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"An investment in knowledge always pays the best interest." Benjamin Franklin

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Tel: +994 55 241 70 12; +994518648894; +994 55 241 70 09;;

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TABLE OF CONTENTS

Arzili Ganna PROPERTY OF URBAN ENVIRONMENT GENERATE MYTHS	04
Allahverdiyev Elkhana Rajab, Huseynov Mahammad Safiyar, Hasanova Aynur Oruc THE EFFECT OF THE MINERAL AND ORGANIC-MINERAL FERTILIZER BASED ON THE NUMBER OF DIFFERENT VEGETATIVE IRRIGATIONS ON THE LENGTH OF THE INFLAMMATION PLANT WITH MIXED PEA AND SORGHO	10
Lali Akhmeteli ,Tamar Didbaridze, Inga Gvasalia, Nodar Lomidze, Liana Saginashvili, Darejan Chikviladze, Nino Gogokhia BACTERIOLOGY AND ANTIBIOTIC SUSCEPTIBILITY IN ADULTS WITH PERFORATED APPENDICITIS	13
Mammadova Gulriyya, Abdullayeva Samira, Aliyeva Ulviyya DIE WORTSTELLUNG IM SATZ	16
Khudaverdiyeva Melaika, Aslanova Gulnara, Mammadova Gunay STYLISTIC CLASSIFICATION OF THE ENGLISH VOCABULARY	20
Aliyev Bahman Musa oglu, Qabilov Malik Yusif oglu, Aliyeva İlaha Fizuli qızı MORPHOLOGICAL AND ANATOMICAL ANALYSIS OF THE GLYCYRRHIZA GLABRA L.	24
Aliyeva Lilpar Qasham kızı THE WOMEN POSSESSING AN EQUAL RIGHTS IN SOCIETY IN THE EPOS OF "KITABI-DEDE GORGUD"	27
Kh.N. Gurbanov, Z.V. Babaev MILK IN IT, FOLLOW THE COOLANT TO CONDUCT IMPRESSIVE PARAMETERS REGRESSION EQUATION GRAPHIC - ANALYTICAL METHOD DEFINITION	29
Dinh Tran Ngoc Huy THE RISK LEVEL OF VIET NAM MEDICINE INDUSTRY UNDER FINANCIAL LEVERAGE DURING AND AFTER THE GLOBAL CRISIS 2009-2011	34
Stefan V. Mashkevich GENESIS OF PUBLIC TRANSPORT IN KIEV	43
Vladimer Papava, Tamar Didbaridze, Valerian Kvakhajelidze, Darejan Chikviladze, Nino Gogokhia BACTERIAL PROSTATITIS AND PROSTATE SPECIFIC ANTIGEN LEVEL	49
Saitmuratova Oguljan Khudaiberganovna, Sagdiev Nail Zhadidovich , Zakirov Yorkin Uzuevich INFLUENCE OF CAMEL MILK COMPONENTS (Ver-Mol-1 and Ver-Mol-2) ON CANCER CELL CULTURE	53
Sotnikova Irina Nikolaevna IMPROVING THE PERSONNEL MANAGEMENT SYSTEM AS A NECESSARY CONDITION FOR SUCCESSFUL FUNCTIONING OF THE ENTERPRISE AND FACTOR OF IMPROVING IT COMPETITIVENESS	56

PROPERTY OF URBAN ENVIRONMENT GENERATE MYTHS

Arzili Ganna

Kyiv National University of Construction and Architecture,

PhD, Assistant Professor (**Ukraine**)

e-mail: nonlineararchh@mail.ru. orcid.org/0000-0002-9033-3823

ABSTRACT

In the study, the author presents the urban environment as a conglomerate of material and spiritual principles. The spiritual essence of the environment is considered as a virtual reality or a toponymic image of the urban environment. The toponymic image is a complex mental-semiotic system based on people's ideas about the territory, on the images of the place, on the city folklore.

The author considers mythologization as a process of generating folklore information (myths, legends, legends, legends) in the urban environment, based on historical facts and events, biographies of outstanding people associated with the city and so on. It is revealed that the basis for the generation of myths of the environment is the historical, geographical, natural and economic features of the territory, with respect to which they arise.

A division of the semantic structures of the mental-semiotic system of the environment into genetic narratives and synthetic narratives is made. The fact that for the development and viability of the urban environment is required requires the interaction of both types of narratives, by analogy with the living system, of two differently directed tendencies of the genotype (C) and mutations (Δ). The harmonious interaction of these trends create a balance of urban and living systems – homeostasis.

Keywords: urban environment, spirituality of the environment, spirituality of the society, genetic memory of the environment, toponymical image of the environment, mental-semiotic system, urban folklore, myth, mythologization, narrative, genetic narrative, synthetic narrative, homeostasis.

РЕЗЮМЕ

В исследовании автором представлена городская среда как конгломерат материального и духовного начала. Духовная сущность среды рассматривается как виртуальная реальность или топонимический образ городской среды. Топонимический образ – это сложная ментально-семиотическая система, основанная на представлениях людей о территории, на образах места, на городском фольклоре.

Автором рассмотрена мифологизация как процесс генерации фольклорной информации (мифов, легенд, сказаний, преданий) в городской среде, на основе исторических фактов и событий, биографий выдающихся людей, связанных с городом и прочее. Выявлено что основой для генерации мифов среды служат исторические, географические, природные и экономические особенности территории, относительно которой они возникают.

Производится разделение смысловых структур ментально-семиотической системы среды на генетические нарративы и синтетические нарративы. Обозначается факт, что для развития и жизнеспособности городской среды необходимо взаимодействие обоих типов нарративов, по аналогии с живой системой, двух разнонаправленных тенденций генотипа (C) и мутаций (Δ). Гармоничное взаимодействие этих тенденций обеспечивают равновесие городской и живой систем – гомеостаз.

Ключевые слова: городская среда, духовность среды, духовность социума, генетическая память среды, топонимический образ среды, ментально-семиотическая система, городской фольклор, миф, мифологизация, нарратив, генетический нарратив, синтетический нарратив, гомеостаз.

РЕЗЮМЕ

У дослідженні автором надано міське середовище як конгломерат матеріального і духовного джерел. Духовна сутність середовища розглядається як віртуальна реальність або топонімічний образ міського середовища. Топонімічний образ – це складна ментально-семиотична система, заснована на уявленнях людей щодо території, на образах місця, на міському фольклорі.

Автором розглянуто міфологізацію як процес генерації фольклорної інформації (міфів, легенд, переказів) в міському середовищі, на основі історичних фактів та подій, біографій видатних людей, пов'язаних з містом та інше. Виявлено, що основою для генерації міфів середовища служать історичні, географічні, природні та економічні особливості території, відносно якої вони виникають.

Проводиться поділ смислових структур ментально-семіотичної системи середовища на наративи - генетичні та синтетичні. Позначається факт що для розвитку і життєздатності міського середовища необхідна взаємодія обох типів наративів, за аналогією з живою системою, двох різноспрямованих тенденцій генотипу (С) і мутацій (Δ). Гармонійна взаємодія цих тенденцій забезпечує рівновагу міської системи та живої системи (гомеостазу).

Ключові слова: міське середовище, духовність середовища, духовність соціуму, генетична пам'ять середовища, топонімічний образ середовища, ментально-семіотична система, міський фольклор, міф, міфологізація, наратив, генетичний наратив, синтетичний наратив, гомеостаз.

FORMULATION OF THE PROBLEM

In the critical age of deformation of meanings, ideologies, culture and spirituality, especially characteristic of the period of globalization, people subconsciously seek to find information that would be perceived by them according to the principle of psychological homeostasis [1]. This determines the spiritual needs of man in the urban environment. Myths and legends is precisely the new methodology for the life of ethnic self-determination, which allows to develop mechanisms to counter the "mass culture" period of globalization and harmonization of himself as a highly spiritual person. [2]

SUMMARY OF THE BASIC RESEARCH MATERIAL

The urban environment, in addition to its material component, also includes a spiritual component or toponymic image, which is based on ideas about the territory and gives specific features, characteristics, sacral-symbolic meanings and meanings in the public consciousness (mentality) to the territories. At the same time, there is a close associative connection of the mentally-semiotic system with urban toponymy.

The toponymic image is a system of signs, symbols, stereotypes, archetypes, myths that characterize a certain territory, a semantic content. The toponymic image is a complex mental-semiotic system based on people's ideas about the territory, on the images of the place, on urban folklore. Urban folklore is the oral folk art that exists in the city. So, with urban folklore, the information-semiotic layer of the urban environment is connected, which is an integral part of the spirit of the nation.

Myths in the urban environment are created in several ways: hearsay; bricolage (people develop over time a system of binary features used to describe semantics); the mythologization of the environment and its elements. Let us dwell more specifically on mythologization.

The roots of the "mythologization of space" in the minds of man are explored in psychology, cultural studies, and philosophy.

The problem of mythologization, which occupies a special place in the history of social philosophy in general, and in the history of science in particular, had a wide range of conceptual developments in the further development of socio-humanistic knowledge. The theme of mythologization and mythology devoted the colossal philosophical tradition expressed in the writings of the philosophers of the Middle Ages, the Renaissance, the New and Newest Times: Augustine, J. Gusdorff, M. Montaigne, F. Bacon, T. Hobbes, I. Kant, F. Nietzsche, A. Schopenhauer, TS Kuna, A. Parandovsky, A. Sowie - where the analysis of the processes of mythologization occupies a significant place. All this allows us to speak about the lasting significance of the exploration of the mythsphere, as a component of social reality [3].

Among the researchers of modern times on the problem of social and moral aspects should be highlighted the work of M. Weber, E. Durkheim, E. Cassirer, K. Mannheim, etc. Analyzing the socio-psychological problems of the phenomenon of mythologization, we considered publications dedicated to specific issues of myth-making. Here one can note the research of R. Barth [4], [5], [6], E. Giddens, V. R. Medinsky, N. Smelser, EB Taylor, E. Fromm, K. Horney.

Let us emphasize that the XX century opened a new page in the interpretation of the problems of the mythologization of society. The main theoretical principles for analyzing the problems of mythologization were developed by such researchers as K. Levi-Strauss, B. Malinovsky, D. Frazer. According to the theory of M. Eliade, the "open-hidden"

character of mythology manifests itself as a tension between what one myth or another means (opens) for consciousness, and what it means (hides) beyond the immediate reality [7]. The most prominent representatives of the symbolic theory of the myth were E. Kaut, U. Urban, S. Langer. They emphasized the universal role of symbols in the spiritual culture of mankind, since it is symbolic creativity that distinguishes man from an animal.

Russian philosophy associated with the names of S. Bulgakov, Vyach, Ivanova, I. Ilyin, NO Lossky, V. Rozanova, VI. Solovyova, considered the problems of theoretical studies of myth, the ratio of mythology and the mythology created by social reality.

The study deals with the "psycho-social" mechanism, individual and mass levels of consciousness of man and society.

The information obtained through the process of education through folklore, a person from childhood acquires a stable cognitive platform that, in the process of personality development, does not change it, but only gives it the features of a humanistic treasure that grows into the genetic memory of a nation.

The basis for the generation of myths of the environment is the historical, geographical, natural and economic features of the territory, concerning which they arise [1].

Mythologization is the process of generating folklore information (myths, legends, legends, legends) in the urban environment, based on historical facts and events, biographies of outstanding people associated with the city and so on. The mechanism of the action of the myth is a peculiar connection of the structural elements that ensure its interpretation.

Sights, events, persons marking the region are the most accessible for perception. They can significantly influence the assessment of the environment by groups of the target audience. This "view from above", fixes the most vivid narrative potentials of the environment, settling in the mass consciousness. Thus, the idea of a place and its elements is a prerequisite for the formation of urban mythology. On the one hand - associated with the topography of the territory (for example, museum-apartment, monument, bust, commemorative plaque on the wall of the house, a cult object, a memorial tomb, etc.). On the other hand - the idea of the place and its elements, focused on embedding in the myth at the level of the country, the region, and sometimes the world [1].

However, the method of mythologizing the urban environment and its elements can be applied in a new place. As an example, you need to bring one of the newest cities in the world, lined up in a free place in a short time - Dubai. In contrast to historical cities, the city is only 30 years old, but it has become international.

The image of this city does not give the impression that it is built in the Arab world (UAE). The feeling of disorientation is caused, for example, by two copies of the New York skyscraper of the Chrysler Building, set in Dubai.

The image of the western city in the modern center of Eastern culture on Arab land was conceived from the outset and successfully realized. Dubai is not just a meeting place for East and West. According to Brooke, he "causes far more severe judgments. Local customs cleared, instead of markets - shopping malls, supermarkets sold pork, pour alcohol in hotels; It is a city where the traditions of the Arab world are deliberately blurred, giving way to an impersonal, tasteless global future. In the absence of the charm of antiquity, which has turned into monuments of architecture fakes. This "Las Vegas of the Middle East" is like a completely false metropolis, completely devoid of culture" [8]. The global metropolis of Dubai became known to the whole world just a few years ago. It draws attention to the record high skyscrapers - up to 158 floors, downhill slopes on the Arabian Gulf coast and the fact that it is inhabited almost by foreigners (96%), who have not become citizens of this Arab country. Sheikh Mohammed managed in a few years to turn this place into a global metropolis thanks to the development of aviation and the network of airlines that connected it with all countries of the world. It is a city of emigrants and the apotheosis of modernity, famous for its costly architectural and construction projects.

So, in Dubai at the request of Shaikh first two silver towers were built with triangular tops, superior to any European building height (Emirates Towers, 2000), then - the highest skyscraper in the world (Burj Khalifa, 2010). The image of this city embodies the results of the race for the ideal, for the embodiment of superiority - first at the European level, then - at the world level. "Dubai must stand on a par with the most prestigious financial centers in the world," Mohammed proclaimed, for this he invited Western financiers, architects, bankers. Dubai has also become the capital of information technology and media. Along the Sheikh Zayed highway, salinate fields were drained, on the site of which Internet City and Media City were built. This place is marked by two 53-storyed towers - copies of the Chrysler Building

from New York. In the sea area were literally built giant artificial archipelagos near the shoreline in the form of palm trees, which immediately gained worldwide fame.

In Dubai, every district, even every building, looks like it was moved from another corner of the planet "[9]. As a result, the city does not develop a dominant culture. It is cosmopolitan due to the absence of unified ethical norms. They do not seek to provide all residents with an adequate standard of living. For workers building the city, the labor camp of Sonapur is intended - "Golden City". It is a chain of workers' settlements of the 21st century, where dormitories are built of concrete blocks, and the social mobility of the people inhabiting it is severely limited. Local residents as the number of newcomers move to the depths of the desert and feel themselves as strangers in a city full of foreigners.

The idea of this new city is by no means new in itself. In its time, as E. Brook shows, St. Petersburg became its prototype. Both cities, besides - Shanghai and Bombay, were built in due time as port cities - "a window to Europe", and are oriented not to the local historical and architectural tradition, but to the western one. With their help the Third World countries made an attempt to tighten their development to the European and world level.

The architecture of these cities is saturated with foreign samples. In Bombay dominates the Victorian style of England, in St. Petersburg adopted the principles of spatial organization of Amsterdam, in Shanghai, territorially organized three main zones: British, French and American, which were landscaped on the basis of the latest achievements of Europe in the middle of the 20th century and were strikingly different from the dirty outskirts populated local residents.

Thus, the modern urban environment, which proclaims its break with the past, with the genetic memory of the nation, thereby condemning himself to a completely new story, which is often in particular not carried out because the next movement in its turn denies the connection with its predecessors. This is a challenge to the spirituality of the nation, which symbolizes the rejection from traditions, its destruction, even disappearance.

The existing continuity in the movement of world culture, where the Hegelian principle of "negation of negation" implies not the destruction of the previous springboard of development but its transformation in the next stage, which has its analogue in the cognitive process of ontogenetic and phylogenetic assurance of perception. This principle presupposes the presence in each subsequent stage of the cognitive development of the urban environment of cognition, even if of rudiments, of similarity with the previous stage, that is, in fact, the existence of certain "end-to-end" elements of the past that "enlighten" the face of the present. In fact, recognition in the new elements of the old, known is a demonstration of the **principle of the continuity of culture** as an integral socio-cultural phenomenon in which function operators - archetypes [10]. Sometimes these archetypes are manifested as narratives (semantic structures) of the urban environment.

As it was said above in the study, the spiritual beginning of the urban environment appears as a virtual topographic network of the territory with a multitude of semantic structures - narratives. In its essence, narratives of the urban environment as a system-forming potential are divided into: **genetic** and **synthetic** (artificial).

Genetic narrative is based on genetic material from the history of the nation-ethnos, urban folklore, associated with the genetic memory of the nation.

Synthetic narrative is generated in the process of mythologizing the environment and its elements. Here the property of the environment is revealed to generate myths.

Genetic narratives put on a condition about the necessity of preserving and reconstruction of the genetic memory of the medium (the reconstruction of objects and spaces), reflecting the genetic memory of the nation. This is reflected that the urbanist, confronted with a environment with narratives, must take into account that he works not only with the subject-spatial environment, but with the myths, legends rooted in the minds of the citizen. In fact, he works with the consciousness of people. This fact is basic, fundamental, as the urbanist here will act as a manipulator and his task will be to support the existing myths, which are the basic spiritual needs of man in the urban environment (*the basic category of man's spiritual existence in the environment*).

Synthetic narratives, based on the method of mythologizing the environment and its elements, determine the structural changes in the urban environment. For the development and viability of the urban environment, it is necessary to interact both types of narratives, by analogy with the living system, of two differently directed tendencies of the genotype (C) and mutations (Δ). Genotype and mutation are the main driving force behind the evolution of living systems. The genotype as a genetic code is a specialized "authority" for storing and transmitting hereditary information of any content and designates both hereditary information and its material carrier [11]. Heredity information is addressed to the system of ontogenesis - phenotype [12]. Thus, the phenotype is the personification of the active functional principle in the body, i.e. Δ, and the genotype is the personification of the passive structural beginning, i.e. C.

Harmonious interaction of these trends ensures the balance of the living system - **homeostasis** - by the ability of an open system to maintain the constancy of its internal state through coordinated reactions aimed at maintaining a dynamic equilibrium. A similar situation occurs with the urban environment as a living system. On the one hand, for its fullest expression, the urban environment should serve as the basis for generating as many myths as possible (*mutation*, Δ). On the other hand, manifestations of narratives in the urban environment should meet the genetic need of a person in spiritual comfort in the urban environment, keep in touch with the genetic memory of the socium-nation, the genotype. So, the urban environment of Dubai, Shanghai is focused on the volume of construction and profitability, which forces it to abandon the necessary self-analysis. Architecture has to abandon its own professional tasks for the sake of the interests of large international corporations glorifying their name [13]. The urban environment turns into advertising. The uncontrollable, chaotic, aggressively variegated, morbidly dissonant diversity offered by such an urban environment with its architecture causes shocking effects also in its visual perception. This is confirmed by the style of work of architects in the cities of the United States of America, China, the United Arab Emirates.

First, the genetic memory of a nation and the spiritual needs of a person in an urban environment are not taken into account, and secondly, from the point of view of perception, such a medium is extremely aggressive for human perception.

Thus, it is one thing to work with a historically developed environment (filled with urban folklore), another thing is to work with a new environment where it is necessary to apply the method of mythologizing the environment on the one hand, and on the other, to raise its semantic context (myths), on the other, If there are any. That is, work to create an image (brand) of the environment is a consideration of historical narratives, the genetic memory of the environment and the development of new narratives of the environment (the mythologization of the environment).

From the whole complex of myths and legends inherent in this area in the urban environment, it is necessary to choose the one that will maximally affect the emotions and feelings of a person, thereby providing his emotional connection with the urban environment [1].

Here it is necessary to turn to a new direction in humanitarian geography - mythogeography. The author of mythogeography I.I.Mitin emphasizes the development of a model of a system of spatial meanings – **palimpsest**. Palimpsest is a set of branching semiological systems. It is the category of the palimpsest that reflects the specific scientific direction of the idea of the safe coexistence of multiple interpretations of space and place. Fundamental for mythogeography is the "decomposability" of the notion of place on individual features. Complex, multicomponent spatial representations should be structured and represented in the text in the form of contexts, i.e. sets of characteristics. This understanding is based on the information approach, which implies that the spatial representation of the essence of the system of characteristics (elements, characteristics, etc.) of the place. The model of the palimpsest puts emphasis on specific places. At the heart of the mythogeographical model of reality is the notion of the multiplicity of interpretation of each place. Each place is not just a real object. In the process of an infinite semiosis of spatial myths, many virtual things were created. The essence of this process in the infinite interpretation of spatial representations.

So, to each place in the environment there should correspond a lot of spatial representations and myths. The place as a palimpsest appears to us as a sum of heterogeneous contexts, each of which focuses on its dominant (the main sign and, under certain conditions, "closes" the others.) Dominant can become different signs, for each specific application often the first place - one or more dominants, the context of which in this situation becomes of paramount importance in the urban environment.

Palimpsest is not only bright and memorable slices of information about the place from which each person can form his vision. In fact, the perception of the environment consists of a series of mental representations overlapping each other, each of which is strictly individual, but all are formed around common points of reference.

The methodological analysis carried out allows us to formulate the basic rules for modeling the mythological component of a place in an urban environment:

1. It is necessary to consider each place in the urban environment as a set of characteristics, the singling out of which is a semiological and structural characteristic of the place.
2. With all set of semiological signs of a place, it is necessary to select only those that are most relevant and necessary for a given place in the environment, with one or more dominant ones in the given place. Selection of the dominant will ensure the maximum "unfolding" and interpretability of myth in the urban environment.
3. It is necessary to focus on the integrity of the information component of place, work out the links between the individual features, build their hierarchy from the dominant to the secondary.

4. Considering the place in the urban environment as the basis for the formation of the myth, it is necessary to take into account the attitudes and stereotypes existing in the minds of people existing in the consciousness of form and category.
5. To strive for a compact and coherent reflection of manifestation in the environment of one or another idea - the dominant.
6. Creating myths, it is necessary to clearly focus on the potential consumers, on which this characteristic is aimed.

CONCLUSIONS

Thus, the myth is a manageable and dynamic set of marketing information generated on the basis of the existing narrative potential of the urban environment, with a view to achieving a competitive advantage. The historical, cultural, ethnic, geographical, social context of the urban environment is capable of generating myths that are fixed in time in the mass consciousness. The genetic memory of the environment and ethnos is the basis for the formation of a mentally-semiotic system of the urban environment [1].

The process of creating a place myth is the way to the synthesis of contexts of attributes that can form an integral reality.

The application to the urban environment of the model of the system of spatial meanings - Palimesta will allow to show the multifacetedness of the genetic memory of the nation-ethnos and legitimize its constant enrichment.

Mythologization, based on the colossal socio-genetic, cultural, historical experience of mankind, mediates human social behavior in the urban environment, shapes its emotional connections with the environment, influences the formation of reality. This fact is significant for the author, because there is a global opportunity to modify the existing reality in a humanistic way both for the human socium and for the environment of his living with the help of the manipulation technique.

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THE EFFECT OF THE MINERAL AND ORGANIC-MINERAL FERTILIZER BASED ON THE NUMBER OF DIFFERENT VEGETATIVE IRRIGATIONS ON THE LENGTH OF THE INFLAMMATION PLANT WITH MIXED PEA AND SORGHO

¹Allahverdiyev Elkhan Rajab, ²Huseynov Mahammad Safiyar, ³Hasanova Aynur Oruc

¹Azerbaijan State Agrarian University, Doctor of philosophy of agrarian sciences, associate professor

²Azerbaijan State Agrarian University, Doctor of philosophy of agrarian sciences, associate professor

³Azerbaijan State Agrarian University, Doctor of philosophy of agrarian sciences, associate professor

e-mail: ¹elxan_recebli@mail.ru; ³hasanovaaynur77@mail.ru

ABSTRACT

It is important for the plants to grow at the proper level with the nutritional elements in the first place. The phenological observations made in the grass-grass soils in the Agjabadi region show that the varieties of mineral and organic mineral fertilizers on the basis of different irrigation numbers have been relatively taller than the peach vegetation of the chickpea seedlings with sorghum grown in lump.

Keywords: mixed sprout, inflammation, fertilizer, soil, plant, irrigation

Plants should be provided optimally with nutrients for normal growth and development. In this regard, the role of mineral and organic fertilizers is high, and their use in agro technical regulations should be widely used.

Food items have a great role in the growth and development of plants. Depending on the biology of plants, developmental stages, the demand for foodstuffs varies. Failure to comply with one of the nutrients or to not be able to absorb the plants in the soil results in the loss of plants or their total destruction. Growth intensity and direction in a specific direction is the key condition for the formation and growth of the product. To maintain this balance, it is important to study the biological characteristics of plants, including those contained in the soil and plants, to ensure that plants are in need of nutritional elements.

Plants usually use spare nutrients contained in the first phases of their development. At this time, the growth of organic matter is very rare. In subsequent periods, the demand for plant nutrients is rapidly increasing, as the ash content and nitrogen are maximized when its size and mass reach the highest level.

Organic and mineral nitrogen fertilizers, along with increasing nitrogen and ash content in the soil, greatly enhance soil mineralization. Organic fertilizers are not only organic matter that regulates the activity of microorganisms, but also with various micro floras, fertilizer and compost which accelerate the decomposition of organic matter in the soil. Studies show that mineral fertilizers increase the intensity of biological processes in the soil because the soil is the source of nutrients with microorganisms. Nitrogen metabolism occurs throughout the entire life of the plant, but the nature and speed of this process are not equal in different phases of growth and development.

Long-term research has shown that when mixed sowing is poorly maintained with nitrogen, the increase in cereals is delayed and the demand for potassium decreases. Pulsed plants provide themselves with nitrogen as a result of the symbiotic activity of fertilized bacteria and, in contrast to cereals, use potassium and are intensively developed. In the case of potassium deficiency in mixed crops, the provision of nitrogen fertilizers negatively affects the development of pulsed components. [1].

The lack of proper quantities of soils in the soil has a significant impact on physical-chemical, biological processes in soil, soil fertility, the size and development of the plant, productivity, plant nutrition, and other issues. It should be noted that the growth process of plants is closely related to their provision with water. Thus, the plant requires water without interruption in the growth process. Water is the most important environment for the whole plant to continue its biological and chemical life. As a result of intermittent evaporation of the water, the functional organs of the plant are cooled, they do not burn the day and the growth process continues.

The intensity of the biological, chemical, physical and chemical processes occurring in the soil, the movement of the substance throughout the soil, the water-air, food and heat regimes of the soil, its physical-mechanical properties, ie the important indicators of soil fertility, depend on the amount of water in the soil. Thus, irrigation water directly affects the development and longitudinal growth of the plant. Plant always develops normally whenever there is enough water in the soil. Studies have shown that as the leguminous plants grow and develop, the activity of the bubble bacteria is gradually increasing and reaching the maximum until the flowering period. By the end of the vegetation, the amount and activity of bacteria in the tubes decreases, and the bacteria are again mixed with soil. This also plays a major role in increasing soil fertility.

Nitrogen fertilizers to the soil also enrich the soil with nitrogen, making the hard-absorbed phosphorites an easy-to-use plant-derived form. When nitrogen is not present, the nitrogen content in the plant decreases and the normal development of the plant is disrupted. Nitrogen forms the basis of protoplasm, including protein, chlorophyll, amino acids, enzymes, etc. When the nitrogen is missing in the plant, the color of the leaves becomes light green and they are poorly developed. If nitrogen does not reach soil, growth and development of sorghum are delayed, productivity is significantly lower. [3].

Leguminous plants, along with nitrogen enrichment, improve the soil's structure and its water-physical properties. Many researchers have shown that the norms of nitrogen fertilizers have a direct impact on the growth of cereals in mixed crops, but weaken legumes. Providing corn in Kosovo with nitrogen and phosphorus fertilizer, while growing plants grow and develop the amount of protein in the product grows. [4].

Fertilizer norms are one of the key conditions for improving soil fertility so as to return the irrigated lands to the turf. Organic fertilizers, while enriching soil with nutrients necessary for nutrition of plants, improve its water-physical properties, provide soil-beneficial microorganisms, accelerate the process of mineralization and plant entry, prevent loss of nutrients in the soil, enrich soil with microelements, soil fertility is restored and the cultivation of agricultural crops, as a result, increases the probability of normal plant growth. [2].

It is important for the plants to grow at the proper level with the nutritional elements in the first place. The phenological observations made in the grass-grass soils in the Agjabadi region show that the varieties of mineral and organic mineral fertilizers on the basis of different irrigation numbers have been relatively taller than the peach vegetation of the chickpea seedlings with sorghum grown in lump.

Table: The effect of the mineral and organic-mineral fertilizer on the basis of the number of different vegetative irrigations on the length of the inflammation plant with mixed pea and sorgho

Ordinal numeral	Variants	The length of grain in the milk-waxing maturation phase	
		04.10. 2017	15.10.2017
In the background of 3 times irrigation			
I	Without fertilizer, control	156/71	169/77
II	N ₄₀ P ₆₀ K ₆₀	162/76	175/81
III	N ₆₀ P ₉₀ K ₉₀	179/84	191/87
IV	N ₉₀ P ₁₂₀ K ₁₂₀	207/92	217/95
V	N ₁₂₀ P ₁₅₀ K ₁₅₀	232/99	245/106
VI	manure 10 t/hec + P ₃₅	164/78	178/82
VII	manure 10 t/hec + N ₁₀ P ₆₅ K ₃₀	186/89	195/92
VIII	manure 10 t/hec + N ₄₀ P ₉₅ K ₆₀	224/97	234/101
IX	manure 10 t/hec + N ₇₀ P ₁₂₅ K ₉₀	243/103	254/108
In the background of 5 times irrigation			
I	Without fertilizer, control	168/75	174/79
II	N ₄₀ P ₆₀ K ₆₀	172/78	179/84
III	N ₆₀ P ₉₀ K ₉₀	181/87	192/89
IV	N ₉₀ P ₁₂₀ K ₁₂₀	211/95	220/98
V	N ₁₂₀ P ₁₅₀ K ₁₅₀	238/102	249/112
VI	manure 10 t/hec + P ₃₅	171/80	182/84
VII	manure 10 t/hec + N ₁₀ P ₆₅ K ₃₀	187/89	197/95
VIII	manure 10 t/hec + N ₄₀ P ₉₅ K ₆₀	228/99	239/101
IX	manure 10 t/hec + N ₇₀ P ₁₂₅ K ₉₀	254/105	259/110

As shown in the table, in the milk-waxing phase of the sorghum, the fertilized control variant of the plant is 169 cm in height, the height of the plant is 77 cm, while the combined use of mineral and organic mineral fertilizers results in 175-254 cm in sorghum and in the pea plant 81-108.

Similar mixed slaughtering occurred in the irrigation area 5 times. Thus, 5 times the irrigated soils in the sorghum plant in the milk-waxing stage without fertilizer control variant 174 cm height of the plant, the height of the chickpea plant is 79 cm, combined with application of mineral and organic mineral fertilizers significantly change the length of plants in sorghum 179-259 cm, 84-110 cm in the plant. The highest biometric indicator was obtained when the manure was applied at 10t / ha + N₇₀P₁₂₅K₉₀

Apparently, optimum fertilizer and irrigation norms have a more efficient effect on the length of the mixed squash and chickpea, which in turn leads to an increase in green mass.

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BACTERIOLOGY AND ANTIBIOTIC SUSCEPTIBILITY IN ADULTS WITH PERFORATED APPENDICITIS

Lali Akhmeteli¹, Tamar Didbaridze², Inga Gvasalia³, Nodar Lomidze⁴, Liana Saginashvili⁵, Darejan Chikviladze⁶, Nino Gogokhia⁷

¹Tbilisi State Medical University, #1 department of surgery, associated Professor, MD, ScD (Tbilisi, Georgia)

²Tbilisi State Medical University, department of microbiology, associated Professor, MD, PhD (Tbilisi, Georgia)

³Physician of infection diseases. TSMU The First University Clinic, MD, PhD (Tbilisi, Georgia)

⁴Head of #1 Department of Surgery, TSMU Professor (Tbilisi, Georgia)

⁵Tbilisi State Medical University, #1 department of surgery, assistant-Professor, MD, PhD (Tbilisi, Georgia)

⁶Head of Microbiology Department, TSMU Professor, MD, ScD (Tbilisi, Georgia)

⁷Head of Clinical Laboratory. TSMU the First University Clinic, TSMU Professor, MD (Tbilisi, Georgia)

ABSTRACT

Acute appendicitis represents one of the most frequent abdominal surgical emergencies. Ready diagnosis of this pathology significantly reduces morbidity and mortality, which can be significantly higher in cases with complications. Appendectomy is one of the commoner operations with a lifetime risk as high as 12% or 23% in males or females, respectively. Since the 1940s intra-operative intra-peritoneal swabs have commonly been taken from the appendix site, the spectrum of infecting organisms and their antibiotic sensitivity may be gauged from the culture results.

We retrospectively reviewed bacterial etiology and antibiotic susceptibility in patients diagnosed with perforated appendicitis who were admitted in TSMU the First University Clinic #1 Surgery department between January 2017- and December 2017. In total, 64 culture-positive perforated appendicitis cases were analyzed. *Escherichia coli* was the most common pathogen (40/64, 63.5%), followed by *Enterobacter cloacae* (8/64, 12%), *Streptococcus* species (6/64, 9.2%), *Enterococcus* spp (10/64 15.3%). The susceptibility of *E. coli* to ampicillin/sulbactam, piperacillin/tazobactam, ceftazidime, cefepime, amikacin, gentamicin, and imipenem was 100%, 100%, 98.0%, 99.2%, 98.9%, 81.8%, and 100%, respectively. The overall susceptibility of *E. coli* to fluoroquinolones (ciprofloxacin, levofloxacin and moxifloxacin) was 85.0%.

Keywords: appendix, bacteria, perforation, treatment.

INTRODUCTION

Appendectomy is the commonest intestinal operation performed in hospitals. In addition, there is also a high incidence of intra-abdominal sepsis. Post-operative sepsis after appendectomy depends on several factors (1,2). Besides the presence or absence of perforation, factors like the age of the patient, delay in diagnosis, difficulty of the operation, the skill of the surgeon and the use of appropriate antibiotics may all influence the development of sepsis. The success of chemotherapy depends on the sensitivity of the likely contaminating bacteria towards antibiotics (3). Very often it is necessary to start chemotherapy before the availability of bacterial culture and sensitivity reports. Unfortunately, there has been only a few studies on the bacteriology of appendicitis and these have all been done overseas. Bacterial infections are a factor for morbidity in patients with perforated appendicitis (PA). The spreading of multidrug-resistant (MDR) bacteria is a significant problem in surgery, and the most relevant MDR pathogens are summarized as Enterobacteriaceae, *Staphylococcus aureus*, *Klebsiella pneumoniae*, *Acinetobacter baumannii*, *Pseudomonas aeruginosa*, and Enterococci (ESKAPE) bacteria. Data regarding the species and distribution of bacteria in PA are available, but information about the resistances and their relevance is deficient (4,5,6).

Perforation may result in free peritonitis, the formation of an abscess or a phlegmon. Antibiotic treatment may be important in medical or surgical management of perforation. Peritoneal lavage may be of debatable efficacy. Surgical drainage is employed in addition to anti-microbial therapy in those unlucky enough to suffer a large abscess (>1–2 cm)

(7,8). Medical therapy with antibiotics is important both prophylactically and as indicated in a septic patient or one with evidence of perforation; Antibiotics considered for patients with appendicitis must offer full aerobic and anaerobic coverage (9). The duration of the administration is closely related to the stage of appendicitis at the time of the diagnosis, considering either intraoperative findings or postoperative evolution. According to several studies, antibiotic prophylaxis should be administered before every appendectomy. When the patient becomes afebrile and the white blood cell (WBC) count normalizes, antibiotic treatment may be stopped. Results of peritoneal swab culture can crucially guide antibiotic choice (10,11).

The aim of this study was to investigate the microbiology of perforated peritonites. The purpose of this survey is to determine the bacteriology and treatment associated with cases of perforated appendix in patients who were admitted to TSMU the First University Clinic #1 surgical department. All patients were found to have perforated appendix during operation. Free pus was found in the peritoneal cavities of all patients.

MATERIAL AND METHODS

We retrospectively reviewed the records of 76 adult patients who were admitted to TSMU the First University Clinic #1 surgical department between January 2017 to December 2017 ,54 males and 12 females with ages ranging from 18 years to 64 years. All patients were found to have perforated appendix during operation. Free pus was found in the peritoneal cavities of all patients. Specimens were obtained by swabbing the suppurative peritoneal fluid or periappendiceal abscess. In some cases, specimens were obtained by swabbing the lumen of appendix or by retrieving the suppurative peritoneal fluid via syringe aspiration. The volume of pus ranged from 5 ml to 10 ml. A pus swab was taken during operation and by using optimum sampling, transport, and culture techniques sent to the bacteriology laboratory. The swab was cultured on to blood agar, Endo agar, Sabouraud dextrose agar and Schaedler agar with 0,5% sheep blood. The blood agar plate, Endo agar plate and Sabouraud plate were incubated aerobically while the Schaedler blood agar plate was incubated in an anaerobic bag (biomerieux). The plates were examined after 24 hours incubation at 37°C and again after a further 24-hour incubation period. All bacteria isolated were identified using api system (biomerieux) and susceptibility testing was done by a Kirby-Bauer disc diffusion methods. Susceptibility testing results were interpreted according to the European Committee on Antimicrobial Susceptibility Testing guidelines published in 2017 (EUCAST 2017).

RESULTS

No bacteria was isolated from the specimens of 12 patients (15,8%). Of the 64 specimens (84,2%) which gave positive cultures, pure cultures were obtained from 38 while mixed cultures were obtained from the other 26. The culture results are summarized in Table I. *Escherichia coli* was the most common pathogen (40/64, 63.5%), followed by *Enterococcus* spp (10/64, 15,2%), *Enterobacter cloacae* (8/64 ,12%) *Streptococcus* species (4/64, 6,2%), *Pseudomonas aeruginosa* (2/64,3,1%).e Susceptibility test for gramnegative organisms was done on following antibiotics: Amoxicillin/Clavulanic acid, Ampicilline/sulbactam, Piperacilline/Tazobactam, Imipenem, Meropenem, Ceftazidime, Cefepime, Amikacine, Gentamicin, Ciprofloxacin, Aztreonam, ,Colistin.33,1.

TABLE 1

4-7 Microorganisms	Number of patients(out of 64)
<i>Escherichia coli</i>	40
<i>Enterococcus faecalis</i>	10
<i>Enterobacter cloacae</i>	8
<i>Streptococcus</i> spp	4
<i>Pseudomonas aeruginosa</i>	2

CONCLUSION

E. coli was the most common pathogen identified in this study (63.5% of all isolates). Similarly, *Enterococcus* (16,2%) and *Streptococcus* (6,2%) species were the most frequently isolated gram-positive organisms. Gram-negative bacillus was isolated from nearly one half of all patients. Although *E. coli* showed a high susceptibility rate of 97% to third and fourth generation cephalosporins that are most commonly used for empirical antibiotic treatment. Although third-generation cephalosporins might be a better treatment choice because *that Streptococcus* species showed high susceptibility to ceftriaxone.

Most gram-negative pathogens had susceptibility rates of 90% or more to aminoglycosides, imipenem and piperacillin-tazobactam, except for *Pseudomonas*, which generally had susceptibility rates to these agents of between 80% and 90%. The rates of susceptibility to fluoroquinolones, however, were alarming- less than 20% for *Pseudomonas*.

In conclusion routine culture testing might be useful to identify changes in susceptibility and to select appropriate antibiotics.

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DIE WORTSTELLUNG IM SATZ

¹Mammadova Gulriyya, ²Abdullayeva Samira, ³Aliyeva Ulviyya

¹Oberlehrer, ^{2,3}Deutsch lehrer, Abteilung für Sprachen

E-mail: ³ulviyye.eliyeva.90.90@mail.ru, ¹mammadovagulriyya@gmail.com, ²kerim.novruzov.08@mail.ru

ABSTRACT

In diesem Artikel wird die im deutschen Satzsatz verwendete Wortfolge in allen Sprachbereichen in einfachen und komplexen Sätzen zusammengefasst und in anderen Sprachen mit den meisten englischen Wörtern dargestellt. Die Schwierigkeiten, die bei der Befragung der Aussprache der Sätze auftraten, die Schwierigkeiten, auf die man in der Rede gestoßen ist, sind gelöst worden, und die Vorteile der Kenntnis der genauen Wortfolge sowohl in geschriebener als auch in verbaler Sprache sind in dem Artikel gezeigt.

Schlüsselwörter: Wortstellung, Satzglieder, Betonung, Rede, Prädikat, Aussagesatz.

ABSTRACT

This article is about correct order of the words in the sentence which is one the most important factor in linguistics while building simple or compound sentences .In this article, the word order in German is compared with English.Using the parts of sentence correctly in the speech is also actual topic of this article in which we touch the importance of using main elements of sentence.And also we touch some difficulties which learners can meet while they are building "Interrogative sentence".

Keywords: Word order in the sentence, the parts of sentence, stress, subject, predicate.

REZÜME

Bu məqalədə alman dilində cümlə qurarkən istifadə olunan söz sırası , nitqin bütün sahələrində,sadə və mürəkkəb cümlələrdə söz sırası öz əksini tapmışdır.Digər dillərlə,ən çox ingilis dili ilə fərqi göstərilmişdir.Zaman,yer zərflərinin işlənmə qaydaları ,əks söz sırasının nitqdə üstünlüyü ön planda tutulmuşdur.Sual cümlələrinin qurulması,danışarkən rast gəlinən çətinliklər öz həllini tapmışdır.Həm yazılı,həm də şifahi nitqdə söz sırasını dəqiq bilməyin üstünlükləri məqalədə göstərilmişdir.

Açar sözlər : Söz sırası, cümlə üzvləri, vurğu, nitq, xəbər, mübtəda

Man äussert und versteht einen Satz immer als eine Gesamtheit ,als inhaltliche Einheit,aber man kann ja seine Bestandteile nicht gleichzeitig sagen oder schreiben,sondern muss sie nacheinander anordnen.Die Bedeutung eines Satzes ergibt sich also aus seinen einzelnen Teilen und ihrer Anordnung.

Der üblichste Begriff für die Anordnung der Satzteile ist "Wortstellung". Dabei muss man sich aber bewusst sein , dass es hier nicht um die Stellung einzelner Wörter geht,sondern um die Stellung von Satzeinheiten, also um "Satzgliedstellung" und um die Stellung des Prädikats.Allerdings spielt "Wortstellung" auch in anderen Bereichen eine Rolle : beim Aufbau von Wortgruppen und beim Aufbau eines Satzgefüges aus Haupt- und Nebensatz.

Im Unterschied zu anderen Sprachen , etwa dem Englischen , hat das Deutsche eine relativ freie Wortstellung .Der meisten Satzglieder können an verschiedenen Stellen im Satz stehen ; vgl. z. B. die Stellung der Zeitangabe *morgen* in folgenden Sätzen :

Morgen bringe ich das Auto in die in die Werkstatt.

Ich bringe *morgen* das Auto in die in die Werkstatt.

Ich bringe das Auto *morgen* in die in die Werkstatt.

In bestimmten Fällen hat die Wortstellung die Aufgabe , die Art eines Satzglieds deutlich zu machen , z.B. in einem Satz wie

Endlich fanden **sie die Kinder**.

Hier ist an der Form der Ergänzungen nicht zu erkennen, welches die Akkusativergänzung ist, wer also wen fand – *sie die Kinder* oder umgekehrt *die Kinder sie*. Solche eigentlich mehrdeutigen Sätze versteht man aber automatisch so, dass die erste Ergänzung das Subjekt ist, weil allgemein die Regel gilt, dass das Subjekt vor der Akkusativergänzung steht. Wenn man die andere Satzbedeutung ausdrücken wollte, würde man entsprechend sagen:

Endlich fanden die Kinder sie.

Wirklich mehrdeutige Fälle dieser Art sind aber sehr selten; in der Regel wird nicht erst durch die Wortstellung, sondern schon aus dem Zusammenhang deutlich was gemeint ist.

Die Wortstellung kann also weitgehend andere Aufgaben beim Bau des Satzes übernehmen. Der Sprecher kann mit ihrer Hilfe den Satz nach seinen Absichten und Zwecken organisieren, indem er den einzelnen Teilen ein unterschiedliches Gewicht gibt. Gewöhnlich baut man eine Äusserung so auf, dass man vom Bekannten zum Neuen, zur eigentlichen Aussage fortschreitet. Bei einer solchen "normalen" Wortstellung liegt also der Schwerpunkt der Äusserung am Satzende:

Die 50-Jahr-Feier unseres Vereins erhielt ihren sportlichen Höhepunkt **mit dem Spiegel gegen die deutsche Nationalmannschaft**.

Man kann die Hauptinformation aber auch besonders hervorheben, indem man sie an den Anfang des Satzes stellt:

Mit dem Spiegel gegen die deutsche Nationalmannschaft erhielt Die 50-Jahr-Feier unseres Vereins ihren sportlichen Höhepunkt.

So wird die Aufmerksamkeit des Hörers bzw. Lesers sofort auf den Wichtigsten, interessantesten Punkt der Äusserung gelenkt.

Die Wortstellung kann also "Akzente setzen" – und das ist sogar wörtlich zu verstehen: Sie leistet in der geschriebenen Sprache das, was in der gesprochenen Sprache durch den Akzent, die Betonung, ausgedrückt wird. In mündlicher Rede kann man fast jeden Satzteil durch entsprechende Betonung hervorheben, in schriftlichen Äusserungen muss man zur Hervorhebung in der Regel eine andere Wortstellung wählen. Wenn man z.B. betonen möchte, dass man das Auto seinem Freund geliehen hat, kann man mündlich mit normaler Wortstellung und Betonung auf dem Dativ sagen:

Ich habe meinem Freund das Auto geliehen.

Wenn man dasselbe schriftlich ausdrücken will, muss man die Dativergänzung an eine Schwerpunktstelle im Satz stellen, also zum Ende hin oder an den Anfang:

Ich habe das Auto **meinem Freund** geliehen.

Meinem Freund habe ich das Auto geliehen.

Dass die Wortstellung im Deutschen relativ frei ist, bedeutet jedoch nicht, dass sie beliebig wäre. Es gibt vielmehr Gesetzmässigkeiten, Regeln, für die Anordnung der Satzteile, und sie gelten in bestimmten Bereichen uneingeschränkt, d.h., es entsteht ein unkorrekter Satz, wenn sie nicht beachtet werden.

Sprecher, die Deutsche als Muttersprache sprechen, machen im Allgemeinen keine Fehler in der Wortstellung; Ausländern dagegen bereiten die Stellungsregeln oft grosse Schwierigkeiten, da sie sich zum Teil erheblich von denen anderer Sprachen unterscheiden. Die wichtigsten Besonderheiten der deutschen Wortstellung haben mit der Stellung des Prädikats zu tun:

Das Prädikat tritt in bestimmten Sätzen auseinander:

Wir **können** morgen ins Kino **gehen**.

Das Prädikat hat in jedem Satz eine feste Stelle ; es kann innerhalb dieses Satzes nicht verschoben werden. Es gibt aber verschiedene Möglichkeiten für diese feste Stelle. Ein einteiliges Prädikat kann die erste ,die zweite oder die letzte Stelle im Satz einnehmen.

Erscheint er heute wieder nicht zur Arbeit?

Er **erscheint** heute wieder nicht zur Arbeit.

Ein mehrteiliges Prädikat kann sich aufspalten, sodass die Teile getrennt voneinander im Satz stehen. Dabei ist aber nur die Personalform tritt an die letzte Stelle :

Ist er heute wieder nicht zur Arbeit erschienen?

Er ist heute wieder nicht zur Arbeit erschienen.

Nur in Nebensätzen steht das gesamte Prädikat am Ende des Satzes, die Personalform tritt an die letzte Stelle :

..., weil er heute wieder nicht zur Arbeit erschienen ist.

Man nennt die auseinander tretenden Prädikatsteile die "Satzklammer", weil sie den übrigen Satz wie eine Klammer umschließen :

Ist er heute wieder nicht zur Arbeit **erschienen**?

Die Klammerteile stehen getrennt voneinander ,gehören aber inhaltlich eng zusammen. Das bedeutet, dass man den Satz nicht stückweise verstehen kann ,sondern ihn erst vom Ende her überschaut , wenn man auch den letzten Prädikatsteil erfasst hat. Das gilt auch für Nebensätze – und sogar in besonderem Masse ,da hier ja nicht nur ein Teil der Verbformen ,sondern das gesamte Prädikat am Ende steht . Man kann auch in Nebensätzen von einer Klammer sprechen ; allerdings handelt es sich nicht um eine reine Verbklammer wie in Hauptsätzen . Die Satzklammer in Nebensätzen besteht aus der einleitenden Konjunktion und dem Prädikat am Ende :

Weil er heute wieder nicht zur Arbeit **erschienen ist**.

Auch die Konjunktion und das Prädikat gehören eng zusammen ,sie bedingen einander : Eine unterordnende Konjunktion bewirkt immer ,dass das Prädikat am Ende steht , und umgekehrt steht das Prädikat nur dann am Ende , wenn eine unterordnende Konjunktion vorkommt .

Die Satzklammer umschließt nicht immer den gesamten übrigen Satz. In Aussage- und bestimmten Fragesätzen steht ein Satzglied vor der Klammer :

Heute ist er heute wieder nicht zur Arbeit **erschienen** .

Warum ist er heute wieder nicht zur Arbeit **erschienen**?

Unter bestimmten Bedingungen kann auch ein Satzglied hinter der Klammer stehen ; man spricht dann von "Ausklammerung" :

Er **ist** wieder nicht zur Arbeit **erschienen** **heute**.

So wird der Satz durch die Satzklammer in drei Abschnitte gegliedert, auf die sich die Satzglieder verteilen. Man nennt diese Satzabschnitte auch "Felder" und bezeichnet den Abschnitt vor der Klammer als "Vorfeld" ,den Abschnitt zwischen den Klammerteilen als "Mittelfeld" und den Abschnitt hinter der Klammer als "Nachfeld" :

Vorfeld	Linke Satzklammer	Mittelfeld	Rechte Satzklammer	Nachfeld
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Ein Vorfeld, also einen Satzabschnitt vor der Satzklammer ,gibt es nur in bestimmten Hauptsätzen : in Aussagesätzen und einem Teil der Fragesätze.Im Vorfeld steht in der Regel nur ein Satzglied ;

Wegen Krankheit fällt der Unterricht diese Woche aus .

Der Unterricht fällt diese Woche wegen Krankheit aus .

Diese Woche fällt der Unterricht wegen Krankheit aus .

Vor dem Satzglied an der ersten Stelle können auch Wörter wie **fast,besonders,auch,sogar,nur** und **nicht** stehen ; sie beziehen sich dann speziell auf dieses Satzglied :

Nicht diese Woche fällt der Unterricht aus, sondern nächste .

Fast jede Woche fallen Stunden aus.

Nahezu alle Satzglieder können das Vorfeld besetzen vgl.z.B.:

(Ergänzungen:) **Wir** melden uns wieder um 22.30 Uhr .**Die Botschaft** hör ich wohl, allein mir fehlt der Glaube .**Damit** konnte niemand rechnen .**In München** steht ein Hofbräuhaus .Politiker wollte er eigentlich nie werden .-(Angaben:)
Morgen können wir endlich einmal ausschlafen.In der Firma gab es heute viel Arger . **Wegen eines schweren Unfalls** war die Autobahn bis in die Abendstunden gesperrt.**Hoffentlich** sind wir bald da .**Vielleicht** komme ich heute Abend noch vorbei.

Besonders häufig steht im Vorfeld das Subjekt ; man spricht in diesem Fall auch von "Grundstellung" oder "gerader Wortstellung" und von "Umstellung" oder "ungerader Wortstellung", wenn das Subjekt hinter der Personalform des Verbs ,also im Mittelfeld,steht.Man darf diese Bezeichnungen aber nicht so verstehen, dass nur die Stellung am Satzanfang die "richtige", "normale" Stellung des Subjekts sei.Dass das Subjekt häufiger als andere Satzglieder an der ersten Stelle vorkommt,erklärt sich einfach daraus ,dass es überhaupt das bei weitem häufigste Satzglied ist .Von allen Subjekten die in Hauptsätzen vorkommen,steht rund die Hälfte im Vorfeld ,die andere Hälfte steht im Mittelfeld.

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STYLISTIC CLASSIFICATION OF THE ENGLISH VOCABULARY

Khudaverdiyeva Melaike, Aslanova Gulnara, Mammadova Gunay

¹Head teacher, ^{2,3}English teacher, Department of Languages

E-mail: ²eshginnnnn@mail.ru

ABSTRACT

The actual situation of the communication has evolved two varieties of language—the spoken and the written. The varying of the communication has caused the literary language to fall into a number of self-sufficient systems.

Of the two varieties of language, diachronically the spoken is primary and the written is secondary. Each of these varieties has developed its own features and qualities which in many ways may be regarded as opposed to each other.

The situation in which the spoken variety of language is used and in which it develops, can be described concisely as the presence of an interlocutor. The written variety, on the contrary, presupposes the absence of an interlocutor. The spoken language is maintained in the form of a dialogue, the written in the form of a monologue. The spoken language has a considerable advantage over the written, in that the human voice comes into play. This is a powerful means of modulating the utterance, as are all kinds of gestures, which, together with the intonation, give additional information.

Keywords: literary language, spoken language, written language, literary vocabulary, colloquial vocabulary.

РЕЗЮМЕ

Литературный английский почти синонимичный с термином стандартный английский. Классификация словарного состава предназначена для стилистических целей. Общие литературные, нейтральные и общие разговорные слова группируются под термин стандартного английского языка. Научная лексикология, являющаяся особой ветвью лингвистики сделана многое в классификаций словарного состава.

Ключевые слова: литературный язык, разговорный язык, письменный язык, литературный словарь, разговорный словарь.

XÜLASƏ

Ədəbi İngilis dili termini demək olar ki, standart ingilis dili termini ilə sinonimdir. Lüğət tərkibinin təsnifatı sadəcə üslubi məqsədlər üçündür. Üslubi ədəbi, neytral və ümumi danışiq sözləri standart ingilis dili termini adı altında qruplaşdırılır. Dilçiliyin xüsusi sahəsi olan elmi leksikologiya lüğət tərkibinin təsnifatında çox işlər görmüşdür.

Açar sözlər: ədəbi dil, şifahi dil, yazı dili, ədəbi lüğət, danışiq lüğəti.

INTRODUCTION

The bookish vocabulary, one of the notable properties of the written language, may, on the contrary, go beyond the grasping powers of even the most intelligent reader and may very frequently need interpretation. Literary language is a historical category. It exists as a variety of the national language. The literary is that elaborated form of the national language which obeys definite morphological, phonetic, syntactical, lexical, phraseological and stylistic norms recognized as standard and therefore acceptable in all kinds and types of discourse. It allows modifications but within the frame work of the system of established norms. It casts out some of the forms of language which are considered to be beyond the established norm. The norm of usage is established by the language community at every given period in the development of the language. In this connection it will not come amiss to note that there are two conflicting tendencies in the process of establishing the norm:

- 1) Preservation of the already existing norm, sometimes with attempts to re-established old forms of the language;
- 2) Introduction of new norms not yet firmly established.

It is interesting to note that much of what was considered a violation of the norm in one period of the development of a language becomes acknowledged and is regarded as perfectly normal in another period. Many words and constructions which were once considered illiterate have become literary. There is no hard and fast division between the literary and non-literary language. The English literary language was regulated and formalized during the 17 and 18th century. The literary language greatly influences the non-literary language. The non – literary language manifests itself in all aspects of the language: phonetic, morphological, lexical and syntactical. Literary English is also synonymous with the term *standard English*. The English literary language has had a long and peculiar history. Throughout the stages of its development there has been a struggle for progressive tendencies. On the one hand, aim at barring the language from the intrusion of contaminating elements, such as jargonisms, slang, vulgarisms and the like, and, on the other hand, at manifesting themselves in protest against the reactionary aspirations of some zealous scholars to preserve the English language in a fixed form. The English language, as is known, is the result of the integration of the tribal dialects of the Angles, Saxons and Jutes who occupied the British Isles 3rd – 5th centuries. Old English is a dead language, like Latin or classic Greek.

The English language, as is known, is the result of the integration of the tribal dialects of the Angles, Saxons and Jutes. The new English period, as it is called, is usually considered to date from the 15th century. This is the beginning of the English language known, spoken and written at the present time. In the 16th century literary English began markedly to flourish in all forms – drama, poetry and prose. To give a general idea of the factors influencing the development of literary English of 15th and 16th centuries, it will suffice to point out the following three:

- 1) A common interest in classical literature during the Renaissance and hence the application of classical grammar, spelling and rhetoric to the English language. Attempts were made by scholars to force the classical norms into the English language.
- 2) A desire to keep the language pure, to retain and revive old English words and as far as possible old English morphological and syntactical forms. This tendency has been called *archaic purism*. The influence of archaic purism led to an acute struggle against the intrusion of foreign words, particularly those of Latin and continental French origin, and as a consequence of this struggle an orientation towards the obsolescent forms of the language.
- 3) An orientation towards the living, developing and rapidly changing norms of the colloquial language. Free use was made of the inherent properties of the English language as they had materialized by this time, for example, free use of conversion, word-composition, derivation and semantic change. In the domain of syntax and word order too, there was already considerably freedom of usage.

Neutral, Common Literary and Common Colloquial Vocabulary

Neutral words, which form the bulk of the English Vocabulary, are used both in literary and colloquial language. They are the main source of synonymy and polysemy. It is the neutral stock of words that is so prolific in the production of new meanings. Unlike literary and colloquial words, neutral words lack special stylistic colouring.

Common literary words are chiefly used in writing and polished speech. It may seem difficult to distinguish a literary word from a colloquial word as no objective criteria of classification have been worked out. The opposition between literary, colloquial and neutral can become more apparent in pairs/ groups of synonyms.

As can be seen from the chart, the main distinction between the synonyms is stylistic.

Synonyms can differ in the emotional tension connoted in a word, in the sphere of application, or in the degree of quality denoted, etc. Colloquial words are always more emotionally coloured than literary ones. Neutral words lack emotiveness, nor do they have any distinctions in the sphere of usage.

Both literary and colloquial words have their upper and lower ranges. The lower range of literary words approaches the neutral layer and has a tendency to pass into that layer. The same can be said of the upper range of the colloquial layer. The boundaries between common colloquial and neutral, and between common literary and neutral are blurred, i.e. words from one stratum can penetrate into the other.

Still the extremes remain antagonistic and therefore are often used to bring about a collision of speech for special stylistic purposes. The difference in the stylistic aspect of words may colour the whole utterance.

The words in Juggins's answer are on the border line between common literary and neutral, whereas the words and expressions used by Dora are obviously common colloquial, not bordering on neutral.

In the chart, common colloquial vocabulary is represented as overlapping into the Standard English vocabulary. It is considered to be part of the latter. It borders both on the neutral vocabulary and on the special colloquial vocabulary.

Types of lexical meaning

A number of stylistic devices are based on the peculiar use of lexical meanings. A word is a language sign that expresses a concept by its forms and meanings. By concept is meant an abstract or general idea of some phenomenon of objective reality including the subjective feelings and emotions of human beings. The forms of the word show its relation to the other words in a sentence. The meaning of a word is the means by which the concept is materialized. The word may have a number of meanings.

Three types of meaning can be distinguished: *logical*, *emotive* and *nominal*.

Logical meaning is the precise naming of a feature of the idea, phenomenon or object, the name by which we recognize the whole of the concept (direct meaning or referential meaning).

The potentiality of words can also be noted in regard to *emotive meaning*. Emotive meaning also materializes a concept in the word, but unlike logical meaning, emotive meaning has reference not directly to things or phenomena of objective reality, but to the feelings and emotions of the speaker towards these things or to his emotions as such.

And finally we come to *nominal meaning*. There are words which, while expressing concepts, indicate a particular object out of a class. These words are classified in grammars as proper nouns.

In accordance with the division of language into literary and colloquial, we may represent the whole of the word stock of the English language as being *divided* into three main layers: the *literary layer*, the *neutral layer* and the *colloquial layer*. The aspect of the literary layer is its markedly bookish character. It is this that makes the layer more or less stable, the aspect of the colloquial layer of words is its lively spoken character. It is this that makes it unstable, fleeting.

The aspect of the neutral layer is its universal character, that means it is unrestricted in its use. It can be employed in all styles of language and in all spheres of human activity.

The literary vocabulary consists of the following groups of words: 1. common literary; 2. terms and learned words; 3. poetic words; 4. archaic words; 5. barbarisms and foreign words; 6. literary coinages including nonce-words.

The colloquial vocabulary falls into the following groups: 1. common colloquial words; 2. slang; 3. jargonisms; 4. professional words; 5. dialectal words; 6. vulgar words; 7. colloquial coinages.

The common literary, neutral and common colloquial words are grouped under the term *standard English vocabulary*. Other groups in the literary layer are regarded as special literary vocabulary and those in the colloquial layer are regarded as special colloquial (non-literary) vocabulary.

Neutral words, which form the bulk of the English vocabulary, are used in both literary and colloquial language. Neutral words are the main source of synonymy and polysemy. It is the neutral stock of words that is so prolific in the production of new meanings. Unlike all other groups, the neutral group of words cannot be considered as having a special stylistic colouring, whereas both literary and colloquial words have a definite stylistic colouring.

Common literary words are chiefly used in writing and in polished speech. Literary units stand in opposition to colloquial units.

The following synonyms illustrate the relations that exist between the neutral, literary and colloquial words in the English language.

Barbarisms and Foreignisms

Barbarisms are words of foreign origin which have not entirely been assimilated into the English language. They bear the appearance of a borrowing and are felt as something alien to the native tongue. Nevertheless most of what were formerly foreign borrowings are now, from a purely stylistic position, not regarded as foreign. But still there are some words which retain their foreign appearance to a greater or lesser degree. These words, which are called barbarisms, are, like archaisms, also considered to be on the outskirts of the literary language.

Most of them have corresponding English synonyms; e. g. chic (=stylish); Weltanschauung (=world-view); en passant (=in passing); ad infinitum (= to infinity) and many other words and phrases.

It is very important for purely stylistic purposes to distinguish between barbarisms and foreign words proper. Barbarisms are words which have already become facts of the English language. They are, part and parcel of the English word-stock, though they remain on the outskirts of the literary vocabulary. Foreign words though used for certain stylistic purposes, do not belong to the EV. They are not registered in dictionaries, whereas barbarisms are.

Foreign words are often italicized, barbarisms on the contrary, are not made conspicuous in the text.

CONCLUSION

From the Old English period up to the 15th century there had been chaos in English spelling. The Old English system, which was phonetic, had broken down because the language had changed. Then besides that, no writer knew exactly how to spell borrowed words – in the Latin, the French or the Norman – French way, or according to the rules which individual writers applied in their own way spelling words of French origin. 17th century literary English is characterized by a general tendency to refinement and regulation. The orientation towards classical models, strong enough in 16th century English, assumed a new function, that of refining, polishing and improving the literary language. This was, of course one of the trends leading to the final establishment of the norms of Literary English. 18th century concepts in the fields of philosophy and natural sciences had considerable influence on contemporary theoretical linguistic thought. The gap between the literary and colloquial English of the 18th century was widening. The restrictions forced on the written language are felt in the speech of the characters in the novels and plays of this period. Their speech is under the heavy influence of literary English and therefore it is erroneous to understand it as representing the norms of 18th century spoken English. The 19th century trends in literary English are best summarized in the following statement by McKnight: "The spirit of purism evidently alive in the early 19th century. The sense of classical perfection to be striven for survived from 18th century". The language must not only be made more regular, but it must be protected from the corrupting influences that were felt to be on all sides. Vulgarisms were to be avoided and new words, if they were to be tolerated, must conform not only to analogy but to be tolerated, must conform not only to analogy but to good taste. We must point out that functional styles of language have shaped themselves within the literary form of the English language. The division of the standard English language into two varieties, written and spoken, which was acknowledged as a natural coexistence, now goes alongside the problem of the "closed" system of styles of language. The classification of the vocabulary here suggested is for purely stylistic purposes. This is important for the course in as much as some SDs are based on the interplay of different stylistic aspects of words. In order to get more or less clear idea of the word-stock of any language, it must be presented as a system, the elements of which are interconnected, interrelated and yet independent. The word – stock may be represented as a definite system in which different aspects of words may be singled out as independent. A special branch of linguistic science – lexicology has done much to classify vocabulary.

The word-stock of the English language as being divided into three main layers: the *literary lawyer*, the *neutral lawyer* and the *colloquial layer*.

The literary vocabulary consists of the following groups of words: 1. Common literary, 2. Terms and learned words; 3. Poetic words; 4. Archaic words; 5. Barbarism and foreign words; 6. Literary coinages including nonce-words.

The colloquial vocabulary falls into the following groups: 1. Common colloquial words, 2. Slang, 3. Jargonisms; 4. Professional words, 5. Dialectal words; 6. Vulgar words; 7. Colloquial coinages;

The common literary, neutral and common colloquial words are grouped under the term *standard English vocabulary*.

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MORPHOLOGICAL AND ANATOMICAL ANALYSIS OF THE GLYCYRRHIZA GLABRA L.

¹Aliyev Bahman Musa oglu, ²Qabilov Malik Yusif oglu, ³Aliyeva İlaha Fizuli qızı

¹Cand. Sc. Biology, Docent, Azerbaijan State Agrarian University, Ganja, Azerbaijan

²Cand. Sc. Biology, Docent, Azerbaijan State Agrarian University, Ganja, Azerbaijan

³Cand. Sc. Biology, Senior lecturer, Azerbaijan State Agrarian University, Ganja, Azerbaijan

Emails: ³ilahaaliyeva@inbox.ru,

ABSTRACT

Glycyrrhiza glabra in the low-lying semi-desert regions of Azerbaijan is very widespread and often forms thickets occupying large areas. At present, in connection with the development of new lands for technical and grain crops, their area has somewhat decreased.

Keywords: *Glycyrrhiza glabra*, fodder plant, chlorenchyma, parenchyma, sclerenchyma.

Glycyrrhiza glabra L. is a perennial herbaceous root-crop plant, 60-80 cm high. The root system is powerful, consisting of the main root, vertically extending deep into the soil for 2-7 m and more, and a network of lateral offspring that extend in all directions from the main one and give new above-ground shoots and new vertical roots. The roots in the fracture are bright yellow or lemon-yellow, outside are brownish-gray. Stems straight, strong, usually slightly branched, absent-mindedly short-furry. Stipules lanceolate-subulate, early shedding. Leaves are 5-20 cm long, with 7-19 leaves. Leaflets are elliptically-lanceolate or oblong-ovate, almost bare, from below usually sticky from resinous secretions and densely covered with acicular glands. Corolla pale purple, 8-10 mm long. Calyx 5-6 mm long, short-furry; its teeth are equal in length to the tube or slightly longer. Beans are glabrous, oblong, straight or slightly curved, brown, leathery, non-opening or late-opening, with 3-6 seeds.

Glycyrrhiza glabra - is of great economic importance. The most ancient medicinal plant included in the pharmacopoeia of almost all European countries. For medicinal purposes, roots and rhizomes are used; they contain up to 15% of glycyrrhizin, which has a sweet taste. Rhizomes and roots contain up to 25% of extractive substances. In addition to glycyrrhizin, *Glycyrrhiza glabra* contains glucose (3%), sucrose (5%), about 3% asparagine, tar, starch and a yellow pigment that gives the root a yellowish color. Preparations from *Glycyrrhiza glabra* are used as enveloping and facilitating the separation of sputum, as a mild laxative and as a taste improving agent; is a part of various medicines. Powder from a dry root is a part of the laxative complex powder and in the composition of various cakes from cough. *Glycyrrhiza glabra* has a weak diuretic effect. The roots contain vitamin C, in ashes 14% potash [2].

Glycyrrhiza glabra is a fodder plant. On the content of nutrients, there are discrepancies, depending on the phase of development, the organ of the plant and the habitat. Thus, in the fruiting phase of the protein contains from 5.3% to 14.3%, fat - from 2.3% to 7.1%, fiber - from 19.8% to 39.3%, nitrogen-free extractives from 31, 9% to 55%. In the pasture camels and sheep poorly or satisfactorily eat *Glycyrrhiza glabra* before fruiting; cattle and horses almost do not eat it. Poor consumption of *Glycyrrhiza glabra* is explained by the presence of tannins in it.

Materials and methods of research

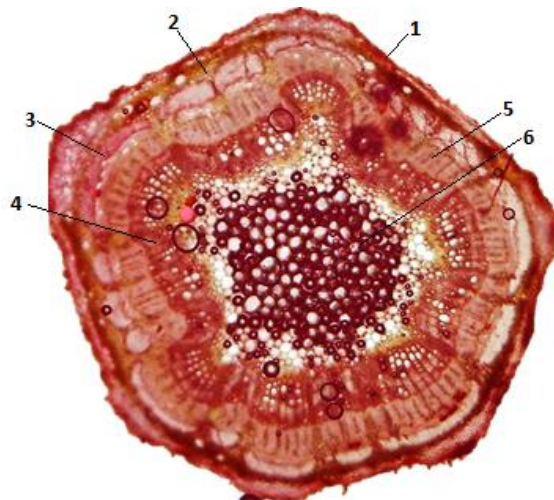
The material for the study is *Glycyrrhiza glabra*, a widely distributed species on the territory of Azerbaijan.

Samples for anatomical studies were taken at various morphological-physiological stages of plant development. From the samples taken, herbariums were prepared, and for anatomical studies, the samples were fixed in 70% alcohol. Temporary and permanent preparations were manufactured on the basis of conventional methods. Morphological features of the vegetative organs of the plant were investigated with the help of a binocular loupe, and the manufactured preparations with the help of microscopes "MI-4100DHD" and "Motic". Anatomical drawings were made using a microscope "TAC-3.0C". Anatomical terminology of various authors was used.

Results of the study

The root. The cross-section of the root is round in shape, with a cork on the outside. Cork consists of 3-4 rows, under it is located an exodermis. The mesoderm (the parenchyma) is represented by 10-15 layers of large round cells that are loosely located. In the mesoderm, excretory receptacles of a schizogenous character are observed. Endoderm and pericycle are 1-row. Between cells of the endoderm, there is transmission cells located opposite the xylem rays. They serve to maintain the connection between the bark and the central cylinder. The cells of the pericycle are polyhedral, with a thin shell and densely arranged [3].

The location of the xylem is tetrarchic, the vessels are arranged in groups of 4-5, and the main parenchyma is thin-walled. The phloem is located between the rays. Cells of phloem are underdeveloped, small and multifaceted.



Anatomical structure of the stem

1. Epidermis; 2. Chlorenchyma; 3. Sclerenchyma;
4. Xylem; 5. Phloem; 6. Spare substances.



Anatomical structure of the root

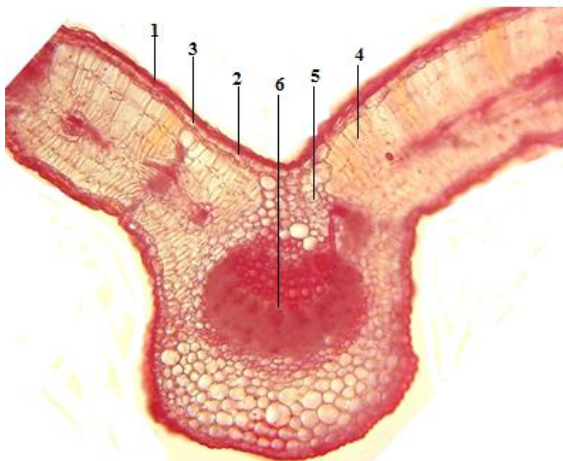
1. Cork; 2. Exodermis; 3. Mezoderm;
4. Schizogenous container; 5. Endoderm.

The stem. The stem is covered with a single-layered epidermis. The epidermis consists of isodiametric large cells, contains stomata. Under the epidermis, photosynthetic parenchyma cells are located in 2-3 layers. The parenchyma is 13-15 rows. The central cylinder has a bundle structure. As the growth increases, the vascular bundles merge and form a ring. The stalk is characterized by a combination of parenchymatization and significant sclerosis [4].

Studies show that in arid conditions the number of vascular bundles increases, their volume decreases. Medullary rays are numerous. According to our reasoning, this is due to environmental conditions. In the center is well developed core, in which the reserve substances accumulate. Specific structure of the bundles, their shape, origin, development of sclerenchyma, reserve nutrients and etc. are characteristic features of this species.

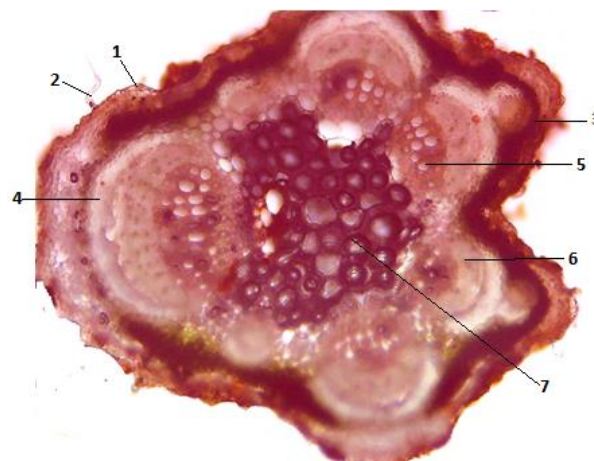
The leaf. The epidermis is single-row, the contours of the cells are rectilinear. The cells of the upper epidermis are large and elongate. The epidermis is covered on the outside with the cuticle. Mesophyll is dorsiventral, palisade cells are small and 2-3-row, abundantly filled with chloroplasts. The major part of the mesophyll is the spongy parenchyma, the cells of which are large and loose. Leaves are epistomatic, stomata are observed only on the upper epidermis. The conductive tissue is well developed, vascular bundles of collateral type. The main vein of the leaf is large, heavily scarified. The lateral vascular bundles are small, numerous. In the bundles there is a strong development of xylem. The number of xylem rays in the vascular bundle is 6-7, in each ray there are 5-8 vessels. In the early stages of development, hairs form on the surface of the leaf, which later fall off, and the leaf and petiole remain bare [1].

The phloem is facing the underside of the leaf, the cells of which are small and polyhedral in shape. A bundle-sheath is formed around the vascular bundle, which serves for communication between the leaf mesophyll and the bundle elements.



Anatomical structure of the leaf

1. Cuticle; 2. Epidermis; 3. Stoma;
4. Palisade parenchyma; 5. Spongy parenchyma;
6. Central bundle.



Anatomical structure of the petiole

1. Epidermis; 2. Hair; 3. Chlorenchyma;
4. Sclerenchyma; 5. Xylem; 6. Phloem;
7. Spare substances.

The petiole. The petiole is covered with the epidermis, under which the cells of the chlorenchyma are located in 2-3 rows. Vascular bundles of various sizes: large and small, collateral. Sclerenchymation is observed only in bundles. The parenchyma is 8-14 rows. These cells on the border with the parenchyma and vascular bundles are small, in the center are large. The petiole has a bundle structure, at the base of the petiole there are 5 vascular bundles of the collateral type. Xylem inverted to the upper, and phloem to the underside of the petiole. The phloem is multilayer; the cells are small and multifaceted. Above each bundle is developed sclerenchyma, which increases the mechanical strength, as well as the elasticity of the petiole. In the early stages of development, hairs form on the surface. The core is wide, its cells thin-walled, contain spare nutrients [5].

CONCLUSION

Thus, the structure of vegetative organs reflects their function and the environment of formation. In the process of evolution, this species has adapted to various environmental conditions. All this allows us to think that materials on the anatomy of the vegetative organs of *Glycyrrhiza glabra* can be useful for understanding its ecology, as well as for solving phylogeny and taxonomy.

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THE WOMEN POSSESSING AN EQUAL RIGHTS IN SOCIETY IN THE EPOS OF “KITABI-DEDE GORGUD”

Aliyeva Lilpar Qasham kızı

Azerbaijan State Agrarian University. Senior teacher (Azerbaijan)

ABSTRACT

The article deals with the power of the cults in the Oguz state, the completion of each other's family and state cults, and the honesty of the father's respect. In Kalin Oguz, the elderly manages to control the protection of the elephant, the white-headed cults, the existence of non-formal education. The responsibility for the honor of the spouse is not only the husband's personal responsibility, but also the responsibility of the society in the present case, in the Oguz era, above all the material-physical barrier, the Turkishness of peace and so on. are talked about.

Keywords: The Oguz society, the respect of women, heroic women, the attitude towards women, mother, loyalty of husband, care of child and mother, love, marriage settlement codes.

There is an invincible historical book in the life of Turkish people coming from old centuries: “Kitabi-Dada Gorgud”! Old Oguz eposes scraped to our memories are really one of the richest, greatest sources created by Turkish people.

Each part of a poem (called “boy”) is dedicated to divine love to the country, parents, brother and sister; and also bravery and heroism, happiness and felicity in the world. The name of “Kitabi-Dada Gorgud” is equal of huge eposes in the world, and it is a rare pearl for Azerbaijan literature, folklore, art and culture. The most valuable monument of the old Azerbaijan. Oguz tribe, their life style, customs and traditions, moral quality, such as thinking style (tefekkur terzi), ethical and esthetical views, family education (aile terbiyesi), naming (adqoyma), victory, respect and care of the old people.

From the beginning the information about Oguz state system attracts attention. It is clear that, The Oguz State consists of “beys”. All these to one centre. The leader of the State is “khan of khans”. In this Solid Oguz State the assembly is held for the leaders of “beylik”, different problems are discussed, arbitrated in these assemblies. Despite of this, one assembly is definitely held: “It was a wedding held at khan of khan’s Bayandur. And a lot of guests were invited for the sake of Oguz beys”. It is the celebration of State day nowadays. These eposes praise heroism, the respect of mother and father, love, friendship, sincerity and self-sacrifice, the respect of the women, prefer mother rights, honesty, etc. While talking about the feelings of patriotism in “Dada Gorgud” epos we must mention the heroines too. It’s not said in vain.

There are special women in epos as idea bearer. Three of them are: Burla khatun, Banuchichek, Selcan khatun. The same women’s names are not mentioned in the epos, but their special places and positions are felt clearly. Dirse khan’s, Deli Domrul’s and Seyrey’s wives are such kinda of women. These women are described such as heroines in some parts. The first part (boy) known as the name of “Dirse khan’s son Bugac”, but he is not the hero of the events. Depriving Dirse khan from the heroism of the part (boy) causes his clever and sober-minded wife.

She releases her husband and family from the Bayandur khan’s punishment. She also releases her son from the enemies and gives him chance to live, because this woman is “mother” reconciles him with his father, she does not let enmity between father and son. And at last, she gets her husband rid of death, keeps Dirse khan’s rules (beylik) wholly, she also achieves to give Bugac the title of the second leader (beylik), and prepares her son as a future khan. The attention to the women, mother noticed seen from the first stage of the epos. These words are said at that moment in the epos: “Dirse khan held great wedding with the intrusion of “dishli ehli”. “Dishli ehli” this expression shoews that the spirit of patriarchy is dominant in the great Oguz state. Despite of it, there is a great respect for the woman’s word. It is the immortal rule for the Turkish people in attitude to woman, they think “The rights of woman is the rights of God”. The woman is appreciated as a wise member of society in “Dada Gorgud” epos. They don’t drop behind from the men in bravery. They suckle love to children, loyalty to husband, respect to parent. These words also approve the rights of woman in the same society : Dirse khan addresses his wife as the same words she does: “Beru gelgil bashum bakhtu, evum takhtu” (means: my luck, the throne of my house, come here). In the part of “Qanturali the son of Qanli Qocha father complains his son about that it is time for him to get married and asks him about the kind of girl he wants to get married. The son answers: “I want the girl who will wake up before me, will ride the horse before me, will reach the

enemy before me". And his father answers to him: "my son, you don't want a wife, you want a brave husband, find that kind of girl and I'll marry her to you. He heard about such kind of girl, she was a daughter of Trabzon king, named Sari donlu Selcan khatun. But the conditions for getting married to this girl are very hard. In order to get married to her one must to defeat a rabid lion, a black bull and camel. It means, Selcan khatun looked for not an ordinary husband, but a brave one. That means, in both Inner Oguz, and outer Oguz women wanted a Caurageous man and visa versa. Because the defence of the country and family depend on it. When the brave man goes a part the country, he knows whom to trust the homeland. For example, Khanturali, whose horse was shot by an arrow in the battle ground drove out the enemy unmounted, Selcan khatun murdering the enemy took Khanturali on his horse and saved him. The character Selcan khatun shows that, the women's honour is greatly appreciated in Oguz society. Training the healthy and strong generation is a public goal. The old proverb is said for this momentum: "apple does not fall far from apple tree".

Banuchichek is as heroine selcan khatun. We see her presence in the battles with heroes. The most successful woman character in the epos is "boyu uzun Burla khatun". This part of epos called by the name of Uruz, but he is not the hero of the part (boy). Khazan khan can not be the hero of the part (boy) too. Boyu uzun Burla khatun, who established situation for her son's survival helped her husband, carried Oguz beys with her, cut with the sword the enemy's flag and became the main hero of the part (boy). There are some details in the part (boy) which gives information about the old Turkish life conditions, the cultural level, the traditional behavior, esthetic thoughts, etc. The first word about the birth of Dirse khan's son is this: a son was born after a while. He gave her son to nannies and ured him". The concept of nanny in the sign of care to mother and child. That means, the culture of capitalist aristocratism in pedagogic-medical manners is the symbol of ethnic-family in Turkish people. The child is given to nannies. In this case the nanny not only takes care of child's nourishment, but also his phisical and mental education. It's the factor of high-level society.

Dirse khan's wife addresses him like that: my khan father saw you, my mother's said you, I opened my eyes, noticed and loved you, Dirse khan. It reflects all codes of marriage, if the daughter wants to marry parents must take part in this process. It means, father and mother together allow her daughter to marry some one. T the same time, the women says this expressions: "I opened my eyes and saw you", "I loves you by my soul". Thus, the girl has got a right to choose her husband. This is the peculiarity of high-level democratic society.

"Kitabi-dada Gorgud" can not lose color, it always remains fresh, and admires generations now and then. We can courageously call this book the father of oral and written literature in Azerbaijan. Wise and meaningful thoughts, elegant and human feelings starts from "Kitabi-Dada Gorgud", old our Literature. "Kitabi-Dada Gorgud" with its taste is a great monument as product of our ancestor's rich cognition and imagination.

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MILK IN IT, FOLLOW THE COOLANT TO CONDUCT IMPRESSIVE PARAMETERS REGRESSION EQUATION GRAPHIC - ANALYTICAL METHOD DEFINITION

¹Kh.N. Gurbanov, ²Z.V. Babaev

¹Doctor of Science, Professor, ²Doctoral student

^{1,2}Azerbaijan State Agrarian University

Research works effectively and accelerating the main place planning of experiment. Experiment planning multifactor dependencies with the definition of functions that affect the factors of low prices without regard for the amount of loss reduction seriously affecting factors on the experiment and carry. With this purpose, many managers regression function equation is made. Regression equations the general expression to wrote as bottom:

$$f(y) = a_0 + a_1x_1 + a_2x_2 + \dots + a_nx_n + a_1a_2x_1x_2 + a_2a_3x_2x_3 + \dots + a_{n-1}a_nx_{n-1}x_n + a_1x_1^2 + \dots + a_nx_n^2 \dots$$

where $a_1 \dots a_n$ – indicator of regression;
 $x_1 \dots x_2 \dots x_n$ – the studding parameters.

One of the main objectives of regression coefficient assignment.

These determine the coefficients of the different methods when determining (the smallest squares, etc.). long it takes with women. Coefficients to set the value lies in the fact that, if these coefficients are small in comparison and negative assessment, if there when these coefficients, representing the parameters of the reduction are laid and the experiment number decreases. Given this, these factors easy way to specify its methods of design, implementation had been proposed. In the essence of the method lies in the fact that the required parameters are the minimum and maximum prices, the purpose was ordinat axis, function, price, absis axis mentioned, the price scale, indicating, in dependence tangensial (t_{ga}) is assigned. Regression equations of these coefficients $a_1, a_2, \dots, a_n, t_{ga2}, \dots, t_{gan}$ with replacement. For example,

$$f(y) = tga_0 + tga_1x_1 + tga_2x_2 + \dots + tga_nx_n + tga_1tga_2x_1x_2 + tga_2tga_3x_2x_3 + tga_{n-1}tga_nx_{n-1}x_n + (tga_1x_1)^2 + \dots + (tga_nx_n)^2$$

In the form should be written.

Depending, as shown below the coordinate axis, can be displayed.

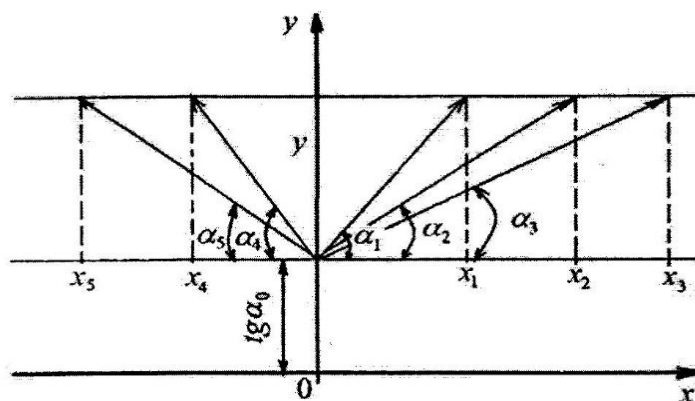


Fig.2

It is graphic, as seen

$$a_0 = tga_0; \quad tga_1 = \frac{y}{x_1}; \quad tga_2 = \frac{y}{x_2}; \quad tga_3 = \frac{y}{x_3};$$

$$tga_4 = \frac{y}{x_4}; \quad tga_5 = \frac{y}{x_5};$$

If these expressions are y - and therefore, thinking in the total the readings obtained:

$$\sum y = tga_0 + tga_1x_1 + tga_2x_2 - tga_3x_3 - tga_4x_4 - tga_5x_5 + tga_1tga_2x_1x_2 + tga_2tga_3x_2x_3 + tga_3tga_4x_3x_4 + tga_4tga_5x_4x_5 + tg^2a_1x_1^2 + tg^2a_2x_2^2 + tg^2a_3x_3^2 + tg^2a_4x_4^2 + tg^2a_5x_5^2$$

That's what the ratio is small, or negative his regression withdraw equation. So that, for example, a small tga₃, tga₄ and tga₅ is negative, then the regression equation figs will take, and thus change the functions x₁ and x₂ arguments based on appropriate.

Milk coolant it follow with the purpose of conducting its business of influencing factors, defined the research acceleration regression equation grafo-analytical method is made. Here the main goal-at a low price, which have sought far-reaching, which do not affect the trim settings Recalling studies of acceleration, in a short time work to finish, to bring. We study the necessary coolness, providing the heat transfer equation is used. These equations of milk in cold water, solution, and design refrigerator, which correspond to the equations the sum of the duration consists of. These equations are.

1. Water the necessary cooling:
- 2.

$$Q_{su} = MC_m(t_{milk}^I - t_{last}^{II})$$

where: M – is the refrigerator included in the mass of milk;

C_m - milk especially warm capacity ratio;

t_{milk}^I - the previous temperature in milk;

t_{last}^{II} - the last temperature in milk.

3. The solution gave the cold capacity:
- 4.

$$Q_{sol} = nMc(t_{sol}^{last} - t_{sol}^o)$$

where: n - the liquid consumption ratio;

C – solution especially heat capacity, coefficient;

t_{sol}^{last} – last solution final temperature;

t_{sol}^o - solution original temperature.

5. The depend fridge cooling area from cooling.
- 6.

$$Q_F = kF\Delta t$$

where: K- is the heat (cold) transfer coefficient;

F – area of fridge;

Δt - the environment, the common cold in the refrigerator between

temperature account.

Given below in the general equation, we get next:

$$Q_{gen} = MC_m(t_{milk}^I - t_{last}^{II}) + nMc(t_{sol}^{last} - t_{sol}^{or}) + kF\Delta t$$

These regression equation:

$$y(Q_{gen}) = a_1x_1(M) + a_2x_2(t_{milk}^I) + a_3x_3(t_{milk}^{II}) + a_4x_4(t_{milk}^{or}) + a_5x_5(t_{sol}^{or}) + a_6x_6(K) + a_7x_7(F) + a_8x_8(\Delta t)$$

These indicators hüdud within prices, providing the following scheduled report conducted. Q_{gen} average score, it will count regression equation the following hold.

$$y(Q_M) = Q_1(x_1) + Q_2(x_2) + Q_3(x_3) + Q_4(x_4) + Q_5(x_5) + Q_6(x_6) + Q_7(x_7) + Q_8(x_8)$$

Different indicators depending on the cooling equantity

	M (x_1)	C_m	t_{milk}^I (x_2)	t_{milk}^{II} (x_3)	n (x_4)	c	t_{sol}^{last}	t_{sol}^{or} (x_5)	F (x_6)	K (x_7)	Δt x_8	Q k/kal
1	100	0,94	40 ⁰	5 ⁰	2	1,0	2	-10	0,8	2000	2 ⁰	8890
	100	0,94	30 ⁰	5 ⁰	2	1,0	2	-10	0,8	2000	2 ⁰	7950
	100	0,94	20 ⁰	5 ⁰	2	1,0	2	-10	0,8	2000	2 ⁰	7100
mid	100	0,94	30 ⁰	5 ⁰	2	1,0	2	-10	0,8	2000	2 ⁰	7950
2	100	0,94	30 ⁰	5 ⁰	3	1,0	2	-10	0,8	2000	2 ⁰	9150
	100	0,94	30 ⁰	5 ⁰	2	1,0	2	-10	0,8	2000	2 ⁰	7950
	100	0,94	30 ⁰	5 ⁰	1	1,0	2	-10	0,8	2000	2 ⁰	6750
mid	100	0,94	30 ⁰	5 ⁰	3	1,0	2	-10	0,8	2000	2 ⁰	9150
3	100	0,94	30 ⁰	5 ⁰	2	1,0	2	-5	0,8	2000	2 ⁰	6950
	100	0,94	30 ⁰	5 ⁰	2	1,0	2	-10	0,8	2000	2 ⁰	7950
	100	0,94	30 ⁰	5 ⁰	2	1,0	2	-15	0,8	2000	2 ⁰	8950
mid	100	0,94	30 ⁰	5 ⁰	2	1,0	2	-15	0,8	2000	2 ⁰	8950
4	100	0,94	30 ⁰	5 ⁰	2	1,0	2	-10	1,0	2000	2 ⁰	8750
	100	0,94	30 ⁰	5 ⁰	2	1,0	2	-10	2,0	2000	2 ⁰	12750
	100	0,94	30 ⁰	5 ⁰	2	1,0	2	-10	3,0	2000	2 ⁰	16750
mid	100	0,94	30 ⁰	5 ⁰	2	1,0	2	-10	3	2000	2 ⁰	16750
5	100	0,94	30 ⁰	5 ⁰	2	1,0	2	-10	0,8	2000	3 ⁰	9550
	100	0,94	30 ⁰	5 ⁰	2	1,0	2	-10	0,8	2000	5 ⁰	12750
	100	0,94	30 ⁰	5 ⁰	2	1,0	2	-10	0,8	2000	6 ⁰	14350
mid	100	0,94	30 ⁰	5 ⁰	2	1,0	2	-10	0,8	2000	7 ⁰	15950
	100	0,94	30 ⁰	5 ⁰	2	1,0	2	-10	0,8	1000	2 ⁰	6350
	100	0,94	30 ⁰	5 ⁰	2	1,0	2	-10	0,8	1500	2 ⁰	7150
	100	0,94	30 ⁰	5 ⁰	2	1,0	2	-10	0,8	3000	2 ⁰	9550
mid	100	0,94	30 ⁰	5 ⁰	2	1,0	2	-10	0,8	1800	2 ⁰	7630
7	100	0,94	30 ⁰	3 ⁰	2	1,0	2	-10	0,8	2000	2 ⁰	8138
	100	0,94	30 ⁰	6 ⁰	2	1,0	2	-10	0,8	2000	2 ⁰	7856
	100	0,94	30 ⁰	1 ⁰	2	1,0	2	-10	0,8	2000	2 ⁰	8326
mid	100	0,94	30 ⁰	3,3	2	1,0	2	-10	0,8	2000	2 ⁰	8109,8
8	500	0,94	30 ⁰	5 ⁰	2	1,0	2	-10	0,8	2000	2 ⁰	26956
	1000	0,94	30 ⁰	5 ⁰	2	1,0	2	-10	0,8	2000	2 ⁰	50700
	200	0,94	30 ⁰	5 ⁰	2	1,0	2	-10	0,8	2000	2 ⁰	12700
mid	600	0,94	30 ⁰	5 ⁰	2	1,0	2	-10	0,8	2000	2 ⁰	31700

The dates what received from the table, for $Q_1 \dots Q_8$ run, typing the following regression equation is made to do.

$$Q_1(x_1) = 31700; \quad Q_2(x_2) = 7950; \quad Q_3(x_3) = 9150; \quad Q_4(x_4) = 16750;$$

$$Q_5(x_5) = 15950; \quad Q_6(x_6) = 7630; \quad Q_7(x_7) = 8109,8; \quad Q_8(x_8) = 9550;$$

$$Q = 31700 M + 9150 n + 15950 \Delta t + 16750 F + 9550 K$$

From equation as can be seen, the main impressive factors:

M, Δt , t_{sol}^{or} , n, F and K, and the other three factors are note can get.

Still regression equation in the preparation of the second degree used, but from our side we offer regression equation from class to replace. This is the simplest and easiest way.

The assessment of based on various indicators, mostly cold changes additive, there is a schedule $Q = f(M, t_{milk}^i, n, t_{sol}^{or}, F, K, \Delta t)$ to build. With this purpose, ordinate reading cold abscissa mentioned rates with the indication of three price-based curve is drawn. These graphs follows this.

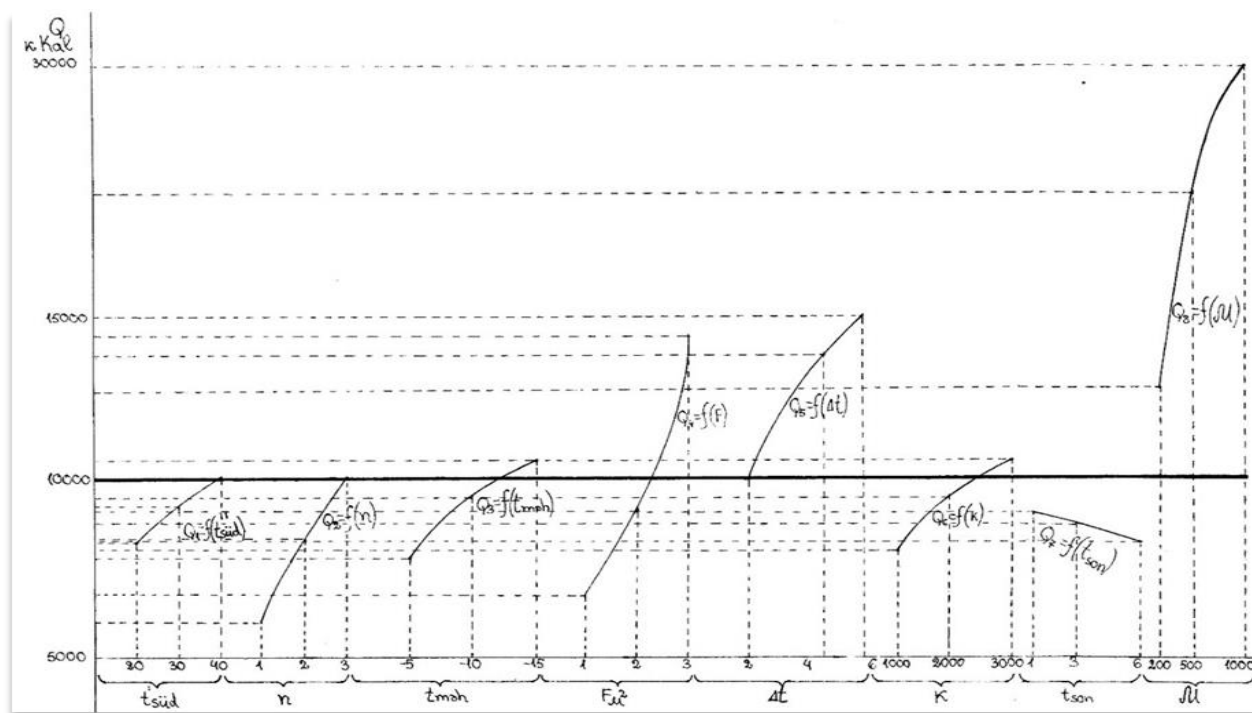


Figure 1. Milk required for cooling the cold of the size parameter dependence graphs

t_{sud}^i - milk in the previous temperature;

n – solution of oil, compared to other fuel consumption ratio;

t_{sol} - solution temperature;

F – the refrigerator cooling area;

Δt -temperature difference;

K – coefficient of thermal conductivity;

t_{last} – milk in the last temperature;

M – the performance of the refrigerator.

These dependencies of the lowest prices abscissa parallel to the axis of the straight line are laid in the line above, the remaining parameters of the lines is impressive than experiment on their basis are conducted. These parameters M, Δt , n, F, K consists of. This performance, that is on the chart listed in the table prices are the same. This method grafo-analtik method can be called.

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THE RISK LEVEL OF VIET NAM MEDICINE INDUSTRY UNDER FINANCIAL LEVERAGE DURING AND AFTER THE GLOBAL CRISIS 2009-2011

Dinh Tran Ngoc Huy

Banking University HCMC Viet Nam – GSIM, International University of Japan, Japan

Email: dtnhuy2010@gmail.com

ABSTRACT

This paperwork evaluates the impacts of external financing on market risk for the listed firms in the Viet nam medicine industry, esp. during and after the financial crisis 2009-2011.

First of all, by using quantitative and analytical methods to estimate asset and equity beta of total 6 listed companies in Viet Nam medicine industry with a proper traditional model, we found out that the beta values, in general, for many institutions are acceptable.

Second, under 3 different scenarios of changing leverage (in 2011 financial reports, 30% up and 20% down), we recognized that the risk level, measured by equity and asset beta mean, decreases when leverage increases to 30% but increases more if leverage decreases down to 20%.

Third, by changing leverage in 3 scenarios, we recognized the dispersion of risk level, measured by equity beta var, keeping the same value of 0,711 if the leverage increases to 30% or if leverage decreases to 20%. But the dispersion measured by asset beta var increases to 0,200 (leverage down 20%), showing leverage impact.

Finally, this paper provides some outcomes that could provide companies and government more evidence in establishing their policies in governance.

Keyword: equity beta, financial structure, financial crisis, risk, external financing, medicine industry.

JEL CLASSIFICATION : G010, G100, G390

INTRODUCTION

Financial leverage has certain effects on the risk level of listed companies on stock exchange. Flifel (2012) stated today, the assumption of efficient capital markets is very controversial, especially in these times of crisis, and is challenged by research showing that the pricing was distorted by detection of long memory. Gabrijelcic et al (2013) find a significant negative effect of leverage on firm performance. And firms that had some foreign debt financing performed better than their counterparts.

Measuring beta is a popular method used in many models such as the famous CAPM model. The Viet Nam medicine industry is selected for the research because until now there is no research published with the same scope and because Viet Nam medicine industry is considered as one of active economic sectors in local financial markets, which has some positive effects for the economy. The purpose of this study, therefore, to find out how much market risk for this industry in changing contexts of financial leverage.

We mention some issues on the estimating of impacts of external financing on beta for listed medicine industry companies in Viet Nam stock exchange as following:

Issue 1: Whether the risk level of medicine industry firms under the different changing scenarios of leverage increase or decrease so much.

Issue 2: Whether the disperse distribution of beta values become large in the different changing scenarios of leverage estimated in the medicine industry.

Beside, we also propose some hypotheses for the above issues:

Hypothesis 1: because using leverage may strongly affect business returns, changing leverage scenarios could strongly affect firm risk.

Hypothesis 2: as external financing is vital for the business development, there will be large disperse in beta or risk values estimated.

This paper is organized as follow. The research issues and literature review and methodology will be covered in next sessions 2 and 3, for a short summary. Next session presents empirical results and findings. The last session shows discussion and will conclude with some policy suggestions. This paper also supports readers with references, exhibits and relevant web sources.

THEORETICAL BACKGROUND

A. Conceptual theories. The impact of financial leverage on the economy

Financial development and economic growth are positively interrelated. The interaction between these two (2) fields can be considered as a circle, in which good financial development causes economic growth and vice versa. A sound and effective financial system has positive effect on the development and growth of the economy. Financial institutions and markets can enable corporations to solve liquidity needs and enhance long-term investments. This system include many channels for a firm who wants to use financial leverage or FL, which refers to debt or to the borrowing of funds to finance a company's assets.

In a specific industry such as medicine industry, on the one hand, using leverage with a decrease or increase in certain periods could affect tax obligations, revenues, profit after tax and technology innovation and compensation and jobs of the industry.

During and after financial crises such as the 2007-2009 crisis, there raises concerns about the role of financial leverage of many countries, in both developed and developing markets. On the one hand, lending programs and packages might support the business sectors. On the other hand, it might create more risks for the business and economy.

B. Methodology

For calculating systemic risk results and leverage impacts, in this study, we use the live data during the crisis period 2009-2011 from the stock exchange market in Viet Nam (HOSE and HNX and UPCOM).

In this research, analytical research method is used, philosophical method is used and specially, leverage scenario analysis method is used. Analytical data is from the situation of listed medicine industry firms in VN stock exchange and current tax rate is 25%.

Generally speaking, quantitative method is mainly used in this study with a note that risk measure asset beta is mainly derive from equity beta and financial leverage.

Finally, we use the results to suggest policy for both these enterprises, relevant organizations and government.

C. Previous Studies

Fama, Eugene F., and French, Kenneth R., (2004) also indicated in the three factor model that "value" and "size" are significant components which can affect stock returns. They also mentioned that a stock's return not only depends on a market beta, but also on market capitalization beta. The market beta is used in the three factor model, developed by Fama and French, which is the successor to the CAPM model by Sharpe, Treynor and Lintner.

Dimitrov (2006) documented a significantly negative association between changes in financial leverage and contemporaneous risk-adjusted stock returns. Aydemir et al (2006) identified in an economy with more realistic variation in interest rates and the price of risk, there is significant variation in stock return volatility at the market and firm level. In such an economy, financial leverage has little effect on the dynamics of stock return volatility at the market level. Financial leverage contributes more to the dynamics of stock return volatility for a small firm. Then, Maia (2010) stated the main determinants of firms' capital structures are related to firms' sensitivities to these systematic sources of risk and they affect asymmetrically low and high leverage firms. And temporary shocks are relatively more important for low leverage firms, and that financial distress risk seems to be captured by the sensitivity of firms' cash flow innovations to market discount rate news.

Umar (2011) found that firms which maintain good governance structures have leverage ratios that are higher (forty-seven percent) than those of firms with poor governance mechanisms per unit of profit. Chen et al (2013) supported regulators' suspicions that over-reliance on short-term funding and insufficient collateral compounded the effects of dangerously high leverage and resulted in undercapitalization and excessive risk exposure for Lehman Brothers. The model reinforces the importance of the relationship between capital structure and risk management. Then, Alcock et al (2013) found evidence that leverage cannot be viewed as a long-term strategy to enhance performance, but in the short term, managers do seem to add significantly to fund excess returns by effectively timing leverage choices to the expected future market environment. And Gunaratha (2013) revealed that in different industries in Sri Lanka, the degree of financial leverage has a significant positive correlation with financial risk.

Finally, financial leverage can be considered as one among many factors that affect business risk of medicine firms.

EMPIRICAL ANALYSIS

A. General Data Analysis

The research sample has total 8 listed firms in the medicine industry market with the live data from the stock exchange.

Firstly, we estimate equity beta values of these firms and use financial leverage to estimate asset beta values of them. Secondly, we change the leverage from what reported in F.S 2011 to increasing 30% and reducing 20% to see the sensitivity of beta values. We found out that in 3 cases, asset beta mean values are estimated at 0,283, 0,213 and 0,338 which are sensitive and negatively correlated with the leverage. Also in 3 scenarios, we find out equity beta mean values (0,490, 0,446 and 0,516) are negatively correlated with the leverage. Leverage degree changes definitely has certain effects on asset and equity beta values.

B. Empirical Research Findings and Discussion

In the below section, data used are from total 8 listed medicine industry companies on VN stock exchange (HOSE and HNX mainly). In the scenario 1, current financial leverage degree is kept as in the 2011 financial statements which is used to calculate market risk (beta). Then, two (2) FL scenarios are changed up to 30% and down to 20%, compared to the current FL degree.

Market risk (beta) under the impact of tax rate, includes: 1) equity beta; and 2) asset beta.

B.1 Scenario 1: current financial leverage (FL) as in financial reports 2011

In this case, all beta values of 8 listed firms on VN medicine industry market as following:

Table 1 – Market risk of listed companies on VN medicine industry market

Order No.	Order No.	Company stock code	Equity beta	Asset (assume beta = 0)	beta debt	Note	Financial leverage (F.S reports)
1	1	AMV	1,191	1,075			9,7%
2	2	APC	0,419	0,383		DLV as comparable	8,6%
3	3	DBM	2,091	0,765		PGT as comparable	63,4%
4	4	DBT	0,661	0,192		PGT as comparable	70,9%
5	5	DCL	0,700	0,312		PGT as comparable	55,4%
6	6	DDN	-0,946	-0,163			82,8%
7	7	DHG	0,592	0,432			27,2%
8	8	DHT	0,610	0,251			58,8%
Average							47,11%

(source: Viet Nam stock exchange 2012)

B.2. Scenario 2: financial leverage increases up to 30%

If leverage increases up to 30%, all beta values of total 8 listed firms on VN medicine industry market as below:

Table 2 – Market risks of listed medicine industry firms (case 2)

Order No.	Company stock code	Equity beta	Asset beta (assume debt beta = 0)	Note	Financial leverage (30% up)
1	AMV	1,191	1,041		12,6%
2	APC	0,419	0,372	DLV comparable as	11,2%
3	DBM	2,091	0,368	PGT comparable as	82,4%
4	DBT	0,661	0,051	PGT comparable as	92,2%
5	DCL	0,700	0,235	PGT comparable as	72,1%
6	DDN	-0,946	0,072		107,7%
7	DHG	0,592	0,383		35,3%
8	DHT	0,610	0,144		76,4%
Average					61,2%

(source: Viet Nam stock exchange 2012)

B.3. Scenario 3: leverage decreases down to 20%

If leverage decreases down to 20%, all beta values of total 8 listed firms on the medicine industry market in VN as following:

Table 3 – Market risk of listed medicine industry firms (case 3)

Order No.	Company stock code	Equity beta	Asset beta (assume debt beta = 0)	Note	Financial leverage (20% down)
1	AMV	1,191	1,099		7,8%
2	APC	0,419	0,390	DLV comparable as	6,9%
3	DBM	2,091	1,030	PGT comparable as	50,7%
4	DBT	0,661	0,286	PGT comparable as	56,8%
5	DCL	0,700	0,390	PGT comparable as	44,3%
6	DDN	-0,946	-0,319		66,2%
7	DHG	0,592	0,464		21,7%
8	DHT	0,610	0,323		47,0%
Average					37,7%

(source: Viet Nam stock exchange 2012)

All three above tables and data show that values of equity and asset beta in the case of increasing leverage up to 30% or decreasing leverage degree down to 20% have certain fluctuation.

C. Comparing statistical results in 3 scenarios of changing leverage:

Table 4 - Statistical results (FL in case 1)

Statistic results	Equity beta	Asset (assume beta = 0)	beta debt	Difference
MAX	2,091	1,075		1,0153
MIN	-0,946	-0,163		-0,7831
MEAN	0,665	0,406		0,2589
VAR	0,7106	0,1400		0,5705
Note: Sample size : 8				

(source: Viet Nam stock exchange 2012)

Table 5 – Statistical results (FL in case 2)

Statistic results	Equity beta	Asset beta (assume debt beta = 0)	Difference
MAX	2,091	1,041	1,0500
MIN	-0,946	0,051	-0,9970
MEAN	0,665	0,333	0,3316
VAR	0,7106	0,0998	0,6107
Note: Sample size : 8			

(source: Viet Nam stock exchange 2012)

Table 6- Statistical results (FL in case 3)

Statistic results	Equity beta	Asset beta (assume debt beta = 0)	Difference
MAX	2,091	1,099	0,9921
MIN	-0,946	-0,319	-0,6265
MEAN	0,665	0,458	0,2071
VAR	0,7106	0,1999	0,5107
Note: Sample size : 8			

(source: Viet Nam stock exchange 2012)

Based on the above results, we find out:

Equity beta mean values in all 3 scenarios are low ($< 0,7$) and asset beta mean values are also small ($< 0,5$). In the case of reported leverage in 2011, equity beta value fluctuates in an acceptable range from -0,946 (min) up to 2,091 (max) and asset beta fluctuates from -0,163 (min) up to 1,075 (max). If leverage increases to 30%, equity beta moves in an unchanged range and asset beta moves from 0,051 (min) up to 1,041 (max). Hence, we note that there is an increase in asset beta min value if leverage increases. When leverage decreases down to 20%, equity beta value moves in an unchanged range and asset beta changes from -0,319 (min) up to 1,099 (max). So, there is a decrease in asset beta min when leverage decreases in scenario 3.

Beside, Exhibit 4 informs us that in the case 30% leverage up, average equity beta value of 8 listed firms almost has no change while average asset beta value of these 8 firms decreases little more to -0,073. Then, when leverage reduces to 20%, average equity beta value of 8 listed firms almost has no change and average asset beta value of 8 firms up to 0,052.

The below chart 1 shows us : when leverage degree decreases down to 20%, average equity has no change and asset beta values increase to 0,665 and 0,458 compared to those at the initial reported leverage (0,665 and 0,406). Then,

when leverage degree increases up to 30%, average equity beta has no change and average asset beta value also decreases less (to 0,665 and 0,333). Then, the fluctuation of equity beta value (0,711) in the case of 30% leverage up is the same as the results in the rest 2 leverage cases. And we could note that the decrease of leverage in the case of 20% leverage down causes an increase in asset beta var up to 0,200 (compared to 0,14).

Figure 1 – Comparing statistical results of three (3) scenarios of changing FL (period 2009-2011)

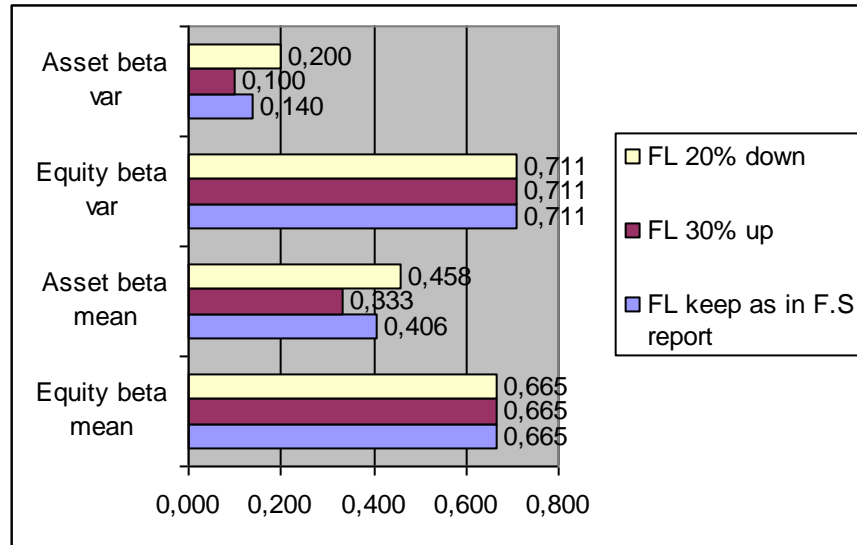
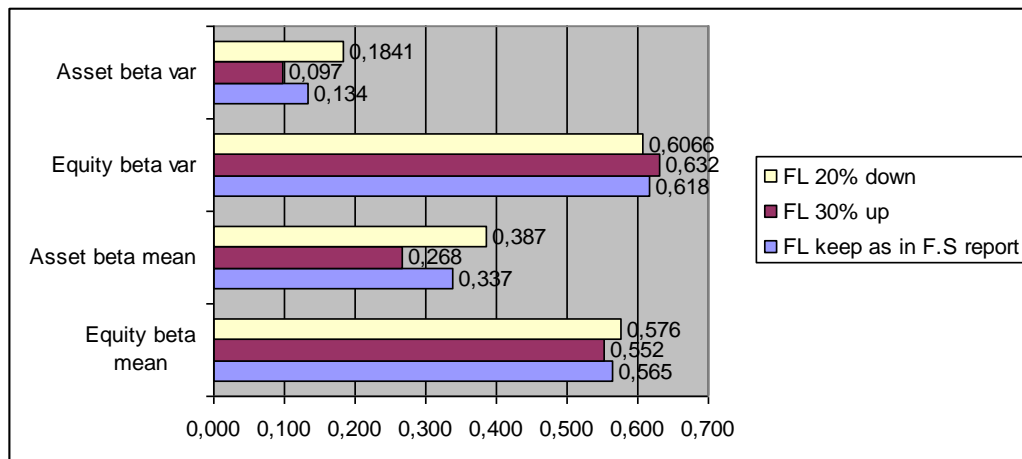


Figure 2 – Comparing statistical results of three (3) scenarios of changing FL (period 2007-2011)



(source: Viet Nam stock exchange 2012)

D. Empirical results

In scenario 1 (current FL), asset beta mean reaches the medium value (0,406) whereas asset beta var also reaches medium (0,140), compared to the rest 2 cases.

In scenario 2 (FL 30%), asset beta mean reaches minimum value (0,333) whereas equity beta var reaches minimum (0,100), compared to the rest 2 cases.

And finally, in scenario 3 (FL down 20%), asset beta mean reaches maximum value while asset beta var reaches maximum value (0,200), compared to the rest 2 cases.

E. Risk analysis

In short, the using of financial leverage could have both negatively or positively impacts on the financial results or return on equity of a company. The more debt the firm uses, the more risk it takes. Beside, the increasing interest on loans might drive the earning per share (EPS) lower.

On the other hand, in the case of increasing leverage, the company will expect to get more returns. The financial leverage becomes worthwhile if the cost of additional financial leverage is lower than the additional earnings before taxes and interests (EBIT). Considering risk vs. return, FL becomes a decisional variable for managers. And the maximum risk that a firm accepts will ask for the maximum financial leverage.

F. Discussion

Looking at figure 2, it is noted that in case leverage up 30%, during 2009-2011 period, asset and equity beta mean (0,333 and 0,665) of medicine industry are higher than those in the period 2007-2011 (0,268 and 0,552). Looking at exhibit 6, we can see asset beta mean and equity beta mean are lower than those of consumer good industry (0,336 and 0,694). This relatively shows us that financial leverage does affect asset beta values.

CONCLUSION

In general, the government has to consider the impacts on the mobility of capital in the markets when it changes the macro policies. Beside, it continues to increase the effectiveness of building the legal system and regulation supporting the plan of developing medicine market. The Ministry of Finance continues to increase the effectiveness of fiscal policies and tax policies which are needed to combine with other macro policies at the same time. The State Bank of Viet Nam continues to increase the effectiveness of capital providing channels for medicine companies as we could note that in this study when leverage is going to increase up to 30%, the risk level decreases as well as the asset beta var, compared to the case it is going to decrease down to 20%. And for the corporations, figure 2 tells us that increasing leverage can reduce risk both in the period 2009-2011 and in the 2007-2011 period.

Furthermore, the entire efforts among many different government bodies need to be coordinated.

Finally, this paper suggests implications for further research and policy suggestion for the Viet Nam government and relevant organizations, economists and investors from current market conditions.

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Appendix 1. Interest rates in banking industry during crisis

(source: Viet Nam commercial banks)

Year	Borrowing Interest rates	Deposit Rates	Note
2011	18%-22%	13%-14%	Approximately (2007: required reserves ratio at SBV is changed from 5% to 10%) (2009: special supporting interest rate is 4%)
2010	19%-20%	13%-14%	
2009	9%-12%	9%-10%	
2008	19%-21%	15%-16,5%	
2007	12%-15%	9%-11%	

Appendix 2. Basic interest rate changes in Viet Nam

(source: State Bank of Viet Nam and Viet Nam economy)

Year	Basic rate	Note
2011	9%	Approximately, fluctuated
2010	8%	
2009	7%	
2008	8,75%-14%	
2007	8,25%	
2006	8,25%	Approximately, fluctuated
2005	7,8%	
2004	7,5%	
2003	7,5%	
2002	7,44%	
2001	7,2%-8,7%	
2000	9%	

Appendix 3. Inflation, GDP growth and macroeconomics factors

(source: Viet Nam commercial banks and economic statistical bureau)

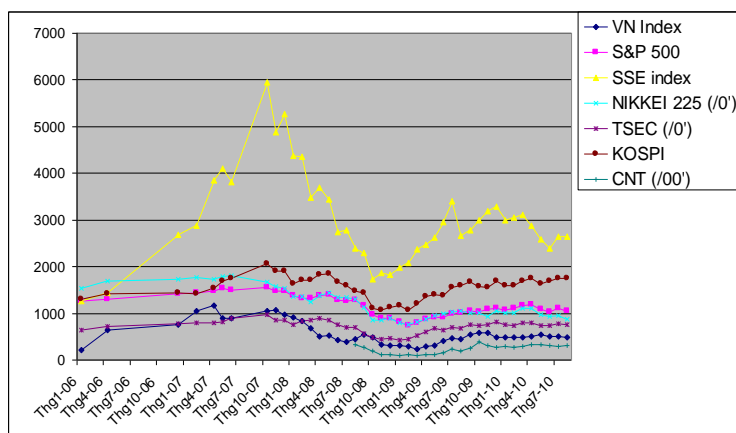
Year	Inflation	GDP	USD/VND rate
2011	18%	5,89%	20.670
2010	11,75%	6,5%	19.495
	(Estimated at Dec 2010)	(expected)	
2009	6,88%	5,2%	17.000
2008	22%	6,23%	17.700
2007	12,63%	8,44%	16.132
2006	6,6%	8,17%	
2005	8,4%		
Note	approximately		

Appendix 4. Increase/decrease risk level of listed medicine industry firms under changing scenarios of leverage : in 2011 F.S reports, 30% up, 20% down in the period 2009 - 2011

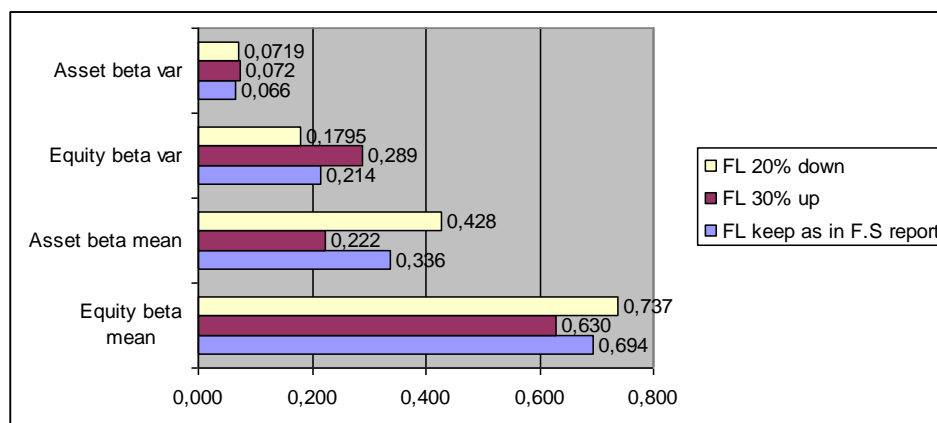
Order No.	Company stock code	FL keep as in F.S report		FL 30% up		FL 20% down	
		Equity beta	Asset beta	Increase /Decrease (equity beta)	Increase /Decrease (asset beta)	Increase /Decrease (equity beta)	Increase /Decrease (asset beta)
1	AMV	1,191	1,075	0,000	-0,035	0,000	0,023
2	APC	0,419	0,383	0,000	-0,011	0,000	0,007
3	DBM	2,091	0,765	0,000	-0,398	0,000	0,265
4	DBT	0,661	0,192	0,000	-0,141	0,000	0,094
5	DCL	0,700	0,312	0,000	-0,077	0,000	0,078
6	DDN	-0,946	-0,163	0,000	0,235	0,000	-0,157
7	DHG	0,592	0,432	0,000	-0,048	0,000	0,032
8	DHT	0,610	0,251	0,000	-0,108	0,000	0,072
Average				0,000	-0,073	0,000	0,052

(source: Viet Nam stock exchange 2012)

Appendix 5. VNI Index and other stock market index during crisis 2006-10



Appendix 6. Comparing statistical results of three (3) scenarios of changing FL of 121 listed firms in the consumer good industry



(source: Viet Nam stock exchange 2012)

GENESIS OF PUBLIC TRANSPORT IN KIEV

Stefan V. Mashkevich^{1,2}, Dr. Habilitat in Physics and Mathematics

¹ Leading Scientist, Department of High Energy Density Physics, Bogolyubov Institute for Theoretical Physics, Kiev, Ukraine

² Dr. Habilitat Applicant, Department of History, T. Shevchenko National University of Kiev, Ukraine

mash@mashke.org

ABSTRACT

The paper is devoted to the early history of public transport in Kiev. Special attention is paid to the circumstances characteristic of this city, which (i) dictated the specific shape of the future transportation network, and (ii) caused major delays with finding a contractor. The main transport corridor in Kiev at the time was the "north-south" axis, approximately parallel to the Dnieper river. First, we describe the early, rather sporadic attempts at setting up passenger transport routes, mostly (but not only) along that corridor. Then we show how, during almost two decades, projects of a horse-tram network submitted by different entrepreneurs fizzled, for the most part because of a specific reason: The city had put forward a condition that any contractor who wished to build a horse-tram line along Kreschatik, the main street, had to also build the main sewer line under that street. The situation only got resolved after the city lifted that condition and made an independent arrangement for the sewer line construction. Finally, we describe the successful project, by engineer Amand Struve, who initially built a number of horse-tram lines but quickly moved on to electrify them; the electric tram in Kiev came to be the first of its kind in the Russian Empire.

Keywords: Kiev, transport, omnibuses, horse tram, Amand Struve.

INTRODUCTION

Public transport is one of the most essential features of modern cities. When the population of a city and/or its density exceed a certain critical threshold, multiple "attraction centers" (places of compact settlement, areas with a high concentration of jobs, shopping districts, markets, places of leisure, etc.) are bound to emerge. This, as well as the growing dimensions of the city itself, causes a sharp increase in demand for passenger transportation and the emergence of stable passenger traffic along more-or-less fixed routes – transport corridors. Then it becomes economically advantageous to create enterprises whose main function is to carry passengers along such routes, for a price that most working people can afford. That is the beginning of public transport. In fact, the appearance of the first transport route in a given city is an important qualitative step in the evolution of the city itself.

This article will focus on the emergence of public transport in Kiev, mentioning the first projects dating back to the mid-19th century, which either faded out soon or were not implemented at all, and putting a special emphasis on the successfully implemented city railroad project – the horse tram, built by engineer Amand Struve, which opened in 1891 (and whose electrification followed in 1892).

PREREQUISITES FOR THE APPEARANCE OF PUBLIC TRANSPORT

The conditions which implied the need for public transport arose in Kiev by mid-XIX century. In the first third of that century, the three previously largely autonomous parts of the city – Podol, Upper (Old) Town and Pechersk – as well as its suburbs of Lukyanovka, Tatarka, Kurenivka, etc., were unified within the framework of a single city development project, following a master plan put together by the then-chief architect of Kiev, Andrey Melensky [1]. In particular, a thoroughfare connecting Podol with Pechersk (the present-day Sagaidachnogo St., Vladimirsky Descent and Grushevskogo St.) was laid out. In the 1830s, the development of the present main street, Kreshchatik, intensified considerably, as part of a new Kiev planning project, adopted in 1837, whose author was Vikenti Beretti [2]. Another factor that changed the structure of the city was the construction of the new Pechersk fortress, which started in 1831. Residents of the areas designated for the fortress were allowed to resettle onto a free territory on the left bank of the Lybed river, along the current Antonovicha and Bolshaya Vasilkovskaya streets, which became known as Novoe Stroenie (New Construction) [3].

This was how a north-south axis (Podol – Kreshchatik – Novoe Stroenie), approximately parallel to the Dnieper river, took its shape. All the early Kiev public transport projects were aimed either at carrying passenger traffic along that axis,

or at connecting one or more point on the axis with one or more of the passenger-forming objects outside it. The most significant such objects were the railway station, which opened in 1869, and markets (Sennoy, Lukyanovsky, Jewish).

OMNIBUSES AND STAGECOACHES

The first known public transport project in Kiev dates back to 1848, when one retired Major Martynov applied for permission to establish (horse-drawn) omnibus service here. Apparently, though, those omnibuses were not meant to service fixed routes, but rather to perform a role similar to modern taxis, at a fare of 1 rouble for an hour, 75 kopeks per hour for two hours or more, or 4 roubles per day. Approval was given in December 1849 [4], but the subsequent fate of this project is unknown.

In December 1868, the Kiev-Kursk railway line reached Brovary station, some 20 km from Kiev (trains could not yet get to the city, since the railway bridge across the Dnieper had not been completed). Therefore, stagecoach service was instituted, in order to carry passengers from the city to the trains and vice versa. In January 1869 there were at least three daily runs from the Podol terminus in Kiev. The fare was 1.50 rubles for an inside seat, 1 rouble for an outside seat (to compare, a third-class Brovary–Kursk train ticket cost 5.19 rubles) [5]. In August 1869 the railway was extended to Dnieper station, on the left bank of the river, which made the Brovary stagecoaches unnecessary: the passengers could now take a steamer to cross the river and get to the train [6]. In 1870, the bridge was completed, and the trains could get into the city itself.

The first public transport route known to actually have operated fully within Kiev city limits was an omnibus service owned by a Kiev merchant of the First Guild called Meer Levin. In January 1878 he applied for permission to run omnibuses between Aleksandrovskaya and Kreschatitskaya Squares (present-day Kontraktova Sq., in the heart of Podol, and Maidan Nezalezhnosti, respectively) [7]. He got his permission as late as March 1879, and service started on 17 June 1879 (here and after, all dates are according to the Julian calendar, or “old style”, in use in Russia at the time; in the XIX century, it was 12 days behind the Gregorian calendar). That date should be regarded as the birth date of public transport in Kiev. The route ended up being longer than originally planned, from Aleksandrovskaya to Bessarabskaya Square – i.e., covering all of Kreschatik, the main street. The horse-drawn omnibuses had a capacity of about twenty people each. It is noteworthy that the fare was asymmetric: going uphill, from Podol to Bessarabskaya Square, cost 7 kopeks; going in the opposite direction, only 6 kopeks [8]. This was quite a bargain in comparison with horse cabs, which would charge 25 kopeks (a one-horse cab) or 50 kopeks (a two-horse one) for the same route [9].

The new enterprise must have been an outright success. In just a few days after service started, Levin applied for permission to open three more routes, including one to the Jewish market and another one to the railway station [10]. At some point, the existing route was extended from Bessarabskaya Square all the way to the end of Bolshaya Vasilkovskaya Street [11]; thus, it now covered most of the north-south axis. However, in November 1880 the city sanitary commission inspected the stagecoaches and found that all but one of them were not only in an unsatisfactory sanitary state, but posed considerable safety threats for passengers. As a result, service was shut down by the city, and Levin was brought to liability [12].

There were more stagecoach projects in Kiev. In 1879, Kalman Gurvich, a Minsk merchant of the 2nd guild, applied for permission to establish a few routes, some along the north-south axis, some outside it; he did not get the permission since he had no residence permit for Kiev [13]. In 1882, titular counselor Vasily Ivanov got permission to operate *lineiki* (open coaches with seats perpendicular to the direction of travel) between the city Duma building (on today's Maidan Nezalezhnosti) and the neighborhood of Pechersk. His enterprise lasted at least into 1883, but eventually shut down [14].

Thus, up until the 1880s, there were attempts to establish regular passenger transport routes in the city of Kiev, some of them temporarily successful, but none resulted in a permanent solution.

EARLY RAIL PROJECTS

Street railways (horse-drawn trams) date back to the first third of the XIX century. New York was the first to build one, in 1832; in the Russian Empire, Saint Petersburg instituted freight horse-tram service in 1860 and passenger service in 1863. In Kiev, the idea of building of one or more horse-tram lines emerged no later than at the end of the 1860s, when, as already mentioned, long-distance rail service came to the city. One suggestion was to build a line connecting the passenger and freight railway stations with Podol. It was anticipated that the horse tram would become a profitable enterprise; if the city were to own it, it could contribute noticeably to the city budget [15]. However, the city did not actually take any steps in that direction.

Meanwhile, in the second half of 1869 a group of entrepreneurs – landowners Korchakov-Sivitsky, Karpenko and Rodzianko – applied for permission to build a U-shaped rail line running from Podol through the railway station to Kreschatik [16]. In the summer of 1870 the Ministry of Railways in Saint Petersburg rejected the application, stating that the project was technically incomplete [17]. The authors revised the project several times thereupon. Interestingly, in 1871 a map was published, entitled “Plan of the city of Kiev with horse railway lines”, which indeed pictured two lines, one from the station to Podol, the other one from the station to Kreschatik [18]. In reality, a draft contract between the city and Korchakov-Sivitsky was only approved by the city Duma in 1873. However, one condition put forward by the city eventually caused this project and a few subsequent ones to fizzle. Namely, the Duma ruled that an entrepreneur who was to build the Kreschatik line should first build a sewer main line under the same street, and only then the rail line above it. The Korchakov-Sivitsky project finally got approval from Saint Petersburg as late as in 1875, by which time, apparently, the entrepreneurs had lost their interest in pursuing it [19].

In September 1880, Mayor Gustav Eisman announced to the city Duma that “applications from different persons wishing to build up horse-tram lines in Kiev are flowing in”; the Duma decided to formally solicit proposals, with a deadline of 1 September 1881 [20]. Only one proposal actually came in, by Engineer Colonel Ruban and companions, in October 1880. Initially, these entrepreneurs agreed to build the sewer line, provided that the city would subsidize it [21]. Later on, however, they realized that, owing to a complicated relief of the city, with many steep ascents, the rail project would become financially challenging both at the building and exploitation stage. Citing these difficulties, the entrepreneurs asked to be relieved from the obligation to build the sewer line, offering, instead, to extend a credit to the city for the same purpose. At some point they also suggested to temporarily lay the rails along the sidewalks and then, after the sewer is built, to relocate them to the middle of the street. However, the city refused to change its stance, and the negotiations collapsed [22].

A horse-tram project by entrepreneurs Sokolovsky, Gorchakov and others was being considered by the city Duma in April 1884. According to the standard procedure, the proposal was forwarded to the Uprava (the executive branch of the Duma) [23], but it never went beyond the discussion stage.

A different kind of proposal was submitted in the summer of 1884. Captain Modl and engineer De Balog came up with an idea of a steam railway along Andreevsky Descent – a direct link between Podol and Upper Town. Because of the steep descent, it had to be a cable railway – a predecessor of the present-day funiculaire. The city Duma gave the project a conditional approval [24]. Notably, it was on this occasion that a few basic conditions pertaining to financial relations between the (future) transport enterprise and the city were established, apparently for the first time in Kiev. Namely: (i) the enterprise was to be guaranteed with a deposit; (ii) once it started making money, it had to share a certain percentage of its income with the city; (iii) upon expiration of the concession term (in that case, 60 years), the whole enterprise was to become the property of the city, without compensation – and even before the expiration, the city had a right to buy the enterprise, which the owners could not countermand.

However, the Ministry of Internal Affairs in Saint Petersburg returned the project, alleging that not only was it technically imperfect, but it also lacked proper justification [25]. The authors modified the project and eventually got approval from the ministry [26], but it was disagreement between them and the authorities on the statute of a future joint-stock company that turned out to be the stumbling block [27]. Just like its predecessors, this project never materialized.

THE STRUVE ENTERPRISE

Finally, in 1885, the city Duma initiated the process that was to result in a successful implementation of a rail transport project in Kiev. On June 15 of that year, the Duma adopted the “Draft Conditions for the Construction and Operation of Horse Railways in Kiev”, with a deadline for applications of September 30 of the same year [28]. Notably, those conditions included a list of routes that the would-be entrepreneur was to build. The north-south axis was to be covered with two routes: from Aleksandrovskaya (Kontraktovaya) Square to Kirillovskaya Square in the north and from Tsarskaya (Evropeyskaya) Square to Konnaya Square (near the present-day Olimpiysky sports complex) in the south. An essential link along Aleksandrovsky (Vladimirsky) Descent was lacking. It was assumed that horses would not be able to pull carriages up a descent as steep as that one. Other projected routes included, in particular, one to the railway station and one along Zhandarmaskaya (Saksaganskogo) Street [29].

In March 1886 the results of the competition were summarized. Three proposals had been submitted: 1) by Struve and Kozlyaninov; 2) by the Bryansk Rail, Iron and Mechanical Factory; 3) by the same Modl and De Balog who had earlier concocted the Andreevsky Descent proposal [30]. However, negotiations with all three groups came to a halt, because the Uprava concluded that their proposals were disadvantageous for the city.

But then, later in 1886, two more proposals were submitted: a modified project by Struve and a new project by a group of twelve capitalists. The former was evidently better (the proposed network was bigger and the fare lower – 5 kopeks vs 6 kopeks per tariff zone). No less important, Engineer Major General Amand Struve was already quite well known in Kiev, having made a more than significant contribution to the city's infrastructure. He was the one who had built the already mentioned railway bridge across the Dnieper, as well as the waterwork and the gas factory. Notably, back in 1870, around the time when the horse tram subject was first debated, a Saint Petersburg newspaper alleged that Struve was a probable builder of a horse tram network in Kiev [31]. At that time, Struve did not actually come forward. But now, on 29 September 1886, the Duma voted overwhelmingly (34 against 3) to take Struve's project into consideration [32].

Even before signing any contract, Struve suggested – and won approval for – a very important amendment. He was granted permission to implement, apart from horse traction, “also other kinds of power, mechanical or steam, on steep descents of Kiev streets” [33]. Now the Aleksandrovsy Descent link did get included in the network plan. The amendment just mentioned would eventually make it possible for Struve to build a line along that steep descent using electric traction. On 7 March 1887 a preliminary contract between Struve and the city Uprava was signed. The engineer undertook upon himself to lay approximately 24 km of track, including the whole north-south axis, from Kirillovskaya Square, via Podol, Kreschatik and Bolshaya Vasilkovskaya all the way down to the Lybed river, as well as side lines to the railway station, to Pechersk, to Lukyanovka and a few others [34]. By way of a financial guarantee, Struve made a deposit of 30 thousand rubles.

Still, the whole enterprise nearly collapsed again. The stumbling block remained the same as before: the issue of the Kreschatik sewer line. The preliminary Struve contract called for tracks on both sides of the main street, which would make it possible to postpone building the sewer line (since the latter was to run under the middle of the street). However, the Kiev *gubernia* (governorship) administration did not agree to this, insisting instead that the sewer be built right away and the tracks be laid in the middle of the street, to provide for free passage of conventional horse-drawn carriages. But neither Struve nor the city itself were ready to shell out the cash necessary to build the sewer. At the same time, both the Duma and the entrepreneur realized that excluding the core Kreschatik line from the network would render the whole enterprise senseless. The Duma tried to convince the governor to separate the sewer project from the rail line project, so the latter could get underway [35], but apparently without success.

Eventually, in October 1888, the Duma passed a unanimous vote to go ahead with the sewer line, which, once completed, would enable Struve to proceed with his project. But now it was Struve who refused to cooperate. He stated that he needed to start laying track no later than the spring of 1889, but the sewer line would not be ready until the autumn of the same year, which would be an unacceptable delay. Therefore, he refused to sign a contract, unless the city hired himself, Struve, to build the sewer, for 250,000 rubles – more than twice (!) the city's own estimate, 122,000 rubles [36]. The city did want to do business with Struve, rather than be forced to issue a new call for proposals. But it was only willing to negotiate up to a certain limit – and it was reluctant to make a guarantee that the sewer would be completed (by some yet-to-be-found contractor) in a given time frame, for fear of not being able to make good on that guarantee [37]. Struve pressed his point and insisted that unless the city came around and made a guarantee, he would call off the signing of the contract and demand his 30-thousand deposit back, since the impasse would not be his fault [38].

Having apparently recognized that yet another failure would be too much, the Duma (while the negotiations with Struve were still in progress) made a resolution to go ahead with the sewer project, which would, in turn, open the way for horse tram construction. A city commission to oversee the matter was established, headed by a well-known architect Vladimir Nikolayev, and by October 1888 – that is, even before Struve's “ultimatum” – it presented to the Duma a project by engineer Alexey Theremin. The price tag was 116,000 rubles [39] – quite close to the previous estimate. A tender was declared, and the winner was announced in November: A limited partnership of merchants Leizer Gershunov and Lurie bid 108,950 rubles, i.e., even less than the city's estimate [40].

The sewer project got underway as early as in January 1889. It was rather unusual to begin construction in winter time [41]; normally, such work would be done during summer, but on this occasion the city stressed that the work had to be done in a hurry, precisely because the Struve contract and consequently the beginning of horse tram construction hinged upon it [42]. Eventually, the contract between Struve and the city Uprava was signed on 8 July 1889 [43], when there was no longer any doubt that the sewer construction would end up with success. (It did end up in August of the same year [44], and the city settled the account with Gershunov and Lurie's agent, by name of Pavel (Faitel) Wolfson, in September [45].) Just as the preliminary condition stipulated, Struve undertook to build, during five years, approximately 24 km of rail lines, as outlined above.

THE HORSE TRAM AND ITS ELECTRIFICATION

The 1889 contract explicitly stated that the entrepreneur had the right to transfer that same contract, in its entirety, to a joint-stock company. Struve exercised that right in the following year. He founded the so-called “Kiev City Railway Joint-Stock Society”, with an authorized capital stock of 1 million rubles, divided into 4000 shares with a base price of 250 rubles each. The statute of the Society was approved by the Emperor on 21 December 1890 [46]. The groundbreaking ceremony took place on 18 June 1891, at a location near the present-day Lybidska metro station, which was chosen as a site for the first horse-tram depot. On the very next day, the newly-formed Society was officially inaugurated and opened for business. A three-man board was elected, initially consisting of Struve himself as well as I. Matsnev and N. Sakhansky [47].

It took only a month from the groundbreaking to the first test run. At 8 PM on 18 July 1891, the first horse-drawn car traveled from the Lybed station, near the depot, to the corner of Bolshaya Vasilkovskaya and Mariinsko-Blagoveschenskaya (Saksaganskogo) Streets [48]. Test runs, with passengers traveling for free, continued for just under two weeks. On 30 July 1891, regular, for-profit passenger service started [49]. That date (11 August by the modern calendar) is the birthday of rail public transport in Kiev.

On 6 August, the first line was extended through Kreschatik to Tsarskaya Square, and on 26 October, service on the northern segment of the north-south axis, from Aleksandrovskaya Square to Troitskaya Square, began [50]. The main route was now in operation, except for the Aleksandrovsky Descent link. Struve had realized beforehand that it would be impractical to run horse trams on that steep stretch. Thus, already at project stage, he anticipated that the horse railway would be gradually converted to electric traction [51]. At the same time, the Aleksandrovsky Descent line was built electrified from the outset. Service on that line started on 1 June (13 June by the modern calendar) 1892 [52]. That date, in turn, is celebrated as the birthday of Kiev electric tram, the first of its kind in the Russian Empire.

Apart from being more technically advanced – more precisely, because of that – the electric tram proved to be a much more profitable enterprise than the horse tram. More horse-tram lines were added during 1892–1893, mainly to the west of the north-south axis. At the end of 1893, it turned out that all those horse lines were unprofitable (except the main Kreschatik line, where a few steam engines operated along with horse trams, and which turned a small profit), but the Aleksandrovsky Descent electric line, barely one-tenth the length of all the other lines combined, brought a profit that more than covered the losses from all those other lines. It became absolutely clear that electrification was the way to go. Struve wanted to electrify all the horse lines by early 1894, but this did not happen due to delays with acquiring electric tramcars and importing equipment from Germany. The Kreschatik line was electrified by June 1894 (although there were still not enough electric cars, so horse cars and steam engines ran under electric wires for a while there). In August 1894, the line to the railway station opened, under electric traction from day one. By 1896, all horse-tram lines were electrified, and since then, all new tram lines in Kiev (with one exception, the narrow-gauge Svyatoshin tram, which was not part of the city tram network and which used horse traction for a little over a year in 1900–1901) were electric [53].

CONCLUSION

We have analyzed the generic and specific reasons that influenced the process of appearance and development of public transport in Kiev. After a few basically unsuccessful attempts to establish stagecoach service, the task of building a rail line came up. Here the main issue was the following: The geography of the city called for a main line along the north-south axis, but the necessity to first build a sewer tunnel under the main street was a hindrance. As a result, the horse-tram network in Kiev opened some twenty years later than it could have under more favorable circumstances. However, after it did open, the peculiarities of Kiev relief (which made it impractical to use horse traction on a critical piece of the line) as well as the vision and organizational capabilities of Engineer Struve, the builder of the tram, enabled its quick electrification. Kiev, therefore, became the first city in the Russian Empire to institute electric tram service.

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BACTERIAL PROSTATITIS AND PROSTATE SPECIFIC ANTIGEN LEVEL

¹Vladimer Papava, ²Tamar Didbaridze, ³Valerian Kvakhajelidze, ⁴Darejan Chikviladze, ⁵Nino Gogokhia

1.TSMU Department of Urology, assistant-professor. MD, PhD (Tbilisi, Georgia).

2.TSMU Department of Microbiology, associate –professor.MD,PhD (Tbilisi, Georgia).

3.Urologist.TSMU Department of Urology (Tbilisi,Georgia).

4.TSMU Head of Microbiology department,TSMU Professor,MD,ScD (Tbilisi,Georgia)

5.Head of Clinical Laboratory, TSMU the First University Clinic,TSMU Professor MD,PhD (Tbilisi, Georgia).

ABSTRACT

Serum levels of PSA in healthy persons have been known to vary depending on age, race, prostate volume, and biologic variability. The PSA level can increase for several reasons, including trauma, ejaculation, and rectal and urethral procedures. It can also increase because of diseases such as benign prostatic hyperplasia and prostatitis. The aim of this study was to investigate the relationship between prostatitis and the level of prostate-specific antigen in patients with no clinical evidence of prostate cancer before and after antimicrobial treatment.

We retrospectively study the serum PSA level and bacteriological results in 20 patients, ages 45-65 years old.

Normal blood PSA concentration (<4ng/ml) were observed after 3 weeks course of antibacterial treatment in 18 patients.

Diagnoses of Benign Prostatic Hyperplasia (BPH) was conformed with further recommendation for urological surveillance In two patient PSA level persisted to be elevated after 3 week of antibiotic course and was found to have adenocarcinoma.

Keywords: prostatitis, antibiotics, prostatic antigen.

INTRODUCTION

PSA is a prostate-specific marker. Serum levels of PSA in healthy persons have been known to vary depending on age, race, prostate volume, and biologic variability. The PSA level can increase for several reasons, including trauma, ejaculation, and rectal and urethral procedures. It can also increase because of diseases such as benign prostatic hyperplasia and prostatitis (1,2).

Table 1

Age Range (Years)	Asian Americans	African Americans	Caucasians
40 to 49	0 to 2.0 ng/mL	0 to 2.0 ng/mL	0 to 2.5 ng/mL
50 to 59	0 to 3.0 ng/mL	0 to 4.0 ng/mL	0 to 3.5 ng/mL
60 to 69	0 to 4.0 ng/mL	0 to 4.5 ng/mL	0 to 4.5 ng/mL

Prostate-specific antigen, or PSA, is a protein produced by normal, as well as malignant, cells of the prostate gland. The PSA test measures the level of PSA in a man's blood. For this test, a blood sample is sent to a laboratory for analysis. The results are usually reported as nanograms of PSA per milliliter (ng/mL) of blood. Prostate-specific antigen (PSA), also known as gamma-seminoprotein or kallikrein-3 (KLK3), is a glycoprotein enzyme encoded in humans by the KLK3 gene. Prostatic-specific antigen (PSA) is a tumor marker helpful in diagnosis and follow-up prostate cancer, may rise due to prostatitis, benign prostatic hyperplasia (PBH) and cancer (3,4,5).

The National Institute of Health (NIH) classification for prostatitis is recognized as the best clinical classification system.

1.Acute bacterial prostatitis (NIH category I) – This category is relatively uncommon. The most common organism are gram negative enterobacteriaceae such as *E. coli* from gastrointestinal sources and less commonly gram positive enterococci. Initial diagnosis is made by history, physical, urinalysis and culture.

2.Chronic bacterial prostatitis (NIH category II) – NIH II typically affects men aged 40 -70 years of age. CBP is a recurrent urinary infection due to the same organism, which persists in the prostatic fluid, and has an associated symptom complex. The bacteria reside in aggregates or biofilms found in ducts of the prostate gland.

3.Chronic Pelvic Pain Syndrome or CPPS (NIH category III) – This category is composed of two sub-types and accounts for the majority of all prostatitis cases. NIH III type A and B CPPS have persistent chronic genitourinary pain without uropathogenic bacteria.

4. Asymptomatic inflammatory prostatitis or AIP (NIH category IV) – No infection is present, cultures are negative and patients frequently have benign prostatic hypertrophy and/or an elevated PSA. A noninfectious etiology may be present such as prostate cancer. Urologic consult is required (6,7,8).

Prostatitis is the most common urological diagnosis in men < 50 years of age and approximately 10% of men have chronic prostatitis-like syndrome. Chronic bacterial prostatitis (NIH category II) – NIH II typically affects men aged 40 – 70 years of age. CBP is a recurrent urinary infection due to the same organism, which persists in the prostatic fluid, and has an associated symptom complex. Acute and chronic prostatitis has been a known cause of increased PSA levels.

Animal experiments have shown that chronic infection leads to the formation of a biofilm in the prostatic acini, leading to pathogens forming colonies with enhanced growth conditions. The bacteria reside in aggregates or biofilms found in ducts of the prostate gland. Chronic inflammation caused by persistent bacterial infections might lead to carcinogenesis (9).

The most common causative organisms of CBP are *Escherichia coli*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, *Proteus* species, *Staphylococcus aureus* and *Enterococcus faecalis*. Although fastidious organism such as *Chlamydia trachomatis*, *Ureaplasma urealyticum*, *Mycoplasma hominis* can cause non-bacterial prostatitis. TPSA level in prostatic fluid is much higher than in serum, causing leakage from prostatic acini leading to increase TPSA level in serum [5]. PSA levels, 32-42% had evidence of prostatitis and TPSA level fell to normal in 43-46% treated with antibiotics and remained so in most men for 1-2 years (10,11).

The aim of this study was to investigate the relationship between prostatitis and the level of prostate-specific antigen in patients with no clinical evidence of prostate cancer before and after antimicrobial treatment.

MATERIAL AND METHODS

We retrospectively study the serum PSA level and bacteriological results in 20 patients, ages 45-65 years old, who visited TSMU the First University Clinic Urology department. A comprehensive urological examination was performed. All patients have symptoms of prostatitis. Prostate fluid and two sample of urine was cultured: midstream portion and after Digital Rectal Examination. The PSA analyses were done on immunology analyzer - Roche Diagnostics, Cobas E411. Bacteriology was done by using standard bacteriological methods, API-system (Biomérieux) and Kirby-Bauer susceptibility test (EUCAST guidelines 2017). All measurements were done in a TSMU the first university clinical laboratory.

RESULTS

Positive culture was observed in all patients. Same organism were isolated from prostate fluid and from urine: *Enterococcus faecalis* was isolated in 6 cases (30%), *Escherichia coli* 5 (25%), *Enterobacter cloacae* in-3 cases (15%), *Staphylococcus aureus* 3 cases (15%), *Klebsiella pneumonia* in 2cases (10%), *Proteus mirabilis* in 1cases (5%) (Table 2).

TPSA level 4-7 ng/ml was observed in 13 patients, 7-10 ng /ml in 4 patients, 10-15ng/ml in 3 patients (table 2). All patients underwent a 3 week of antibacterial treatment depends on local susceptibility test results. Mostly with group of fluoroquinolones, such as second-generation ciprofloxacin, third generation levofloxacin. Most of them responded to the treatment very well.

Table 2

4-7 Microorganisms	Number of patients (out of 20)
Enterococcus faecalis	6
Escherichia coli 7 Eee 10-15-10-10	5
<u>1</u> Enterobacter cloacae <u>1</u> eeeeee0-15	3
Staphylococcus aureus Eee 10-15-10-10	3
Klebsiella pneumoniae 10-15-10-10	2
Proteus mirabilis Eee 10-15-10-10	1

Table 3 PSA Test Assay Results

4-7 PSA range ng/ml	Number of patients (out of 20)
4-7	13
7-10 <u>7710</u>	4
<u>1</u> 10-15	3

Normal blood PSA concentration (<4ng/ml) were observed after 3 weeks course of antibacterial treatment in 18 patients. Diagnoses of Benign Prostatic Hyperplasia (BPH) was conformed with further recommendation for urological surveillance. In two patient PSA level persisted to be elevated after 3 weeks of antibiotic course and was found to have adenocarcinoma by TRUST and biopsies, Gleason grading system 3+3.

CONCLUSION

According our study low blood concentration of PSA were observed after effective antibacterial treatment therapy in most cases. A markedly elevated serum PSA level in bacterial prostatitis can cause confusion in the diagnosis of prostatic carcinoma. Therefore, PSA determination should be obtained after complete clinical resolution of inflammation to exclude prostatic malignant involvement. Prostatitis must be considered when using PSA as tumor marker.

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INFLUENCE OF CAMEL MILK COMPONENTS (Ver-Mol-1 and Ver-Mol-2) ON CANCER CELL CULTURE

Saitmuratova Oguljan Khudaiberganovna ^{1,2}, Sagdiev Nail Zhadidovich ¹, Zakirov Yorkin Uzuevich ²

Institute of Bioorganic Chemistry named after acad. AS Sadykov AS RUZ, Doctor of Biological Sciences, Leading Researcher, Associate Professor of the Department of Histology, Cytology and Immunology, TashPMI (Uzbekistan)

Institute of Bioorganic Chemistry. Acad. AS Sadykova AN RUZ, head of the laboratory of bioregulators, candidate of chemical sciences (Uzbekistan)

Tashkent Pediatric Medical Institute, Doctor of Medical Sciences, Professor, Head of the Department of Histology, Cytology and Immunology TashPMI (Uzbekistan)

ABSTRACT

This work reflected in this article concerns the actions of Ver-Mol-1 and Ver-Mol-2 in different concentrations on different cultured cancer cells.

It has been established that Ver-Mol-1 and Ver-Mol-2 do not exhibit cytotoxic activity in regard to Hela cells (cervical cancer) at the implemented concentrations. AKAT cells (small intestine cancer) are more sensitive to the action of Ver-Mol-1 and Ver-Mol-2 (33-40%).

Keywords: Ver-Mol-1, Ver-Mol-2, substances, camel milk.

ARTICULATION OF ISSUE

Camel's milk has long been used in folk medicine for the treatment of a number of diseases.

The unique therapeutic properties of camel's milk are conditioned by the presence in it of such active natural ingredients as alpha-hydroxy acids, ascorbic acid, antioxidants, proteins and immune complexes, vitamin A, B vitamins, antibacterial agents [2,3].

Consumption of fresh camel milk helps to achieve better resistance to illnesses [4,5]. Scientists noted that lyophilized camel milk blocked the growth of cancer cells (BT-474-thorax)[6].

Likewise, the works of Arab scientists, highlight the inhibiting activity of camel milk on HepG2 (hepatoma) and MCF7 (breast cancer) cells in concentrations of 2.5, 5, 10 and 20 Mg/ml. It was shown that camel's milk causes apoptosis, increasing the activation of caspase-3 mRNA and the forms of activated oxygen [7].

In addition, the antitumor and immunomodulating activity were also found to be in camel's urine [8]. The Arab scientists have developed a substance derived from camel milk and urine, which according to them can successfully suppress cancer growth.

We also have been studying the biological activity of drugs isolated from camel milk and particularly, Ver-Mol-2, which possessed antiviral, interferon-inducing, anti-anememic, hypoglycemic features [9-11].

The objectives of the study include studying the effects of Ver-Mol-1 and Ver-Mol-2 on various cultured cancer cells.

MATERIALS AND METHODS

We studied samples of camel milk from the farming enterprises located in the Karakalpakstan region.

Cytotoxicity was assessed biochemically using the MTT method.

To determine the cytotoxic effect of the substances, B-16 cells (skin cancer), AKAT (small cell carcinoma) and Hela (cervical cancer) were placed on 96-well boards in the amount of 20-30 thousand cells/ml of 100 µl of RPMI 1640 medium with 10% calf embryo serum and were cultured at 37 ° C in a CO₂ incubator. After a day, proteins were

administered in the form of 100, 10 and 1 µg/ml per 100 ml of the medium, the cells were cultivated for 24 hours and then MTT [3- (4,5-dimethylthiazol-2-yl) -2,5-diphenyl-2H-tetrazolium bromide] was added into cells to identify living cells. After one hour of incubation, the wells containing monolayer culture of B-16 cells were carefully drained of medium, then DMSO was added and incubation continued for 20 minutes and after it the optical density of the solution was measured at a wavelength of 620 nm.

RESULTS AND DISCUSSION

In this paper we studied the actions of Ver-Mol-1 and Ver-Mol- 2 on three lines of cell cultures. The data are given in Tables 1 and 2.

Table 1

Cells. Doses, µg/ml	Suppression of inclusion MTT per cell,%			Growth Suppression Cells,%		
	B-16 (Skin cancer)	Hela (Cervical cancer)	AKAT (Cancer of the small intestine)	B-16 (Skin cancer)	Hela (Cervical cancer)	AKAT (Cancer of small intestine)
Control group	0%	0	0	0	0	0
100	18.2	0 (111)	33	17	0	30
10	0.7	0 (124)	11	1	0	10
1	0	0 (143)	11	0	0	9

* - the table reflects cytotoxic activity

Cells without exposure to substances were taken as control, where the level of MTT incorporation into cells equals to 100% (100% of living cells). Cisplatin was used by us as a positive control, indicating the sensitivity of cells to the effects of drugs. As can be seen from Tables 1, Ver-Mol-1 in the dose of 100 µg/ml inhibits the growth of B-16 cells by 18%, the growth of AKAT cells by 33%, and causes proliferation in the Hela cell culture. Cisplatin inhibits incorporation of MTT in B-16, AKAT and Hela cells by 98.5%, 84.5%, 44.4% at dose of 100, 10, and 1 µg/ml, respectively.

Effects of Ver-Mol-2 on cell culture

Table 2

Cells, Doses, µg/ml	Suppression of inclusion MTT per cell,%			Growth Suppression Cells,%		
	B-16 (Skin cancer)	Hela (Cervical cancer)	AKAT (Cancer of small intestine)	B-16 (Skin cancer)	Hela (Cervical cancer)	AKAT (Cancer of small intestine)
Control group	0	0	0	0	0	0
100	19	0 (141)	40	20	0	35
10	12	0 (131)	10	16	0	10
1	14	0 (121)	7	12	0	9

* - the table shows cytotoxic activity

As can be seen from Table 1, Ver-Mol-2 in doses of 100 µg/ml also inhibits the growth of B-16 cells by 19%, AKAT by 40%, and Hela cells grow under Ver-Mol-2 as well as with Ver-Mol-1. It can be said that AKAT-cells of small intestine cancer are more sensitive than other cell lines. Ver-Mol-2 suppresses cellular growth more than Ver-Mol-1 in general.

CONCLUSION

Preparations of Ver-Mol-1 and Ver-Mol-2 at concentration of 100 µg/ml, 10 µg/ml and 1 µg/ml do not exhibit cytotoxic activity against Hela cells .AKAT cells are more sensitive to the effects of Ver-Mol-1 and Ver-Mol-2.

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IMPROVING THE PERSONNEL MANAGEMENT SYSTEM AS A NECESSARY CONDITION FOR SUCCESSFUL FUNCTIONING OF THE ENTERPRISE AND FACTOR OF IMPROVING IT COMPETITIVENESS

Sotnikova Irina Nikolaevna

VSP "Institute of Innovation Education of Kyiv National University of Construction and Architecture", lecturer of the Department of Economics and Management (**Ukraine**)

e-mail: iyur@ukr.net

ABSTRACT

The article discusses improvement of the HR management system as a factor of its competitive growth in the market economy conditions. The authors consider specific nature of the Ukrainian HR management system, and emphasize high significance of the personnel as a strategic resource of the company along with its finance assets.

The specifics of the Ukrainian personnel management system are singled out. The high significance of the personnel as a strategically important resource of the company along with financial assets is determined. The ways of solving an existing problem of personnel management in Ukrainian companies are offered and directions of increasing of competitiveness of the enterprises are developed through increase of motivation and efficiency of work of the personnel.

Keywords: HR management system, competitiveness, human resource management functions, strategic factors of HR management, competency, qualifications, motivation, effective operation of the enterprise.

PROBLEM STATEMENT

The transition of the economy to the market raids significantly changed the relations in the sphere of management and use of personnel of enterprises and organizations. Of particular importance, in our view, is the problem at the level of enterprises, whose position in the market economy is radically changing. Being a subject of commodity-money relations, which has economic independence and fully meets the results of its business activities, the enterprise must create a system of personnel management that will ensure its effective work and high competitiveness, as well as stable market conditions. But many enterprises, especially small ones, are not fully aware of the importance of the process of improving and developing the personnel management system. For this reason, relations are changing not only between employees and the employer, between managers and staff of the enterprise, but also between executives and subordinates. Undoubtedly, there is a problem in enterprises that the development and application of new systems and other mechanisms of human resources management that will correspond to the new realities of the market economy, which makes this topic even more relevant.

MAIN MATERIAL OF THE RESEARCH

In any industry or field of activity, competitiveness is one of the main factors of commercial success. Today, the competitiveness of the enterprise, along with the technologies and methods of organization of production, determines the security of the enterprise by highly qualified human resources, the level of motivation of the personnel, as well as organizational structures and forms of work that allow achieving a high level of effective activity [4].

Competitiveness - the concept is multidimensional and includes not only the qualitative, technical and economic characteristics of the goods or services provided, but also those processes that occur parallel to the main activities of the enterprise or organization. The price of the product, sales channels, delivery terms, logistics, advertising, service, and much more depends mainly on effective and efficient personnel management both on the stage of production of the goods and on the subsequent activities of the organization, which again confirms the high importance of personnel management [5].

In our opinion, successful operation of the enterprise and increase of its competitiveness are connected with people, precisely for this reason the modern concept of management of an enterprise allocates from a large number of functional spheres of management activity one which is connected with management of the personnel component of production - the personnel of the enterprise. Exact principles and methods for organizing and planning production, optimal systems and procedures play a significant role, but despite this, the success of the firm depends on the specific people who work at the enterprise, their knowledge, skills, competence, motivation, discipline, learning receptivity, and the ability to correctly solve emerging tasks. At the same time, labor relations are hardly the most complicated and

multifaceted problem of entrepreneurship, especially when the staff of the enterprise consists of tens, hundreds and thousands of people. Attitudes in the field of work cover a wide range of problems that are connected with the organization of the labor process, recruitment and selection of personnel, training, training and retraining, the choice of a suitable system of remuneration, creation of conditions for social partnership at the enterprise. Therefore, for the effective functioning of the enterprise, it is necessary to properly organize the labor process, while continuously controlling the activities of employees in various methods. The personnel management system proceeds from its theoretical requirements, combines managerial knowledge, accumulated experience in both foreign and domestic practice of personnel work. It defines the contents of the programs of recruitment, selection, training and retraining of the personnel of the organization and its arrangement, but not reduces to it. The system of personnel management reflects existing tendencies of interests and needs, installations and values of employees of the organization, which determine their activity [2].

The high significance of the improvement of the personnel management system also confirms a number of functions it performs: it is the function of personnel planning, the function of management of hiring and personnel recruitment, assessment, the function of personnel motivation management, social development, the function of legal and information support personnel management, the function of ensuring normal working conditions, as well as the function of linear guidance [1].

Like any other system, the control system consists of components such as: system element, system communication, system subsystem, and system structure. It is worth to say about the system-forming factors that determine the creation and functioning of the system, which are subdivided into internal and external ones.

Meskon, Albert and Hedouri in their scientific works highlight the factors of the external and internal environment. So, to the factors of the environment authors include: consumers, suppliers (labor resources, materials, capital), competitors, trade unions, the state of the economy, laws and state bodies, political factors, socio-cultural factors, NTP and international events. The factors of the internal environment include: strategic, target, general quality (technology, general and professional culture), information, stabilization and functional [6]. Of course, both internal and external factors have a sufficient influence on the functioning of the enterprise, therefore, it is not meaningful to oppose them or to highlight the dominant ones. In this regard, the head must take the necessary material solutions, on the one hand, and stimulate the activities of employees of the enterprise - on the other.

According to universities in Western Europe, in countries such as Singapore, USA, Germany, France, Great Britain, Italy and Finland, human resources are used by more than 70%. In Australia, Spain, Canada, the Czech Republic, Japan - no more than 50%. Ukraine, Russia, Mongolia, the People's Republic of China, Poland, Mexico [1]. In our opinion, it is possible to comment on this situation based on the domestic features of personnel management. Firstly, the fact that due to the lack of a requirement for optimization of the control system is focused on instant gain is clearly tracked. There is insignificant and unnecessary information about costs and outcomes, which leads executives and line managers to be an important tool for identifying problems. As a result, all transformations are accidental and, as a rule, have no effect on the final result. Without the elimination of this problem and the correction of such a "specificity" of the Ukrainian system of personnel management, a forward movement is not possible. Even the most advanced market research techniques and favorable conditions for the marketing service will not deliver expected results unless they receive support from the management system in which executives speak the same language, there are well-known summaries of the company's economic performance and continuous monitoring of incomes and expenditures. Secondly, the specific feature of domestic systems of personnel management is connected with the fact that the enterprises do not distinguish the main factor of success or the main strategic advantage, without which it is impossible to further development. There is no such need, no tradition, no necessary skills to complete this work. And, finally, the last feature of the Ukrainian system of personnel management is connected with organizational culture. The negative attitude towards organizational culture, which appeared during the restructuring, still affects the company's activities. In our opinion, a new culture is needed that can support the profound transformations that must be made. Only taking into account all of the above-mentioned features and building a truly market-oriented management system, one can talk about hanging competitiveness and the successful development of enterprises and organizations, since the essence of personnel management lies in the competitive human resource, which is a value for the company. And in order to increase the productivity of labor, achieve economic benefits, as well as the goals and objectives of the organization, it is necessary to fully motivate, stimulate and develop the personnel. To date, the workforce requires high-quality work, highly professional craftsmanship, teamwork skills, the ability to make an independent decision, responsibility for the quality of performing the labor function, and more. Therefore, it is legitimate to highlight the dependence of effective functioning on the quality of labor, its forms of use.

CONCLUSION

Thus, it seems to us that staff is a competitive asset that needs to be developed along with other resources to achieve the strategic goals of the enterprise and ensure its effective functioning in a market economy. Staff is no longer seen as ancillary costs or an additional cost item, but as a strategically important resource for the company.

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USA

Ahmet S. Yayla

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Carol Scott Leonard

Presidential Academy of the National Economy and Public Administration. National Research University – Higher School of Economics. Russian Federation

Christine Sixta Rinehart

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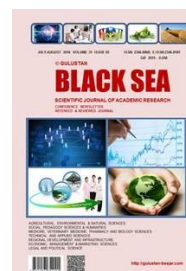
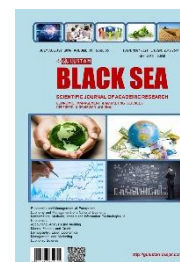
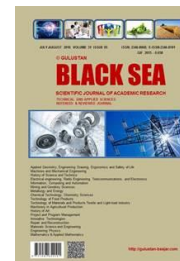
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