meeting, 2) free standing conferences held at a time quite separate from either Spring or Fall APS meetings, 3) conferences held a day before or after the Fall meeting.

There are pros and cons for all three of these approaches and it seemed worthwhile to consider them and if they are held, to obtain figures on the attendance at meetings scheduled to meet three different ways.

Recommendations Concerning the Structure of the Ad Hoc Subcommittee of the APS Program Committee

It was proposed by the Task Force that the ad hoc subcommittee might be formed as follows:

The President of the American Physiological Society is advised to appoint a member of the Program Committee charged with the responsibility for organizing and chairing a subcommittee whose function would be to arrange problem-oriented conferences in neurobiology. The chairman so designated by the President of the APS would be free to solicit members of his ad hoc committee as he saw fit.

With this as the general format for creating the ad hoc subcommittee, there were a number of additional suggestions as to the details of the ways in which the subcommittee might be formed. It was generally agreed that the creation of the subcommittee should be widely advertised and that any members of the APS or of other societies interested in having an input to this subcommittee should be encouraged to do so. It was felt that individuals should be encouraged to volunteer for the subcommittee, though, of course, the chairman of the subcommittee would have freedom to call upon individuals who had not specifically volunteered.

With these recommendations concerning the formation of the ad hoc subcommittee, we ended the morning's discussion of ways in which the APS meetings might be enriched in the area of neurophysiology.

Expansion of APS Publications in the Area of Neurobiology

Discussion of this item began in the afternoon with an introduction by Jack Brookhart. Dr. Brookhart began by reviewing the proposals which had been made by the American Physiological Society to the Society for Neuroscience in which it was proposed that there be joint sponsorship of the Journal of Neurophysiology. Dr. Brookhart pointed out that this proposal carried with it a possibility for a change in title of JN, an expansion of the Editorial Board and an increase in the variety of material which the Journal would accept. Dr. Brookhart indicated that the Society for Neuroscience had not been able to reach any firm decision with respect to this proposal at the time the Society for Neuroscience Council met in San Diego in November 1973. Dr. Evarts then reviewed the current status of the Society for Neuroscience deliberations with respect to this matter. He had obtained information on this point from Dr. Floyd Bloom, who is chairman of a Society for Neuroscience committee dealing with this matter. Though Dr. Bloom's committee has not yet made any final decisions, it is concerned that identification of Society for Neuroscience with one particular subdiscipline

within the broad field of neuroscience (to the exclusion of other disciplines) might create difficulties. The membership of the Society for Neuroscience is drawn from a number of different areas. Perhaps 20% of the membership are neurophysiologists, with other members coming from anatomy, pharmacology, psychology, clinical fields, and a variety of other branches in neuroscience. Though one cannot be sure what the Society for Neuroscience committee will conclude, it seems likely that no decision of a positive nature will be forthcoming rapidly, and for this reason it would seem that the APS should probably go ahead with its plans for JN expansion.

The Task Force recommended that the Publications Committee of the APS proceed with the changes which it is contemplating for the Journal of Neurophysiology. Coupled with this recommendation was the added suggestion that discussions with the Society for Neuroscience continue so that if at some time in the future the Society for Neuroscience wishes to undertake joint sponsorship, that matter can be reconsidered.

Areas for Expansion of JN

Discussion of this topic began with a review of the history of the Journal of Neurophysiology. The current (but mistaken) image of the JN as a "journal of electrophysiology" was reviewed. It was pointed out that actually the increase in the proportion of "electrophysiological" papers in the JN had occurred without any explicit change in the editorial policy of the Journal. Thus, from the time of Fulton to the present, the Journal of Neurophysiology has been open to papers which deal with any aspect of the function of the nervous system. Early in its history, the Journal of Neurophysiology published many papers dealing with behavior, effects of brain lesions, and the broad field of neurophysiology and neuropsychology. As other neurobiology journals were created, however, a tendency developed for there to be a greater and greater concentration of a certain subcategory of neurophysiological papers in the Journal, and it is this tendency which has gradually resulted in a change in the image of the Journal.

In discussing the sorts of papers which the Journal should seek to recapture in its expansion, we discussed papers at two ends of the spectrum. One end of the spectrum would deal with cellular and sub-cellular physiology at the molecular level. It was pointed out that at one time many of these papers were published in the Journal of Neurophysiology but that now they were going elsewhere. After some discussion it was felt that it would be difficult to bring these papers back into the Journal of Neurophysiology, partly because the phenomena with which they deal are of a very general nature rather than being specifically neurophysiological.

The other direction for expansion and enrichment of JN would be in those areas which deal specifically with the function of the nervous system but which may explore neural function by techniques other than the electrophysiological techniques which seem to form the basis for so many

of the articles currently published in the Journal. Thus, it was proposed that the Journal be expanded in areas of tissue culture, neuropharmacology, neurochemistry, neuropsychology, and the various other divisions which are now so important in the broad field of neuroscience. A mechanism for expressing the intention for expansion in this direction would be the inclusion within the Editorial Board of individuals competent in these areas.

Other Publications

Having completed discussion of the Journal of Neurophysiology, the Task Force turned its attention to possible other areas in which the APS publications might be enriched in the area of neurophysiology. There was discussion of the possibility of sponsorship of monographs, and Stephen Geiger pointed out that discussion of this topic was pending in the Publications Committee. Since the issue of monographs in general is pending, the Task Force on Neurophysiology did not feel it would be useful to make specific recommendations with regard to monographs in neurophysiology. On the other hand, if a decision is made to enter into this area, then presumably neurobiology would be an area that would be included in the broad area of subjects to be dealt with in the monographs.

With respect to other new ventures, it was suggested that an up-to-date index of the Journal of Neurophysiology extending back over a number of years would be extremely useful. The cost factor was brought up, and it was recognized this would be a problem, but all members of the Task Force agreed that the preparation of such an index would be useful if it could be financed.

There was also discussion of the possibility of having short reports in the Journal of Neurophysiology. At first glance, such reports might seem to be useful, but in practice it seems to be the case that when short reports are submitted they are actually preliminary reports. It was agreed that the JN would not publish preliminary reports, and it seemed that by excluding preliminary reports it would in fact be excluding most short reports. Another reason for belief that it will not be necessary for JN to publish short reports at this time is the pending creation of an abstract journal by the Publications Committee in connection with reorganization of the AJP and the JAP.

Another topic considered was the possibility of introducing a new type of article in the JN. This would be a "Synthesis" rather than a review, and in this sense would differ from the reviews which appear in Physiological Reviews. It was felt that one possible value in having such articles in JN would be to show that JN is expanding into areas which heretofore had not been prominent in its publications.

There was a brief discussion of the Handbook series in neurophysiology, and it was suggested that perhaps there might be somewhat greater emphasis on chemical aspects of neurophysiology than appeared to be the case in the present plan for the Handbook series.

Education

The third major item discussed dealt with possible activities in the area of neuroscience education. It was pointed out that many of the conferences and educational activities going on in neuroscience now under the sponsorship of various established organizations appear to be directed at the upper echelons within the field of neuroscience. It was suggested that perhaps the APS might make an important contribution by directing its educational efforts to individuals at an earlier stage in their career, perhaps at undergraduate or graduate levels. It was pointed out that this is an area in which the Society for Neuroscience has expressed interest and has been active.

Beyond this, the Task Force discussed the possibility of increasing the availability of neuroscience films to groups that contact the Education Committee of the APS.

V WORLD CONGRESS OF GASTROENTEROLOGY

The V World Congress of Gastroenterology will be held in the city of Mexico, October 13-19, 1974. The Congress will be organized by the Mexican Association of Gastroenterology with the support of the Organization Mondiale de Gastro-entérologie. The Congress will evolve around an interesting scientific program formed by conferences, symposia, informal discussions, study groups and scientific films on the latest developments in the field. There will also be a section of free papers open to all specialists who wish to participate. For further details please contact: V Congreso Mundial de Gastroenterología, Avenida Veracruz 93, Mexico 11, D. F., Mexico.

JOURNAL COSTS

In the May 1970 issue of *The Physiologist* John M. Brookhart clearly and succinctly summarized the financial operations of the Society including those of the journals. It is not necessary to repeat the points made in that report or to emphasize that inflation is still with us. However, perhaps it is of interest to present the accompanying graph and to note that despite increases in printing and non-printing costs over the last eight years, the Society has been able to reduce the journal operations from a deficit position of \$67,000 in 1969 (\$75,900 for 1970) to a blue figure for 1973. Two of the journals remained in the red at the end of 1973. Subscription prices were increased beginning in January 1974 to \$75 for the *American Journal of Physiology* and to \$55 for the *Journal of Applied Physiology*, without an increase in subscription rates to Society members in either case, and it is hoped that by the end of 1974 all of the journals will again be self-supporting.

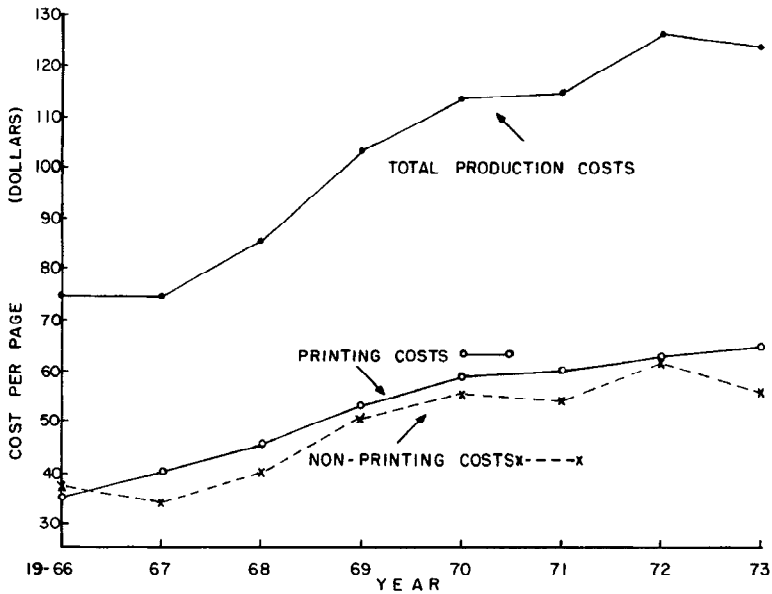


Fig.1. Average per page cost of producing the *American Journal of Physiology*, *Journal of Applied Physiology*, *Journal of Neurophysiology*, and *Physiological Reviews*.

It should be emphasized that the figures used to plot the graph are "bottom line" figures from the Society's Financial Statements and do not reflect the great detail that is involved in deriving them. The missing detail involves a multitude of line items, but more importantly it represents individual effort by many people to maintain the Society's Publications Operating Fund in a sound financial position despite continuing inflation. Our thanks must go to authors, editors, editorial staff, and business office staff for their efforts and to subscribers for their support.

SYMPOSIUM ON SWIMMING AND FLYING IN NATURE

This Symposium sponsored by the National Science Foundation and the California Institute of Technology will be the interaction of biology and fluid mechanics in promoting understanding of locomotion by swimming and flying in nature. By combining fundamental biological and fluid mechanical contributions, the objective will be to encourage activity in this interdisciplinary field. The Symposium is being held July 8-12, 1974 under the auspices of a Technical Program Committee who will monitor the technical content of the meeting and a Local Organizing Committee who will be responsible for the management of the Symposium. For further information please contact Dr. C. Brennen, Symposium Secretary (301-46) California Institute of Technology, Pasadena, California 91109.

PROPOSALS FOR CHANGES IN NATIONAL BOARD EXAMINATIONS*

JOHN P. HUBBARD

I greatly appreciate the invitation to meet with you and to review the current position of the National Board of Medical Examiners as it contemplates new directions in evaluation, certification and licensure in medicine.

As I have been anticipating this meeting, there has been ringing in my ears the very articulate voice of a prominent Chairman of a basic science department and former Chairman of one of our basic science test committees. His message, which came through loud and clear a couple of years ago, was that the National Board of Medical Examiners was doing a splendid job in examining candidates for licensure but should keep out of the business of evaluating classes of students. He was referring, of course, to the increasing extent to which medical schools require our examinations of their student classes in order to provide comparative assessments on a department-by-department basis within the school and, what is more, on a school-by-school basis. From the analyses provided by the National Board at the request of medical schools, comparisons can be made in a rank order based upon the performance of student classes on an extramural examination that may have had no relation to the curriculum objectives of the faculty. At the present time, 84 medical schools are requiring Part I or Part II or both Parts for all students. To the extent that the resulting comparative evaluations are taken seriously by the faculty, they could stand in the way of curriculum change and experimentation, so we are told.

Sensitive to our obligation to serve the needs of medical education and certainly to avoid being an obstacle to progress, the National Board appointed a Committee to reassess its mission and its role in these changing times. This was the Committee that has become widely known as the Committee on Goals and Priorities. In all the turmoil and strident clamor that has followed the publication of the Committee's report, the initial concern about the influence of National Board examinations over curriculum appears to have been overshadowed by a new concern about what might happen if the National Board withdrew this influential examination in basic sciences as a requirement at the end of the second year of medical school.

For two years, the Committee on Goals and Priorities, now known as the GAP Committee, diligently studied trends and the handwriting on the wall of academe. With careful and abundant documentation, the Committee drew up a forecast of the shape of things to come.** It saw the medical school years as a preparation for further education in a graduate

* Address to the Association of Chairmen of Departments of Physiology, April 7, 1974, Atlantic City, N.J.

** Evaluation in the Continuum of Medical Education. The Report of the Committee on Goals and Priorities, published by the National Board of Medical Examiners. Copies available at \$2.50 each.

training program and not as a sufficient qualification for the independent practice of medicine. The free-standing internship is dying, although not without gasps of protest. A continuum of medical education is emerging with an interface or point of transition between the so-called undergraduate phase and the graduate phase of medical education (See Fig. 1). For purposes of convenience, this point of transition was labeled as the A interface. At the end of the graduate phase, a second interface was described as a point labeled B which in turn leads into the C phase of continuing medical education for the physician who has finished his formal training but who never really escapes from the need for continual updating of his competence, knowledge and skills.

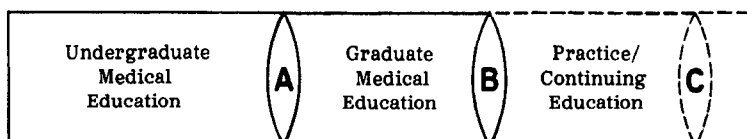


FIG. 1. The Continuum of Medical Education

Against this forecast of observable trends, the Committee challenged the National Board with the proposition that, since medical education is changing, so too should the evaluation system prepare for change.

The extent to which the projected continuum is becoming a reality has been documented in a study recently published by Edythe Levit, Melvin Sabshin, and C. Barber Mueller.* In this paper, carefully collected data indicate the proportion of U.S. medical graduates who do, in fact, continue through the continuum. A sampling study was done for classes graduated from medical school long enough ago so that those entering specialty practice would have had opportunity to complete their requirements for specialty certification. The classes of 1960 and 1964 were selected for this purpose. It was determined that 89 per cent of each of these classes had had residency training in one of the specialties then approved. Today, with Family Practice included as one of the established primary specialties, almost all graduates of U.S. medical schools may be expected to follow the path to specialty certification. Few choose not to do so, and there are others who fail to make it.

Another development that is having a determining effect on the predictable course of events is the integration of accreditation of graduate medical education through the implementation of the Liaison Committee for Graduate Medical Education.

These several forces for change, the growing reality of the continuum of medical education, together with unified responsibility for the continuum and redefinition of medical education; the fact that almost all of today's graduates seek specialty training; the integrating influence of the Coordinating Council for Medical Education and the expanding Liaison Committee structure - these forces taken together are the staging platform on which

* Levit, E.J., M. Sabshin, C.B. Mueller. Trends in Graduate Medical Education and Specialty Certification. *New England Journal of Medicine*, 290: 545-549, March 7, 1974.

the Committee on Goals and Priorities built its conclusions and recommendations for an orderly and rational system of examinations and evaluation.

As the study proceeded, the Board's Committee on Goals and Priorities met on many occasions, not only with members of its Executive Committee and Test Committees, but also with others in positions of responsibility in medical schools, state boards, specialty boards and the federal health establishment. In June 1973, a conference was held for workshop discussion of the Committee's report. To be sure, the conference was scheduled for only one day, but a much longer conference would still have been too short for full review and discussion of the far-reaching conclusions and recommendations of the GAP Committee. Following the conference, the report has been widely distributed. Requests for copies far exceeded expectations; the report is now in a second printing with a distribution of about 10,000 copies.

As interest in the report has increased, so have the reactions to its recommendations. Medical schools, state licensing boards, specialty boards and related groups and organizations have met formally and informally to take positions on one or another of its proposals. Reports of these deliberations have come to the National Board in the form of letters, resolutions and public statements. And as they accumulate, they reflect one overriding misconception, namely that the National Board has given an all-encompassing approval to the report and is proceeding forthwith to implement its recommendations. This is not so. At its Annual Meeting more than a year ago in March 1973, the Board placed in the hands of its Executive Committee the task of continuing to study the Committee's proposals and to move forward in the new directions in relation to the development of predicted trends.

One of the recommendations on which there was wide agreement was, however, approved and given prompt attention. Better ways must be developed to assess objectively the knowledge and competence of the student along all phases of the educational continuum. A blue ribbon panel was named and has met with the staff to review the Board's current program of R and D and to move toward the achievement of stated objectives.

Secondly, it appeared very clear to the Board that a small but widely representative committee should be appointed for further study of the intricate complex of problems related to evaluation and examinations at the undergraduate level. Included in the assignment for this committee is consideration of the examination at the interface to which I have referred at the transition point from undergraduate student to graduate student. This committee has not yet been named. Its appointment was, as a matter of fact, delayed to allow sufficient time for us at the NBME to hear the voice and reaction of the medical community to the recommendations contained in the GAP Committee's report. We did not have to ask for this; it has come to us in abundance in letters from Boston to San Diego and in resolutions from medical schools across the country. As evidence of the importance of some of these resolutions as viewed by the faculty, they carry the personal signatures of every department chairman from both basic science and clinical departments.

Also, as a further means of providing for open discussion and an opportunity for expression of strong opinions and deep concerns, our Invitational Conference on March 22 was scheduled for a full day focusing on reactions to the recommendations of the Committee on Goals and Priorities. A morning session was arranged to hear from agencies that had taken positions on one or another aspect of the proposed changes. During the afternoon of the conference, a panel discussion focused on evaluation at the undergraduate level. This symposium was an attempt to respond at least in part to a resolution that, with variations on the theme, had come to us from many medical school faculties:

Since the recommendations contained in the GAP report will have an enormous impact on all phases of medical education, it is recommended that further representative opinions be solicited from interested groups including medical school faculties, students, appropriate government agencies, among others, and these be considered before steps are taken to implement any recommendations of the GAP Report.

I wish to assure you that this is exactly what has happened. Those of you who were present at our conference two weeks ago, will recall the wide range of opinion all the way from strong - although not unqualified - support such as that from Dr. Horns speaking as President of the Federation of State Medical Boards to the proposal of one of our panel members who suggested that the NBME repudiate the GAP report and start all over again.

When the Board's Advisory Committee on Undergraduate Evaluation is appointed and implemented, it will have some stern homework to do even before it first meets. It will have a verbatim transcription of the day's discussion for reading and digesting and also copies of the statements and resolutions received from medical schools and from associations of teachers of the basic sciences.

It would be inappropriate for me to predict what the Committee will come up with, but it will, I trust, be of some comfort to you to know that no decisions have been made nor will they be made until the Committee will have had full opportunity to review and synthesize the wide-ranging opinions that will be taken into consideration in the formulation of recommendations. These recommendations will then in turn be subject to further scrutiny and judgment by the academic community.

I can, however, offer a guess about where the deliberations of this yet-to-be-appointed committee will start. Almost surely they will start on the question that consumed probably more time than any other in the many meetings of the GAP Committee. I am referring to the criticism of our prominent Basic Science Test Committee member to whom I referred earlier and who voiced the hazard arising from the use of Part I as a requirement for medical school classes for purposes of evaluation. His question could be put somewhat differently: Should one examination, namely National Board examinations, serve two purposes? National Board examinations now do serve two purposes, the first of which is to

provide state boards and hence the public with assurance that the physician who has passed these examinations has met a minimum acceptable standard to qualify him for the practice of medicine. The second purpose served by the National Board examinations is their use as educational achievement examinations to provide in-course assessment of the success of the students' learning endeavors. After lengthy debate about this question within the GAP Committee, their answer was "no." One examination should not serve both purposes. The National Board should continue to make in-course educational achievement examinations available to medical schools, but these examinations should be unhooked from the licensing sequence and allowed thereby to focus on the curriculum objectives of the educational institution. If need be, these examinations could be custom-made to fit the goals of an individual faculty or an individual department. Among all the cries of alarm arising from apprehension about doing away with Part I, the point appears to have been lost that neither the GAP report nor the National Board since publication of the report has ever entertained the idea of abandoning a comprehensive examination in the basic sciences available to medical schools for administration to their students as educational achievement examinations. The issue is whether the examination should be a requirement for licensure. If it is a requirement for licensure, it is surely going to influence medical school teaching and we are back where we started with the threat of control over the educational institution exerted by an extramural testing agency.

Before closing, I would like to offer one more guess as to the course of events for the use of our examinations at the undergraduate level. This is really not a guess, it is a certainty. There is no way in which the National Board could discontinue Part I in the immediately predictable future. Students are now registering for Part I in June. It will take them three years to run the course and we have guaranteed that they will be allowed to complete the series of National Board examinations once they have entered the pipeline. Thus, I wish to assure you and I have endeavored to assure the medical educational community, that National Board examinations in their familiar pattern of Parts I, II and III are continuing and will continue for as long as we can see into the future at the present time.

This does not mean that we will not have a good hard look at the proposed comprehensive qualifying examination referred to as Qualifying A. The concept of Qualifying A has gained support from many sources. We have received a clear message that we should get on with the business of designing and developing this examination so that medical educators, state boards and others can see it, weigh it, take it apart and judge for themselves its potential usefulness. Much has been made of the point that the Qualifying A examination should contain strong components of basic science. Just what is meant by this? Basic scientists along with others in other fields of medicine have made it very clear that they must have a chance to see the Qualifying A examination and study its content before they can approve it. And I cannot argue with that position. Thus, we are not talking about taking away something that has become well-established and proven to be useful. What we are talking about is developing something new that will inevitably have to be put to the test of usage in comparison with the old before it would seem sensible to try to draw conclusions about

the value of the new.

In summary, I would like again to emphasize the fact that the National Board has made no decisions to change its well established series of examinations (Parts I, II and III) leading to qualification for a medical license. It does, however, have a sense of responsibility to study and deal with strong recommendations for change that are currently being widely debated. These recommendations will be submitted to a yet-to-be-appointed Advisory Committee on Undergraduate Evaluation together with the continuing collection of statements, resolutions and letters that come to the National Board expressing a wide range of viewpoints. Prominent among the many questions that will be before this Committee may be mentioned the following few:

1. Should Part I, as a comprehensive examination in the basic sciences, be a requirement at the mid-point of a four-year (or three-year) curriculum?
2. Should the National Board continue in any event to make examinations available to medical schools for purposes of evaluation, i.e. educational achievement examinations?
3. If examinations of Part I or II are a requirement for medical students, where should the requirement originate: in the external testing agency, i.e. the National Board, in individual schools, or possibly in the Association of American Medical Colleges?
4. Should Parts I and II, as they now exist, be replaced by a general, comprehensive qualifying examination that would have stronger basic science components than are now to be seen in Part II?
5. Should such a general qualifying examination (the proposed Qualifying A examination) be a requirement for admission to graduate education for graduates of American medical schools and for graduates of foreign medical schools?
6. If it is agreed to proceed with the development of the proposed Qualifying A examination, who should do it? What should be its design and content? And what would be the anticipated time schedule for its introduction?

We will look forward to receiving - and we expect that we shall receive - expressions of your continuing interest and guidance as we seek answers to these questions so important for medical education in the years ahead.

BASIC SCIENCE DEPARTMENTS - INHIBITORS OR CATALYSTS?

An Allegorical Tale

ROBERT G. PETERSDORF

Department of Medicine
University of Washington

Once upon a time in a far away land, there was a medical faculty. It was a fine faculty full of hard working basic scientists and dedicated clinicians, but it had fallen upon evil days.

The faculty was led by Dean Hardnose. Our fable begins as Dean Hardnose calls the Professor of Physiology, Professor Capillary, or Capillary if he trained in England, into his office. "Cap", says Dean Hardnose, "the University is in dire straits. There is a major budget deficit, and we have an avowed policy of no growth in the number of faculty. As a matter of fact, the policy of the central University administration is to reduce the number of faculty over a period of time. These policy changes are coming at a time when federal support for education and research is shrinking while demands on the University, particularly its medical school, for service and involvement in the community are getting larger. I have puzzled long and hard about how to solve this dilemma, and I have decided that the easiest solution is to abolish the Department of Physiology."

Professor Capillary constricted visibly and with terse voice said, "Why me?" "Perfectly simple," says Dean Hardnose. "There are several reasons: Firstly, the trend is for physiology to be taught by people in clinical departments. After all, this is not too surprising because historically, for better or for worse, physiology has often been taught by anatomists - or sometimes surgeons - or other clinicians. In the old days, it was not unusual for a Professor of Medicine to be also the man who was the primary teacher of physiology. This changed in the years before and after World War II when Departments of Physiology were created in almost all medical schools and played a major role in the clinical curriculum. But, now, things have come full circle. The curriculums have been reorganized not along departmental lines but along organ systems and, more and more, organ system physiology is being taught by clinicians. Even comparative and very basic physiology is no longer sacrosanct. Look at all of the toad bladder and squid axon doctors in clinical departments. What I am trying to tell you then, Cap, is that you don't really perform a unique service in teaching medical students. In fact, several schools have shown that they can get along without Departments of Physiology. Look now, the endocrinologist in the Department of Medicine can teach endocrine physiology, the pediatricians or obstetricians can teach neonatal circulatory physiology, the neurologists and occasionally even the neurosurgeons can teach neurophysiology, modern divisions or departments of cardiology have faculty who are quite expert at electrophysiology and you guys never were any

*Presented at the meeting of the Association of Chairmen of Departments of Physiology, November 1973.

good at gastrointestinal physiology, which has always had a stronger base in Departments of Medicine or Surgery, and so on, *ad nauseum* and *ad infinitum*."

Capillary says, "Well, now, what about graduate students; who is going to teach them?" Dean Hardnose answers, "Who needs them? In the first place, there are many more Ph.D.'s in physiology being trained than there are faculty positions open in this declining market. Secondly, now that most of physiology can be taught by clinicians, what need is there for more graduate students?"

But Capillary does not give up easily. He says to old Hardnose, "Well, what about research? We do magnificent research in physiology and it is so exciting and so unique." But old Hardnose is not swayed; "Is it really?", he says. "I have already told you about the large number of clinical investigators who are using basic physiologic techniques, and who are studying isolated nerve fibers, single cells, microtubules, etc. What is so unique about your work? Isn't everything that you are doing being done in clinical departments or, if it isn't, don't many clinical investigators have the capabilities to do physiological research? Moreover, is research *per se* the *raison d'être* for the maintenance of Departments of Physiology?"

Fighting for his life now, Capillary says "Well, but we are so important to the medical center and to the University. After all, we are such paragons of quality and we play such an important role in maintaining standards in the medical school." Old Hardnose harrumphs and says, "What evidence do I have that you are such an important influence on the medical center? Let me ask you some questions:

1. Have you participated in medical center committee work other than that dealing with undergraduate medical students and even that rather reluctantly because you consider medical students a lesser responsibility than graduate students or graduate course committees?
2. Have you been willing to serve on committees that deal with some of the clinical problems that are so all-pervasive in the medical center nowadays?
3. Have you attempted to understand HR-1 and its impact on the finances of the medical school, or have you tried to meet the new professor of Family Practice to see what he is all about and what he is up to?
4. Do you have any idea of what your clinical colleagues do, and what the amount of service many of them have to render implies, or have you just scoffed at their comparatively thin bibliographies when the promotions committee met?
5. Have you attempted to solve the problem of pharmacology? Where were you when I asked you to consider amalgamating pharmacology, the most depressed of the basic sciences, into your department? Doesn't investigative pharmacology at the basic level involve primarily physiologic

techniques and, if it does not, isn't the rest biochemistry? What justification is there for having free-standing departments of pharmacology now that so much of the teaching and drug oriented research is being done in clinical departments or in industry and, specifically, in many instances in divisions or departments of clinical pharmacology? Yet, when I asked you to consider this problem, like Pontius Pilate you washed your hands. But, you should have been concerned along with your colleagues in biochemistry about this problem because pharmacology is the most depressed of the basic sciences. You should have considered taking it under your wing and attempted to give it scientific respectability as well as providing for it a place in the curricular sun.

6. Where were you when I asked that you modify your graduate courses to make physiology more meaningful to lower and middle level health professionals such as nurses, Medex and other types of physician's assistants who so badly need an understanding of human physiology if they are to function in their new tasks, and what did you and your faculty do when I wanted you to devise a program for the basic sciences at the VA Hospital? You had a retreat - literally as well as figuratively - and decided that this would take too much time from your graduate teaching, and said no.

7. Finally, where were you when I needed your support to increase the class size so we could qualify for a capitation grant? You opposed me in the hallways, in the faculty club and even in the laboratories and when the vote came, you were out of town.

What you and your colleagues have done, Cap my boy, is to lead an altogether insular existence. You have attempted to resurrect the past by fighting for training grants that are specifically aimed at training Ph.D. physiologists. You have attempted to exist in a vacuum in which physiology was considered an entity wholly unto itself without realizing that physiology is irrevocably related to clinical medicine - not only intellectually, but in this day and age, sociologically and administrative-ly as well. Moreover, now that funds for research grants are tough to get, several of the people in your department may not survive. Even if I did not intend to abolish the department, it is most likely that you would lose a fair segment of your faculty because their research support will be lost."

Capillary was oozing freely as he slunk out of Old Hardnoses's office, but the more he thought about the conversation, the madder he got and the more he constricted. "Tell you what I am going to do," he said to himself. "I am going to fight rather than switch. I am going to insist on the sanctity of my graduate programs, the excellence of our research, the importance of our time and old Hardnose be damned. And I know just how I am going to do it," he said. "I am going to get my allies in the other basic sciences to help me."

And so he made the rounds of his colleagues, but he found that old Hardnose had been there before him. He had abolished the department of pharmacology and had sold their antiquated spectrophotometer for junk. He had assigned the teaching of microbiology to the departments

of medicine and pediatrics. Likewise, physiological chemistry, i.e., that chemistry dealing with human disease, was dispersed between the several clinical departments. So as not to miss the chance of having some of the faculty win the Nobel Prize, he had taken the star investigators in the departments of microbiology and biochemistry and had combined them into a department of molecular and cell biology. For good measure, he had thrown in a few of the molecular pathologists who weren't much good for anything else anyway. He then had combined anatomic and laboratory pathology into a single department oriented primarily to service and, as the coup de grace, he had abolished the department of Physiology. Thus, in a series of bold, innovative and certainly radical strokes, old Hardnose had done away with the bulk of the basic science departments in the medical center.

The faculty of the school of medicine were stunned. Those basic scientists who had tenure retired to the faculty club to play billiards with the professors of English and Philosophy and the younger, non-tenured faculty went out looking for jobs, but alas, there were few.

At first glance, the faculty in clinical departments were not totally unhappy with old Hardnose's radical pruning. After all, would it not give them positions to do the things they wanted to do, and weren't they already teaching physiology and pharmacology and biochemistry anyway and what was a few more lectures among friends. But their initial agreement to go along with old Hardnose soon turned to disenchantment because they found that the abolition of the basic science departments imposed intolerable burdens on them. Although they were promised a few more positions, they could not find just the right people to teach the subjects that had been taught by the departments of physiology, biochemistry, and pharmacology. And then there were the students, clamoring and demanding, and generally unhappy at the change. As it turned out, the teaching of physiology by the clinicians was deemed no more relevant by the students than had been the teaching by the physiologists and according to the students, there was still too much emphasis on the toad bladder, the squid axon and the microtubule.

So it turned out that little had been accomplished. Although there were no more basic science departments, the clinical departments were no happier. In fact, because of the increased teaching load, they seemed more harried and over-worked and dyspeptic than ever before.

Dean Hardnose did not survive the tumult and with all of the faculty unhappy and up in arms, he resigned. The President of the University looked far and wide for his successor and he came up with two candidates - Professor Goodheart and Professor Commonsense. Both were invited to the campus and were paraded before the faculty.

Professor Goodheart was the first one to visit. His solution to the problem was to go back to things as they had been. His plan was to re-constitute all of the basic science departments and to have them assume the ways of the past. Emphasis was to be on the training of graduate students, the teaching was to be more related to the faculty's research interest than to any problems in human disease, the pedagogic needs of

middle level professional students were to be ignored, and research would be performed in small enclaves that refused to disgorge their scientific prowess to help their colleagues in either the basic science departments or clinical departments. The department of pharmacology was to be returned to its former state that was characterized by failure to see the trends in modern pharmacology, by teaching antiquated theories and by the performance of obsolescent research.

Professor Capillary called his tenured faculty together and commented, "Wouldn't it be great to have Professor Goodheart as Dean. After all, here is a way to return to the halcyon days of yore, when physiology was the true mother science."

But the younger heads in the department prevailed and they said, "Cap, old friend, let's wait to hear from Professor Commonsense."

And so Professor Commonsense came to the campus, surveyed the havoc that had been wrought by Dean Hardnose and met with the faculty of the department of physiology and said, "Look, I have reviewed the reasons that led to Dean Hardnose's decision. He felt that you were inhibitors of progress in this medical school by insisting on doing your thing in a changing time and by burying your heads in the sand. Let me outline for you some of the things that I would expect of a basic science department in a modern medical school.

Firstly, adapt your teaching to the new curriculum, which is the vogue of the day. At this point, none of us knows whether the many curricular revisions which have taken place in the last five or ten years will hold up and it may well be that the older curricula were sounder and that we will get back to them. But, for heaven's sake, do not abdicate your obligations to teach physiology. Do not hide behind a facade of biophysics or theoretical biology or computers or fancy mathematics. You must realize that one of your jobs is to teach physiology to future physicians and that you can do it better than anyone else provided you at least listen to what your clinical counterparts are saying just as they should listen to what you are saying.

Secondly, pay attention to some of the students other than graduate students who are your responsibility. All too often, the graduate programs have taken so much of your time, intellect and energy that little has been left. In particular, other students in the health professions must be able to obtain the benefit of your knowledge and teaching. And this means, that you simply cannot give them the same course that you give to the graduate students and expect them to know what is going on.

Thirdly, find ways to communicate with your clinical colleagues. After all, what is physiology but the study of human biologic phenomena. Collaborate with them not only in teaching but also in research. As investigator-initiated research grants become scarcer, find a way to join them in center or program project enterprises. Both groups have a lot to offer one another and withdrawal of a basic science department into the fortress of science - often under a cloak of intellectual snobbery - is neither practical nor prudent.

Fourthly, partake of the life of the entire medical center. For better or for worse, take an interest in the problems of your clinical confreres. Begin to realize what the increasing demands for service that are being placed upon them mean to you. All you really need to do is to think of the kind of care you want and expect when you are ill and see how time consuming this kind of care - which should be the right of all - is, to understand how it cuts into the time of your clinical counterparts.

Learn something about HR-1 and the reimbursement of physicians in the teaching setting, because while this may not put a great deal of money in your pocket, at least on the surface, unless your clinical colleagues can be paid for their services at rates equal to other physicians who render the same services, there will be less money to go around for all in the medical center. Conversely, if your clinical colleagues can convert the patient care dollar into salaries for faculties or funds to aid research or teaching, the entire faculty will prosper.

Don't say that you are not interested in the affairs of your teaching hospital because if it cannot survive, you cannot either. Remember that as intelligent basic scientists who have a vital interest in the affairs of the medical center, you can bring a good deal of objectivity to bear on the decisions made by your clinical confreres, who all too often make these decisions under stress and in the heat of battle.

Take under advisement such difficult issues as the teaching of organ physiology and, in particular, the problems of pharmacology. Perhaps Dean Hardnose's decision to do away with the department of pharmacology was ill-advised and capricious but should you not consider the option of having pharmacology and physiology as a joint department while supporting the growth of units in clinical pharmacology as well.

Finally, while we can all agree that we are citizens of the University as well as the medical center, we need to realize that there are some things that are indigenous to the medical center and the major difference is that in a medical school the faculty in the clinical departments has to render a service and has to be accountable to patients. Realize that when your colleagues in the clinical departments oppose collective bargaining for faculty they are not against higher salaries for anyone, including basic scientists, but want to preserve some of the private relationship that is so essential between doctor and patient. Many of us also feel that collective bargaining may compromise the freedom which is so essential to the academic enterprise. So do not turn your backs on your clinical counterparts. Both of you need to strive for excellence but the measures of excellence may have to be different because in many instances the things you do are so different from one another.

The path I am showing you is one which emphasizes close collaboration, friendship and understanding between basic science and clinical departments. It is the only one which basic science departments can follow if they are to survive in the modern Health Science Center. Believe it or not, you cannot stand alone. At the same time, failure of the clinical departments to enter into a partnership with you may well lead to their intellectual isolation and investigational atrophy.

Professor Capillary and his faculty had a meeting and they thought and they debated but at last they had to choose. Was it to be Professor Goodheart and the return to the good old days or was it to be Professor Commonsense who would demand so much more of them but under whose leadership they would become an integral part of the medical center? And they balloted. When the votes were counted, only a few in the department chose Professor Goodheart. The overwhelming majority threw in their lot with Professor Commonsense and he was named Dean. And Dean Commonsense took them at their word, and they were made to work and teach and research both singly and collaboratively, and he made them communicate and they thrived in this new environment.

The basic sciences regained the leadership role they had formerly held in the medical center, and they led their clinical colleagues in a number of collaborative ventures, and they became true catalysts in the medical center. And despite the harshness of the times, they lived happily for they looked forward to greater years. Who knows but that these greater years might be here sooner than anyone thinks.

CONFERENCE ON NEUROPHYSIN PROTEINS

The New York Academy of Sciences announces a conference on "Neurophysin Proteins: Carriers of Peptide Hormones." The conference will cover biochemical, physiological and medicinal aspects of neurophysin proteins. It will be held at the Delmonico Hotel, September 9-11, 1974. Professor Roderich Walter, Department of Physiology and Biophysics, Mount Sinai School of Medicine in New York will be the chairman.

NEWS FROM SENIOR PHYSIOLOGISTS

The following notes are replies to birthday greetings sent to members by the Senior Physiologists Committee.

Wilder Penfield wrote to Hal Davis:

Your letter arrived the day before my birthday which is on the 26th. At least, I thought it was the 26th, until last week when I happened to look into the old Jefferson family bible and there I discovered, in my mother's own handwriting the statement that I was born on the 25th, although I have celebrated the 26th, and allowed others to ever since I can remember.

What a nice custom and tradition it is your writing to those of us who have gotten into the higher brackets by age. I have a thrill of pleasure each year to see that beautiful residence and to receive your warm greetings. For three and a half years I had been working on the story of the Montreal Neurological Institute trying to tell the story of the growth of an idea under the title "No Man Alone." However, last January I started out on a detour after setting up a road block at Chapter 15. The American Philosophical Society Secretary asked me to talk once more and so I set to work and gave an address on "The Place of Understanding." Following that Peter Gloor asked me to join a symposium at the Montreal Neurological Institute on the relation of brain and mind and so the same address grew into something else and after that I could not drop it. Consequently, I have just sent off the manuscript which I hope Little Brown & Co. will accept. It is called, "The Mystery of the Mind. A Study of the Physiology of Consciousness." I found the review very illuminating and quite enjoyable and it had the unexpected result that I find myself believing, as a scientist, what I have always assumed must be the case any way. One always does learn a good deal from reviewing evidence and writing it up with time for reflection. In this case, I have learned perhaps more than with any writing I have ever undertaken.

Horsley Gantt received Hal's greeting in November and promised to send his curriculum vitae for Society Archives after attending the 2nd International Conference on the Unity of the Sciences in Tokyo. His secretary mailed the data in March when Horsley was enjoying a visit in Russia.

Hiram Essex, long time member of our Committee, wrote Maurice Visscher about his busy life on the farm and enclosed a clipping announcing his having won three awards for performance of his Holsteins. He continued: It was a pleasure to hear from you regarding my having another birthday. It has been my good fortune to have freedom from any major ills. Consequently living is still a joy. I am thankful that Marion, my wife, is able to carry on as she has for so many years with household affairs, music (piano), pink lady activities and those of our church. I have kept up my interest in painting. I am doing work with acrylics and mixed mediums. Soon I shall be deciding what additions I should make to our roses and other flowers. We have a vegetable garden at the farm that I enjoy. You may be sure, Maurice, that I have periods of intense

nostalgia for those days when we worked with you and others at the old institute. It was different from what we have now, being closer to nature for one thing. Thanks for your kind words about the National Society for Medical Research. I read your remarks in the last Bulletin. Anti-science seems to be on the increase. We don't need less but more scientific activity. Science didn't cause our modern difficulties but must be used to solve them. Thanks to you, the Committee and the Society, for remembering those of us of the past!

Dr. Visscher included in his birthday greeting to Honorary Member Genichi Kato an appreciation of Prof. Kato's services:

I remember with great pleasure your many courtesies and services both to the Travelling Lecture Conference team to Japan that I chaired, and also to the success of the International Physiological Congress in Tokyo, which was unquestionably one of the most successful Congresses in our history. It was historic in being the first Congress in Asia.

Prof. Kato replied: I am very happy to send you my heartiest thanks for your letter of greetings, on the occasion of my 84th birthday, you have written and sent me on behalf of the American Physiological Society. In that evening (February 11), about 100 doctors living in Tokyo, who had worked with me in my laboratory met in a restaurant and talked cheerfully about many pleasant remembrances of the past days we spent together, and all drank to my health.

Gustav Eckstein replied to Hy Mayerson's birthday greeting cheerfully: I like your note, and, from the last row gallery, have always liked you. I am almost ashamed to say it, but my body troubles me not at all; and my next book is far along. When I go yonder it will surely be with a pencil in my hand, and it has been nice, as you know, to want to do a certain thing, and to keep wanting to do it.

Theodore Elliott Boyd wrote about his problems with vision and hearing: I still manage fairly well in direct conversation with adults. But children all speak a language that is strange to me. The microphones that speakers commonly use convert their words into gibberish. I watch TV programs on which the actors seem to be speaking Chinese or maybe Swahili. Then a commercial breaks in and all at once every word becomes magically distinct. So I must expect that eventually TV commercials will be the only kind of communication I shall be able to receive from the outside world. The last words I hear no doubt will be exhorting me to take Geritol, or to shave using two razor blades at once. Things are not yet that bad. I can see well enough to do all the necessary outdoor work on my little estate. I am strong enough to spend three or four hours a day at manual labor. My wife reads to me and drives the family car. It is still a good life.

Allen Boyden celebrated his 88th birthday at the annual meeting of the Anatomists in Cleveland and returned to resume his research with the neonatal group in Pediatrics at the University of Washington School of Medicine. He wrote to Bruce Dill about his success:

Through the help of our Central Laboratory of Embryology in Pediatrics, I obtained some months ago a perfect specimen of a 17th week human fetus and had it sectioned. (This stage is very hard to obtain.) Reconstruction of it has revealed for the first time the origin of the pulmonary acinus (the future respiratory lobule of the lung) including the initial invasion of its distal branches by capillaries. This, and the work on the monkey, has enabled us to make the generalization that canalization (before birth) proceeds in a centripetal direction just as alveolization (after birth) - an earlier finding - moves progressively inward from the periphery of the bronchial tree.

He added that he was induced by his pediatric colleagues to blow out 88 candles on an enormous cake; they commended him for his vital capacity and sustained expiratory flow.

Dr. Dayton James Edwards

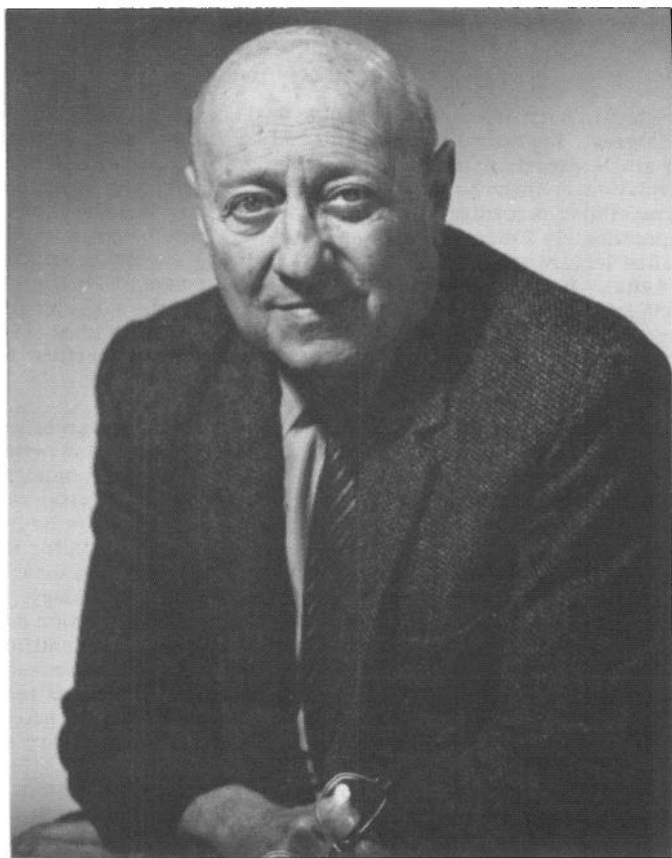
Dayton James Edwards, born September 7, 1882 at Olisfield, Maine died June 20, 1973 at his home in Salisbury, Maryland. He received the B.S. degree in Biology, University of Maine in 1906 and the Ph.D. from Columbia University in 1913. He was an instructor in biology and physiology at the College of Physicians and Surgeons and the College of the City of New York 1909-1917. In 1917 he studied with Einthoven in Leiden. On returning in 1918 he joined the Faculty of Physiology of Cornell University Medical College where he continued until 1954 some years after his official retirement. His field of specialization was cardiology to which he made many contributions. In referring to his experience with Einthoven he wrote, "He was then past 70 but it was his practice to ascend the steep Dutch stairs two steps at a stride. It was nerve-wracking to watch but a good lesson to receive; never give up!" He was appointed Assistant Dean in 1936, Associate Dean in 1948 and Acting Dean in 1953 of Cornell University Medical College. He was made Emeritus Professor of Physiology in 1950.

The Alumni Association of the Cornell University Medical College gave him their much prized award at a convocation last year. The accompanying citation was, in part, as follows: "Throughout his career he encouraged students, he served graduates, he served hospitals - most importantly, he understood medical youth, their needs, their motivations, their fears."

Note: Biographical material was supplied by Drs. Joseph C. Hinsey and Hiram E. Essex.

R. W. GERARD

Born October 7, 1900 - Died February 17, 1974



Ralph Waldo Gerard was one of the leading physiologists of his time, but he was also much more. He was a great generalist, an inspiring and many-faceted teacher and a significant achiever in an incredible number of areas, scientific and otherwise. The prodigiousness and breadth of his interests and productive contributions - to the neural sciences as both investigator and teacher, to philosophical aspects of science, to the articulation of positions and ideas in various areas, to the organization and administration of scientific societies and journals and to government - would be difficult to match. Gerard fortunately completed, shortly before his death, the selection of his own papers and his commentaries on them, for their forthcoming publication by Futura Press in four volumes; these deal with 1) nerve metabolism and function, 2) central nervous system-

electrophysiological and biochemical, 3) clinical and behavioral sciences, and 4) philosophy, education, and science and society. In the commentary related to his papers on the biology of imagination, in the last volume, Gerard noted that he "likes to think of man's imagination as the culminating effluorescence of the process of evolution up to the present time." This predilection for imagination characterized Gerard's own activities in general.

Gerard's experimental and theoretical contributions in his main field of interest, the neural sciences, cannot be detailed here. Paradoxically, the single experimental piece of work which has had perhaps the most revolutionary impact was a technical one, namely, the introduction of the intracellular recording microelectrode (with Ling and Graham). (The approximately 25th anniversary of this event is to be noted by a special invited lecture at the forthcoming International Physiological Congress in India). In addition to research papers, a stream of Ph.D's issued forth from Gerard's lab, which included many of the subsequently leading neural scientists*. An additional large number of more advanced colleagues who achieved international stature also spent variable periods of time in his labs, gaining from contact with Gerard's intellect*.

In a broader sense Gerard was a teacher of a much larger group of neural and other scientists. In his more general papers and review articles he articulated, with an elegance of language, the general biological and philosophical positions in the field, and he often pointed with great insights to future directions of investigations and discoveries. His bibliography includes 69 review type articles and nine books. Of the latter his favorite was the first one, "Unresting Cells," which provided an almost poetic yet scientifically valid and stimulating introduction to cell biology. Gerard also served on the editorial boards of 16 journals. In addition many of us had the privilege of hearing him speak "on his feet" at scientific sessions and otherwise; he could quickly analyze and integrate the proceedings and issues and extemporaneously express his thoughts on the matters at hand with lucidity, verve and meaningfulness. He could instantly produce one or more relevant stories from a seemingly inexhaustible memory storehouse.

Ralph Gerard's intellectual brilliance was in evidence at an early age. He entered the University of Chicago at 14 and achieved the Ph.D. at 21 and the M.D. at 24. During this time he managed to include a year (1921-22) as Professor and Chairman of the Department of Physiology, Biochemistry and Pharmacology at South Dakota University. Gerard came into neurophysiology when he accepted a National Research Council Fellowship (1925-1927) to work with A. V. Hill in London and Otto Meyerhof in Berlin. He returned to the University of Chicago in 1927 as Assistant Professor of Physiology (Associate Professor, 1929; Professor, 1942) and here the major part of his neurophysiological work was conducted. In 1952 he became Director of Laboratories at the University of Illinois Neuropsychiatric Institute. In 1954 the University of Chicago also made him perhaps the world's first Professor of Behavioral Sciences. Gerard's mounting interest in the latter field led him to help in founding the Mental Health Research Institute at the University of Michigan in 1955.

* Listed at the end of this article.

Gerard served governmental activities in a variety of ways but perhaps the greatest impact this service had was his role in the establishment of the "peer review" system in allocation of grants and contracts for research. As chairman of the first such panel established by the Office of Naval Research in 1946, the Physiology panel, most of the policies and mechanics of the peer review system used today were explored. Assistant Secretary for Health, Charles Edwards of the Department of Health Education and Welfare recently said the "peer review system is one of the most remarkable accomplishments in the history of science administration."*

In the last phase of his active career he concentrated on education; he helped to organize the newly forming Irvine campus of the University of California, beginning in 1963-64, and became its first Dean of the Graduate Division until his retirement in 1970. Even in this phase Gerard did not abandon his love of the neural sciences; he initiated the activities, under the auspices of the National Academy of Sciences, which led to the founding of the highly successful Society for Neuroscience. He was made Honorary President of this Society from its inception and until his death. He had already been President of the American Physiological Society in 1951 and the Society of Biological Psychiatry in 1967. Among many other honors, he was elected in 1955 to membership in the National Academy of Sciences and in the American Academy of Arts and Sciences.

During his term as President of the American Physiological Society Gerard instituted a number of innovations. Because of his desire to involve the membership, especially younger members, in Society activities and governance, he proposed and obtained Council approval that a series of standing committees reporting to Council be established. This committee activity is still an important part of Society management.

Also a "Survey of Physiological Sciences" was initiated with support from the National Science Foundation which achieved a mid century review of the status of physiology and physiologists in the setting of science in general**.

The many who were privileged to know Ralph Gerard personally will not forget his exciting presence, his super-alert mind, his lively wit and sense of humor, his affectionate charm. His large observant eyes and his shiny top (bald at an early age) combined to give him a striking appearance in spite of his short stature. Ralph Gerard was an elitist; he was excited by creativity and discovery, he respected excellence in others, he expected recognition for his own contributions, and he "did not suffer fools easily." Yet he wanted and needed to give and to receive affection. This was given by many of his colleagues and disciples, but above all by his dear "Frosty." He had married Frosty (the former Leona Bachrach

* Drug Research Reports, Vol. 17, No. 10. 1974.

** Gerard, R.W. Mirror to Physiology. Washington, D.C.: American Physiological Society, 1958.

Chalkley) in 1955, following the death of his first wife, Margaret, who was herself a prominent neural scientist. Ralph Gerard made life more worthwhile for many of us; we shall miss him deeply.

Among the Neurophysiologists who initiated their educational and research experiences in the field with Dr. Gerard

L. G. Abood	B. Libet
L. L. Boyarsky	G. N. Ling
V. B. Brooks	W. H. Marshall
R. A. Cohen	S. Ochs
R. W. Doty	F. F. Offner
H. H. Dubner	H. M. Serota
A. E. Edisen	E. Sigg
G. Falk	M. L. Silver
K. Frank	O. Sugar
J. Graham (Pool)	J. M. Tobias
H. P. Jenerick	R. D. Tschirgi

Among those who worked in his laboratories as more advanced colleagues

B. W. Agranoff	H. W. Magoun
A. Arvanitaki	H. McIlwain
T. H. Chang	J. G. Miller
T. P. Feng	M. Monnier
S. S. Fox	Y. Oomura
A. Geiger	R. F. Pitts
R. S. Geiger	D. Y. Solandt
S. Gelfan	S. F. Takagi
H. K. Hartline	R. E. Taylor
E. G. Holmes	G. Wald
K. Koketsu	J. Z. Young
S. W. Kuffler	A. Yuwiler
J. Magnes	

Ben Libet and Orr E. Reynolds

A "RALPH WALDO GERARD READING ROOM" is being established in a Neurosciences Wing at the University of California, Irvine, for the use of graduate and undergraduate research students as well as the faculty. It will house literature chiefly in the scholarly areas to which Dr. Gerard was devoted, and will include materials from his library. Contributions, tax-deductible, should be made out to the "U.C.I. Foundation in Memory of R. W. Gerard" and sent to this Foundation, c/o Dean of the Biological Sciences Division, University of California, Irvine, California 92664.