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SOME HISTORIC ASPECTS OF THE CHANGES IN HUMAN DISEASES

In the recent years it has become more and more imperative to analyse theoretically all problems connected with the intensification of social and environmental changes in which we live. The present epoch of the scientific-technical revolution is characterized by a qualitatively new influence of the human society upon the nature. Thanks to the rapid growth of the technogenous action of the mankind upon the environment the results of human activity affect not only whole regions, their impact is visible throughout the earth. They do not influence only certain organisms, but the whole biosphere. The increasing influence of the human society upon the nature is full of contradictions. Scientific and technological progress, on the one hand, eliminates hard physical work, protects us against various diseases and is prolonging life span — on the other hand, the pollution of the environment, destruction of ecological balance, violent increase of the flow of informations, increased spiritual activities, lack of physical work and exercise and the increase of psycho-emotional stresses also take their toll.

The scientific-technical revolution is rapidly developing in our world, divided into two contradictory social systems, into socialism and capitalism, giving all our activities social motivation. The increasing economic activities of man and his gigantic material and cultural achievements have, in many cases, very alarming results. One of the most acute problems of the present epoch are the extensive marginal zones arising in the course of the production process, due to the extension of the so-called primary technogenous regions and foci (situated right inside the industrial zones) and their impact upon the formation of secondary technogenous zones, where all abiotic and biotic components are undergoing profound changes. The global necessity of preserving our natural environment was realized for the first time after the explosion of the American nuclear bombs in Japan. Scientists had to coin new names for the new dise-

ases caused by man — they call them man-made diseases in the British and American literature, kogai (ignored harmful effects of human activity) in Japan.

These negative influences make their impact felt also on the health of the population and on the development of the present-day man. G. I. Tsaregorodtsev is one of the scientists who consequently ask for the elimination of contradictions caused by the production process, contradictions between hygiene and health protection on the one side, and economic rentability on the other (1968). In the present epoch of social development social and hygienic factors play an ever increasing role in human life. The socialist society has a threefold task to fulfil: to speed up the development of the scientific-technical progress, to secure the rational use of natural resources and the protection of the natural resources, and to further the transformation of the environment with regards to the biological capabilities and adaptability of man. The fulfilment of these tasks will enable us to create optimum conditions for the development of the creative forces of all people for the elimination of physical diseases, and will bring about an overall harmonious development of the spiritual and physical forces of every individual. The basic task of the human society is to increase its influence upon natural processes, which is impossible without 'mastering the control of life processes in the human organism, including health protection and biological protection of the *Homo sapiens sapiens* species'

In this connection let us draw your attention to the large quantity of empirical materials amassed by various medical branches on the impact of social progress upon human health, and on the analyses of historical changes in the structure of human diseases, since the changes in the way of life, caused by changes in the production process, have epochal consequences for the development of human diseases. A profound analysis realized along the principles of the dialectic-materialist methodology

should help us to learn more about the biological and philosophical character of the present epoch, and it should become also a theoretical basis for the preparation of forecasts, concerning not only the health of the population, but also its biological future.

The study of the influence of the social progress upon the biological processes in man, and of the historical changes in diseases is one of the most important conditions for working out the general theory of man.

The basic theoretical condition for the analysis and for the generalization of the gathered materials is the dialectic-materialist approach to the biological and social factors, since the source of human diseases lies in their contradictions.

Marxist philosophy studies the interaction of social and biological factors on the principle of dependence between higher and lower degrees of material organization, stressing the determining role of the social factors with regards to the biological ones. The dialectic factor of subordination of the biological character to the social one does not mean its neglect, on the contrary, in certain relations it can be relatively independent.

On studying the vital processes of human organism we shall see that the social conditionality of their various systems and functions will differ, due to their evolutionally and structurally differing qualities, besides, the function of social and biological factors differs in various ontogenetic and phylogenetic stages of the human evolution.

The correlation of the biological and social factors will differ also in different diseases. It has been found out e.g. that neuro-psychical activities and their defects depend more on social conditions than on physiological processes, connected, from the evolutionary viewpoint, with much older somatic systems.

It is necessary to bear in mind that the natural and social factors of the environment alone are subject to profound changes in the course of the social development; the rapidly increasing differentiation among these factors increases the versatility of interaction between the individual levels and the character of their mutual activities is also changing.

Besides, one of the imperative theoretical conditions of this analysis is, what criterion is accepted by the author for the notion 'disease.' Similarly like I. V. D a v y d o v s k i (1969), G. E. V e k u a, (1968) A. M. I z u t k i n, and others (1967), the authors of this article also hold that disease is basically a biological phenomenon, though social factors play an increasing role in the determination of human diseases.

The complexity of the studied problem enables us to use various approaches — we can use a phylogenetic, socially-historical, ontogenetical or ecological approach. Each of these approaches requires a thorough study of the systems of external and internal causes of the given group of diseases.

We share the view of G. I. T s a r e g o r o d t s e v and A. F. P o l i s (1968), stating that 'The environment in which man lives is a complex of factors

and processes of very complicated structure.' We would like to emphasize that the complexity and versatility of the mutual relations of the human organism and of the environment and their factors cannot be limited by a scheme determined beforehand. The individual structural components of the complex environment can be separated only with a certain degree of conditionality and relativity.

The problem of concept, the assessment of the social and cultural processes influencing human diseases, can be solved only on the basis of analysing the changes characterizing various levels of the system, represented by the natural or social environment, with a view to the overall character of the human organism and its evolutionally different qualities. Correctly are assessed the changes in the structure of human diseases caused by the present stage of scientific technical revolution, and correct is also the definition of the sanitary measures improving health conditions and prolonging the average life span of the population.

The above approaches to the analysis of historic changes in the structure of diseases are interdependent, they are identical, in fact they complete each other. The application of these approaches helps us to overcome the difficulties and barriers dividing various aspects of the study of the biology of man. The usefulness of their detachment can be proved by obtaining a versatile and better knowledge of the studied phenomenon.

In these approaches we realize the dialectical-materialistic conception of the interaction of the social and biological factors.

The starting point for the study of the genesis of human diseases is the admission of the fact that the social and biological determination of diseases is connected with the process of forming the development of man, as a species of *Homo sapiens*.

The correlation of the social and biological aspects in the human organism and their eventual contradictions and the necessity of their harmony require a serious study. The importance of studying these contradictions is increased by the fact that our literature was paying attention mostly to the study of social factors only, neglecting the biological ones. Such an approach, such a situation in the study of the problems of ecology is characterized by Academician A. P. A v t s y n (1972) as 'fear to study man biologically, so as not to do any harm to present-day sociology'.

For the present period is characteristic the liquidation of barriers between various sciences on man and a complex approach to the study of man, a necessity for a synthesis of the results of the natural sciences and humanities, in order to understand the essence of human existence. Approaches placing biology against sociology bring only limited results. Thanks to a frontal offensive of all scientific branches dealing with the substance of human existence, and thanks to a differentiated approach to man, to the synthesis of the results of various scientific branches, contemporary marxism was able to reach the 'gates' foreseen by Karl Marx and Friedrich Engels, who spoke of the future confluence

of natural sciences with social and historical sciences, forming thus a single science dealing with the historical substance of man.

At the present epoch of scientific development hardly would be acceptable any abstract sociologization in the study of human organism. We agree with the conclusion of I. V. Davydovskii (1969) that 'man as living organism and social being will continue developing concordantly with the overall evolution of the world, in keeping with the laws of this evolution, regardless on the will of the people, and according to the degree of sapientation of man, the adaptive biological mechanisms will become subject to serious studies. Social hygienists intended some time ago 'to cross the limits of biology'. This harmony can be reached through the knowledge of the history of the origin and extension of various diseases in various stages of development of the human society and through the explanation of their causes. For the assessment of the influence of civilization upon the health of man the principle of historism plays an important role, helping us to understand the social factors.

Our interest in historical aspects of the structure of human diseases has been excited by the fact that in the medical sciences abroad we can see certain trends exaggerating the influence of diseases upon the fate of mankind. E. G. Henschen (1966) called part of his studies on historical and geographical pathology 'The Role of Diseases in World History'. He attributed considerable role to the influence of diseases, especially of contagious diseases, upon history considering them the most dangerous enemies of mankind (even more dangerous than wars), and he agrees with the words of . . . Brown, a British statesman, that 'the world is not a hotel, but a hospital'.

Historic approach to human diseases deserves special attention, since any underestimation of time aspects in the development of human pathology can lead to simplifications as to their causes. Some people speak of a back-lash effect of the biological changes in the development of man upon history. The study of historically conditioned variability in human biology should become a field of joint research for historians, medicine, demography and sociology.

The generalizations gathered by the medicine do not allow us to realize consequently the above approaches to determine fully the specific character of interaction of the systems of factors in each single approach, but these generalizations can prove useful for the system of medical science also under this condition.

It is necessary to turn our attention to the scarce data on human diseases at the dawn of the human society. It has been found out that many human diseases are completely unknown in animals, and consequently, the number of human diseases is much higher than that of the animal diseases. The transition from animal ancestors to man, the impact of new conditions in which mankind lived, led to the limitation or complete elimination of a series of diseases, very frequent in animals, on the other

hand, certain diseases, common both to man and animals, were greatly extended and new human diseases appeared. E.g. I. V. Davydovskii (1956) shows that compared with animals, either wild or domesticated, the number of infectious diseases in man is increasing. In the animals the scope of diseases is narrower and the relative number of sick individuals is also lower.

The generally recognized re-creation of the biological substance of man, the formation of a specifically human organism structure and its life activities led, in the view of numerous researchers, to serious disharmonies already at the dawn of the human history. The idea of disharmony in certain human organs as a source of diseases was deeply analysed in the works of I. I. Mechnikov (1915). In his 'Studies on the Substance of Man' he points out that there is a disharmony in the structure of the digestive tract, in the structure and function of sexual organs, leading to diseases. Other scientists hold similar views. The high death-rate of women in the early periods of the human society is explained by complications during pregnancy and delivery. In the view of V. A. Nemilov (1930) the transition to erected walking has led to important changes in the female organism, having negative impact on pregnancy and delivery; he considers it a biological tragedy for women.

The French anthropologist H. Vallois (1961) explains the overwhelming number of grown-up men compared with the number of adult women in the Paleolithic and mesolithic societies also with complications during pregnancy and delivery. The analysis of bones from prehistoric human remains shows certain changes in the bone pathology.

D. G. Rokhlin, a specialist in paleopathology (1965), points out that certain pathological changes appeared more often in primitive people, and were more conspicuous than today. These changes are 'traumatical and degeneratively-dystrophic damages. On the other side adaptively-compensating changes appeared in certain bone finds more often and were more conspicuous than today.'

Very interesting are the data of the condition of teeth and jaws. The most frequent tooth disease of modern man—caries (in 40 per cent of the present-day Frenchmen, and in 50 % of the present-day British population) have probably been caused by changes in the regime of alimentation, use of certain types of foods and beverages, etc. (D. G. Rokhlin, 1964). Caries did not exist or very rare in the Paleolithic man, and it appears as a comparatively rare disease in the Mesolithic man. In the Neolithic age the number of teeth damaged by caries did not overpass 50 %. In Neolithic Age finds we registered caries only on 0,8 % of milk teeth — at present 24 % of children have caries.

In the Bronze Age and in the Iron Age this disease is very frequent, teeth with caries appear practically in every adult.

There is a connection between the speed up of the growth and development of the children and between the extension of caries.

Numerous materials have been gathered on the development of contagious diseases — showing a very distinct relation between social and natural factors. In view of V. N. Zhdanov (1964) many of the parasites perished during the transition from animal populations to human society — only some of them adapted themselves to the new conditions and many diseases disappeared. In the early periods of human development the main sources of infectious diseases of man were the zoonoses of wild animals. The progress of social work, domestication of wild animals and tilling of earth were accompanied by the pollution of the settlements of our forefathers with rodents, resulting in mighty new sources of infection, causing a series of typically human infections — anthroponoses, alongside with the development of the human society.

M. F. Bernet (1947) holds that at early stages of human development, beginning with the Pleistocene — up to approximately 10 000 years before our era, there were no carrier of infections adapted exclusively to man. Only after the transition to settled life and with the foundation of large settlements arose the conditions enabling the formation of specifically human infection.

The evolution of infectious diseases is connected not only with the process of social development, it is also a combined process changing the biological properties of the etiological agent of the disease, and of immunological changes in the very human carrier.

V. M. Zhdanov (1964) dates the appearance of specifically human virous infections, like measles, small-pox or influenza to the period a forming a class society; he places e.g. the origin of small-pox to the late Barbarian epoch, when this disease developed as an infection of large herds of animals.

The formation of large antique states led to the increase of the density of population, easing the separation of the etiological agent of small-pox from the live-stock, and changing it into an anthroponosis, changing at the same time the contact mechanism of the disease through air and droplets. The first small-pox epidemic was recorded in the 6th century A.D.

The evolution of small-pox is connected both with the development of the society and with the character of the reaction of the human organism. In the large states the density of the population greatly increased and formed favourable conditions for uninterrupted chains of epidemics. Selectivity acting in the direction of the resistance against infectious diseases (in the view of V. P. Yefroimson, 1964) persevering still some 100—200 years ago, increased the acute course of the disease, instead of helping to create intense immunity. In the 15th century the character of the disease is changing, it is becoming endemic, it is attacking mainly children. The discovery of vaccination considerably limited its extent.

In the Middle Barbarian Epoch arose a new utterly human infection, the spotted fever, also separated its carrier the lice, from domestic rodents. The development of this etiological agent is orient-

ed towards the increase of pathogenity, which is a very wide-spread evolutionary law of infectious diseases. The evolution of this disease is closely connected with war periods and famine, so frequent in the human history. At present we can see a certain easing trend in the course of this disease.

In the Barbarian Period arose also diphtheria. Its extension is also accompanied by the formation of anti-toxical immunity, which has hereditary character. In the recent decades it has an easier form and diphtheria death-rate is also dropping.

Dysentery, which arose at the transition to permanent settlements, has also developed an epidemic character with the increase of the density of the population in the Late Barbarian Period.

The 'youngest' diseases, are measles, whooping cough, sheep-pox. These 'civilization's infections,' spread by the air and through droplets arose due to the increased contacts among people in large urban agglomerations.

They are characterized by easy contagion, acute course, relatively short contagious period and stable post-infectious immunity.

V. M. Zhdanov dates the appearance of measles to the Late Middle Ages, and of the influenza to the 16th century. In his view the present flu is a pure anthroponosis, occurring without any participation of animal reservoirs of the etiological agent, whose virus is uncommonly variable. The unstability of this disease also shows that it is a comparatively new anthroponosis.

Up to the 20th century epidemics came in waves, but since the end of the 19th century, when capitalist development spread practically over the whole world, epidemics have a global character, they have changed into pandemics.

Analogically to the development of other human contagious diseases V. M. Zhdanov (1964) holds for possible that contemporary influenza will develop in keeping with the changes of the virus, creating permanent immunity, and changing the whole affair into a children's complaint, similar to measles.

Due to the progress of the human society, achievements of modern medicine and thanks to certain active measures, contagious diseases have rapidly dropped in the industrially developed countries.

In the recent decades there have been basic clinical shifts in many diseases, both thanks to artificial immunization of the population, and also due to the improvement of the natural immunity of the people, resulting in an overall drop of disease- and death-rates, they have easier forms, the strains causing lighter forms of disease are preserved and the etiological agents show a large degree of variability.

The above-followed examples to the evolution of infectious diseases enable us to draw the conclusion that the immunological reactions of man are improving alongside with the development of human infections. This could explain the wide-spread tendency though not a general one, to transform acute epidemic infections into chronic endemic diseases; such examples are, in the view of S. Nikol, syphilis and leprosy.

The biological protective mechanism of contemporary man are systematically improving, since the development of infectious diseases is the result of a combined process, i.e. of the evolution of the etiological agent and of the reaction by the human organism. J. W y n e r (1968) writes: 'In this or in other moment various populations can be at various stages of resistance against various pathogenic organism they are meeting. The disease reaching a certain state of equilibrium can be slightly endemic in one population, but can appear in strong epidemic waves in other populations lacking the required immunity'.

Among natural biological factors conditioning the infectious diseases of great importance is the character of the etiological agent and the immune character of the organism, but also the influence of the climate and of the geophysical conditions. Some scientists speak of parallelity (Chizhevski A. L., Shishkina Y. G. (1969), Stadolnik V. E. (1968) between the course of certain infectious diseases and between the oscilation of solar activities, causing synphasy between various epidemics and between changes of solar activities.

Various stages of development of the human society coincide with the origin or spreading of new diseases — or new stages of old diseases, whose determination is caused by the constellation of the social and biological factors, with social factors playing a decisive role. Progress in social production and the development of class society caused the spreading of certain infections, converting them into 'civilization infections'. The capitalist way of production with its slums and unhygienic working and living conditions were accompanied by the spreading of epidemics and children's complaints. This had started already in the Middle Ages.

Progress in social development and in medical sciences have led to the limitation of contagious diseases and to the increase of the average life expectancy in many industrial countries. Most consequent in fighting infections, is however, the socialist society. At the same time gastric and intestinal infections, pneumonia and influenza remain the most serious hazards of the developing countries. Here we can see very conspicuously the impact of various social systems upon the health of the population.

Each historic epoch has its specific medical problems. The protection of the health of people, destruction of the etiological agents and causes of certain diseases do not exclude the appearance of other, equally complicated tasks, connected with the ever increasing and changing role of man under the conditions of the scientific-technical revolution.

At present the problem of fighting contagious diseases is of comparatively small importance in most industrially developed countries. At the centre of our attention are now diseases connected with the main demographic processes of the present epoch, with the increase of the average age, i.e. with the increase of the proportion of old people in the structure of the population, with the so-called demographic ageing of the population. According

to E. L. Rosset (Poland) 7.6 % of the world's population has over 60 years. In many industrially developed countries their proportion reaches 12 %, while in Africa and Asia it varies about 2—3 %. According to R. Bennet (USA) by 1985 the population of the world will have increased by 11 %, while the category of old people over 65 years will reach 24 %. Similar changes in the age and sexual structure of the population have become important factors of the structural changes of the disease-rate of the present population of the world. While in the early 20th century tuberculosis and pneumonia were the main causes of death, at present the most serious threats to mankind are cardio-vascular illnesses, cancer and neuropsychical disorders.

Experts in the industrially developed countries are greatly alarmed by the increase of cancerous illnesses, occupying the second place just behind the cardio-vascular illnesses. At the beginning of the century cancer was still ranking eight place among the diseases. In the view of many researches the increasing frequency of malignant tumours is obviously caused by the intermediary of the social factors.

The increase of death-rate caused by malignant tumours is naturally also due the prolongation of the life expectancy, and to social progress in the above-mentioned countries, since cancer is a typical illness of elderly people. In the industrially developed countries 25 % of all cancer cases fall to people over 50 years. Cancer is caused, naturally, also by the increase of the versatility of cancerogenous factors due to the increasing pollution of the environment. It can be caused by various chemical agents, ionization, radiation, penetration of specific viruses, etc., i.e. by technogenically created components of the abiotic and biotic environments.

Changes in death-rate caused by malignant tumours, compared with other causes of death, are shown in the below table prepared by Y. A. Dobrovolski (1968) (per one hundred death cases):

Country	1900	1965
Italy	2.4	16.3
England and Wales	3.4	19.4
Belgium	3.4	19.6
France	3.5	18.4
USA	3.7	16.2
Federal Republic of Germany	3.7	20.3
Netherlands	5.4	22.9
Norway	6.4	17.7
Switzerland	7.2	20.3
Sweden	7.6	18.6

Historically conditioned ways of work and life, feeding habits and noxious habits also contribute to the spreading of tumourous cases and to certain special features in their location.

The spectacular increase of lung-cancer death-rate (according to Dobrovolski (1968) in the USA the number of death cases caused by lung-

cancer has increased twelve times since the beginning of the century, and in England and Wales 25 times more people died on lung-cancer in 1950 than in 1900) and the spreading of tumours in the respiratory organs is connected with the pollution of the air in large urban agglomerations, but also with the number of cigarettes smoked by each smoker.

40–80 % of malignant tumours fall to cancers of the digestive tract. This form of illness is greatly influenced by the ways of preparing and eating the food, by tobacco chewing habits, etc., but of great importance are also the endogenous factors; stomach cancer mortality e.g. is much higher in Japan than in other countries.

The increase of mortality due to the tumour of lacteals and of female sexual organs has doubled during the recent decade in many countries — in Great Britain, Denmark, Canada and the Netherlands it is six times higher than in Japan. These changes can be explained by numerous changes in the way of life in the above countries, by sexual malfunctions, drop of the birth-rate, shortening of lactation period due to the use of artificial baby food, etc.

The cancer death-rate is increasing with the transition from rural environment to large towns, where the population is employed in large factories, and where are large sources of radiation.

In the developing countries malignant tumours do not play such a prominent role in mortality.

The special features of the frequency of cancer in various nations and the extent of their certain forms can be a result of genetic peculiarities of certain isolates.

Cardio-vascular illnesses have become problem No. 1 for most of the highly developed countries of the world. One hundred years ago, writes G. I. Kosicki (1971) coronary illness was quite a rarity, nowadays it causes 50 % of all death cases. Since the turn of the century mortality caused by cardio-vascular diseases has increased e.g. in the USA, Denmark, Netherlands and Norway 5–9 times.

The mortality caused by cardio-vascular illnesses per 100.000 inhabitants:

Country	1954—1956	1958—1960
Japan	235.7	257.7
Italy	405.3	409.2
Belgium	490.0	499.7
Sweden	498.6	509.4
USA	502.7	521.8
Great Britain	601.7	605.4

This illness shows certain tendencies to further increase of cases and 'to turn younger', it is spreading towards younger age categories.

All researchers connect the increase of cardio-vascular illnesses with the changes in the way of life and work, characteristic for modern production. The tempo of work has increased, and work itself

has acquired, in many professions, a very emotional character. The increase of mechanization and of automation of the production has led to a drop in the share of physical work, of physical activities. Hypertony is often considered as a retribution for civilization.

Comparative research of the condition of heart and blood vessels in many African tribes has shown that cardio-vascular illnesses are practically unknown among these people. F. Burlier (1971) quotes very demonstrative data of his research realized among Massai tribesmen. The diet of Massai boys from 14 years of age upwards is practically limited to meat, milk and blood, and adults drink daily some 3 litres of milk (187,5 g of fat), still only 3,36 % of the Massais showed cardio-vascular diseases.

With the spreading of civilization the frequency of these illnesses is increasing. Some ten years ago cardio-vascular diseases were explained mainly by the character of diet, by the cholesterine content of the food. The above-quoted example of Massais shows that cholesterine-rich food alone, without neuro-psychical stresses and without hypodynamy does not lead necessarily to the development of cardio-vascular illnesses. The character of food, the amount of consumed fats, overabundancy of sugar lead to overweight, if there is no corresponding energy output, and this will result in the development of arterial sclerosis. In the last decade researchers have been focusing their attention on the role of neurogenous factors among the causes of cardio-vascular affection (A. L. Myasnikov, 1960; N. T. Shutova, 1968). The impact of social factors is mediated through neuropsychical stresses. Rural life and life in large urban agglomerations are accompanied by different neuropsychical stresses, and this can explain a higher death rate with the ischaemic heart illness in large cities and capitals.

The increasing emotional stresses, namely the so-called negative emotions, which in the view of P. K. Anokhin (1965) have a long-term fixation in the course of physiological processes on the molecular level and represent a strongly pathogenetic factor.

Complications in the emotional life of the modern man, helping to form a very irritant cortical-subcortical complex, which sometimes cannot be controlled by the cortex, lead often to pathological results, especially if emotions find no outlet.

Increased emotional stress in large urban agglomerations caused that 40 years old Muscovites have 2,5–3 times more often myocardial infarction than the inhabitants of small regional towns.

The social system influences all illnesses, including cardio-vascular affections. The atmosphere of competition, profiteering, uncertain future violently increase the number of cardio-vascular and psychical affection. It is not a mere accident that 55 % of death cases in the USA are caused by damaged cardio-vascular systems. Among workers employed in the Chicago mechanized factories cardio-vascular

mortality is four times higher than in other groups of workers.

The socialist society carefully plans and realizes the necessary social measures aimed at making working and living conditions healthier.

The contemporary medicine enables us to create such a way of life that would eliminate cardiovascular illnesses. Its main factor is communist education, improvement of human interrelations, easing the normal emotional tonus of each man. The programme of the Communist Party of the Soviet Union emphasizes 'the importance of human relations, mutual understanding; man to man is comrade and brother'. Optimum health conditions can be formed only under socialism, only this social system has the necessary conditions for their creation, only socialism enables us to re-create profoundly the material and spiritual conditions of the life of human society on a scientific basis, enabling us to organize our work, education and leisure in a most suitable way.

The rational way of life requires for each man a well-balanced alimentation, sufficient physical activities, changes in the form of activities and a favourable emotional climate. The increase of psychological illnesses has become a real plague for the economically developed countries. Almost all researchers derive the psychological illnesses from social factors — the specific human nature plays also an important role for the explanation of certain neuro-psychical defects. Psychological illnesses are typically and exclusively human illnesses, since they are connected with certain special features of the neuro-psychical organization of man, enabling him to think and behave in abstract notions, in keeping with certain social standards. Animals can serve as models for the study of psychological defects only in a limited extent, since excessive stressing can convert animals into 'neurotic beings', while people due to defects in thinking may become 'psychoticians'.

Neuro psychic illnesses seldom cause some one's death directly, nevertheless, they are among the top ten causes of death. The highest number of psychological illnesses both absolutely and relatively, was observed in industrially developed countries.

The USA and Great Britain have the highest rate of psychological illnesses. Half of the beds in American hospitals are occupied by psychologically ill and according to Federal Health Bureau every 16th US citizen is psychologically ill, and 8% of the population is mentally retarded — i.e. 5,400,000 people (Y. A. Dobrovolski, 1965).

B. D. Petrakov (1968, 1972) characterizes the trends of extension of the psychological illnesses in the 20th century, dividing the world into three groups.

His work is based on comparative hygienic and mathematico-statistical analyses of the general laws of the extension of psychological illnesses, and he comes to the following conclusions;

1. In the industrially developed capitalist countries, in the structure of psychopathic illnesses the first place is occupied by oligophrenia and epilepsy without psychosis — totaling 51%; the second by

neuroses and reactive states — 30%, and the third by psychoses — 19%.

Very instructive is the table of the growth of the sickness-rate and of the 'accumulation of psychological illnesses' in the past 60 years, as indicated by Y. A. Dobrovolski, 1968, p. 272 (per 1000 people).

2. In the USSR and in other European socialist countries the average arithmetic index of these diseases is three times lower than in the capitalist countries.

In the nineteen-fifties and sixties the countries of the socialist camp occupy the second place in the world as regards the indexes of the rate of psychological illnesses. In the structure of psychological diseases the first place is occupied by neuroses and reactive conditions — 57,5%, the second by insanity and epilepsy, and the third by psychoses — 19,5%.

3. The developing and colonial countries of Asia, Africa and Latin America rank third in the extension of the above diseases, whose indexes in Ghana, India, Indonesia, Nigeria, Ceylon, Taiwan and in the Philippine Islands oscillate between 3,5—15 cases per one thousand, and reach up to 30/1000 in Egypt, South African Republic, Chile, Peru, Mexico. The first place is occupied by insanity, reaching 65—70%, the second by psychoses — 20 to 25%, and the third by neuroses and reactive states.

In the view of B. D. Petrakov these data disprove the wide spread views that the rate of psychological diseases in the developing countries is low. Petrakov holds that the fluctuation between the three groups is determined by genetic factors and also by different conditions of life of various social classes and professional groups.

At present the leading psychological illnesses of the capitalist countries are schizophrenia, alcoholism, old-age psychosis and the pathology of psychological development. The extension of schizophrenia, of this illness of the modern society, reflects the crises of the human mental life (psyche) in the capitalist society, full of acute contradictions. The bourgeois alienists often mechanically connect the frequent appearance of schizophrenia with technological progress, with the tempo of life and work and with emotional stresses in work. And really, the increase of the tempo of life, caused by the technical revolution and its impacts upon the production and on everyday life often create extreme situations, sometimes combined with critical and disharmonious reactions. The unprecedented speed of urbanization in many countries may have similar results.

The extent and deepness of the negative results of the technical revolution differ a great deal under capitalism on the one hand, and under socialism on the other. It is clearly demonstrated by the psychological illness-rates in the USSR and in the capitalist countries. Regardless of the fact that our country was ravaged by wars and epidemics connected with wars, followed by an unusually quick tempo of urbanization and industrialization — one of the typical causes of psychological illnesses, the rate of these illnesses is still very low in the USSR. A. R. Rapoport (1956), studying the dynamics of schizophrenia, shows that we have 0,8—1,5 ill, per

one thousand inhabitants, while the illness-rate of Germany is 6,4—8, of Great Britain 2—4, and of Sweden 3,3 per one thousand. The share of schizophrenia is in our country increasing slowly and only gradually.

These important differences, compared with the situation in the capitalist countries, are direct results on the profound social changes in the USSR, such as the elimination of the exploitation of man by man, unemployment, elimination of social differences, and of the optimistic belief of the Soviet people in the future of the strengthening of socialist relations among people. The study of the social factors of the psychical diseases enables us to separate a series of 'supporting moments' of psychical disorders. Among these factors belong urbanization and industrialization, accompanied by a transition to complicated mechanized forms of production, pauperization of the population, migration of whole groups of inhabitants, radical changes in the traditional family life, alcoholism, etc.

The increasing 'social mobility' of all groups of the population and of the individuals, the migration of popular masses resulting in radical changes of the traditional forms of life, changes in inter-human relations, extension of noxious habits, such as alcoholism, affect also psychical health.

The connection of psychical disorders with changes in the character of work, in the traditional way of life in various stages of history appears in the prevailing forms of psychical disorders of certain national groups, in the remote and isolated areas of our planet. D. Astrup, a renowned Norwegian alienist (1956) studied psychical disorders in their cultural and historical aspects and realized that in the antique world (Greece, Rome) psychosis and schizophrenia were rarer than nowadays. Very frequent were, on the other hand, epilepsy and hysterical syndromes.

The Middle Ages, with religion deeply rooting in all spheres of life, with its exhausting fasts and prayers led often to affective hysterical psychoses, mostly of religious character.

In the present capitalist society the order of psychic disorders has changed. Comparatively rare are the cases of hystery and of maniacal depressive psychosis, more frequent are, however, the cases of schizophrenia. D. Astrup connects the increase of psychoses with the development of capitalist relations. He shows that during the industrial revolution in the 19th century psychical illnesses were most frequent in the most progressively developing capitalist countries, i.e. in Great Britain and in France. Towards the end of the 19th century the violently developing Germany outpaces the above countries, not only in the level of industrial production, but it becomes also a 'leading power' in the number of psychical disorders. In keeping with this trend in the present epoch we observe the highest numbers of psychical disorders in the USA, where the production has reached an unprecedented level, and man is heavily affected by the jungle of the capitalist way of life.

The attempts to determine the predisposition of

various human races and nations to psychical diseases requires critical analysis, nevertheless they deserve our attention.

The Bulletin of Transcultural Researches of the Problem of Psychic Health, published in Canada since 1946, contains generalizing materials on remote areas of our planet (Rapport A. M., 1959). Most researchers underline the fact that alienists of the whole world face practically the same problems; on the other hand there are also certain specific features, connected with the cultural-historical and genetic features of certain population groups.

In certain West African countries we can observe e.g. typical states of depressive agitation, connected with a belief in fetishes and with obligatory ritual ceremonies. In this area people often ran amuck, which is a short-term psychical disorder, excellently described in a short story called Amuck by S. Zweig. Local people believe that amuck is a hysteric possession by a bad spirit. 'Possession by spirits' is quite frequent also in some Asian countries — but there it is not connected with running amuck.

Urbanized Africans develop psychoses typical for Europeans. In rural areas, lacking basic hygiene and full of superstitions, schizophrenia and cyclothymic diseases are rare, while hysteric psychoses and amuck abound. Forster shows the frequency of psychic disorders in persons that moved to the town of Mazani (Bombay). In Nyassaland psychic disorders are more common in people living in contact with Europeans; many psychic disorders are connected with food shortage, with avitaminosis, and with the wide-spread acute hashis psychosis (e.g. in India).

In Japan there are certain specific features in the etiology and in the pathogenesis of the neuroses due to special features of the family life, religion and density of the population, since large agglomerations, characteristic for highly urbanized societies, form new sources of neuroses.

In Iran (M. Valentein) we can see neuropathic conditions and sexual abnormalities, connected with the segregation of sexes before marriage, and with the slave-like position of the woman. Besides, there are also some 1,500.000 opium smokers in Iran.

P. Ratonkorna published unique data from Thailand, where in 1953 schizophrenia formed 72 % of all psychical disorders. The author thinks that it is the highest schizophrenia rate in the world and he explains it by the inverted national character which is the result of traditional ways of family life and of the Buddhist religion.

Views on racial predisposition to certain psychic disorders require a very critical approach — at the same time we must consider also certain specific features of family life, working conditions and climate too.

This brief review of historic changes in human diseases shows that both health and disease have deep social roots.

Their analysis serves as a necessary theoretical precondition for understanding the general laws of

the adaptation of the human organism to changes bringing progress to the natural and social environment surrounding us.

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