POLISH ACADEMY OF SCIENCES

MEDICAL RESEARCH CENTRE

REPORT
OF SCIENTIFIC ACTIVITIES
1974

WARSAW 1975

POLISH ACADEMY OF SCIENCES

M E D I C A L R E S E A R C H C E N T R E

3, Dworkowa str.-00-784 WARSZAWA

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INTRODUCTION

This Report presents the results of research performed in 1974, and general information on scientific activities of the Medical Research Centre.

Professor W.A. Karczewski, M.D., D.Sc.
Scientific Director

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MEDICAL RESEARCH CENTRE

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D I R E C T I O N

Director:	Professor A. Kunicki, M.D., D.Sc. Full Member of the Polish Academy of Sciences
Scientific Director:	Professor W. Karczewski, M.D., D.Sc.
Managing Director:	Wł. Śledziński, M.C.L.

DETAILED SCIENTIFIC REPORTS

N o t i c e :

All English titles in parentheses in this Report indicate, that the original language of those titles is other than English.

A. LABORATORY OF NEUROPHYSIOLOGY

W.A. KARCZEWSKI, M.D., D.Sc., professor of Physiology

Member of: Polish Physiological Society
British Physiological Society
Societas Europea Physiologiae Clinicae Respiratoriae
International Brain Research Organization

K. BUDZIŃSKA, M. Pharm.

M. GŁOGOWSKA, M.D.

Member of: Polish Physiological Society

P. GRIEB, M. Biol.

H. GROMYSZ, D. Nat. Sc.

Member of: Polish Physiological Society

K. HERBACZYŃSKA-CEDRO, M.D.

Member of: Polish Physiological Society
Society of Polish Internists

A. HUSZCZUK, M.E. Eng., D.Nat.Sc.

J. KULESZA, M. Phys.

M. POKORSKI, M.D.

Member of: Polish Physiological Society

A. PRZYBYLSKI, D. Nat. Sc., Ph.D.

Member of: Polish Cybernetics Society

J. ROMANIUK, M. Biophys.

M. RYBA, M.D.

Z. SEMERAU-SIEMIANOWSKI, M.D., professor of Medical Sciences

J. STASZEWSKA-BARCZAK, M.D., Ph.D., assis. professor of Natural Sciences

Member of: Polish Physiological Society
Polish Cardiological Society

B. SZEREDA-PRZESTASZEWSKA, M.D.

Member of: Polish Physiological Society

Societas Europea Physiologiae Clinicae Respiratoriae

L. TORUŃ, M. Biol.

In 1974, the studies comprised the following two general subjects:

1. **Neural control of respiration**

Role of the brain stem in the central and reflex regulation of breathing.

Stimulation of hypothalamus and mesencephalon accelerated the breathing rhythm the more, the slower was the control rhythm; the reaction weakens with the increase of the respiratory drive at the other "inputs" of the system: /CO_2, temperature/. Blockade of the hypothalamus causes an opposite effect; the faster the initial rhythm, the stronger the deceleration. The results suggest that the suprapontine structures are responsible for the polypnoeic breathing, irrespective of the kind of stimulus.

Studies on brain metabolism revealed the existence of correlation between the oxygen level in the blood, the time of appearance of so-called hyperventilation apnoe and the decrease of cerebral blood flow, pointing to the contribution of metabolic disturbances in the brain to the mechanism of apnoe.

Electrophysiological studies on chemosensitive regions showed the presence of neurons specifically reacting to pH changes in the cerebrospinal fluid.

Application of pneumothorax, irritant vapors or smoke markedly accelerate breathing owing to the reduction of the expiration period. This represents a reflex phenomenon depending on the integrity of the vagal loop and related to changes of the activity of at least two groups of pulmonary receptors. Response to the above mentioned stimuli is liable to strong modifications

by the excitability level of the CNS /general anaesthesia/.

A vagal component of instantaneous control of the rate of rise of inspiration has been shown to operate in the respiratory cycle. This phenomenon may play the role of negative feed--backs in the control of breathing. The presence of dynamic, positive feed-backs "neutralizes" the negative ones, making possible continuation of inspiration and determining its gradient. Rapid negative feed-backs were found to participate in controlling the duration of inspiration.

Chronic elimination of the vagal feed-back loop allowed to examine the role of the vagus nerves in the development of the breathing response to CO_2 in physiological conditions /without general anaesthesia/. It has been shown that, in contrast to the general opinion, rabbits are capable of a frequency reaction to CO_2 after opening the vagal feed-back loop and that the direction of reaction is determined by the initial breathing rhythm. This may be indicative of the existence of an "optimal" breathing pattern, which the system tends to reach in a given biological situation.

It has been shown that the laryngeal calibre control in anaphylactic shock does not depend on the integrity of the vagus nerves; neither are the superior laryngeal nerves the "input" for laryngeal constriction.

2. N e u r a l c o n t r o l o f c i r c u l a t i o n

Mechanisms of neural control of circulation and heart function in physiological and pathological conditions.

The participation of endogenous prostaglandins in reactive

hyperaemia produced by working skeletal muscles has been demonstrated. It has been shown that prostaglandins of E type, the strongest vasodilatators known, are secreted into the blood that flows out from the working extremity of a dog. Parallel haemodynamic studies revealed that inhibition of endogenous synthesis of prostaglandins by indomethacin leads to a decrease of reactive hyperaemia. The results allow to conclude the local production of prostaglandins in tissues, and its release into the blood to represent one of the mechnisms involved in local control of circulation in conditions of reactive hyperaemia.[1/]

COOPERATION WITH FOREIGN COUNTRIES

In 1974, the Laboratory of Neurophysiology has continued cooperation with the following foreign research institutions:

1. St. George's Hospital Medical School, University of London, London, England.
2. Department of Medicine, Charing Cross Hospital Medical School, Fulham Hospital, London, England.
3. Nobel Institute for Neurophysiology, Karolinska Institutet, Stockholm, Sweden.
4. Institut für Physiologie, Ruhr Universität, Bochum, F.R.G..
5. Department of Physiology, Medical Faculty, Commenius Universit Martin, Czechoslowakia.

[1/] See list of publications, Nos. 6, 7, 11, 16, 28, 29, 31, 33, 34, 35, 37, 38, 39, 46, 47, 135.

6. Wellcome Research Labs., Beckenham, England.

The cooperation included various aspects of neural control of breathing and circulation, and consisted in joint studies and publications, consultations and organization of microsymposia on special topics.

In 1974, the following scientific workers of the Laboratory stayed abroad for scientific training or to perform joint research programmes:

A. HUSZCZUK, M.Sc., E.Eng., D.Nat.Sc., September 1973 - August 1974. Department of Medicine, Charing Cross Hospital Medical School, University of London, England.

During his one-year stay dr Huszczuk performed studies on vagal regulation of tidal volume in dogs and rabbits and breathing reactions after elimination of the activity of lung mechanoreceptors in man and rabbits. The results were in part presented at the meeting of the Physiological Scociety in Cambridge, where dr Huszczuk read a paper entitled: "The role of vagal feedback from the lung of the dog in tidal volume regulation".

M. POKORSKI, M.D. October 1973 - December 1974.
Institut für Physiologie, Ruhr Universität, Bochum, G.F.R.

The aim of dr. Pokorski's stay was to perform studies on the role of chemosensitive regions /central chemoreceptors/ in regulation of breathing with the use of new research methods.

J. STASZEWSKA-BARCZAK, M.D., Ph.D., Assis. professor. April - - October, 1974, Laboratory of Pharmacology, Wellcome Research Laboratories, Beckenham, England.

The studies, sponsored by the Wellcome Trust Foundation, dealt with the role of endogenous prostaglandins in the regulation of circulation. The results were presented at the Joint Meeting of British and Italian Pharmacological Societies, held in Bristol, September 1974.

K. HERBACZYŃSKA-CEDRO, M.D., May 25 - June 2, 1974.
Wellcome Research Laboratories, Beckenham, England.

The aim of the visit was to discuss the results of joint studies.

W.A. KARCZEWSKI, M.D., D.Sc., professor, head of the Laboratory, visited June 10-14, 1974, the Nobel Institute for Neurophysiology Stockholm, Sweden, with the aim of discussing research problems and to prepare a paper for a Symposium on Breathing, planned for the XXVI-th International Congress of Physiological Sciences in New Delhi, India, October 1974 - which he attended.

In 1974, the following foreign scientists visted the Laboratory of Neurophysiology:

Doctor M. PURVES - from the Department of Physiology, University of Bristol, England - a one-week visit, January 1974.
Discussion on neural control of breathing.

Doctor P. RICHARDSON - from St. George's Hospital Medical School University of London, England - a 3 week stay in February 1974.

Doctor J. WISE - from the same Hospital - a 3-week stay in May 1974.

Both scientific workers were interested in the microelectro-

de system of recording from respiratory neurons, and were trained in this method.

Professor J.G. WIDDICOMBE, from St. George's Hospital Medical School, University of London, England.

Professor Widdicombe visited the Laboratory for 10-days in March, and for a week in September 1974. The aim of those visits was consultation of results and discussion over problems of the future programme of investigations.

Doctor P. JOHNSON - from Nuffield Institute for Medical Research, University of Oxford, England.

The aim of doctor Johnson's one-week visit in September, 1974 was the exchange of views on the neural control of breathing.

F. RECH, Eng., D.Sc., - from the Chechoslovak Academy of Sciences, Prague,

stayed one month in October 1974, in the Laboratory for a scientific exchange of views and experience on the microelectrode recording techniques.

Doctor S. LEMAKOVA - from the Department of Physiology, Commenius University, Martin, Czechoslovakia.

The one-month stay in November 1974 of doctor Lemakova, was aimed at becoming acquainted with the electrophysiological methods employed in the Laboratory of Neurophysiology.

PARTICIPATION OF THE SCIENTIFIC STAFF OF THE LABORATORY IN CONGRESSES, MEETINGS, CONFERENCES, SYMPOSIA AND SEMINARS

Papers presented at:

1. Biologiczeskii stimul istorichesko-evolucyonnyi podkhod.
/Conference on biological stimulus - a historical and evolutional approch/
January 28-th - February 3-th, 1974, Moscow, U.S.S.R.
PRZYBYLSKI A.
Wzajemny związek organizacji i rozwoju w biologii.
/Relationship between organization and development in biology/

2. II-nd Symposium on Pharmacology of Thermoregulation
April 16-18, 1974, Paris, France.
KARCZEWSKI W.A.
Thermal polypnoea.
Proc. of the II-nd Symp. Pharm. Thermoreg., 1974, Paris, 178-182.

3. Meeting of the British Physiological Society
April, 1974, London, England.
SZEREDA-PRZESTASZEWSKA M.
Changes in laryngal calibre in anaphylactic shock in rabbits.

4. The VIII-th Annual Meeting of the European Society for Clinical Investigation.
April 25-27, 1974, Rotterdam, Holland.
HERBACZYŃSKA-CEDRO K., STASZEWSKA-BARCZAK J.
Prostaglandins and functional hyperaemia in skeletal muscles.
Abstracts of the VIII-th Annual Meeting Europ. Soc. for Clinic. Investig., 1974, Rotterdam, 162.

5. The VII-th International Congress of Neuropathology
September 1-7, 1974, Budapest, Hungary.
RAP Z., STASZEWSKA-BARCZAK J.

Adrenergic response and morphological changes in neurosecretory system and adrenal cortex during intracranial hypertension in cats.
Proc. of the VII-th Intern. Congr. Neuropath., 1974, Budapest.

6. Meeting of the British and Italian Pharmacological Societies September 11-13, 1974, Bristol, England.
HERBACZYŃSKA-CEDRO K., STASZEWSKA-BARCZAK J.
Muscular work and prostaglandin release.
Proc. of the Meeting Brit.-Ital. Pharm. Soc., 1974, Bristol, 32.

7. The XII-th Congress of Hungarian Pharmacological Society October 1974, Budapest, Hungary.
HERBACZYŃSKA-CEDRO K., STASZEWSKA-BARCZAK J.
Adrenocortical hormones and the release of prostaglandin--like substances.
Prof. of the XII-th Congress of Hung. Pharm. Soc., 1974, Budapest.

8. The XXVI-th International Congress of Physiological Sciences October 20-26, 1974, New Delhi, India.
HERBACZYŃSKA-CEDRO K., STASZEWSKA-BARCZAK J., JANCZEWSKA H.
The role of endogenous prostaglandins in functional hyperaemia in skeletal muscles.
KARCZEWSKI W.A.
Lung reflexes and central control of rate and depth of respiration.
Proc. of the XXVI-th Congress Physiol. Scien., 1974, New Delhi.

B. LABORATORY OF APPLIED PHYSIOLOGY

S. KOZŁOWSKI, M.D., D.Sc., professor of Physiology

Member of: Research Council, Institute of Food and Nutrition
Research Council, Institute of Protection of Labour,
Physiological Committee, Polish Academy of Sciences,
Polish Physiological Society,
International Working Group on Biological
and Cosmic Medicine "Intercosmos",
Polish National Committee of the International
Programme, /Subcommittee of Human Adaptability/,
American Association for the Advancement of Sciences

Z. BRZEZIŃSKA, M. Biochem., D. Pharm.

Member of: Polish Physiological Society

E. JASIŃSKA, M. Pharm.

H. KACIUBA-UŚCIŁKO, M. Agr., D. Agr. Sc., D.Nat.Sc.,
assis. professor of Natural Sciences

Member of: Polish Physiological Society
Editor of "Acta Physiologica Polonica"

B. KRUK, M. Biol., D.Nat.Sc.,

Member of: Polish Physiological Society

J. ŁYSZCZARZ, M.D., D.Sc., assis. professor of Medical Science

Member of: European Society for Clinical Physiology of
Respiration, Polish Physiological Society

K. NAZAR

Member of: Polish Physiological Society
European Society for Clinical Investigation

B. SADOWSKI, M.Biol., D.Nat.Sc., assis. professor of Natural
Sciences

Member of: Polish Physiological Society

J. SADOWSKI, M.D., D.Sc., assis. professor of Medical Sciences

Member of: Polish Physiological Society

J. SOŁTYSIAK, M.D.

E. TURLEJSKA, M. Vet., D.Nat.Sc.

Member of: Polish Physiological Society

A. ZIEMBA, M. Biol.

The main subjects of research completed in 1974 can be outlined as follows:

Metabolic effects of catecholamines and thyroid hormones during physical exercise

Thyroid hormones, both thyroxine and triiodothyronine, were shown to modify metabolism and thermoregulation during exercise. An increase in blood thyroxine level, by administration of exogenous hormone, was associated with pronounced lipolysis and a significant increase in rectal temperature during exercise. A dual mechanism of thyroid hormone action during exercise is suggested. One would consist in increasing heat production /owing to interaction of thyroid hormones with catecholamines/ while the other one, perhaps more important, in reducing heat elimination or changing the "set-point" of thermoregulatory centres at the level of the central nervous system. The described effects of thyroid hormones become apparent a few hours after their administration, at the time when their metabolic effects at rest cannot yet be distinguished.

In separate series of experiments the glycogenolytic action of adrenaline was found to be reduced after exhaustive muscular work.

Activity of thermoregulatory centres and body electrolytes

Function of the thermoregulatory centre during physical exercise of dogs was found to depend on plasma osmolarity or Na concentration in the extracellular fluid. Another series of experiments showed that a decrease of Ca^{++} in cerebrospinal

fluid induces both a decreased heat elimination and an increased heat production, leading to an increase in core temperature.

C a t e c h o l a m i n e s, T S H a n d e x p o s u r e t o c o l d.

It was found that in human subjects exposure to cold induces activation of the adrenergic system and consequent calorigenic effects. This response was initiated from skin thermoreceptors for it occurred also when the central thermodetectors were inhibited by increasing core temperature.

Thyrotropic hormone /TSH/ was found to exert an extrathyroidal action on the muscles; effects of TSH on the thyroid and muscle tissues were also examined during prolonged exposure to cold.

The earlier developed concept on the role of catecholamines in the control of thermogenesis in the early postnatal period was substentiated with new experimental data.

M e c h a n i s m o f t h i r s t

Sodium-free and sodium-containing osmotic loads were found to be equally effective in activating the thirst mechanism. This puts in doubt some current concepts on the exclusive role of "sodium receptors" in the stimulation of thirst. An elevation of plasma ADH level and an increase in blood volume were shown to have opposite effects on the osmotic reactivity of the thirst mechanism.

C l i n i c a l s t u d i e s

Based on earlier experimental research, clinical studies were performed to examine different responses of the adrenergic

system and renin release to physical work in normal subjects and in patients with arterial hypertension.

In another clinical study the differences were examined between normal subjects and patients with juvenile diabetes with respect to the adrenergic system and hemodynamic responsiveness to static exercise. In final evaluation of these results some suggestions concerning the diagnostic value of the observed different responses are presented, for use in clinical practice.[2/]

COOPERATION WITH FOREIGN COUNTRIES

In 1974 the Laboratory has continued joint studies with the Section of Cosmic Biology and Medicine "Intercosmos" on the physiological effects of reduced physical activity on thermal adaptation.

Cooperation has also been continued with the Department of Physiology, Cambridge University, England, in the field of hormonal control of water intake /thirst mechanism/. The joint study concerned the effect of components of the renin-angiotensin system. The experimental part was perfomed in 1973 in Warszawa and in 1974 in Cambridge.

The results of the studies will be presented in a paper in preparation.

In 1974 the following scientific workers of the Laboratory stayed abroad for scientific training or to perform joint

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2/ See list of publications, Nos. 30, 40, 41, 49, 74, 121, 122, 172.

research programs:

1. S. KOZŁOWSKI, Department of Physiology of the Cambridge University /Professor J.T. Fitzsimons/, Cambridge, England. October 1973 - January 1974 The aim of the visit was to discuss problems of common studies and to establish the programme of further cooperation.

2. B. SADOWSKI, Department of Psychopharmacology, Janssen Pharmaceutica, Beerse, Belgium, March 6 - - April 5, 1974.
Studies on the so-called positive emotion in dogs with particular reference to mechanisms of hunger and satiation and to functioning of thermoregulatory mechnisms as well as the action of psychotropic drugs. Discussion aimed at initiating joint studies.

3. B. KRUK, Laboratory of Thermoregulation, Pavlov-Institute, U.S.S.R. Academy of Sciences - Leningrad. /Professor K.P. Ivanov/ March 3 - May 4, 1974.
Familiarization with new research methods. Experimental study on thermal sensitivity of the anterior hypothalamus of the rabbit in physiological conditions.

The following foreign guests visited the Laboratory in 1974:

J.E. GREENLEAF, M.D., Head of the Laboratory of Physiology, NASA Ames Research Center, Moffet Field, CA. U.S.A. April 19 - May 19, 1974.

The aim of the visit was to complete common investigations initiated in 1973 on the effects of osmotic and hormonal changes on thermoregulation during physical exercise. Two papers have been completed. The visit took place within the framework of the agreement on scientific cooperation between the National Academy of Sciences and the Polish Academy of Sciences.

P. GAGGE, Professor, from the John B. Pierce Found. Laboratory, New Haven, CT. U.S.A., May 1974.
Discussion of studies concerning thermal adaptation of organisms.

S. PACAUD, Professor, of the Paris University, France, June 4-th 1974.
The aim of the visit was to acquaint with investigations carried out in the Laboratory of Applied Physiology, in the field of the physiology of work.

J. BARTHA, M.D. Department of Physiology of the Hungarian Medical Academy, Budapest, Hungary.
November / December 1974.
A one-month's methodical training, arranged within the exchange programme of research workers, between the Polish and Hungarian Academies of Sciences.

PARTICIPATION OF THE SCIENTIFIC STAFF OF THE LABORATORY IN CONGRESSES, MEETINGS, CONFERENCES, SYMPOSIA AND SEMINARS

Papers presented at:

1. The VIII-th Annual Meeting of the European Society for Clinical Investigation, April 1974, Rotterdam, Holland.
   NAZAR K., KOZŁOWSKI S., BRZEZIŃSKA Z., CHWALBIŃSKA-MONETA J.
   Adrenergic responses to sustained isometric exercise in patients with peripheral circulatory disturbances.

2. II-nd Symposium on Pharmacology of Thermoregulation. April 16-18, 1974, Paris, France.
   GREENLEAF J.E., KOZŁOWSKI S., KACIUBA-UŚCIŁKO H., NAZAR K., BRZEZIŃSKA Z.
   Temperature responses to infusion of electrolytes during exertion. Proc. 2-nd Symp. Pharm. Thermoreg. 1974, Karger, Basel, Switzerland p. 352.

   KACIUBA-UŚCIŁKO H., POCZOPKO P.
   Role of catecholamines in cold-induced thermogenesis in newborn pigs.
   Proc. 2-nd Symp. Pharm. Thermoreg., 1974, Karger, Basel, Switzerland, p. 202.

   KOZŁOWSKI S., KACIUBA-UŚCIŁKO H., GREENLEAF J.E., BRZEZIŃSKA Z
   The effect of thyroxine on temperature regulation during physical exercise in dogs.
   Proc. 2-nd Symp. Pharm. Thermoreg., 1974, Karger, Basel, Switzerland, p. 361.

   ŁYSZCZARZ J.
   The effect of general anaesthesia on thermoregulatory responses to local nostril heating in rabbits.
   Proc. 2-nd Symp. Pharm. Thermoreg., 1974, Karger, Basel, Switzerland, p. 325.

3. XI Konferencja Sekcji Diabetologicznej Towarzystwa Internistów Polskich, maj 1974, Poznań, Polska.
/The XI-th Conference of the Diabetology Section of the Polish Society of Internal Medicine, May 1974, Poznań, Poland/
NAZAR K., TATOŃ J.
Zmiany kliniczne testów wysiłkowych w cukrzycy.
/Clinical changes in exertion tests in diabetes/.

4. Konferencja Polskiego Towarzystwa Kardiologicznego: Choroba Nadciśnieniowa, maj 1974, Kraków, Polska.
/Conference of the Polish Cardiological Society: "Hypertension" May 1974, Kraków, Poland/
CHODAKOWSKA J., WOCIAL B., KOZŁOWSKI S., NAZAR K., SKÓRKA B., JARECKI M.
Wpływ wysiłku fizycznego na zachowanie się aktywności nerwowej katecholamin i osocza u chorych z nadciśnieniem tętniczym pierwotnym.
/Effect of physical exercise on nervous activity and plasma catecholamines in patients with primary arterial hypertension/.

5. European Colloquium on Nephron Physiology /Mechanism and Regulation/ May 1974, Royaumont, France.
SAĎOWSKI J., TORUŃ L.
Oxygen consumption of nonfiltering dog kidneys.

6. Working Conference of the Cosmic Biology and Medicine, Section "Intercosmos", June 1974, Bucuresti, Rumania.
KOZŁOWSKI S.
Report on the studies of physiological consequences of immobilization.

7. VIII Krajowy Zjazd Endokrynologów Polskich, czerwiec 1974, Białowieża, Polska.

/The VIII-th National Meeting of Polish Endocrinologists, June 1974, Białowieża, Poland/

BRZEZIŃSKA Z., KACIUBA-UŚCIŁKO H., KOZŁOWSKI S.

Wpływ hormonów tarczycy na lipolityczne działanie amin aktecholowych w czasie wysiłku fizycznego u psów.

/Effect of thyroid hormones on the lipolytic action of catecholamines during physical exercise in dogs/

BRZEZIŃSKA Z., KOZŁOWSKI S., NAZAR K.

Zmiany poziomu amin katecholowych u psów podczas długotrwałych wysiłków; glukostatyczny mechanizm aktywacji układu adrenergicznego.

/Changes in catecholamine levels during prolonged exercise in dogs; glucostatic mechanism of adrenergic system activation/

CHWALBIŃSKA-MONETA J.

Zmiany aktywności antydiuretycznej krwi u psów pod wpływem infuzji hipersomotycznych roztworów NaCl do żyły wrotnej wątroby.

/Changes in antidiuretic activity of dog blood induced by infusion of hyperosmotic solutions of NaCl into the hepatic portal vein/.

KOZŁOWSKI S., KACIUBA-UŚCIŁKO H., NAZAR K., BRZEZIŃSKA Z.

Wpływ hormonów tarczycy na wysiłkowe zmiany temperatury ciała u psów.

/Effect of thyroid hormones on changes in body temperature during exertion in dogs/.

SADOWSKI J., KURKUS J., CHWALBIŃSKA-MONETA J.
Efekty ekspozycji nieskrępowanych psów na niską temperaturę otoczenia: zmiany hormonalne i zmiany czynności nerek.
/Effects of exposure of unrestrained dogs to cold: hormonal and renal function changes/.

SOBOCIŃSKA J., KOZŁOWSKI S., CHWALBIŃSKA-MONETA J.
Wpływ infuzji angiotenzyny II do komory bocznej mózgu u psa na poziom ADH we krwi.
/Effect of infusion of angiotensin II into the lateral ventricle of the brain on blood ADH level in dogs/.

8. XXIV-th Symposium on Higher Nervous Activity, June 1974, Moscow, U.S.R.R.
SADOWSKI B.
Conditioned-reflex self-stimulation reactions in dogs

9. Collegium Internationale Nuoropsychopharmacologicum, July 1974, Paris, France.
WANQUIER A., SADOWSKI B.
Brain self-stimulation in dogs: use of several stimulus parameters and fixed-ratio schedules.
Proc. Coll. Intern. Neuropsychopharm., Paris, 1974.

10. XXVI-th International Congress of Physiological Sciences October 1974, New-Delhi, India.
SADOWSKI B.
Self-stimulation in dogs: its relation to body temperature and feeding.
Proc. XXVI-th Intern. Congr. Physiol. Sci. 1974, New-Delhi, India.

11. International Symposium on Depressed Metabolism and Cold Thermogenesis, October 1974, Praha, Czechoslovakia.
KACIUBA-UŚCIŁKO H., KOZŁOWSKI S., BRZEZIŃSKA Z., NAZAR K., TURSKI B., BORUTA A.
Blood catecholamines and thyroxine at rest and during exercise in men exposed to cold.
Proc. Intern. Symp. Depress. Metab. and Cold Thermogen. Praha, CSRR, 1974.

C. LABORATORY OF NEUROPATHOLOGY

M.J. MOSSAKOWSKI, M.D., D.Sc., professor of Neuropatology
Corresponding member of the Polish Academy of Sciences
President of the Polish Society of Neuropathologists.
Member of the Committee on Neurological Sciences of the Polish Academy of Sciences
Corresponding member of the American Association of Neuropathologists
Member of the Board of the International Society of Neuropathology
Member of: International Brain Research Organization /IBRO/
Polish Society of Neurologists
Polish Society of Anatomopathologists
Polish Society of Cyto- and Histochemists
Polish Society for Radiation Research

J. ALBRECHT, M. Biol., D. Nat. Sc.
Member of: Polish Biochemical Society

Z. BAŃKOWSKI, M.D., D.Sc., professor of Medical Sciences

M. DĄMBSKA, M.D., D.Sc., assis. professor of Neuropathology
Member of: Polish Society of Neuropathologists
Polish Society of Neurologists
International Society of Neuropathology

L. DYDYK, M.D.

R. GADAMSKI, D.Vet.Sc.

Member of: Polish Society of Anatomy

Z. FERENS, M.D.

Member of: Polish Society of Neuropathologists
International Society of Neuropathology

L. IWANOWSKI, M.D.

Member of: Polish Society of Neuropathologists
Polish Society of Neurologists
International Society of Neuropathology

A. KAPUŚCIŃSKI M.D.

Member of: Polish Radiological Society

J. KORTHALS, M.D.

Member of: Polish Society of Neuropathologists
International Society of Neuropathology

Z. KRAŚNICKA, M.D., D.Sc., assis. professor of Neuropathology

Member of: Polish Society of Neuropathologists
Polish Society of Neurologists
Tissue Culture Association /USA/
International Society of Neuropathology

H. KROH, M.D.

Member of: Polish Society of Neuropathologists
Polish Society of Cyto- and Histochemists
Polish Society of Neurosurgeons
International Society of Neuropathology

B. LACH, M.D.

Member of: Polish Society of Anatomopathologists

Polish Society of Neuropathologists
International Society of Neuropathology

M. MARCINIAK, M.D.

M. MAŚLIŃSKA, M.D.

Member of: Polish Society of Neuropathologists
International Society of Neuropathology

M. OSTENDA, M.D.

Member of: Polish Society of Cyto- and Histochemists
Polish Society of Neuropathologists
Polish Society of Neurologists
International Society of Neuropathology

A. PRONASZKO-KURCZYŃSKA, M.Biol., D.Nat.Sc.

Member of: Polish Endocrinological Society

Z. RAP, M.D.

Member of: Polish Society of Neuropathologists
International Society of Neuropathology

K. RENKAWEK, M.D.

Member of: Polish Society of Neuropathologists
International Society of Neuropathology
Polish Society of Cyto- and Histochemists

M. SIKORSKA, M.Chem.Eng.

Member of: Polish Society of Neuropathologists

M. ŚMIAŁEK, M.Pharm., M.D.

Member of: Polish Society of Neuropathologists
Polish Biochemical Society
International Society of Neuropathology

G. SZUMAŃSKA, M.Biol. D.Nat.Sc.

Member of: Polish Society of Cyto- and Histochemists
Polish Society of Neuropathologists
International Society of Neuropathology

H. WEINRAUDER, M.Biol., D.Nat.Sc.

Member of: Polish Society of Neuropathologists
International Society of Neuropathology

I.B. ZELMAN, M.D., D.Sc., assis. professor of Neuropathology

Member of: Polish Society of Neurologists
Polish Society of Neuropathologists
International Society of Neuropathology
Editor in Chief of "Neuropatologia Polska".

The studies performed in 1974 dealt with the problem of reaction of nerve tissue to the action exogenic and endogenic noxious factors.

This problem was elaborated in the following three groups of subjects:

1. Effect of oxygen insufficiency on the central nervous system

Studies on the consequences of ischaemia revealed that a decrease of the cerebral blood flow below 20 % of the normal value leads to irreversible changes in the nerve tissue. In these conditions the blood-brain barrier is damaged with subsequent vasogenic brain oedema. Ischaemia at ca. 20 % of the normal blood flow leads to cytotoxic brain oedema, whereas ischaemia above this value produces postischaemic cerebral hyperaemia without structural tissue damage and blood brain barrier changes. Postischaemic brain oedema develops in the period of increased blood pressure in the cerebral vessels, with disturbances of venous outflow playing a crucial role in this process. This period is characterized by changes in the activity and localization of phosphatases, which are involved in the transport function and by abnormalities in the distribution and content of catecholamines in the particular structures of the brain. The postischaemic increase of catecholamines content in the brain areas, where in normal conditions these compounds are undetectable should be emphasized. Disturbances of adenyl cyclase activity were demonstrated to accompany both the ischaemic and postischaemic period and are supposed to be the factor promoting glycogen

deposition in the nerve tissue.

In the group of studies on cytotoxic anoxia, experiments on cerebral microcirculation in carbon monoxide intoxication disclosed the presence of generalized, regional and focal disturbances of blood supply, both during and after intoxication. Carbon monoxide intoxication was also demonstrated to affect the activity of a number of enzymes involved in glucose metabolism in the brain and, likewise other types of hypoxia were found to stimulate adenyl cyclase.

Studies on the respiratory activity of neurons of four anatomical formations, isolated from the brain of rats subjected to carbon monoxide intoxication, revealed that the disturbances of oxygen consumption differentially involve the particular structures. Ammon's horn neurons turned out to be the most vulnerable to CO action, which explains the fact of frequent impairment of neurons of this structure, known from pathology. Energy deprivation in various models of hypoxia leads to disturbances of protein biosynthesis, mainly by involving the initial step of this process - formation of active polyribosomes. Inhibition of polyribosomes formation seems to be related to the decrease of messenger-RNA transport from cell nuclei to the cytoplasm.

Convulsive seizures in pregnant females were shown to lead to transplacental anoxia of foetuses, resulting in retardation of maturation of the cellular elements of the CNS and of the structural oraganization of the brain. However, the transplacental effects of CO intoxication in foetuses were much less than the effect of exposure of mature nerve tissue to carbon monoxide.

Analysis of autopsy material of newborn and children after cardiac arrest and resuscitation revealed the dependence of the character and distribution of brain lesions on the severity and duration of ischaemia. The advancement of pathological changes allows to differentiate between the postresuscitation changes and those produced by the essential noxious factor.

Studies on tissue culture i n v i t r o demonstrated that oxygen consumption by a nerve cell increases with its maturation. Short-term anoxia inhibits oxygen consumption by the neurons most markedly in mature cultures. Complete return of oxygen consumption to the control level has only been observed in the youngest cultures. Thus the changes in resting potentials of neurons and amphicytes from cultures of dorsal root ganglia subjected to anoxia show a full parallelism, with those concerning oxygen consumption.

Morphological and histochemical evaluation of cyanide gliopathy in in vitro conditions suggested that myelin sheaths damage in cyanide encephalopathy may be related to primary impairment of oligodendroglia.

2. E x o g e n i c t o x i c e n c e p h a l o p a t h i e s

It has been demonstrated that in experimental compression oedema, administration of mannitol remains without effect on the water content in the brain or on the occurrence of focal blood--brain barrier damage. In cases with massive impairment of the blood brain barrier, mannitol may even lead to an increased water content in the tissue. When the intracranial pressure increases, the water content in the brain changes at various compression

stages, depending on the degree of blood-brain barrier impairment, the duration of compression and the arterial blood pressure values.

The disturbances of adrenaline and noradrenaline secretion and the changes in the hypothalmo-hypophyseal system accompanying an acute increase of intracranial pressure were shown to be related with the type and mechanisms of the factors leading to increased intracranial pressure.

It has been shown that in postirradiation oedema, a blood--brain barrier tracer - horse radish peroxidase - penetrates from the vascular system to the extracellular space and that this occurs by means of increased pinocytosis with unchanged functioning of interendothelial junctions. These disturbances were accompanied by changes of the activity and ultrastructural distribution of phosphatases, which are the enzymes involved in the transport across the cell membranes.

Studies on the effect of hyperoxia on the maturing nervous system revealed an earlier appearance of ultrastructural abnormalities in the brain than in the lungs. The mechanism of brain damage induced by hyperoxia consists of two components: an ischaemic /constriction of brain vessels evoked by hypercapnia/ and a hypoxic one, related to pulmonary changes. The degree of participation of each of the components depends on the duration of hyperoxia.

Studies on the transplacental action of phenobarbital revealed that administration of this drug to pregnant females increases the death rate among the newborn and leads to a decrease of body weight of foetuses, proportionally to the drug

content in the placenta, and to the delay in nerve tissue maturation. A hypothesis has been put forward that non-excreted phenobarbital metabolites rather than the drug itself, may be the factor causing retardation of the CNS development.

3. Biological properties of nerve and glial cells in normal and pathological conditions

In studies concerning hepatogenic encephalopathy it has been demonstrated that copper accumulates in the brain in cases of acute liver necrosis, primarily binding to neuronal proteins and much less to glial proteins. The intensity of accumulation differs markedly in the particular structures of the brain. A lower oxygen metabolism in the glial than in the nerve cells may be responsible for the fact, that the impairment of glia occurs more rapidly and is more intensive than that of neurons. Experimental hepatogenic encephalopathy was shown to be characterized by changes in the permeability of cerebral vessels, manifested by the penetration of horse raddish peroxidase across the vascular bed to the extracellular spaces surrounding the vessels and by disturbances of ultrastructural distribution of phosphatases related to the transport through the cell membranes, in th structural elements of the blood-brain interphase.

Studies in vitro revealed the protective effect of penicillamine on the development of "hepatic" gliopathy, resulting from administration of sera from patients with hepato-lenticular degeneration in to the culture medium. The same effect was observed in cultures, the medium of which contained an excess of

exogenous copper salts. The inhibitory effect of penicillamine depended upon the copper content in the culture medium.

The histochemical abnormalities in the brain following transplacental action of methylooxymethane acetate /MAMA/ were characterized. MAMA-induced microcephaly and retardation of myelination were found to be accompanied by a wide range of histochemical changes expressing the retardation of metabolic development of CNS and disturbances of the structural organization of the brain. Remarkable pathological changes found in oligodendroglia indicate that its impairment might be an essential pathogenetic link in both early and late myelin sheaths degeneration, accompanying Cycasine microcephaly.

In experimental glial tumours a significant accumulation of both neutral and acid mucopolysaccharides was found, similar to that occurring in human gliomas. The chemical composition of the compounds differed in various types of tumours. It has been suggested that mucopolysaccharides accumulation results from disturbances in the permeability of tumour vessels. The essentially different composition of mucopolysaccharides in oligodendrogliomas may be related to their distinct metabolic properties as compared to astrocytomas and ependymomas.

In studies concerning the antigenic properties of nerve and glial tissue an unknown, organ-specific brain antigen was isolated. It shows no species-specificity and is strictly associated with glial cells, mostly with astrocytes. The antigen has been characterized by means of immunodiffusion, immunoelectrophoresis and immunofluorescence. The sequence of its appearance in the particular structures of the central nervous system in the course

of ontogeny was followed, starting with the 9-th day of foetal life until full maturity. A positive immunofluorescence reaction was observed in the brains of rats, guinea pigs and humans and in glial tumours of the astrocytic series. Intensification of anaplastic features in a tumour leads to a marked reduction of the immunofluorescence reaction.[3/]

COOPERATION WITH FOREIGN COUNTRIES

In 1974, the Laboratory of Neuropathology has continued cooperation with the following countries, based on previous appointments:

1. Institute of Physiology Georgian Academy of Sciences, Tbilisi, U.S.S.R. /Professor G. Mchedlishvili, M.D./- on the problem of brain abnormalities in circulatory hypoxia /ischaemia/.

2. Institute of Experimental Medicine, Academy of Medical Sciences, Leningrad, U.S.S.R. /J. Żabotiński, M.D. Professor/ - on the problem of myelination, demyelination and remyelination in conditions of tissue culture.

3. National Institute of Neurological Diseases and Stroke, N.I.H., Bethesda, U.S.A.

3/ See list of publications, Nos. 2, 3, 4, 5, 14, 15, 21, 23, 24, 25 26, 36, 42, 43,44, 45, 50, 51, 52, 59,65, 66,67, 68, 69, 70, 75, 114, 115, 124, 125, 126, 128, 139, 140, 141, 143, 144, 145, 152, 153, 168, 169,170, 171.

a/ Laboratory of Neuropathology and Neuroanatomical Sciences /I. Klatzo, M.D./ - on the problems of biology and pathology of glia, brain hypoxia and blood-brain permeability.

b/ Laboratory of Perinatal Physiology /R. Myers, M.D./ - on the problem of influence of perinatal asphyxia on the nervous tissue.

In 1974, the following scientific workers stayed abroad for visits or training:

M.J. MOSSAKOWSKI, M.D., professor.
Laboratory of Neuropathology and Neuroanatomical Sciences NIH, Bethesda, USA - 6 weeks. Performed joint studies on histochemical changes in the brain of mongolian geileils following controlleble ischaemia. He visited also several scientific centres in USA giving lectures with discussions.

M.J. MOSSAKOWSKI, M.D., professor, stayed 2 weeks in Finland becoming acquainted with the scientific activity of neurological centres and giving lectures.

M. DĄMBSKA, M.D. assis. professor,
Laboratory of Perinatal Physiology, NIH, Bethesda, USA - 3 months. Performed comparative studies on changes caused by perinatal asphyxia in the central nervous system of various animals and human newborn.

K. RENKAWEK, M.D.
Laboratory of Neuropathology and Neuroanatomical Sciences, NIH, Bethesda, USA - continued studies on organotypic tissue cultures

and on glucose transport phenomena in conditions of tissue culture.

D. MAŚLIŃSKA, M.D.

Histochemical Laboratory, Max-Planck Institute, Frankfurt a/Main, G.F.R. - 9 months. The purpose of the study was to become acquainted with histochemical methods in the light - and electron microscope. She perfomed histochemical investigations on the effects of transplacental anoxia on the nervous system of foetuses.

A. KAPUŚCIŃSKI, M.D.

Institute of Physiology, Georgian Academy of Sciences, Tbilisi, U.S.S.R. - 3 months. Performed joint studies on the pathomechanism of postischaemic brain oedema in experimental circulatory hypoxia.

J. ALBRECHT, D.Nat.Sci.

Institute of Physiology Czechoslovak Academy of Sciences, Prague, Czechoslovakia - 3 weeks. The aim of the visit was to acquire experience in separating nerve and glial cells by a method developed in this Institute.

In 1974, the following foreign guests visited the Laboratory

N. ALEXIANU, M.D. - from the Institute of Neurology and Psychiatry, Academy of Sciences, Bucuresti, Romania, for two-weeks training in the methods of tissue culture.

A.N.GURWICZ, M.D. professor, - from the Laboratory of Experimental Anaesthesiology and Reanimation, Academy of

Sciences, Moscow, U.S.S.R. - delivered a lecture on investigations of the effects of brain ischaemia.

J. FISCHER, M.D. - from the Institute of Physiology, Czechoslovak Academy of Sciences, Praha, Czechoslovakia - delivered a lecture on experimental epilepsy.

D. KARCHER, D.Sc. - from the Bunge Institute, Antwerpen, Belgium - delivered a lecture on the progress of virological and immunological investigations in subacute sclerosing panencephalitis.

I. KLATZO, M.D. - from the Laboratory of Neuropathology and Neuroanatomical Sciences, N.I.H., Bethesda, U.S.A. - delivered a lecture on the progress in investigations on anoxia and ischaemia of the central nervous system.

J. REFSUM, M.D., professor , President of the World Federation of Neurology, Oslo, Norway.
Delivered a lecture on new metabolic and therapeutic informations on hypertrophic neuropathy /Refsum disease/ and on the pathogenesis of epileptic fits.

H. SCHMID, M.D. - from the Institute of Pathology, Basel University, Basel Switzerland, - delivered a lecture on neuropathology of tropical parasitic encephalitides.

M. SPATZ, M.D., - from the Laboratory of Neuropathology and Neuroanatomical Sciences, N.I.H., Bethesda, USA - delivered a lecture on the blood-brain barrier and transport phenomena in brain ischaemia.

E. WESTERGAARD M.D., - Department of Anatomy, University of København, Denmark, - delivered a lecture on the investigation of the blood-brain barrier permeability in normal and various pathological conditions.

PARTICIPATION OF THE SCIENTIFIC STAFF OF THE LABORATORY IN CONGRESSES, MEETINGS, CONFERENCES, SYMPOSIA AND SEMINARS.

Participation - papers presented at:

1. The National Conference on Convulsions in Children
   April 22-24, 1974, Gdańsk, Poland
   DĄMBSKA M.
   Zmiany podrgawkowe w mózgach dzieci.
   /Postconvulsional changes in the brains of children/

2. XXVI-th Meeting of the Polish Medical Radiological Society
   May 23-25, 1974, Lublin, Poland
   KAPUŚCIŃSKI A.
   Wybrane zagadnienia z badań nad niedotlenieniem mózgu przy użyciu metod izotopowych.
   /Selected problems from studies on brain hypoxia by means of isotope methods/.

3. III-rd Symposium on Blood Circulation in the Brain
June 5-7, 1974, Tbilisi, U.S.S.R.
KAPUŚCIŃSKI A.
Cerebral flow in the experimental model of controlled cerebral ischaemia with particular regard to the early period after retransfusion.
Proc. of III-rd Symp. Blood Circulation in the Brain 1974, Tbilisi, U.S.S.R.

4. 50-th Annual Meeting of American Association of Neuropathologist.
June 7-9, 1974, Boston U.S.A.
ITO U., SPATZ M., KLATZO I., MOSSAKOWSKI M.J.
Behaviour of the blood-brain barrier /BBB/ in cerebral ischaemia.

5. VII-th International Congress of Neuropathology
September 1-7, 1974, Budapest, Hungary.
ALBRECHT J., ŚMIAŁEK M.
Neuronal and glial protein synthesis in rat brain in various models of experimental hypoxia.

DĄBSKA M., FERENS Z., KULCZYCKI J.
The structure of ventricular wall in different types of hydrocephalus.

IWANOWSKI L.
The role of connective tissue in the brain ageing.

KAPUŚCIŃSKI A.
Efficiency of cerebral blood supply through the vertebral and spinal arteries in ischaemic conditions.

KRAŚNICKA Z., OSTENDA M.

Comparison of the ultrastructure of synapses of maturing superior calliculus of the rat in situ and in vitro.

LACH B., HAUST M.D.

Morphological evolution of intraneuronal storage material in Sanfilippo syndrome.

LACH B., ALWASIAK J.

Immunofluorescence studies on the glia-specific antigen in human brain tumours.

MAŚLIŃSKA D., DĄMBSKA M., BRYŁKO J.

The effect of phenobarbital on the development of the rabbit foetus brain.

MOSSAKOWSKI M.J., ZELMAN I.B.

Dynamics of brain microcirculation disorders in experimental circulatory hypoxia /ischaemia/.

RAP Z., STASZEWSKA-BARCZAK J.

Adrenergic response and morphologic changes in neurosecretory system and adrenal cortex during intracranial hypertension in cats.

SIKORSKA M., ŚMIAŁEK M.

The glycogen content and UDPglucose-glycogen alpha-4-glycosyl transferase /EC 2.4.1.11/ activity in rabbit brain following experimental circulatory hypoxia.

SZUMAŃSKA G., GADAMSKI R.

Histochemistry of vasogenic brain oedema.

SZUMAŃSKA G., KROH H.

Mucopolysaccharides and glycogen in chemically induced CNS gliomas.

ŚMIAŁEK M., KRAŚNICKA Z.

Cytochrome oxidase activity in the isolated sensory neurons of the intervertebral ganglia from chicken embryo tissue culture in experimental anoxia.

WEINRAUDER H., LACH B.

Immunofluorescence studies on the localization of the brain--specific antigen/s/ in the central nervous system of the rat.

ZELMAN I.B., PRONASZKO-KURCZYŃSKA A., SZUMAŃSKA G.

Glycogen content and topography in rat brain in experimental ouabain encephalopathy.

Proceedings of the VII-th International Congress of Neuropathology, 1974, Budapest, Hungary.

6. VI-th International Congress on Infections and Parasitic Diseases.

September 23-25, 1974, Warszawa, Poland.

KASSUR B., OLEJNIK Z., MOSSAKOWSKI M.J., KRAŚNICKA Z.

Some pathogenetic aspects of acute liver failure with encephalopathy in the course of viral hepatitis.

7. I-th World Congress of Nuclear Medicine

Sptember 30-th - October 5-th, 1974, Tokyo-Kyoto, Japan.

KAPUŚCIŃSKI A.

Significance of the circle of Willis in cerebral blood supply in ischaemic conditions.

Proceedings of the First World Congr. Nuclear Medicine, 1974, Tokyo-Kyoto, Japan.

8. IV Jahrestagung der Gesellschaft für neuropathologie der Deutschen Demokratischen Republik.
/IV-th Annual Meeting of the Neuropathological Society of the German Democratic Republic/
October 10-12, 1974, Mülhausen-Pfafferrode, G.D.R.
MOSSAKOWSKI M.J., ZELMAN I.B.
Glycogen deposition as an indicator of glucose metabolism disturbances in the brain due to various damaging factors.
IWANOWSKI L., OSTENDA M.
Ultrastructural picture of old rat brain vessels.

9. Symposium on Chemotherapy of Experimental and Human Brain Tumours, organized by the Neurosurgeons Department of the Pavia University,
October 16-th, Pavia, Italy.
KROH H.
Experimental oligodendriogliomas in mice.

10. III-rd Scientific Symposium of the Polish Society of Neurosurgeons.
October 18-20, 1974, Warszawa, Poland
RAP Z., STASZEWSKA-BARCZAK J.
Wydzielanie katecholamin w ostrym nadciśnieniu wewnątrzczaszkowym oraz zmiany morfologiczne w układzie neurosekrecyjnym i korze nadnerczy.
/Catecholamines secretion in acute intracranial hypertension and morphological changes in neurosecretory system and

adrenal cortex/.

11. XI-th International Cancer Congress
October 20-26, 1974, Florence, Italy.
Participant: H. Kroh, M.D.

12. National Conference on Electron Microscopy
October 24-26, 1974, Gdańsk, Poland
KRAŚNICKA Z., GAJKOWSKA B.
Wpływ niedotlenienia na zwoje uczuciowe zarodków kurzych hodowanych in vitro.
/Effect of hypoxia on chick sensory ganglia cultured in vitro/

OSTENDA M., SZUMAŃSKA G.
Ultrastrukturalna lokalizacja enzymów hydrolizujących estry fosforanowe w popromiennym uszkodzeniu mózgu.
/Ultrastructural localization of enzymes hydrolysing phosphate esters in postirradiation brain impairment/.

13. Symposium on "Differentiation of neurons and glia and their metabolic and functional relationships".
October 31 - November 1, 1974, Liblice, Czechoslovakia.
ALBRECHT J.
Effect of carbon monoxide intoxication on RNA synthesis in neuronal and glial nuclei of rat brain.

ŚMIAŁEK M.
Respiratory activity of the isolated neurons from the rat central nervous system following carbon monoxide intoxication.

14. Danube Symposium on Neurology and Neuropathology

November 14-16, 1974, Poznań, Poland

IWANOWSKI L., OSTENDA M.

Delayed ultrastructural changes in blood vessels of rat brain due to gamma-irradiation.

MOSSAKOWSKI M.J.

Brain microcirculation disoders in acute carbon monoxide intoxication in rats.

ZELMAN I.B., MOSSAKOWSKI M.J.

Pathomechanism of brain lesions in experimental carbon monoxide intoxication.

ŚMIAŁEK M.

Cytochrome oxidase activity in isolated neurons from the central nervous system in acute carbon monoxide intoxication.

SIKORSKA M., GORZKOWSKI S., SZUMAŃSKA G., ŚMIAŁEK M.

Incorportaion of C^{14}-glucose into glycogen and activity of glucose 6-phosphate dehydrogenase in rat brain in acute carbon monoxide intoxication.

DYDYK L., ŚMIAŁEK M., DĄMBSKA M.

Cytochrome oxidase activity and ultrastructure of giant neurons from the brain stem reticular formation in newborn rats following transplacental carbon monoxide intoxication.

GADAMSKI R., EUSTACHIEWICZ R.

Histochemical changes in the medulla oblongata of rabbits in experimental circulatory hypoxia.

KRAŚNICKA Z., GAJKOWSKA B.

The effect of short-lasting anoxia on the sensory ganglia

cultured in vitro.

KRAŚNICKA Z., GAJKOWSKA B., MOSSAKOWSKI M.J., BOROWICZ J.W.
The effect of short-lasting anoxia on the nerve tissue cultured in vitro.

DZIDYK L., DĄMBSKA M., SZRETER T.
The effect of hyperoxia on the developing rabbit brain.

RAP Z., WIDEMAN J.
The level of sulphydric groups in nerve tissue in brain oedema induced by cold lesion of the brain.

SZUMAŃSKA G., SPATZ M.
Histochemistry of microcephaly in rat induced by transplacental action of methyloxymethanol acetate.

KROH H.
Perivascular calcifications in mouse brain.

D. LABORATORY OF COMPARATIVE NEUROLOGY

E. OSETOWSKA M.D., professor of Neurology

Member of: Polish Society of Neuropathologists
International Society of Neuropathology
World Federation of Neurology
Deutsche Vereinigung der Neuropathologen
und Neuroanatomen
Société Belge de Neurologie

K. ALBERT M.V.Sc.

M. BRZOSTEK M. Pharm. Sc.

F. LUSZAWSKI Agr. Eng.

B. PĘDRAS M. Biol. Sc.

J. SAWICKI M.V. Sc.

A. TARASZEWSKA M.D.

Member of: Polish Society of Neuropathologists
International Society of Neuropathology

In 1974, the main research work on hereditary diseases of the central nervous system was continued.

I. Principal problem

Studies on hereditary diseases of CNS with a model of "pt" rabbit /sex-linked inherited paralytic tremor/.

1. The review of ten generations of "pt" rabbit /400 cases, 1964-1974/ put in evidence the different forms of the clinical course. One of the most interesting: the possibility of improvement, unknown in severe by handicapped humans with hereditary CNS disease, is explained.

   The first "pt" rabbits showing improvement are descendants of one health father. The further mating between siblings of the latter gave the changed patterns of "pt" syndrome. The possibility of the autosomal genetic quality /designated as "M" for modification"/ of the heterozygotic character Mm is supported by genetic and clinical documents and recent appropriate matings.

2. The correlation of calcified neurons /a pathognomonic feature of "pt" rabbit/ with age and clinical course reveals that the selectively calcified neurons appear in 45,2 % of the whole material /312 cases/, but in 53,14 % in the cases between 2 and 6 months of life /acute phase/. The selective topography concerns the motor neurons in the reticular substance and motor cranial nerves /79,4 %/, decreasing gradually in the other subcortical grey structures. The possibility of a chemical link between disturbed metabolism of the basal ganglia /parkinsonian tremor/ and

calcium deposits in the nerve cells is hypothetically suggested.

3. The earliest neuronal changes /ballooned and vacuolized cells/ were observed in "pt" rabbits 2-8 days old, prior to the clinical symptoms, in the motor neurons of the brain stem. No changes are observed in the pallidum, neo-striatum and substantia nigra before the established evident tremor.

4. The first neurochemical verifications proved: the normal /as compared with health and carrier groups/ levels of ceruloplasmine, uric acid and cholesterol in the serum of "pt" rabbit. The qualitative pattern of cerebral lipids is likewise normal, with quantitative differences corresponding to secondary myelin degeneration in the long subcortical pathways and neuronal destruction in the acute phase of the disease.

II. Other Topics.

The appearance of Rosenthal Fibers in a case of Multiple Sclerosis is described with a review of pertinent world literature /3 published cases and 3 demonstrated at the Vienna - Symposium in 1972/.

The different pathological conditions accompanied by R.F. are discussed with the final conclusion that the R.F. represent rather Rosenthal Glia, specially degenerated astrocytes like the Alzheimer ones, Opalski and other similar forms of astrocytes. The paper is dedicated to the memory of two Polish neuropathologists: Opalski and Głuszcz whose work was devoted to Rosenthal Fibers.[4/]

4/ See list of publications, Nos. 1,12,80,81,82,83,84,146,151,

COOPERATION WITH FOREIGN COUNTRIES

In 1974, within the scope of the Polish-American Scientific Agreement /Pl 480, 05-035-13/ for the years 1973-1975, the Laboratory continued cooperation with the National Institutes of Health, Bethesda, USA.

The studies dealt with hereditary diseases of the central nervous system /"pt" rabbit model/ and were supported by a PL 480 grant, resulting from the agreement.

In September 1974, an agreement was signed with the National Medical Library, National Institutes of Health, U.S.A., concerning the American edition of the monograph: E. Osetowska "Neuropathology of viral and allergic encephalitides" The text of this monograph was revised.

In 1974, the following foreign guests visited the Laboratory:

I. KLATZO, M.D., Chief of the Laboratory of Neuropatology and Neuroanatomical Sciences, National Institute of Neurological Diseases and Stroke, Bethesda, M.D., U.S.A., August, 1974.

The aim of the visit was consultation of the results of joint studies and establishment of cooperation programme, for the next year.

D. KARCHER, assis. prof. of the Neurochemical Institute, University of Bruxelles, Belgium, 12-22 August 1974.

The aim of the visit was biochemical consultation of material for determination of DOPAmine metabolites in "pt" rabbit urine.

E. LABORATORY OF NEUROCHEMISTRY

A. GROMEK, M. Biol., D. Nat. Sc.

Member of: Polish Biochemical Society
Polish Physiological Society

B. BRONISZEWSKA-ARDELT, M. Biol., D.Nat.Sc.

Member of: Polish Biochemical Society

K. DOMAŃSKA-JANIK, M.D., D.Med. Sc.

Member of: Polish Biochemical Society

H. KSIĘŻAK, M.Biol.

Member of: Polish Biochemical Society

J.W. ŁAZAREWICZ, M.D., D.Med.Sc.

Member of: Polish Biochemical Society

M. MAJEWSKA, M.Biol.

A. PASTUSZKO, M.Biol.

U. RAFAŁOWSKA, M.Biol., D.Nat.Sc.

Member of: Polish Biochemical Society

M. ROSSOWSKA, M.Biol., D.Nat.Sc.

J. STROSZNAJDER, M.D., D.Med.Sc.

Member of: Polish Biochemical Society
Polish Neurological Society

J. WIDEMAN, M. Biochem.

Member of: Polish Society of Neuropathologists

J. WRÓBLEWSKI, M.Biol., Postgrad. Stud.

M. ZALESKA, M.Biol.

Z. DĄBROWIECKI, M.Chem.

T. ZALEWSKA, M.Biochem., D. Pharm.Sc.

Member of: Polish Society of Neuropathologists

International Society of Neuropathology

Polish Biochemical Society

In 1974 the Laboratory of Neurochemistry has continued the investigations within the problem:
Intracellular mechanisms regulating the metabolism of the nervous tissue in normal and pathological conditions.

The problems of the Laboratory of Neurochemistry were realized within 3 subtopics constituting an essential and comprehensive integrity and were concerned with studies in the field of intracellular mechanisms regulating the carbohydrate-energy metabolism of C.N.S. cells in normal and pathological conditions.
In the subtopic: "The effect of hypoxia and anesthesia on the intracellular mechanisms regulating the carbohydrate-energy metabolism in C.N.S. cells" the disturbances of glucose metabolism observed during preceding years have been confirmed and the possible mechanisms of their pathogenesis have been elaborated. It has been demonstrated that free fatty acids released during hypoxia are inhibitors of hexokinase activity. This inhibition is of a noncompetitive character. Simultaneously, it has been demonstrated that free fatty acids may produce the release of the enzyme from mitochondria and synaptosomes to the supernatant. This effect may be also conditioned by the change in pH value, occurring during ischemia. It may be assumed that free fatty acids may in in vivo conditions play the role of a factor regulating the activities of the key glycolytic enzymes, and may be responsible for the rate of glycolysis and gluconeogenesis in various pathophysiological states of the cell.
Subtopic: "Processes of oxidative phosphorylation and biochemical features of ultrastructures of C.N.S. cells in normal and pathological conditions".

Disturbances of the phospholipid structure of cellular membranes have been demonstrated in the studies concerned with Na^+-K^+--dependent ATPase, as well as the decrease of the activity of this enzyme during hypoxia, what is most likely due to the damage of the enzyme phospholipid component. Addition of exogenous lecithin or phosphatidylethanolamine produces a reactivation of the enzyme activity.

The disturbance of the activity of Na^+-K^+-dependent ATPase is an evidence for the damage of transport processes. This is confirmed by investigations concerned with calcium transport in mitochondria under ischemic conditions. Simultaneously with the uncoupling of oxidative phosphorylation, a decrease of calcium accumulation in mitochondria is observed. It may be assumed that free fatty acids, released during ischemia, are the possible inhibitors of both oxidative phosphorylation and mitochondrial calcium transport processes. It has been observed that unsaturated fatty acids influence phospholipid synthesis and activate the synthesis of diacylphosphatidylcholine from CDP-choline and 1,2-diacylglycerol in the presence of the microsomal fraction from rat brain. They do not affect the activity of ethanolamine phosphotransferase, but inhibit the synthesis of alkyl phosphoglycerides.

The damage of the phospholipid structure of cellular membranes and subcellular components is also confirmed by the enhancement of the enzymatic and nonenzymatic processes of free-radical oxidation of unsaturated fatty acids from phospholipids in the microsomal fraction of guinea pig brains submitted to hypoxia. In the studies concerning the de novo synthesis of ethanolamine

and choline phosphoglycerides in neuronal and glial cells, a more active synthesis of these phosphoglycerides was found in neuronal cells and a higher index of the synthesis of choline phosphoglycerides, as compared to ethanolamine phosphoglycerides, has been observed.

In continuation of the studies dealing with the cytoplasmic activity of citrate oxidation cycle, it has been demonstrated that reduced adenine nucleotides may play the role of a factor regulating the activity of NADP-dependent isocitrate dehydrogenase. They may react with the active site of the enzyme, connected probably with SH-groups.

Within the subtopic: "Intracellular mechanisms regulating the metabolism of mediators in normal and pathological conditions", it has been demonstrated that the activity of choline acetyltransferase in the mitochondrial and synaptosomal fractions is decreased during hypoxia, and that this effect may be due to free fatty acids. Oleate at a concentration of 40 nM produces a decrease of the enzyme activity by about 20 %, 2-3 min of hypoxia by - 2 %, O_2 for 30 min and nembutal anesthesia do not affect the enzyme activity.[5/]

5/ See list of publications, Nos. 9, 10, 17, 18, 19, 20, 53, 54, 55, 56, 58, 110, 111, 112, 113, 116, 133, 134, 154, 155.

COOPERATION WITH FOREING COUNTRIES

In 1974 the Laboratory of Neurochemistry has been continuing cooperation with the following foreign institutes:

1. Institute of Biochemistry and Pathophysiology, Georgian Academy of Sciences, Tbilisi.
   The Laboratory of Neurochemistry is realizing the scientific cooperation within the scientific agreement with the Institute of Biochemistry and Pathophysiology of the Georgian Academy of Sciences in Tbilisi /Head of the Institute: Prof. Dr G. Mchedlishvili/. The cooperation concerns problems of intracellular mechanisms regulating the metabolism of the C.N.S. in normal and pathological conditions, such as hypoxia, anesthesia, drug action. In more detail, the investigations deal with the carbohydrate-energy metabolism and the metabolism of mediators and biogenic amines.

2. Institute of Physiological Chemistry, University of Köln G.F.R. /Prof. Dr H. Debuch/.
   Problem: "Phospholipid metabolism in C.N.S. cells".
   Between this Institute and the Laboratory of Neurochemistry there is an agreement for scientific cooperation concerning the problems of phospholipid metabolism. Within this cooperation Dr J. Strosznajder stayed at this Institute for 4 months in 1974. She continued the previously initiated investigations dealing with the synthesis of phosphatidylethanolamine plasmalogens in neuronal and glial cells. Dr J. Strosznajder received for the Laboratory of Neurochemistry from the Alexander Humboldt Foundation a gas chromatograph /Fa Varian

GmbH Modell 1440-01/ in order to facilitate further scientific cooperation and the continuation of investigations, as well as for other research works.

From 15.09 to 31.10.1974 on the invitation of the Head of the Laboratory of Neurochemistry - Dr Andrzej Gromek, Dr Brigitte Witter from the Institute of Physiological Chemistry in Köln stayed at the Laboratory. She participated in research work concerning the catabolism of labelled glucose in brains of animals in normal and hypoxic conditions.

3. Institute of Neurobiology, University of Göteborg, Sweden /Prof. Dr A. Hamberger/.

The scientific cooperation with this Institute within a mutual agreement is a continuation of the previously realized investigations and concerns problems of calcium transport in C.N.S. cells in normal and pathological conditions.

Dr J. Łazarewicz stayed at this Institute for 2.5 months, from 21.09 to 8.12.1974.

Within the above cooperation Dr Åke Sellstrom has visited the Laboratory of Neurochemistry. He was introduced to the scientific problems of the Laboratory and delivered a lecture concerning GABA metabolism in C.N.S. cells.

4. Johnson Research Foundation, Department of Biophysics and Physical Chemistry, Philadelphia Pa., USA /Prof. Dr Britton Chance/

The cooperation with this Institute concerns studies of citrate metabolism in brain cytosol under conditions of hypoxia and anoxia.

Dr U. Rafałowska stayed in this Institute for 6 months, from

19.06. to 19.12.1974. The work has been accomplished and published: "Effect of aspartate on citrate metabolism in rat brain cytosol under conditions of normoxia, hypoxia and anesthesia".

5. Department of Physiology, Medical School, University of North Carolina, Chapel Hill, USA.
   The investigations concern the effect of hypoxia on the activities of key glycolytic enzymes.

6. Department of Physiological Chemistry, Ohio State University, Columbus, OH 43210 USA.
   /Prof. Dr L.A. Horrocks/
   The scientific cooperation concerns problems of phospholipid metabolism in C.N.S. cells in normal and hypoxic conditions, i.e. the de novo synthesis of phosphatidylethanolamine and phosphatidylcholine in the microsomal fractions of neuronal and glial cells, as well as the activities of plasmalogen dehydrogenase and plasmalogenase.

In 1974, the following scientific workers of the Laboratory visited foreign Institutes for scientifc training:

U. RAFAŁOWSKA - in the Johnson Research Foundation, Department of Biophysics and Physical Biochemistry Philadephia, U.S.A., June 19 - December 19,1974,

The aim of the visit was to carry out studies on the metabolism of reductive equivalents in the central nervous system in normal condition and hypoxia.

J. STROSZNAJDER - in the Institute of Physiological Chemistry, of the Köln University, G.F.R.

July 2 - October 10, 1974.

The aim of the visit was to continue the joint studies undertaken in 1972/1973, concerning the synthesis of nerve tissue - specific phospholipids from the phosphatidylethanolamine group in neuronal and glial cells.

J.W. ŁAZAREWICZ - in the Institute of Neurobiology,
of the University of Göteborg, Sweden.
September 21 - December 8, 1974.

The aim of the visit was the continuation of joint studies on calcium transport in the central nervous system in normal conditions and hypoxia.

J. WIDEMAN - July 14-22, 1974, London, England.

Participated in the course on the application of physical methods in biochemistry.

J. WRÓBLEWSKI - September 1-5, 1974, Budapest, Hungary.

Participated in the course on the application of mathematics in biological research.

In 1974, the Laboratory was visited by the following froreign scientists:

Åke SELLSTROM, M.D. - from the Institute of Neurobiology,
University of Göteborg, Sweden.
April 29 - May 9, 1974.

The visit was organized in the framework of mutual cooperation between the two Institutes and was aimed to inform the visitor about the research performed in the Laboratory of Neurochemistry.

During his stay doctor R. Sellstrom delivered a lecture on calcium transport in the central nervous system.

Brigitte WITTER, M.D., - from the Institute of Physiological Chemistry, of the Köln University, G.F.R.

September 15 - October 31, 1974.

During her stay at the Laboratory, doctor B. Witter participated in the studies on the catabolism of labelled glucose in the brains of experimental animals, in conditions of norm and hypoxia.

PARTICIPATION OF THE SCIENTIFIC STAFF OF THE LABORATORY IN CONGRESSES, MEETINGS, CONFERENCES, SYMPOSIA AND SEMINARS

Papers and information presented at:

1. IV-th International Colloquium on Bioenergetics and Mitochondria.
   May 13-16, 1974, Magdeburg, G.D.R.
   ŁAZAREWICZ J.W., DĄBROWIECKI Z., STOSZNAJDER J.
   Calcium transport in normal and ischemic brain mitochondria.
   DOMAŃSKA-JANIK K., BRONISZEWSKA-ARDELT B., ŁAZAREWICZ J.
   Brain hexokinase - the factor effecting subcellular distribution in vivo and in vitro.
   Proc. of the IV-th Colloqu. on Bioenerg. and Mitochondria, May 1974, Magdeburg, G.D.R.

2. International Symposium on the Metabolism of Phosholipids.
   July 1974, Perugia, Italy.
   STROSZNAJDER J.

The synthesis of choline and ethanolamine phospholipids in nerve- glial - and synaptosomal cells.
Proc. of the Intern. Symp. Metabol. Phospholipids.
July 1974, Perugia, Italy.

3. International Meeting of the Federation of European Biochemical Societies, August 25-30, 1974, Budapest, Hungary

WIDEMAN J.
LDH isoenzymes under mild hypoxia: a new model of adaptation.

WRÓBLEWSKI J.T., DOMAŃSKA-JANIK K.
Brain soluble hexokinase: inhibition by oleate.

KSIĘŻAK H., GROMEK A., ZALEWSKA M.
Enzymes involved in the metabolism of acetylcholine in hypoxia and barbiturate anesthesia.

ŁAZAREWICZ J.W., HAMBERGER A.
Specific properties of respiration-linked Ca^{2+} transport in brain mitochondria.

BRONISZEWSKA-ARDELT B., MILLER A.T.
Hypoxic changes in the brain hexokinase distribution: phylogenetic and developmental considerations.

RADOMIŃSKA-PYREK A., STROSZNAJDER J., DĄBROWIECKI Z., CHOJNACKI T., HORROCKS L.A.
The effect of fatty acids on the synthesis of choline and ethanolamine phosphoglycerides.

PASTUSZKO A., GROMEK A., RAFAŁOWSKA U.
Regulation of IDH NADP activity from brain cytosol by adenine and pyridine nucleotides.

Proc. of the Intern.Meeting of Feder. of Europan Biochemical Societies, August 1974, Budapest, Hungary.

4. VII-th International Congress of Neuropathology, 1-7 September, 1974, Budapest, Hungary.

DOMAŃSKA-JANIK K., BRONISZEWSKA-ARDELT B., ŁAZAREWICZ J.
Subcellular distribution of brain hexokinase under normal and experimental condition.

RAFAŁOWSKA U., PASTUSZKO A., GROMEK A.
Purification of NADP-dependent isocitrate dehydrogenase from the rat brain cytosol.

STROSZNAJDER J., RADOMIŃSKA-PYREK A., DĄBROWIECKI Z., DZDUSZKO J.
Qualitative and quantitative analysis of lipids from cerebrospinal fluid under normal and pathological conditions of central nervous system.

ZALEWSKA T.
Effect of hypoxia and nembutal anesthesia on protein synthesis in the rat brain.

ŁAZAREWICZ J.W., STROSZNAJDER J., DĄBROWIECKI Z.
Effect of cerebral ischemia on calcium transport in isolated brain mitochondria.

5. XII Zjazd Polskiego Towarzystwa Biochemicznego
wrzesień 1974, Warszawa, Polska.
/The XII-th Meeting of the Polish Biological Society
September 1974, Warszawa, Poland/.

RADOMIŃSKA-PYREK A., STROSZNAJDER J., DĄBROWIECKI Z., CHOJNACKI T.

Wpływ kwasów tłuszczowych na biosyntezę sn-fosfatydylocholiny i sn-fosfatydyloetanoloaminy w mikrosomalnej frakcji mózgu i wątroby szczura.

/Effect of fatty acids on sn-phosphatidylcholine and sn-phosphatidylothanolamine biosynthesis in the microsomal fraction of the rat brain and liver/.

6. Conference organized by the Biochemical Societes of Belgium, German Federal Republic and Holland.
October 2-5, 1974, Düsseldorf, G.F.R.
Participant from the Laboratory of Neurochemistry:
J. Strosznajder M.D.

7. International Danube Symposium of Neurology
Child Neurology and Neuropathology
October 11-16, 1974, Poznań, Poland.
RAP Z., WIDEMAN J.
Poziom grup sulfhydrylowych w tkance nerwowej podczas obrzęku mózgu spowodowanego zimnem.
/Sulphhydryl groups level in the nerve tissue during oedema induced by cold/

DOMAŃSKA-JANIK K.
Przemiana glukozy we frakcji cytoplazmatycznej mózgu szczura w czasie pobudzania cyklu monofosforanu.
/Glucose metabolism in the cytoplasmic fraction of the rat brain during stimulation of hexose monphosphate shunt/
Proc. of the Danube symp. of Neurology, Child Neurology and Neuropathology, 1974, Poznań, Poland.

F. DEPARTMENT OF NEUROSURGERY

A. KUNICKI, M.D., D.Sc., professor of Neurosurgery
Full member of the Polish Academy of Sciences
Chairman of the Committee of Neurological Sciences
of the Polish Academy of Sciences
Hon. President of the Polish Society of Neurological Surgeons
Member of the Polish Society of Neuropathologists
Member of the Polish Medical Society
V-President of the World Federation of Neurosurgeons
Corresponding member of the American Association of
Neurological Surgeons
Hon. member of the British Society of Neurological Surgeons
Hon. member of the Bulgarian Society
of Neurology, Psychiatry and Neurosurgeons
Hon. member of the Purkinye Czechoslovak Medical Society
Hon. member of the Neurosurgical Society
of the German Democratic Republic
Corresponding member of the Società Italiana di Neurochirurgia
Hon. member of the Neurosurgical Society of the U.S.S.R.

J. ADYNOWSKI, M.D.
Member of: Polish Radiological Society

B. AUGUSTYNIAK, M.D.
Member of: Polish Society of Neurological Surgeons

Z. CZERNICKI, M.D.
Member of: Polish Society of Neurological Surgeons

P. DYTKO, B.Sc/hon/, M. Phys.

J. DZIDUSZKO, M.D.

Member of: Polish Society of Neurological Surgeons

W. GROCHOWSKI, M.D.

Member of: Polish Society of Neurological Surgeons

J. JURKIEWICZ, M.D.

Member of: Polish Society of Neurological Surgeons

J. KORSAK-ŚLIWKA, M.Sc., E.Eng.

E. ŁUCZYWEK, M.Ps.

E. MEMPEL, M.D., D.Sc., assis. professor of Neurosurgery

Member of: Polish Society of Neurological Surgeons
Hon. member of the Purkinye Czechoslovak Medical Society

Z. RYCEMBEL, M.D.

Member of: Polish Society of Anaesthesiologists

R. STADNICKI, M.Ps.

J. SZEWCZYKOWSKI, M.D.

Member of: Polish Society of Neurological Surgeons

J. SZUMSKA, D. Ps., D. Neurophys. Sc., assis. professor of Neurosurgery

Member of: Polish Society of Neurological Surgeons

S. ŚLIWKA, M.Sc., E.Eng.

B. WITKIEWICZ, M.D.

Member of: Polish Society of Neurological Surgeons

The main research subject of the Department was the pathomechanism, prevention and treatment of brain oedema.

As a result of long-term investigations on intracranial pressure conducted by means of computer-assisted neurosurgical intensive care system, developed in this Department, an index was established allowing the distinction of two zones of intracranial pressure. The transition from one zone to the other is manifested by a sharp increase of the amplitude of pressure oscillations and results probably from exhaustion of mechanisms compensating the rising pressure. The second zone is the "waring zone" which signalizes an unfavorable change in the pressure-volume relation. The distribution of pressure changes in a given period of time is represented by means of a "floating histogram". This method consists in construction of continuous 24-hour histograms with a time step of 12 hours, so that the data comprising two consecutive histograms partly overlap.

In the investigation of prevention and treatment of brain oedema, surgical evidence has accumulated, which indicates that hyperventilation does not always efficiently lower intracranial pressure. In certain situations the effect of osmotically active agents is doubtful, probably because of extensive brain oedema.

This agrees with the experiments from which it results that osmotic dehydration involves non-oedematous tissue, but does not affect the area with oedema.

Since routinely applied hyperventilation under modern anaesthesia is associated with a fall of pCO_2, experiments were performed on cats in order to establish the limits of

brain tissue tolerance to acidosis and the degree of reversibility of these changes. It was demonstrated that in the brain tissue and cerebrospinal fluid of the cat, the lactate level rises by a factor of seven, as early as after 45 min. of deep hyperventilation /below 15 mm Hg/, but returns to normal after as long as 10 h of this treatment.

A study of lactates in the cerebrospinal fluid of patients with cranio-cerebral trauma showed that the danger to life increases if the lactate level persists above 30 mg %. It results from other experiments that at this level disturbances of the acid-base balance occur. The studies referred to above will be continued in view of their importance for therapy and prognosis.

In experimental studies of brain oedema, epidural pressure was applied as a model for characterizing biochemically and morphologically the oedematous tissue dependence on the duration of compression and the application of osmotically active drugs.

As early as after 2 h of compression, very slight changes in the electronmicroscopic picture were noted and after 4 h they were pronounced, consisting in a dilatation of glial cell processes, an increased lysosome count and a considerable widening of the endoplasmic reticulum.

Interesting data were obtained in experiments in which rats were dehydrated by intraperitoneal introduction of mannitol. It appeared that, in spite of severe dehydration, the astrocytes exhibit changes similar to those in oedema, hence it may be inferred that they play a role in the translocation of water from the tissues to the vascular bed.

The subgroup subject "Direct and remote consequences of

trauma to the nervous system" included EEG examinations of 150 subjects practising boxing. Wide differences were found in the records. In 14 cases the type of changes observed constituted an indication to forbid further engagement in this sport.

The second research group conducts research, along two lines.

1. On the effect of stereotactic damage on emotional states, memory and brain bioelectric activity

Headed by Eugeniusz Mempel, M.D., D.Sc., Assis. Professor.

Investigations concerning the behaviour of epileptic patients treated by amygdalotomy have been ended. The results obtained with 46 patients indicate that after selective amygdalotomy, motor hyperactivity diminishes and uncontrolled paroxysmal emotional disturbances recede. The possibility arises, moreover, of the patient controlling his own acts and reactions to external stimuli and to "compulsive action". This subject is dealt with in the paper "Effect of amygdalotomy on behavioural disorders in epileptic patients".

The memory of the patients was also tested after stereotactic damage to the amygdaloid nuclei, hippocampus, thalamic nuclei and cingulate gyrus. It was found that selective damage to the amygdaloid nuclei does not disturb immediate memory. On the contrary, it has a favourable influence on concentration, retention and learning.

Comparative EEG examinations of these patients before and after amygdalotomy revealed a reduced frequency of discharges,

a geater regularity and an increased contribution of alpha activity in the basic rhythms. In most patients a normalization of the EEG record was observed.

Investigation of the cells of the amygdaloid nuclei in cats demonstrated differences in them as regards spontaneous activity and that under the influence of the reaction to electric stimulation of the hypothalamus. Further studies are in progress.

2. Gnostic disturbances caused by damage to the cerebral hemispheres

Headed by Jadwiga Szumska, D.Ps., D.Nat.Sc., Assis. Professor

A paper dealing with gnostic activity "Neurophysiological aspects of childhood aphasia" has been prepared for publication. In this paper the concept of speech mechanisms suggested by Konorski, based on the cooperation of gnostic brain fields responsible for the particular manifestations of the function of speech /naming, repeating and understanding/ is referred to. This concept is applied for elucidating certain disorders in children with aphasia, in the case of sufficiently developed intelligence and hearing level.

On the basis of the above named concept, guiding principles have been elaborated for logopedists and psychologists, concerning the procedure in various forms of aphasia and rehabilitation of the patients. The methods elaborated consist in the best possible utilization of the time relations formed, on pathways facilitating the occurrence of successive reactions.

Two prospects of diagnosis and rehabilitation albums of

speech disturbances in aphasiae adults and children suferring of speech deficiency have been prepared.[6/]

PARTICIPATION OF THE SCIENTIFIC STAFF OF THE DEPARTMENT IN CONGRESSES, MEETINGS, CONFERENCES, SYMPOSIA AND SEMINARS

Papers and informations presented at :

1. II-nd International Symposium on Intracranial Pressure
   June 16-18, 1974, Lund, Sweden.
   CZERNICKI Z., JURKIEWICZ J., KUNICKI A.
   The effect of hypocapnia on normal and increased intracranial pressure in cats and rabbits.
   SZEWCZYKOWSKI J., DYDTKO P., KUNICKI A., KORSAK-ŚLIWKA J., ŚLIWKA S., DZIDUSZKO J., AUGUSTYNIAK B.
   Determination of critical ICP levels in neurosurgical patients. A statistical approach.
   Proc. of the II-nd Intern. Symp. Intracran. Press., 1974, Lund, Sweden.

2. III Sympozjum Przepływu Krwi przez Mózg.
   /III-rd Symposium on Cerebral Blood Flow/
   June 1974, Tbilisi, U.S.S.R.
   SZEWCZYKOWSKI J., DYTKO P., KUNICKI A., KORSAK - ŚLIWKA J., ŚLIWKA S., DZIDUSZKO J.
   Relationship between mean ICP and the amplitude of its variation - pratical application in neurosurgery.
   Proc. of the III-rd Symp. Cerebral Blood Flow, 1974, Tbilisi, U.S.S.R.

6/ See list of publications, Nos: 8, 22, 32, 58, 129, 130, 131, 132, 136, 142, 149, 150.

3. Conference of the Working Group of W.H.O.
August 19-23, 1974, Genève, Switzerland
Professor A. Kunicki, head of the Department of Neurosurgery, participated in the Conference on the invitation of W.H.O. The Working Group was established with the aim of working out the nomenclature and classification of nervous system tumours. The discussion dealt with controversial problems, concerning the classification and biological evaluation of some morphological units.
The working programme for the coming 3 years has been established.

4. International Conference of the Hungarian Neurosurgical Society
September 8-10, 1974, Siofok, Hungary.
SZEWCZYKOWSKI J., KORSAK-ŚLIWKA J., KUNICKI A., DYTKO P., ŚLIWKA S., DZIDUSZKO J., GROCHOWSKI W.
Computer-assisted evaluation of intracranial pressure in benigh tumour of the posterior fossa.
Proc. of the Intern. Conf. Hungar. Neurosurg. Soc., 1974, Siofok, Hungary.
During the discussion following one of the sessions, doctor Z. CZERNICKI emphasized the possibility of evaluating the postoperative condition of a patient on the basis of the lactate level in the cerebrospinal fluid.

5. III Ogólnopolskie Sympozjum Neurochirurgów, Warszawa, Polska, 18-20 października 1974.
/III-rd Symposium of Polish Neurosurgeons
October 18-20, 1974, Warszawa, Poland/

CZERNICKI Z., KARCZEWSKA E., RYCEMBEL Z., ŚLIWKA S., KORSAK-ŚLIWKA J.

Ocena statystyczna równowagi kwasowo-zasadowej i stężenia mleczanów w płynie mózgowo-rdzeniowym i tkance mózgowej.
/Statistical evaluation of the acid-base balance and lactate concentration in cerebrospinal fluid and brain tissue/.

CZERNICKI Z., JURKIEWICZ J., GADOMSKI R.

Wpływ głębokiej hiperwentylacji na poziom mleczanów w płynie mózgowo-rdzeniowym i tkance mózgowej.
/Effect of deep hyperventilation on the lactate level in the cerebro spinal fluid and brain tissue/.

CZERNICKI Z., GROCHOWSKI W.

Mleczany w płynie mózgowo-rdzeniowym chorych z urazem czaszkowo-mózgowym.
/Lactates in the cerebro spinal fluid of patients with cranio-cerebral trauma/.

DZIDUSZKO J., PYREK A., STROSZNAJDER J., DĄBROWIECKI Z., SZEWCZYKOWSKI J., BRZEZIŃSKI T.

Wpływ nadciśnienia czaszkowego na metabolizm fosfolipidów w ośrodkowym układzie nerwowym.
/Effect of intracranial hypertension on phospholipid metabolism in the central nervous system/.

JURKIEWICZ J., BOROWICZ J.W., CZERNICKI Z.

Obraz elektronowo-mikroskopowy tkanki mózgowej szczura po podaniu środków odwadniających.
/Electron microscopic picture of the brain tissue of rats after administration of dehydrating agents/.

JURKIEWICZ J., RYCEMBEL Z., KARCZEWSKA E.
Niebezpieczeństwo stosowania środków odwadniających.
Część I.
/The danger of application of dehydrating agents.
Part I./.

RYCEMBEL Z., KARCZEWSKA E., JURKIEWICZ J.
Niebezpieczeństwo stosowania środków odwadniających.
Część II.
/The danger of application of dehydrating agents.
Part II./.

JURKIEWICZ J., BOROWICZ J.W., CZERNICKI Z., CZAJKOWSKA B.
Zmiany elektronowo-mikroskopowe w tkance mózgowej po dotrzewnym podaniu 20 % roztworu mannitolu.
/Electron microscopic changes in the brain tissue after intraperitoneal administration of 20 % mannitol/.
Proceedings of the III-rd Symposium of Polish Neurosurgeons 1974, Warszawa, Poland.

G. SURGICAL RESEARCH AND TRANSPLANTATION LABORATORY

J. NIELUBOWICZ, M.D., D.Sc., professor of Surgery
Corresponding Member of the Polish Academy of Sciences
President of the Polish Surgeons Society
V-President of the European Cardiovascular Surgical Society
Corresponding Member of the Lyon's Surgical Society /France/
Hon. Member of the Lombardy Surgeons Society /Italy/
Member of: The Executive Committee of the Société Internationale de Chirurgie
Surgeons Society of Great Britain and Ireland
American College of Cardiology
Surgeons Society of Italy

H. GAŁKOWSKA, M.Biol.

A. KOSSAKOWSKI, M.D.

H. ŁUKASIEWICZ, M.Pharm., D. Pharm.

M. MORZYCKA, M.D.

M. MUSZYŃSKI, M.D.

W. OLSZEWSKI, M.D., D.Sc., assis. professor of Surgery
Member of: Polish Surgeons Society
European Society for Experimental Surgery
International Lymphological Society

J. PŁACHTA, M.Pharm.

J. POLAŃSKI, M.D.

W. ROWIŃSKI, M.D.
Member of: Polish Surgeons Society
European Dialysis and Transplantation Association

European Society for Experimental Surgery

International Transplantation Society

M. RUKA, M.Vet.Sc.

Z. SAWICKI, M.D.

J. SZMIDT, M.D.

Work on the two main research subjects, initiated in 1971, namely experimental organ transplantation and pathophysiology of the lymphatic system, and arterio-venous communications has been continued. The former included studies on hyperacute rejection of xeno- and allografts, coagulation and fibrinolysis in hyperacutely rejected organ transplants, research on substances found in the effluent serum from hyperacutely rejected grafts inhibiting migration of macrophages, early diagnosis of kidney allograft rejection, preservation of kidney and liver, raising of ALG in different species under various immunization protocols. The latter consisted of studies on the biochemistry and serology of peripheral lymph, and opening of arteriovenous communications following transection of the lumbar trunk and sciatic nerve.

Studies included into the problem:

Theoretical and practical aspects of immunological differentiation of organisms

Coordinating center : Institute of Immunology and Experimental Therapy, Polish Academy of Sciences.
Cooperating institution: Surgical Research and Transplantation Laboratory, Medical Research Centre, Polish Academy of Sciences.

Organ and tissue transplantation:

Intravascular coagulation in xenotransplants

Various anti-aggregation drugs were tried for preventing

platelet aggregation in the microvasculature of hyperacutely rejected liver and kidney xenografts. Persantin and its two derivatives RA 233 and SH 869 were studied. In vitro tests revealed that persantin inhibits ADP, thrombin and collagen--induced aggregation only when applied on washed platelets at a concentrations of 1.2×10^{-7} to 1.8×10^{-7} cells. There was no such an effect when platelets suspended in serum were studied.

Mechanism of vessel wall damage in hyperacutely rejected xenografts

Electron microscopic studies revealed main changes in the sinusoidal endothelial cells, with disruption of the cell membrane, cell desquamation and widening of interendothelial junctions. By immunofluorescent techniques it was possible to visualize the deposists of dog's complement and immunoglobulins on the surface of rabbit liver endothelial cells. This indicates that the process of hyperacute rejection is antibody-mediated and limited in its initial phase to the vascular lumen and wall.

Inhibition of hyperacute rejection of xenografts

A state of unresponsiveness in the recipient to donor transplantation antigens in the system dog-rabbit with weekly injections of a small volume of donor blood was induced. Administration of antigen was discontinued whenever cytotoxic antibody titers appeared in the recipient's serum. No prolongation /or shortening!/ of xenograft survival time was obtained after a

6-months pretreatment of the recipient.

Studies on macrophage migration inhibiting activity of serum from hyperacutely rejected xenografts

Effluent serum from hyperacutely rejected xenografts was fractionated on Sephadex G - 200 columns. Two most potent fractions were found, with protein concentration of 1.4. - 1.5 g %, still active at a dilution of 1 : 40. They were proved not to be cytotoxic.
On electrophoretic patterns the active fractions were located in β-globulin strands.

Model of hyperacute rejection of kidney allograft

A reproducible experimental model was designed in dog for studies of the mechanism of hyperacute rejection. The rejection time was on the average 2-4 hrs.

Early diagnosis of kidney allograft rejection by the leucocyte migration inhibition test

The test turned out to be positive only in a low percentage of cases of rejection.

Morphology of intestinal epithelium and lymphoid tissue after trasplantation and under various immunosupressive protocols

Stimulation of villous and cryptal epithelium of the jeju-

num was found after administration of ALG. There was no statistically significant prolongation of allograft survival time under different immunosupressive protocols.

"Squirt" method liver preservation

No better results were obtained than by classical methods of hypothermic perfusion preservation.

Long-term results of kidney autografts

Normal or slightly /decreased/ plasma flow /PAH clearance/ and normal glomerular filtration rate /inulin clearance/ were found in kidney autografts in 2-year follow-up.

The effect of warm ischaemia on posttransplantation kidney function

Thirty minutes lasting warm ischemia of the kidney preceding the transplantation resulted in 50 % mortality of recipients.

Functional studies of human preserved kidneys

In 13 cases human kidney obtained from cadaver donors was preserved in modified Collin's solution for a period of 2 to 8 hrs. In 11 out of 13 studied cases the function of the transplanted kidney proved to be adequate for life support.

Studies on evaluation of ischemic damage of the preserved kidney

Kidneys preserved for 24 hrs in Ringer's and Collin's

solution were studied. Substantially decreased absorption of PAH by kidney sections was found after preservation in Ringer's solution. Only minor changes were found after preservation in Collin's solution.

Studies on the practical application of immunosuppressive factors :

1. R a i s i n g o f p i g a n t i - d o g ALG

   Studies on the pig immunization schedule, dose and route with dog antigen were completed. Potent ALG batches were obtained.

2. L i v e r a n d k i d n e y a l l o g r a f t s u r v i v a l t i m e u n d e r t h e s a m e ALG i m m u n o s u p p r e s s i v e r e g i m e

   No prolongation of liver graft survival was found with ALG doses usually prolonging kidney allograft survival time in dogs.

3. O r a g a n a n d t i s s u e m o r p h o l o g i c a l c h a n g e s a f t e r ALG a d m i n i s t r a t i o n

   Non-specific stimulation of jejunal epithelium was found in grafts, without any evident prolongation of transplant survival. No changes in kidney allografts were found. In spleen cellular depletion of lymphoid follicles was observed, and in lymph nodes a decrease of lymphocyte number in thymus-dependent areas.

Studies included into the problem:

P a t h o p h y s i o l o g y o f c i r c u l a t i o n

A. Pathophysiology of lymphatic circulation

Biochemical studies of stagnant lymph of dogs with 8-year lasting lymphedema were carried out. Low protein concentrations /1.5 g %/ and enzyme activity Sbor, SGPT, LDH, alkaline and acid phosphatase not exceeding 10 - 15 % of serum values were found. This was accompanied by low complement activity and immunoglobulin concentration. A high degree of lymphocyte auto-transformation was found with a high response to Con A.

Studies on transosseous lymphography were completed. The method enables visualization of lymph vessels and nodes draining the bone.

B. Opening of A - V communications after peripheral nerve dissection

Lumbar trunk sympathectomy was followed by temporary opening of A - V communication.

Mechanical stress on the rabbit foot did not produce ulcerations similar to those observed after denervation. No spontaneous amputation cases were seen as had been found after nerve severance.[7/]

COOPERATION WITH FOREIGN COUNTRIES

The following research workers were trained or carried out joint research studies in 1974:

7/ See list of publications, Nos: 71, 72, 73, 76, 77, 78, 79, 102, 103, 117, 118, 119, 123.

W. OLSZEWSKI, M.D., D.Sc.,

In the Norwegian Radium Hospital, Oslo, Norway, - June 8 - August 31, November 11 - 18, December 6 - 12.

A joint programme on lymphocyte and immune protein kinetics in peripheral tissues was started, and its I -st phase on immunoglobulins and complement components in peripheral lymph was completed.

J. POLAŃSKI, M.D.

In University of Szeged, Hungary, November 14 - 28.

Visited a leading Hungarian centre for experimental and clinical organ transplantation and presented our results of canine and porcine liver transplantation.

M. MUSZYŃSKI, M.D.

Charité Hospital, Berlin, G.D.R. December 6 - 20.

Visited the Institute of Radiology whose new lymphographic techniques have recently been introduced in the case of patients with malignant tumors.

W. ROWIŃSKI M.D., ŁUKASIEWICZ H., D. Pharm.

Institute for Tissue and Organ Transplantation, Soviet Academy of Sciences.

A 5-day visit was devoted to the presentation of results of both groups, on the immunological aspects of organ transplantation. Plans for 1975 were discussed and, after some corrections, accepted.

W. OLSZEWSKI, M.D., D.Sc.

University of Lund, Dept. of Surgery Lund and Malmö, Sweden,

November 4 - 11.

Visiting Scientist on the invitation of the Swedish Academy of Sciences. Presented papers and presided symposia on immune deficiency in tissues deprived of lymphatic circulation.

H. ŁUKASIEWICZ, D.Pharm.

The Center for Thrombosis Research, Tempel University School of Medicine, Philadelphia, USA. September 1-th 1973, - - February 1-th, 1974.

Studies on coagulation disorders following immunological reactions, immunology of blood platelets and participation of the coagulation process in the rejection of organ transplants.

The following foreign guests visited the Laboratory in 1974:

F. LUKIC, M.D., D.Sc., March 6-12, The Oncological Institute Ljubliana, Yougoslavia.

Presented his experiences on malignant toumor spread via the lymphatics and particularly on the retrograde spread of cancer cells from the thoracic duct to the limbs.

L. CLODIUS, M.D., March 17-24, University of Zürich, Switzerland.

During his 7-day visit gave a lecture on the pathomechanism of lymph stasis, performed a new type of plastic operation on a patient with post-infective lymphodema, and presented 2 papers at the Plastic Surgeon Symposium in Kraków.

S.E. BERGENTZ, M.D., D.Sc. professor, March 27 - April 3, University of Lund, Malmö - Sweden.

Presented his research results on coagulation and fibri-

nolysis in allogeneic organ transplants.

C. GRANDVAL, M.D., April 24-30, University of Buenos-Aires, Argentina.

Main topics discussed with Dr Grandval were immunological deficiencies in tissue with lymph stasis, and immunotherapy of skin and breast cancer.

H. KEITEL, M.D., B. KLOTZER, M.D., University of Montpellier, Montpellier - France.

Held a series of meetings and presented papers on pancreatic pathophysiology and modern methods of treatment of acute pancreatitis.

PARTICIPATION OF THE SCIENTIFIC STAFF OF THE LABORATORY IN CONGRESSES, MEETINGS, CONFERENCES, SYMPOSIA AND SEMINARS

Papers presented at:

1. Symposium "Experimentale Chirurgie"
   May 9-11, 1974, Zinovitz - Usedom, G.D.R.
   ŁUKASIEWICZ H., OLSZEWSKI W., ROWIŃSKI W., NIELUBOWICZ J.
   Blood coagulation disturbances due to circulating pancreatic enzymes.

   ROWIŃSKI W., OLSZEWSKA K., BOROWICZ J.W., PŁACHTA J.
   An assessment of ischemic injury before transplantation and protective effect of various perfusates.

   POLAŃSKI J.
   Liver conservation.

MACHOWSKI Z.

Immunological studies of peripheral lymph in dog and man.

OLSZEWSKI W.

Sensitivity of liver sinusoidal endothelium to ischemia and conservation procedures.

OLSZEWSKI W.

Morphology of rejected jejunal allografts.

2. IX-th Congress of European Society for Experimental Surgery
May 14-17, 1974, Salzburg, Austria.

ROWIŃSKI W., SZMIDT J., OLSZEWSKI W., ŁUKASIEWICZ H., POLAŃSKI J., JAKUBOWSKA M., BRÜHL A., TUPALSKA B., NIELUBOWICZ J.

Dose and route of ALG administration-dependent effect on renal and liver allograft survival in dogs.

OLSZEWSKI W., BOROWICZ J.W., OLSZEWSKA K.

Sensitivity of vascular endothelium of liver sinusoids to ischemia and conservation procedures.

3. Congress of the German Democratic Republic Surgical Society.
May, 1974, Halle, G.D.R.
Participation of professor J. Nielubowicz M.D., D.Sc.

4. Annual Congress of the European Cardio-vascular Surgical Society
July, 4-6, 1974, Oslo, Norway.
Participation of professor J. Nielubowicz, M.D., D.Sc.

5.Symposium on Blood Platelets.

July 21, 1974, Istambul, Turkay.

ŁUKASIEWICZ H.

Interference of plasma proteins in the antiaggregation activity of dipyridamole and its derivates.

6. Annual Congress of the Royal Society of Surgeons.

September, 1974, Edinburgh, G. Britain.

Paticipation of professor J. Nielubowicz, M.D., D.Sc.

7. Meeting of the Polish Surgeons Society

September 20-22, 1974, Katowice, Poland

ROWIŃSKI W.

Niewydolność nerek w przebiegu ostrego zapalenia trzustki.

/Renal insufficiency in acute pancreatitis/

8. I-st Congress of the Polish Immunological Society

October, 8-9, 1974, Wrocław, Poland.

OLSZEWSKI W., ROWIŃSKI W.

Efekty immunologiczne i toksykologiczne stosowania immunosupresorów w klinice przeszczepów.

/Immunological and toxic effects of immunosuppressive drugs in clinical organ transplantation/.

H. ELECTRON MICROSCOPY UNIT

J.W. BOROWICZ, M.D., D.Sc. assis. professor of Medical Sciences

Member of: Polish Anatomopathologists Society
Polish Society of Neuropathologists
European Society of Pathology
European Cell Biology Organization

A. DANIELEWICZ-KOTOWICZ, M.D.

B. GAJKOWSKA, M.Biol., D.Nat.Sc.

R. MARYNIAK M.D.

K. OLSZEWSKA, M.Biol.

In 1974, the studies were concentrated on the following problems:

1. **Hypothalmo-hypophysical system in various experimental systems**

This line of investigations included:

A. Studies on rat cerebral cortex and hypothalmic neurosecretory nuclei after administration of antiedematous drugs.

B. Studies on rat cerebral cortex, neurosecretory nuclei, hypophysis and liver in the case of acute and chronic intoxication with morphine and after its sudden discontinuation.

2. **Electron microscopy of the nervous tissue in vitro.**

Two groups of works may by distinguished here:

A. Studies on the central and peripheral nervous tissue in conditions of short-term hypoxia.

B. Studies on the effect of various concentrations of penicilamine, on glial tissue cultured in vitro.

The results have in part been included in the papers published in 1974, others are in preparation for publication.[8/]

COOPERATION WITH FOREIGN COUNTRIES

In 1974, A. Danielewicz-Kotowicz, M.D., completed a 4-month's training in new electron microscopic methods at the Laboratory of Histology and Embryology of the University of Marseille, France. /Head: professor Picard/.

PARTICIPATION OF THE SCIENTIFIC STAFF OF THE UNIT IN CONFERENCES, CONGRESSES, MEETINGS, SYMPOSIA AND SEMINARS

In 1974, the Electron Microscopy Unit was represented at the following scientific meetings and conferences:

1. XV Zjazd Sekcji Torakochirurgicznej i Chirurgów Naczyniowych, Towarzystwa Chirurgów Polskich, 9-10 maja 1974, Gdańsk, Polska.
   /XV-th Meeting of the Thoracosurgery and Angiosurgery Section, of the Polish Surgical Association/.
   May 9-10, 1974, Gdańsk, Poland.

[8/] See list of publications, Nos: 13, 27, 50, 120.

Participant: J.W. Borowicz, M.D., D.Sc., assis. professor

2. Sympozjum Mikroskopii Elektronowej Skaningowej, Sekcji Mikroskopii Elektronowej Polskiego Towarzystwa Anatomopatologów.
24-25 maja 1974, Białowieża, Polska
/Symposium on Scanning Electron Microscopy, organized by the Electron Microscopy Section of the Polish Association of Anatomopathologists/.
May 24-25, 1974, Białowieża, Poland.
Participants: B. Gajkowska, M.Biol., D.Nat.Sc., A.Danielewicz-Kotowicz M.D., R. Maryniak M.D.

3. XII Sympozjum Polskiego Towarzystwa Histochemików i Cytochemików, na temat jądra komórkowego.
26-28 września 1974, Uniejów k/Łodzi, Polska.
/XII-th Symposium of the Polish Society of Histochemists and Cytochemists on the Cell Nucleus, /September 26-28, 1974, Uniejów n. Łódź, Poland/.
Participant: B. Gajkowska, M.Biol., D.Nat.Sc.

4. Konferencja naukowa na temat: "Błony biologiczne i zjawiska transportu przez błony".
18-19 listopada, 1974, Warszawa, Polska.
/Scientific Conference on "Biological membranes and membrane transport processes"/.
November 18-19, 1974, Warszawa, Poland.
Participants: B. Gajkowska, M.Biol., D.Nat.Sc., K. Olszewska, M.Biol., R. Maryniak, M.D.

Papers and informations presented at:

5. IX Ogólnopolska Konferencja Mikroskopii Elektronowej
24-26 października 1974, Gdańsk, Polska.
/IX-th Polish Conference on Electron Microscopy,
October 24-26, 1974, Gdańsk, Poland/.

BOROWICZ J.W., DANIELEWICZ-KOTOWICZ A., MARYNIAK R.
Zmiany mikroskopowo-elektronowe płata nerwowego przysadki szczura pod wpływem morfiny.
/Electron-microscopic changes in rat neurohypophysis induced by morphine/

KRAŚNICKA Z., GAJKOWSKA B.
Wpływ niedotlenienia na zwoje czuciowe hodowane in vitro.
/Effect of hypoxia on sensory ganglia cultured in vitro/.

OLSZEWSKA K., ROWIŃSKI W.
Zmiany mikroskopowo-elektronowe nerki ludzkiej w procesie odrzucania po przeszczepieniu.
/Electron-microscopic changes in human kidney in the rejection process after transplantation/

6. International Danube Symposium of Neurology, Neuropathology and Child Neurology, on: "Influence of environmental chemical and physical factors on the nervous system".
November 14-16, 1974, Poznań, Poland.

GAJKOWSKA B., KRAŚNICKA Z.
The effect of short-duration anoxia on sensory ganglia cultivated in vitro.

KRAŚNICKA Z., GAJKOWSKA B., MOSSAKOWSKI M., BOROWICZ J.W.

The effect of short-duration anoxia on nervous tissue cultivated in vitro.

I. RESEARCH GROUP OF SCHOOL MENTAL HYGIENE

H. OSIŃSKI M. Ps., M.D.

Member of: Polish Society of Mental Hygiene

The Orton Society, Towson-Maryland USA

J. MARKIEWICZ M.Ps.

J. SIWKIEWICZ M.Ps.

Member of: Polish Society of Mental Hygiene

The Orton Society, Towson-Maryland USA

S. SZMUKLER M.A.

Member of: Polish Society of Mental Hygiene

The Orton Society, Towson-Maryland USA

B. ZAKRZEWSKA M.Ps.

Member of: Polish Society of Mental Hygiene

Polish Psychological Society

The Orton Society, Towson-Maryland USA

In 1974, the Research Group continued studies on the problems of adaptation of children to school environment. These studies comprised two subjects:

1. Difficulties in adaptation to school environment in children of high intelligence

2. Adaptation of first class children subjected to controlled therapeutic and correcting treatment

In line with the generally accepted principles of team work, complex studies were carried out with the use of adequate pedagogical, sociological, psychological and medical methods.

Ad 1. The examinations comprised 50 pupils with a very high intelligence level, but at the same time difficulties in adaptation to school environment. All the subjects were primary school pupils. The results of the studies are briefly summarized below.

The teachers of the children under examination mostly /in 80 % of cases/ complained of their restless behaviour at school, insufficient attention during lessons and conflicts with school-mates. The conflicts were due to the lack of mutual understanding and excessive emotional excitability of the very gifted children, and frequently to bad performance in sport games.

Eighty five per cent of the children were disappointed with their school environment and considered the institution of school as dull and bringing no satisfaction.

The pupils were from all social environments but mostly from educated circles. The family circle frequently committed various educational mistakes in relation to the children under examination.

In most cases the parents were neurotic and in no case did they have to complain of a poor living standard. The majority of the pupils were only children. More then one half of the subjects showed disturbances of either audial or visual or moto-kinetic perception. The general physical development was mostly above the age level. None of the

children suffered from serious, long-lasting diseases which could have disturbed learning. Although no organic changes in the nervous system were detected in the group, all the children showed enhacement of physiological reflexes or intensified vegetative symptoms. Eighty five percent of children showed symptoms of elevated emotional excitability, whereas a minor proportion /15 %/ were characterized by: lack of self-confidence, apathy, fears and anxieties and/or fatigue.

With growing difficulties in adaptation to school the children showed an increasing tendency to becoming engaged in other occupations than studying: day-dreaming, book reading but not the obligatory reading matter, watching films in cinemas and television /more then one a day/, organizing groups of children and commanding them. The difficulties in adaptation to school in turn made worse the situation of the children in the family. Here may be emphasized frequent facts of helplessnes of both - school and family environment - in such cases.

It seems that pedagogic guidance alone does not warrant satisfactory solutions in this problem.

Ad 2. The realization of this problem was based on the results of studies on the adaptation to school environment of first class children performed in 1973.[6]

These studies gave thorough information as to the possibilities and difficulties of each of the examined children. This allowed to apply early appropriate methods of therapeutic and corrective treatment in cases where

the difficulties had appeared, i.e. in 25 children. Examinations of these children revealed disturbances of audial, visual and motokinestetic perception and of emotional and psychomotor excitability.

These children formed the 25-person experimental group, subjected to "two-route reeducation" according to Markiewicz and Zakrzewska. The latter method consists in a close synchronization of the therapeutic programme of the following reeducation routes:

1. psychodidactic - carried out by a psychologist and -
2. psychomotoric - conducted by a reeducator of psychomotorics.

The first is focussed mainly on the disturbed process of reading and writing. Its aim is to develop or to correct these functions, which from the psychological point of view are essential for the two performances.

The aim of the second therapy is to reinforce the causal treatment in dislection therapy and it is, focussed on the disturbances of psychomotor functions and in this connection on the disturbances of psychomotor excitability.

In this method in both therapeutic routes, two phases may be distinguished: - the initial - and the specific phase.

In the initial phase predominates the psychomotor aspect. Psychomotor reeducation includes application of a special relaxation method, preliminary exercises reeducating the disturbed motorics and in particular manual capability and disturbed space orientation in the form of games and problems.

The period of specific reeducation has a correcting and therapeutic character. In psychomotor reeducation the relaxation

elements are supplemented by stepwise introduction of more difficult exercises with the aim of suppressing the psychomotor disturbances. These exercises are practised in a macrospace with the use of macro-instruments, enabling translocation of body, wide movements and manipulations with a variety of non-literal, letter-like and literal instruments. In psychodidactic reeduaction, in turn, gradual impediments of exercises on letterlike and literal-verbal material in a microspace and with micro-instruments are applied, as well as various geme techniques.

Correction and compensation trainings are carried out in groups of several children, 2 - 4 times a week, 45 minutes each.

The reeducation period is planned to last about 6 - 7 months.

Though it is too early to evaluate the results of the experiment before its completion and repetition, the 3-monts therapeutic programm realized so far produced a significant improvement in the majority of children reeducated in reading and writing and decreased emotional motor hyperexcitability.9/

COOPERATION WITH FOREIGN COUTRIES

On the invitation of the Czechoslovakian part, Miss B. ZAKRZEWSKA sojourned in the period September 29 - October 12, 1974, in Praha, Dolni-Počernice, Czechoslovakia.

The aim of the visit was to become acquainted with the

9/ See list of publications, Nos: 60, 61, 62, 63, 64, 85, 86, 87, 88, 89, 90, 91, 92, 127, 137, 138, 156, 157, 158, 159, 160, 161, 162, 163,

reeducational methods for dislectic children.

During her stay Miss Zakrzewska participated in:

- the Seminar for psychologists and educators - on dislection--reeducation problems;
- Logopedics Annual National Conference;

and delivered a lecture on "O dvouaspektove naprave dyslexie" /The method of two-route reeducation of dislection/.

PARTICIPATION OF THE SCIENTIFIC STAFF OF THE RESEARCH GROUP IN CONGRESSES, MEETINGS, CONFERENCES, SYMPOSIA AN SEMINARS

VIII-th Syposium of the International Union of School and University Health and Medicine, june 17-19, 1974, Stockholm, Sweden.

OSIŃSKI H., SIWKIEWICZ J., ZAKRZEWSKA B.., SZMUKLER SZ. Complex examination of pupils from the first classes of the primary school for prevention of their maladjustemnt at school.

OSIŃSKI H., SIWKIEWICZ J., ZAKRZEWSKA B., SZMUKLER SZ. The programme of compensating deficiencies in psychophysical development of children maladjusted to school environment.

Abstracts from the VIII-th Symp. Intern. Union School and Univerity Health and Medicine, 1974, Stockholm, Sweden, p.31-32.

J. ORGANIZATION TEAM OF THE DEPARTMENT OF MENTAL HYGIENE

Z. POSEŁ, M.D.

Member of: Polish Society of Psychiatry
Polish Society of Mental Hygiene

Z. JUCHA, M.A., D.Ph.Sc.,

Member of: Polish Psychological Society
Polish Society of Mental Hygiene

A. KLIMOWICZ, M.L.

Member of: Polish Society of Mental Hygiene
Polish Society of Lawyers

M. PEŁKA-SŁUGOCKA, M.L., D.C.L.

Member of: Polish Sociological Society
Polish Society of Lawyers
Polish Society of Mental Hygiene

M.J. SUŁAT, M.A.

M. SZAFRAŃSKA, M.D.

Member of: Polish Society of Psychiatry
Polish Society of Mental Hygiene

J. TOMCZAK, M.D.

Member of: Polish Society of Psychiatry
Polish Society of Mental Hygiene

L. WIERCIOCH, M.D.

Member of: Polish Society of Psychiatry

P. ZAKRZEWSKI, D.C.L., D.A.Sc.

Member of: Polish Sociological Society
Polish Society of Mental Hygiene

J. ŻURAW, M.A.

In 1974, the following problems have been subject of investigations:

1. Influence of family and educational institutions on the development of personality

Preliminary studies on psychiatric diseases among teachers revealed a high frequency of neuroses in this group. The psychic stress related to the profession seems to be the most important traumatizing factor. The studies are continued.

Another line of recently initiated investigations deals with alcoholism as a cause of divorces. Marital couples from Łódź district, which were granted divorce in 1973, were the subject of studies.

2. Factors determining social adaptation and maladaptation

It has been established that 40 % of the group of 326 people released under amnesty in 1969 did not made profit of postpenitentiary aid. Within this group, 15 % turned out to be, and 25 % not to be capable of social readaptation. The working habit aquired before committing delinquency appears to be the crucial factor facilitating resocialization.

3. Drug abuse by children and juvenils: causes, consequences, prevention.

Follow-up examinations /after 10 years/ of 78 persons who started abusing alcohol in juvenile age were completed. The fact of an early start with alcohol drinking has been demonstrated to be of great significance for the development of the social maladaptation syndrome, which finds manifestation in unsuccessful marital life, difficulties in work and deliquency. The results will be published in the form of a monograph.

Thirty five juvenile alcoholics were subjected to intensive pedagogic treatment when participating in a two--week hiking camp. Questionnaire examinations performed before and after the camp have not provided confirmation of the hypothesis, that this form of spending time could be advantageous, with respect to the attitude towards addiction and treatment. However, the ideas of the subjects under examination concerning the ways of spending free time have changed and this fact is of importance for further resocialization.

Interdisciplinary /psychiatric, psychological, pedagogical, sociological, and criminological/ studies on the group of 120 juvenile drug abusers are continued and are planned to be finished in 1976.

4. P s y c h o p h y s i c a l a n d s o c i a l a s p e c t s o f s u i c i d e s a n d s u i c i d e p r e v e n t i o n .

Studies on the epidemiology and ecology of suicides committed in Łódź in 1972 - 1974 are in progress.

The results will be elaborated in 1975.[10/]

COOPERATION WITH FOREIGN COUNTRIES

In 1974, Chief of the Team, doctor Z. Poseł and sen. assistant doctor J. Tomczak estblished contacts with the Juvenile Psychiatry Clinic /Head: professor A.E. Lichko, M.D., D.Sc/ of the Bechterow Institute of Psychoneurology, R.F.S.R. in Leningrad.

The project of cooperation includes studies in drug addiction in juveniles.

PARTICIPATION OF THE SCIENTIFIC STAFF OF THE TEAM IN SCIENTIFIC CONGRESSES, MEETINGS, CONFERENCES, SYMPOSIA AND SEMINARS

Papers presented at:

IV Mieżdunarodnyj Simpozjum po Reabilitacji Psichičeski Bolnych. /IV-th International Symposium on Rehabilitation of Psychiatric Patients/.

October 15-18, 1974, Leningrad, U.S.S.R.

POSEŁ Z.

Miesto vosstanovitel'noj terapii psichičeski bolnych v sistiemie psichičeskoj gigieny.

/The role of psychiatric patients rehabilitation in the mental hygiene system/.

Proc. of the IV-th Intern. Symp. on Rehabilitation of Psychiatric Patients, 1974, Leningrad.

10/ See list of publications, Nos: 48, 93, 94, 95, 97, 98, 99, 100, 101, 104, 105, 106, 107, 108, 109, 147, 148, 164, 165, 166, 167, 173.

K. MEDIPAN - SCIENTIFC INSTRUMENTS LABORATORIES

S. KARAŁOW M.Sc., M.Eng.

J. GONSTAŁ M.Sc., M.Eng.

R. GRUCZA E.Eng.

J. HARASIMOWICZ M.Sc., M.Eng.

J. IZDEBSKI M.Sc., E.Eng.

M. JĘDRASZAK M.Sc., M.Eng.

A. KŁOBUKOWSKI M.Sc., M.Eng.

A. KWAPISZ M.Sc., M.Eng.

E. RUDOWSKA M.Sc., E.Eng.

L. TOMKOWICZ M.Sc., M.Eng.

In 1974, the scientific and research profile of the activity of MEDIPAN has been established as follows:

- Production of models and prototypes of medical and biological devices based on the scientific and research programme of the Medical Research Centre;
- Developing and testing of prototypes and know-how;
- Production of unique and small-series line of medical devices for home reguirements and for export;
- Running experimental work connected with realization of invention projects of the Medical Research Centre;
- Carrying on a technical service of own devices and imported equipment exploited in the Laboratories of the Medical Research Centres;
- Maintenance training for customers in handling of devices

produced by the MEDIPAN Laboratories.

The production programme of the MEDIPAN Instruments Laboratories included the following devices:

1. Classical Laboratory Respirator, type CLR-1
2. Biologically Controlled Respirator, type URL-1
3. Glass Micro-pipette Puller, type GMP-1
4. Oscillograph Camera, type KO-3
5. Instantaneous Rate Analyser, type FA-2

Classical Laboratory Respirator - type CLR-1

The classical respirator, type CLR-1 is a standard laboratory device, designed for ventilation of experimental animals, such as rabbits and dogs.

Technical data:

Continuously Variable Rate: 12 to 80 strokes/min
Continuously Adjustable Volume: 0 to 400 ccm/stroke
Minute Volume: up to 32 litres
Time inlet-to-outlet Ratio 1 : 1

Biologically Controlled Respirator, type URL-1

The Biologically Controlled Respirator type URL-1 is a universal laboratory instrument used for ventilation of lungs. The design of the respirator is based upon the newest discoveries in the field of respiration physiology. It is particularly useful in experimental work and can be applied as:
A respirator controlled by the diaphragm nerve activity, ventilating the lungs in accordance with the current requirements of respirating medium. The accordance concerns both the

rate and the volume of respiration.

A triggered respirator. The respiration cycle is triggered by an electric pulse. Then the respiration follows a preset program. After completion of the program the equipment is ready to receive a successive pulse which triggers the next respiration cycle.

A conventional system respirator having wide adjustment ranges of:

- respiration rate
- respiration volume
- inhalation to exhalation period ratio

Technical data:

Respiration rate - automatically controlled or continuously adjusted within a range of 10 to 100 respirations per minute.

Respiration volume - automatically controlled or continuously adjusted in two ranges:

0-200 cm^3 and 0-400 cm^3

Inhalation period - automatically controlled or continuously adjusted in the range from 0,3 to 3 s.

Glass Micro-pipette Puller, type GMP-1

The puller is designed to produce glass micro-capillaries applied in electrophysiology.

Technical data:

Outside tube diameter ranges: 1 - 4 mm

Guaranteed tip diameter: 1 μ

Oscillograph Camera, type KO-3

Oscillograph camera, type KO-3 enables recording electric signals on light sensitive materials displayed on the oscilloscope screen.

Technical data:

Power supply: 220 V, 50Hz

Power consumption: 55 VA

Recording speeds: 0,5; 1; 2; 3; 4; 6; 12; 24; cm/sec

Photographic material:

width : 70 mm

Capacity of the cassette: 30 m

Overall dimensions: 48x36x31 cm

Weight: 11 kg

Instantaneous Rate Analyser, type FA-2

The Analyser, type FA-2 is designed for measurement of the instantaneous rate of action potentials produced by a neuron or a nerve fibre.

Technical data:

Measured frequency range: 0 to 250 pulses /sec

Linearity in the measuring range: $\pm$ 5 %

Time constant of result averaging circuit: 0.1 sec

Input signal amplitude: not less than 100 mV

Input impedance: not less than 1 mohm

Calibrating impulse rate: 50, 100 or 200 imp/sec

Controls: a/ Input signal gain

b/ Input signal discrimination level

c/ Output signal amplitude

The described devices have been displayed in 1974 at several exhibitions and fairs, both in Poland and abroad.

The first international exhibition where they have been presented, was "Health 1974", which took place in Moscow /USSR/ - May 28-th - June 11-th.

The respirator with biological control, type URL-1, presented by MEDIPAN, became one of the sensations of this exhibition and gained for the institution an honorable mention.

M I S C E L L A N E A

STATE DISTINCTIONS

Polonia Restituta - Officer Cross

Mirosław Mossakowski

Golden Cross of Merit

Irmina Zelman

Silver Cross of Merit

Barbara Sudziarska

Medal of the XXX-th Anniversary of the Polish People's Republic

Maria Dąmbska

Andrzej Gromek

Henryk Gromysz

Witold Karczewski

Stanisław Kozłowski

Zuzanna Kraśnicka

Adam Kunicki

Mirosław Mossakowski

Waldemar Olszewski

Jadwiga Szumska

MEMBERSHIP AWARDS OF THE POLISH ACADEMY OF SCIENCES

Professor A. Kunicki, M.D., D.Sc., corresponding member of the Academy was honoured with full membership of the Academy.

Professor M.J. Mossakowski, M.D., D.Sc., was honoured with corresponding membership of the Academy.

MEMBERSHIP AWARDS OF FOREIGN SCIENTIFIC SOCIETIES

The following foreign scientific Societies conferred to professor A. Kunicki, M.D., D.Sc., honorary memberships:

- Neurosurgical Society of the German Democratic Republic
- Neurosurgical Society of the Union of Soviet Socialist Republics

DEGREES AWARDED

Assitant professor Stanisław Kozłowski, M.D., D.Sc., was honoured with the title - professor of Medical Sciences /Physiology/

Miss Maria Morzycka, after having completed her 3-year postgraduate studies at the Surgical and Transplantation Laboratory of the Centre, in January 1974 defended her thesis entitled:

"Studies on changes in kidneys in viral hepatitis"

and was awarded the title of Doctor of Medical Sciences.

Mr Tran Van Lieu, from the Medical Academy in Hanoi /Northern Vietnam/, after having completed his 5-year postgraduate studies at the Electron Microscopy Unit of the Centre, defended in November 1974 his thesis entitled:

"Ultrastructural changes in the liver in acute and chronic intoxication by morphine"

and was awarded the title of Doctor of Medical Sciences.

SCIENTIFIC AWARD OF THE SCIENTIFIC SECRETARY OF THE POLISH ACADEMY OF SCIENCES FOR 1974

For the work entitled:

"Pathomechanism of impairments of the central nervous system in hepato-cerebral diseases"

performed by a 12 - person group under the guidance of professor M.J. Mossakowski:

Scientific workers: Professor M.J. Mossakowski, M.D., D.Sc.
Assis. professor J.W. Borowicz, M.D., D.Sc.
Assis. professor Z. Kraśnicka, M.D., D.Sc.
B. Gajkowska, M.Biol., D.Nat.Sc.
T. Majdecki, M.D.
M. Ostenda, M.D.
A. Pronaszko, M.Biol., D.Nat.Sc.
K. Renkawek, M.D.
M. Śmiałek, M.D.

Technicians: O. Dziedzic
W. Osińska
T. Pańkowska

INDIVIDUAL AWARDS OF SCIENTIFIC SOCIETIES FOR 1974

II-nd Degree Award of the Polish Physiological Society to doctor Krystyna Herbaczyńska-Cedro, for the work entitled: "Loss of myocardial enzymes in relation to enhanced adrenaline secretion in an erly stage of experimental infarction"

- published in the book - "Effect of acute ischaemia on myocardial function".

Editor: Churchill Livigston, Edinburgh-London, 1972, p. 109-128.

PAPERS PUBLISHED AND SUBMITTED FOR PUBLICATION - 1974

1. ALBERT K., SAWICKI J.
   Przypadek ciąży brzusznej pozamacicznej u królicy "pt".
   /A case of abdominal extrauterine pregnancy in "pt" female rabbit/.
   Med. Wet., 1974, 30, 289-290.

2. ALBRECHT J.
   Polyriobosomes of the rabbit brain in circulatory hypoxia.
   Neuropat. Pol. 1974, 12, 665-669.

3. ALBRECHT J.
   Niektóre etapy biosyntezy białka i RNA w mózgu szczura po wielokrotnym zatruciu tlenkiem węgla.
   /Some steps of RNA and protein biosynthesis in adult rat brain following repeated carbon monoxide intoxication/.
   Neuropat. Pol, in press

4. ALBRECHT J., ŚMIAŁEK M.
   Neuronal and glial protein synthesis in rat brain in various models of experimental hypoxia.
   Proc. VII-th Intern. Congr. Neuropath., 1974, Budapest, Hungary.

5. BARAMIDZE D.G., ZELMAN I.B.
   Histochemical study on nucleoside phosphatase activity in rabbit brain following circulatory hypoxia /ischaemia/.
   Neuropat. Pol., 1974, 12, 617-624.

6. BARTOLI A., CROSS B., GUZ A., HUSZCZUK A.
The role of vagal feedback from lungs of the dog in tidal volume regulation.
J. Physiol., 1974, 242, 73 p.

7. BLOCK A.J., FEINBERG H., HERBACZYŃSKA-CEDRO K., VANE J.R.
Anoxia-induced release of prostaglandins in rabbit isolated heart.
Circ. Res. /1975/ in press

8. BOROWICZ J.W., JURKIEWICZ J., OLSZEWSKA K.
Electron microscopic changes in acute morphine poisoning of the rat brain.
Ann. Med. Sec. Pol. Acad. Sci., 1974, 19, 2,

9. BRONISZEWSKA-ARDELT B., MILLER A.T. /Jr./
p-H-dependent solubilization of brain mitochondrial hexokinase: developmental consideration.
Compar. Biochem. and Physiol. in press

10. BRONISZEWSKA-ARDELT B., MILLER A.T. /Jr./
Hypoxic changes in brain hexokinase distribution: phylogenetic and developmental considerations.
Comp. Biochem. Physiol., 1974, 49B, 151-156, Pergamon Press G.B.

11. BUDZIŃSKA K.
Effects of hyperthermia and stimulation of the hypothalmus on the activity of the phrenic nerve in hypo-normo and hypercapnic rabbits.
Acta Neurobiol. Exp. in press

12. CZARTORYSKA B., WALD I., TARASZEWSKA A.
Lipidy mózgu u królika "pt".
/Cerebral lipids in "pt" rabbit/
Neuropat. Pol. in press

13. DANIELEWICZ-KOTOWICZ A.
Zmiany mikroskopowo-elektronowe w przysadce szczura po adrenalektomii oraz po podaniu ACTH.
/Electron microscopic changes in rat hypophysis following adrenalectomy and ACTH administration/
Neuropat. Pol., 1974, 12, 3, 345-356.

14. DĄMBSKA M., FERENS Z., TAYTSCH-KAPULKIN Z.
The infection by Coxackie B_3 virus in mouse during pregnancy.
Neuropat. Pol., 1974, 12, 269-276.

15. DĄMBSKA M., KULCZYCKI J., SCHMIDT-SIDOR B., GOERTZ J.
Agenezja i hypoplazja spoidła wielkiego. Analiza morfologiczna 12 przypadków.
/Agenesia and hypoplasia of corpus callosum. Morphological study of 12 cases/.
Neuropat. Pol., 1974, 12, 487-504.

16. DIXON M., SZEREDA-PRZESTASZEWSKA M., WIDDICOMBE J.G., WISE J.C.M.
Studies on laryngeal calibre during stimulation of peripheral and central chemoreceptors, pneumotorax and increased respiratory loads.
J. Physiol., 1974, 239, 247-363.

17. DOMAŃSKA-JANIK K., WIDEMAN J., ŁAZAREWICZ J., MAJEWSKA D.
Effects of circulatory hypoxia on some metabolic processes in the brain.
Neuropat. Pol. in press

18. DOMAŃSKA-JANIK K., WIDEMAN J., ŁAZAREWICZ J.W., MAJEWSKA D.
Effects of circulatory hypoxia on some metabolic processes in the brain.
Neuropat. Pol. in press

19. DOMAŃSKA-JANIK K., WIDEMAN J.
Regulation of thiols in the brain. 3. Glucose metabolism in the cytoplasmic fraction of rat brain during stimulation of the hexose monophosphate shunt in vitro.
Resuscitation 1974, 3, 43-50.

20. DOMAŃSKA-JANIK K., WIDEMAN J.
Regulation of thiols in the brain. 2. Effect of hypoxia on the activities of cytoplasmic NADPH-producing enzymes in different parts of the rat brain.
Resuscitation 1974, 3, 37-41.

21. DYDYK L., ŚMIAŁEK M., DĄMBSKA M.
Respiratory activity of isolated giant cells of reticular formation and ultrastructure of neurons from rat brain stem in carbon monoxide intoxication.
Neuropat. Pol. in press

22. DZIDUSZKO J.
Torbiel podtwardówkowa w kanale kręgowym.
/Subdural cyst in the vertebral canal/

Neurol. Neurochir. Pol., 1974, 5, 757-759.

23. GADAMSKI R., EUSTACHIEWICZ R.
Histochemical changes in medulla oblongata in rabbit caused by circulatory hypoxia /ischaemia/.
Neuropat. Pol., 1974, 12, 603-615.

24. GADAMSKI R., JURKIEWICZ J., CZERNICKI Z.
Stan bariery krew-mózg we wczesnym doświadczalnym obrzęku mózgu u kotów.
/Studies on the blood-brain barrier permeability in cats in early experimental brain oedema caused by supradural compression/.
Neuropat. Pol., 1974, 12, 435-445.

25. GADAMSKI R., SZUMAŃSKA G.
Blood-brain barrier after circulatory hypoxia /ischaemia/.
Neuropat. Pol., 1974, 12, 693-702.

26. GADAMSKI R., SZUMAŃSKA G., SIKORSKA M.
Wpływ hipoksji krążeniowej na zachowanie się amin katecholowych w mózgu królika. Badania histochemiczno-fluorescencyjne.
/Effect of circulatory hypoxia on rabbit brain catecholamines. Histochemical and fluorescence study/.

27. GAJKOWSKA B.
Zmiany mikroskopowo-elektronowe jądra nadwzrokowego i jądra przykomorowego podwzgórza mózgu szczura w niedoczynności nadnerczy.
/Electron microscopic changes in the supraoptic and paraventricular nuclei of rat brain hypothalamus in adrenal

hypofunction/.
Neuropat. Pol., 1974, 12, 3, 329-343.

28. GŁOGOWSKA M.
The significance of afferent vagal information in the control of breathing.
Acta Neurobiol. Exp., 1974, 35, 2, 139-146.

29. GŁOGOWSKA M., STRANSKY A., WIDDICOMBE J.G.
Reflex control of discharge in motor fibres to the larynx.
J. Physiol., 1974, 239, 365-379.

30. GREENLEAF J.E., KACIUBA-UŚCIŁKO H., KOZŁOWSKI S.,KOLLIAS J.
Thyroxine induces hyperthermia during exercise.
Federation Proceedings, 1974, 33, 441.

31. GRIEB P.
Wpływ niedotlenienia na ośrodkowy układ nerwowy.
/Hypoxia and central nervous system/
Acta Physiol. Pol. in press

32. GROCHOWSKI W., DIETRICH-RAP Z., ŁUCZYWEK B., STADNICKI R.
Odległe następstwa zamkniętych uzrazów czaskowo-mózgowych u chorych z długotrwałą utratą przytomności w świetle badań neurologicznych.
/Late effects of cranio-cerebral trauma in patients with long-term loss of consciousness, on the basis of neurological examinations/.
Pol. Tyg. Lek., 1974, 29, 13, 523-527.

33. GROTEK A., ROMANIUK J.R., RYBA M.
Regulation of expiratory time by low frequency activities of the vagus nerve.
I.R.C.S. /1975/ 3, 32, Physiology, Respiratory System.

34. GROTEK A., ROMANIUK J.R., RYBA M.
Relation between pulmonary stretch receptor activity and transpulmonary pressure.
I.R.C.S. /1975/ 3, 12, Physiology, Respiratory System.

35. GROTEK A., ROMANIUK J.R., RYBA M.
The effects of phrenic nerve-driven artificial ventilation on the pattern of breathing.
Resp. Physiology, North-Holland, Amsterdam in press

36. HOPPE B.
Obraz zmian strukturalnych i histochemicznych gleju hodowanego in vitro poddanego działaniu tlenku węgla.
/The structural and histochemical picture of carbon monoxide gliopathy in vitro/.
Neuropat. Pol., 1974, 12, 371-385.

37. HERBACZYŃSKA-CEDRO K., STASZEWSKA-BARCZAK J., JANCZEWSKA K.
The release of prostaglandin-like substances during reactive functional hyperaemia in the hind leg of the dog.
Pol. J. Pharmacol. Pharm., 1974, 26, 167-170.

38. HERBACZYŃSKA-CEDRO K., VANE J.R.
Prostaglandins as mediators of reactive hyperaemia in kidney.
Nature, 1974, 247, 492.

39. JANCZEWSKA K., HERBACZYŃSKA-CEDRO K.
Effect of indomethacin on vascular responses to vasoactive agents in working skeletal muscles in the dog.
Pol. J. Pharmacol. Pharm., 1974, 26, 159-166.

40. JUSIAK R., KACIUBA-UŚCIŁKO H.
The effect of TSH on tissue respiration in vitro in control and cold-acclimated rats.
Bull, Acad. Pol. Sci., ser. biol., 1974, 22, 643.

41. JUSIAK R., KACIUBA-UŚCIŁKO H., POCZOPKO P.
The effect of thyroid-stimulating-hormones /TSH/ on tissue respiration and total metabolism in the rat.
Bull. Acad. Pol. Sci., ser. biol., 1974, 22, 539.

42. KAPUŚCIŃSKI A.
Cerebral blood flow in the experimental model of controlled cerebral ischaemia with particular attention to the early period after retransfusion.
Proc. Soviet. Symp. on Blood Circul. in the Brain., 1974, Tbilisi, U.S.S.R.

43. KAPUŚCIŃSKI A.
Cerebral blood flow under conditions of circulatory hypoxia with particular reference to the retransfusion period.
Neuropat. Pol., 1974, 12, 563-572.

44. KAPUŚCIŃSKI A.
Efficiency of cerebral blood supply by the vertebral and spinal arteries in ischaemic conditions.
Proc. VII-th Intern. Congr. Neuropath., 1974, Budapest, Hungary.

45. KAPUŚCIŃSKI A.
Significance of the circle of Willis in cerebral blood supply in ischaemic conditions.
Proc. I-st World Congr. Nuclear Medicine, 1974, Tokyo-Kyoto, Japan.

46. KARCZEWSKI W.A.
Thermal polypnoea.
Proc. II-nd Symp. Pharmacology of Thermoregulation.
Paris, 1974, 178-182.

47. KARCZEWSKI W.A.
Organization of the brain stem respiratory complex.
MTP International Review of Sciences. Respiratory Physiology /J.G. Widdicombe Ed./, Butterworths London, 1974, 197-219.

48. KLIMOWICZ A.
"Materiały do oceny zawartości prasy polskiej w zakresie alkoholu i alkoholizmu"
Rozdz. 23. Informacja prasowa o narkotykach i narkomanii w Polsce, p. 132-144,
Rozdz. 24. Informacja prasowa o narkotykach i narkomanii za granicą, p. 145-157.
Zeszyty Naukowe Ośrd. Bad.-Nauk. przy Zarz. Gł. Społecznego Komitetu Przeciwalkoholowego, 1974, Warszawa.
/Materials for evaluation of the Polish press content in the field of alcohol and alcoholism.
Chapter 23. Press information about drugs and drug addiction in Poland, p. 132-144.

Chapter 24. Press information about drugs and drug addiction abroad, p. 145-157/

Issues of the Research Centre on Alcoholism of the Social Committee for the Control of Alcoholism, 1974, Warszawa.

49. KOZŁOWSKI S., SZCZEPAŃSKA-SADOWSKA E.
Antagonistic effects of vasopressin hypervolemia on osmotic reactivity of the thirst mechanism in dogs.
Pflügers Archiv 353, 59-65, /1975/.

50. KRAŚNICKA Z., KONOWAŁOW H., GAJKOWSKA B.
Wpływ krótkotrwałego niedotlenienia na zwoje uczuciowe hodowane in vitro.
/Effect of short-term hypoxia on sensory ganglia cultured in vitro/.
Neuropat. Pol., 1974, 12, 3, 357-370.

51. KRAŚNICKA Z., OSTENDA M.
Comparison of the ultrastructure of synapses of the maturating superior colliculus of the rat, in situ and in vitro.
Proc. VII-th Intern. Congr. Neuropath., 1974, Budapest, Hungary.

52. KROH H.
Perivascular calcifications in the mouse brain.
Neuropat. Pol., in press

53. KSIĘŻAK H., ZALESKA M., GROMEK A.
Level of total and bound acetylcholine in conditions of

hypoxia, ischemia and barbiturate anesthesia in guinea pig brain.
Bull. Acad. Pol. Sci., Ser. sci.biol., 1974, 12 N° 9, 649-656.

54. ŁAZAREWICZ J.W., HALJAMÄE H., HAMBERGER A.
Calcium metabolism in isolated brain cells and subcellular fractions.
J. of Neurochem., 1974, 22, 33-45.

55. ŁAZAREWICZ J.W., HAMBERGER A.
Respiration-linked limited calcium accumulation in brain mitochondria.
Biuletyn PAN in press

56. ŁAZAREWICZ J.W., STROSZNAJDER J., DĄBROWIECKI Z.
Effect of cerebral ischemia on calcium transport in isolated brain mitochondria.
Proc. of VII-th Intern. Congr. Neuropath., 1974, Budapest. Academ. Kiadó, Budapest., Hungary.

57. ŁUCZYWEK B., GROCHOWSKI W., DIETRICH-RAP Z., STADNICKI R.
Odległe następstwa zamkniętych urazów czaszkowo-mózgowych u chorych z długotrwałą utratą przytomności w świetle badań psychologicznych.

/Late effects of cranio-cerebral trauma in patients with long-term loss of consciousness, on the basis of psychological examinations/.
Pol. Tyg. Lek., 1974, 29, 13, 529-532.

58. MAJEWSKA D., GROMEK A., STROSZNAJDER J.
Properties of brain mitochondria in conditions of ischemia and membutal anaesthesia in guinea pigs.
Bull. Acad. Pol. Sci., Ser. sci. biol., 1974, Vol. 12, № 4, 264-273.

59. MARCINAK M., MAJDECKI T., OPAŁKA S.
Wpływ etanolu na rozwijający się mózg psa.
/Effect of ethanol on developing dog brain/.
Neuropat.Pol., 1974, 12, 27-32.

60. MARKIEWICZ J.
Możliwości stosowania elementów reedukacji psychosomatycznej w placówkach pedagogiczno-terapeutycznych.
/Application possibilities of psychosomatic reeducational factors in pedagogical-therapeutic institutions/.
Przegląd Pedagogiczny in press.

61. MARKIEWICZ J.
Zastosowanie psychokinezyterapii w zaburzeniach rozwoju psychoruchowego dzieci.
/Psychokinesiotherapy application in disturbances of psychomotor development of children/
Proceedings of the Conference, December 14-16, 1974,Kraków, Poland organized by the Polish Scientific Society for

Physical Education, on "Correction and compensation in the development of children".

62. MARKIEWICZ J.
Higiena postawy ciała. Wskazania dla klas VIII.
/Body posture hygiene. Indications for primary school top classes/
Pablications of the Ministry of Education. In press.

63. MARKIEWICZ J., ZAKRZEWSKA B.
Kształtowanie percepcji i pamięci wzrokowej w dwutorowej terapii dyslekcji.
/Modelling of perception and visual memory in the two-route dislection therapy/.
Bull. of the Orton Society. In press.

64. MARKIEWICZ J.
Wpływ stosowania relaksacji na rozwój psychosomatyczny dziecka szkolnego.
/Influence of applied relaxation on the psychosomatic development of a school child/.
Zagadnienia Wychowawcze a Zdrowie Psychiczne in press

65. MAŚLIŃSKA D., DĄMBSKA M., BRYŁKO J.
The effect of phenobarbital on development of the rabbit fetus brain.
Proc. VII-th Intern. Congr. Neuropath., 1974, Budapest, Hungary.

66. MCHEDLISHVILI G.L., KAPUŚCIŃSKI A., NIKOLAISHVILI L.S.
Role of circulatory changes in the formation of

postischaemic brain oedema.
I.R.C.S /Cardiovasc. Neurobiolog./ in press

67. MOSSAKOWSKI M.J.
Cerebral microcirculation disorders in experimental circulatory hypoxia.
Neuropat. Pol., 1974, 12, 573-582.

68. MOSSAKOWSKI M.J., ZELMAN I.B.
Dynamics of microcirculation disorders in experimental circulatory hypoxia /ischaemia/.
Proc. VII-th Intern. Congr. Neuropath., 1974, Budapest, Hungary.

69. MOSSAKOWSKI M.J.
Zaburzenia ukrwienia mózgu w ostrym zatruciu tlenkiem węgla u szczurów.
/Cerebral mierocirculation abnormalities in acute carbon monoxide intoxication in rats/.
Neuropat. Pol. in press

70. MOSSAKOWSKI M.J., KRAŚNICKA Z., KASSUR B., OLEJNIK Z.
Patomorfologia układu nerwowego w ostrych uszkodzeniach wątroby.
/Pathomorphology of the central nervous system in acute liver diseases/.
Neuropat. Pol., 1974, 12, 15-62.

71. MUSZYŃSKI M.
Pomiary objętości kończyny metodą radiologiczną.
/Limb volume mesurement by radiological techniques/

Pol. Przegl. Med. Naukl. Rad. in press

72. NIEWIAROWSKI S., ŁUKASIEWICZ H., NATH N.
Platelet aggregation and release triggered by antibody to platelet factor 4/PF/4.
Proc. Soc. Exp. Biol. and Med., 1974, 4, 9.

73. NIEWIAROWSKI S., ŁUKASIEWICZ H., NATH N., TAISKA A.
Inhibition of human platelet aggregation by dipyridamole and two related compounds and its modification by acid glycoproteins of human plasma.
J. Clin. Invest. in press

74. NOWAKOWSKA A., KOZŁOWSKI S.
Fizjologiczne sposoby zwiększania wydolności fizycznej człowieka.
Rozdział w monografii pt. "Doping". P.Z.W.L. /druk w 1976/
/Physiological means of increasing physical working capacity in man.
A chapter in a monograph "Doping". P.Z.W.L - 1976 in preparation/.

75. NYKA W.
Damage of nervous system following perinatal asphyxia.
Neuropat. Pol., 1974, 12, 309-316.

76. OLSZEWSKI W.
Doświadczalne przechowywanie narządów do przeszczepienia.
/Experimental organ conservation for transplantation/
Probl. Techn. Med., 1974, 5, 5,

77. OLSZEWSKI W., ROWIŃSKI W.

Metody badań doświadczalnych w chirurgii.

Rozdziały dotyczące: przeszczepiania, przechowywania narządów oraz immunosupresji.

/Methods and techniques in experimental surgery - with chapters on - transplantation, conservation and immunosuppression in organ grafting/.

P.Z.W.L., Warszawa, 1974, p. 424.

78. OLSZEWSKI W. /Editor/

Doświadczalne przeszczepianie narządów.

/Experimental organ transplantation/

P.Z.W.L., Warszawa, /1975/, in press

with the chapters:

ŁUKASIEWICZ H.

Zaburzenia hemostazy w procesie odrzucania przeszczepów narządowych.

/Hemostasis disturbances during allograft rejection/

ROWIŃSKI W.

Przeszczepianie nerek. Leczenie immunosupresyjne. Przechowywanie narządów. Przeszczepianie trzustki.

/Kidney transplantation. Immunosuppressive theraphy. Organ conservation. Pancreatic transplantation/.

OLSZEWSKI W.

Mechanizm odrzucania przeszczepów. Techniki chirurgiczne w badaniach transplantologicznych. Przeszczepy ksenogenne. Powikłania przeszczepów narządowych. Przeszczepianie jelita. Przeszczepianie wątroby.

/Pathomechanism of allograft rejection. Surgical techniques in transplantology. Xenogenic transplants. Infections complications of organ allografting. Jejunal transplantation. Liver transplantation/.

79. OLSZEWSKI W., ROWIŃSKI W., OLSZEWSKA K., BOROWICZ J.W.
Zmiany biochemiczne i ultrastrukturalne w wątrobie w czasie chłodzenia i pobierania do przeszczepienia.
/Biochemical and ultrastructural changes of the liver during its cooling and taking for transplantation/.
Pol. Przegl. Chir., 1974, 46, 5, 591-598.

80. OSETOWSKA E.
Neuropatologia zapaleń mózgu wirusowych i alergicznych
/Neuropathology of viral and allergic encephalitides/
P.Z.W.L., Warszawa, 1974, p. 228, t. XXXII.

81. OSETOWSKA E.
Choroba Rosenthala czy glej Rosenthala?
/Rosenthal's disease or Rosenthal's glia?/
Neuropat. Pol., in press

82. OSETOWSKA E., LUSZAWSKI F., TARASZEWSKA A.
Zmiany w przebiegu klinicznej choroby u królika "pt" na przestrzeni 10-ciu pokoleń.
/Changes in clinical features of the "pt" syndrome, observed in 10 generations/.

83. OSETOWSKA E., TARASZEWSKA A.
Nosówka nerwowa i toksoplazmoza - interferencja dwóch różnych procesów zapalnych mózgu.

/Nervous distemper and toxoplasmosis - interference of two infectious processes in the brain/.
Neuropat. Pol., 1974, 12, 3, 477-486.

84. OSETOWSKA E., TARASZEWSKA A., LUSZAWSKI F.
Korelacje kliniczne i wskaźniki topograficzne zwapnień neuronalnych u królika "pt".
/Clinical-morphological correlations concerning the appearance of calcified neurons in "pt" rabbit/.
Neuropat. Pol. in press

85. OSIŃSKI H.
Wyniki badania elektroencefalograficznego 50 dzieci rozpoczynających naukę szkolną.
/The results of electroencephalographic examinations concerning 50 pupils starting school attendance/
Zdrowie Psychiczne in press.

86. OSIŃSKI H.
Zakład Higieny Psychicznej i Psychiatrii Dziecięcej PAN w Warszawie /1968-1970/.
/The Department of Mental Hygiene and Child Psychiatry of the Polish Academy of Sciences in Warsaw 1968 - 1970/.
Zdrowie Psychiczne in press.

87. OSIŃSKI H.
Objawy nerwicowe u dzieci o wysokiej inteligencji.
/Neurosis symptoms in children with high intelligence/
Zdrowie Psychiczne in press

88. OSIŃSKI H., GAJEWSKA Z., SIWKIEWICZ J., ZAKRZEWSKA B., SZMUKLER SZ.
Dzieci wzorowe w nauce i zachowaniu w świetle badań Zespołu Psychohigieny.
/Perfectly learning and behaving children in the light of Research Group investigations/.
Zdrowie Psychiczne, 1974, 1-2, 101-105.

89. OSIŃSKI H. GAJEWSKA Z., SIWKIEWICZ J., ZAKRZEWSKA B., SZMUKLER SZ.
Wybrane zagadnienia uspołeczniania dzieci ze szkoły podstawowej.
/Selected problems of the inducement of primary school children to the active social collaboration/.
Zdrowie Psychiczne, 1974, 3, 161-168.

90. OSIŃSKI H., GAJEWSKA Z., SIWKIEWICZ J., ZAKRZEWSKA B., SZMUKLER SZ.
Projekt modelu uspołecznienia dzieci z trudnościami szkolnymi.
/A model of inducement of children with difficulties of adaptation to school environment, to active social collaboration/.
Zdrowie Psychiczne, 1974, 3, 169-173.

91. OSIŃSKI H., GAJEWSKA Z., SIWKIEWICZ J., ZAKRZEWSKA B., SZMUKLER SZ.
Przyczyny trudności dydaktycznych i wychowawczych u dzieci jednej szkoły.
/Reasons of didactic and educational difficulties with

children in one school/.
Zdrowie Psychiczne in press

92. OSIŃSKI H., SIWKIEWICZ J., ZAKRZEWSKA B., SZMUKLER SZ.
Obraz biopsychospołeczny dzieci w pierwszym roku nauki szkolnej w świetle badań własnych.
/A biopsychosociological picture of children in their first year of schooling in the light of the authors research work/.
Zdrowie Psychiczne, in press

93. PEŁKA-SŁUGOCKA M.
Zakres podmiotowy pomocy postpenitencjarnej.
/Subjective range of postpenitentiary aid/
Studia Kryminolog., Kryminal.i Penitenc. in press

94. PEŁKA-SŁUGOCKA M.
Recenzja książki Z. Leśko, pt.:
System środków karnych, Warszawa, 1974.
/Review of the book by Z. Leśko, entitled:
Penal measure system. Warszawa, 1974/
Palestra, 1974, N° 11, p. 130-134.

95. PEŁKA-SŁUGOCKA M.
Recenzja pracy: H. Malewska i V. Peyre, pt.:
Przestępczość nieletnich. Uwarunkowanie społeczno-ekonomiczne. Ossolineum, 1973.
/Review of the book by H. Malewska and V. Peyre entitled:
Delinquency among juveniles. Social and economical grounds. Ossolineum, 1973/.
Kultura i Społeczeństwo, 1974, N° 2, p. 257-264.

96. PEŁKA-SŁUGOCKA M., SŁUGOCKI L.
Recenzja pracy J. Sikory, pt.:
Obraz emocjonalności u więźniów w świetle badań psychologicznych, biochemicznych i fizjologiczno-lekarskich.
Ossolineum, 1973.
/Review of the work by J. Sikora, entitled:
Pattern of emotionality in prisoners in the light of psychological, biological, physiological and medical examinations.
Ossolineum, 1973/.
Państwo i Prawo, N° 6, 1974.

97. PEŁKA-SŁUGOCKA M., SŁUGOCKI L.
Realizacja prewencji szczególnej.
/Realization of special prevention/.
Palestra, 1974, N° 11, p. 96-102.

98. PEŁKA-SŁUGOCKA M., SŁUGOCKI L.
Advance pay as one of the forms of post-penitentiary aid obligatory in Poland.
Intern. J. of Offender Therapy and Compar. Criminology, N° 2, /1975/.

99. PEŁKA-SŁUGOCKA M., SŁUGOCKI L.
Analiza zgodności między wypowiedziami o faktach uzyskanymi w wywiadzie kwestionariuszowym a dokumentami. Analizy i próby technik badawczych w socjologii.
/Analysis of consistence between statements concerning facts in questionnaire interview and documents.
Analyses and trials of research techniques in sociology/
Pol. Acad. of Sci. Inst. of Phil. and Sociol.

Vol. V, Ossolineum in press

100. PEŁKA-SŁUGOCKA M., SŁUGOCKI L.
Nawyk pracy skazanych przed i po zwolnieniu z zakładu karnego.
/The work habits of prisoners prior to and after release from penal institutions/.
Studia Kryminolog., Kryminal. i Penitenc., 1974, t. 1, p. 371-390.

101. PEŁKA-SŁUGOCKA M., SŁUGOCKI L.
Potrzeba leczenia a faktyczne leczenie skazanych na przykładzie badań.
/The need of treatment and the actual treatment of the convicts/
Alkohologia Łódzka, 1973, t. 6, N° 1, p. 78-85.

102. PLUCIŃSKI S.
Przetoka chłonna jelita cienkiego.
/External lymphatic fistula of jejunal allograft/.
Pol. Przegl. Chirurg., 1974, 47, 424.

103. POLAŃSKI J., OLSZEWSKI W.
Model doświadczalny do badań nadostrego odrzucenia przeszczepu wątroby.
/Experimental model for studies of hyperacute rejection of xenografts/.
Pol. Przeg. Chir. in press

104. POSEŁ Z.
Badania psychologiczne, biochemiczne, elektroencefalograficz-

ne i inne badania w klinice psychiatrycznej.
Rozdział do podręcznika: "Podstawy Psychiatrii".
/Psychological, biochemical, elctroencephalographic and other examinations in a psychiatric clinic.
Chapter in the manual: "Elements of Psychiatry"/
P.Z.W.L. in press

105. POSEŁ Z.
Problemy psychiatrii w polskim prawie rodzinnym.
/Problems of psychiatry in Polish family law/.
Psychiatria Polska, /1975/, t. 9, N° 1, p. 65-69.

106. POSEŁ Z., TOMCZAK J.
Projekt klasyfikacji alkoholizowania się dzieci i młodzieży.
Zeszyty Naukowe Ośrod. Bad.-Nauk. przy Zarz.Gł. Społecznego Komitetu Przeciwalkoholowego, 1974, Warszawa.
/A proposal of classification of alcoholization of children and juvenils.
Issues of the Research Centre on Alcoholism of the Soci: Committee for the Control of Alcoholism. 1974, Warszawa/

107. POSEŁ Z.
Badania psychiatryczne.
Rozdział do podręcznika: "Podstawy Psychiatrii".
/Psychiatric examinations.
Chapter in the manual: "Elements of Psychiatry"/.
P.Z.W.L. in press.

108. POSEŁ Z., WIERCIOCH L.
Biologiczne leczenie uzależnień lekowych.

/Biological treatment of drug addictions/.
Psychiatria Polska in press

109. POSEŁ Z.
Padaczka. Rozdział do podręcznika: "Podstawy Psychiatrii"
/Epilepsy. Chapter in the manual "Elements of Psychiatry"/
P.Z.W.L. in press

110. RAFAŁOWSKA U., PASTUSZKO A., GROMEK A.
The effect of pyridine nucleotides on the activity of NADP-dependent isocitrate dehydrogenase from brain cytosol.
Febs Letters, Vol. 42, N° 1, 1974, 20-32.

111. RAFAŁOWSKA U., GROMEK A.
Effect of oxygen deficiency and barbiturate anesthesia on citrate oxidation in brain cytoplasm.
Neuropat. Pol. in press.

112. RAFAŁOWSKA U., PASTUSZKO A., GROMEK A.
Characteristic of certain features of NADP-dependent isocitrate dehydrogenase in rat brain.
Neur. Neurochir. Pol., 1974, 8/24/, N° 5, 673-676.

113. RAFAŁOWSKA U., PASTUSZKO A., GROMEK A.
NADP-dependent isocitrate dehydrogenase from rat brain cytosol.
Bull. Acad. Pol. Sci., Ser.Sci.biol., 1974, 12, N° 7-8, 453-459.

114. RAP Z., KAPUŚCIŃSKI A., SIKORSKA M.
Ocena stanu bariery krew-mózg i zawartość wody w mózgu w

doświadczalnym zatruciu tlenkiem węgla.
/Evaluation of the blood-brain barrier and water content in brain in experimental acute carbon monoxide intoxication/
Neuropat. Pol., 1974, 12, 403-412.

115. RAP Z., STASZEWSKA-BARCZAK J.
Adrenergic response and morphological changes in the neurosecretory system and adrenal cortex during intracranial hypertension in cats.
Proc. VII-th Intern. Gongr. Neuropat., 1974, Budapest, Hungary.

116. ROSSOWSKA M.
Wpływ niedoboru tlenowego i narkozy barbituranowej na aktywność aminotransferazy alaninowej w korze i móżdżku świnek morskich.
/Effect of oxygen defficiency and barbiturate anesthesia on the alanine aminotransferase acitivity in guinea pigs cerebral cortex and cerebellum/.
Bull. Acad. Pol. Sci., Ser. sci. biol., 1974, 12, N° 11.

117. ROWIŃSKI W. /Editor/
Niewydolność nerek w chirurgii.
/Renal insufficiency in surgery/
P.Z.W.L., Warszawa, /1975/, in press

118. ROWIŃSKI W., OLSZEWSKI W.
Wybrane zagadnienia z przeszczepiania narządów.
/Selected problems in transplantology/
Symp. Med. Współcz., P.Z.W.L., Warszawa, 1974.

119. ROWIŃSKI W., SZMIDT J., ŁUKASIEWICZ H., GAWLIK Z., PLUCINSKI S., TUPALSKA B., ŻYTKOWSKA L., DZIEDZIUL S., NIELUBOWICZ J.
Immunosuppressive effect of horse anti-dog lymphocyte globulin.
Pol. Med. Sci. and Hist. Bull., 1974, XV/II, 115.

120. RUDOWSKI J., SZIER J., BOROWICZ J.W., KLAWE Z., SIELCZAK M., KNAP J.
Dwa przypadki przyzwojaka niechromochłonnego kłębka szyjnego.
/Two cases of chemodectoma of the carotid body/
Neuropat. Pol., 1974, 12, 3, 505-513.

121. SADOWSKI B., SZCZEPAŃSKA-SADOWSKA E.
The effect of calcium ions chelation and sodium ions excess in the cerebrospinal fluid on body temperture in conscious dogs.
Pflügers Archiv, 1974 in press.

122. SADOWSKI J.
Zużycie tlenu przez nerki: korelacja z funkcją kanalików.
/Renal oxygen consumption: correlations with tubular functions/
Acta Physiol. Pol. Suplement, 1975 in press.

123. SAWICKI Z., OLSZEWSKI W.
Limfografia śródkostna.
/Transosseous lymphography/
Pol. Przegl. Med. Nukl. Rad. in press

124. SIKORSKA M., BICZ W., ŚMIAŁEK M., MOSSAKOWSKI M.J.
ATP, ADP, AMP concentrations in rat brain following carbon monoxide intoxication and in experimental ischaemia.
Neuropat. Pol., 1974, 12, 387-396.

125. SIKORSKA M., GORZKOWSKI B., SZUMAŃSKA G., ŚMIAŁEK M.
Incorporation of ^{14}C-glucose into glycogen and glucose-6--phosphate dehydrogenase activity in rat brain following carbon monoxide intoxication.
Neuropat. Pol. in press

126. SIKORSKA M., ŚMIAŁEK M.
Glycogen level and UDPglucose: glycogen alfa-4-glucosyltransferase /EC 2.4.1.11./ activity in the brains of rabbits after experimental circulatory hypoxia.
Neuropat. Pol., 1974, 12, 655-664.

127. SIWKIEWICZ J.
Rysunek w diagnostyce psychologicznej dziecka.
Materiały XXIV Sympozjum Szkoleniowego Psychoterapii Dzieci i Młodzieży.
/The drawing in the psychological diagnostics of children/ Proceedings of the XXIV-th Training Symposium on Psychotherapy of Children and Juveniles.

128. SPATZ M., RAP Z., RAPAPORT S.I., KLATZO I.
Hyperosmolar and H_gCL_2 effect on the brain uptake of ^{14}C glucose analogues.
Brain Research /1975/ in press

129. STADNICKI R., DZIDUSZKO J., TUBYLEWICZ K., AUGUSTYNIAK B.
Odległe następstwa wstrząśnienia mózgu w świetle badań elektroencelograficznych.
/Late effects of commotio cerebri in the light of E.E.G./
Pol.Tyg.Lek., 1974, 29, 11, 453-455.

130. STADNICKI R., GROCHOWSKI W., DIETRICH-RAP Z., ŁUCZYWEK B.
Odległe następstwa zamkniętych urazów czaszkowo-mózgowych u chorych z długotrwałą utratą przytomności w świetle badań elektroencefalograficznych.
/Late effects of cranio-cerebral trauma in patients with long-term loss of consciousness in the light of E.E.G./
Pol.Tyg.Lek., 1974, 29, 13, 534-537.

131. STADNICKI R., DZIDUSZKO J., TUBYLEWICZ K., AUGUSTYNIAK B.
Odległe następstwa wstrząśnienia mózgu w świetle badań neurologicznych.
/Late effects of commotio cerebri, on the basis of neurological examinations/.
Pol.Tyg.Lek., 1974, 29, 11, 445-447.

132. STADNICKI R., SZUMSKA J., DIETRICH-RAP Z., TUBYLEWICZ K., WITKIEWICZ B.
Odległe następstwa podtwardówkowych, nadnamiotowych krwiaków i wodników w świetle badań elektroencelograficznych.
/Long-terms effects of subdural supratentorial haematomas and hygromas in the light of E.E.G./
Pol.Tyg.Lek., 1974, 29, 12, 497-500.

133. STROSZNAJDER J., DĄBROWIECKI Z.

Reakcja wolnorodnikowa utleniania kwasów tłuszczowych fosfolipidów błon mikrosomalnych w warunkach kontrolnych i pod wpływem zaburzonej równowagi tlenowej.

/Free-radical reaction of oxidation of fatty acids of phospholipids in microsomal membranes in control conditions and during disturbed oxygen balance/.

J. of Neurochem. in press

134. STROSZNAJDER J., RADOMIŃSKA-PYREK A., ŁAZAREWICZ J.W., HORROCKS L.A.

Synthesis in vitro of 1-alkyl-2-acyl and 1,2-diacyl-an-H-glycero-3 phosphorylcholines and ethanolamines by neuronal glial and synaptosomal fractions from adult rabbit brain.

J. of Neurochem. in press

135. SZEREDA-PRZESTASZEWSKA M.

Changes in laryngeal calibre in anaphylactic shock in rabbits.

J. Physiol., 1974, 241, 21-22.

136. SZEWCZYKOWSKI J., ŚLIWKA S., KUNICKI A., KORSAK-ŚLIWKA J., DZIDUSZKO J., DYTKO P., AUGUSTYNIAK B.

Computer-assisted analysis of intraventricular pressure after mannitol administration.

J. of Neurosurgery in press

137. SZMUKLER SZ.

Osobowość ucznia jako przedmiot troski szkoły.

/The pupil's individuality as the subject of school care/

Zdrowie psychiczne, 1974, 1-2, 42-47.

138. SZMUKLER SZ.
Rola wychowania estetycznego ucznia w zwalczaniu trudności wychowawczych.
/The role of aesthetical education of school children in overcoming educational difficulties/,
Zdrowie Psychiczne in press

139. SZUMAŃSKA G., GADAMSKI R.
Histochemical changes in rabbit brain following circulatory hypoxia.
Neuropat. Pol., 1974, 12, 593-602.

140. SZUMAŃSKA G., GADAMSKI R., CZERNICKI Z., JURKIEWICZ J., TĘŻYCKA J.
Zmiany histochemiczne w mózgu kota w doświadczalnym ucisku nadtwardówkowym.
/Histochemical changes in cat brain in experimental supradural compression/.
Neuropat. Pol., 1974, 12, 447-460.

141. SZUMAŃSKA G., KROH H.
Mucopolysaccharides and glycogen in chemically induced CNS gliomas.
Proc. VII-th Intern. Congr. Neuropath., 1974, Budapest, Hungary.

142. SZUMSKA J., WITKIEWICZ B., DIETRICH-RAP Z., TUBYLEWICZ K., STADNICKI R.
Odległe następstwa podtwardówkowych, nadnamiotowych krwiaków i wodniaków w świetle badań neurologicznych.

/Long-term effects of subdural supratentorial haematomas and hygromas, on the basis of neurological examinations/.
Pol.Tyg.Lek., 1974, 29, 12, 491-492.

143. ŚMIAŁEK M.
Cytochrome oxidase activity in isolated giant cells of the reticular formation from the rat brain stem following carbon monoxide intoxication /Cartesian micro-diver technique/.
Neuropat. Pol., 1974, 12, 397-402.

144. ŚMIAŁEK M., KRAŚNICKA Z.
Cytochrome oxidase activity in isolated sensory neurons of spinal root ganglia from chick embryo tissue culture in experimental anoxia.
Proc. VII-th Intern. Congr. Neuropath., 1974, Budapest, Hungary.

145. ŚMIAŁEK M., MOSSAKOWSKI M.J.
Morphological changes and quantitative topography of copper in the brains of patients with hepatic coma due to acute liver impairment.
Neuropat. Pol., 1974, 12, 259-268.

146. TARASZEWSKA A., OSETOWSKA E.
Zmiany morfologiczne w mózgu królika "pt" w okresie przedobjawowym.
/Morphological changes in the brain of "pt" rabbits in the presymptomatic phase/.
Neuropat. Pol., in press

147. TOMCZAK J.
Zaburzenia psychiczne w nadciśnieniu tętniczym.
Rozdział do podręcznika: "Podstawy Psychiatrii".
/Psychic disturbances in arterial hypertension.
Chapter in the manual: "Elements of Psychiatry"/
P.Z.W.L. in press

148. TOMCZAK J.
Zaburzenia psychiczne spowodowane miażdżycą naczyń mózgowych.
Rozdział do podręcznika: "Podstawy Psychiatrii".
/Psychiatric disorders caused by cerebral arteriosclerosis.
Chapter in the manual: "Elements of Psychiatry"/.
P.Z.W.L. in press

149. TUBYLEWICZ K., DZIDUSZKO J., STADNICKI R., AUGUSTYNIAK B.
Odległe następstwa wstrząśnienia mózgu w świetle badań psychologicznych.
/Late effects of commotio cerebri, on the basis of psychological examinations/.
Pol.Tyg.Lek., 1974, 29, 11, 449-451.

150. TUBYLEWICZ K., SZUMSKA J., WITKIEWICZ B., DIETRICH-RAP Z.
Odległe następstwa podtwardówkowych, nadnamiotowych krwiaków i wodniaków w świetle badań psychologicznych.
/Long-term effects of subdural supratentorial haematomas and hygromas, on the basis of psychological examinations/.
Pol.Tyg.Lek., 1974, 29, 12, 493-495.

151. WALD I., WEHR H., HERMAK K., ALBERT K., SAWICKI J.
Niektóre wskaźniki biochemiczne w surowicy królika "pt".
/Some biochemical indices in "pt" rabbit serum/
Neuropat. Pol. in press

152. WEINRAUDER H., LACH B.
Immunofluorescence studies on the localisation of the brain-specific antigen/s/ in the central nervous system of the rat.
Proc. VII-th Intern. Congr. Neuropath., 1974, Budapest, Hungary.

153. WEINRAUDER H., ŚMIAŁEK M.
Ocena immunologiczna wzbogaconych frakcji komórkowych w mózgu szczura.
/Immunological evaluation of cell-enriched fractions of rat brains/.
Neuropat. Pol., 1974, 12, 469-476.

154. WIDEMAN J., DOMAŃSKA-JANIK K.
Regulation of thiols in the brain. 1. Concentrations of thiols and glutathione reductase activity in different parts of the rat brain during hypoxia.
Resuscitation 1974, 3, 51-62.

155. WIDEMAN J.
Regulation of thiols in the brain. 4. Glutathione-cystine transhydrogenase activity during hypoxia and its substrate specificity in different parts of the rat brain.
Resuscitation, 1974, 3, 51-62.

156. ZAKRZEWSKA B.

O reedukacji dziecka dyslektycznego.

/The reeduction of dislectic children/.

Ceskoslovenska Psychologie in press.

157. ZAKRZEWSKA B.

Wybrane ćwiczenia korekcyjno-wyrównawcze dla dzieci z trudnościami czytania.

/Selected correctional-compensatory exercises for children with defects in reading/.

Sbornik Logopedycky in press.

158. ZAKRZEWSKA B.

Z doświadczeń nad dziećmi z trudnościami czytania i pisania.

/Some experiences concerning children with reading and writing defects/.

Puch Pedagogiczny in press.

159. ZAKRZEWSKA B.

Zaburzenia lateralizacji u dzieci.

/Rozdział dodatkowy, napisany na prośbę PZWS do własnej książki pt.: "Reedukacja dzieci z trudnościami czytania i pisania"/.

/Lateralization troubles in children.

A supplementary chapter to the author's work entitled: "Reeducation of children with reading and writing difficulties"/

P.Z.W.S. in press.

160. ZAKRZEWSKA B.

Recenzja książki: J. Koch - "Vychova kojence v rodine" /Wychowanie niemowlęcia w rodzinie/

/Review of book by J. Koch: "The upbringing of the infant in the family"/.

Zagadnienia Wychowawcze a Zdrowie Psychiczne in press

161. ZAKRZEWSKA B.

Teoretyczne założenia i organizacja opieki nad dziećmi w niektórych krajach Europy.

/Theoretical foundations and organization of children's care in some European countries/.

Ruch Pedagogiczny, 1974, 6, 808-814.

162. Translation into Polish.

Zdeněk Matějček: "Nove formy náhradni rodinné péce o deti".

ZAKRZEWSKA B.

Nowe formy zastępczej opieki rodzinnej nad dziećmi.

/New forms of parents substitutes care of children/

Zagadnienia Wychowawcze a Zdrowie Psychiczne, 1973, 4-5, 91-99.

163. Zdeněk Matějček: "Výběr matek pro dětskou vesmičku v CSR".

ZAKRZEWSKA B.

Metody doboru matek dla wiosek dziecięcych w Czechosłowacji.

/Methods for choosing mother substitutes for children's hamlets in Czechoslovakia/

Zagadnienia Wychowawcze a Zdrowie Psychiczne, 1973, 4-5, 107-116.

164. ZAKRZEWSKI P.

Szanse realizacji art. 107 nowego Kodeksu Karnego a celowość leczenia odwykowego w zakładach karnych.
/Chances of realization of par. 107 of the new Penal Code and purposefullness of the disaccustoming in penitentiary institutions/.
Alkohologia Łódzka, 1973, t. 6, N° 1.

165. ZAKRZEWSKI P.

Zespół objawów wczesnego nieprzystosowania społecznego.
/Complex of symptoms of early social maladaptation/
Prawo i Państwo, /1975/, t. 30, N° 1, 68-82.

166. ZAKRZEWSKI P.

Próba systematyzacji badań nad spożyciem alkoholu i alkoholizmem. Studia nad zwalczaniem alkoholizmu.
Zeszyty Naukowe Ośrod.Bad.-Nauk. przy Zarz.Gł.Społecznego Komitetu Przeciwalkoholowego, 1974, Warszawa.
/An attempt at systematization of studies on alcohol consumption and alcoholism. Studies on antialcoholic action.
Issues of the Research Centre on Alcoholism of the Social Committee for the Control of Alcoholism.
1974, Warszawa/

167. ZAKRZEWSKI P.

Okres zawarcia małżeństwa w życiu młodych alkoholików.
/The period of contracting marriage in the life of juvenile alcoholics/.
Problemy Alkoholizmu, 1974, N° 10.

168. ZELMAN I.B.
Pathomorphology of the rabbit brain following circulatory hypoxia.
Neuropat. Pol., 1974, 12, 583-591.

169. ZELMAN I.B., MOSSAKOWSKI M.J.
Some aspects of the pathomechanism of nerve tissue lesions in acute carbon monoxide intoxication.
Neuropat. Pol. in press.

170. ZELMAN I.B., PRONASZKO-KURCZYŃSKA A., SZUMAŃSKA G.
Glycogen content and topography in rat brain in experimental ouabain encephalopathy.
Proc. VII-th Intern. Congr. Neuropath., 1974, Budapest, Hungary.

171. ZELMAN I.B., SZEWCZYKOWSKI J., JURKIEWICZ J., CZERNICKI Z.
Patomorfologia w doświadczalnym uciskowym obrzęku mózgu u kotów.
/Pathomorphology in experimental brain oedema caused by supradural compression/.
Neuropat. Pol., 1974, 12, 425-434.

172. ZWIERZCHOWSKI S., TURLEJSKA-STELMASIAK E.
The thermistor as a thermode fed with direct current for the hypothalmic heating.
Acta Physiol. Pol., 1974, 25, 599.

173. ŻURAW J.
Turystyka - formą terapii.
/Tourism - as a form of therapy/
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