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SYSTEM APPROACH IN PLANNING OF WORK FOR MOTOR TRANSPORT

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ABSTRACT

The article reveals the analysis of professional literature and describes the features of the system approach in the planning of motor vehicles. The use of logistics to improve the quality of the transportation planning process is discussed. The results of studies on the development of the theory of transport systems and suggested ways of improving approaches based on a systematic approach road transport planning are reflected.

Keywords: system approach, logistics, transport process, system, road (motor) transport.

1. INTRODUCTION

Motor Transport at the present stage of human activity is a necessary element in industry, agriculture and consumption [7], so the development and improvement of the theory of transport systems is an actual problem.

The basis of the science of rational use of the rolling stock in the national economy formed by studies of SR Leiderman, L. Bronstein, Afanasiev LL and other scientists. They are widely used and applied in regulatory and technical documentation for the planning, analysis and operational management of transport [9].

Evaluation of the development of freight transport theory is reflected in [6], which states: indicators are designed in relation to rolling stock unit, or to a haul, or to the park of the same type operating in one shift; researchers proceeded from the assumption that the transport process is monotone.

In recent decades Siberian State Automobile and Highway Academy actively worked to create the theory of operation of motor systems, low-level, ie, motor systems, which directly carries out transportation of goods [7] as an integral part of freight transport theory. During the research the following has been established:

- the flow of the transport process is discrete and not monotone;
- changes in production of vehicles, depending on the changes in the technical and operating characteristics of systems in motor vehicles and systems themselves are described by piecewise linear functions;
- a classification system of motor transportation of cargoes (ATSPG) of the lower level was developed;
- a model describing the functioning ATSPG of the lower level was developed;
- the methods of solving the problem of the choice of rolling stock in ATSPG of lower level was developed.

Analysis of the research indicates that the transport process is not deterministic but random (probabilistic). In order to solve the problem of planning and management of stochastic processes, the probability theory and the theory of mass service are used. One of the basic approaches in the planning of the transport processes in the delivery of goods by automobile transport is the use of the logistics concept as a part of a system approach.

2.METHODS

A study of the transportation process was carried out using the methodology of the system approach, modern concepts of transport logistics and supply chain management taking into account the Russian commodity market and the market of logistics services. Scientific methods such as analysis and synthesis were used. The method of analysis allowed to identify the problem and to allocate it to the problem of the main components. As a result the theoretical foundations of the transportation process in the delivery of goods have been formed.

The methods of empirical knowledge include description, comparison, and measurement. The description of the main aspects in the planning, control and accounting of execution of logistics operations in the transportation is done.

3. RESULTS AND DISCUSSION

3.1 OVERVIEW OF CURRENT TRENDS IN THE DEVELOPMENT OF SYSTEM APPROACH IN PLANNING OF MOTOR TRANSPORT'S WORK

The basics of system approach were developed by Bogdanov A.A. who attempted to identify universal principles of inherent and lively and inanimate nature in the fundamental work "Tectology. Universal organizational science" in 1912. [4]. Later tectology statements have been applied in economics and management.

Kozlov P.A. [3] points out that the concept of "system" was born when observing living organisms. Everything is destroyed under the influence of the environment, but the living beings, on the contrary, develop. Therefore, the author concludes, real systems include only living beings.

Consequently, it is possible to consider a system approach in technical systems but only conditionally. However, in terms of logistics theory, a person is an important element of the logistics system, so we can say that man is

responsible for the development of technical systems and their stability. But, on the other hand, we can talk about the human factor, which results in road accidents and malfunctions of transport. Therefore, it is necessary to consider these two mutually exclusive factors doing the planning and design of transportation of goods.

In the modern theory of transportation systems analysis prevails over synthesis. The elements of the transport system in the analysis are distinguished by researchers and studied without mutual connection with the preceding and subsequent stages of product distribution and without features of impact of the environment on the transport process. At the same time the synthesis involves identification of hidden patterns for transport systems.

Scientists seek to identify the rules or the average value without the possibility of considering the use of industry-specific transport. This interferes with synthetic approach. Analysis of existing destinations using the motor transport shows that the technology of transport processes in various fields has exceptional variety, and one of the objectives of research should be the identification of patterns for cargo delivery in various fields of industry, trade and services.

It is necessary to identify both the causes that promote diversity of delivery systems, and the consequences of wrong organization, leading to the problems and unnecessary costs

Analysis (division into parts and identification of the structure of parts) and synthesis (such as "reverse assembly" and revealing the hidden structure of laws for transport systems) should be used together. Synthesis can be used both horizontally (the union of members in the supply chain), and vertically (the union of of the supply chains in hierarchical systems).

In essence, we are dealing with the following situation in studies: the inability to examine fully the structure and functions of transport systems, because researchers' actions (division of system into parts) lead to disruption of the perception in the integrity of the research object.

Here the Fock's principle of relativity arising from the uncertainty principle of Heisenberg quantum physics can be applied. Fock principle reads as follows: "The object of research is not the reality that exists independently of the observer, but the system consisting of the object (in the classical sense) and the conditions of observation, by which we mean a set of measurement procedures, including methods and measuring instruments as well as the actual observer (researcher), associated with the observed system "[4]. The researcher simulates a situation where it is impossible to fully understand the laws of the organization of the transport system, because features of environmental factors and their impact are not being investigated.

In this sense, the methodology of freight traffic theory is imperfect, because the transport system is "torn" from the context of its environment, macro- or mezological systems.

In addition, for an understanding and disclosure of the general laws for transport systems we must go from review on micro-level (the common aspiration of transport science in recent decades), to review on macro level. Using the system approach for the development of the science methodology is the alternative.

General Systems Theory was developed in the 40s of the twentieth century, by Ludwig von Bertalanffy based on the tectology of Bogdanov [1].

Based on the above it can be concluded that the future development of freight traffic theory is possible towards the creation and development of knowledge of the system that include identifying of causal relationships between structure and function of transport systems, especially mutual parts in logistics system.

Analysis of the available literature shows that, there is a local structural approach (the activity of one of the vehicle as a system) or local functional approach (work of motor transport enterprise) in theory of motor systems. In this case there is no connection with the operation of the macro, meso and micrological systems; these systems are considered in isolation.

It is important to understand the dependence of the transport systems and the logistics systems at different levels, because transportation is a logistical function in the logistics system, i.e. it is a part of a whole and it can not exist separately.

The transport system is the link between micrological systems of supplier and customer, therefore, it is a structural part of macrological system. In this regard, we need to talk about vertical and horizontal multidimensionality of global economic production systems, handling and consumption of capital goods and consumer goods.

Structurally, the transport system can be static (transport corridors and lines of communication), but functionally they can be dynamic in the case where the decision makers (focus companies, enterprises, suppliers or buyers of the enterprise) choose the sources of supply, logistics intermediaries, mode of transport, or a combination of modes of transport. In this case there is a formation of a temporary structure of the transport system.

3.2. KEY PROPOSALS FOR THE DEVELOPMENT OF SYSTEM APPROACH DOING THE PLANNING OF MOTOR TRANSPORT'S WORK

For rational traffic management it is necessary to develop the theory of transport systems and to include the elements of logistics based on a system approach. It should be noted that by transport systems we mean the totality of people, vehicles and equipment, forming a single unit.

The use of a system approach involves science-based transportation management, but the transport system consists of heterogeneous elements. Then by taking into account the specifics of various components of the system there is the difficulty in creating a unified management system. In this case, the main unifying factor is the common goal for the participants of the logistics process, which is an objective prerequisite for a whole logistics system.

In its turn system approach in logistics enables us to consider and study the logistics processes through the decomposition from the perspective of general systems theory.

When considering the transport system through the prism of a system approach the following basic properties can be noticed

Integrity and (emergence). Integrity can be structural and functional, so it is appropriate to determine the real-world system as a structural and functional. The structure in this case is the primary, and the function - is secondary, as each structural element is designed to perform a partial function, but the combination of these features provide a common function of logistics or transport system [3].

The system can be divided into subsystems and components that have their purposes and functions, but in the global system goals. Logistics systems are divided into subsystems, units and elements [5]. Divisibility property allows to explore the structure in the study and design of the company's logistics system.

Since all subsystems and elements associated with each other and have a mutual influence, therefore, there is a synergistic effect. Separately, each subsystem can not exist, its functions and properties are manifested only in the system, so the emergence of the property appears where the system implements a quality that is inherent only to it, and is not peculiar to the individual parts.

Connections. A substantial connection between elements of the system exist because businesses and enterprise divisions are linked by contracts and industrial relations respectively.

Organization. For the appearance of the system it is necessary to create orderly connection between its parts. For micrologistical system it must be not only vertical relations (between levels of government), but also horizontal links (between the enterprise subdivisions along the material flow). Similarly, connections should be considered in macrologistical systems in such formations as "Logistics Network" and "logistics chain".

Adaptability and management [3] or the property of logistics systems to adapt to the conditions of uncertainty [5]. Active opposition, self-maintenance are ensured by adaptability and hence control. Therefore, the correct display of internal control is paramount.

The uncertainty of the environment is associated with the emergence of a large number of new products or of transport services, uncertain events (risks) during transportation, leading to sharp fluctuations of qualitative and quantitative characteristics of the material flow passing through the logistics system. Therefore, the company's ability to adapt is a significant competitive advantage.

System approach allows to consider the main theoretical characteristics of transport systems through dedicated properties. Logistics approach is not only in the process of examining the origin and movement of the main and collateral flow in the transport system, but also in the harmonization and optimization of the main parameters.

Achieving a common goal of the transport system goes through the interaction of all the elements, between which there are complex links that unite not only subsystems into a single system, but also provide a link with the environment. The use of logistics is to find organizational and economic compromise in the process of internal and external cooperation and to prevent cross-functional and inter-organizational conflicts in the transport system.

Therefore, in the transportation system we can distinguish the internal structure which is interconnected with the external environment.

The internal structure is composed of subsystems and components for an execution of transport services, while the main subjects of the environment are the consumers of transport services. The movement of goods and passengers is a service that on the one hand, is a production process, on the other – products of transportation system.

Looking at transport system from the point of view of the theory, it is divided into passenger, freight and multimodal transport. Also it the following types of transport such as road, rail, water, air and pipeline are included.

Each mode of transport is a specialized center, it has its own peculiarities of development of technical means, communications, and improving of organization and management, training, and ie it has not only technical, but also economic characteristics [2].

To enable the different types of vehicles in a single system, it is necessary to form a system of communication and relationships.

There are the following logistical aspects of the interaction between different modes of transport:

- Technical – to unify all the elements and components of the system on the basis of technical and constructive power.
- Technological provides a single processing technology of different vehicles using a single information security.
- The organizational aspect of the interaction - to create a unified subsystem of operational planning for ongoing work.

After selecting the the main aspects of the interaction of logistics vehicles, in terms of a systema approach we should define the basic disturbing factors. These factors influencing the transportation process can be divided into controlled (movement routes, arrival and delivery, etc.) and uncontrolled (traffic accidents, congestion, weather conditions and other factors related to the environment).

Since the main activity of the transport system is to move goods and passengers, the use of the logistical approach is to organize the delivery using 7R rules: to deliver the right product to the consumer on the optimal route in the right place and time, in the required quantity and quality at the lowest price.

To perform basic rules of the logistics system must provide [9-12]:

- an automation of the order distribution for vehicles;
- an automatic calculation of shipping routes ;
- a visualization of addresses and shipping routes on an electronic map;
- formation of the optimal order detour delivery points with the possibility of change.

To use a system approach in the transport management, it is necessary to allocate the source data, such as the working time of each vehicle, the number of delivery points, limit for vehicles on routes of movement restriction, duration of loading and unloading.

The transport system management are currently going on with the help of modern software products (eg, TMS-system), where the full automatic control and requires no human intervention, which eliminates the "human factor".

The final calculated data (consumption of fuels and lubricants, vehicle miles traveled, time, the need for a technical park, costs, etc.), are formed As a result of the constructed transport complex.

The result of a system approach in the transport sector is the achievement of synergies between the work of different modes of transport, where each species should interact with each other based on the need for a common goal of the entire system. The general criterion of effectiveness when using the system approach is to achieve a common goal with maximum efficiency in resource-limited settings.

In a system approach we must consider not only the formation of the transport system, but also its further development, which leads to the optimization problem.

Also, optimization of the transport system depends on its manageability. The issue of the transport system's hierarchy has not yet received the proper development. This is confirmed by the presence of a wide variety of organizational structures both for individual modes of transport, and in certain regions of the country, especially in the automotive, industrial and river transport [2].

4. CONCLUSION

System analysis aims not only to establish internal and external transportation system processes but also to create the basis for its competitiveness, due to the expense of ensuring the effective planning of movement of vehicles on the routes, rational load distribution between all transport units, and so on. Thus, the transferring systems to a new level, which will increase customer loyalty and contractors, will provide a high level of competitiveness in the market taking into account the minimization of transport logistics costs.

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EVALUATING PROTECTIVE EFFECTS OF SILYMARIN ON LIVER AND CARDIAC SIDE EFFECTS OF CHEMOTHERAPY DRUGS IN CHILDHOOD ACUTE LYMPHOBLASTIC LEUKEMIA

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ABSTRACT

Background: Hepatotoxicity and cardiotoxicity of chemotherapy drugs are a problem in treatment of childhood leukemia. Silymarin with known protective effects on liver and heart may be effective.

Methods: In this study, 71 child 2- 14 years in maintenance phase of treatment of acute lymphoblastic leukemia were studied in 2015. Two patient died and the remainder were divided in case (n=49) and control (n=20) groups. Cases received Mercaptopurin (75mg/m²/day/po) + Methotrexate (20mg/m²/week/po) plus Silymarin 5mg/kg/day in 2 divided doses and control group were taking only Mercaptopurin and Methotrexate. Liver enzymes, Coagulation studies, Creatine kinase- Muscle and Brain (CK-MB), Ejection fraction (EF) and Systolic function (SF) were measured at the first, 3 and 6 months of study. Data were analyzed by using SPSS and P value ≤ 0.05 was considered as statistically significant.

Results: Mean levels of Alanine aminotransferase (ALT) in two groups were increased significantly at 6 months (P-value=0.01, 0.01 respectively). Although increment was more in controls but there was no significant differences between two groups.

Aspartate aminotransferase (AST) and Alkaline phosphatase (ALP) have also increased in both groups and the increment was only significant in the control group (P-value=0.001, 0.05 respectively).

Prothrombin Time (PT), Activated Partial Thromboplastin Time (aPTT) and International Normal Ratio (INR) increased in the first 3 months in both groups and the increase was only significant in control group (P-value= 0.01, 0.03 and 0.04, respectively).

Ejection fraction and SF were decrease in two groups especially in controls but changes in CK-MB were not significant.

Conclusion: It seems that Silymarin can be useful in prevention of hepatotoxicity and cardiotoxicity of chemotherapy drugs in ALL children.

Keywords: Acute lymphoblastic leukemia, Silymarin, Hepatotoxicity, Cardiotoxicity

INTRODUCTION

Although chemotherapy drugs specially anthracyclines have many benefits in the treatment of childhood acute lymphoblastic leukemia (ALL) but cardiac side effects have limited their clinical use. Cardiac dysfunction and disorders can be from asymptomatic disease to severe heart failure [1-2] and include systolic or diastolic dysfunction, cardiomyopathy, arrhythmia and pericardial effusion [1, 3-6]. These complications more created with cumulative dose of drug but can be presented by administration of first dose or during treatment without considering drug dosage or even as late as 20 years from initial exposure [7]. Duration of drug use, total drug used in treatment process and prescribing drug with another medication can increase cardiac toxicity [8]. Correlation between these drugs and decreased cardiac function that may remain for many years was reported in some studies [9,10]. Trans-thoracic echocardiography is a safe important diagnostic way for evaluating effects of these drugs on systolic and diastolic heart function [5, 11].

The mechanism of anthracyclines cardiotoxicity are multi factorial. These drugs "induce multiple forms of cellular injuries by free radical production and alter nucleic acid biology by intercalation in to DNA and modulates intracellular signaling that leading to cell death and the disruption of homeostatic process such as sarcomere maintenance" [7]. So substance such as Silymarin and its isolated components because of antioxidant effects and cell membrane stabilizing and radical scavenging potency can be protective for cardiomyocytes [12, 13].

Of other complications that most commonly is seen in treatment of childhood ALL is hepatic side effects. Serum aminotransferases elevation associated with combination of MTX and 6MP that used in maintenance phase of therapy is

frequent [14]. Five-fold elevation of these enzymes causes drug interruption [15] that this can increase risk of relapse in childhood ALL [16]. Moderate rise in bilirubin or reduced levels of coagulation factors may be seen but there is low risk for permanent liver damage and within few weeks after discontinuing of drug administration, the enzymes usually are normalized [17]. Mercaptopurine metabolism influenced by age and genotype and drug response is related to its red blood cell (RBC) metabolite concentrations. In aged 6 years or less steady-state is lower than older patients and these children required higher doses to achieve clinical improvement. Hepatotoxicity induced by 6-MP is strongly related to concentration of 6-methylmercaptopurine nucleotide (6-MMPN) in red blood cell. A 6-MMPN threshold of $5000 \text{ pmol}/8 \times 10^8 \text{ RBC}$ was reported with hepatotoxicity [18].

MTX was reported to be more hepatotoxic than 6-MP and its chronic low-dose may lead to hepatic cirrhosis and fibrosis in maintenance phase of ALL treatment. MTX is usually the first drug to be adjusted or discontinued when a hepatotoxicity occurs and the enzymes abnormalities resolve within one month after the cessation of therapy [14, 18].

Therefore, the use of hepato and cardioprotective substances such as Silymarin that is an herbal extract of silybum marianum plant with known hepatoprotective and cardioprotective effects may be effective in these patients. The protective effect of Silymarin on liver and heart is more related to anti-oxidant effects which eliminate free radicals. In addition this substance can increase RNA polymerase activity in the cell nucleus and initiate ribosomal protein synthesis which improves hepatic cell re-generation power [13].

Based on above information, present study evaluated the protective effects of Silymarin on liver and heart of a small group of Iranian leukemic children undergoing chemotherapy by using Livergol tablet contains 70 or 140 mg Silymarin which made in Iran.

METHODS

In this prospective case control study 71 child 2- 14 years in maintenance phase of treatment of ALL who had received antracycline $25\text{mg}/\text{m}^2$ /week/4 times in induction phase and 3 times in reinduction phase (totally $175\text{mg}/\text{m}^2$) were studied. All patients are selected from children's cancer center (Syed Al-Shohada hospital) of Isfahan University of Medical Science, central area of Iran in 2015. Research council and ethics committee of school of medicine approved this study (code: 394213) and a written informed consent was obtained from the parents who agreed with participate their children in this study.

The inclusion criteria were diagnosis of childhood ALL based on bone marrow morphology and immunophenotype, age 2- 14 years and therapy in maintenance phase of childhood ALL (at least 6 months). Previous history of liver and heart disease and take any other medicines except chemotherapy drugs were exclusion criteria. To calculate sample size, was used the standard formula suggested for clinical trials by considering $\alpha = 0.05$ and the power of the test equal to 80%. Finally, a total of 20 cases in each group were estimated and increased to 49 samples control group to cover 20% anticipated dropout. $n = \frac{(z_1 + z_2)^2 (2s^2)}{d^2}$, $z_1 = 1.96$, $z_2 = 0.84$, $d =$ two-tailed t-test of different between mean for ALT and AST parameters ($0.8 \times s$).

Of all patients included in this study ($n=71$) two patient died. The remainder of patients ($n=69$) were divided in two case ($n=49$) and control ($n=20$) groups. In case group patients were taking MTX: $20\text{mg}/\text{m}^2/\text{week}/\text{po}$ [EBEWE Pharma Ges.m.b.h. Austria] and 6MP: $75\text{mg}/\text{m}^2/\text{day}/\text{po}$ [KOREA UNITED PHARM.INC] at least 6 months [19] plus Silymarin: 5 mg / kg body weight / day [20] in 2 divided doses by using Livergol herbal tablet contains 70 or 140 mg Silymarin [Goldaru Pharma Com, Iran]. Patients in control group were taking only 6MP and MTX with similar dose in cases.

DATA COLLECTION:

At the beginning, 3 and 6 months of study blood was tested for liver enzymes (ALT, AST, ALP), coagulation studies (PT, aPTT, INR) and CK-MB (as a marker of heart injury). Liver enzymes were measured by biochemical methods (Elitech kit, Man Company under license of France, Iran), coagulation studies were done with Fisher kit, Netherlands and CK-MB were also measured by biochemical methods (Parsazmoon kit, Karaj, Iran).

Ejection Fraction and SF were measured in all patients by echocardiography at first, 3 and 6 months of study. All data were recorded in specific checklist.

STATISTICAL ANALYSIS

Data analysis was performed using SPSS (version 22 software). Continuous variables are reported as the mean \pm SD and P value ≤ 0.05 was considered as statistically significant. Changes in ALT, AST, ALP, CK. MB, PT, aPTT, INR, EF and SF were compared in two groups at first, 3 and 6 months of study. The association between variables was analyzed by independent t-test, chi square test and repeated measures ANOVA test. A two-sided α level of 0.05 was used to assess statistical significance.

RESULTS

In this study 71 patients participated that two of them (2.8%) died and the reminder divided as case and control groups.

Distribution of age and sex in groups did not show any significant differences. (Table 1)

Measuring of ALT in two groups showed that the mean levels of ALT in case and control groups were increased significantly during 6 months (P-value= 0.01,0.01 respectively) and the ALT increment was more in control than case group but there was no significant differences in comparing the two groups after 3 & 6 months of study. [Table 2]

Changes in mean levels of AST was also shown in table 2. Unlike ALT, AST increment was only significant in controls after 3 & 6 months and in comparing the two groups after 3 & 6 months likeness ALT there was no significant differences.

Alkaline phosphatase changes in control group were similar AST changes during 6 months (P-value=0.04) but changes in case group and in comparing the two groups were not significant. (Table 2)

According ANOVA test PT, aPTT and INR increased in the first 3 months in both groups but the increment was only significant in control group (P-value= 0.01, 0.03 and 0.04, respectively).

Despite increase in CK-MB at the first 3 months in both groups, changes in CK-MB at the end of study in cases and controls were not significant (P-value= 0.07, 0.10 respectively).

Echocardiography results showed that both EF and SF decrease in the second 3 months in case and control groups. (Table 2) Although these changes were not significant during 6 months but according to the ANOVA test the decline was more in control group.

In this study two-fold ALT increasing was more in cases than controls but five-fold or more ALT increasing based on age which leads to discontinuing of treatment was more in controls. (Table 3)

DISCUSSION

As mentioned earlier side effects and toxicity of cytotoxic drugs is a problem in treatment of malignancies. Toxicity of these drugs is due to the inability of them to differentiate between normal and malignant cells. So cytoprotective compounds are very important in ameliorating the toxicity associated with these drugs. Compounds as dexrazoxane, glutathione, mesna... have been extensively investigated in the past [21]. But herbal ingredients with known cytoprotective effects may also be effective in ameliorating the side effects of chemotherapy drugs.

The study that evaluated the effects of Silymarin as an herbal cytoprotective [13, 22-26] on liver and heart of leukemic children during the 6 months of maintenance therapy showed that increased liver enzymes levels were less in patients who received Silymarin than the control group. Studies that assessed the effects of herbal medicine showed the efficacy of this substance in decreasing liver enzymes and mortality of liver disease [27, 28]. Saller et.al study which evaluated 106 liver disease patients who were treated with Silymarin and placebo, shows more reduction and normalization of liver enzymes in patients were treated with Silymarin than the placebo [29]. Although more studies suggested that Silymarin is effective in reducing liver enzymes, but Vargas-Mendusa et.al in 602 patients showed that the levels of liver enzymes were not different in patients who were treated with Silymarin to control [30].

These differences in results of studies may have occurred due to the dosage of drug, stage of liver disease and different planning in studies and show the need to review articles.

In addition to decrease in liver enzymes protective effects of Silymarin in the fall of clotting factors was reported in intoxicated dogs since years ago [31] and Vargas-Mendusa et.al that evaluating the hepatoprotective effects of Silymarin showed that using this substance can improve Prothrombin Time [30]. In this study also patients who had received Silymarin had fewer changes in coagulation studies especially for Prothrombin Time and it suggests that this medication may prevent of increasing of PT and INR.

Another problem in the treatment of malignancies is cardiotoxicity secondary to anthracyclines. Echocardiographic evidence of left ventricular contractile abnormalities was seen in up to 65% of patients with a history of a childhood malignancy that treated with doxorubicin [32]. In a study of 14,358 five-year survivors of childhood malignancies, patients that use of <250 mg/m² of anthracycline have 2.4-fold higher risk of developing congestive heart failure compared to those patients who did not receive [33]. Free radical formation caused by doxorubicin metabolism and formation of doxorubicin-iron complexes that catalyze conversion of hydrogen peroxide to hydroxyl radical and resulting in the generation of reactive oxygen species are the responsive of cardiotoxicity. In animal models probucol as an antioxidant, and the beta-adrenergic blocker, carvedilol, due to antioxidant properties have been shown protective against doxorubicin-induced left ventricular dysfunction. *In vitro* experiments and some clinical studies have also shown the favorable effects of antioxidant therapy [34].

Because of the interaction of doxorubicin with non-heme iron and generation of reactive oxygen species iron chelating agents can be effective in prevention of anthracyclines cardiotoxicity. Protective effects of Dexrazoxane as an iron chelator in reducing the incidence of congestive heart failure and Left Ventricular Ejection Fraction have been shown since years ago [35]. Therefore Silymarin as an antioxidant and iron chelating agent [35] can be effective on cardiotoxicity of these drugs.

In this study EF was decreased in the second quarter in both groups and although these decreases were not significant but the amount of decline was more in controls than the cases. Animal studies showed the protective effects of

Silymarin against anthracyclines cardiotoxicity [36, 37] but there is lack of sufficient data about effects this substance on cardiac functions in human and need to these studies is obvious.

The limitations of this study were small sample size and short duration of study. Therefore in the future longer studies with larger sample size is recommended.

CONCLUSION

In conclusion, it seems that using Silymarin in leukemic children has protective effects on their liver and heart and can decrease the side effects of chemotherapy drugs.

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TABLES

Table1. Demographic variables in case and control groups

Variable		Control	Cases	P
Gender	Boy	29(65.5%)	12(60%)	0.694 1
	Girl	20(34.5%)	8(40%)	
	Total	49(100%)	20(100%)	
Age	Mean age \pm SD	6.4 \pm 3.1	6.7 \pm 3.1	0.768 2

1. Chi-Square test 2. Independent t-test

Table 2. Mean ± SD of ALT, AST, ALP, PT, PTT, INR, EF & SF in case and control groups at first, 3 and 6 months of study

	Time	Control Group	Case Group	P- value
ALT	At the beginning	33.8±3.7	32.8±6.2	0.88
	After 3 months	122.9±32.4	44.3±9.9	0.10
	After 6 months	52.6±7.9	50±11.4	0.85
	P- value*	0.01	0.01	
AST	At the beginning	35.3±2.2	35.4±3.7	0.91
	After 3 months	87.7±14.9	37.7±4.7	0.28
	After 6 months	50.9±5.3	49.5±9.5	0.88
	P- value*	0.001	0.11	
ALP	At the beginning	400.7±20	357.8±46.1	0.33
	After 3 months	450±26.8	400.1±48.5	0.35
	After 6 months	446.1±23.5	400.8±43.7	0.33
	P- value*	0.04	0.45	
PT	At the beginning	12.9±0.27	15.8±2.4	0.26
	After 3 months	15.9±0.55	16.8±2.5	0.72
	After 6 months	13.8±0.44	16±2.5	0.42
	P- value*	0.01	0.13	
PTT	At the beginning	33.3±1.3	32.4±3	0.79
	After 3 months	43±3	46±9	0.74
	After 6 months	35±1.7	37.4±3.3	0.67
	P- value*	0.03	0.27	
INR	At the beginning	1.1±0.05	1.27±0.18	0.41
	After 3 months	1.4±0.07	1.24±0.07	0.17
	After 6 months	1.2±0.06	1.18±0.05	0.62
	P- value*	0.045	0.28	
EF	At the beginning	68±7.14	70±6.21	0.46
	After 3 months	69.2±6.43	72.5±4.6	0.15
	After 6 months	65.6±9.3	71.9±5.9	0.049
	P- value*	0.15	0.30	
SF	At the beginning	38.2±5.4	38.7±4.5	0.77
	After 3 months	37.3±5	40.7±3.96	0.077
	After 6 months	36.1 ±5.6	39.9±4.6	0.082
	P- value*	0.41	0.25	

P- Value*= Compare Mean ± SD of variables in the beginning, 3 and 6 months of study in each group. (ALT: Alanine aminotransferase, AST: Aspartate aminotransferase, ALP: Alkaline phosphatase, PTT: Partial tromboplastine time, PT: Prothrombine time, INR: International normal ratio, EF: Ejection fraction, SF: Systolic function).

Table 3: Increasing two and five-fold of ALT and AST in case & control groups

Variable	Cases	Control	P	
ALT	Multiplied by 5	2 (10.0 %)	10 (20.4 %)	0.25
	Multiplied by 2	3 (15.0 %)	15 (30.6 %)	0.09
AST	Multiplied by 5	0	5 (5.2 %)	0.06
	Multiplied by 2	2 (10.0 %)	16 (32.6 %)	0.03

STABILIZATION MECHANIZMS OF GEORGIAN LARI

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ABSTRACT

Scientific work “Searching complex way of suspension devaluation of Georgian Lari in Georgia “is an original research, which is dedicated to the solution of the theoretical and practical issues of Georgian monetary unit-Lari. The topic is actual, as today as never before if has become essential to research current changes in the economy of Georgia, identify and eliminate subjective and objective reasons for decrease of Georgian national currency.

Global circumstances, i.e. long-term nature of Gel exchange rate of external and internal factors, as well as the political economic processes of neighbouring countries of Georgia, the country’s unstable economic development, investment “famine”, wrong monetary and fiscal policy and other objective and subjective reasons caused the drop of Georgian national currency. In the work scientifically, based on the practical materials is explained the need and the inevitable of devaluation of Georgian Lari in Georgia.

In the work, on the basis of analysis of devaluation processes of Georgian Lari, there is given by the authors the recommendations of suspension of created an extreme situation in country’s economy, to avoid expected inflation, as well as emergency facilities of survival of the national currency.

In the work the results are presented as problem solving economic recommendations, which promote economic development of Georgia, suspension of impairment and reinforce of Georgian Lari.

Keywords: Economic situation, Georgian national, Objective and subjective reasons, Lari, real sector of the economy, Foreign direct investments, Investment activity, Dollarization system, devaluation, Currency devaluation, Monetary policy.

1. INTRODUCTION

THE TOPICALITY OF THE PROBLEM

Today, there is a difficult economic situation in Georgia. Fluctuations of currency exchange rates has become one of the main subjects of the research of our scientific circle. The society closely follows the devaluation of Georgian Lari: this process does not complain about the lack of emotions, as well as the diversity of opinion. This is natural, - Business and each person’s daily life are largely depended on the Gel exchange rate.

At the same time we consider it necessary to note, that during for several years, the problem of Georgian national currency devaluation get multifaceted face; the most deplorable (bad) is that not to stop the slowdown of currency exchange rate fluctuations, but after its establishment (1995) the exchange rate of Georgian Lari fell to the historical minimum, and the Gel exchange rate towards the Dollar rate showed 2.80 benchmark in December, 2016.

The problem has become very urgent. Almost all current Georgian economists, Government, the National or Commercial Banks are searching scientifically substantiated ways of devaluation suspension (1,3,4,6,7,17,18, and etc).

2. STUDY LEVEL. GOALS AND OBJECTIVES

In the work, the topical issues for the country, naturally, put the following goals and objectives:

- May be we need to look more deeply into the reasons of the sharp drop in the exchange rate of the Georgian Lari, in particular, the slowdown of the country’s economic growth, unstable political situation, “hidden” inflation, unfavorable investment environment and so on.

- Therefore, was the drop in the exchange rate of the Georgian Lari inevitable and necessary?

- Are we afraid of recognition of extremely serious changes in the economy –when transformation of the market-oriented economy into the social oriented one takes place? Why don’t we, the economists, speak more openly and boldly and explain the role of using the factor of foreign debt in non-maintenance of the exchange rate of Georgian Lari? Why are we looking for the reasons of devaluation of Georgian Lari in subjective factors? If the National Bank has made mistakes in maintenance –non –maintenance of the “sharp” drop in the exchange rate, is it the mistake of others? And generally, should we mention the fault –in the course of solving or not solving the economic fate of the country?

- We’d prefer to ask one simple question instead of those named above –how can we rescue the Georgian lari, Economy, our country? What shall we do?

It is immediately necessary to learn the changes taking place in the economy of the county, as well as identification and elimination of objective and subjective reasons of the drop in the exchange rate of Georgian Lari (and not shifting responsibilities and sometimes ungrounded blaming of others).

To our mind, the main thing is that we are not looking for the means of solving the problems, where we see them. It’s time to develop, name and protect axioms of economic development: sustainable growth of the economy, immediate

development of industry, agriculture and processing industry, and development of small, middle and other businesses for the country and people.

We shall recognize that the National Bank did not devalue the Lari, but decades of non-development of material industry (as it is today called “real sector of economy”. L. Q.), and the passive nature of the production sector devaluated national Lari. Only trading service fields, infrastructure, construction of houses, and wide network of hotels and catering units won't save the economy of the country, innovative ways of economic development are necessary, as well as an investment boom, for creation of a favorable, attractive investment environment for investors processing and implementation of correct fiscal policy, creation of a reliable, legal and legislative framework of invariable nature bounding and identical to everybody, start-up enterprises.

Thus, the purpose of our manuscript has been revealed:

Cause –consequence analysis of depreciation of national currency, at the background of certifying inevitability of devaluation of Georgian Lari for development of correct monetary and fiscal policy, regulation of exchange rate of Georgian Lari, economic growth in the country, increasing foreign investment flow for creation of an attractive investment climate and activation of large investment projects, development of recommendations for increasing export potential and improvement of promotion mechanisms.

In the course of working on the manuscript we were greatly assisted with the researches of Georgian scientists, analytical data of economic experts, official data of the National Service of Statistics of Georgia (Saqstati), data of the National Bank of Georgia, World Bank, International Monetary Fund, data of international organizations, as well as popular articles published in the central media of the country.

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3. THE MAIN PART

From theoretical perspective-there is a direct and reverse relation between monetary relations and reproduction process. Objective grounds for monetary relations are processes of such public reproduction, which give rise to an international exchange of goods, money and labour.

Development of monetary relations significantly depends on development of the national and global economy, as well as relations formed between the political situation and different countries of the world.

We take into account the fact that international relations, including monetary ones, are in close relations with such fields, as policy, economy, diplomacy, commerce, industrial production and trading, and occupy an important place in the national and global economy. Settlement, credit, and financial operations implemented between different countries and their economic subjects give rise to transformation of national currency into foreign currencies and vice-versa.

Under the conditions of globalization of industrial relations, dependence of the reproduction process upon such foreign factors as: international trade, export-import operations and production development, as well as foreign currency circulation, etc are getting stronger. Instable state of international currency relations and monetary crisis may negatively influence the reproduction process. Such irreversible processes occurred in 2013-2015 in Georgia. Let us consider it from top down. To our mind, devaluation of the Georgian Lari started in the year 2013; the second wave was in 2014, and the third wave in 2015, i. e., devaluation of the Georgian Lari began two years ago and continues today (14, 8).

Today in Georgia, we consider accelerated development of the real sector of the economy: industry, agriculture and fields of processing industry to be extremely necessary.

To justify our offer, I will come up with the argument, in any developed or developing countries national currency devaluation or inflation is explained by retardation of economic growth.

Today economists in the problems of devaluation of Georgian Lari emphasised objective (the low rate of economic growth, reduction exports and foreign investments in Georgia, exports decline, insufficient levels of remittances, as well as the fields of currency providers (tourism, communications, transportations and others) weak growth and reinforces of the US dollar positions on international market. The US dollar strengthened so that happened the devaluation of the gold and in recent month gold fell -5 % (10,2), and subjective reasons: delivery of refinancing short-term loans to commercial banks by the National Bank and a significant increase of the mass of Georgian Lari in circulation (Archvadze). To transfer control packets for foreign residents of the operating banks and therefore to carry away their profit from Georgia, wrong fiscal and monetary policy of the government and the National Bank, partly inefficient use of foreign loans, lack of pre-targeting strategies of causing risks of Georgian Lari and anti-crisis plan of government and other fundamental reasons.

We can freely refer to the quote of the Academician Avtandil Silagadze, the essence of which we can share and approve entirely: “application of the government made in connection with the privatization of state property during the last period may be considered to be one of the mechanisms of monetary stability. On the other hand, for the purpose of assisting foreign investments we shall review legislation, in order to have stimulating mechanisms in maximal extent. The work shall be guided actively in direction to the development of tourism.

Production, industry and agriculture shall be developed. For this, we shall use local resource in maximal extent, which we have of quite great amount. As for the new state foreign debt, this step, may be made, though this money shall be used purposefully, particularly for the purpose of national production and it will be effective only in such case. Previous

government assumed huge debt during last 4-5 years-billions of US dollars, but they did not use it for development of economy. Every state takes assumed debt, but they try to use it for making profit (16, 2).

Georgia holds great reserve for rising state foreign debts. Share of foreign debt is purposeful to be up to 60 % of Gross Domestic Product. Today share of foreign debt with GDP is maximum 40%. Except for infrastructure, loans shall be used for real production. During the years, we were taking billions of loans and never used it in the real sector, where real wealth is made, and where there are great reserves of employment. Consequently, we don't support increasing such loans and its expenditures, except for infrastructural projects. The monetary fund didn't tell us categorically to increase taxes and not to take loans. They offered several alternatives to the government. Budget optimization, of course, is possible, but we consider it unreasonable to increase taxes under existing situations.

On the contrary, entrepreneurs and businesses shall not be restricted by increasing taxes, but we shall move to greater liberalization. Professor Mikheil Tokmajishvili gives a similar recommendation for the purpose of stopping devaluation and strengthening the exchange rate of Georgian Lari. He writes: "We cannot blame any bank in devaluation of Georgian Lari. Though, the merger of several banks may influence upon exchange rate, but this will be only a single step, which will not give rise to the extended outcome. The bank cannot form crisis of exchange rate. Considering this problem, we shall focus on more objective factors, such as: the current situation in economy, investments, export opportunities of the country, level of their usage and etc". As for the National Bank, it may generally freeze exchange rates, but in such case, the economy is entirely stopped. Due to this, we shall make a choice between the following: 1. Lari shall be devalued smoothly and not sharply, but development of the economy shall be stimulated instead and 2. We shall stop the economy, observe if Georgian Lari is stable, and be happy (12,4).

I emphasised, that devaluation of Georgian Lari is not among functions and interests of the National Bank, its main objective is providing the economy with funds and maintain low index of inflation. Thus, let us formulate the recommendation of stopping devaluation of Georgian Lari and its further appreciation: gradual growth of systemic nature of the real economy, reversible nature of the process of economic growth, warranty of stability of Georgian Lari, in the first place, is recovering the economy of the country. It will be impossible to speak about improvement of economic growth if no investment boom takes place in Georgia. Under modern conditions, activation of investment policy is the main condition for moving the Georgian economy, to sustainable economic development. Today the main lines of the state investment policy are: strengthening the support of prior directions of economic development, creation of a legal and economic environment for institutions to promote investments in the real sector of the economy.

We consider it necessary to specify that in the process of reforming the Georgian economy, we considered foreign direct investments and development of the banking system to be the driving force for the economy. By the National Statistics Office data, in the first half of 2016, by the direct and foreign investments 834 million dollars entered in Georgia that is 11% more than in previous year, but this figures do not allow us to be optimists. If we compare this figures to the 10 years old figures one thing should be noted: in 2007-2008 Gross Domestic Product was less and the impact of million investments are much more impressive than today. Professor I. Archvadze emphasises: "In order to have a similar effect, we need more investments today" (1,2).

To activate the state investment policy in modern conditions is the main condition that the economy of Georgia move on the sustainable development. It would be impossible to speak about the improvement of Economic growth rate, if there is no significant investment boom in Georgia. The sharp fluctuation amplitude of Georgian Lari will be improved when every Lari from privatization and from millions of investments will be invested in the real sector, and will be spent on material production and on the agricultural development. As a result, people will be employed, people will have incomes, will be local production, we will not import, we will sell our products and cash flow will stream from export.

Foreign direct investments build a clear opinion about the amount of funds invested in Gross fixed capital of the country, how attractive the country is for investment, and which fields hold opportunities for making high profit. In this regard, the dynamics and structure of foreign investments is an extremely important indicator of development of the country. Moreover, under the conditions of Georgia, when there are small amounts of domestic resources for development, budget resources are limited and savings of economic subjects are too small for investments. Inflow of foreign investments is not the only provision with financial resources, in the first place, this is an opportunity for sharing technological achievements, which is needed by the country. Besides this, direct investments have serious potential for employment. Subject to the long-term perspectives of development, in course forming an investment climate, the necessity of creating unified conditions of foreign and national investment activities shall be considered.

This is the condition of economy, as investment activity and economic development of the country are in proportional relations.

On the background of unadmitted crisis, attraction of foreign direct investments remains to be the main challenge of the Georgian Government. Reduction of direct foreign investments in many countries gave rise to serious macroeconomic problems. After the crisis, competition in attending foreign direct investments became worse. While the country is unable to develop their own economy without assistance, foreign investments are of essential importance for economic growth of the country.

However paradoxical it may sound, the main problem of Georgia is the same as insufficient investments. Another and very important problem is high interest rates on loans. Few businesses can pay such high interest rates. These factors, of course, prevent development of the economy of the country and this is the main responsibility of the government and banking system together. The banks shall have healthy competition and they shall not agree secretly about high interest rates.

Here the National Bank shall have its say. Under market conditions, the government shall create unified rules of game for every industrial subject. In relation with the banking sector, the government is liable to have strict rules of regulation, which shall be processed, determined and monitored by banking supervision service. It shall also be noted that the main objective for management of commercial banks is making maximal profit and for this purpose, it may take on particular risks. Due to this, the government determines particular regulations to protect depositors, shareholders, Investors, as well as economic stability and safety (14,8).

The Georgian economy and the Georgian monetary unit are to act under a complex global and regional environment. Under international globalization, relation of reproduction processes with such foreign factors as international trade, export-import operations and real sector development is being strengthened, as well as foreign capital turnover, political stability, etc. The unstable state of international relations and currency crisis may influence negatively upon economies of the country. Concussion and, moreover, canceling genesis of stability of the Georgian monetary unit was influenced by almost every factor of fluctuation and drop in the exchange rate of the currency. The former president of the National Bank R. Gotsiridze wrote about this still in 2015. Subject to this, economic policy and especially, necessity of transformation of monetary –credit currency policy, becomes important (5,14).

With above mentioned circumstances, it should be noted the panic formed at the international markets and Georgian Lari. Circumstances taking place in years 2014-2015, at the global and regional levels, made the Georgian economy face challenges, as the small and open economy of Georgia is quite vulnerable against foreign shocks. These phenomenon created a background of a strong foreign shock, reflected negatively upon the economy of the country from the point of reduction of inflow of foreign incomes.

Here, we'd like to emphasize situations created at the international markets, which were finally followed with the destruction of the exchange indexes at the leading international stock exchanges, reflecting on the monetary market of Georgia. The resonance, taking place at the monetary market of Georgia, is mostly conditioned with the panic created at the monetary market. Demand on the US dollar has been significantly increased in Georgia, giving rise to the drop in Georgian Lari. To our mind, this is an extremely negative trend. Though such resonance is short-term and this process with be completed in a short period in Georgia, the resonance means the peak and we shall expect signs of stability in the near period, but the reality is not so.

To overcome cardinal changes, financial and currency catalysms, and social-economic risks, it is necessary to process long-term state programs where there with be creation of increasing economy. Every expected financial risk of financial outcomes (i.e., cheapening oil, appreciation of US dollars, etc), macro-economic environment of the country, the banking sector and circumstances taking place in it, their strategy and management, global standard of development and future perspectives will be analyzed (18, 10).

In addition once and forever, Georgia shall gradually get out of the dollarization system, but many people think it to be better if the mass of US dollar is reduced in the country. Today, we have ugly financial forms from the financial point of view: for example, settlement, tax collection, and issuance of salary is provided in Georgian Lari, but when it comes to savings, we prefer US dollars. Due to the fact that our life is related with US dollar, its sharp reduction influences negatively upon exchange rate of Georgian Lari. According to the experts, getting out of dollarization may be provided only with particular financial balances and moreover, with development of local production.

We consider assistance of export to be urgent objective, as well as development of local production. Strengthening growth of Lari production or devaluation with reduction of production is a real image reflecting the state of Georgian economy. I consider it a positive decision to have replacing products at the local market. This will influence positively upon the exchange rate of Georgian Lari, as we will not need additional US dollar for purchasing imported products. Moreover, it is not difficult to use weak national currency for using local production.

Thus, fluctuation of exchange rate of Georgian Lari shall be, in the first place, purposeful, with market mechanisms, and on the other hand-it shall be implemented for avoidance of important losses. In the first place it is necessary to neutralize inflation expectations, negative expectations. Here, coordinated work of the government and national bank is necessary.

Extremely important is the influence of budgetary expenditures upon devaluation of Georgian Lari. This includes disciplined management of budgetary expenditures and their equal distribution till the end of the year, also to cut current expenditures to a maximal extent and to have basic orientation towards a real economy and creation of infrastructure in the country.

4. CONCLUSIONS AND RECOMMENDATIONS

Generally, the national currency reflects all the country's economic situation. In Georgia, since 2014 exchange rate of Georgian Lari goes down and it's no wonder. Absolutely everything affects on our national currency devaluation. As long as the economy does not improve, where will always be such a difficult situation. We consider it necessary to urgently implement economic policy adjustment by the government, not far to go the process of devaluation, Gel does not devalue more and this process does not lead to higher inflation rates. This is extremely important , because in the long period, currency devaluation causes inflation with its inner nature.

– The price decline on the world market will have a positive effect on the economy and on the trade balance of our country. It will also help the lower outflow of foreign currency from Georgia.

– We'd emphasize the Russian Ruble from external factors, as well as the Ukrainian market will start recovery. Because of entering Russia's economy in recession phase, developments in Syria, and confrontation with Turkey, may cause update the direct aggression from Russia. Therefore, suspension of the Ukrainian currency devaluation and increase the buying capacity will have distinct influence on export growth in this country from Georgia.

– Gradually, the active enforcement of the EU Association may be considered as external economic factors. Generally, the process of integration with Euro-Atlantic and ultimately , establishment of a visa-free regime. This will help to revive business environment of Georgia (especially the small and medium entrepreneurship) and increasing export capacity.

The National Bank and the Government must work synchronously. The important issues should be resolved expeditiously: The National Bank has to do the measured foreign exchange interventions, together with the tightening of monetary policy; Monetary and Fiscal policy should be in unison , in order to make successive steps by the Ministry of Finance of Georgia, as well as by the National Bank and contribute stability in the short term and avoid inflation.

– The main thing is diagnosis, to be made by the government It shall have accurate uptake of the task and in such case, decisions may be respective. Ministry of Economy, National Bank, Ministry of Finance and respective agencies shall work together to the direction guarantying irreversible process, everything shall be made to recover currency inflow, to have high economic growth, expressed in the growth of real incomes.

– Improvement, development of mechanism of export promotion shall be implemented within shortest terms.

– Activities shall be pursued at the target markets , this in the first place is monitoring of portfolio existed in direction of infrastructure and on the other hand, planning schedule projects , in order to implement additional projects , and promote the economy.

– Every hasty adopted restriction shall be cancelled.

– We shall wait to see how the budget is fulfilled and how newly formed negative factors in currency inflow are eliminated.

– Cycle of reforms shall be processed and concluded, stimulating and creating mechanisms and preconditions for attraction of long-term investments, Georgian Lari will not simply stand such incompetence.

– Changes shall be started from the Tax Code and they shall be completed with the mechanisms, which are approved in the developed countries.

– Inflation control shall be provided at the expense of economic growth, when it maintains artificial prices-deficit and price of production is not changed. Shall not an entrepreneur have motivation for working?

– Government intended stabilization of situation from the sums accepted from the monetary fund, there is logic – entering currency in cash would partially improve balance of demand –delivery at the currency markets and later would prevent or alleviate devaluation. Though, this is a single event and such process would not have been stopped. Today's problems would be shifted until full spending of borrowed or gifted money.

– It is necessary to increase income in maximal extent, which is a direct responsibility of the government, will not increase export potential of the country (how can we do it? L.Q.), but work may be provided to the mechanism of promoting exports.

– Inflation expectation may be worse than the inflation itself, because inflation expectation is excess load and pressure on Georgian Lari. In such case, not with standing the fact that if the bank client needs currency or not, he keeps purchasing it for some reason and this gives rise to the negative results.

– For the purpose of maintaining purposeful index of inflation during middle-term period, National Bank of Georgia shall activate instruments of monetary policy in 2015-2017 refinancing loans, depository certificates, operations with governmental securities, currency interventions, standing instruments, minimal reserve requirements, etc.

– Currency conduct of large trade-partner states of Georgia shall be studied and parallels shall be made in relation with Georgian Lari , of course, for pursuing correct monetary policy.

– We shall set the essential task to increase exports, we can even make use of the weakness of the National currency in some cases and replace imports with local production. Otherwise, we shall continue living in virtual reality, take new debts, etc.

– To do everything for recovering currency inflow, have high economic growth, which, of course, is expressed in growth of incomes.

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PREVENTIVE PROPERTIES VER-MOL-2

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ABSTRACT

In present article on base of camel milk, was prepared Ver-Mol-2 and study chemical compounds and different biological activity. Results showed of natural biologic active compound against diabetics mellitus as for prophylaxes and treatment diseases.

Keywords: Ver-Mol-2 natural substance isolated from camel's milk and diabetes.

ACTUALITY

One of the most pressing problems at the present time is not only the creation of drugs, but also disease prevention by creating new medical food products. In foreign studies, much attention is paid to ensure that the remedies contained in the composition of the food.

It is known that camel milk and dairy product shubat - acid fermentation is used in folk medicine, as well as in a number of clinics in Kazakhstan in the treatment of tuberculosis, chronic gastritis, colitis and other diseases by raising the body's defenses. They are also useful in diseases of the respiratory tract, blood circulation and strengthen the immune system. Despite this, the chemical composition and biological properties of Ver-Mol-2 in scientific terms is not sufficient investigate.

The aim of our research - the study of the chemical composition and the biological significance of Ver-Mol-2 created by shubat from camel milk.

We conducted the following studies:

Determined the total and free amino acid composition;;

- Set the trace element composition;

- Carbohydrate composition;

- Electrophoretic analysis determined the protein composition;

- Studied the biological activity of Ver-Mol-2.

MATERIALS AND METHODS

Experiments were carried out on isolated and freeze-dried Ver-Mol-2 based on camel's milk.

The amino acid composition was determined chromatographically using high performance liquid chromatography: Beckman System Gold, integration via IBM-28b, Column: Ultrasphere C-18. Buffer system: A water; B 50% acetonitrile in water, linear gradient B and A of from 2 to 80% within 45 min. Detector: wavelength 254 nm, the sensitivity of 0.01. The standard was a mixture of amino acids of the «Sigma» (USA) company.

Trace element composition of Ver-Mol-2 defined neutron-adsorption method at the Institute of Nuclear Physics, Academy of Sciences of Uzbekistan.

The content of total carbohydrates was determined by the phenol-sulfuric acid with the use of H₂SO₄ (Savall test), on the photo electric colorimeter (PEC) at a wavelength of 490 nm. The calibration curve is constructed with respect to glucose.

Sugars descending paper chromatography was performed in a system pyridin- butane-I-water (6: 4: 3) on the paper PN-1,13 (Germany). The developer - the acidic aniline phthalate.

Monosaccharide composition was determined by GC under the following conditions: a stainless steel column (200h0,01 mm), 5% SilicoleXE-60 on chromatone «NAW-DMCS» 0,2-0,25 mm, 200C, carrier gas - helium, the gas velocity 60 ml / min for aldononitrilles acetates by (2).

Electrophoretic analysis was carried out in 13% polyacrylamide gel in the presence of 0,1% SDS-Na (3). Analysis of the molecular weight separated protein was carried out on a Q-TOF LC-MS Agilent 6520B .

Hypoglycemic properties Ver-Mol-2 was carried out on models of alimentary and adrenaline hyperglycemia. The level of blood sugar (glucose) was measured one hour after the induction of hyperglycemia. The content of the sugar in the serum was determined by the glucose oxidase method using a set BioGlyukoFen (IBOC AS of RUz)

Alimentary hyperglycemia induced by glucose feeding rats at a dose of 9 g / kg body weight using a stomach catheter. Adrenaline hyperglycemia caused by injection of adrenaline (50 micrograms / kg / ip) one hour prior to the blood draw (7). Control group were orally administered distilled water in the volume of 1 ml.

CONCLUSION

In general, the work carried out to study the chemical composition of the Ver-Mol-2 and its biological activity reveals some new approaches in understanding the therapeutic properties of this natural raw material. The results provide a basis for Ver-Mol-2 Recommendations as a natural biologically active additives for the prevention and treatment of diabetes.

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THE ISSUES OF CULTURAL DIVERSITY IN COMMUNICATION

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ABSTRACT

The present article is related with the issues of cultural diversity in communication. The challenges of the 21st century enable the societies to interact with one another on a more frequent basis than they used to do several years ago. Evolution of the mankind, on the other hand, has enormously increased the possibilities for the various nations to mix with culturally diverse teams. However, if we take a pretty dim view of the mentioned subject, we will definitely see the sophisticated picture of the global reality with a number of complications existed.

The purpose of the paper is to study the principal obstacles caused by working or studying in different cultural environments from our own. Ultimately, the article aims to examine the pros and cons of the cultural diversity in a modern world of today, under the conditions of high and low diversity.

Key words: Cultural diversity, international relations, international communication, globalization.

Main concept of culture

Cultural diversity is considered one of the most significant issues of international communication. It occurs when societies of different cultures, pursuing the same activities of great interest. As, the fundamental principles of human relationships are based on mutual understanding and the common consent, if a group of people have different ideas and beliefs regarding the specific social values, such as the religious, language, racism, ethnicity etc. unquestionably, it will almost be impossible for them to get along. In such a case, the root of the problem is grounded in cultural diversity.

From the mentioned point of view, it is of primary importance to define the exact meaning of the word “culture”. As researched by one of the most outstanding American anthropologists Edward Hall (1976: 16-17) “Culture is man’s medium; there is not one aspect of human life that is not touched and altered by the culture. This means personality, how people express themselves, including, shows of emotion, how they move, how problems are solved, the way they think”. Since, a social system is combined of specific norms and behaviors, the culture, alternatively, associations the ways we intermingle and cooperate in a society. Consequently, culture is a combination of languages, communication, attitudes and values, accepted by a concrete characteristic identity group. Culture is something that is learned from parents, from teachers at schools, from friends. Universal unity of the norms, disciplines and rules. As highlighted by Holliday, Hyde, & Kullman (2010), “Culture is a social force which is evident where it is significant. Society is complex with characteristics which are difficult to pin down”. Culture, as a dynamic process, it is largely inclined to have a constantly changeable nature. According to Raymond Williams (1983: 89), culture “is one of the two or three most complicated words in the English language”. In support of this statement Martina and Nakayama (2010: 84), noted that culture, as a complex concept “influences communication to a site of contestation and conflict”. We frequently hear the expression: “It is hard, to understand him, he has quite a different culture”. Though, people greatly differ from one another, it should firstly be stressed that, the most significant point is found in common values and principles. Despite huge variety, people tend to have almost the same ambitions and needs, with a common desire: to realize themselves as individuals in a competitive world of today. Germans, French, Americans or Chinese, without doubt, have their own identity, language, history, but they all have the same feeling of happiness, sadness, satisfaction etc. The significant distinction among the cultures is that different cultures have different habits of achieving their goals and objectives (Martin and Nakayama: 2010).

As noted above, culture greatly involves teaching and learning process, alternatively stated, the process of socialization, in a broader sense. Material culture is a unity of physical objects that express cultural knowledge such as: books, mobile phones, CD.s, cars etc. while non-material culture is set of knowledge and beliefs that effect on people’s behavior (Woodward, 2007; Everett: 2012).

Additionally, Religious beliefs, as well as scientific beliefs make a profound impact on culture. The biggest religious of the world, Christianity, Islam and Buddhism make a significant influence on the people’s behavior, while scientific beliefs, on the other hand, represent specific nature of human evaluation, for instance, Darwin’s theory (1859).

Material culture has a deep meaning within it. For instance, the house, that somebody owns, is not only a building of material importance, an architectural construction made to live in, furthermore, it symbolizes much more than that, obviously. The type of a house indicates culture itself, the structure, construction, furniture inside the house tell us a lot, which, undoubtedly, makes a connecting chain to the specific culture of concrete ethnical groups. We cannot compare what would be a cultural norm of a person’s house in Morocco to that of one in Germany. Since, the cultural differences between the two countries are enormously huge, their belongings will definitely make a clear demonstration of their cultures.

Non-material cultural principles, which are associated with the abstract ideas, ethics and beliefs, are getting even deeper and more profound form of cultural behavior (Everett: 2012). We can easily differentiate the people of totally diverse social identities. For instance, people from the Christian and Muslim world, distinctly differ from one another that

becomes absolutely visible even at first sight, reflected in their way of dressing, behaving, the norms of ethic etc. Apparently, it is a clear example of what we call cultural diversity.

As it is plainly evident, culture represents a mixture of different kinds of aspects of civilization. Culture can be found everywhere, in the street, at the University, at the workplace, as individuals are simply illustrating their own culture everywhere. From this perspective, intercultural relations are becoming progressively valuable in a contemporary world of the 21st century and the role of it largely increases, lately.

Cultural diversity in different environments

The globalization makes the societies to open to new businesses, challenges and opportunities. Cultural diversity is a complex subject which can either be productive or unproductive for the organization. Most of the companies deeply believe that, in order to create competitive and creative working environment, the atmosphere should definitely be flexible and comfortable. Different cultures have different ways of expressing feelings, different ways of understanding or delivering the information. For instance, people from Asia are immediate to give bad news to their boss or colleague unlike Europeans that, on the contrary, tend to behave in a totally opposite way. Team-building might also become a problematic subject in business, particularly, when it comes to working with culturally diverse groups of people. Some cultures prefer to show more individualism rather than dependence on someone else while doing a particular task, whereas, the others have a strong preference for a group work, as they find it extremely helpful in many ways.

Allen (1995: 145), on the other hand, highly focused on studying the impacts of racial and ethnic differences at the workplace and stated that “organizational members’ experiences, attitudes and behaviors in the workplace are often influenced by race-ethnicity”. Asante and Davis (1989), hugely influenced by Kochman’s theoretical research, come to a conclusion that different intercultural outlook often lead to the blacks and whites to a certain point of miscommunication, which is definitely grounded in the distinction of their beliefs and general assumptions. From this standpoint, racial differences might also become an issue in culturally diverse environment which is absolutely unacceptable, especially, in the epoch of the 21st century. According to Greenberg, “diversity not only involves how people perceive themselves, but how they perceive others”.¹

Hall’s monochronic and polychronic cultures represent a clear illustration of the above noted subject. (Hall, 1976). Since, understanding the time, differs from culture to culture Managers, and staff members belong to monochronic societies are extremely careful and task-oriented doing one thing at a time while polychronic societies like Italy and Brazil, are inclined to do many things simultaneously. A related point to consider is the calendar the company uses that hugely depends on the religious. For instance, Eastern Orthodox Christians celebrate the greatest holiday of Christians “Easter” on a different day of the year than the Christians from the Western part of the world. For Muslims, Friday is a “day of prayer while Jews people are ranging the holidays from Rosh Hashanah to Yom Kippur”.²

The significance of the term “friendship” might be considered a different phenomenon with a changeable nature from culture to culture. For some cultures, the understanding of friendship is quite a limited concept and encircles the family members only, while for the others, even acquaintances might be considered friends. As highlighted by Antonio (1999: 6-7) “Interracial friendships and general interracial interaction tend to go together”. When it comes to intercultural friendship, certain norms should be taken into consideration, since without respect one’s identity, origins and life principles, the friendship is becoming indubitably worthless.

“The reason, why friendships may begin is similarity, Osbeck and Moghaddam (1997) found out that people tend to be attracted to others that are similar to themselves. For instance, similarities in beliefs or values, such as a belief in God or a certain political stance, may help begin a friendship. According to Dodd (1991), those similarities can be variables such as appearance, age, gender, race, marital status, education, residence, social class, economic situation, social status, personally traits, opinions, attitudes, interests, intelligence and values”. (Li, 2010: 10).

According to Fine (1996), first and utmost, intercultural communication is based on communication between individuals, which identifies culture as a main mechanism of communication. In intercultural terms, the main issues, caused by intercultural diversity are clearly found in individuals as well. In support to Brislin (1989) and Storti (1990), Fine highlights the following: “Intercultural perspective assumes that there is a host country to which visitors from other countries adapt. The central assumption of intercultural preparation for business people is “when in Rome, do as the Romans do”.

As researched by Holliday, Hyde and Kullman (2010), Stereotypes play a key role in intercultural communication. “To communicate with someone from another culture we must first understand the details or stereotype of their culture” (Holliday, Hyde, & Kullman, 2010: Introduction). Stereotypes come naturally as a part of our everyday lives. It is obvious that stereotypes are characterized by having a significant impact on the social life of the people, which creates a direct connecting link with our feelings, emotions, lifestyle etc. “The problem with stereotypes is not their existence, but the way how they are used” (Schneider & Barsoux, 2003: 13). Stereotypes can be positive and negative at the same time depending on specific circumstances. Some stereotypes even deteriorate a person’s ability to succeed in achieving their

¹ Available at: <http://www.multiculturaladvantage.com/recruit/diversity/diversity-in-the-workplace-benefits-challenges-solutions.asp>

² Available at: <http://www.diversityresources.com/cultural-diversity-workplace/>

goals, make people become depressive as they are criticized excessively. For instance, we see Americans, and say “All the Americans are the same” stick a certain prejudice to a person, that in reality might not exist in their nature at all. Stereotypes “All Asians like to eat rice”, “All white Americans are lazy” “All Arabs are terrorists”, “Italian and French people are the best lovers” etc. are beyond doubt, false and unfair judgments towards the concrete cultural or ethnical groups without actually knowing the fact. After Merlin Monroe’s excellent performance in a movie “some like it hot”, blond women have become the stereotype of the “Dumb blond”. Obviously, we might get to know several people of the same culture having an absolutely similar characteristic features, therefore, the mentioned does not necessarily imply all the people of that culture are equally the same without any exception. From this viewpoint, stereotypes make and absolutely negative effect on relationships. We need to overcome stereotypes and see individuality in each person.

The issues of Cultural diversity in communication

The concept of the word diversity defines “a wide range of interests, backgrounds, experiences. Differences among groups of people and individuals based on ethnicity, race, socioeconomic status, gender, exceptionalities, language, religion, sexual orientation and geographical area”.³ Understanding the uniqueness of an individual in a society. Cultural diversity, as a global phenomenon, has an important effect on every sector of a social life. Since the process of globalization has increased greatly recently, the interaction between the cultures is getting highly appreciated today. “There exists a wide range of distinct cultures, which can be readily distinguished on the basis of ethnographic observation, even if the contours delimiting a particular culture prove more difficult to establish than might first sight appear” (UNESCO, 2007: 3).

Most people in our time have wide intercultural relationships. People show a great willingness to intermingle with culturally diverse societies. The keen interest of a new nation, culture, ethnic, religious group, language etc. reaches a peak of interest. As stated by Holliday, Hyde and Kullman (2010: 55) “It appears increasingly likely that many people have biographies entailing various cross-cutting allegiances-they share different parts of their personal cultural repertoires with different collections of people”. How successfully might the relationships among the culturally diverse people be developed? Including age, social class, origins, ethnicity, religious etc. From this angle, the main aspect in relationships is maintaining a balance between differences and similarities.

“One example is the relationship between Judith and a Chicana colleague. When they first met, they thought they had little in common, coming as they did from very different ethnic and cultural backgrounds. But once they found commonality in their academic work, they discovered that they actually had a great deal in common. For instance, both come from large religious families, both have parents who contributed a great deal to their communities, and both are case to their older sisters and their nieces. Through the relationship they have also learnt a lot about each other’s different words” (Martin & Nakayama, 2010: 383).

Taking the above mentioned example, it is clearly visible that, relationships like this, have certain benefits internationally. They basically enlarge a person’s general understanding of a particular culture, which also promotes acquiring new skills and experiences, however, the most importantly, it breaks stereotypes.

Interacting with culturally diverse people increase, what anthropologists call “relational learning”, we can take various examples of many of the cases when intercultural students at the university or intercultural colleagues at the workplace learn much from one another, sometimes even without them realizing it. It is one of the greatest advantages indeed, as enhancing our areal of knowledge is, without doubt, one of the most valuable things a human being can achieve.

Cultural diversity becomes a big issue in communication when certain groups of people, belong to one specific culture start conflict with another culturally diverse group of people. History gives us numerous examples of cultural conflicts. Take an example of Georgia.

During the centuries many nationalities, more concretely, Armenians, Russians, Greeks, Chechens lived in the territory of Georgia in a peaceful and friendly way. Georgians, as a nation, have always tried to show respect to all cultures. Although, Georgia belongs to one of the oldest Christian counties, one can find mosque and synagogue beside the Georgian Orthodox Churches. 1989-1992 years have been the hardest period in the history of Georgia. The country undertook two civil wars which had totally destroyed its economic and cultural development. The conflicts has been caused by the hegemonic policy of the Russian Federation. The Official Russia tried to occupy internationally recognized Georgian territories and gradually seize control on the weakened country for the benefit of its strategic plans in the Caucasus region. The official Kremlin created well-organized conflicts in two of the universally recognized parts of Georgia, Abkhazia and so-called South Ossetia. It should definitely be added that although Abkhazia and South Ossetia regions have their own cultural features including language, traditions, ethnicity etc. from the geographical orientation the mentioned territories are the integral parts of Georgia. The political tension reached the escalation in 1989-1992. “Ethnical conflict”, as the historians call it, developed into the civil war, in which the people of many of the cultures and origins (including the neighboring regions of Georgia) have all been involved in. Abkhazia and South Ossetia required independence from Georgia with a pretension of declaring their provincial languages the national languages of the regions, totally separated from Georgia (Jojua: 2010; Kalichava: 2016).

³ Available at: https://sph.unc.edu/files/2013/07/define_diversity.pdf

As has been pointed out, “cultural conflicts” are one of the most serious issues in international relations. According to Andrea Williams, cultural conflict should be resolved by probing for the cultural dimension, learning about other cultures, and altering organizational practices and procedures (Williams, 1994: 2-6).

CONCLUSION

As demonstrated, cultural diversity is one of the most challenging parts of our time. In order to lead an effective communication with people belong to different cultural societies, certain norms should certainly be taken into account. For instance: It is of primary importance to be aware of which culture they are coming from, how they communicate, what they consider racist, homophobic, sexist etc. Additionally, communication among culturally diverse groups of people should definitely be based on mutual understanding. Basic knowledge of the general background of the target culture might also be a great help in a broader sense.

The author supported her conclusion by taking an example, based on a real fact. She has participated in “Erasmus Mundus” program in Porto, Portugal. “Erasmus Mundus” is one of the most inspiring programs among the many others in an educational field. The project gives a wonderful opportunity to international students to pursue their research studies abroad as well as realize themselves as independent individuals in a foreign country, among the hundreds of students from different nations of the world. Cultural diversity is the biggest challenge for the students. Concisely, the author tried to convey the main idea by concluding the following: regardless cultural differences students interact with one another easily and most importantly, find much in common, as they have common outlook and attitude towards life in general.

To sum up, we all represent a small world in a big universe. Since we are all equal, totally irreplaceable creatures, intercultural communication obviously increases our individual perfection as long as we respect the origins of one another.

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MICROBIAL ETIOLOGICAL AGENTS OF ANORECTAL ABSCESSSES

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ABSTRACT

An anorectal abscess originates from an infection arising in the cryptoglandular epithelium lining the anal canal. The internal anal sphincter is believed to serve normally as a barrier to infection passing from the gut lumen to the deep perirectal tissues. This barrier can be breached through the crypts of Morgagni, which can penetrate through the internal sphincter into the intersphincteric space. Both aerobic and anaerobic bacteria have been found to be responsible for abscess formation. The anaerobes most commonly implicated are *Bacteroides fragilis*, *Peptostreptococcus*, *Prevotella*, *Fusobacterium*, *Porphyromonas*, and *Clostridium*. The aerobes most commonly implicated are *Staphylococcus aureus*, *Streptococcus*, and *Escherichia coli*. More recent studies have noted community-acquired methicillin-resistant *S aureus* (MRSA) as a pathogen leading to abscess formation. Typically, the abscess forms initially in the intersphincteric space and then spreads along adjacent potential spaces.

The material reviewed by us does not enable us to make a final confirmed conclusion due to the lack of cases. Therefore, proceeding from cases studied we can make conclusion on microbial spectrum causing anorectal abscesses and determine local sensitivity on antibiotics, which will make the treatment of anorectal abscesses more effective.

Keywords: Anorectal abscesses, treatment, resistance.

INTRODUCTION

An anorectal abscess originates from an infection arising in the cryptoglandular epithelium lining the anal canal. The internal anal sphincter is believed to serve normally as a barrier to infection passing from the gut lumen to the deep perirectal tissues. This barrier can be breached through the crypts of Morgagni, which can penetrate through the internal sphincter into the intersphincteric space(1,2).

Once infection gains access to the intersphincteric space, it has easy access to the adjacent perirectal spaces. Extension of the infection can involve the intersphincteric space, ischiorectal space, or even the supralelevator space. In some instances, the abscess remains contained within the intersphincteric space. The severity and depth of the abscess are quite variable, and the abscess cavity is often associated with formation of a fistulous tract. For that reason, fistulas are also discussed in this article where relevant(3). Approximately 10% of anorectal abscesses may be caused by reasons other than anal gland infection, including Crohn disease, trauma, immunodeficiency resulting from HIV infection or malignancy (both hematologic and anorectal cancer), tuberculosis, hidradenitis suppurativa, sexually transmitted diseases, radiation therapy, foreign bodies, perforated diverticular disease, inflammatory bowel disease, or appendicitis (a rare cause of supralelevator abscesses). Both aerobic and anaerobic bacteria have been found to be responsible for abscess formation. The anaerobes most commonly implicated are *Bacteroides fragilis*, *Peptostreptococcus*, *Prevotella*, *Fusobacterium*, *Porphyromonas*, and *Clostridium*. The aerobes most commonly implicated are *Staphylococcus aureus*, *Streptococcus*, and *Escherichia coli*. More recent studies have noted community-acquired methicillin-resistant *S aureus* (MRSA) as a pathogen leading to abscess formation. Typically, the abscess forms initially in the intersphincteric space and then spreads along adjacent potential spaces(4,5).

AIM OF THE RESEARCH

The aim of the study was a bacteriological examination of pus taken during surgery under compliance with the appropriate protocol and sent for culture and sensitivity test.

Material and Methods:

Bacteriological research covered: isolation of poor culture, identifying microbes with rapid identification system (API20E, API Staph, API Strep, API Ana, production company bioMerieux). Also rapid tests defining oxidase and catalase were also used.

Sensitivity of microorganisms on antibiotics was defined with Kirby-Bauer disc-diffusion method using standard discs (EUCAST guidelines 2015) and with standard of Clinical Laboratory Standard Institute (CLSI) (ATB strips: ATB G, ATB Staph, ATBANA, ATBPse, ATBStrep. bioMerieux)

Research was carried out in 49 patients having anorectal abscesses. Women-7, men-42. Age varied between 20 and 70. Among researched in 39 patients was monomicrobial growth by bacteriological research :*Escherichia coli* – 17 cases,*Enterobacter cloacae* -10, *Staphylococcus aureus* was isolated in 7 cases, *Enterococcus faecalis* -4. Polymicrobial

growth was in 10 patients with following bacterial associations: Escherichia coli and Enterobacter cloacae -5 cases, Enterobacter cloacae and Enterococcus faecalis-3, Escherichia coli and Klebsiella pneumoniae-1, Staphylococcus aureus and Enterococcus faecalis -1. Negative culture was not reported.

Among 39 patients who showed presence of monomicrobial growth by bacteriological research, gram-negative bacteria prevailed.

RESULTS

Despite the fact, that the material reviewed by us does not enable us to make a final confirmed conclusion due to the lack of cases, it is important, that by defining sensitivity on local antibiotics on strains isolated by us only 12% of gram-negative bacteria was resistant on quinolones, 19% to the third generation of cephalosporins, and among gram-positive bacteria methicillin-resistant Staphylococcus aureus and vancomycin-resistant Enterococcus faecalis was not found.

CONCLUSION

Therefore, proceeding from cases studied by us we can make conclusion on microbial spectrum causing anorectal abscesses and determine local sensitivity on antibiotics, which will make the treatment of anorectal abscesses more effective.

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SUBURBAN AREA OF KYIV AND ITS TERRITORIAL AND RECREATIONAL STRUCTURE

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OBJECTIVE: Analyze the territorial structure of suburban area of Kiev city and review the current status and development trends of the recreational areas of Kiev suburban area.

METHODS: Typical methods were used for constructive-geographical research.

RESULTS: Cities suburbs serve for the rest of the townspeople and are the objects of studying. In its borders they must ensure the unity of recreational and environmental functions, which leads to consideration of environmental, recreational, historical, cultural, aesthetic, scientific, educational and other values of natural systems and facilities located thereon. Starting with the study was to determine the concept of Kyiv suburban zone. It was based on a definition that was given in General Plan materials of Kyiv city. Suburban area of Kiev - a territory within which developed and developing active systemic connections that form and cover all activities related to the joint use of land, water and recreation and other resources. In the suburbs of Kiev, according to the Master Plan, geographically consists of six cities of regional importance and 9 administrative districts. Kyiv Suburban area relates mainly to the short rest - and a neighbor of public entertainment in the last days of the week and during holidays. In the suburbs of Kyiv, is used as the foundation resort complex of medical facilities, recreational or sporting nature, depending on the number of beds. These systems work throughout the year and are not only used by residents of Kyiv, but also from other regions of Ukraine and abroad. Development of landscape and recreational areas helps by the presence of cultural heritage on them. For now Kyiv region has about 6,000 such cultural monuments, such as 1194 monuments of ancient villages different epochs, settlements, cemeteries, burial mounds, places of battles and historical events that are significant layers of history that created the foundation for thousands of years modern civilization in the region. In 2010, the field of archaeological sites listed in the Register of Monuments, eight cities in the region referred to the Ukrainian cities of historical importance. Separately, in the list of monuments of Kyiv suburbs inscribed 24 monuments of national importance, including a significant number of religious buildings XVI-XIX., palaces, architecture, parks, including park "Alexandria" in Bila Tserkva and many others. In the plans proposed to create a 12 recreational areas in the territory of suburbs around the Kyiv city.

Keywords: suburban area, territorial recreational system, recreational landscapes, recreational areas, landscape and recreational areas

INTRODUCTION

With the growing urbanization of human environment particular relevance directed at the issues of quality of the environment. One of the basic characteristics of quality urban environment is the presence in its planning structure landscapes that provide recreational needs of the population. At the same time, the growth and diversification of recreational needs of the population accompanied by increased anthropogenic impact on recreational landscapes of capital city, because of their functions.

The priority of recreational value of suburbs of Kyiv is undisputed in development strategy. The dominant factors of territorial planning in terms of recreational activities are the elements of geographical and socio-cultural direction.

Cities suburbs serve for the rest of the townspeople and are the objects of studying. In its borders they must ensure the unity of recreational and environmental functions, which leads to consideration of environmental, recreational, historical, cultural, aesthetic, scientific, educational and other values of natural systems and facilities located thereon [4, 6].

Kyiv region is very promising for the development of recreational facilities, such as the availability of favorable climate, numerous water resources, historic sites, scenic landscapes, clean air, attractive tourist routes preserved national traditions folklore and architectural monuments. There function sanatoriums, recreation camps for children. Many settlements of the Kyiv region have a long history, rich with events. But there are some problems that require radical solutions. Therefore, a study of the current state and prospects of development of Kyiv region is very relevant issue.

Kiev region has all necessary resources for the development of recreational activities, because of its geographical position and peculiarities of historical development. Promising development of recreational Kyiv region is due, above all, the growing demand for recreational services, interest in the history of Kyiv region not only the citizens of Ukraine and foreigners for the most part. In the observed adverse environmental conditions, which manifests itself in air, water basin and soil pollution. Not enough natural areas that are suitable for recreation. Therefore, the problem of recreation on the territory of Kyiv region has social character. To solve it, that requires a comprehensive assessment of these areas.

The main provisions of research the natural properties of recreational landscapes are reflected in the writings of G.I. Denysyk, O.U. Dmitruk, K.Y. Kilinskoi, F.D. Mil'kov A. Rihling, O.O. Sivak, Y.G. Tyutyunnyk, P.G. Shyschenko and

other physical geographers and scientific works in the recreational nature that disclosed in the works of A.A. Beydyk, M.P. Krachylo, O.O. Lyubitseva, P.O. Maslyak, M.S. Mironenko, I.T. Tvyerdohlyebov, Y.B. Oleinik, A.V. Stepanenko, V.S. Preobrazhenskiy and others [1, 5, 8, 9, 10, 12, 13].

The recreation of Kyiv region has a long history, but aspects of recreational use of its landscapes insufficiently studied. Topical issue of scientific evidence, comprehensive and rational use, restoration and preservation of suburban territorial recreation systems, and the study of the territorial structure of Kyiv suburbs.

The research is aimed at studying of the territorial structure of the recreational sphere of Kyiv suburbs and studying issues related to the current state and prospects of the landscape and recreational areas of Kyiv suburbs of natural and cultural significance.

Starting with the study was to determine the concept of Kyiv suburban zone. It was based on a definition that was given in General Plan materials of Kyiv city, as enshrined in the legal field and that reflects the actual situation at present.

Suburban area of Kiev - a territory within which developed and developing active systemic connections that form and cover all activities related to the joint use of land, water and recreation and other resources [2, 3, 14].

Accordingly to this, the limits of Kyiv suburbs were adopted, as enshrined in the material General Plan of Kyiv and identified based on the of effective intensity level communications that focus to a greater extent in the one hour zone transport accessibility to Kyiv. This distance is defined as 60-80 km from Kyiv [2, 3].

In the suburbs of Kiev, according to the Master Plan, geographically consists of six cities of regional importance – Borispol (city council), Brovary, Vasylkiv, Irpin (city council), Fastiv - and 9 administrative districts: Boryspilsky, Borodyansky, Brovarsky, Vasilkovsky, Vyshgorodsky, Kiev-Svyatoshinsky, Makarivsky, Obukhovsky, Fastovsky [2, 3].

In the northern suburbs is Vyshgorodsky district - one of the largest in area. North-eastern part of the district bordering with the Chernihiv region, northwest of Ivankovsky, south-east - with Brovarsky, south-west - with the Borodyansky district's. In the south, boundary of the area is the border with Kyiv (Desnyanskiy and Obolonskiy areas) and a small part of Kiev-Svyatoshynsky area. The Dnieper River crossing region from north to south. The district is located middle and lower areas of the Kiev reservoir, which area occupy about a quarter of the region area.

Eastern suburbs of Kyiv represent two areas: Brovarsky and Boryspilsky. Brovarsky district in the northern and eastern borders with Chernihiv region, in the west - Vyshgorod district and Desnyanskiy, Dniprovsky and Darnytskyi district of Kyiv. At the southern limit runs from Boryspilsky and Baryshevsky districts. Boryspilsky district also refers to one of the largest in the region. In northern his boundary borders with Brovarsky district and Darnytskyi and partly Holosiivskyi district of Kyiv, in the east - Baryshevsky and Pereyaslav-Khmelnitsky region, in the eastern region bordering on the Obukhovskiy, on the south - Kagarlyksky areas. The border of area along the western and southern parts held by the waters of the Kanev reservoir.

The southern suburbs of Kyiv up compactly located three regions: Obukhovsky, Vasilkovsky and Fastovsky. Obukhovsky on the north borders with Kiev-Svyatoshinsky area and the Goloseyevsky area of Kyiv, in the east - from Boryspilsky, in the west - with Vasilkovsky and south - with Kagarlyksky and Belotserkovski areas. Vasilkovsky district, the largest in the group, in the northern part has a border with Kiev-Svyatoshinsky district, from east and west, respectively, limit runs from the Obukhovsky and Fastovsky region, and in the south - Belotserkovski. Fastovsky area farthest from the capital, among all regions of suburbs. In the north it is bordered by Makarov district, in the south - with Skvyrskyi and Belotserkovsky, on the eastern part it border with Vasilkovsky area, and on the west - with Zhytomyr region.

The west, suburban zone consists of three areas: Kyiv-Svyatoshinskiy, Borodyansky and Makarivsky. Kiev-Svyatoshinsky area has the greatest length of the border with the Kyiv city, which runs from east to south-east area and borders with part of Obolonsky, Svyatoshynsky, Solomenskiy, Goloseyevsky area of the capital. The western part of the district bordering with Makarivsky, south - with Vasilkovsky and partly with Obukhovsky district. In the north boundary of the area is mainly border with a small part of Borodyansky and Vyshgorodsky districts. The area has a C-shaped form and almost "wraps" Kyiv from the west. Makarovsky district on the north and south boundaries with, Borodyansky and Fastovsky region, on the east located Kiev-Svyatoshinsky area, from the west - Zhytomyr region. Borodyansky district borders the northern part with Ivankovsky district, north-east - with Vishgorodsky, south-east - with the Kiev-Svyatoshinskiy, south and south-west - with Makarovsky district and the West - with Zhytomyr region.

Total consisting of suburbs are 12 cities, 24 townships and 575 villages [2, 3].

Total area of suburbs is 1175.74 hectares and is about 48% of the Kiev region, of these the agricultural land accounts for 40,68%, forests – 26,3%, land under residential and public buildings – 10,14%, garden-plots territory – 0,69%, the production area – 1,15%, water - 6,94%, grasslands – 11,94%, communal area – 0,62%, recreational area – 0,36%, special area – 1,13%.

In the suburban area of Kyiv influence, in a radius of 60 km is home to around 500 thousand people. The zone of influence of local centers of settlement consists of a set of local centers which are small cities and towns with a population from 3 to 20 thousand people. Also in this area are cities with bigger population: Brovary - 60 thousand people, Borispol - 50 thousand, Vasil'kov - 40 thousand which make up the so-called near zone of Kyiv agglomeration [2, 3].

Kyiv and its suburban zone in the system of economic activities are considered as a single territorial socio-economic complex, which development is based on the principles of consistency of individual functional and territorial components and complementarity [2, 3, 14].

As socio-economic complex, Kyiv suburban area belongs to the zone of most active changes related to many influence factors [4, 7].



Figure 1: Zoning and location of districts of Kyiv suburban zone

On the territory of the territorial-economic complex in planning organization of the territory envisaged changes in the economic sector, social sphere, engineering and transport infrastructure, and the expansion and deepening capital functions of Kyiv agglomeration, that causing appropriate transformation of the territory planning of Kyiv suburbs. These changes provide appropriate impact on the recreational area of the region and promote its development in some parts of the complex and the extinction of others, like those that lose their relevance and appeal, due to the deteriorating environmental component - cutting down forests, pollution of air, water and soil. Some territory lost in connection with residential and industrial construction, laying a new infrastructure etc.

According to architectural and planning project solutions of Kiev General plan in 2025 further provides for the development of the city to form the residential, industrial, landscape and recreation areas and include in the project of the city areas covering about 60 thousand hectares: in Vyshgorodskiy area - 16.2; Kiev-Svyatoshinsky - 13.5; Obukhovskiy - 13.4; Boryspilskiy 12.9; Brovarskiy - 3.8. With that stated, that these decisions will carry a compact nature [2, 3].

Kyiv Suburban area relates mainly to the short rest - and a neighbor of public entertainment in the last days of the week and during holidays. This is most pronounced in the next to the city forest areas, areas near ponds and other areas, both ordered and disordered places of recreation. The biggest load exposed areas next to the city and next to transport

infrastructure. Power load on these areas depends on the weather and leisure guests. Due to the large number of visitors is consistently high load [11].

In the suburbs of Kyiv, is used as the foundation resort complex of medical facilities, recreational or sporting nature, depending on the number of beds. These systems work throughout the year and are not only used by residents of Kyiv, but also from other regions of Ukraine and abroad. They are organized and don't have such massive as the previous ones.

Green Zone - forests suburbs - occupy a total area of 282597.6 hectares, of which 50% - are forests of recreational and health purposes [2, 3].

The natural and recreational potential of the suburbs of Kyiv region include climatic resorts such as Boyarka, Vorzel, Irpen, Concha Zaspas, Pusha Voditsa Svyatoshyn and that is 100%, from such facilities throughout the region. As the number of sites zone near the city of Kyiv is 75% natural and recreational potential of the area.

Large tracts of coniferous forests, mixed forests, lakes and spacious meadows Dnipro have all the opportunities for effective recovery. Pearl of Kyiv region - the famous arboretum "Alexandria" (v. Bila Tserkva), who turned 200 years old.

In the plans proposed to create a 12 recreational areas in the territory of suburbs around the Kyiv city. These are the zones as Boyarska, Obukhivska, Rzhyschivska, Dniprovska, Plesetska, Klavdievo-Tarasivska, Borodyanska, Lyutyzhska, Katyuzhanska, Zalisska, Dubechanska and historical and cultural tourist complex "Park Kievan Rus" in the area of Kopachivskoyi village council. These areas are characterized by the presence of forest and water resources, the vast majority of which help to create seating areas. It is proposed to create a zone of active and passive recreation in all areas. These territories mainly be used as a recreation area, designed for residents of the capital and suburbs [2, 3].

This is facilitated by the presence in these areas of land recreational purpose, which according to the Land Code includes lands used for public recreation, tourism and sporting events. Natural Areas suburbs of Kyiv has 75 facilities with a total area of 1723.89 hectares (1.5% territory) and is an important part of environmental protection and shaping the future of the regional recreational network. Most of the territory covered by reserves (44 objects) and natural monuments (25 objects), 12 of which are national importance [2, 3].

Development of landscape and recreational areas helps by the presence of cultural heritage on them. For now Kyiv region has about 6,000 such cultural monuments, such as 1194 monuments of ancient villages different epochs, settlements, cemeteries, burial mounds, places of battles and historical events that are significant layers of history that created the foundation for thousands of years modern civilization in the region. In 2010, the field of archaeological sites listed in the Register of Monuments, eight cities in the region referred to the Ukrainian cities of historical importance. Separately, in the list of monuments of Kyiv suburbs inscribed 24 monuments of national importance, including a significant number of religious buildings XVI-XIX., palaces, architecture, parks, including park "Alexandria" in Bila Tserkva and many others [1, 2, 3, 6].

For many decades in modern suburban Kyiv area formed the system of museums, which now has 2 State Museum ("Battle for Kyiv in 1943" and Vyshgorodskiy historical and cultural museum), 15 state museums with 17 branches and 241 museums of local and subordination meaning [2, 3, 6]. To the best regional museums including: The Regional Archaeological Museum (Tripoli - Tripoli culture) Yagotynsky Historical Museum, including museum-estate folk artist K.Bilokur, archaeological museum "Dobranichivska stoyanka" Bilotserkivskiy Museum and a number of museums-mansions of prominent personalities such as I.Kozlovskoho, M.Ostrovsky, K.Stetsenko, I.V. Zadorozhnogo, T. Shevchenko K. Paustovskoho, M.Vovchka, O.Korniychuka, A.Malyshka and others. A special place among all these institutions takes National Historical and Ethnographic Reserve "Pereyaslav", which has a membership of 23 museums [2, 3]. In the future museum aims at points of public figures, as Yaroslav the Wise, Ivan Mazepa, Feofan Prokopovich, Sholom Aleichem, I.M.Soshenko, P.P. Chubinskogo, H.M.Kosynka, I.S.Kozlovskyy, A.S..Malyshko, K.V.Bilokur, O.K.Dyptan, A.M.Lyulka, P.R.Popovych, Ivan Drach, Lina Kostenko, and other prominent personalities.

Suburban area will actively develop in different directions, including towards the tourism sector and the preservation of a unified system landscape and recreational green spaces and objects of cultural heritage. These principles are enshrined in the National Strategy of Regional Development of Kyiv region.

CONCLUSION

Suburban area of Kyiv is formed in a radius of 60 km and geographically covers 9 administrative districts and 6 cities of regional significance. Total consisting suburbs are 12 cities, 24 townships and 575 villages. Total area suburbs of 1175.74 hectares and is about 48% of the Kiev region.

In the recreational area of Kyiv suburbs gradually formed a territorial resort and tourist complexes etc.

The area of suburbs is actively developing. The current state and prospects of landscape and recreational areas Kyiv suburbs natural and cultural values are considered. They clearly require further studies of development and prospects for the future.

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COGNITION OF THE PSYCHE IN ITS CONSCIOUS AND UNCONSCIOUS INTERRELATIONS

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ABSTRACT. The article is devoted to the investigation of the problem of cognition integrity of the psyche in its conscious and unconscious interrelations. There has been substantiated the necessity of forming methodological foundations of psychological cognition in the unity of conscious and unconscious.

KEYWORDS: conscious, unconscious, interrelations, methodology.

OBJECT: the psyche in its conscious and unconscious interrelations.

OBJECTIVE: To substantiated the necessity of forming methodological foundations of psychological cognition in the unity of conscious and unconscious.

METHODS: psychodynamic approach to deep psychological correction by T. S. Yatsenko

MAIN MATERIAL OF THE RESEARCH

The specificity of mental reality is the integrity of the conscious and unconscious spheres, despite their autonomy and contradictory unity. The problem of mental deep-laid cognition provides a disclosure as functional features of the unconscious as instrumental aspects of objectifying relationships between two abovementioned spheres. Solving the alleged problem requires the formation of methodological principles of deep cognition of the psyche.

Psychocorrection is a branch of practical psychology. It is focused on a holistic and systematic cognition of the entire psyche in order to harmonize it. Deep correction is considered as a group form of active social-psychological cognition method (ASPC), which is based on psychodynamic theory. It assimilates psychoanalytic achievements (Z. Freud, C. Jung and etc.).

Methodology has been made the way from representation practical forms of the work to rational knowledge and focus on socially oriented system of rules, standards of knowledge, that are correlated with the properties and laws of the reality. The abovementioned is acquired the specificity role of the deep cognition. It deals with the subjective reality, which has its origins in the unconscious sphere. It is important to us that in this context the methodology is a subject of the specific needs of reflection and philosophical understanding. It requires the organization principles of cognitive activities in a holistic knowledge of the mental structure. Declared way of the deep cognition requires an attention to the role of language as a means of dialogic interaction with the respondent. It “gives life” to materialize ways of cognizing the mental activity.

Particular importance was attached to the problem of choosing the most appropriate methods which were investigated and converted facilities. Philosophical understanding of the methodology involves bias views on it as a strict and unambiguous system of norms, “recipes” and formal methods as a general knowledge of regulators. It corresponds to the principles of psychodynamic theory, which is working out by academician of National Academy of Pedagogical Sciences of Ukraine, by T. S. Yatsenko. The methodology provides an integrative perspective to combine the efforts of specialists in various fields, which turns on the mental activity to a “complex object of cognition”. Thus, there is combined in the research modern views on chemistry, quantum physics, cybernetics, systems approach and the theory of the unconscious, in particular psychoanalytic approach.

The methodology is differ from the theory of cognition by its semantically foreshortening. It makes an emphasis on the methods and ways to achieve true knowledge in the unity of its practical effectiveness (feasibility) that meets the objectives of the deep psychocorrection due to ASPC method. Methodological knowledge is distinguished by its formal and meaningful indicators. This research is performed in the light of meaningful and methodological parameters. Targeting methodology of the deep mental cognition prevents the development of undue tendencies of psychology to universalize its basic position. It would raise the cognition of the psyche in its integrity (conscious and unconscious).

The current methodology of science indicates the limitations of natural-scientific approach, which is based on the idea of the physical world as mechanistic deterministic system. It allows to separate the integrity of the psyche on individual interconnected components, which have an artificial mathematization language of psychology. It only separates the methodology from solving real practical problems. Humanistic paradigm overcomes the limitations of this approach due to the person perception as such, that has a tendency to internal development.

The dominant problem in modern approach is the idea of the conscious as a subject study of psychology. It is under observation and quantitative analysis. There is no other different progressive approach in which the unconscious is investigated like conscious, without analyzing interrelations between these two areas. We are solidary with psychologists from the International Congress in Tbilisi (1978). Their works clearly show that neither general theory of the conscious no general theory of the unconscious cannot be complete if their research does not consider the system of relations with each other. Collected work in IV volumes, which reflects the results of the congress, shows a huge influence of the psychoanalytic paradigm of Z. Freud. Z. Freud made an invaluable contribution in the context of the set problems of

identifying the interrelations of conscious and unconscious. It takes criticism in his address, including observations on the dominant priority of the unconscious over conscious. His practice, as the methodology, shows no less “scientific respect” to the conscious. Z. Freud lined up his own theory not only in dreams, slips and jokes, but in free association, which are represented by the person consciously. Moreover, this method is a “visiting card” of the orthodox psychoanalysis.

Processing of free association in their order system (associative interrelations) is oriented on their conscious understanding and acceptance, in terms of common research (with the client) the prime causes of neurosis. That is psychodynamic paradigm actually the first can be attributed to integrative theories, which is aimed at harmonizing the conscious and unconscious spheres, as well as those theories that their content (and practice) argue that psychological disorders (mental illness) are generated by a violation of interrelations between the conscious and unconscious spheres.

There has been put the concept of mental set as a basis of a unified theory of the conscious and unconscious by the representatives of scientific school of D. N. Uznadze. The concept of mental set is a category that underlies the conscious and unconscious of mental activity. However, this approach ignores the fact that the category of the unconscious is broader than the concept of psychological aim. So the reduction of cognition of the unconscious to the “Theory of Set” severely limits the cognition of contradictions and unity categories of the conscious and unconscious. Particular significance acquires position A. E. Sherozia, who believed that “understanding the interrelations of the conscious and unconscious of mental activity - is actually the core of psychology as a science” [1]. Following a systematic approach the scientist attempted to build meta-theory of psychology. It is based on the psychology of conscious and unconscious. The fact of antagonism between the conscious and unconscious (Z. Freud) supplements the idea of synergy, keeping the lead role to the conscious. On his opinion, the internal contradictions between the conscious and unconscious behavior is not removed, so they are available to external observation. The researcher believes that the psychological set is the central branch, “the principle of the interrelations”, between the conscious and unconscious. The psychological set is understood as prime psychological state of integrity of the psyche and an essential component of psychological reality.

There has been paid a particular attention to the methodology, which would not only integrate scientific and practical results, which are presented in the literature, but would also facilitate the development of methods of mental cognition in its entirety. The adequacy of methods including their cognition of mental proximity with the laws is targeted at its phenomenology, with the naturalness of laws which it is conquered. The necessary point in the process of deep cognition is the incorporation of functional differences of the conscious and unconscious spheres, their autonomy in all its interdependency.

CONCLUSION

There is a task of the deep cognition to disclose causes of violation of the interrelations between the conscious and unconscious, their mismatching at deep-laid levels that causes personal problems of the subject. The mismatching areas of the psyche are masked by psychological defenses in their basal and situational (peripheral) manifestations.

The abovementioned problems require both methodological and practical their solution. It will bring refinement in the methodology of mental cognition and it will facilitate the development of adequate methods of expression of the interrelations between the conscious and unconscious spheres as well as outline the prospects for their harmonization.

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ACTIVITY OF DISTRICT COUNCILS OF TAURIDE PROVINCE IN AGRICULTURE (SECOND HALF XIX – EARLY XX CENTURIES)

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ABSTRACT

Development of local government in the Tauride province in activity of district councils was an important factor in the development of agriculture of Crimea. Activities of district councils covered a wide range from the promotion of education and cultural life, to solve problems in the field of economy and social sphere of the population of Crimea. District councils as non-governmental organizations set the tone of its activities, which has been an innovative and cutting-edge at the time. People with different levels of education, experience, different national, religious and age groups were included to the work of district councils.

Extensive development and the response of the population received the agronomic assistance, provided by district councils. Agronomic courses, courses of horticulture, viticulture, apiculture and sericulture; exhibitions of provincial, county level were organized. District councils facilitated activities of natural and scientific societies, dissemination of agricultural knowledge, publication of literature on agriculture. They petitioned to the government on topical issues of local owners, with needs of the province or counties. The priority areas for district councils of Tauride province were breeding, agricultural entomology and agricultural machinery.

KEYWORDS: district councils, development, agriculture, sectors of agriculture, Crimea, Tauride province.

OBJECTIVE: Activity of district councils of Tauride province in agriculture (second half XIX – early XX centuries).

METHODS: Analysis of the activities in Russian empire district councils presented in several studies. Different aspects revealed in the works of pre-revolutionary researchers [3; 9], of Soviet historians [12] and modern scientists [20; 2]. However, it remains an open question of research of the activities of district councils of Tauride province for its impact on agriculture of Crimea in the second half of XIX - early XX centuries on the basis of the principle of historicism and the problem-chronological analysis.

MAIN MATERIAL OF THE RESEARCH

The second half of the XIX century was marked for Crimea with series of events that, on the one hand, led to the devastation of the peninsula (The Eastern War 1853-1856, The Russian-Turkish war 1877-1878, epidemics, natural disasters), and on the other - influenced the rapid development of the economy, particularly agriculture (the liberal reforms of the 1860s, the approval and development of capitalism, the development of scientific, research institutions). The important was the development of local governments. So, in October 1866 started its work Tauride provincial district council [4, p. 349]. The reform of provincial district was based on two principles: classless and eligibility. Assemblies of district councils were presented in counties and provinces (in the townships district councils were not created). Elections to assemblies of district councils were held on the basis of the property qualification. All voters were divided into three categories: district landowners, urban voters, elected by rural communities. Activities of district councils covered a wide range from the promotion of education and cultural life, to solve problems in the field of economy and social sphere of the population of Crimea.

Analysis of the activities in Russian empire district councils presented in several studies. Different aspects revealed in the works of pre-revolutionary researchers [3; 9], of Soviet historians [12] and modern scientists [20; 2]. However, it remains an open question of research of the activities of district councils of Tauride province for its impact on agriculture of Crimea in the second half of XIX - early XX centuries on the basis of the principle of historicism and the problem-chronological analysis.

After Eastern War traditionally agricultural region – Crimea – needed for new approaches to the management of the economy, dissemination of knowledge and modern technology. At the same time, it was necessary to develop and improve the available research base. District councils of province with the Department of Agriculture and Rural Industry were engaged these issues. Thus, to Crimea were invited talented scientists-professionals, whom were attracted by allocation of housing, good working conditions. Tauride district council had initiated measures to establish experimental fields (local, district), the experiments in chemistry and biology of agriculture, nature study of province, the standard of living and the factors influencing it.

District councils as non-governmental organizations set the tone of its activities, which has been an innovative and cutting-edge at the time. People with different levels of education, experience, different national, religious and age groups were included to the work of district councils.

Extensive development and the response of the population received the agronomic assistance, provided by district councils. Agronomic courses, courses of horticulture, viticulture, apiculture and sericulture; exhibitions of provincial, county level were organized. District councils facilitated activities of natural and scientific societies, dissemination of agricultural knowledge and publication of literature on agriculture. They petitioned to the government on topical issues of local owners, with needs of the province or counties [5, l. 29]. The priority areas for district councils of Tauride province were breeding, agricultural entomology and agricultural machinery.

District councils played an important role during epidemics, natural disasters. Provincial district council, in accordance with the general plan of the County of veterinary medicine in the province, relative to the sporadic disease has a coordinating role. In Tauride province district councils founded veterinary function in the late 60's – early 70's of the XIX century [2, p. 95]. In 1912, Yalta Committee of viticulture and winemaking with the assistance of the district council began an activity, directed to combat agricultural pests on the southern coast of Crimea [6, p. 1; 7 p. 2].

District councils of Tauride province contributed to development of museums on the peninsula. At the end of January 1877 the Provincial Assembly at the suggestion of the province vowel A. Steven authorized the City Council with the assistance of county governments and individuals to start collecting the materials of natural and historical description of Tauride province [8, l. 2; 15, p. 450]. In 1899, on the basis of entomological study, that began its work as early 1895, under the guidance of Z. Mokrzhetsky, was established Natural History Museum of district council of Tauride province. Later Z. Mokrzhetsky became a world-renowned scientist and headed the museum. During the first years, the museum became a center for the study of flora and fauna of the province. Its activities were applied nature and has been linked with agriculture. On scientific basis, there were examined artesian wells, soil, industrial fishery, sericulture and beekeeping. [1, p. 29, 30].

Needs of economy of peninsula gradually grew, and the problem of water, both drinking and irrigation, only aggravated. Agriculture of Crimea was particularly sensitive to drought and needed in irrigation fields. Scientists of peninsula were constantly searching of scientific development in the field of water supply of peninsula [13, p. 1, 34; 11, p. 2]. Irrigation and drainage works are also engaged in Tauride district council. In this direction, it does not always act rationally, sometimes selectively and unscheduled, resulting in the allocation of funds caused many questions. District council led the development of specific conditions for creation artesian wells to prevent wasteful use of water (Art. 108, n. 2) [17, p. 225].

In the last quarter of the XIX century continued to develop hydrogeology, well drilling machinery, studied questions of use of artesian springs to meet the needs of water supply and management. District councils in addressing these issues have been actively involved. Thus, in 1903 pursuant to a decision of the Yalta district council to make a general plan of water supply, professor of Novorossiysk University, the first hydrogeologist of Crimea (1886-1897) N. Golovkinsky began to search aquifers to create artesian wells [18, p. 43-44; 16, p. 751]. Studies have shown that from 67 villages of Yalta district in 31 village was not enough drinking water sources [19, p. 67]. The Yalta district council decided on the allocation of public loans at 4% per a year for the construction of melioration facilities. The funds for the district council were allocated by General Directorate of Planning and agriculture [10, p. 325].

Tauride district council collected statistic data that were published on the pages of scientific, statistical, scientific-popular publications. Specially created Statistical Office of Tauride province district council was engaged with this. The well-known and approved by its contemporaries "The memorial book of Tauride province" [14] was published by Tauride province district council in 1889. The collection included statistical information on the Tauride province of territory, population, land tenure, land use, agriculture and special crops industry and trade, social economy.

CONCLUSIONS

Thus, it is difficult to overestimate the work of local authorities in Crimea – of district councils. They actively used the progress in agronomy, introduced the use of technical means and organized exchange of experiences in the course of events (congresses, meetings, exhibitions) for pest control. The range of issues covered by the activities of district councils of agriculture of Crimea was very wide, which favorably affected the development and the state of the industry and agriculture of the peninsula.

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Academy of Science. Institute of Microbiology. PhD in BS.

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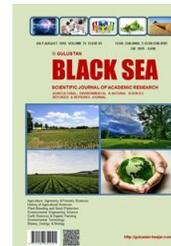
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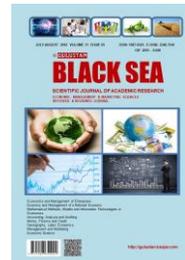
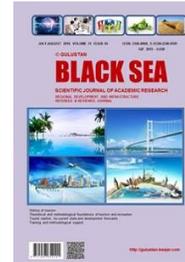
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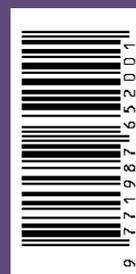
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