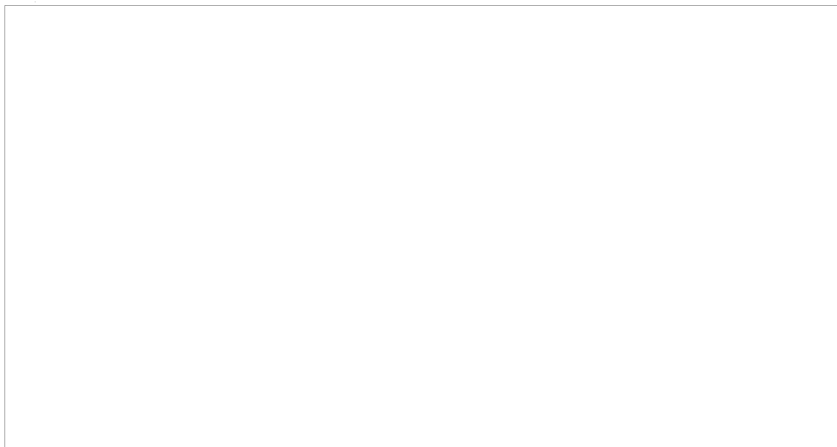


PROGRESS OF SOVIET NEUROPATHOLOGY AND PSYCHIATRY

(Results of the Scientific Session of the Academy of Sciences
USSR and the Academy of Medical Sciences USSR Dedicated to the
Development of the Pavlov Physiological Trend)

Professor N. I. Grashchenkov



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Tremendous historical significance is to be attached to the recently held scientific session of the Academy of Sciences USSR and the Academy of Medical Sciences USSR which was devoted to the Pavlov Physiological Trend, the problems and prospects of its future development, and its deep penetration into various fields of Soviet science, especially psychology and medicine. In the last case the session was of extraordinary significance for the development of Soviet Neuropathology and Psychiatry.

the contents of which were significant
Reports ~~of significant meaning~~ were given at this session by Academician K. M. Bykov and Professor A. G. Ivanov-Smolenskiy concerning the development of the ideas of I. P. Pavlov and the directions of the development of I. P. Pavlov's ideas in the field of the pathophysiology of the higher nervous functions. The reports disclosed serious defects and errors in the work of a number of scientists, among them people in the field of our science -- neuropathology and psychiatry -- and indicated the directions for the future development of the scientific ideas of Academician Pavlov.

The scientific session served as another step in the fight for the spirit of the Bolshevik Party in Soviet science and for raising its conceptual level on the basis of dialectical materialism.

The keynote of the session was the elimination of all possible deviations from the correct path of development of physiological science, various obstacles to genuine progress, and all possible antiscientific fabrications serving as hidden forms of resistance against the dialectic materialistic outlook and against the militant materialistic teachings of Academician Pavlov.

At the session the errors of native scientists and their various attempts toward substituting unscientific theories for the militant materialistic Pavlovian outlook were subjected to resolute criticism. Individual tendencies in the person of their leaders, such as the "school" finding its support in L. S. Shtern, have actively contended against Pavlov and repeated in all keys various fabrications and slanders of foreign scientists who have opposed Pavlov's materialistic teaching. This "school" possesses all the negative features of cosmopolitanism and deference to bourgeois science and has been trying to establish its unscientific theories in place of Pavlov's materialistic teaching and to introduce into various departments of clinical medicine its anti-Pavlovian notions concerning pathogenesis of and therapy for different illnesses, such as shock, ulcers, hypertonic ailments, etc. Some Soviet clinical workers have been caught in these nets and have tried to use such unscientific formulations as a basis for the pathogenesis and therapy of various ailments, among which are such things as virus encephalitis, especially its mosquito form.

An anti-Pavlovian position has been taken by the "school"

of physiologists headed by Academician I. S. Beritashvili. The leader of this school came out with a number of doubts concerning Academician Pavlov's teaching even while Pavlov was alive, and has continued to adhere to them since Academician Pavlov's death. Beritashvili has constructed a theory concerning certain "psycho-nervous" foundations for the behavior of animals because he considers the theory of conditioned reflexes to be inadequate in its explanation of the behavior of animals. Beritashvili has posited that the essential factor in the behavior of animals consists of certain "apprehensions" which animals possess rather than conditioned or temporary connections.

The appearance at the session of Academician Beritashvili's pupil, Professor Dzidzishvili, showed that neither Academician Beritashvili, as the leader of the group, nor his associates perceived the defects and errors of his "teaching" and had taken no decisive steps in the direction of a critical conquest of their errors. It should be mentioned that Academician Beritashvili has not once made the attempt to establish a connection for his erroneous theoretical assumptions with a clinic, in particular, with a clinic for nervous and psychic illnesses.

The errors of Academician Orbeli were subjected to a ^v supported by adequate arguments. much-debated criticism. He has not properly evaluated Pavlov's teaching and methodological foundations, showing an instability from the point of view of methodology, especially in his generalizations concerning the valuable experimental results with respect to the physiology of sense organs and in his ^{treatment of the} discussions on the ~~importance of~~ a secondary signal system as formulated by

Academician Pavlov on the basis of his work during the last years of his life at the Clinic for Nervous and Psychic Illnesses. That same methodological instability in the problem of psychophysiological parallelism was responsible for errors by Academician Orbeli's pupil, Professor Gershun, in the study of physiological ^y ~~of~~ ^{sense} ~~the~~ ^{of} organs with regard to subjective and objective ~~feelings~~ in man. The inability to appreciate the importance of Academician Pavlov's teachings and the attempt to proceed independently in research were also shown by other pupils of Academician Orbeli, such as Professor Ginetsinskiy and Professor Lebedinskiy, a fact ^{which is} ~~that was~~ most clearly evident in their textbook on physiology.

Academician L. A. Orbeli was subjected to severe criticism because of the fact that, although after I. P. Pavlov's death he had headed a number of scientific institutions and an important group of Pavlov's pupils, he had not organized a systematic and productive development of the main facets of I. P. Pavlov's scientific heritage, especially with regard to problems of the physiology and pathophysiology of the higher nervous functions, ^{and not} ~~but~~ had ^{is} ~~was~~ carried on extensive research on the secondary signal system, which ~~was~~ simply a man-made addition to the physiology of the brain of animals. Academician Orbeli came to understand the meaning of his errors only toward the end of the session for he had in the middle part of the session made strong attacks on his critics and tried to discredit the force of the criticism leveled at him both ^{as a whole} ~~on~~ generally and individually.

This approach was subjected to criticisms concerning two basic questions as first defended by Academician A. D. Speranskiy. They included the disparagement of the role of Academician Pavlov

in working out the problem of nerve ^{trophisms} ~~nutrition~~. This was especially marked in the basic monograph of A. D. Speranskiy entitled Elements for Constructing a Theory of Medicine and in publications and appearances of his associates, particularly during the first stage of the discussion (Ostryy, Bronovitskiy, Durmish'yan, etc.). [The second question related to] the understanding of the nervous system, in which there could be noted no specific breakdown into individual divisions of the nervous system, especially the cortex of the large hemispheres of the brain. This resulted in the incorrect conclusion that the nervous system organizes disease, thus belittling the role of external factors and the historical approach to the inception and development of disease. It should be noted to the credit of Academician A. D. Speranskiy that in his talk he acknowledged the fallacy of such views and announced that he and his associates would correct these errors in their scientific research work and in their discussions.

Professor Anokhin was subjected to very sharp criticism for his great confusion concerning and outright revision of Pavlov's basic assumptions ~~that he had developed~~ ^{during} over many years. Professor Anokhin was criticized for having inaccurately stated in 1940 in reference to the scientific work carried on in Academician Beritashvili's laboratory that he considered him to be one of the best authorities on the physiology of the higher nervous functions even though Beritashvili at that time had already made certain statements concerning Pavlov's basic views.

Professor Anokhin was also criticized for the fact that he attributed to Pavlov not only mechanical but also analytical

limitations, as if to imply Pavlov had not been able to make full use of synthesis and the principle of unity. Professor Anokhin once said that the vulnerable point in Pavlov's theory on conditioned reflexes was to be found in its break from foreign ideas on neurology. Professor Anokhin set ^{for} himself as his main task the review and revision of the basic concepts of Pavlov's teachings, among which he included the concept of the conditioned reflex itself. Professor Anokhin has tried to replace Pavlov's materialistic synthesis accompanied by analysis with a concept concerned with the integral character of unconditioned and conditioned reflexes of animals (Professor Anokhin has borrowed this theory from the English idealistic physiologist Sherrington whom Pavlov had criticized more than once for his idealism and mysticism as can be seen in Pavlov's Wednesdays). Soon after I. P. Pavlov's death, Professor Anokhin subjected Pavlov's concept of internal inhibition, and even cortical inhibition in general to a radical reconsideration. Then, giving his own basically inaccurate explanation for a number of phenomena related to higher nervous functions, Professor Anokhin not only did not contribute to the development of Pavlov's ideas, but in essence disparaged his teaching. In 1949 Professor Anokhin began to speak of the frontal parts of the cortex in manifest contradiction to all experimental investigation of frontal segments carried out by Pavlov and his pupils. Examples of slavishness and kowtowing to bourgeois (particularly Anglo-American) science were manifested by Professor Anokhin in a number of his publications, especially in his book From Descartes to Pavlov published by Medgiz in 1945.

Professor Kupalov was also criticized for his mistaken utterances on the mechanism of the so-called shortening reflexes in which he deviated from a position of objective materialistic study of higher nervous functions in the direction of zoopsychological subjectivism. Kupalov admitted that the existence of such forms of activity in a higher animal could be determined neither by external nor by internal irritants, and consequently could not depend on the reaction of the external or internal environment of the organism and therefore must carry a spontaneous character. Such views are incompatible with the deterministic concepts on reflex activity of Sechenov and Pavlov.

I. P. Pavlov was able to overcome the mechanistic explanation of the activity of the brain by formulating a historical conception of the development of the animal world in its constant mutual interrelation with the external environment.

In this connection there should be mentioned the errors of certain workers on the philosophical front dating back to 1930 and 1931, among which should be included my own. These errors were particularly clearly expressed in statements by the heads of the Institute of Red Professors in Philosophy and Natural Science and by individual listeners, of whom I was one, who had uncritically accepted the ideas of their leaders concerning the methodological views of Pavlov. By making use of isolated quotations in explaining the very complex higher nervous functions of animals he was able to draw his own conclusion concerning Pavlov's seeming mechanical outlook. Incidentally, a more-carefully conducted study of Pavlov's works as a whole later showed the

complete lack of justification for such a conclusion.

Such contradictions are at complete variance with Pavlov's historical concepts and with his position as a militant materialist concerning the basic questions of biology, among which should be included the problems of the transmission of acquired characteristics, the problems of the unity of the analysis and synthesis of the subjective and the objective, and a number of other both theoretical perceptual and important physiological problems.

We can note with satisfaction that such an inaccurate understanding of Pavlov's methodological views was completely destroyed as early as 1933.

Let us turn to those parts of the reports and to those talks which are directly related to neuropathology and psychiatry.

Academician Bykov's report particularly emphasized the fact that Pavlov's teaching serves as the foundation of contemporary scientific medicine. The report criticized that psychosomatic tendency which has achieved wide circulation in the US and which is completely and entirely idealistic in its methodology. It is not accidental that this movement has Freudianism as its theoretical foundation. This direction is completely opposed by the teaching of Academician Pavlov concerning the unified relationship of the external and the internal environment of the organism and the role of the cortex of the large hemispheres of the brain in the realization of this unity. As is known, the idea of the internal environment and of its unity with the central nervous system, the basis for which was put forth by I. P. Pavlov, was most fully

developed by Academician Bykov and his associates experimentally, and to some degree clinically.

It has been some time since Academician Bykov determined the relation of conditioned reflexes or temporary connections with internal organs, resulting from the combination of different stimuli reaching the internal organs under different conditioning external factors. Moreover, the most complex and widely generalized functions of internal organs and of the entire organism, such as the different forms of metabolism, are also regulated in accordance with varying external environmental and conditioned-reflex actions. This part of the research was widely made use of in the field of ecological physiology. The entire total of the investigations concerning the interrelation of the cortex and internal organs is of tremendous significance both for internal medicine and for neuropathology, especially psychiatry. Not only can different functional ailments of the nervous system be found to be related to different disruptions of the functions of the internal organs, but even organic ailments of the central nervous system may also take place in connection with different forms of the pathology of certain internal organs. It has been quite some time since that various Soviet neuropathologists proved that an intimate connection exists between the disease of the liver and certain degenerative ailments of sub-cortical nodes, and that there is a connection between a stomach ailment caused by disrupted blood circulation and degenerative organic diseases of the brain. It has also been proved that reactive connections, more precisely the onset of different forms

of ailments of the internal organs, exist between the endocrine glands and the disruption of different forms of metabolism in connection with different organic diseases of the brain. This was shown in particular for virus encephalitis, especially that caused by the mosquito, for disruption of blood circulation in different parts of the brain, inflammation of the brain, and for traumatic affections of the central and peripheral nervous systems. However, this should be considered as only the beginning in the explanation of the pathogenesis both of different forms of ailments of the internal organs in connection with affections of the central nervous system, as well as of the functional and organic ailments of the central and peripheral nervous system in connection with ailments of the internal organs.

Questions relating to cortico-visceral pathology were presented in the form of concrete examples of the brain cortex of the large hemispheres during the period of the inception and development of the pathological process which found their expression particularly in the form of ulcers of hypertonic disease, in the mechanism of neuroses, as well as in the therapy of these illnesses through protective inhibition, shock therapy, hypnosis, etc. These in truth speak of the transition to the new view of the nature of the human organism as being a completely live personality developing and showing in itself the concrete conditions of the social environment.

Our native psychiatry, dating back to the time of S. S. Korsakov, started to transcend the rupture existing between soul and body, but this transcendence became possible only on the basis of Pavlov's physiology.

Of exceptional significance is Pavlov's theory concerning the secondary signal system and of the necessity for further concrete application and wide utilization of this theory in the Clinic for Nervous and Psychic Illnesses for the purposes of diagnosis and therapy.

The essence of the secondary signal system was determined by Pavlov in the following way: "If our perceptions and ideas relating to the surrounding world serve for us as primary signals of reality, that is, concrete signals, then speech, which is first of all a form of kinesthetic stimuli traveling from the cortex to the speech organs, is also a special form of secondary signals or signals of signals. They present in themselves digressions from reality and permit generalization, the latter comprising our superfluous but specially human higher form of thinking" (Pavlov, I. P., Sochineniya, tom III, page 420).

It is only natural for the question to arise as to whether or not it would be justifiable to include in the concept of the secondary signal system not only the speech functions which belong specifically to man but also complex apprehension and complex activity (gnosis and praxis). Thanks to the presence of these complex nervous functions, which likewise are peculiar to man, man can be distinguished from other highly organized animals by the activity of his brain. Most complex working activities are peculiar to man only because of the development of the proper parts of the large hemispheres of the brain; the same is true of a complex recognition of his surroundings, which is made possible by the operation of the brain in man.

In his epoch-making work, which established the beginning of a new stage in linguistics, I. V. Stalin formulated with the utmost clarity the concept of the identity of speech and thinking. This further emphasizes the fact that Pavlov's theory concerning the secondary signal system is specifically limited to man and that speech is tied in with thinking and, consequently, with complex actions and a complex recognition of the surroundings. I. P. Pavlov, in formulating his concept of the secondary signal system, made an enormous step forward when he abolished the chasm existing between the functioning of the brain in animals and functioning of the brain in man. Through his concept of the secondary signal system I. P. Pavlov emphasized those features of the functioning of the brain peculiar to man as contrasted with the functioning of the brain in animals. But this concept of the secondary signal system as he himself pointed out, was only a first, rudimentary approximation requiring further development. It was not accidental that I. P. Pavlov in the last years of his life spoke of the possibility of dividing people into artistic and thinking types. He considered this to be a working hypothesis for use in the further investigation of the concept of the secondary signal system and, consequently, of the special functions of the brain in man in comparison with the functions of the brain of highly evolved animals.

In studying disturbances of the functioning of the brain in man in connection with certain ailments of the brain (hemorrhages, tumors, neural infections), which disrupt the activity of those regions of the cortex of the brain most closely connected with functions peculiar to man (speech, complex perceptions and actions),

none else but neuropathology and psychiatry is in a position to make a detailed study and further development of Pavlov's theory of the secondary signal system.

Of much importance to the Clinic of Nervous and Psychic Illnesses is I. P. Pavlov's theory relating to the localization and phases of development of traumatic processes and equally the methods of rehabilitative therapy. In contrast with foreign investigators, I. P. Pavlov established the theory of the localization of brain functions on new neurophysiological foundations and on principles of a strictly objective investigation of higher nervous functions. By combining the method of extirpation with the method of conditioned reflexes, I. P. Pavlov established a connection between the morphology of the brain and the physiology he had created dealing with higher nervous functions, that is he was able to establish a physiological-anatomical correlation as the only correct materialistic interpretation of the identity of the structure and the functions of the brain in distinction to a psycho-anatomical correlation, which carried to a significant extent a certain speculative character -- a position which almost all foreign investigators have taken and there remain.

Stemming from an evolutionary approach to the formation of functions of the nervous system, I. P. Pavlov, as early as in 1913, took a sharp, dissenting position with respect to representatives of formal idealistic genetics, adherents of Weismann, Mendel, and Morgan, by assuming that certain conditioned reflexes may through transmission later be transformed into

unconditioned ones. The most complex manifestations of the external and internal environment make up the basic function of the large hemispheres of the brain and take place with the help of analyzers of both higher and lower sense organs, including extero- and interoceptors. The large hemispheres, according to I. P. Pavlov, not only perform a most complex analyzing function in relation to the external and internal environment, but also connect "the analyzing function divided up in this way with this or that activity of the organism". Consequently, the hemispheres perform both complicated analysis and complicated synthesis or, more accurately, there is performed simultaneously in the same cortical analyzer or in the higher sense organ both complex analysis and synthesis of what is intercepted of the external or internal environment. The synthesis performed by the cortex of the large hemispheres of the brain determines the direction of the work of the entire organism and the value of the reaction of both a part and the whole of the organism in relation to the external and internal environment. I. P. Pavlov considered the material substratum that performs only complex analyzing and synthesizing operations of the large hemispheres of the brain as being, in his words, points of connection for neurones or, as it is customary to say in contemporary neurological literature, synapses. "The occurrence, the formation of new connections," said I. P. Pavlov, "we consider to be functions of the dividing membrane or simply of the attenuated branching existing between neurones and between individual nerve cells."

This statement of I. P. Pavlov is of great significance at the present stage of our understanding of the role of synapses in

physiological and pathological processes, which not only are not in contradiction to I. P. Pavlov's statements, but which serve to give greater concrete expression to Pavlov's ideas concerning the morphological bases of complex analytical and synthesizing functions of the large hemispheres of the brain. For this reason Pavlov was justified in denying the existence of special associative centers in the cortex of the large hemispheres by positing that such combined activity is characteristic of the entire cortex of the large hemispheres of the brain. Pavlov considered the understanding of such centers to be mainly different from the idea of narrow localizations, which were on a purely mechanistic basis. Moreover, I. P. Pavlov's ideas concerning the centers were far removed from those equipotential (ekuiopotentsial'nyye) idealistic concepts which would separate the idea of centers and certain functions of the brain from the material substratum or, more accurately, from the structural-functional interrelations which were to be found in the large hemispheres of the brain.

I. P. Pavlov considered the cortex of the brain to be the vehicle for the signal-switching, censor-associative, receptor-combining functions in the operation of which synthesis and analysis take place. The functions of the brain are not only permanent and strictly delineated dotlike centers, but, with respect to functionally created states they include the lower sections of the nervous system and terminate in different sections of the cortex of the large hemispheres of the brain. The cortex may be considered to be a unified whole in relation to these temporary functional states. The representation of certain Soviet neuropathologists of a systemic localization of functions

in the brain, formulated on the basis of analysis of traumatic affections of the brain, is in complete accord with Pavlov's ideas regarding the systemic localization of functions in the cortex of the large hemispheres of the brain assisted by the lower sections of the central nervous system.

While studying local interferences in the work of the brain taking place when different sections of the large hemispheres are injured, I. P. Pavlov established that with the removal of the frontal halves of the large hemispheres there is a pronounced disturbance of higher synthesis and analysis of skin stimulations and motor activity. This fact is most important with respect to resolving the problem of frontal leucotomy as a method of treating certain types of schizophrenia. Not accidentally, this question was brought up for consideration at the last session and was touched upon in the report of Professor A. G. Ivanov-Smolenskiy in connection with the problem of the frontal parts of the cortex of the brain. It was developed rather fully in the talk of Professor V. A. Gilyarovskiy who thought leucotomy to be an antiphysiological and an anti-Pavlovian method of treating schizophrenia.

It should be mentioned that individual Soviet psychiatrists who had made wide use of leucotomy truly showed a certain superficiality. They started to give the method wide recommendation while it was still undergoing a preliminary strict clinical and physiological, as well as a dynamic psychopathological, verification and evaluation at a time when there had not yet been developed clear positive and negative findings relative to the use of this

method. Furthermore a careful neurological examination of patients subjected to leucotomy had not been provided, nor had a real investigation of the dynamics of the functions of the vegetative nervous system been made, the cortical parts of the brain, peripheral neural and somatic formations. All this led to an unnecessarily wide application of leucotomy without the necessary preliminary strict experimental clinical and physiological verification, without which there could not have been a proper evaluation of the method and the working up of exact positive and negative findings relating to its use.

I. P. Pavlov and his pupils noted that in all cases of extirpation there was a disturbance of cortical synthesis and analysis regardless of the localization of the intervention. In all cases of extirpation there took place a disruption of perception and registration of different external and internal stimuli. There always took place a disruption of the integrative functions and various degrees of disruption of effector activity. It should be pointed out that a detailed analysis of the disruption of the brain functions as a result of injury to it in different parts as well as the degree of severity has completely confirmed those rules established by I. P. Pavlov concerning the functional disruption of the large hemispheres of the brain. New qualities inherent in the brain activity of man in the form of the presence of the secondary signal system with its speech function naturally determined the specific character of functional brain disruptions as a result of brain injury. As is known, I. P. Pavlov set up different stages in the development of the disruption of functions

of the large hemispheres after their cortex had been damaged, beginning with diffused disturbances, changing to defined and regular disturbances, and ending with the onset of various kinds of compensatory manifestations in place of the disrupted functions.

We should emphasize once more the complete concurrence of the assumptions made by I. P. Pavlov (as early as the first decade of his work on conditioned reflexes) pertaining to phases in the disruption and restoration of brain functions after a trauma with the findings that have been disclosed by clinical workers, neuropathologists, and psychiatrists for wounds and contusions of the brain in man.

Even scar processes in traumatic affections of the brain, as established by I. P. Pavlov, are of great significance in the understanding of the pathogenesis of different brain affections as indirect results of trauma, at the basis of which lies the formation of a scar on the brain. Even after I. P. Pavlov's death a number of his pupils continued to make investigations in this direction. Some of them attempted to relate these experimental investigations to the immediate needs of clinical practice. The experimental investigations of Usiyevich, Asratyan, and others established the fact that traumatic affections of the cortex of the large hemispheres of the brain of the experimental animal resulted in a disruption of the cardiac-vascular and respiration systems, in disruptions of varying degree of the vegetative functions, and in a verification of the role of sleep therapy in the restoration of functions. Through the efforts of Professor

Asratyan, the concept of protective inhibition, as formulated by I. P. Pavlov, was used as a theoretical foundation for the therapy of traumatic shock. It should be remembered that disturbance of the cardiac-vascular and respiration systems and that disruptions in varying degree of the functions of the higher and lower sense organs and the vegetative nervous system were also noted and studied by Soviet neuropathologists and psychiatrists in the investigation of traumatic affections of the human brain. However, one must completely agree with the speaker, A. G. Ivanov-Smolenskiy, for reproaching the clinical speakers because they had made such little use of the findings made by I. P. Pavlov and his associates in the study of pathological changes of higher nervous functions brought on by extirpation methods in the large hemispheres of the brain and by other methods for traumatic affection of the large hemispheres. As is known, I. P. Pavlov, even while carrying out his early extirpation investigations, placed before morphologists, who were studying the structure of the brain, the problem of relating their profound analytical work on the structure of brain tissue to physiological investigations of higher nervous functions. In spite of the important achievements of Soviet morphology in studying the fine structures of the brain, there has not yet been achieved to the fullest degree a cooperation between physiologists and histologists for a joint solution of the more difficult problems relating to the physiology of the higher nervous functions, so important both for physiology and morphology of the brain and in the clinic, especially clinics for nervous and psychic illnesses.

A. G. Ivanov-Smolenskiy brought up in his report a problem for Soviet morphologists studying very delicate structures of the brain. This especially pertains to morphologists who are studying the cyto-architectonics of the large hemispheres of the brain and are carrying on experiments considerably removed from physiologists studying the higher nervous functions. As a case in point, there may be considered the work of the qualified group of associates of the principal institute, the Moscow Brain Institute which, at least as far as words are concerned, is trying "to show the morphological basis for those, even fundamental, rules of movement and interaction of cortical processes which have been described by I. P. Pavlov and which are likewise very important for the pathophysiology of the higher parts of the nervous system" (page 24 of A. G. Ivanov-Smolenskiy's report).

The writer correctly criticized those Soviet psychiatrists who have been for a long time resisting in every possible way attempts to apply Pavlov's teaching to the problems of psychiatry. Professor A. G. Ivanov-Smolenskiy considers such attitudes to have a direct historical connection with the development of psychology and psychopathology in the second half of the 19th century. He shows that the basic concepts of psychology were formed during the 19th century without any regard for the morphology and physiology of the brain. To the degree that morphology was developed at the time, psychologists made attempts, as the writer says, "to impose a psychological and psychopathological picture on the morphological canvas of the brain" (page 13). On such a foundation was constructed the theory, bearing the impress of

mechanism and idealism, of the localization of psychic functions in the brain. Utilizing the psychomorphological approach, the German psychiatrists Meinert and Wernike (the latter was also a neuropathologist) tried to rebuild psychiatry. These attempts, as the writer shows, took place during the Twenties and Thirties of this century in connection with an even more successful study of the morphology of the brain expressed in the desire (again by German psychiatrists, Kleist and Petslya) to establish the so-called "brain pathology". The writer correctly sees in these attempts the manifestation of chauvinistic anti-Russian and anti-Soviet tendencies of the German psychiatry of that time which tried to separate itself from the tremendous achievements of Russian and Soviet physiology of the central nervous systems as expressed in the works of Sechenov, Vvedenskiy, Ukhtomskiy, Samoylov, and especially the works of I. P. Pavlov and his school on the physiology and the pathophysiology of the higher nervous functions. It is in this connection that the writer directs his criticism against the attempts of certain Soviet psychiatrists to continue to develop the so-called "brain pathology" apart from the ideas of Sechenov and Pavlov. The writer points out that the psychomorphological movement in psychiatry, which has been introduced by a number of leading Soviet psychiatrists who have ignored and improperly evaluated the contemporary achievements of native physiology and pathophysiology of the higher nervous functions, cannot pretend to occupy the foremost progressive position in Soviet psychiatry. Certain leading Soviet psychiatrists still continue to conduct an intensified propaganda in favor of the ideas of the so-called "brain pathology" without having acquainted

themselves nor mastered Pavlov's teaching on the physiology and pathophysiology of the higher nervous functions. "One cannot remind oneself without a bitter taste that for a long time, even quite recently, all attempts to apply Pavlov's teaching to the problems of psychiatry were invariably met by unfriendly opposition, were dubbed 'verbal peelings' and considered to present a 'tremendous danger of mechanism' to Soviet psychiatry. At the same time Pavlov's teaching was opposed by that notorious 'brain pathology' (Shmar'yan), by that 'dynamico-physiological conception', which in the words of Professor Shmar'yan seemed to have been created by the joint labors of certain leading Moscow and Leningrad psychiatrists who felt themselves called upon to make a new reconstruction of psychiatry, and, finally, by that 'theory concerning the integration, disintegration, reintegration, and pathological integration', whose founders should include the English physiologist Sherrington and the Moscow psychiatrist Professor Gurevich. Unfortunately, similar tendencies have not been extirpated from our psychiatry to the present day" (pages 15-16 of the report).

The writer secures this position with quotations from monographs that have appeared in recent years on problems of psychic disruptions resulting from brain tumors and in newly reissued textbooks on psychiatry.

Professor Gurevich in all his appearances completely subscribed to the criticism of the defects of his textbook on psychiatry.

The writer in analyzing the position of Soviet neuropathology

objective study of the brain processes comprising the physiological basis of psychic activity and against the acceptance of freedom of will and for materialistic determinism. The study of pathological disruptions of the higher nervous functions by I. P. Pavlov and his associates is of direct and immediate interest in the first degree to clinics for nervous and psychic illnesses. Whereas I. P. Pavlov was able to recreate examples of organic traumatic affections of the brain by use of the extirpation method, with the method of overworking nervous processes and blocking stimulation and inhibition processes with experimental animals, especially those with different types of nervous systems and nervous functions, he was able to recreate examples of functional neurotic and psychogenic ailments of the nervous system and to explain the role of different somatic ailments, especially those of endocrine origin, by the mechanism of the same functional ailments that take place in man.

Especially great was the service of the now-dead M. K. Petrova in the study of these examples of experimental neurosis. The concept of experimental neurosis resulting from the last sixteen years of Pavlov's scientific work presents a new and exceptional epoch in the study of the pathophysiology of the higher nervous functions and has an unparalleled significance which is of primary importance for clinics dealing in our specialties. The concept of neurosis was developed in the closest possible connection with the study of animals possessing higher nervous activity and with the role of the external environment in the development of such types, including the explanation for the influence of the conditions

of the environment, especially those conditions which served to bring the changes peculiar to a type.

The writer of the report carried on an investigation with his associates on inducing ailments related to the nervous functions in animals by using different toxic agents, and in the development of methods for their cure. The writer worked with such poisons as mescaline, bulbocapnine, tetraethyl lead, various microbe toxins, etc. In connection with these experiments the writer was able to determine that "in all cases there took place first of all, in greater intensity, and for greater duration, the affection of the youngest, from the standpoint of evolution, functions of the brain, especially the newest conditioned connections and processes of internal inhibition, and last of all the oldest, most ancient functions of the nervous system, while in the reverse development of the process, these were the first to be reestablished" (page 34).

That part of the report of Professor A. G. Ivanov-Smolenskiy of most significance for our profession describes the work that I. P. Pavlov and his pupils carried on in nervous and psychiatric clinics in the field of pathophysiology of the higher nervous functions. In analyzing the psychopathological picture of the disruption of the movement and interaction of nervous processes, I. P. Pavlov determined the part of the disruption of dynamic relations between different parts of the nervous system and the disruption of relations between the higher nervous functions and the somatic in the formation of psychopathological states. This disruption was expressed through the fact that at the basis of

certain nervous-psychic states lie manifestations of pathological obstructions, inertness of stimulation and inhibition, the difference in the character of inductive processes in the cortex and the subcortex, or, as the writer aptly expresses, "the psychopathological picture is unfolded on a pathophysiological canvas". Moreover, I. P. Pavlov always considered the features peculiar to the higher nervous functions in man as elements that have a social origin, the function of which is determined by the entire social environment. These findings are of great significance to clinics treating nervous and psychic illnesses and studying the mechanisms of neurosis and the development of effective therapeutic agents; for these findings can further refine the understanding of the types of nervous functions in man, and contribute toward the development of different methods of therapy that take into consideration the special features of the given type of nervous activity. Consideration of phases in the development of neurotic states and further development of types of nervous activity in man is being achieved in the clinic for nervous illnesses in which Pavlov himself worked during the last years of his life, and which is continuing his work along the two indicated directions about which Professor Birman spoke at the session.

Wide use of sleep therapy in the clinic for nervous and psychic sickness on the basis of Pavlov's concept of protective inhibition and further concrete expression of this concept by applying the induction of protective inhibition to persons with different brain ailments are the principal objectives of our profession. A whole series of other types of therapy, mechanisms

of which are calculated to act on the nervous system (including tissue therapy), has not received the full application and the necessary development in the clinic for nervous and psychic illnesses. Electroshock therapy, in comparison with types of therapy which stem from Pavlov's theories on the pathogenesis of neurotic and psychotic conditions, should not be so widely used in clinical practice and should be forced out of use by new types of more merciful protective therapy based on the principles of Pavlov's theory on the pathophysiology of higher nervous functions. All manner of combinations, such as the use of bromine with caffeine, luminal with caffeine, and others, among them alkaloid agents, should be and must be used in the therapy of nervous and psychic ailments, since their operation on the nervous system has been explained in terms of individual components and of different, sometimes apparently antithetical, medicinal mixtures.

The report of Academician K. M. Bykov and the talks of a number of other persons raises the question of the proper interpretation of the role of the vegetative nervous system, of the value of continuing to use this term, of the relation of the sympathetic and the parasympathetic nervous system to the cortex of the brain, and of Professor Markelov's misleading talk on the role of the vegetative nervous system as being self-sufficient and independent of the sympathetic nervous system, in particular, of the brain, as though it included the sum total of somatic innervations, including both the brain and its large hemispheres. Such a hypertrophy in the understanding of the functional designation of the vegetative nervous system is partly explained by Markelov by those false interpretations made by Academician L. A. Orbeli and his associates in connection with the understanding of the functions of sympathetic innervation. It is known that in the formulation of the law regarding the adaptive trophic role of the sympathetic nervous system, Academician Orbeli has affirmed that the cortex of the large hemispheres of the brain and the higher sense organs, not to mention all the lower sections of the nervous system, are subject to the operation of this law. The attempt to consign to the cerebellum all regulatory functions in relation to vegetative formations stems from the same false statements, contradictory to Pavlov's ideas, concerning the all-encompassing and self-sufficient role of the sympathetic nervous system. These questions were touched upon in more detail in the talks of Professor Sepp and Professor Grashchenkov.

It must be admitted that in the understanding of the nature and functional significance of the vegetative nervous system and its

relation to the somatic nervous system, in particular the large hemispheres of the brain, there exists much confusion, especially in neuropathological circles, requiring clarification in the light of the work of the scientific session, which would naturally fall to the lot of the editors of this magazine as a problem to be handled in the immediate future.

The teaching of Academician I. P. Pavlov on the function, physiology, and pathophysiology of higher nervous activity should be widely introduced into our theoretical and practical work through analysis of the pathogenesis of different so-called organic ailments of the nervous system of a microbial, virus, toxic, traumatic or tumor nature, as well as through the analysis of the pathogenesis of different psychic illnesses. Not only a correct understanding of the pathogenesis of nervous and psychic sicknesses but also a successful treatment of them would be possible only through the mastery and wide introduction of Pavlov's scientific heritage into theory and practice of neuropathology. On the basis of Pavlov's ideas concerning organic and functional identity we are able to treat actively and effectively different ailments of the nervous system. Only by basing our work on Pavlov's ideas concerning the neurophysiological foundations of rehabilitation therapy can we fruitfully work out different forms of restorative and compensatory therapy for affections of the central and peripheral nervous system and for different psychotic ailments.

The introduction of Pavlov's scientific heritage into the theory and practice of our specialties presents possibilities of the

widest scope for scientific creative work not only to the associates working with the 26 scientific research institutes but also to those who are working in psychiatric hospitals and ambulatoria.. This would mean not only a golden age for Soviet neuropathology and psychiatry but also the further development of the great materialistic ideas of I. P. Pavlov concerning the higher nervous functions.

Scientific research institutes in our field should lead the fight against all manner of slanderous distortions of Pavlov's scientific heritage on the part of foreign neuropathologists and psychiatrists who fulfill the will of their Anglo-American imperialist bosses by propagandizing idealism as the means for suppressing the self-consciousness of the wide masses of people and as a weapon for stupefying them.

Scientific research institutes in our field must also wage an active fight against all anti-Pavlovian manifestations and against the various errors of our native investigators -- neuropathologists, psychiatrist, and neurophysiologists.

In this plan it is necessary to include the reconstruction of the work of our scientific societies. The first to receive such attention should be the administration and presidium of the All-Union Society of Neuropathologists and Psychiatrists with its local branches. This plan should also include the reorganization of the work of the magazine Nevropatologiya i Psikhatriya, while the personnel of its editorial board should assure the fulfillment of these important tasks confronting the Soviet neuropathology and psychiatry

and their theory and practice.

We are all certain of the victory of the advanced materialistic Pavlovian physiology which partakes of the progressive, universal dialectic materialistic theory of Marx, Engels, Lenin and Stalin.

E N D