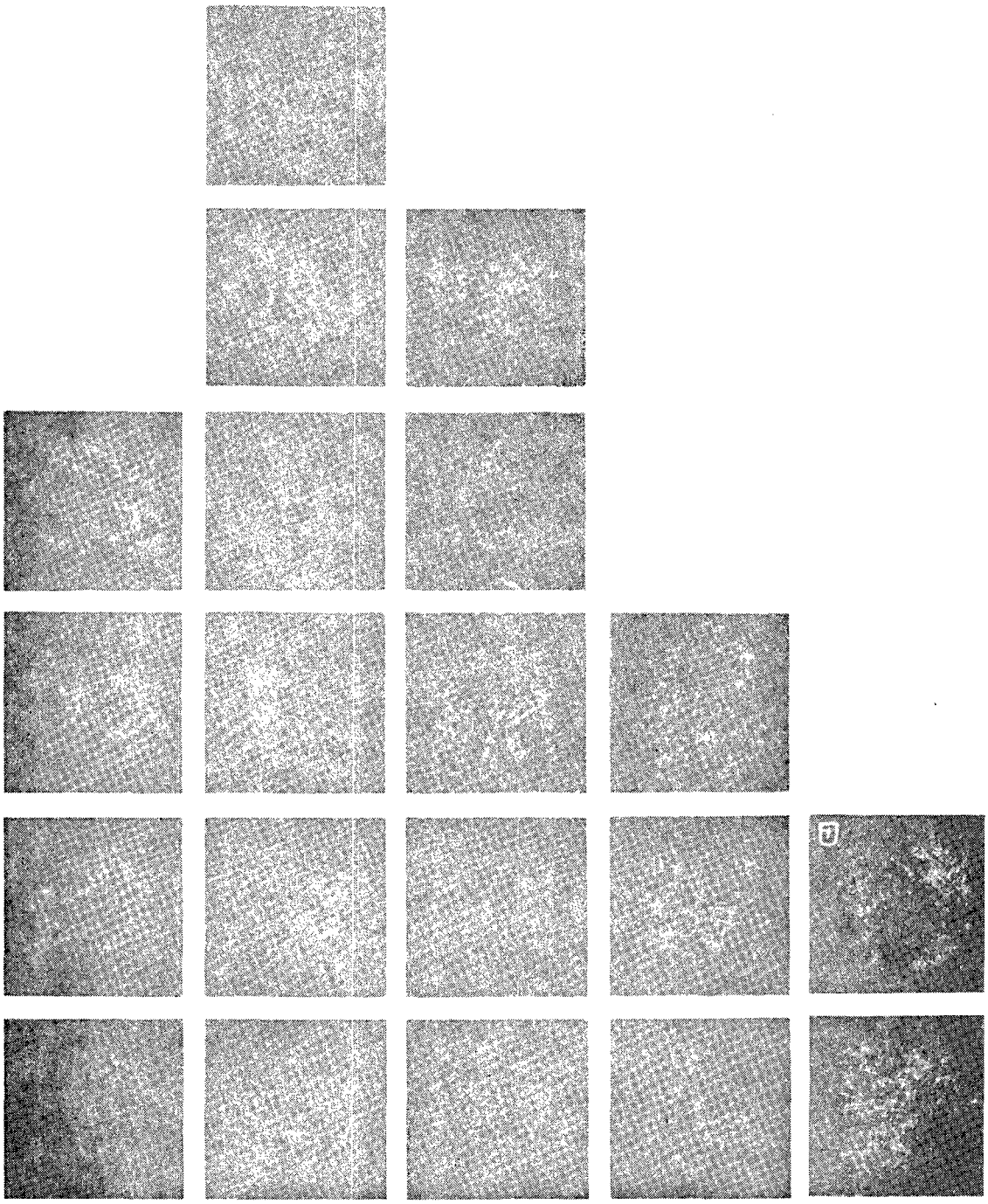
神経化学

VOL. 4 NO. 1 FEBRUARY 1965



神 経 化 学 懇 話 会

—神経化学文献—

凡例

1）＊印はこの号に，その雑誌から拾い出した神経化学文献表題がのっていることを示します。

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1. REVIEWS

Ergebn. Physiol.
Pharmacol. Rev.
Physiol. Rev.

2. FUNDAMENTALS

General:

Analyst
Analyt. Chem.
Exp. Cell Res.
*Fed. Proc. 24 (2) ・・・・・・・・
J. exp. Med.
Life Sciences
Nature

Naturwissenschafted
Proc. nat. Acad. Sci. (Wash)
Proc. roy. Soc. -B.
Proc. Soc. exp. Biol. (N.Y.)

Biochemical:

Arch. Biochem. Biophys.
Biochem. biophys. Res. Comm.
Biochem. J.
Biochem. biophys. Acta
Biochemistry (USSR)
Canad. J. Biochem. Physiol.
Hoppe-Seylers Z. physiol. Chem.

J. Amer. chem. Soc.
J. biol. Chem.
J. Cell. Biol.
J. Histochem. Cytochem.
J. Neurochem.

Pharmacological :

Biochem. Pharmacol.
Brit. J. Pharmacol.
J. Pharmacol.
Psychopharmacol.

Physiological :

Acta Physiol. Scand.
Amer. J. Physiol.
J. Cell. Comp. Physiol.
J. Gen. Physiol.
J. Neurophysiol.
J. Physiol.
Pflug. Arch. Ges. Physiol.

3. CLINICALS

Acta Neurol. Scand.
Acta Psychiat. Scand.
Amer. J. Psychiat.
Ann. Med. Psychol.
Arch. Gen. Psychiat.
Arch. Neurol.
Arch. Psychiat. Nervenkr.
Brain
Brit. J. Psychiat.
Clin. Chim. Acta
Dtsch. Z. Nervenheilk.
Electroenceph. Clin. Neurophysiol.
Encephale
Endocrinology
Epilepsia
Exp. Neurol.
Fortschr. Neurol. Psychiat.
J. Clin. Endocr.
J. Clin. Invest
J. Endocr.
J. Nerv. Ment. Dis.

J. Neuropsychiat.
Nervenarzt
Neurology (Minneap.)
Psychiat. et Neurol.
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Paralyzing action of muscle relaxants as determined by the Head-drop method in rabbits. (W. Diamantis & S. Margolin) 717

Vitamin B_{12}, transmethylation and protein synthesis in murine hydrocephalus. (James C. Woodaed & Paul M. Newberne) 718

—ニュース—

NEUROSCIENCE RESEARCH PROGRAMについて

アメリカのMassachusetts Institute of TechnologyのProfessor Francis O. Schmittから1963年末より，NEUROSCIENCE RESEARCH PROGRAM (NRP)のBULLETINが送られて来ています。こゝにそのＮＲＰの主旨，編集，活動，その他の簡単な紹介をします。

〔主旨〕

第二次世界大戦後，目ざましい進歩・発展をとげた分子生物学的知見を，人間の精神現象や神経活動の機構の解明に応用してゆこうとする試みをこの神経科学研究計画（ＮＲＰ）はやってゆこうとしている。即ち，現代は特に遺伝や免疫現象を分子レベルで理解することによって，新しい生命の科学の確立がなされつゝある。この段階に於て人間の精神現象の理解についても，同様に著しい進歩がなし遂げられ得る様な状態にあると考へられるのである。古くから精神活動の研究方法としては，生理学及び行動科学が大きな貢献をなし遂げてきたが，これらの手段を充分利用するのみならず，又，物理学，化学及び分子生物学的研究技術をも助けとして，更に研究をすゝめてゆけば，一層大きな進歩が期待されるであろう。

ＮＲＰの活動はMassachusetts Institute of Technology で1962年始め頃より始まり，数多くの高名の学者達が集って研究発表会が定期的にもられてきた。これらは，夫々専門の領域でのすぐれた創造的な研究ばかりであって，各人の専門分野での明察力を人間の脳の働きの研究という多面的な複雑な問題に結集するという点で非常に意義あることであると考へられる。

〔ＮＲＰの活動〕

ＮＲＰは広範な分野の人々の豊富な創造的活動を最大限に発揮せしめるため，次の様な三つのお互いに関連した事業を行っている。

1：神経科学研究センター

ＮＲＰの基本的な意義として協同利用の出来るセンターを，ＭＩＴのDr. F. O. SCHMITTの指導の下にMassachusetts 州Brookline, MIT内にあるHouse of the American Academy of Art and Sciences に置いている。出版活動は前International Science and Technology の Associate EditorであったMr.Theodore MelnenchukがCommunication Directorとして担当している。

此のセンターの機能として主任研究員及び准会員の科学的研究活動を遂行するために次の三つの方法を行っている。

a）定期的及び特別科学研究会のために会場を提供する便宜をはからう。その他，図書室，試料サービス，勉強室その他の設備をそなえている。

b）准会員間に時期を得た報告や刊行物の配布を行う。

c）主任研究員はＮＲＰープログラム作製のために神経科学の分野で広く学問的な知識の発展を分析，統合する役目をもっている。そして准会員らと密接な連絡をとってプログラムの効果的編成をすゝめてゆく，

2：神経科学の研究計画の強化。

1965年夏に広範な分野にわたる予備会議を開いて約100人の科学者を1ケ月間集めて，講演会，討論会等を行うよう計画する。これによって，ＮＲＰの決定版的刊行物の作製を行うよう

にする。

3：神経科学の研究集会。

最初の18ヶ月の間に6回研究集会を開いたが，その¾は，准会員の人達の講演であった。又多くの招待講演者もこれに加わり，広範囲な自由討論会で数多くの創造的意見が発表された。

第1年目の終りに，NRPの総会が開かれ，精神と記憶の生物分子系の基礎的研究を協同して進めることを申し合わせた。

〔NRPのスポンサー〕

MITが現在の所NRPのスポンサーとして会を運営することにする。Academy of Arts and SciencesはNRPのために5年間建物の使用を許可してくれている。

Mrs. Brandegeeの好意によりBrandegee慈善財団の現在のAASの建物の中にNRPがおかれているが，NRPの新しい建物を同一敷地内に設設することに決めている。

この建物は准会員や客員たちが適当な期間滞在して仕事や会合が出来る様考へられている。

〔Neurosciences Research Program 発表報告〕

一ケ年半の間に第2回から第6回迄の会議，（1962年3月から1963年8月迄）で55の報告がなされた。これらの内で5題はWork Sessionの報告であり，N.R.P.Associateが主催したプログラムに関係ある議題で10人以上の非会員も含まれた。残りの50題は招待者及び準会員による指導口演及び研究口演であった。これら55の報告は一般に研究機構の重要性と機能等に関する項目を網羅している。

〔NRPの経済援助〕

NRPはNational Institutes of Health(NIH)のGrant No. GM 10211－02，及び航空宇宙局（NASA）のGrant No. N.G. 462の援助により運営されている。

更に下記の寄附金の援助を受けている。

Cubot Fouudation, David C. Crockett
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〔機関紙の発行〕

NRP Bulletin として1963年10月より毎月発行されている。この中に前記の発表報告が載せられている。以下 Bulletin の内容を紹介する。

〔NRP BULLETIN〕

Vol. I No. 1 October 1963

1) ON THE NATURE OF MACROMOLECULAR CODING IN NEURONAL MEMORY

Oscar Hechter and Ian D. K. Halkerston

Worcester Foundation for Experimental Biology, Shrewsbury, Massachusetts

2) IMMUNOLOGIC AND PSYCHIC MEMORY

An Examination of the Phenomenologic Similarities Between Two Biologic Mechanisms for the Acquisition, Storage, and Use of Information

Arthur M. Silverstein

Chief, Immunobiology Branch, Armed Forces Institute of Pathology, Washington, D. C., 20305

Vol. I No. 2 November December 1963

CELLULAR REGULATORY MECHANISMS

A Discussion Paper based on a report given at the Fifth Stated Meeting of the Neurosciences Research Program

Peter F. Davison

(Executive Officer of Professor Francis O. Schmitt's Unit M. I. T.)

Vol. II No. 1 January-February 1964

1) CORTICAL UNIT ANALYSIS AND MEMORY

A Discussion Paper in the form of a Report of a recent symposium at the California Institute of Technology

Robert Galambos

Eugene Higgins Professor of Psychology and Physiology, Department of Psychology, Yale University, 333 Cedar Street, New Haven, Connecticut

2) ON RETINA-CORTEX CONNECTIONS AND DNA CODING

Richard B. Roberts

Department of Terrestrial Magnetism, Carnegie Institution of Washington, 5241 Broad Branch Road, N.W., Washington 15, D. C.

3) THE SYNAPSE AS A CYBERNETIC UNIT: A BIOCHEMIST'S FRANTASY

A Discussion Paper

Eugene Roberts

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C E L L M E M B R A N E S

REPORT OF AN N.R.P. WORK SESSION
HELD JULY 27-28, 1963

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W. Stoeckenius	Rockefeller Institute, New York
T. E. Thompson	Johns Hopkins University School of Medicine, Baltimore

Vol. II No. 2 March-April 1964

[ITEM]

Evaluative Summary of Work Session on Cell Membranes by Work Session Chairman, A. L. Lehninger (Oct. 1963)

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- The Importance of Cell Membranes
- Properties of Membranes
- Focus on Mitochondrial Membranes
- Controversial Issues
- Other Membrane Enzyme Arrays

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- Unit Membrane Hypothesis
- Variation in Membrane Structure
- Structure and Staining
- Negative Contrast Staining
- Lamellae and Micelles as Phases

II. Biochemical Aspects of Membrane Structure
- Structural Protein
- Arrays of Phospholipids
- Enzyme Organization

III. Physical Chemistry of Lipid Bilayers

Supplementary Statements by Work Session Participants

[SUPPLEMENTARY STATEMENTS]

I. ON QUESTIONS OF MITOCHONDRIAL ORGANIZATION AND THE ELECTRON TRANSFER CHAIN

David E. Green

II. ADDENDUM TO SUMMARY OF N.R.P. WORK SESSION ON CELL MEMBRANES INCLUDING CERTAIN NEW X-RAY DIFFRACTION FINDINGS ON RETINAL ROD OUTER SEGMENT MEMBRANES

J. David Robertson

(FURTHER READING)

I. MEMBRANE ULTRASTRUCTURE

Robertson, J. D., The occurrence of a subunit pattern in the unit membranes of club endings in Mauthner cell synapses in goldfish brains, J. Cell Biol. 19, 201 (1963)

Smith, D. S., The structure of flight muscle sarcosomes in the blowfly Calliphora erythrocephala (Diptera), J. Cell Biol. 19, 115 (1963)

II. BIOCHEMICAL ASPECTS OF MEMBRANE STRUCTURE

1. Chance, B., and Parsons, D. F., Cytochrome function in relation to inner membrane structure of mitochondria, Science 142 (3596), 1176 (1964)

2. Chance, B., Parsons, D. F., and G. R. Williams, Cytochrome content of mitochondria stripped of inner membrane structure, Science 143 (3602), 136 (1964)

3. Fernandez-Moran, H., and Oda, T., Blair, P. V., and Green, D. E., A macromolecular repeating unit of mitochondrial structure and function, J. Cell Biol., in press

III. PHYSICAL CHEMISTRY OF LIPID BILAYERS

1. Huang, C., Wheeldon, L., and Thompson, T. E., The properties of lipid bilayer membranes separating two aqueous phases; formation of a membrane of simple composition, J. Mol. Biol. 8, 148 (1964)

2. Thompson, T. E., The properties of bimolecular phospholipid membranes, Cellular Membranes in Development, ed. M. Locke, Academic Press, 83-94 (1964)

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(1) SOME BRAIN STRUCTURES AND FUNCTIONS RELATED TO MEMORY

A Summary of an NRP Work Session
held January 10-11, 1964
and of Subsequent Discussion at the
Seventh Stated Meeting of NRP Associates

Walle J. H. Nauta

Department of Psychology
Massachusetts Institute of Technology
Cambridge, Massachusetts

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I. FOREBRAIN STRUCTURES AND MEMORY
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  - 1. Histological Structure
  - 2. The Place of the Limbic System in the Neuronal Organization
- B. Elicitation of Memories by Electrical Stimulation of Temporal and Occipital Cortex
- C. Frontal Lobe Function and Memory
- D. Discussion

II. INNATE, RELATIVELY STABLE NEURAL ORGANIZATIONS: THE PROBLEM OF MUTABILITY OF EXISTING FUNCTIONAL CONNECTIONS BETWEEN NEURONS
- A. Retinal Ganglion Cells
- B. Lateral Geniculate Body
- C. Visual Cortex
- D. Binocular Interaction
- E. Postnatal Development of the Visual System
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III. GENERAL DISCUSSION
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V. FURTHER READING
- A. Literature Cited
- B. Relevant Publications of Participants
- C. Suggested Background References

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(II) THE ROLE OF WATER STRUCTURES IN THE MOLECULAR ORGANIZATION OF CELL MEMBRANES

Adaptation, dated November 24, 1964,
from a Presentation to the
American Cancer Society Conference on Cryobiology
Rye, New York, October 9-10, 1964

by

Oscar Hechter

Worcester Foundation for Experimental Biology
Shrewsbury, Massachusetts

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(III) GLIAL CELLS

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held June 2-3, 1964

Chaired: Robert Galambos

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  - 1. Glia and Axoplasmic Flow
    - a. Rhythmic Contraction of Glia
    - b. Movements within Developing Neurons
    - c. Discussion by Weiss
  - 2. Schwann Cell Motion and Myelination
  - 3. Function of Oligodendrocytes
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- B. Glial Cell Multiplication in Vivo
  - 1. Glial Response to Lesions
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C. Impedance, EEG: Focal Volumes
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   2. Multiple Sclerosis
   3. Remyelination
   4. Neocortex Organ Culture

B. Phenylketonuria

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   1. Discussion

V. RECOMMENDED FURTHER READING

A. Listed by Individual Participant
B. Literature Cited at Work Session

LIST OF WORK SESSION ATTENDEES

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Volume 11 Vol. II No. 6 November - December 1964 SUPPLEMENT MENT

GLIA BIBLIOGRAPHY 1960-1964

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DEVELOPING BRAIN

No. 4 August, 1964

Our basic supply of news items from our readers is running a little low. Additional contributions will be gratefully received. I hope that as you return to your desks in the fall, you will send any information about new research projects, grants received, additions to your staff, etc. that can be included in the newsletters. It is probable that the December newsletter will be devoted to the UNESCO meeting on Regional Maturation of the Nervous System in Early Life.

The following interesting papers crossed my desk this summer: (1) Adamsons, Jr., K., Behrman, R., Dawes, G.S., Dawkins, M.J.R., James, L.S., and Ross, B.B., The treatment of acidosis with alkali and glucose during asphyxia in foetal rhesus monkeys, J. Physiol. 169: 679-789, 1963. (2) Colonnier, Marc, Experimental degeneration in the cerebral cortex. J. Anat. Lond. 98: 47-53, 1964. (3) Gabersek, V., Etude électro-oculographique des temps de reaction oculomoteurs chez des sujets normaux. Extrait, Nos. 3-4, July-December, 1963. 255-72. (4) Chevreau, J., and Marty, Robert, Développement post-natal de la région limbique du cerveau du Lapin. Comp-

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成瀬　浩	佐野　勇	佐藤　倚男	高垣玄吉郎
高橋　良	高橋　康夫	塚田　裕三	宇尾野公義

昭和40年6月28日 印刷
昭和40年6月30日 発行　　神経化学　第4巻 第1号

編集者　（代表）塚田裕三
編集所　東京都大田区大森西5丁目21番地
東邦大学医学部第二生理学教室内　神経化学懇話会
表紙印刷　東京都北区西ヶ原3丁目46番地　杏林舎
印刷及製本　東京都文京区後楽1丁目5番地　(株)中央商会
発行者　緒方秀雄
発行所　東京都文京区曙町11番地　緒方書店

本会員以外の方で本誌の希望者は，実費でお頒けしますから，上記の編集所宛にお申出下さい．

神 経 化 学　　VOL. 4　　NO. 1

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