

A.G. IVANOV-SMOLENSKY

ESSAYS
ON THE
PATHO-PHYSIOLOGY
OF THE HIGHER
NERVOUS ACTIVITY



A.G. IVANOV-SMOLENSKY

MEMBER OF THE U.S.S.R. ACADEMY OF MEDICAL SCIENCES

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ACCORDING
TO
I.P. PAVLOV
AND HIS SCHOOL

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TRANSLATED BY S. BELSKY

CONTENTS

	<i>Page</i>
<i>Preface to the First Edition</i>	9
<i>INTRODUCTION</i>	13
<i>Essay I. PATHOLOGICAL CHANGES IN THE HIGHER NERVOUS ACTIVITY, CAUSED BY EXPERIMENTAL LESIONS (EXTIRPATION) OF THE CEREBRAL HEMISPHERES IN ANIMALS</i>	23
1. FROM EXPERIMENTAL PSYCHO-PATHOLOGY BASED ON THE STUDY OF ANIMALS TO THE PATHO-PHYSIOLOGY OF THE HIGHER NERVOUS ACTIVITY	25
2. THE MAIN FEATURES OF THE ACTIVITY OF THE CEREBRAL HEMISPHERES	29
3. PAVLOV'S BASIC VIEWS ON THE LOCALIZATION OF FUNCTIONS IN THE HIGHER PARTS OF THE CENTRAL NERVOUS SYSTEM	39
4. GENERAL AND LOCAL DISTURBANCES OF THE WORK OF THE BRAIN RESULTING FROM INJURY TO VARIOUS PARTS OF THE CEREBRAL HEMISPHERES .	48
5. VARIOUS STAGES OF DISTURBANCES OF THE CERE- BRAL ACTIVITY RESULTING FROM INJURY TO THE CEREBRAL HEMISPHERES	53
6. THE STUDY OF THE HIGHER NERVOUS ACTIVITY UNDER EXPERIMENTALLY INDUCED DAMAGE TO THE BRAIN CONDUCTED AFTER PAVLOV'S DEATH . . .	66

7. THE POSSIBILITY OF APPLYING THE EXPERIMENTAL DATA CITED IN THE PREVIOUS CHAPTERS TO MAN .	73
--	----

<i>Essay II. PATHOLOGICAL CHANGES OF THE HIGHER NERVOUS ACTIVITY IN ANIMALS RESULTING FROM FUNCTIONAL INFLUENCES</i>	79
--	----

1. EXPERIMENTAL NEUROSES	81
2. THE THEORY OF TYPES OF HIGHER NERVOUS ACTIVITY AND EXPERIMENTAL NEUROSES	83
3. THE FIRST STAGE IN THE DEVELOPMENT OF THE THEORY OF EXPERIMENTAL NEUROSES	96
4. PHASIC CHANGES OF THE CORTICAL ACTIVITY OR INTERMEDIATE STATES BETWEEN WAKEFULNESS AND SLEEP	106
5. THE FURTHER DEVELOPMENT OF THE THEORY OF PATHOLOGICAL CHANGES IN THE HIGHER NERVOUS ACTIVITY CAUSED BY FUNCTIONAL INFLUENCES . .	113
6. VEGETATIVE DISTURBANCES CONNECTED WITH EXPERIMENTAL NEUROSES	128
7. GENERAL AND LOCAL DISTURBANCES RESULTING FROM EXPERIMENTALLY INDUCED FUNCTIONAL DISORDERS OF THE BRAIN	138
8. PATHOLOGICAL CHANGES OF THE HIGHER NERVOUS ACTIVITY CONNECTED WITH EXPERIMENTALLY INDUCED DISTURBANCES OF THE ENDOCRINE AND VEGETATIVE FUNCTIONS	152
9. PATHOLOGICAL CHANGES OF THE HIGHER NERVOUS ACTIVITY RESULTING FROM VARIOUS FORMS OF EXPERIMENTAL INTOXICATION AND FROM CERTAIN INFECTIONS	168
10. EXPERIMENTAL THERAPY OF DISTURBANCES OF THE HIGHER NERVOUS ACTIVITY CAUSED BY VARIOUS NOXIOUS FUNCTIONAL INFLUENCES	187
11. THE CONNECTION BETWEEN EXPERIMENTAL PATHOLOGY OF THE HIGHER NERVOUS ACTIVITY AND EXPERIMENTAL THERAPY	200

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1. FROM EXPERIMENTAL PSYCHO-PATHOLOGY BASED ON THE STUDY OF ANIMALS TO THE PATHO-PHYSIOLOGY OF THE HIGHER NERVOUS ACTIVITY	25
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5. VARIOUS STAGES OF DISTURBANCES OF THE CERE- BRAL ACTIVITY RESULTING FROM INJURY TO THE CEREBRAL HEMISPHERES	53
6. THE STUDY OF THE HIGHER NERVOUS ACTIVITY UNDER EXPERIMENTALLY INDUCED DAMAGE TO THE BRAIN CONDUCTED AFTER PAVLOV'S DEATH . . .	66

7. THE POSSIBILITY OF APPLYING THE EXPERIMENTAL DATA CITED IN THE PREVIOUS CHAPTERS TO MAN .	73
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<i>Essay II.</i> PATHOLOGICAL CHANGES OF THE HIGHER NERVOUS ACTIVITY IN ANIMALS RESULTING FROM FUNCTIONAL INFLUENCES	79
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2. THE THEORY OF TYPES OF HIGHER NERVOUS ACTIVITY AND EXPERIMENTAL NEUROSES	83
3. THE FIRST STAGE IN THE DEVELOPMENT OF THE THEORY OF EXPERIMENTAL NEUROSES	96
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5. THE FURTHER DEVELOPMENT OF THE THEORY OF PATHOLOGICAL CHANGES IN THE HIGHER NERVOUS ACTIVITY CAUSED BY FUNCTIONAL INFLUENCES . .	113
6. VEGETATIVE DISTURBANCES CONNECTED WITH EXPERIMENTAL NEUROSES	128
7. GENERAL AND LOCAL DISTURBANCES RESULTING FROM EXPERIMENTALLY INDUCED FUNCTIONAL DISORDERS OF THE BRAIN	138
8. PATHOLOGICAL CHANGES OF THE HIGHER NERVOUS ACTIVITY CONNECTED WITH EXPERIMENTALLY INDUCED DISTURBANCES OF THE ENDOCRINE AND VEGETATIVE FUNCTIONS	152
9. PATHOLOGICAL CHANGES OF THE HIGHER NERVOUS ACTIVITY RESULTING FROM VARIOUS FORMS OF EXPERIMENTAL INTOXICATION AND FROM CERTAIN INFECTIONS	168
10. EXPERIMENTAL THERAPY OF DISTURBANCES OF THE HIGHER NERVOUS ACTIVITY CAUSED BY VARIOUS NOXIOUS FUNCTIONAL INFLUENCES	187
11. THE CONNECTION BETWEEN EXPERIMENTAL PATHOLOGY OF THE HIGHER NERVOUS ACTIVITY AND EXPERIMENTAL THERAPY	200

<i>Essay III. INVESTIGATIONS IN THE SPHERE OF THE CLINICAL PATHO-PHYSIOLOGY OF THE HIGHER NERVOUS ACTIVITY</i>	203
1. THE BASIC STAGES IN PAVLOV'S APPROXIMATION TO THE CLINIC OF NEUROPSYCHIC DISEASES	205
2. THE BASIC PRINCIPLES OF PAVLOV'S WORK IN THE SPHERE OF CLINICAL PATHO-PHYSIOLOGY OF THE HIGHER NERVOUS ACTIVITY	210
3. PAVLOV'S VIEWS ON THE TYPES OF HUMAN HIGHER NERVOUS ACTIVITY	218
4. THE SIGNIFICANCE OF THE THEORY OF EXPERI- MENTAL NEUROSES FOR THE CLINIC OF HUMAN GENERAL NEUROSES	224
5. GENERAL REVIEW OF THE INVESTIGATIONS CON- DUCTED BY PAVLOV AND HIS COLLABORATORS IN THE NEUROSIS CLINIC	235
6. THE BASIC PRINCIPLES OF PAVLOV'S PATHO-PHYSIO- LOGICAL WORK IN THE PSYCHIATRIC CLINIC	253
7. PAVLOV'S RESEARCH INTO THE DISTURBANCES OF THE HIGHER NERVOUS ACTIVITY UNDER SCHIZO- PHRENIA	264
8. THE MAIN LINES OF RESEARCH IN PAVLOV'S PSYCHIATRIC CLINIC DURING HIS LIFETIME AND AFTER HIS DEATH	274
9. THE WORK OF PAVLOV AND HIS COLLABORATORS IN THE SPHERE OF THE PATHOGENIC THERAPY OF NEUROPSYCHICAL DISEASES	280
<i>CONCLUSION</i>	295
<i>INDEX OF LITERATURE</i>	301

To the Memory of the Great Russian Scientist
IVAN PETROVICH PAVLOV
My Dear and Unforgettable Teacher

THE AUTHOR

PREFACE TO THE FIRST EDITION

Some forty-five to fifty years ago Ivan Petrovich Pavlov laid the foundations of the theory of the higher nervous activity, which has become one of the greatest treasures of Russian science.

Pavlov's theory is the result of collective work, unmatched for the way in which it was planned and organized, for its consistent purposefulness and which was carried on for almost thirty-five years by a large body of scientific workers—the Pavlov school—under his brilliant guidance.

Among Pavlov's immediate assistants, men and women who helped to create his theory, were I. F. Tolochinov, G. P. Zeliony, N. I. Krasnogorsky, L. A. Orbeli, Y. V. Volborth, M. A. Ussievich and M. K. Petrova. In subsequent years some of his closest collaborators abandoned the theory of the higher nervous activity and created their own trends and schools; others worked hard for decades on the further development of the physiology, and later, also of the pathology of the cerebral hemispheres.

But research in the field of the theory of the higher nervous activity directed by I. P. Pavlov developed in a particularly big way after the Great October Socialist Revolution.

Shortly before his death Pavlov, in the well-known address to the youth, stated: "Our country is opening up boundless vistas for scientists, and, let it be said, science in our country receives generous backing, the utmost backing."

A most active part in the elaboration of the theory of the higher nervous activity under Pavlov's direct

guidance was taken over a long period by G. P. Zeliony, M. K. Petrova, Y. V. Volborth, N. A. Podkopayev, Y. P. Frolov, D. S. Fursikov, O. S. Rosenthal, K. M. Bykov, V. I. Pavlova, V. V. Rickman, L. A. Andreyev, M. A. Ussievich, V. V. Stroganov, V. V. Yakovleva, B. N. Bierman and others.

Among Pavlov's younger collaborators an especially big contribution to the theory of the higher nervous activity was made by E. A. Asratyan, G. V. Skipin, A. O. Dolin, L. O. Seewald, S. V. Klestchov, I. O. Narbutovich and K. S. Abuladze.

M. K. Petrova was Pavlov's closest assistant and the most active continuer of his teaching on the patho-physiology of the higher nervous activity; an enormous amount of work was done by her in this field. Being a clinician and therapist, she devoted much energy to bringing the experimental patho-physiology of the animal higher nervous activity into closer contact with the clinic, with practical medicine. Substantial facts were also added to the theory of conditioned reflexes by I. P. Razenkov and A. D. Speransky.

The human higher nervous activity has become the object of experimental study thanks to N. I. Krasnogorsky; a physiologist and pediatricist, Krasnogorsky has been working for more than forty years on problems of the physiology and patho-physiology of the higher nervous activity in the field of pediatrics, at first single-handed and later in collaboration with his numerous co-workers.

A number of Pavlov's disciples, who worked under his guidance, have created their own original trends and schools; however, in many cases these are but far-flung ramifications of the theory of the higher nervous activity, which Pavlov himself over a long period regarded as the main direction.

In his *Lectures on the Work of the Cerebral Hemispheres*, published in 1927, Pavlov summed up all the

experimental data relating to the patho-physiology of the higher nervous activity which had been obtained by that time; he also made the first steps in applying the theory of the higher nervous activity to man and in its utilization in clinical medicine.

Since then more than twenty years have passed, but still we do not see any review or summary (except Pavlov's last articles), even any attempt to sum up the rich and valuable material obtained by the laboratories and clinics of Pavlov during his lifetime and after his death.

On the occasion of the centenary of Pavlov's birthday (September 27, 1949) the author of this book takes the liberty of attempting to fill this gap in the patho-physiology of the higher nervous activity; his aim is to expound in a number of essays the basic achievements of this young branch of science and to give an outline of its development in the Pavlov school (including its ramifications) up to our time.

In the preface to the third edition of the *Lectures on the Work of the Cerebral Hemispheres* published in November 1935, Pavlov wrote: "My new systematic exposition of the *whole* of our experimental material in the shape of one book will require much labour, and I regard it as my last scientific task. It will take years to complete this work. If only fate will be so kind as to preserve for me at my age the vigour that will enable me to carry out this important duty of my life!"

Death prevented Pavlov from carrying out this desire.

In the *Essays on the Patho-Physiology of the Higher Nervous Activity* the author tries, to the best of his ability, to carry out, even in small measure, Pavlov's will; the author regards this as his duty to Russian science and to his late teacher.

April 27, 1949

1