SYMPOSIUM

NEURO-PHYSIOLOGICAL BASIS OF NORMAL AND ABNORMAL MOTOR ACTIVITIES

THIRD RESEARCH CONFERENCE OF THE

PARKINSON'S DISEASE INFORMATION AND RESEARCH CENTER

COLLEGE OF PHYSICIANS & SURGEONS
COLUMBIA UNIVERSITY
NEW YORK CITY

NOVEMBER 28TH AND 29TH, 1966

ALUMNI AUDITORIUM
COLLEGE OF PHYSICIANS & SURGEONS
630 WEST 168TH STREET, NEW YORK CITY
Sponsors

PARKINSON'S DISEASE FOUNDATION
710 West 168th Street
New York, N.Y. 10032

NATIONAL INSTITUTE OF NEUROLOGICAL DISEASES AND BLINDNESS
National Institutes of Health
Bethesda, Maryland 20014

Please address inquiries to:

Melvin D. Yahr
PARKINSON'S DISEASE INFORMATION AND RESEARCH CENTER
710 West 168th Street
New York, N.Y. 10032
Telephone messages may be left at 212-579-3609. The names of individuals for whom messages are held at the Registration Desk will be displayed intermittently during sessions.
Organizing Committee

Dominick P. Purpura
Departments of Anatomy and Neurology
College of Physicians and Surgeons
Columbia University, New York City

Melvin D. Yahr
Department of Neurology
College of Physicians and Surgeons
Columbia University, New York City

Discussants

Vahe Amassian
Michael V. L. Bennett
Malcolm B. Carpenter
Otto Creutzfeldt
Robert Eager
Elwood Henneman
Eric R. Kandel

Motoi Kuno
Rudolpho Llinas
Philip G. Nelson
Samuel Peacock
W. Alden Spencer
Victor Wilson
November 28, 1966

SESSION I—9:00 A.M.

INTRODUCTION—Melvin D. Yahr, College of Physicians and Surgeons Columbia University, New York City

GREETINGS —H. Houston Merritt, Dean, College of Physicians and Surgeons, Columbia University, New York City
Richard L. Masland, Director, National Institute of Neurological Diseases and Blindness

REGULATION OF MOTONEURON EXCITABILITY
William M. Landau, Chairman

1 The Effects of Stretch Receptors on Motoneurons.

2 Changes in Muscle Spindle Morphology and Discharge with Long Term Alterations in Muscle Status.
Earl Eldred, Department of Anatomy, University of California, Center for the Health Sciences, Los Angeles, California.

3 The Motor Cortex-Pyramidal System: Patterns of Facilitation and Inhibition on Motoneurons Innervating Limb Musculature of Cat and Baboon and their Possible Adaptive Significance.
James B. Preston, Department of Physiology, College of Medicine, State University of New York, Syracuse, New York.

4 Instability of the Proprioceptive Length-Servo: Its Possible Role in Tremor Phenomena.
Hans D. Henatsch, Physiologisches Institut der Universität, Göttingen, West Germany.
SESSION II—2:00 P.M.

CEREBELLAR AND BRAIN STEM MECHANISMS INFLUENCING SPINAL REFLEX ACTIVITIES
Carlton C. Hunt, Chairman

1  Functional Significance of Information Channels from the Spinal Cord to the Cerebellum.
    Olov Oscarsson, Institute of Physiology, University of Lund, Lund, Sweden.

2  Neuronal Circuitry in the Cerebellar Efferent System.
    Masao Ito, Department of Physiology, School of Medicine, University of Tokyo, Tokyo, Japan.

3  Vestibular Actions on Alpha and Gamma Motoneurons and their Control by Cerebellar Mechanisms.
    Carlo A. Terzuolo, Department of Physiology, School of Medicine, University of Minnesota, Minneapolis, Minnesota.

4  Mutual Interactions between Bilateral Vestibular Nuclei and their Significance in Motor Regulation.
    Hiroshi Shimazu, Section of Neurophysiology, Institute of Brain Research, School of Medicine, University of Tokyo, Japan.
November 29, 1966

SESSION III—9:00 A.M.

APPROACHES TO THE ANALYSIS OF MOTOR SYSTEM ORGANIZATION
Harry Grundfest, Chairman

1. Intrinsic Organization and Synaptic Relations of the Corpus Striatum.
   Dominick P. Purpura, Departments of Anatomy and Neurology, College of Physicians and Surgeons, Columbia University, New York City.

2. Representation of Movements and Muscles by Pyramidal Tract Neurons of the Precentral Motor Cortex.
   Edward V. Evarts, Laboratory of Clinical Science, National Institute of Mental Health, Bethesda, Maryland.

3. Input-Output Relations in Sensorimotor Cortex.
   Vernon B. Brooks, Department of Physiology, New York Medical College, New York City.

4. Induced Phasic Motor Responses in the Chronic Monkey.
   Thomas W. Langfitt, Department of Neurosurgery, Pennsylvania Hospital, Philadelphia, Pennsylvania.

5. Sensory Inhibition During Motor Activities in Sleep.
   Ottavio Pompeiano, Instituto di Fisiologia della Università di Pisa, Pisa, Italy.
SESSION IV—2:00 P.M.

PRINCIPLES AND PERSPECTIVES
Dominick P. Purpura, Chairman

1 The Way in Which the Cerebellum Processes Sensory Information from Muscle.
   John C. Eccles, Institute for Biomedical Research, American Medical Association, Chicago, Illinois.

2 Organization of Motor Behavior.
   Derek Denny-Brown, Neurological Unit, Boston City Hospital, Boston, Massachusetts.

3 Cortical-Subcortical Relations in Abnormal Motor Functions.
   Fred Mettler, Departments of Anatomy and Neurology, College of Physicians and Surgeons, Columbia University, New York City.
PARTICIPANTS

VAHE E. AMASSIAN  
Department of Physiology  
Albert Einstein College of Medicine  
Eastchester Road and Morris Park Avenue  
New York, New York 10461

EARL ELDRED  
Department of Anatomy  
University of California  
Center for the Health Sciences  
Los Angeles, California 90024

MICHAEL V. L. BENNETT  
Department of Neurology  
College of Physicians and Surgeons  
Columbia University  
New York, New York 10032

EDWARD V. EVARTS  
Laboratory of Clinical Science  
National Institute of Mental Health  
Bethesda, Maryland 20014

VERNON B. BROOKS  
Department of Physiology  
New York Medical College  
Fifth Avenue and 106th Street  
New York, New York 10029

RAGNOR GRANIT  
The Nobel Institute for Neurophysiology  
Karolinska Institutet  
Stockholm 60, Sweden

MALCOLM B. CARPENTER  
Department of Anatomy  
College of Physicians and Surgeons  
Columbia University  
New York, New York 10032

HARRY GURDINSTEIN  
Department of Neurology  
College of Physicians and Surgeons  
Columbia University  
New York, New York 10032

OTTO CREUTZFELDT  
Deutsche Forschungsanstalt fur Psychiatrie  
Max-Planck-Institut  
8 München 23  
Kraepelinstrasse 2  
Germany

HANS D. HENATSCH  
Physiologisches Institut der Universitat  
34 Göttingen  
Humboldtallee 7  
West Germany

DEREK DENNY-BROWN  
Neurological Unit  
Boston City Hospital  
Boston, Massachusetts 02118

ELWOOD HENNEMAN  
Department of Physiology  
Harvard University Medical School  
Boston, Massachusetts 02115

ROBERT EAGER  
Department of Anatomy  
Yale University School of Medicine  
New Haven, Connecticut 06520

CARLTON C. HUNT  
Department of Physiology  
Yale University School of Medicine  
New Haven, Connecticut 06520

SIR JOHN C. ECCLES  
Institute for Biomedical Research  
American Medical Association  
Chicago, Illinois

MASAO ITO  
Department of Physiology  
University of Tokyo School of Medicine  
Motofuji-Chō, Bunkyo-Ku  
Tokyo, Japan
PARTICIPANTS

ERIC R. KANDEL
Department of Psychiatry
Harvard Medical School
Boston, Massachusetts 02115

MOTOI KUNO
Department of Physiology
Yale University School of Medicine
New Haven, Connecticut 06520

WILLIAM M. LANDAU
Department of Neurology
Washington University School of Medicine
660 South Euclid Avenue
St. Louis, Missouri 63110

THOMAS W. LANGFITT
Department of Neurosurgery
Pennsylvania Hospital
Philadelphia, Pennsylvania

RUDOLPHO LLINAS
Department of Physiology
University of Minnesota
School of Medicine
Minneapolis, Minnesota 55414

FRED A. METTLER
Department of Neurology
College of Physicians and Surgeons
Columbia University
New York, New York 10032

PHILIP G. NELSON
Spinal Cord Section—Neurophysiology Laboratory
National Institute of Neurological Diseases and Blindness
National Institutes of Health
Bethesda, Maryland 20014

OLOV OSCARSSON
Institute of Physiology
University of Lund
Lund, Sweden

OTTAVIO POMPEIANO
Instituto Di Fisiologia
Della Universita Di Pisa
Via S. Zeno N. 29-31
Pisa, Italy

SAMUEL PEACOCK, JR.
Division of Neurophysiology and Electroencephalography
Eastern Pennsylvania Psychiatric Institute
Henry Avenue and Abbottsford Road
Philadelphia, Pennsylvania 19129

JAMES B. PRESTON
Department of Physiology
State University of New York College of Medicine
Upstate Medical Center
766 Irving Avenue
Syracuse, New York 13210

DOMINICK P. PURPURA
Department of Anatomy
College of Physicians and Surgeons
Columbia University
New York, New York 10032

W. ALDEN SPENCER
Department of Physiology
New York University Medical School
New York, New York 10016

HIROSHI SHIMAZU
Section of Neurophysiology
Institute of Brain Research
University of Tokyo
Tokyo, Japan

CARLO A. TERZUOLO
Department of Physiology
University of Minnesota Medical School
Minneapolis, Minnesota 55414

VICTOR WILSON
Rockefeller University
New York, New York 10021