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CONTENTS

DEVELOPMENT OF BOUNDARY CONDITIONS FOR THE CONSTRUCTION OF A MATHEMATICAL MODEL OF THE PROCESS OF PRESSING POWDER IN A CLOSED PRESS MOLD

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Annotatsiya. Maqolada kontinual qarashlar va plastiklikning matematik nazariyasi asosida metall va qotishma kukunlarini yopiq press-qolipda xona xaroratida presslash jarayonini matematik modelini ko'rish uchun presslanayotgan kukun tana yuzasi bilan press-qolip elementlarining ichki yuzalari o'rtasidagi ta'sirlashish xarakterini va presslanayotgan tana geometriyasini o'zida aks etgan vazifaning chegaraviy shartlari ishlab chiqilgan.

Kalit so'zlar: Kukun, presslash, press-qolip, press-briket, tutashishlar nazariyasi, kontinual yaxlit muxit, oquvchanlik, izotropik muhit, kuchlanish, deformatsiya, chegaraviy shartlar, bosim, qoldiq g'ovaklik, kuchlanish tenzorlari, invariantlar.

Аннотация. В статье представлены граничные условия задачи, отражающие характер взаимодействия поверхности прессованного порошкового тела с внутренними поверхностями элементов пресс-формы, а

также геометрия прессуемого тела, разработанная для математической модели процесса. процесс прессования порошков металлов и сплавов в закрытой пресс-форме при комнатной температуре, основанный на представлениях континуума и математической теории пластичности.

Ключевые слова: Порошок, прессование, пресс-форма, пресс-брикет, теория связей, сплошная однородная среда, текучесть, изотропная среда, напряжение, деформация, граничные условия, давление, остаточная пористость, тензоры напряжений, инварианты.

Abstract. The article presents boundary conditions of the task, which reflect the nature of the interaction between the pressed powder body surface and the inner surfaces of the press-mold elements and the geometry of the pressed body, which have been developed for a mathematical model of the process of pressing metal and alloy powders in a closed press mold at room temperature based on continuum views and the mathematical theory of plasticity.

Keywords: Powder, pressing, press mold, press briquette, theory of connections, continuous homogeneous medium, yield, isotropic medium, stress, deformation, boundary conditions, pressure, residual porosity, stress tensors, invariants.

Introduction

Using the technological methods of powder metallurgy, products (details) made based on iron powder have become an integral part of modern technology [1, 2]. Currently, using technological methods of powder metallurgy, details of various shapes and sizes with a mass of 5 to 1000 g and more are produced on a production scale [3].

Production of details in powder metallurgy can be carried out in two types of technological directions: the first direction consists of pressing metal and alloy powders or their mixtures in closed press molds at room temperature, preparation of press-briquette of the detail with the required shape and size, sintering press briquettes, additional processing of the sintered part (calibration, stamping, re-pressing, thermal and chemical thermal treatment, etc) [4, 5]. In the second technological direction, the powder mixture is hot-pressed in press molds, and the process of powder pressing and sintering is carried out at the same time [6].

The second technological direction requires very complex and expensive technological devices, therefore, this technology is rarely used in industries. In the first technological direction, the production of details is carried out on less complicated devices and equipment, therefore, it is widely used in industries. The physical-mechanical and structural properties of the details produced in this technological direction mainly depend on the quality of the press-briquette preparation process [7, 8]. During the pressing process, the particles in the powder move and slide on each other's surface and the surface of the press mold wall, as a result, a frictional force appears in the volume of the pressed powder and at the boundaries of the powder contact with the press-mold wall. As a result, the volume of press briquettes is unevenly compacted [9]. This significantly worsens the quality of the manufactured powder-based parts.

Ensuring the high-quality implementation of the process of compacting powders by pressing is achieved by mathematical modeling of the process of pressing them. In this article, the boundary conditions of the task necessary for the construction of a mathematical model of the powder pressing process are formulated.

Literature Review

The theory of pressing powders is developing in two directions: 1 - the scientific direction based on the study of the phenomenon of interparticle connection and particle deformation during powder pressing and 2 - the scientific direction based on applying the mathematical theory of plasticity to the pressed powder system as a continuous whole medium.

In the first approach, the powder is considered as a model consisting of particles having the shape of an ideal sphere, and the deformation of the system is analyzed, this direction is called the theory of connections. Within the framework of the theory of connections, scientists K. Torre, M. Y. Balshin, V. V. Skorohod, G.M. Jdanovich, V.M. Segal, M.F.Ashby and others developed the technological parameters of the powder pressing process and the equations related to the change of press-briquette density depending on the pressing pressure. However, the theory of connections does not take into account the actual geometrical shape of the particles that make up the powder, the condition of the surface, and the temperature and pressure changes depending on the time during the pressing process.

The second direction is based on the theory of continuum deformation, A powder system consisting of individual particles is considered as a whole medium with irreversible compressibility, which makes it possible to use numerical calculation methods of the mechanics of the whole medium in the theoretical analysis of the powder pressing process. Scientists who made a significant contribution to the development of the theoretical foundations of this direction: V.V. Skorohod, M.S. Kovalchenko, B.A. Druyanov, R.J. Green, M.B. Stern, G.L. Petrosyan, G.Y. Gunn, V.E. Perelman, M. Oyane and others. One of the main problems in the application of the theory of continuum plasticity in the theoretical analysis of the powder pressing process is certain functions and coefficients in these equations and the yield stress corresponding to the powder density needs to be determined experimentally, which creates some difficulties.

Under the influence of hydrostatic pressure, the volume of the powder body inside the press mold is irreversibly deformed, this can be explained by the gradual reduction or complete closure of the cavities in the body [80-83]. The condition of plasticity of such bodies depends on the hydrostatic stress, and the yield surface is closed. General information on the various yield or loading surfaces used in powder medium can be found in references [10-12]. Some types of plastic yield surfaces for the isotropic medium are presented in Figure 1, many of them have changed as a result of the development of the theory of plasticity [13, 14].

The most commonly used plastic yield condition for the pressing process of powder medium with isotropic properties is called R. Green condition [15, 16]:

$$I_2 + \bar{\alpha} I_1^2 = \bar{\delta} \sigma_s^2 , \qquad (1)$$

where: $I_2 -$ second invariant of stress tensors;

I_1 – the first invariant of stress tensors;

an $\bar{\delta}$ – average value of powder relative density functions;

σ_s – yield stress of the powder particle material.

The first version of the theory of plasticity of a porous body similar to the expression (1) was proposed by V.V. Skorohod [17]. In the expression for the intensity of test stresses and the yield strength in shear stress should be $\bar{\tau} = \bar{\sigma}/\sqrt{3}$ and $k = \sigma_S/\sqrt{3}$ respectively:

$$\frac{\bar{\tau}^2}{\varphi} + \frac{\sigma_0^2}{\Psi} = (1-\theta)k^2 , \qquad (2)$$

where θ – relative porosity;

φ and Ψ – relative porosity functions.
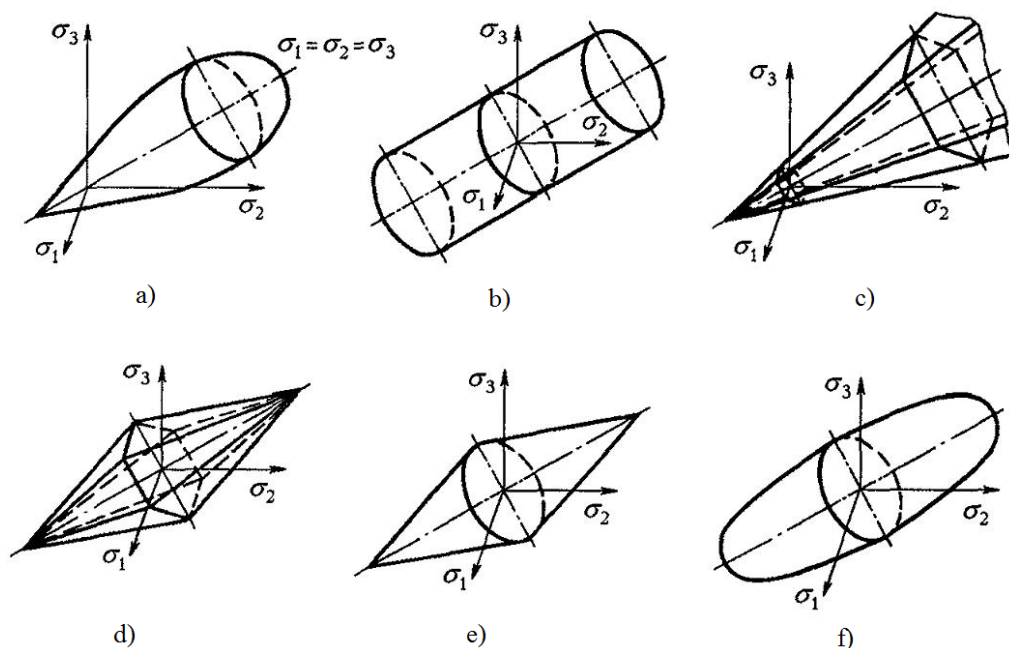
Figure 1. Plasticity criteria corresponding to different types of yield surfaces on principal stress axes for porous isotropic medium: a – N.P. Saha; b – I.S. Degtyareva, V.L. Kolmogorov; c – V.E. Perelman; d and e – T. Tabat, S. Masaki and Y. Abe; f – G. Kun and Ch. Dauni.

At the same time, various scientists have used other forms of the condition of plasticity similar to the equation in [18-20]. If α = 0 and δ = 1, this condition becomes the now-known Huber-Mizes yield condition. A lot of theoretical data and experimental [19, 20] correlations for various materials have been proposed to determine the conditional functions.

A comparison and critical analysis of the results in the research works of several scientists on functions is covered in the literature [20]. It states that most of the functions do not correspond to real conditions, especially in the case of uniaxial stress, the results at the yield point are very different from each other.

A review of the literature on theoretical methods based on the continuum approach in compaction of powders by pressing shows that, the reason for the continued development of the method, is not only finding the relationship between compaction and pressure, density and pressure for a specific process, but it is possible to find a

solution to complex technological tasks in the pressure processing of powder materials. A closed system of equations is required for the solution and the system includes the equations of the theory of elasticity and the equations of the theory of plastic yielding.

Research Methodology

We consider the model of changes (basic equations and boundary conditions of the task) occurring in the powder during the pressing of the press-briquette of the bushing-shaped detail in a closed press-mold at room temperature within the framework of continuum mechanics (Figure 2).
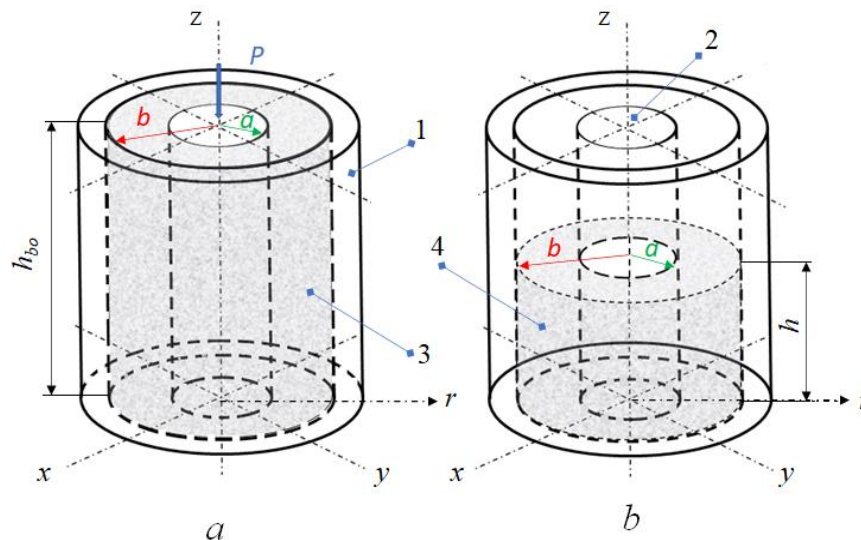
Figure 2. A model of the process of pressing a press-briquette bushing from powder in a closed press-mold: *a* – before pressing; *b* – after pressing; 1 – die; 2 – rod; 3 – powder; 4 – press-briquette bushing; *P* – punch movement; *b* –outer radius of bushing; *a* – inner radius of bushing; h_{bo} – initial height; *h* – the height of the press briquette.

At the same time, we accept the following assumptions for the model: the powder material inside the press mold is isotropic at all times of the pressing process; there are no factors leading to the tensor of symmetric stresses during the deformation process; the ratios between the characteristics of the local environment can characterize rheological properties of the pressed material.

The assumptions made are based on the results of many years of tests on soil mechanics and dispersive materials [21, 22]. We consider the material that forms the basis of the model as a solid medium that becomes denser and plastically strengthened under specified boundary conditions. Since the model adopted in Figure 2 has a cylindrical shape with a single axis, we consider the quantities as a symmetric function concerning the axis in the cylindrical coordinate system.

Since the stress-strain state of the pressing process is considered at the moment of the current deformation, we use the Euler hypothesis [23]. For this, the system of equations corresponding to the general condition can be written as follows:

$$\frac{\partial \sigma_z}{\partial z} + \frac{\partial \tau_{rz}}{\partial r} + \frac{\tau_{rz}}{r} = 0 , \tag{3}$$

$$\frac{\partial \sigma_r}{\partial r} + \frac{\partial \tau_{rz}}{\partial z} + \frac{\sigma_r - \sigma_\varphi}{r} = 0. \tag{4}$$

where: $\sigma_z, \sigma_r, \sigma_\varphi$ – normal stresses along the z-axis, r-radius, and φ-angle, respectively; τ_{rz} – tangential stress.

The continuity equation is as follows:

$$\frac{\partial v_z}{\partial z} + \frac{\partial v_r}{\partial r} + \frac{v_r}{r} = -\frac{1}{\rho}\frac{\partial \rho}{\partial t}. \tag{5}$$

We represent the geometric proportions of the tensor components of the rate of deformation as follows:

$$e_r = \frac{\partial v_r}{\partial r}, \quad (6) \qquad\qquad e_r = \frac{\partial v_z}{\partial z}, \tag{7}$$

$$e_\varphi = \frac{v_r}{r}, \quad (8) \qquad\qquad 2e_{rz} = \frac{\partial v_z}{\partial r} + \frac{\partial v_r}{\partial z}. \tag{10}$$

The relationship between porosity and density of press briquette is expressed as follows [17]:

$$\rho = \rho_{nz}(1-\theta), \tag{11}$$

Where, ρ_{nz} – theoretical density of the powder particle.

We use the general (smooth and piecewise smooth) equation of the yield surface, the unknown parameter of this function is the porosity of the material:

$$f(I_1, I_2, \theta) = 0, \tag{12}$$

This expression and the yield law together form the following vector ratios:

$$\frac{\sigma_z - I_1}{e_z - \frac{1}{3}e} = \frac{\sigma_r - I_1}{e_r - \frac{1}{3}e} = \frac{\sigma_\varphi - I_1}{e_\varphi - \frac{1}{3}e} = \frac{\tau_{rz}}{\gamma_{rz}} = \frac{I_2}{\gamma}, \tag{13}$$

Ratios can be written in scalar form as follows:

$$\frac{\partial f}{\partial I_1}\gamma = \frac{\partial f}{\partial I_2}e, \tag{14}$$

If the yield surface is piecewise smooth, then the following functions can be introduced instead of function (12):

$$\varphi(I_1, I_2, \theta) = 0; \qquad \psi(I_1, I_2, \theta) = 0. \tag{15}$$

In a more accurate representation of the mechanical model of powder pressing, the explicit expression of the function f and the functions φ and ψ are necessary for a smooth and a piecewise smooth yield surface respectively. However, the specificity of the mechanical properties of powders complicates the experimental determination of these functions. Therefore, in this article, the need to determine the type of yield surface in pressing is abandoned, only the dependence of longitudinal and transverse pressures is considered as a function of porosity [24].

Within the framework of the proposed model, it is necessary to define specific tasks and to determine the boundary conditions of the task to obtain their exact solution. These conditions must reflect the nature of contact between the surface of the pressed powder body, the inner surfaces of the press-mold elements, and the geometry of the pressed body.

Analysis and Results

From iron powder within the accepted mechanical model: we determine the boundary conditions of the task necessary to develop a mathematical model of the process of pressing a bushing press-briquette with an inner radius a, an outer radius b, and a final height h_{bo}.

As the basis of the coordinate system, we choose the insertion plane (z = 0) of the press mold and if we consider it completely non-deformable and non-movable, then:

$$\Delta_z^v \big|_{z=0} = 0 \qquad (16)$$

Where, Δ_z^v – displacement of the insert along the z-axis.

Similarly when z = h, when the press briquette reaches height h after the powder is pressed, Δ_z^p – the movement of the punch stops, so the following equality is appropriate:

$$\frac{\partial \Delta_z}{\partial r}\bigg|_{z=h} = 0 \qquad (17)$$

At the same time, the side walls of the press die and the surface of the rod is not deformed, that is, the wall of the die and rod are non-movable:

$$\Delta_r^v \big|_{r=a} = \Delta_r^m \big|_{r=b} = 0. \qquad (18)$$

Friction occurs between the inner sidewall surface of the die ($r = b$) the inner surface of the rod ($r = a$) and the pressed powder mass. If we accept friction on the surfaces in the form of Coulomb's law, it is expressed as follows (Figure 3):

$$\left\| \tau_{rz} \right\|_{r=a} = -\lambda \sigma_r \big|_{r=a}; \qquad (19)$$

$$\left\| \tau_{rz} \right\|_{r=b} = \lambda \sigma_r \big|_{r=b}, \qquad (20)$$

Where, λ – friction coefficient on the surface of the powder mass and press-mold die and rod.

When pressing the powder, we develop different pressing schemes to reduce the effect of the friction force between the powder mass on the inner surface of the die and the outer surface of the rod [25]:

1) The die, rod, and insert are non-movable, the punch moves at the same speed and compresses the powder inside the die (Figure 3, 1):

$$\Delta_z^m = 0; \quad \Delta_z^{st} = 0; \quad \Delta_z^{vs} = 0; \quad \Delta_z^p \neq 0. \qquad (21)$$

2) the die and the rod are non-movable, the punch and the insert move against each other at the same speed and compress the powder (Fig. 3, 2):

$$\Delta_z^m = \Delta_z^{st} = 0; \quad \left| \Delta_z^v \right| = \left| \Delta_z^p \right| \neq 0. \qquad (22)$$

3) the insert is non-movable, the die and punch move together in one direction, and the rod moves in the opposite direction, but the punch can also move faster than the die (Figure 3, 3):

$$\Delta_z^v = 0; \quad \left| \Delta_z^{st} \right| = \left| \Delta_z^m \right| \leq \left| \Delta_z^p \right| \neq 0 \qquad (23)$$

4) the die, the insert is non-movable, the punch and the rod move at the same speed and direction (Figure 3, 4):

$$\Delta_z^m = \Delta_z^v = 0; \quad \Delta_z^{st} = \Delta_z^p \neq 0 \qquad (24)$$
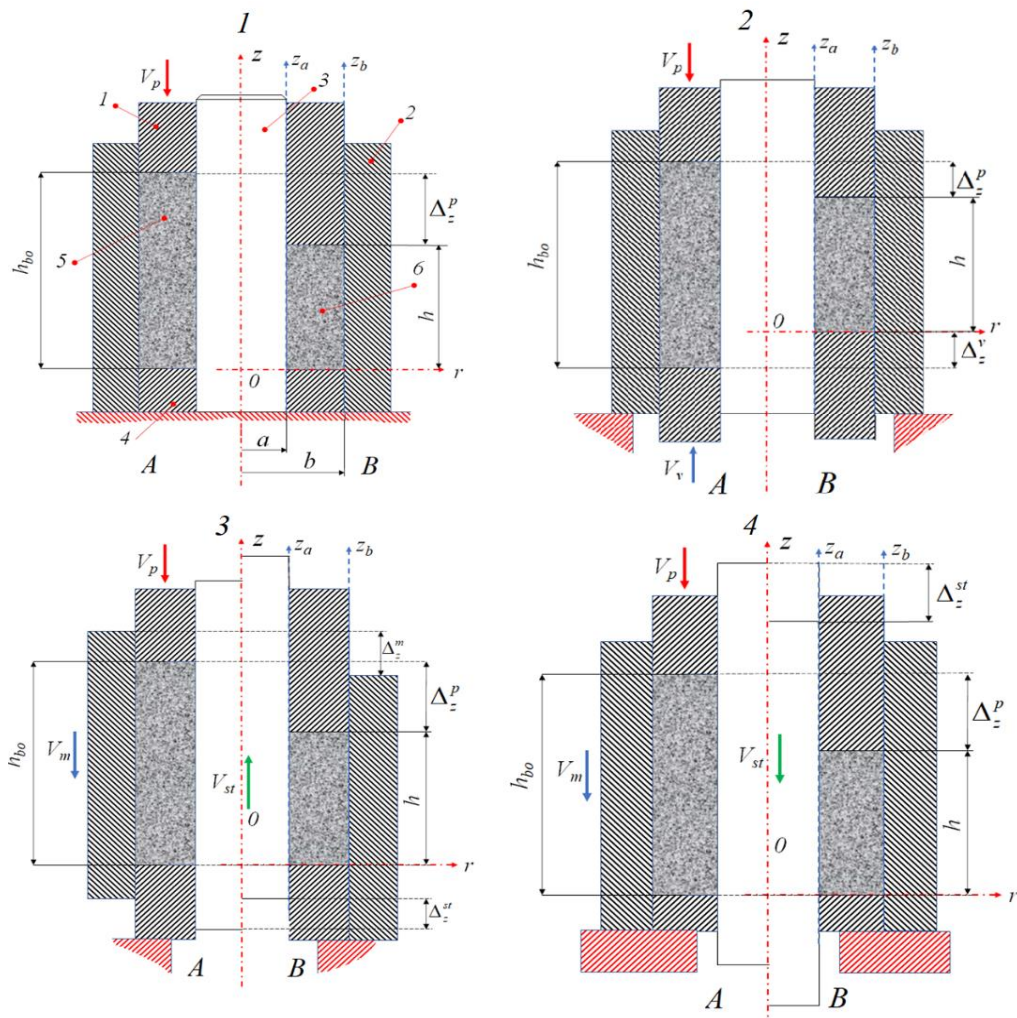
Figure 3. Pressing schemes: 1 – uniaxial; 2 – biaxial; 3 – through die, rod, and punch motion; 4 – through the punch and rod motion; *A* – before pressing; *B* – after pressing; 1 –punch; 2 –die; 3 –die; 4 – insert; 5 - powder; 6 – press briquette; h_{bo} – initial height; h – final height.

The displacement component, which is zero at the boundary $\Delta_z\big|_{r=b}$ between the inner surface of the matrix and the powder body, is a *z* function, it varies continuously from zero on the insert surface to Δ_z^p on the punch surface, we take it as a monotone continuous function of variable in the following limit interval:

$$0 \le \left|\Delta_z\big|_{r=b}\right| \le \left|\Delta_z^p\right|, \tag{25}$$

According to the theorem of intermediate values, for z_b such values found belonging to the interval *[0, h]* that:

$$\Delta_z\big|_{r=b}(z) = \Delta_z^m, \tag{26}$$

The z_b coordinate divides the die into two parts $0 \le z < z_b$ and $z_b < z \le h$. If we take into account the condition (23), then the following inequality holds in the first part of the die:

$$\text{when } 0 \le z < z_b, \ \left|\Delta_z\big|_{r=b}\right| \le \left|\Delta_z^m\right|, \tag{27}$$

for the second part:

$$\text{when } z_b < z \le h, \ \left|\Delta_z\big|_{r=b}\right| \ge \left|\Delta_z^m\right| \tag{28}$$

When $0 \leq z < z_b$ means the powder moves slower than the matrix and when $z_b < z \leq h$ means it moves faster. Худди шу мулоҳаза z_a – стержень билан кукун тана чегараси учун ҳам ўринли. The same reasoning is valid for the boundary between the powder body and z_a rod.

Let's consider that some surface of the powder body moves faster than the die. In this case, the attempted friction on the surface of the powder prevents it from moving along the punch direction, it is opposite to the direction of the punch movement. Attempted friction on the surface of a powder body moving slowly relative to the die helps the powder to move in the punch direction. In this case, the attempted friction is directed parallel to the punch direction.

Then, based on the boundary conditions (19) and (20) given above, we can formulate the following:

$$\tau_{rz}\mid_{r=b} = \begin{cases} \lambda\sigma_r\mid_{r=b};\ z_b < z \leq h \\ 0:\ z = z_b \\ -\lambda\sigma_r\mid_{r=b};\ 0 \leq z < z_b \end{cases} \tag{29}$$

$$\tau_{rz}\mid_{r=b} = \begin{cases} -\lambda\sigma_r\mid_{r=a};\ z_b < z \leq h \\ 0:\ z = z_a \\ \lambda\sigma_r\mid_{r=a};\ 0 \leq z < z_a \end{cases} \tag{30}$$

In the boundary conditions formulated in (16) and (17), there are two independent variables z_a and z_b. These variables characterize the law of movement of press mold elements relative to each other. At the same time, the displacement law determines the pressing scheme. So, the boundary conditions proposed by us take into account the method of pressing the powder in a press mold.

In the mathematical modeling of the pressing process, in addition to the boundary conditions introduced above, it is necessary to include the condition of the powder being compacted by the press. If the pressing is to be done at the specified pressing pressure, in which, as a condition, equality of the average stress to the punch pressure P can be expressed as follows:

$$\frac{2}{b^2 - a^2}\int_a^b \sigma_z\mid_{z=h} rdr = P \tag{31}$$

If the pressing process is carried out at h the specified height of the press briquette, the boundary condition can be expressed by the punch's displacement as follows:

$$\Delta_z\mid_{z=h} = \Delta_z^p \tag{32}$$

Conditions (31) and (32) require that the values of P and Δ_z^p be known in advance during the pressing process. In practice, the values of these quantities are unknown, they need to be determined within the scope of the above task. For the powder pressing process, the average value of the residual porosity allowed in the press briquette can be included as a parameter characterizing the final result. In this case, the boundary condition is expressed as follows:

$$\theta_{avr} = \frac{2}{h(b^2 - a^2)} \int\limits_0^h \int\limits_a^b \theta \, r dr dz. \tag{33}$$

Where, θ_{avr} – the average value of the residual porosity in the press briquette.

All distributed unknowns including Δ_z, and σ_z, and then values of quantities of P and Δ_z^p can be calculated by solving the above-mentioned basic equations (3) - (15) under the specified boundary conditions (16) - (18), (29), (33).

Conclusions

As a result of the theoretical research carried out on the calculation of boundary conditions for the development of a mathematical model within the framework of the continuum theory for the process of pressing metal and alloy powders in closed-press molds, developed boundary conditions provide the following opportunities in the practice of powder pressing:

1) to analyze the stress-deformation state of the press-briquette regardless of the type of yield;

2) to characterize the law of movement of press mold elements relative to each other and to determine the distribution of longitudinal and transverse stresses by the volume of the press-briquette for the four pressing schemes;

3) to determine the final height of a bush-shaped press briquette or the volume distribution of its residual porosity due to pressing pressure.

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TECHNOLOGY OF PRODUCING TUNGSTEN CARBIDE NANOPOWDER BY SELF-PROPAGATING HIGH-TEMPERATURE SYNTHESIS (SHS) METHOD

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Annotatsiya. Ushbu maqolada volfram karbid-kobalt asosli qattiq qotishma chiqindilaridan olingan volfram karbid kukunlarini qarama-qarshi oqimda filtrlash rejimida sintezlash usuli bilan nanokukunlar olish xususida bajarilgan tadqiqotlar natijalari keltirilgan. Olib borilgan ilmiy va amaliy izlanishlar shuni ko'rsatadiki dastlabki shixta namunalaridagi KCl, NaCl, K_2CO_3 ning miqdori ortishi bilan o'z-o'zidan tarqaluvchi yuqori haroratli sintezlash davomida yonish harorati tushdi. KCl ning aralashmani miqdori 6% ga yetganda yonish harorati 1250 °C gacha, NaCl ning aralashmani miqdori 6% ga yetganda yonish harorati 1250 °C gacha, K_2CO_3 ning boshlang'ich tarkibi 3% bo'lganda yonish harorati 1250 °C gacha pasayishga erishildi.

Kalit so'zlar: qattiq qotishma, volfram karbid, nanokukun, sintezlash, filtrlash rejimi, tuzning miqdori, yonish harorati, yonish tezligi, NaCl, KCl, K_2CO_3, nitrosellyuloza.

Аннотация. В статье представлены результаты исследований по получению нанопорошков путем синтеза порошков карбида вольфрама, полученных из отходов твердого сплава карбид вольфрам-кобальт, в режиме противоточной фильтрации. Проведенные научные и практические исследования показывают, что с увеличением количества KCl, NaCl, K_2CO_3 в исходных твердых образцах температура горения при самораспространяющемся высокотемпературном синтезе (СВС) снижается. Когда количество примесей KCl достигало 6%, температура сгорания достигала 1250°С, когда количество примесей NaCl достигало 6%, температура сгорания достигала 1250 °С, когда исходное содержание K_2CO_3 составляло 3%, температура сгорания уменьшалась до 1250 °С.

Ключевые слова: твердый сплав, карбид вольфрама, нанопорошок, синтез, режим фильтрации, количество соли, температура горения, скорость горения, NaCl, KCl, K_2CO_3, нитроцеллюлоза.

Abstract. The article presents the results of research on the production of nanopowders by synthesizing tungsten carbide powders obtained from waste tungsten carbide-cobalt hard alloy in countercurrent filtration mode. The conducted scientific and practical studies show that with an increase in the amount of KCl, NaCl, and K_2CO_3 in the initial solid samples, the combustion temperature during Self-propagating high-temperature synthesis (SHS) decreases. The combustion temperature reached 1250 °C when the amount of KCl or NaCl impurities reached 6%. Similarly, when the original K_2CO_3 content was 3%, the combustion temperature decreased to 1250 °C.

Keywords: hard alloy, tungsten carbide, nanopowder, synthesis, filtration mode, amount of salt, combustion temperature, combustion rate, NaCl, KCl, K_2CO_3, nitrocellulose.

Introduction

Today, tungsten carbide-based hard alloys are widely used in various industries. In the leading countries in the production of hard alloys: the USA, Germany, China, Japan, Russia, Austria and other countries, extensive research is being conducted to improve the properties of hard alloys. In the last 20 years, due to the high price and shortage of carbide raw materials, increasing its working life remains one of the urgent tasks. As a solution to this problem, scientists are conducting research on recycling waste carbide and/or improving their properties by introducing nanopowders. In the production of hard alloys based on tungsten-cobalt carbide, the use of powders with a granule size of less than 100 nm improves their mechanical properties [1]. Adding nanoparticles in an amount of 5% to VK6 hard alloys makes it possible to increase their resistance to abrasive wear by 20-25%, service life by 1.1-1.12 times, and hardness by 11-13% [2].

Literature review

Currently, there are several dozen methods for producing nanopowders [2, 3]. Less than half of the known technologies are used on an industrial scale for the synthesis of tungsten carbide hard alloys. All existing methods for producing carbide nanopowders relate to physicochemical technologies [4].

Today, one of the most common methods for producing nanopowders is plasma-chemical synthesis [5]. In the method of plasma-chemical synthesis, arc and arcless plasma torches are used to burn the starting material; in this method, pure tungsten and carbon powders are used [6]. Using the arc-plasma method, it is possible to obtain tungsten carbide nanopowders using WO_3 raw materials instead of pure powders [7].

According to an analysis of the literature [8, 9], salts contained in slag samples prepared by the reverse filtration method do not react with tungsten carbide powders, but should reduce the combustion temperature. In addition, the salts used are highly soluble in water and are easily removed from samples at low temperatures along with the plasticizer during the primary curing process [10 – 20].

Research Methodology

To conduct research to develop a technology for producing tungsten carbide nanopowders by self-propagating high-temperature synthesis, solutions of NaCl, KCl, K_2CO_3, well dissolved in distilled water, were taken. Tungsten carbide powders obtained from waste tungsten carbide-based hard alloys were selected.

Before starting the experiments, 3 samples of slag №1 WC + nitrocellulose ($[C_6H_7O_2(OH)_{3-x}(ONO_2)_x]_n$) + KCl + (1-10%) were used; №2 WC + nitrocellulose + NaCl + (1-10%); №3 WC + nitrocellulose + K_2CO_3 + (1-10%); Samples of the mixture were prepared.

Analysis and Results

In order to develop a technology for producing tungsten carbide nanopowders by self-propagating high-temperature synthesis for all prepared solid samples, the process of self-propagating high-temperature synthesis also includes countercurrent filtration and co-current filtration performed in [0000] modes. The product formed from the synthesized samples was mixed with $CaCO_3$, each sample was washed 3 times and ground in hot distilled water at a temperature of 70-80 °C until the residual salts disappeared. Washed and crushed samples were subjected to X-ray diffraction and electron microscopy analysis.

Results of studies of slag burned with KCl. Initially prepared samples containing KCl were carried out for a mixture of WC + nitrocellulose + KCl in countercurrent filtration mode with different percentages of KCl, the results of the studies are presented in Table 1.

Table 1. *Dependence of the amount of KCl on the combustion temperature of the WC+nitrocellulose+KCl mixture (in countercurrent filtration mode).*

№	Amount of KCl, %	Combustion parameters		
		Time, s	Speed, mm/s	Temperature, °C
1	0	1,3	38,5	2000
2	1	2,0	25,0	1890
3	2	3,2	15,6	1780
4	3	5,0	10,0	1650
5	4	7,2	6,9	1500
6	5	18,2	2,7	1430
7	6	20,6	2,4	1330
8	7	28,0	1,8	1290
9	8	does not burn	-	-
10	9	does not burn	-	-
11	10	does not burn	-	-

Based on Table 1, a graph was constructed of the dependence of the amount of KCl in the original frozen samples on the combustion temperature in countercurrent filtration mode (see Figure 1).
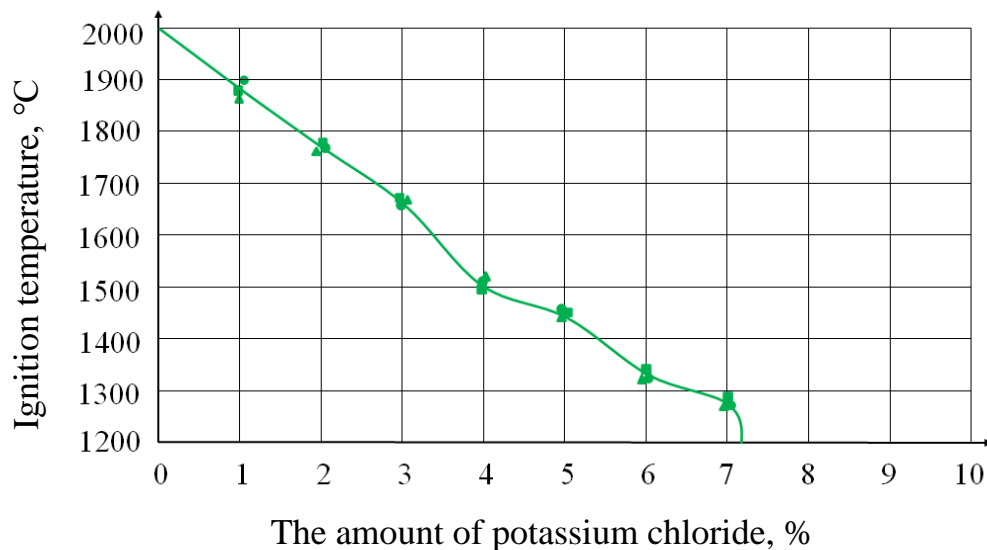
Figure 1. Dependence of the amount of KCl in the initial frost samples on the combustion temperature (in countercurrent filtration mode)

As shown in Table 1 and Figure 1, compiled as a result of scientific and practical experiments, for WC + nitrocellulose + KCl frost samples, an increase in the amount of KCl in the original frost samples led to a decrease in the melting point. during synthesis. When the KCl content of the original frozen samples reached 8%, countercurrent filtration failed.

Results of studies of slag samples calcined with NaCl. To determine the dependence of the amount of NaCl in a mixture containing WC + nitrocellulose + NaCl on the combustion temperature, when the percentage of NaCl is different (0-10%), the mixture WC + nitrocellulose + NaCl was prepared in the counter-flow filtration mode and the process was started (see table 2).

Table 2. *Dependence of the amount of NaCl on the combustion temperature of a mixture containing WC + nitrocellulose + NaCl (in countercurrent filtration mode).*

№	Amount of NaCl, %	Combustion parameters		
		Time, min	Speed, mm/min	Temperature, °C
1	0	2,4	41,6	2000
2	1	3,3	25,8	1920
3	2	4,8	16,4	1790
4	3	6,7	10,8	1680
5	4	10,4	6,5	1510
6	5	21,1	3,5	1400
7	6	32,2	2,7	1250
8	7	does not burn	-	-
9	8	does not burn	-	-
10	9	does not burn	-	-
11	10	does not burn	-	-

If we draw a conclusion based on 2-tables and 2-figures compiled on the basis of the conducted research, then the combustion temperature decreased accordingly with an

increase in the amount of NaCl in the frost samples. When the NaCl content reaches 6%, the combustion temperature drops to 1250 °C, and when the NaCl reaches 7%, it does not burn in countercurrent filtration mode.

Figure 2. Dependence of the amount of NaCl in the initial frost samples on the combustion temperature (in countercurrent filtration mode).

Results of the study of slag samples burned with K₂CO₃. After completing the synthesis processes with mixed solid samples of NaCl and KCl, mixtures with different percentages of K_2CO_3 were prepared in order to determine the dependence of the amount of K_2CO_3 on the combustion temperature in a mixture of WC + nitrocellulose + K_2CO_3 in countercurrent filtration mode, and research was carried out. The results of the study are presented in Table 3.

Table 3. *Dependence of the K_2CO_3 content in the WC+nitrocellulose+K_2CO_3 mixture on the combustion temperature (in countercurrent filtration mode).*

№	Amount of K₂CO₃, %	Combustion parameters		
		Time, min	Time, min	Time, min
1	0	2,4	39,6	2000
2	1	6,8	10,7	1840
3	2	21.2	3,9	1410
4	3	30,5	2,8	1260
5	4	does not burn	-	-
6	5	does not burn	-	-
7	6	does not burn	-	-
8	7	does not burn	-	-
9	8	does not burn	-	-
10	9	does not burn	-	-
11	10	does not burn	-	-

Based on the research results, Table 3 was created, a graph of the dependence of the amount of K_2CO_3 in the initial frost samples on the combustion temperature in countercurrent filtration mode (see Figure 3).

From figure 3 it can be seen that adding a small amount of K_2CO_3 to frost samples causes a significant decrease in the combustion temperature compared to other salts; with an initial K_2CO_3 content of 3%, the combustion temperature decreases to 1250

°C. But mixtures with a K_2CO_3 content of more than 4% did not burn in countercurrent filtration mode.
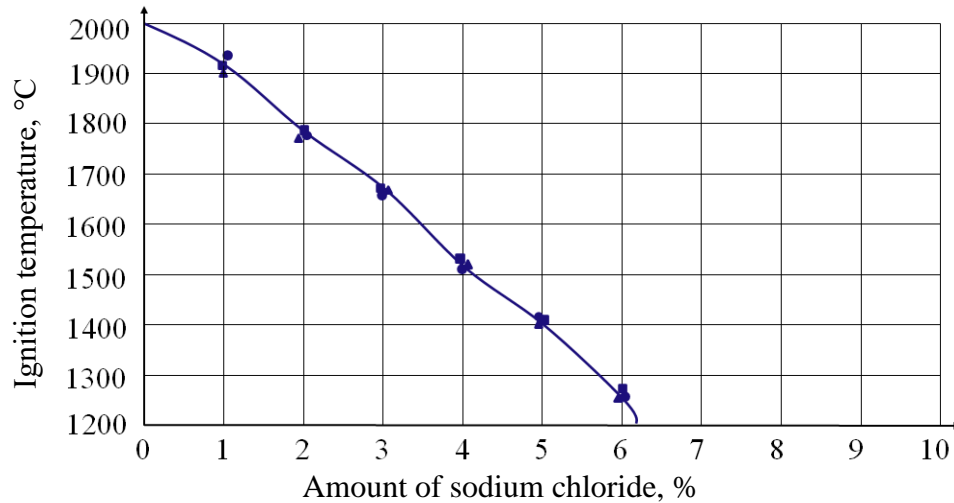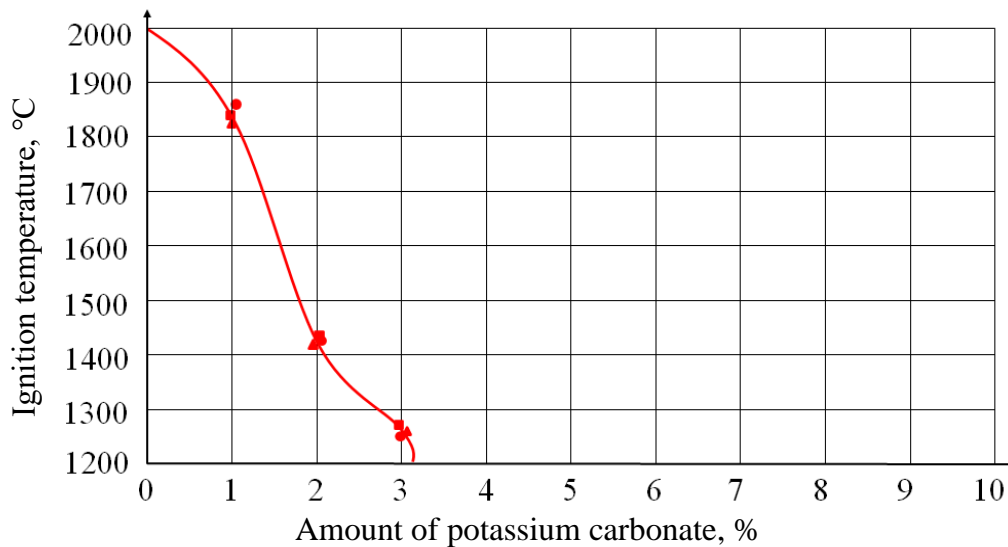

Figure 3. Dependence of the amount of K_2CO_3 in the initial frost samples on the combustion temperature (in countercurrent filtration mode).

As can be seen from the results obtained, the product of the synthesis of mixture № 7 turned out to be a polycrystal with a particle size of up to 400 μm. The results of X-ray diffraction analysis show the presence of not only the target WC phase, but also a large amount of tungsten oxides (WC and WO_3), as well as unreacted tungsten carbide. This is due to the reaction of oxygen with tungsten carbide, leading to decomposition and the formation of oxides during the synthesis of K_2CO_3. In this case, no saline solution is formed, which contributes to the crystallization of large particles of the final product. However, it is interesting to note that in the direct-flow filtration mode, less tungsten oxides are formed, which indicates self-purification of the original solid samples when burned in a semi-closed reactor. Due to unsatisfactory results when working with K_2CO_3, this salt was not used in further experiments on the production of tungsten carbide nanopowders.

Conclusions

As a result of the conducted scientific and practical research, the following conclusions can be drawn:

1. With an increase in the amount of salt in the initial mixture, the synthesis temperature and combustion rate decrease, and the average particle size of the synthesized product decreases.

2. When a large number of salts is included in the initial mixture, there is no reaction in the process of self-propagating high-temperature synthesis. In countercurrent filtration mode, the process does not work if the KCl content is above 7% and NaCl is above 7%.

3. It is impossible to use K_2CO_3 salt to obtain nanoparticles, since adding K_2CO_3 salt to frost samples does not ensure the formation of nano-sized particles, and the final product is contaminated with tungsten oxide.

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ANALYSIS OF FIBER QUALITY INDICATORS IN THE TECHNOLOGICAL PROCESS OF THE SHOVOT COTTON GINING PLANT

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Annotatsiya. Maqolada "Textile finance Khorezm" MCHJ QK Shovot paxta tozalash filialining paxtani dastlabki ishlash texnologik jarayonida tolaning HVI tizimida sifat ko'rsatkichlarini tahlili keltirilgan. Tajriba natijalariga ko'ra, paxtani tozalashdan so'ng namlagan holda jinlash jarayoniga uzatilishi paxta tolasining mustaxkamligini oshishiga olib kelmoqda. Shuningdek, kalta tolalar miqdorini oshib ketishi bartaraf etishga erishilmoqda.

Kalit so'zlar: paxta, tola, namlik, mustaxkamlik, o'rtacha uzunlik, kalta tola, g'aram, quritish barabani, tozalash, jinlash, tola tozalash, presslash.

Аннотация. В статье представлен анализ показателей качества волокна в системе HVI в ходе технологического процесса первичной обработки хлопка Шавотского хлопкоочистительного филиала ООО СП «Текстиль Финанс Хорезм». По результатам эксперимента, хлопок после очистки передается на джинирование в увлажненном виде, что приводит к увеличению прочности хлопкового волокна. Также достигнута о предотвращении появления коротких волокон.

Ключевые слова: хлопок, волокно, влага, прочность, средняя длина, короткое волокно, бунт, сушильный барабан, очистка, джинирование, очистка волокна, прессование.

Abstract. The article presents an analysis of fiber quality indicators in the HVI system during the technological process of primary processing of cotton of the Shavot cotton ginning branch of JV Textile Finance Khorezm LLC. According to the results of the experiment, cotton after cleaning is transferred to ginning in a moistened form, which leads to an increase in the strength of cotton fiber. It has also been achieved to prevent the appearance of short fibers.

Keywords: cotton, fiber, moisture, strength, average length, short fiber, riot, drum drer, cleaning, ginning, fiber cleaning, pressing.

Introduction

At each stage of the technological process, the quality indicators of cotton fiber change [1]. Based on this, the technical condition of equipment installed in technological processes is of great importance [2]. Therefore, it is necessary to constantly adjust the technical condition of process equipment. Many scientific studies have been carried out to improve equipment for primary cotton processing [3]. In these research works, research is carried out to prevent the deterioration of natural quality indicators during cotton storage, increase the efficiency of drying equipment, reduce heat consumption, continuously and uniformly provide cotton during the cleaning process, and study the effect of heat on the efficiency of auger cleaning [4-6]. As a result, although resource-saving methods and technologies have been proposed, growing requirements for the quality indicators of manufactured products, rising prices for electricity and resources force the introduction of many innovations in the production of competitive products [7-10]. The technology installed at the Shavot cotton ginning enterprise works in the following order: cotton is transferred to production using a SS-15A separator. At the beginning of the technology, scales are installed, and the cotton sent for production is weighed on electronic scales and transferred to the 2SB-10 drying drum using a belt conveyor. Drum-dried cotton enters the UCC cleaning stream, located in two rows, and is cleaned of small and large impurities. After cleaning, the process of soaking the cotton in water occurs. After which the cotton is sent to be separated from the cotton fibers into gin machines of the 5DP-130 type (3 pieces). The fiber is cleaned in a 1VP purifier and is wetted with steam when transported through fiber pipes to the pressing section using an 8kV condenser. The press shop has a UzMDY-500 press machine.

Research Methodology

Changes in the moisture content of cotton fiber, the average length of cotton fiber, the strength of cotton fiber, and the number of short fibers were carried out in a laboratory installation HVI 1000 system. Laboratory installation DL-10 for fiber separation, moisture meter VHS-M1 for determining the moisture content of cotton, paintwork materials for determining the contamination of raw cotton.

Analysis and Results

To determine changes in fiber quality indicators in the HVI system at the stages of the technological process, samples were taken from the bundles during the drying process, cleaning the stream from small and large impurities, separating the fiber from the seeds, and cleaning the fiber. and pressing. Table 1 shows the quality indicators of the obtained samples, determined by the HVI system.

Table 1. Quality indicators determined in the HVI fiber system at the stages of the technological process.

№	Quality indicators	Technology					
		Cotton Riot	After 2SB-10	After UXK	After 4DP-130	After 1VP	After pressing
1	SCI	146	136	138	127	123	128
2	Mst, %	7,2	6,3	7,2	6,4	6,3	5,9
3	Mic	4,9	4,7	4,77	4,71	4,74	4,81
4	Mat	0,87	0,86	0,87	0,87	0,87	0,87
5	UHML, mm	30,26	29,32	28,91	28,32	28,16	28,11
6	UI, %	84,7	83,9	83,7	82,4	81,6	82,3
7	SF, %	4,6	4,9	5,3	7,1	7,8	7,5
8	Str, g/tex	32,3	30,3	31,1	30	30	30,5
9	Elg, %	7,7	7,8	7,5	6,8	7,1	6,8
10	Rd	77,7	76,9	77,9	77,3	77,5	78,9
11	+b	7,8	7,6	7,8	7,6	7,8	7,7
12	CGrd, Upland	31-2	41-1	31-2	41-1	31-2	31-1
13	TrCn	11	31	22	53	41	44
14	TrAr, %	0,13	0,66	0,42	0,57	0,42	0,4
15	TrID, TrGrd	1	5	3	4	3	3
16	Amt	750	683	682	694	661	535

Analyzing the data presented in the table, the moisture content of cotton fiber is 7.2% in the gin zone, 6.3% after the drying drum, 7.2% in the UCC cleaning stream and after the water wetting process, after the ginning process 6.4%, after fiber purifier 6.3% and 5.9% during the pressing process. It was established that the degree of wetting of cotton with water after the CCA flow reached 0.9%, but due to the heating of the raw material roller and the action of the saw cylinder it decreased to 0.8%, due to the participation of air flow in the fiber purifier - by another 0.1%, and in the pressing device, the decrease in humidity reached 0.4%.
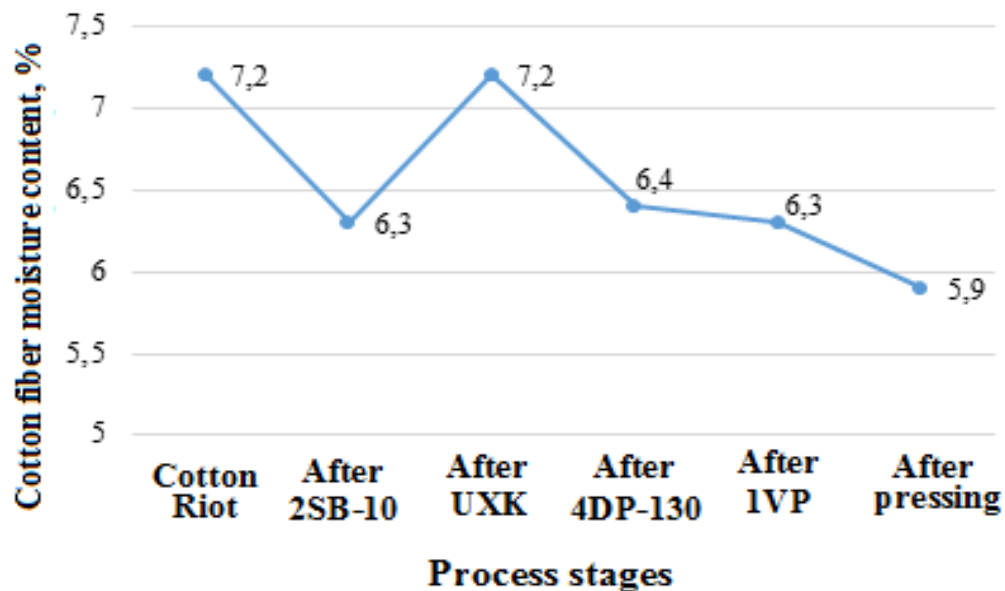
Figure 1. Change in the moisture content of cotton fiber by stages of the technological process.

The average length of cotton fiber in a riot was 30.26 mm, after the 2SB-10 drying drum it was 28.91 mm, after the UHK cleaning line it was 28.32 mm, after the 4DP-130 gin the length was 28.32 mm, the 1VP fiber cleaner - 28.16 mm and after pressing 28.11 mm. The decrease in the average length of the total fiber is 2.15 mm over the entire technological process. As a result of wetting the cotton with water before the ginning process, the average fiber length decreases by only 0.59 mm.
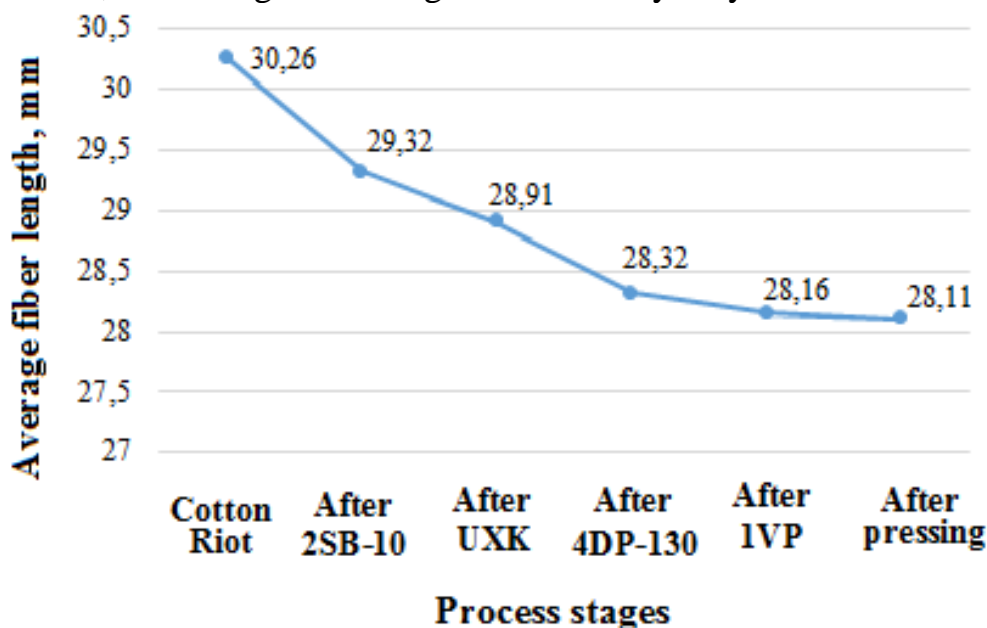
Figure 2. Change in the average length of cotton fiber depending on the stages of the technological process.

The strength of cotton fiber in the riot zone is 32.3 g/tex, after the process of drying the moisture in cotton 30.3 g/tex, after the process of removing impurities 31.1 g/tex, after the process of separating cotton fibers from seeds it was 30.0 g /tex, after fiber cleaning 30.0 g/tex and during fiber packaging 30.5 g/tex. The decrease in the strength of cotton fiber by technological stages was 1.8 g/tex.
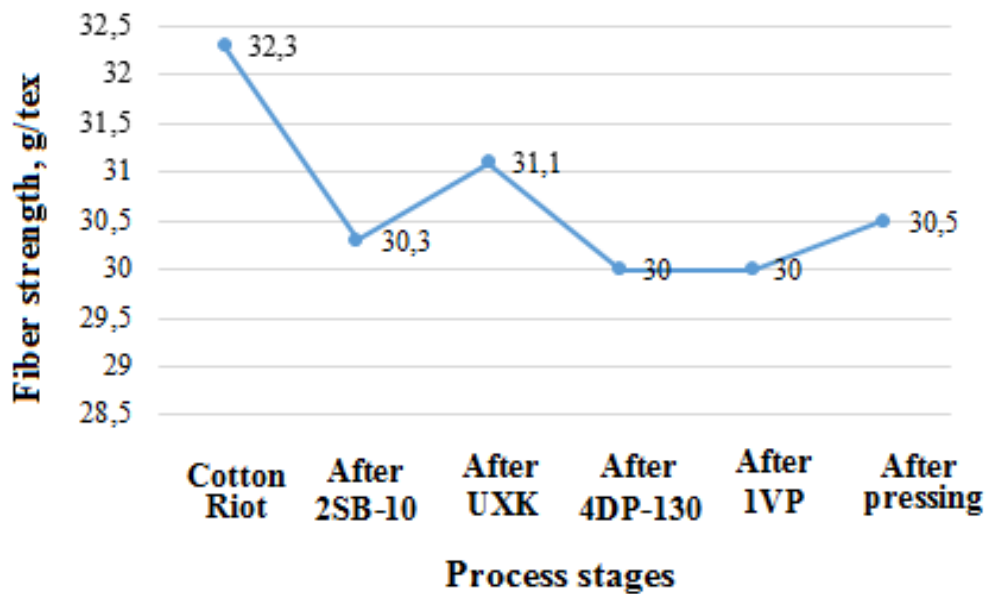
Figure 3. Change in the strength of cotton fiber by stages of the technological process.

It has been established that the moisture level of cotton fiber is important for increasing its strength; as a result of moistening cotton after the flow of UCC, the strength increased from 30.3 g/tex to 31.1 g/tex; in the processes of ginning and cleaning the fiber, the strength decreased to 30 g /tex, and also after pre-wetting before pressing, a further increase in strength is achieved up to 30.5 g/tex.
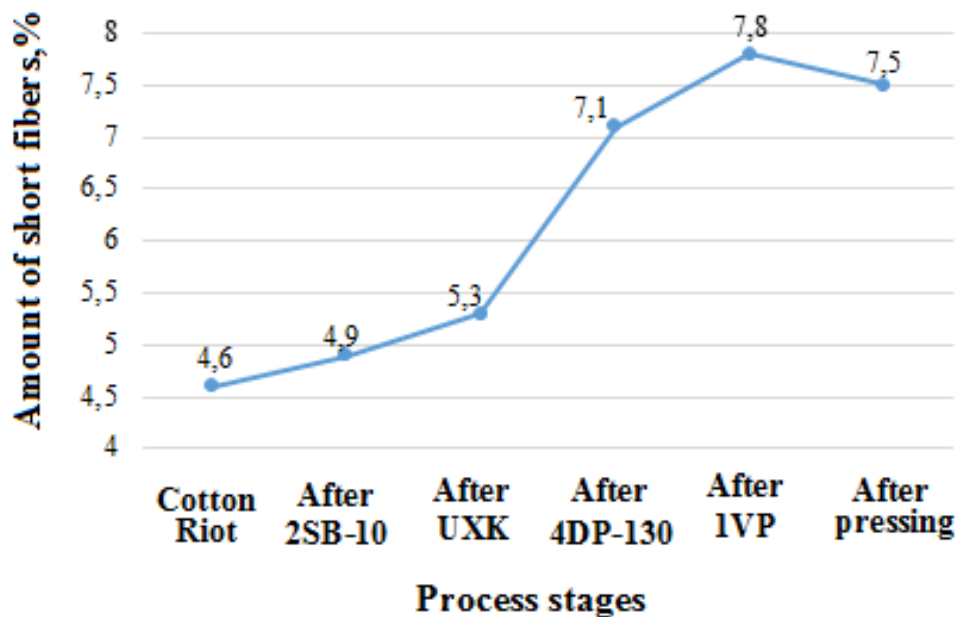
Figure 4. Change in the number of short fibers depending on the stages of the technological process.

The amount of short fibers in the rebellion zone is 4.6%, after drying the cotton - 4.9%, after cleaning from impurities - 5.3%, after separating the fiber from the seed with a gin saw - 7.1%, after three-stage cleaning of the fiber 7, 8% and 7.5% in the pressing device. According to the stages of the technological process, the number of short fibers increases by 2.9%.

Conclusions

An analysis of the quality indicators of cotton fiber processed in the technological process of the Shovot cotton ginning enterprise in the HVI system shows that after the cotton ginning process, moistening with water and steaming the fiber before pressing increases the strength of the cotton fiber. The deterioration of other quality characteristics of the fiber is also prevented. In future studies, we will study the effect of increasing the water wetting process after the cotton ginning process on ginning performance and fiber scouring efficiency.

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OPTIMAL ROUTE FINDING IN AUTOMATIC VEHICLE CONTROL AND OVERCOMING BOTTLENECKS IN LARGE-SCALE GRAPH DISTRIBUTION

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Annotatsiya. Avtonom transport vositalarida (AV) samarali marshrutni rejalashtirish uchun eng qisqa yo'lni topish juda muhimdir. Biroq, an'anaviy algoritmlar zamonaviy yo'l tarmoqlarining keng ko'lamli va dinamik tabiati bilan kurashadi. Ushbu maqola ushbu muammoni hal qilishning turli usullarini o'rganadi. Keng qo'llaniladigan Deykstra algoritmi samarali, ammo katta graflar uchun cheklangan. A* yaxshilangan natijalarni taklif qiladi, lekin aniq usullarni talab qiladi. Parallel hisoblash usullari katta hajmli ma'lumotlarda juda yaxshi natija beradi. Bundan tashqari, umumlashtirilgan Dijkstra va dinamik graflar uchun samarali algoritmlarni o'rganish kutilmagan to'siqlarni hal qilish uchun potensialga ega. Maqolada real vaqtda trafik ma'lumotlariga va atrof-muhitdagi dinamik o'zgarishlarga moslasha oladigan ishonchli yo'l topish yechimlari taklif qilinadi. Graflar nazariyasi, algoritmlar va parallel ishlov berish sohasidagi yutuqlardan foydalanib, biz AV uchun ishonchli va samarali marshrutni rejalashtirish masalasini hal qilishimiz mumkin.

Kalit so'zlar: Avtonom transport vositalari (AV), eng qisqa yo'l, Dijkstra algoritmi, A algoritmi, katta o'lchamli graflar, dinamik graflar, parallel ishlov berish, real vaqtda harakat ma'lumotlari, to'siqlar, graf nazariyasi, marshrutni rejalashtirish.*

Аннотация. Поиск кратчайшего пути имеет решающее значение для эффективного планирования маршрута в автономных транспортных средствах (AV). Однако традиционные алгоритмы не справляются с огромным масштабом и динамичным характером современных дорожных сетей. В данной статье рассматриваются различные подходы к решению этой проблемы. Широко используемый алгоритм Дейкстры эффективен, но ограничен для больших графов. A* обеспечивает улучшенную

производительность, но требует точной эвристики. Методы параллельных вычислений обещают ускорить обработку в крупномасштабных сценариях. Кроме того, исследования обобщенного Дейкстры и эффективных алгоритмов для динамических графов открывают потенциал для преодоления непредвиденных препятствий. В документе подчеркивается необходимость в надежных решениях для поиска пути, которые могут адаптироваться к данным о дорожном движении в реальном времени и динамическим изменениям в окружающей среде. Используя достижения в теории графов, алгоритмах и параллельной обработке, мы можем проложить путь к надежному и эффективному планированию маршрутов для беспилотных автомобилей.

Ключевые слова: автономные транспортные средства (AB), кратчайший путь, алгоритм Дейкстры, алгоритм A*, крупномасштабные графы, динамические графы, параллельная обработка, данные о трафике в реальном времени, препятствия, теория графов, планирование маршрута.

Abstract. Finding the shortest path is crucial for efficient route planning in autonomous vehicles (AVs). However, traditional algorithms struggle with the vast scale and dynamic nature of modern road networks. This paper explores various approaches for tackling this challenge. The widely used Dijkstra algorithm is efficient but limited for large graphs. A* offers improved performance but requires accurate heuristics. Parallel computing methods show promise for faster processing in large-scale scenarios. Additionally, research into generalized Dijkstra and efficient algorithms for dynamic graphs holds potential for handling unforeseen obstacles. The paper highlights the need for robust pathfinding solutions that can adapt to real-time traffic data and dynamic changes in the environment. By leveraging advancements in graph theory, algorithms, and parallel processing, we can pave the way for reliable and efficient route planning for AVs.

Keywords: Autonomous Vehicles(AVs), Shortest Path, Dijkstra Algorithm, A* Algorithm, Large-Scale Graphs, Dynamic Graphs, Parallel Processing, Real-Time Traffic Data, Obstacles, Graph Theory, Route Planning.

Introduction

Traffic congestion plagues modern cities, leading to wasted time, resources, and a decline in quality of life. Traditional solutions often focus on infrastructure expansion or basic navigation tools, yielding limited results.

This paper proposes a novel traffic management paradigm. By leveraging real-time data and advanced analytics, the system predicts future congestion patterns and proactively redirects traffic flow. This data-driven approach aims to optimize urban mobility, reducing congestion and travel times.

Benefits: The proposed system offers the potential to significantly improve traffic flow, leading to:

- Reduced congestion
- Shorted travel times
- Increased fuel efficiency

- Improved air quality

The challenge of efficiently navigating vast urban networks intensifies when factoring in unforeseen obstacles. Traditional shortest path algorithms struggle with the sheer size of modern road networks, and existing solutions often face limitations with real-time adaptation. This paper explores how advancements in graph theory and algorithms pave the way for robust traffic routing that accounts for dynamic obstacles.

Literature Review

The Maze of Big Data and Obstacles:

- *Unpredictable Obstacles and Intractable Calculations:* The sheer magnitude and intricacy of contemporary road networks presents a challenge to traditional shortest path methods. Completing real-time calculations becomes difficult, particularly when unexpected traffic congestion, accidents, or road closures are taken into account.
- *Limitations of Two-Hop Tags:* Although several solutions use two-hop tags to speed up inquiries, they come with hefty preparation or query processing costs, particularly for large networks with dynamic barriers [1].

There are approaches to solving this problem [2]. Scientists have proposed a generalized Dijkstra algorithm to work with the problem of finding the shortest path with interval weights. It is shown that once the acceptance index is selected, the shortest path interval is converted into a definite problem that can be easily solved by exact SP standard algorithms [3]. Dijkstra or A* algorithms are used to solve the shortest path problem. These two algorithms are often used in routing or road networks. Dijkstra and A* have almost the same performance when used to solve city or regional scale maps, but A* is better when used to solve large-scale maps [4]. Besides, mathematical software and graph-theoretical algorithmic packages to efficiently model, analyze, and query graphs are crucial in an era where large-scale spatial, societal, and economic network data are abundantly available. One such package is JGraphT, a programming library that contains very efficient and generic graph data structures along with a large collection of state-of-the-art algorithms [5]. Applying parallel computational methods in finding the shortest paths gives good results [6]. Graphs are mathematical structures used in many applications. In recent years, many applications have emerged that require the processing of large dynamic graphs whose graph structure and properties change constantly over time. Scientists have proposed efficient algorithms for large dynamic graphs [7, 8]. We can see different approaches in the work of other scientists [9, 10].

For graphs whose lengths are not negative, the Dijkstra algorithm is available and is based on independent operation. It has been suggested by scientists Dijkstra, Dantzig [19, 11] and Whiting and Hillier. Many scientists have proposed different approaches to solving this problem [11,12,13,14,15,16,17]. However, their solutions do not allow rapid determination of the result for large graphs. There are also approaches to solving the shortest path finding algorithm for large-scale graphs by parallel computation [11, 16, 18]. However, the study used computers with very high technical capabilities. There are approaches to finding the coefficient of weight for multi-parameter graph edges [17, 19].

Research Methodology

1. Formulation of the problem.

In the regulation of traffic in the city, a distributed and parallel processing method is considered, according to a large-scale graph, which involves developing a set of software tools.

Let's assume, a multi parametric $G=(V, E)$ graph is given. Here $V=\{v_i\}$, $1<=i<=n$, is nodes of graph, $E=\{e_i\}$, $1<=i<=m$, is edges of graphs. Edges of graph $E=\{e_i\}$ consist of v_x and v_y nodes. Here is $ei=(v_x, v_y)$, $1<= x,y<=n$. v_x is the starting node of the edge and v_y is the ending node of the edge. There are parameters that characterize each edge, let these parameters be given in the form of path elements of the matrix. Let C-matrix be given.

$$C = \{c\{i, j\}\}, \overline{\iota = 1, n}, \overline{j = 1, m}$$

The *i*-array elements of the matrix represent the parameters of each e_i edge. The number of parameters is equal to *u*. These can be road length, road speed, road width, road roughness etc. These parameters are the quality indicators of the edge, some of which increase the quality of the edge, while others reduce the quality of the edge.

Let us make the following notation, where Here $\sigma=\{\sigma_i\}$, $1<=i<=u$ is an array derived from the numbers 0 and 1. Let this array e_i determine the quality of the edge on the columns of the matrix C. If the component of the array takes a value of 1, then the element of the matrix C corresponding to this component is understood to increase the quality of the edge, otherwise it is understood that if it takes a value of 0 it decreases the quality.

Let's make the following definitions:

Let σ be the sum of the non-zero components of the array denoted by

$$ur = \sum_{j=0}^{u} \sigma_i , \ \overline{j = 1, u}$$

Matrix elements C are normalized when finding maximum and minimum values of eager static parameters. For this, the following steps are performed sequentially.

First, we introduce the following definition

$$\omega_j = max\{C_{ij}\}, \overline{\iota = 1, m}, \overline{j = 1, u}$$

Then, each element of the column is divided by ω_j. Normalization is done based on the following formula

$$C_{ij}^{H} = \frac{C_{ij}}{\omega_j} \ \overline{\iota = 1, m}, \overline{j = 1, u}$$

In this case, the components of the arrays a_i, and b_i, $\overline{j = 1, u}$ in the normalized space are defined as follows. If $\sigma_i=0$

$$a_i = \frac{1}{ur} \sum_{j=1}^{u} C_{ij}^{H} \ \overline{\iota = 1, m}, \overline{j = 1, u}$$

If $\sigma_i=1$

$$b_i = \frac{1}{u - ur} \sum_{j=1}^{u} C_{ij}^{H} \ \overline{\iota = 1, m}, \overline{j = 1, u}$$

The a_i and b_i components of the vectors a and b correspond to each i edge. The value of these components requires $a_i>0$ and $b_i>0$ as follows. Hence, component a_i reduces the quality of the edge e_i, while component b_i increases the quality.

Let us enter an array $\lambda_p = (\lambda_p[1], \lambda_p[2], \lambda_p[3], \ldots, \lambda_p[m])$ denoting the existence of each completed P path. If the values of the i-component of the array λ_p are equal together, then P indicates that the e_i edge is involved in the path structure. Otherwise, P indicates that the e_i edge is not involved in the path structure.

Below we define the criterion for estimating the path quality P depending on the λ_p array as follows:

$$I(\lambda_p) = \frac{\sum_{i=1}^{m} a_i \cdot \lambda_p[i]}{\sum_{i=1}^{m} b_i \cdot \lambda_p[i]}$$

In the given criterion, $\lambda_p[i]$ represents the edges used in the P-path, and if $\lambda_p[i]=1$, the i-edge is involved in the path, and if $\lambda_p[i]=0$, the i-edge is not involved in the path.

The λ_p edge value is understood as the P-path quality criterion. The smaller the value of the function is selected so perfect.

One of the practical issues of the article is to find the perfect λ_p array. This array minimizes $\sum_{i=1}^{m} a_i \cdot \lambda_p[i]$ values on the one hand and maximizes $\sum_{i=1}^{m} b_i \cdot \lambda_p[i]$ sum values on the other.

So you have to find $\exists \lambda_p$

$$I(\lambda_p) = \frac{\sum_{i=1}^{m} a_i \cdot \lambda_p[i]}{\sum_{i=1}^{m} b_i \cdot \lambda_p[i]} \rightarrow min$$

Below, let us define all the path λ_p sets available in the graph given by $\wedge^p$. In that case the expression $\lambda_p \in \wedge^p$ paths [15, 20].

2. A parallel processing method for finding the optimal route in automatic vehicle control and overcoming the obstacles of large-scale graph distribution.

The software used for automated driving is based on graph theory, and in order to select the best routes, a lot of data must be processed, which makes the computation processes more complex. In light of this, the technique of distributed processing of graph data was applied, depending on the particulars of the issue. The computations needed in route discovery are minimized by keeping the graph data of the areas and the linkages between them separate. Multiple core processors can process data in parallel due to distributed processing in vehicle traffic management software design. Here is an algorithm for processing large-scale graphs in parallel and distributed fashion.

An algorithm for choosing the most optimal routes in a large-scale multi-parameter dynamic graph is shown in Figure 1. Let's now discuss each component of the method separately. A big graph is formed to represent the interconnectedness of regions. If users are required to choose a route between any regions, a route from region to region is determined from the big graph. The process of traversing cities in a given direction is perfected based on the partition graph of that region.
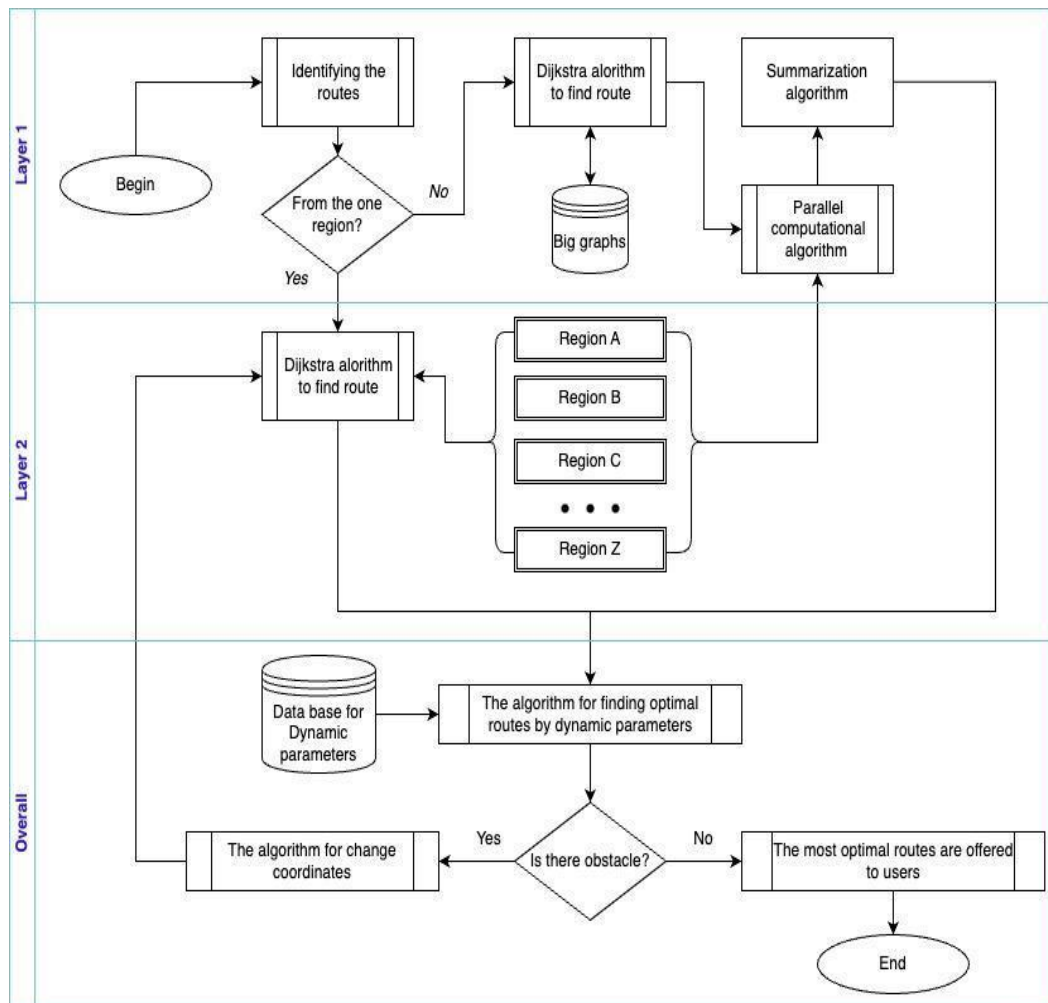
Figure 1. Algorithm for distributed and parallel processing of large-scale graphs.

In the first layer of the algorithm, routes are inserted by inserting their starting vertices from the graph to connect the starting address with the desired destination and the coordinates are checked from the same region in order to determine which part of the graphs to use. The route will only find routes based on the data in the part graph if the entered addresses are from the same region. In any other case, the direction is ascertained using the improved Dijkstra (TD) method [15, 20].

In the second layer - based on the part graphs that are displayed, a parallel calculation technique is used to calculate the routes for crossings in cities. This process is repeated for each region. The generalization of results algorithm summarizes the results derived from simultaneous computations.

In the last part, the algorithm for finding optimal routes based on dynamic parameters is implemented. This section handles the real-time traffic level determination of the roads using data received from external devices. When dynamic data is received during movement, we are able to detect **obstacles** that appear suddenly or are not related to traffic.

Dividing graphs into partial graphs and large graphs made it possible to perform parallel calculations based on the FORK/JOIN framework in the JAVA programming language. The distribution and generalization of tasks in the execution of parallel calculations based on the FORK/JOIN framework designed to work with multi-core processors in the JAVA programming language.
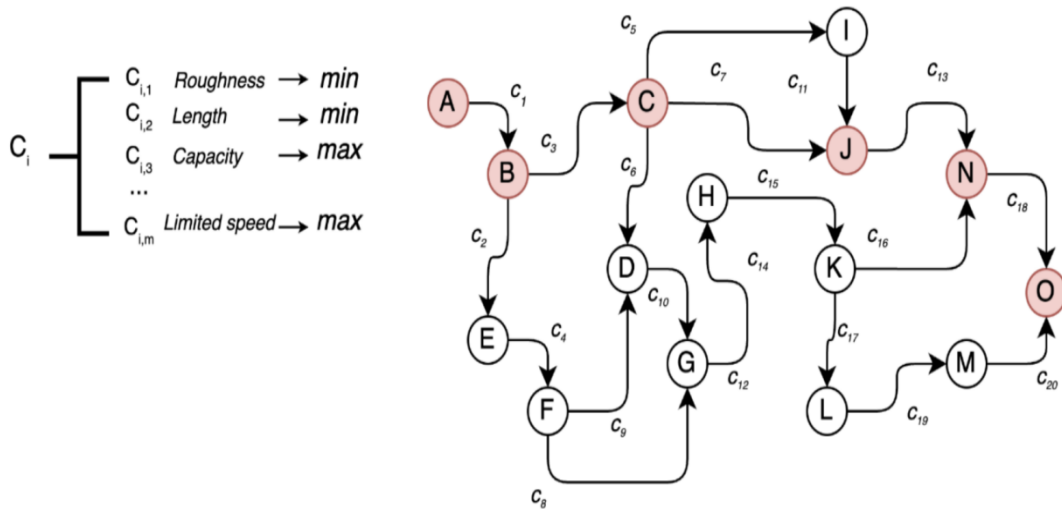
Figure 2. Define connection of roads by graph.

The software is designed to find the most cost-effective routes on multi-core servers, distributing the work to all processor cores. The large number of processors in the computer allows you to quickly process large volumes of graphs. After proposing the optimal path from node A to node O, if an obstacle is detected when moving from point C to point J, the algorithm starts to find the optimal path by updating the initial coordinates, as shown in Figure 3.
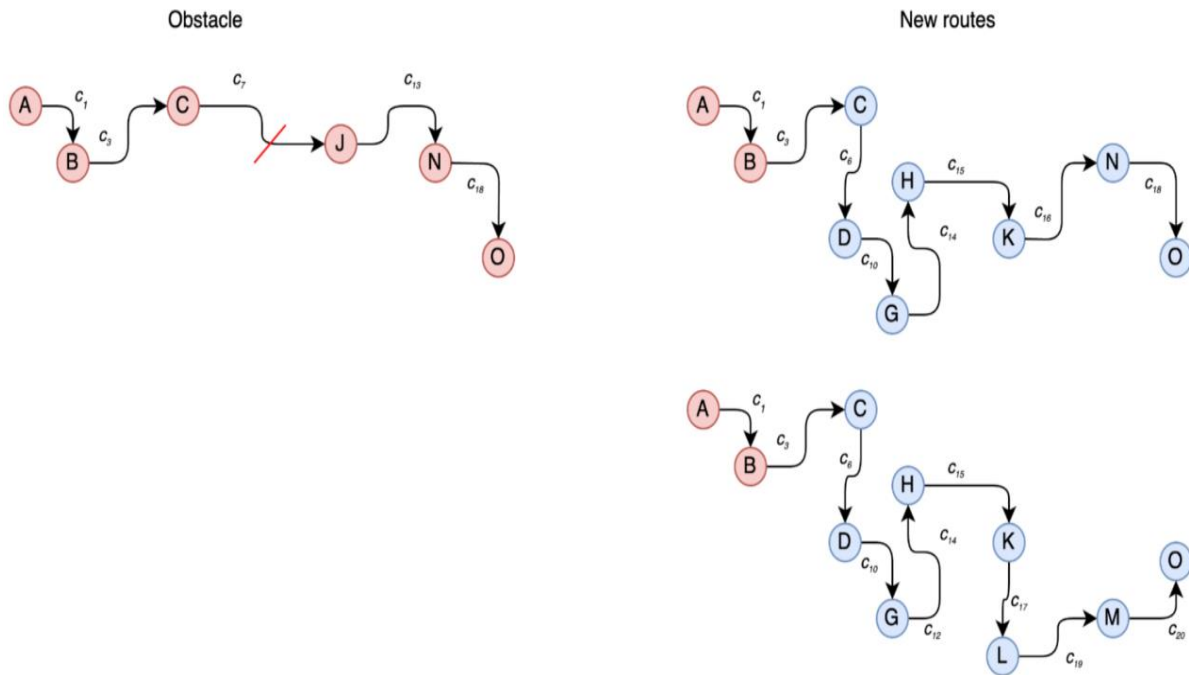
Figure 3. New recommended routes.

Analysis and Results

Testing the efficiency and effectiveness of this algorithm for processing large-scale graphs in a parallel and distributed fashion is crucial to understand its advantages over classic algorithms. The following table demonstrates that the algorithm's efficiency increases with the amount of data. Compared to the classical algorithm, the parallel optimal path finding algorithm offers a better solution by processing dynamic data based on the number of regions and the number of paths and combining 4 static parameters.

Table 1. Comparison data for calculations in classic and parallel computing algorithms.

Number of cities	Number of nodes	Number of edges	Classic calculation algorithms(ммс)	Parallel computing algorithm (ммс)	Comparison
10	24896	75934	4084	1858	2,20
20	48028	146855	9359	3763	2,49
30	74622	216779	11741	4837	2,43
40	99903	314791	17768	6884	2,58
50	124288	381789	24985	8137	3,07
60	152071	440901	39734	10146	3,92
70	172484	526340	46218	10809	4,28
80	197644	630076	55600	11060	5,03
90	229266	693474	63337	11190	5,66
100	251802	735027	70006	12014	5,83

Depending on the quantity of the data in Table 1, the efficiency can be increased by two to six times based on the results of calculations done on one core on four cores and the manner of segmenting the section into graphs. A computer's efficiency increases with the number of cores it has. Especially when calculating with multi-core computers, when obstacles are detected during the movement, the speed of the algorithm is preserved and the regeneration process is carried out.

During software testing, a mobile application was used to view the results. In fact, these results can be applied to the automatic driving of motor vehicles. The software development techniques enable distributed and parallel analysis of big graphs. Each vehicle downloads static graph data for the city where it is driving.

Conclusions

The quest for optimal route planning in autonomous vehicles (AVs) demands a dynamic and robust approach. While both centralized and decentralized methods offer advantages, their limitations call for a more nuanced solution. Centralized management provides real-time traffic data and centralized optimization, but risks single-point-of-failure issues and scalability challenges. Decentralized decision-making fosters robustness and avoids server overload, but faces limitations in on-board processing power and a restricted data scope. The future of AV route optimization likely lies in a **hybrid model**. By integrating centralized traffic data with decentralized processing and on-board sensor information, we can create a comprehensive approach that offers:

- **Resilience:** Continued operation even with server disruptions.
- **Scalability:** Ability to handle a growing number of Avs.
- **Efficiency:** View more traffic and obstacles and build an efficient route using real-time sensor data.

As AV technology continues to evolve, ongoing research and development in both centralized and decentralized methods will pave the way for the next generation of robust, efficient, and adaptable route optimization systems. This will ensure a smoother, safer, and more efficient future for autonomous transportation.

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ANALYSIS OF THE DYNAMIC CHARACTERISTICS OF SPINDLE ASSEMBLIES

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Annotatsiya. «NT-250M» dastgohi shpindel uzelining erkin tebranish chastotalari, hamda dinamik xususiyatlarini hisoblash usuli bayon etilgan. «ARM WINMACHINE» dasturida dastgoh shpindel uzelini modellashtirish xususiyatlari ko'rib chiqilgan.

Kalit so'zlar: Bikrlik, spektr, tebranish, diagnostika, metal kesish dastgohlari, shpindel, dinamika, chastota, matematik modellash.

Аннотация. Изложена методика расчета динамических характеристик и рассчитаны собственные частоты колебания шпиндельного узла станка

«NT-250M». Рассмотрены особенности моделирование шпиндельного узла станка в среде «ARM WINMACHINE»

Ключевые слова: *жесткость, спектр, колебания, диагностика, металлорежущие станки, шпиндель, динамика, частота, математическое моделирование.*

Abstract. A method for calculating free vibration frequencies and dynamic characteristics of the spindle assembly of the «NT-250M» machine tool is described. Features of modeling spindle assemblies of machine tools are considered in the «ARM WINMACHINE» program.

Keywords: rigidity, spectrum, vibrations, diagnostics, metal-cutting machines, spindle, dynamics, frequency, mathematical modelling.

Introduction

Dynamic calculation of the spindle assembly of a metal-cutting machine is necessary to determine the dynamic quality indicators, which are then used to predict durability and assess the technical condition of this unit.

Research Methodology

To analyze the dynamics of vibrations, we will use the methodology described in the work of V.A. Kudinov [1-3]. The main assumptions made when drawing up the design scheme of bearing supports are as follows:

- the support nodes are considered as a linear dynamic system with distributed and concentrated parameters;
- the shaft and its body (in the case of a cylindrical body) are represented by an elastic beam of stepwise variable cross-section;
- spindle assemblies have radial, axial and angular stiffness with linear stiffness and damping characteristics;
- the elastic-inertial and damping properties of the shaft and its supports do not change with respect to the angle of rotation of the shaft, i.e. they are isotropic [14].

The input effects on the elastic system of the support unit are the force effect (torque) from the electric motor P(t) and a variable load from the cutter holder on which the cutter δ(t) is located Figure 1 [14].
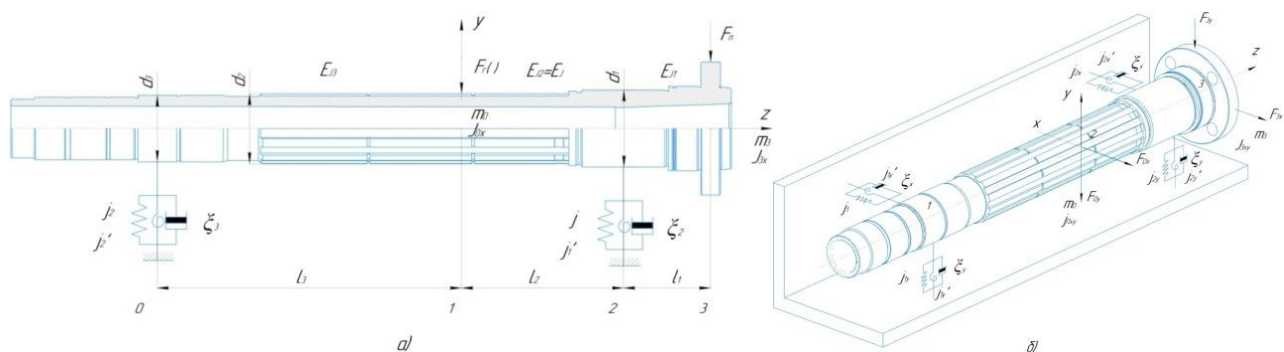

Figure 1. Schematic representation of the elastic-damping elements of the spindle assembly [14].

Among the numerical methods for calculating the static and dynamic characteristics of spindle assemblies of mechanisms represented as linear elastic systems, the method

of initial parameters (in the matrix formulation, the method of transition matrices) has become widespread [14].

The spindle assembly in Figure 1 is considered as a stepped beam of length l on elastic supports with viscous damping proportional to the oscillation rate. The beam is divided into 3 sections, delimited by a change in diameter (geometric moment of inertia), support, concentrated mass and external concentrated load. Each i-th section has a constant (within the section) distributed mass m_i and bending stiffness EJ_i [14].

The parts mounted on the spindle (gearbox, and cutter) are represented as concentrated loads located at both ends of the spindle and having a mass μ_i and moment of inertia J_{ix}. The calculation of the dynamic characteristics of the spindle assembly is reduced to determining the amplitudes of steady-state vibrations of the spindle in the cross section of the location of the supports from the influence of harmonic force disturbances from the cutting process and the electric motor drive [14].

The linear formulation of the problem makes it possible to use the principle of superposition and consistently determine the characteristics of the node under all the above influences [14].

Concentrated loads are located on the spindle – the disturbing force F_1 (t) and the moment M_1 acting from the cutter side, as well as the force F_2 (t) and the moment M_2 acting from the drive side [14].

When composing the oscillation equation of the support nodes in the matrix form of the record, we have [14]:

$$[M]\cdot \Delta'' + [B]\cdot \Delta' + [K]\cdot \Delta = F(t), \tag{1}$$

where Δ - is the vector of nodal displacements *(3n); F(t)* is the vector of nodal dynamic loads (3n); [M], [V], [K] are the matrices of mass, damping and stiffness (3nx3n), n is the number of nodes in the design scheme (see in Figure 1).

If the disturbance has an established harmonic character:

$$F(t) = F_0 \cdot e^{i\omega t}, \tag{2}$$

the solution of system (3) by the method of complex amplitudes should be sought in the form [2], [14]:

$$\Delta(t) = \Delta_0 \cdot e^{i\omega t}, \tag{3}$$

where F_0 and Δ_0 are the complex amplitude values of the vectors of nodal loads and displacements; ω - the frequency of the disturbance; i is an imaginary unit. Substituting (2) and (3) into (1) we get:

$$\left([K] - \omega^2 \cdot [M] + i \cdot \omega \cdot [B]\right)\cdot \Delta_0 = F_0, \tag{4}$$

Where do the complex oscillation amplitudes in the supports come from:

$$\Delta_0 = \left([K] - \omega^2 \cdot [M] + i \cdot \omega \cdot [B]\right)^{-1} \cdot F_0, \tag{5}$$

Assuming that the damping forces in the supports are proportional to the elastic forces, i.e. $\omega \cdot [B] = \eta \cdot [K]$, we write (4) as [14]:

$$\left[V^T\right]^{-1} \cdot \left([V]^T \cdot [K] \cdot [V] - \omega^2 \cdot [V]^T \cdot [M] \cdot [V] + i \cdot \eta \cdot [V]^T \cdot [K] \cdot [V]\right)\cdot [V]^{-1} \cdot \Delta_0 = F_0.$$

From where the vector of complex amplitudes 0 is expressed in terms of the matrix of eigenforms [V] and the natural frequencies of vibrations ω_j (j - is the number of the natural frequency) [14]:

$$\Delta_0[V]\cdot diag\left[\frac{1}{(1+i\eta)\cdot\omega_j^2-\omega^2}\right]\cdot[V]^T\cdot F_0=[W]\cdot F_0\overline{\Delta}_0, \tag{6}$$

considering that the modal matrix [V] has orthogonality properties: [2-4], [14]

$$[V]^T\cdot[M]\cdot[V]=[E]\text{ (the unit matrix), }[V]^T\cdot[K]\cdot[V]=diag[\omega_j^2].$$

Thus, solution (6) is based on the representation of the amplitudes of forced oscillations in the form of a series expansion according to the forms of natural oscillations, which gives a significant gain in calculation speed compared to formula (5). The gain is even more increased if only the lower forms of vibrations of the reference node (3-5 forms) are taken into account. In the case of relatively short rod elements, to account for the effect of transverse forces on the distortion of the shape of the cross sections, it is necessary to use modified expressions for the matrices of masses $[M]^e$ and stiffness $[K]^e$ of the elements given in [2], [3],[14],[15].

When composing the equations of vibrations of the elastic system of the support node, we write down the following matrices [14].

The matrix of inertial characteristics M_j at j the jth point:

$$M_j=\begin{bmatrix} m_X & 0 & 0 & 0 & S_Z & -S_Y \\ 0 & m_Y & 0 & -S_Z & 0 & S_X \\ 0 & 0 & m_Z & S_Y & -S_X & 0 \\ 0 & -S_Z & S_Y & J_X & -\psi_{XY} & -\psi_{XZ} \\ S_Z & 0 & -S_X & -\psi_{XY} & J_Y & -\psi_{YZ} \\ -S_Y & S_X & 0 & -\psi_{XZ} & \psi_{YZ} & J_Z \end{bmatrix}, \tag{7}$$

where m are masses; J are moments of inertia; S and ψ are, respectively, static and centrifugal moments of inertia [14].

The housing in which the spindle assembly is installed is conditionally accepted as an absolutely rigid body, therefore, zero movements along all three axes are set at the places where the spindle assembly is attached to the housing using bolted connections. Since two exact diameters are made on the spindle assembly for centering the assembly in the housing, zero movements along the X and Z axes are set on the specified surfaces, while movements along the Y axis are not limited [15]. The physical and mechanical properties of the spindle assembly elements are given in Table 1.

Table 1. Physical and mechanical properties of the elements that make up the spindle assembly

| Element	Material	Density Kg/m³	Yuung module, GPa	Poisson's ratio	Yield strength, [MPa]
The Spindle of The NT250-M Machine	Steel45 GOST 1050-2013	7810	200	0,3	560

Analysis and Results

Simulation results. Table 2 shows the first ten natural oscillation frequencies of the spindle assembly, obtained as a result of modal analysis of the developed mathematical model [14].

Table 2. *The results of calculating the frequency of natural oscillations of the spindle assembly.*

№ p/p	1	2	3	4	5	6	7	8	9	10
Frequency Hz	1327	1327.6	2039	2039.8	2862	3090	3091	3502	3503	4290

As a result of the experiments, the dependences of the amplitude of vibrations in the bearing supports of the assembly at different spindle speeds were established [14].

Considering that the spindle rotation frequency range ranges from 40 to 2500 rpm, the maximum oscillation frequency calculated for the spindle assembly will reach 42 Hz, and the minimum is 0.67 Hz. Thus, no natural frequencies fall within this range, i.e. fluctuations in the spindle assembly will not affect the accuracy and quality of processing [14].

The 1st form of natural oscillations | The 2nd form of natural oscillations
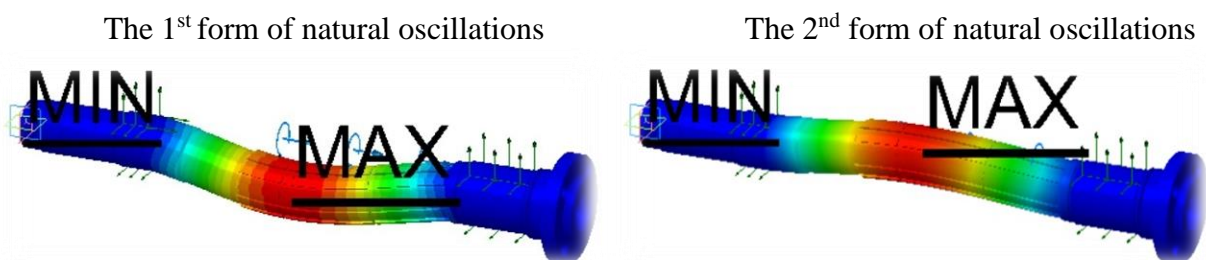
Figure 1. Forms of natural oscillations of the spindle assembly [14,], [15], [18].

Conclusions

As a result of the analysis of the influence of the parameters of the components of the spindle assembly of the NT-250 lathe, a mathematical model of the spindle assembly was developed [14], [18].

The spindle speed varied in the range from 40 to 2500 revolutions, which correspond to the conditions of actual operation of the machine. According to the data obtained, the oscillation frequency in the supports varied within 12 ... 25 Hz. In turn, the oscillation amplitude did not exceed 0.01 mm [10],[14],[18].

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ACTUAL PROBLEMS OF HISTORY, PHILOSOPHY AND SOCIOLOGY

UDC: 172, 177, 304

PROBLEMS OF TRANSFORMATION OF VALUES IN THE CONTEXT OF GLOBALIZATION

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Annotatsiya. Ushbu maqola globallashuv sharoitida qadriyatlar tizimining o'zgarishi bilan bog'liq asosiy muammolar va istiqbollar ko'rib chiqiladi. Asosiy e'tibor global miqyosda ijtimoiy hayotning madaniy, ijtimoiy va axloqiy jihatlariga globallashuv qanday ta'sir qilishini tahlil qilishga qaratilgan. Maqola Zigmunt Bauman, Piter Singer, Amartya Sen, Maykl Valzer va Yurgen Xabermas kabi taniqli faylasuf va sotsiologlar ishlariga asoslangan bo'lib, ular asosan madaniy o'ziga xoslik, axloqiy relativizm hamda global va mahalliy qadriyatlarning o'zaro ta'siridagi o'zgarishlarni o'rganadi. Maqolada globallashuv madaniy boyitish va global axloqni rivojlantirish imkoniyatlarini ham, noyob madaniy an'ana va me'yorlarni yo'qotish xavfini ham olib kelishi ta'kidlanadi. Shuningdek, maqolada globallashuvning axloqiy me'yorlarga ta'siri muhokama qilinib, yanada adolatli va barqaror dunyo tartibini yaratishga yordam beradigan universal axloqiy tamoyillarni ishlab chiqish yo'llari taklif etiladi.

Kalit so'zlar: globallashuv, qadriyatlar transformatsiyasi, madaniy o'zaro ta'sir, axloqiy relativizm, umuminsoniy axloqiy tamoyillar, madaniyatlararo muloqot, globallashuv etikasi, madaniy o'ziga xoslik, ijtimoiy o'zgarishlar, inson huquqlari, global adolat, mahalliy va global qadriyatlar, ta'lim va globallashuv.

Аннотация. В данной статье рассматриваются ключевые вызовы и перспективы, связанные с трансформацией ценностных систем в условиях глобализации. Основное внимание уделяется анализу того, как глобализация влияет на культурные, социальные и этические аспекты общественной жизни на мировом уровне. Статья основывается на трудах известных философов и социологов, таких как Зигмунт Бауман, Питер Сингер, Амартия Сен, Майкл Уолцер и Юрген Хабермас, которые исследуют изменения в культурной идентичности, моральном релятивизме и взаимодействии глобальных и локальных ценностей. Подчеркивается, что глобализация несет как возможности для культурного обогащения и развития глобальной этики, так и риски утраты уникальных культурных традиций и норм. Обсуждается влияние глобализации на моральные нормы и предлагаются пути развития универсальных этических принципов, которые могли бы способствовать созданию более справедливого и устойчивого мирового порядка.

Ключевые слова: глобализация, трансформация ценностей, культурное взаимодействие, моральный релятивизм, универсальные этические

принципы, межкультурный диалог, этика глобализации, культурная идентичность, социальное изменение, права человека, глобальная справедливость, локальные и глобальные ценности, образование и глобализация.

Abstract. This article examines the key challenges and prospects associated with the transformation of value systems in the context of globalization. The focus is on analyzing how globalization affects cultural, social and ethical aspects of public life at the global level. The article draws on the work of renowned philosophers and sociologists such as Zygmunt Bauman, Peter Singer, Amartya Sen, Michael Walzer and Jürgen Habermas, who explore changes in cultural identity, moral relativism and the interaction of global and local values. It is emphasized that globalization brings both opportunities for cultural enrichment and the development of global ethics, and the risks of losing unique cultural traditions and norms. The impact of globalization on moral standards is discussed and ways of developing universal ethical principles that could help create a more just and sustainable world order are suggested.

Keywords: globalization, transformation of values, cultural interaction, moral relativism, universal ethical principles, intercultural dialogue, ethics of globalization, cultural identity, social change, human rights, global justice, local and global values, education and globalization.

Introduction

Globalization has a powerful impact on the sociocultural, economic and political structures of society. One of the most significant aspects of this process is the transformation of value systems that have traditionally been formed within national and cultural boundaries. Philosophers and sociologists are actively exploring exactly how globalization affects these values, leading to their harmonization or conflict. This article examines the main problems associated with changing values in a global context, drawing on authoritative sources in the field of philosophy.

Literature Review

The problem of value transformation in the context of globalization attracts the attention of many researchers from various disciplines. This topic addresses aspects of cultural identity, economic development, political integration and ethical dilemmas that arise at the intersection of global and local contexts. Zygmunt Bauman, in his work "Globalization: Consequences for Individuals and Society" analyzes how globalization changes social structure and cultural orientations, leading to a "mixing culture." He emphasizes that these changes pose new challenges to individual identity and social stability [2]. Researcher Peter Singer examines the ethical challenges of globalization, especially in the context of ecology, economics, and international law. He argues that globalization requires a new approach to ethics that is acceptable and valid throughout the world [9]. Amartya Sen, in "Identity and Violence: The Delusion of Fate" critiques the notion of a monolithic cultural or religious identity, emphasizing the plurality of identities that each person can have. It offers a view of globalization as an opportunity for greater understanding and mutual acceptance of different cultures [8]. Michael

Walzer's work explores how different understandings of justice can coexist in a multicultural society. He discusses the importance of preserving local traditions while recognizing universal rights and responsibilities [10]. Jurgen Habermas undertakes an analysis of how mass media and public debate influence the formation of public opinion in a globalized world [12]. It emphasizes the role of democratic participation and communicative action in preserving public values in the face of global change.

In general, the literature on the topic of value transformation in the context of globalization represents a wide range of approaches and opinions. Research shows that, despite many challenges, it is possible to find sustainable forms of coexistence of different values that contribute to global dialogue and intercultural understanding. The starting point for this is an awareness of the diversity of approaches to justice, ethics and cultural identity that is necessary to build an inclusive and sustainable global community.

Research Methodology

In this study, such methods and means of scientific knowledge were used as analysis and synthesis, complex and systemic analysis, and comparison of conceptual theories.

Analysis and Results

Globalization promotes increased cultural interaction, leading to the mixing and adaptation of values. Zygmunt Bauman in his work "Globalization: Consequences for Individuals and Society" notes that globalization gives rise to a culture of mixing, in which traditional values collide and mix with global influences [2]. This mixing can lead to the enrichment of cultures, but it also causes anxiety among those who fear the loss of the uniqueness and originality of their traditions.

Globalization also poses new ethical challenges for society. Peter Singer, in his book One World: The Ethics of Globalization, raises questions of global justice, pointing out that globalization requires us to reconsider traditional ethical ideas and adopt a more universal approach to rights and responsibilities [9]. This approach suggests the need to develop new forms of moral responsibility that are acceptable and effective at the international level.

The problem of loss of identity is especially acute in the context of globalization. Amartya Sen, in Identity and Violence: The Delusion of Fate, discusses how global interaction affects personal and collective identity, emphasizing that a person's identity should not be limited to any one category; rather, it is a plurality of intersecting identities [8]. This emphasizes the importance of maintaining diversity in a globalizing world, where each individual is free to choose and shape his or her identity from the many cultural and social elements available.

The conflict between global and local values is becoming one of the key points of tension in the context of globalization. This tension often arises from the clash of universal principles, such as human rights, with traditional norms and practices that may contrast or even contradict them. As Michael Walzer points out in his book Spheres of Justice, a balance must be found between respecting local traditions and promoting global standards of justice [10]. Resolving this conflict requires a sensitive approach that takes into account both moral and cultural aspects in each case.

The development of mechanisms for solving ethical problems arising in the process of globalization involves the creation of new forms of intercultural dialogue and cooperation. Jürgen Habermas, in his works on communicative rationality and democracy, argues that globalization requires the development of transnational and intercultural discussion platforms where global norms could be formulated and discussed [12]. Such platforms could contribute to the development of mutual understanding and coherence on issues of international ethics and politics.

To strengthen a global culture that promotes the peaceful coexistence of different values, it is necessary to adopt approaches that can stimulate sustainable development and mutual understanding. This means that every culture must be able to express and present its unique values in the context of global dialogue.

Education systems play a key role in fostering openness and acceptance of global values while maintaining respect for local traditions. An inclusive education that includes lessons in global culture, ethics, and international relations can prepare youth to live in a diverse world. As Martha Nussbaum notes in her work "Not for Profit: Why Democracy Needs the Humanities," education should develop the ability to think critically, empathize, and manage complex intercultural interactions [6, 10]. This helps students become global citizens capable of appreciating and sharing both global and local values.

Economic integration, while reducing barriers and increasing interdependence, can also increase inequality and economic pressure on traditional ways of life. As Thomas Piketty emphasizes in his book Capital in the 21st Century, inequality is often exacerbated by globalization if measures are not taken to regulate it [7]. It is therefore important to develop policies that ensure equitable distribution of benefits across the planet, supporting the development and strengthening of local economies.

Conclusions

International organizations such as the UN, UNESCO and the World Bank play an important role in supporting and promoting global values. They can contribute to the development of programs aimed at promoting peace, education and sustainable development. Through such programs, it is possible not only to disseminate knowledge about global values, but also to support local initiatives that strengthen social and economic stability.

The transformation of values in the context of globalization is a complex and multifaceted problem that requires the participation of all sectors of society: governments, the private sector, academia and civil society. Finding a balance between preserving cultural diversity and promoting universal ethical standards remains one of the main challenges of our time. The future of the global community, its stability and harmonious development depends on how successfully humanity copes with this task.

This problem requires an integrated approach, including educational initiatives, economic reforms, cultural exchange and the active participation of international organizations. Maintaining dialogue between different cultures and civilizations will help not only preserve cultural diversity, but also ensure the formation of sustainable global values that will contribute to peace, justice and prosperity on the planet.

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SOCIO-PHILOSOPHICAL ANALYSIS OF THE PHENOMENON OF NATIONAL IDENTITY

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Annotatsiya. Ushbu maqolada millat va etnik tushunchalar o'rtasidagi murakkab munosabatlar va farqlar yoritilgan, bu toifalar dinamik ijtimoiy jamoalar sifatida tahlil qilinadi, ularning munosabatlari va milliy o'zlikni shakllantirishga ta'siri o'rganiladi. Millatlar va elatlarning an'anaviy idrokini aniq belgilangan va barqaror jamoa sifatida tanqid qiluvchi olimlarning fikrlariga alohida e'tibor qaratilgan. Shuningdek, milliy o'ziga xoslik etnik, ijtimoiy-iqtisodiy va ma'naviy tarkibiy qismlarni o'zida mujassamlashtirgan holda zamonaviy dunyoda qanday

faoliyat ko'rsatishini o'rganadi, uning til, tarix va madaniyatga asoslangan jamoaviy o'zlikni shakllantirishdagi rolini ta'kidlaydi.

Kalit so'zlar: millat, etnik guruh, milliy o'ziga xoslik, ijtimoiy jamoalar, o'ziga xoslik, ijtimoiy-iqtisodiy rivojlanish, etnik identifikatorlar, madaniy o'ziga xoslik, davlatchilik.

Аннотация. Данная статья освещает сложные отношения и различия между понятиями нация и этнос, анализируются эти категории как динамичные социальные коллективности, исследуя их взаимосвязь и влияние на формирование национального самосознания. Особое внимание уделяется мнениям ученых, которые критикуют традиционное восприятие наций и этнических групп как чётко очерченных и стабильных коллективов. Также рассматривается, как национальное самосознание, объединяющее этнические, социально-экономические и духовные компоненты, функционирует в современном мире, подчеркивая его роль в формировании коллективной идентичности на основе языка, истории и культуры.

Ключевые слова: нация, этнос, национальное самосознание, социальные коллективности, идентичность, социально-экономическое развитие, этнические идентификаторы, культурная идентичность, государственность.

Abstract. This article highlights the complex relationships and differences between the concepts of nation and ethnicity; these categories are analyzed as dynamic social collectivities, exploring their relationship and influence on the formation of national identity. Particular attention is paid to the opinions of scientists who criticize the traditional perception of nations and ethnic groups as clearly defined and stable collectivities. It also examines how national identity, combining ethnic, socio-economic and spiritual components, functions in the modern world, emphasizing its role in the formation of collective identity based on language, history and culture.

Keywords: nation, ethnic group, national identity, social collectivities, identity, socio-economic development, ethnic identifiers, cultural identity, statehood.

Introduction

The nation, being one of the most important subjects of activity, is formed over a long historical period, being closely connected with such a substratum of the highest level as ethnicity. As social collectivities, they are interconnected in many ways, and it would be quite correct to clarify that ethnicity is essentially the very soil on which a nation is formed and develops, since national consciousness synthesizes the basic ethnic mechanisms.

Literature review

A large number of works in the field of scientific research are devoted to this topic[1]. Brubaker criticizes traditional approaches to the concepts of nations and ethnic groups, rejecting them as real, stable collectivities. He proposes to think of national and ethnic groups as categories of perception and political mobilization, rather

than as objective realities [4]. Benedict Anderson's Imagined Communities explores how nations are formed through imaginative mechanisms and media technologies, emphasizing the role of print and capitalism in the creation of "imagined communities." Ernest Gellner's writings argue that nations and nationalism are a product of modernity, necessary for the functioning of industrial societies [6]. He sees nationalism as a means of standardizing cultures within the state. In the Clash of Civilizations, S. Huntington develops the idea that the main source of conflict in the post-Cold War world will not be ideological or economic differences, but cultural and religious identities [7]. These sources present a variety of theoretical approaches to understanding nations and ethnic groups, emphasizing the complexity and multifaceted nature of the study of these social phenomena. Together they help to develop a deep understanding of the relationships and differences between these two key concepts in sociology and cultural studies [8].

Research methodology

In this study, such methods and means of scientific knowledge were used as analysis and synthesis, complex and systemic analysis, and comparison of conceptual theories.

Analysis and Results

The discussion about the definition of the concept "ethnic group" is still ongoing, since there is no consensus on the stage boundaries of the use of this concept. And most often, researchers have difficulty trying to distinguish between the concepts of "ethnicity" and "nation", therefore, in one case, all known social collectivities that have undergone ethnohistorical evolution are considered an ethnos, and in the other - only pre-national formations. In general, many agree that an ethnos is a group of people connected spatially at the time of formation [2].

Interesting in this case is the opinion of Roger Brubaker, who considers it a misconception to call "nations and ethnic groups real entities, actual, time-lasting collectives with clearly defined boundaries" [5]. The thinker believes that even formulating the question of what a nation is not a completely correct task, since in this case the researcher redefines the concept of "nation" in terms of objective reality, whereas it would be more appropriate to "refuse the common understanding of a nation as a community of people, collective, special organism. And interpret it as a concept related to a number of value categories. It works well in the language of political activists seeking to change people's perceptions of themselves, to appeal to their devotion to "the nation", but it is not suitable as a tool of analysis. Therefore, we must get rid of it, like other categories of practice" [5].

Let us analyze one of the definitions of the concept of "nation", which was proposed by the domestic researcher Yu. D. Granin, and, according to V. G. Babakov, most adequately represents the essence of the phenomenon of a nation: "In reality, a "nation" is a collection of people connected between themselves into a community not only by common citizenship, but also by common territory of residence, common language and common culture. This is a socio-cultural community of people, united by similar feelings of specialness and unity, common significant historical and current factors, politically united in one state, which (the state), together with the institutions of civil society, through mass communication systems and the national education system,

forms in people their imaginary image "nations" ("Russia", "France", etc.) and "civic consciousness", which dominate over more ancient racial and ethnic identities" [6].

Thus, the nation has a complete system of ethnic identifiers - traditions, customs, identity, language, value foundations. Miroslav Groch especially emphasized the importance of language in the formation of a sense of national community: "Language and ethnicity (cultural specificity) in most European countries were not invented by "nationalists," as some authors believe. "Printed" language is sooner or later codified and plays a prominent role both as a means of communication and as an instrument of "ethnic consciousness" or, better said, ethnic identity. This was especially the case during the period of (enlightened) absolutism, when language was standardized and codified. People felt that they better understood those who used the same language, and they were aware of their belonging to the same ethnic group, which may or may not have caused "national" feelings, that is, positive attitudes towards those who speaks the same language."

One should, apparently, listen to the opinion of A. S. Blinov, who believes that "a nation is a more symbolic structure, expressed in the feeling of belonging to one group of many individuals deprived of the possibility of direct physical contact" [4].

As I. F. Ilyasov defines a nation: "A nation is an association of people that arose on the basis of a common central government, territory, economy, language and awareness of common interests, character traits and culture" [8].

A nation is one of the social collectivities in the form of a social community of the highest level. It is synthetic in nature, it contains ethnic, socio-economic and spiritual components. A nation absorbs the identifying components of an ethnic group - language, mentality and other conservative elements that form the core or platform that ensure the uniqueness of its existence. The further existence of a nation, realizing itself in all public spheres through a complex of social acts, results in the structuring of the entire system of social relations and social differentiation within the territorial space of the nation.

Active knowledge of the surrounding reality in the process of activity forms and improves all forms of social consciousness, or at least gives some color under the influence of certain factors. These include ethnicity and nationality, since the specific nature of each of the social collectivities necessarily affects the nature of thinking, then these same features will manifest themselves in the form of a reflection of the surrounding world, that is, consciousness.

National consciousness is not an ideal structure capable of independently existing and developing. It should be talked about as a product arising from the creativity of selected individuals who are responsible for the renewal of tradition, analyzing the past of the nation and designing its future.

By formulating the past of a historical community called a nation in myths, representatives of its elite are trying to create conditions for the implementation of their political will. For them, national self-consciousness is a special form of objectification of an already past existence - the history of the nation, through which a given social collectivity is created and preserved. As a rule, the national elite in every possible way idealizes the past of the nation, since it knows that any of the put forward and expressed

positions and proposals becomes part of the collective unconscious, under the influence of which self-awareness is formed and on the basis of which national-state ideas are created [1].

The core of national self-awareness is the political will of the ruling layer, which synthesizes the collective ideas of an ethnic group organized into a state and modifies them in accordance with one or another mobilizing messianic idea. Agreeing with Husserl's opinion that "the perceiving consciousness is not an empty box in which the object of perception appears uninvited and ready-made. Rather, the object of perception is internally constituted by an overly refined meaning-giving structure of perception"1, we note that the elite consciously chooses, on the one hand, an illusory-utopian idealization of the past, and on the other, designing the desired future, since in this case it can position itself as an exponent fundamental state-forming interests, that is, forming national identity

There is no doubt that representatives of the same community, which arose on the basis of national-ethnic identity, will have largely identical assessments, views, and opinions regarding particularly important and significant institutions, processes and results of their own activities. Otherwise, there would be no reason to consider them to belong to the same collectivity. One of the conditions for the formation of common and similar features of mentality and worldview is a common historical path and subsequent interpretation of the past. It is in the course of such comprehension of one's history and determining the place of one's community among others that one understands one's peculiarities, specificity and common features with other ethnic groups, and develops not only rational, but also emotional empathy for one's unity.

At one time, discussing Russian self-consciousness and comparing it with populist (read ethnic), Nikolai Berdyaev clarified that: "National consciousness is a qualitative consciousness, not a quantitative one. The populist consciousness was, after all, an admiration for quantity, for the simple masses; it rests on faith in the immanent truth of the mass collective, the truth of unconscious simplicity" [3].

So Ladygina O.V. in the abstract of her doctoral dissertation notes: "Self-organization of national identity: theory and practice," emphasizing that "national identity... a complex self-organized system. The objective basis of the self-organization of the system is the dialectical interaction of chaos and order, as a result of which coherence of the hierarchical levels of the system arises" [9].

We can say that such specificity of national self-awareness is an expression of the biological component of the human essence, that is, it is a completely natural mechanism: thanks to this natural psychological mechanism, a person is able to realize his tribal affiliation. Then this switched on mechanism, continuing its movement, covers the social level and changes it, makes changes. Thanks to this mechanism, a person forms a certain standard that allows him to differentiate a property with a qualitative assessment of "bad - good" in relation to "one's own - good", and "someone else's - bad". Conventionally, we can call this set of socio-regulatory qualities, compiled on the basis of basic ethnic values, national character [10].

Conclusions

This opposition works, first of all, to consolidate ideas about one's group, and this consolidates only a positive image: everything "one's own", by definition, cannot be negative. Based on this assessment, a further positive perception of everything is formed - from socio-economic to spiritual. This mechanism, as a result of its functioning, creates stereotypes, and in addition, it is also responsible for the duration of their preservation. These stereotypes, expressing the emotional perception of "themselves" and "others," can absolutize some of the qualities or exaggerate certain traits or essences, for example, "Russians take a long time to harness, but go fast" - about the slowness and impossibility of quickly normalizing the emotional and irrational manifestation of an internal psychological reaction, or "German is a fascist" - about the fear inherent in two wars over a short historical period.

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PHILOSOPHICAL ANALYSIS OF SOCIO-POLITICAL IDEAS IN THE WORKS OF NAVOI

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Annotatsiya. Ushbu maqolada Navoiy ijodidagi ijtimoiy-siyosiy g'oyalar falsafiy tahlil qilingan. Axloqqa oid ijtimoiy-siyosiy masalalar, xalq hayotini yaxshilashga xizmat qiladi.

Kalit so'zlar: Ijtimoiy, siyosiy, g'oyalar, xalq, inson, siyosat, mamlakat, axloq, mutafakkir, adolat.

Аннотация. Данная статья содержит философский анализ социально-политических идей в творчестве Навои. Отражены социально-политические вопросы касающиеся нравственности, служению, совершенствованию и улучшению жизни народа.

Ключевые слова: Социальный, политический, идеи, народ, человек, политика, страна, нравственность, мыслитель, справедливость.

Abstract. This article contains a philosophical analysis of socio-political ideas in the works of Navoi. Socio-political issues related to morality, serving the improvement of people`s lives.

Keywords: Social, political, ideas, people, human, policy, country, moral, thinker, justice.

Introduction

The XIV-XV centuries, constituting an important period of cultural, socio-political progress of the peoples of the East, especially Maverannahr, have always attracted the close attention of our scientists. Currently, this interest is growing even more, because in this era in Maverannahr there is a particularly intensive development of national socio-spiritual values, independent statehood and socio-political thought, which together acts as one of the most important spiritual and historical sources of the modern national revival of the Uzbek people, genuine social and spiritual progress of our country, represents a major contribution to the history of world civilization.

The works of Alisher Navoi highlighted the issues of socio-political, socio-economic development of the country in the 15th century. In many ways, the poet's thoughts found their response in the works and ideas of his mentor Abdurahman Djami. Under the direct influence of Djami Navoi, he wrote his treatise "Beloved of Hearts," which was a unique reflection of the socio-political, moral and ethical views of the author. This work, in the opinion of the thinker himself, was supposed to become a guide for the implementation of correct social policy, the spiritual enlightenment of the people, and serve to improve the lives of the common people and, along with them, the entire country.

Literature Review

The brilliant work of Alisher Navoi remains relevant after almost six centuries and shows ways to resolve many problems. A poet, scientist and statesman, he is dear to us primarily for the democratic, humanistic orientation of his work. All works of Alisher Navoi are still of interest to the Western world. Foreign scientists and translators who have discovered a number of Navoi's works cannot hide their surprise. They spread the word about Navoi among their contemporaries and became propagandists of the poetry of the great thinker.

Many researchers, among whom it is necessary to highlight Bertels E.E. Navoi and Jami. Selected works. [6] Zaitsev-Manuscripts and lithographed editions of works by Navoi [7], Melikova M.N. Philosophical analysis of the spiritual heritage of Alisher Navoi-Journal of Philosophy [8].

Research Methodology

In this study, such methods and means of scientific knowledge were used as analysis and synthesis, complex and systemic analysis, and comparison of conceptual theories.

Analysis and Results

Alisher Navoi was a talented statesman and politician of his time. His activities to prevent serious political events leading to catastrophic consequences, which he was able to prevent with the genius of his thought, were quite multifaceted, which prevented the country from sliding into the abyss of even more terrible internecine wars and the ruin of a disenfranchised and disadvantaged people. The activities of Alisher Navoi in the public service were quite large-scale and multifaceted, which is not entirely covered in the sources on the study of the thinker's life.

The main objective of this study is to reveal the essence of state and political ideas reflected in the spiritual heritage of Navoi. His keen interest in political social reforms and changes in the country were outlined both in his own writings and in the writings of his contemporaries.

Notable for our research is the collection of his letters, which he wrote due to circumstances, on various occasions to officials, heirs to the throne, indicating the need to take any measures, or, conversely, preventing them from unreasonable actions. Thus, in one of the letters to the heir of Husayn Bayqarah, Prince Badi' al-Zaman, Alisher Navoi writes about the need to strengthen state borders and attract reliable soldiers to guard them. Next, Navoi points out the advisability of carefully studying the foreign and domestic policies of nearby countries, which makes it possible to adjust foreign policy activities and take preventive measures in a timely manner.

Despite this, a number of fundamental aspects of the cultural and philosophical heritage of thinkers of that time still remain poorly understood, and as a result, without them it is impossible to create a holistic concept for the development of all socio-political thought of that time, in particular in the region of the Near and Middle East, including Uzbekistan.

A detailed analysis of the socio-political heritage of such famous thinkers as Navoi, Djami, Amir Timur, Ulugbek and others becomes important.

They represented different strata of society, but they put at the center of their philosophical, political, spiritual and religious ideas and teachings of man, humanistic

values, human interests, interpreted from the point of view of the unity of universal and national-religious approaches.

The social ideals of the thinker are expressed in an instructive form, through which he wanted to direct the activities of rulers and officials towards good deeds and deeds.

Navoi tried to bring his ideas to life during his more than thirty years of service in government positions at the court of the Sultan. He was actively involved in socio-political activities, showed care and paternal guardianship for the common people, deeply sympathizing with their grief and oppressed situation, helping in every possible way to overcome them.

In his works, Navoi covers in detail the socio-political life of the 15th century, sets out his socio-political views, dreams and ideals. Navoi puts forward the idea of the struggle for justice in conditions of a strong centralized government led by the Tsar-Educator. This idea acquired progressive value especially during the period when the power of the Timurids declined and the state disintegrated into small principalities. As Navoi believed, the strength of political power of the state and society, and their economic and cultural development, and the well-being of the people mainly depend on the ruler, on his ability to listen and respect public opinion. He believes that only with a fair ruler and an intelligent ruler will society prosper and the people will live in happiness and contentment. Navoi, as a thinker and statesman, recommends that rulers improve the country and patronize kind and intelligent people. Punish the wicked, free the people from taxes for several years, regulate prices, put measures on scales in the bazaars [9].

Navoi puts morality above politics, on the basis of which the ruler and officials, by personal example, must educate the people through justice in public administration. Subjects must follow the behavior of those in power: "The deeds and character of the people subordinate to the Shah are the same as the deeds and character of the Shah. If the Shah chose justice as his banner, then the light of this justice will be reflected in the people. If he has become a source of evil, then his subjects will constantly experience apprehension and fear. If a ruler follows the path of faith, then his subjects also live by faith and trust. If the sovereign chose the path of the evil atheist, then his people will also find themselves on this path. The sages compare the king to the sea, and the people to the river flowing from it. As the water in the sea is, so will it be in the river. If the water in the sea is bitter, then in the river it will be bitter. If it is fresh there, then it is fresh in the river. If the water in the sea is cloudy, then the water in the river is cloudy; if it is clear there, then it is clear in the river too" [1].

Navoi's political views are revealed in the poem "Iskander's Wall", which summarizes the socio-political ideals of the thinker about a just state. Hero of Navoi's work in governing the country, Iskandar does not rely on his advisers and trusted assistants from among the religious clergy, but leads, relying mainly on the advice of representatives of science of various directions, educated scientists and thinkers. The peoples of the Near and Middle East imagine this group of scientists and thinkers as a symbol of wisdom in the history of philosophical thinking, led by Aristotle. In matters of government, Iskandar turns to philosophers and sages, in particular to Aristotle. Aristotle gives him knowledge about his life experience and the way of life of people in society.

In the poem "The Confusion of the Righteous", Navoi raises very pressing problems associated with the socio-political system that existed in Khorasan at that time, expressing his negative attitude towards feudal relations, lawlessness, oppression and violence to which people were subjected. Here Navoi expresses his social ideas and transformations, modernization of existing relations in society. It indicates the equal position of the ruler and ordinary people in society [7].

According to the Soviet orientalist scientist E.E. Bertels, in the countries of the East, the commonality of the names Aristotle and Iskandar makes it possible to unite moral, ontological, epistemological issues of philosophy in the political, military, and public administration of the country [4].

Another well-known poem "Farkhad and Shirin" is notable for the fact that it comprehensively glorifies the true, noble traits of a person - friendship, love, hard work, heroism, modesty, honesty.

Of great interest are also such works of the poet as "Makhbub ul-qulub", "Munshoat", "Wakfia", in which he expresses his hatred of the feudal state, the Shah and the clergy.

In the work "Beloved Hearts", the poet exposes the true visible covered face of the clergy, officials, thieves and scammers. This poem exalts the role of the working people, the simple peasant. In his famous "Letters" addressed to his friend, Shah Hussein Bayqarah, specific practical advice is given that, according to Navoi, ensures the strengthening and centralization of state power, the expansion and improvement of educational activities in country.

The path to perfection is long and thorny, not everyone can achieve this cherished goal, but still the poet encourages everyone to embark on this path, because a person, having gone through such a difficult path, will eventually reach the truth:

Lucky! Let him be a drop under the sun,
It contains an ocean of knowledge!
He studied all the sciences in the world,
He spoke in all languages.
He is the soul that embraces the world,
He is a drop reflecting the world [2].

In the poem "The Confusion of the Righteous," Navoi calls for exalting people of science as prophets. The heroes of his works are always distinguished by great intelligence and high knowledge, versatility of interests and abilities. For example, Farkhad "was considered a great scientist, Majnun "made science his craft" and mastered "all the sciences of the world," and Iskander (Alexander the Great), despite his greatness and intelligence, asks scientists for advice in everything. The poet advises rulers to "treat scientists, the beauty of the country, in such a way that their hearts are not offended." He did not take into account a person's social or financial situation when choosing friends, but the degree of their learning and knowledge" [3].

Many of Alisher Navoi's works were in one way or another devoted to social problems and ways to resolve them, since the poet was at the same time a high-ranking official who put his conclusions regarding the development of society into practice.

The brilliant work of Alisher Navoi remains relevant after almost six centuries and shows us ways to solve many problems and tasks. A poet, scientist and statesman, he

is dear to us primarily for the democratic, humanistic orientation of his work. The poet's works, remarkable in their artistic power, reflect what we call traditional spiritual values [10].

One must strive for perfection by studying science throughout one's life. Alisher Navoi has wonderful teachings on this matter:

Having accumulated drop after drop, river streams flow.

By accumulating crumbs of knowledge, a person becomes wiser [5].

According to Navoi, every person should show every possible interest in earthly life, use and subjugate the forces of nature, work and engage in self-improvement. He believed that a person knows everything thanks to the power of his mind, the ability to think:

More precious than all riches, it was given to you

One pearl is priceless:

And this is the mind. Can't compare to him

Expensive rubies and diamonds.

In the pearl of earthly existence

Your pearl is imprisoned.

She has the gift of knowledge of secrets and heights,

This is what you have been honored with during your lifetime! [4]

Navoi considers the measure of humanity in a person to be his attitude towards the dignity of his people. A person deserves the same respect from the people that he himself shows towards him [8].

Conclusions

Among the titans of thought of the 15th century, Alisher Navoi occupies a special place. The great poet, thinker, prominent statesman Navoi glorified himself and his country by putting all his talent, strength and knowledge at the service of the people and progress. He was a passionate denouncer, a merciless critic of feudal society, oppression and social injustice and contemporary society.

The thinker's political views are complex and contradictory, just like his era. However, his legacy coexists alongside idealistic thoughts with the most progressive ideas that belong to the present and the future.

According to Navoi's philosophical views, the strength of political power, the state and society, and their cultural and economic development, as well as the well-being of the people, mainly depend on the ruler, on his ability to hear the people, and on the ability to listen and respect the opinion of the people.

Despite the limited and contradictory socio-political views of the thinker, his progressive political ideas and thoughts today are gaining more and more scientific and political interest and significance, and it is no coincidence that they attract the attention of more and more researchers.

Scientists and writers, historians, literary critics, linguists, and art critics have written quite a few works about the great Navoi and conducted valuable research work. It should also be noted that research into the poet's philosophical and socio-political views has only just begun.

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SOCIO-PHILOSOPHICAL ANALYSIS OF VALUES AS A FACTOR IN THE DEVELOPMENT OF SPIRITUALITY

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Annotatsiya. Ushbu maqolada zamonaviy jamiyatda qadriyat yoʻnalishlari va shaxsning maʼnaviy rivojlanishi oʻrtasidagi munosabatlar ijtimoiy-falsafiy tahlil qilinadi. Mualliflar qadriyatlar tizimidagi oʻzgarishlar shaxslar va guruhlar hayotining maʼnaviy jihatlariga qanday taʼsir qilishini oʻrganadilar. Zamonaviy davrdagi ijtimoiy, iqtisodiy va madaniy oʻzgarishlar maʼnaviyat haqidagi anʼanaviy tushunchalarni qanday oʻzgartirayotgani tahliliga alohida eʼtibor qaratilmoqda. Maqolada zamonaviy falsafa va sotsiologiyada qoʻllaniladigan qadriyatlar va maʼnaviyatning asosiy nazariyalari yoritilgan va maʼlum ijtimoiy guruhlar misolida qiymat imtiyozlari maʼnaviy amaliyot va inʼikoslarni qanday

shakllantirishi ko'rsatilgan. Mualliflar ma'naviy rivojlanishni rag'batlantiradigan yoki to'xtata oladigan dinamik elementlar sifatida qadriyatlarni o'rganishga kompleks yondashuvni taklif qilishadi.

Kalit so'zlar: ma'naviyat, qadriyatlar, transformatsiyalar, ideallar, stereotiplar, inson irodasi.

Аннотация. В данной статье проводится социально-философский анализ взаимосвязи между ценностными ориентациями и духовным развитием личности в современном обществе. Авторы исследуют, как изменения в ценностных системах влияют на духовные аспекты жизни индивидов и коллективов. Особое внимание уделено анализу того, как социальные, экономические и культурные трансформации современности модифицируют традиционные понятия духовности. Статья освещает ключевые теории ценностей и духовности, применяемые в современной философии и социологии, и демонстрирует, на примере конкретных социальных групп, как ценностные предпочтения формируют духовные практики и восприятия. Авторы предлагают комплексный подход к изучению ценностей как динамичных элементов, которые могут стимулировать или тормозить духовное развитие.

Ключевые слова: духовность, ценности, трансформация, идеалы, стереотипы, воля человека.

Abstract. This article provides a socio-philosophical analysis of the relationship between value orientations and the spiritual development of the individual in modern society. The authors explore how changes in value systems affect the spiritual aspects of the lives of individuals and groups. Particular attention is paid to the analysis of how the social, economic and cultural transformations of modern times modify traditional concepts of spirituality. The article highlights key theories of values and spirituality used in modern philosophy and sociology, and demonstrates, using the example of specific social groups, how value preferences shape spiritual practices and perceptions. The authors offer an integrated approach to the study of values as dynamic elements that can stimulate or inhibit spiritual development.

Keywords: spirituality, values, transformation, ideals, stereotypes, human will.

Introduction

Spirituality is the sphere of ideals and values, which determines and permeates all human life activity and has power over them, therefore spiritual life can be called such a life that is associated with the discovery by a person of his self-valuable existence and himself, that is, such a life activity of a person, which is based on the ability of individual disclosure of higher values. This means that one of the properties of spirituality is the overcoming of various kinds of stereotypes, boundaries and conventions, and the main functions of spirituality can be considered: meaning-forming, axiological, integral-forming, regulative, informational, cognitive.

The richer a person is spiritually, the more saturated he is with values and his values themselves are more diverse and flowery, the more humane they are. Values act as

worldview ideals for the individual, reflecting the experience of all mankind in its striving for progress and spiritualization. Therefore, all needs, interests, goals, and moods that determine the attitudes of an individual or a group of persons are usually tested for their value before turning into a value orientation, that is, a developed line of behavior on the basis of the values selected and comprehended by them. In this case, only certain social values, because all values have a social nature, become personal or group, directing all human activity, entering the structure of their attitude.

Literature Review

Many works are devoted to this problem, among which it is necessary to highlight the works of Martin, T.P., Schumann G. "The Global Trap: Globalization and the Attack on Prosperity and Democracy", in which the authors give a detailed analysis of the transformation of values and their impact on spirituality. Thus, V.G. Fedotova builds a typology of spirituality, distinguishing the following types of spirituality: aesthetics, ethics, theoretical, political, religious, soulfulness [7] In the basis of the typology of spirituality, V.G. Fedotova puts a certain specialization of the human spirit on the construction of its own system of meanings and meanings. However, at the same time, each type of spirituality can grow into its opposite, into a kind of thoughtlessness, but with a sophisticated variant [8]. The spiritual qualities of a person should complement each other, even if one of them prevails in the system of his spiritual and value hierarchy, so as not to turn into a kind of spirituality [9]. And V.P. Bransky even defines them as the material embodiment of the ideal, where the ideal plays the role of a criterion, while the values are always concrete, that is, "there are no abstract values" [1].

Research Methodology

In this study, such methods and means of scientific cognition as analysis and synthesis, complex and system analysis, hermeneutic approach and existential method of cognition were used.

Analysis and Results

Theoretical interpretations of value are extremely contradictory. If some researchers consider values to be the sphere of individual psychological experiences, others refer them to the non-psychic sphere. While some consider them as objective phenomena, others as purely subjective. If some are inclined to defend their relativity, others absoluteness.

Three main concepts of values can be distinguished. The first reveals value from the point of view of its functional significance and usefulness. At the same time, only two evaluations are important: positive and negative. The second concept considers value as an ideal. Here the value is an ideal object that expresses the subject's positive attitude to reality.

This evaluative concept reduces value to the cognitive, spiritual, practical, and other relations of the subject to the object, revealing the spiritual relations and attitudes of the consciousness of the individual. The third concept analyzes values from the point of view of their significance for a person, identifying them with meaning. We share the approach of I.D. Levin, who considers value as an end in itself, as the ultimate goal

that can no longer become a means to another end [3]. The criterion of value can be considered the ideal, since it is always the result of the realization of the ideal.

Values are the object of aspiration of the human spirit, that is, what puts a person above everything else in life. The subjectivity of a person, the variety of forms and conditions of his life gives rise to a variety of goals and different ways of achieving them. Values are historical in nature, because they can change depending on the circumstances and the content of life. Values are mobile and relative, objective and subjective. They can be described as true, beautiful, useful, pleasant, etc.

Value characterizes phenomena that have a positive or negative significance for the life of a person and society. They are born in the process of forming interests and human life. In their content, they can be utilitarian and sublime, material and spiritual. But all spiritual values, regardless of their content, description and the sphere of human activity to which they belong – aesthetic, religious or theoretical, always appear in the form of basic moral categories – good and evil, since morality is the core of spirituality.

Spiritual values have different meanings for a person, so they should be divided according to the degree of importance for him, lining them up in a certain hierarchy.

The core of spiritual values should be meaningful life values that determine the uniqueness of the personality, the level of his self-consciousness and self-perception. Spiritual values ensure the self-sufficiency of the "I", its safety and stability of life. Universally significant values realized by a person, rethought by him and endowed with personal signs and symbols, form a matrix of attitudes for the life of a person. All these values are designed to ensure human life, its stability, because life is the greatest value. The fundamental life values of a person include those that ensure his vital physiological needs and his security. They also include vital social and spiritual values associated with belonging to the community and respect from the members of this community, as well as values that ensure the self-expression of the individual.

The next group of values includes values that ensure relations with oneself and others. These values are associated with the realization of the need for other people and overcoming loneliness. This circle of values includes, first of all, altruism as overcoming natural egoism and caring for others. It is in the values of altruism that the need for self-preservation is transferred to the other. This includes all values related to the attitude towards other people in everyday life, as well as the values of communication, such as friendship, love, respect, honesty, understanding.

The values of the next group are related to the life of a person in the nearest community. From these values, a matrix of social behavior of an individual in a small group is created. All these values are based on mutual concessions of people who are directly related to each other and depend on each other; therefore, they must adapt their life activity to the nearest impact on each other. Being in a small group, living in certain conditions, a person is obliged to assimilate the system of values that has developed here, adjusting his value orientations, ideas about himself and the individuals around him to fulfill his social roles. In the value system of small groups, the following are distinguished: the values of social status and social roles, the values of group solidarity, the values of social control and management, and the values of personification.

The last group of values includes the values of human life in the conditions of social macrostructures, that is, the values of the social macrocosm. In society as an integral

self-developing structure, a series of values are built, which a person masters in the process of objective, institutional and other activities.

This group of values includes: the values of social protection of a person - peace, public order, stability, rights and freedoms, cultural values - aesthetic, moral, scientific, religious and others. These value groups form a kind of hierarchy of values from the core to the periphery.

The basis for distinguishing these groups is the real social ties and relations of the individual as a subject of spirituality. The core of spiritual values is the values of self-consciousness of the individual. The second group is the values of the "I-Other" relationship, the third group is the values of the individual's attitude to the social microcosm, and, finally, the fourth group is the values of the individual's relationship to the social macrocosm.

The hierarchy of values serves as the basis for a person's orientation in certain conditions. They also serve as the basis for an evaluative attitude to all processes and phenomena, that is, to all external information, as well as a basis for their rethinking and transformation into the inner spiritual world of the individual.

However, the relationship between the values of personal consciousness and the real-life activity of people is not simply rethought by the personality. Often this rethinking takes place in a difficult spiritual struggle.

Thus, the structure of spirituality includes all the necessary components of the spirit, but in a balanced form: intellect, education, ethos, aestheticism, soulfulness, technologists, philosophical or religious preparedness. As for the spiritual structure of the personality, it includes feelings, thoughts, and volitional acts, but here it is not so much their content that is important, but their value status.

For this purpose, the real content with the information contained in them in the form of emotional experience is rethought by the subject by evaluating them, after which they are assigned a certain personal symbolism. And only then does this information, reinterpreted by a person, acquire a personal status: it turns from an externally "given consciousness" into the personality's own content, or in other words, it becomes its own value-based sensory content, which participates in spiritual activity.

Thus, rethought, evaluated and endowed with a personal symbol information in the form of emotions becomes an element of the spiritual structure of the personality and already in this status can directly affect the nature and activity of the individual's consciousness. However, this operation can be performed by a spiritually mature person who is capable of such a rethinking.

If a person is at an insufficiently high level of spiritual development, that is, is not able to fully evaluate information with the help of generally significant norms, requirements and principles, that is, to rethink it according to these parameters and make it an element of his spiritual structure in the form of sensory experiences, then he considers specific emotions caused by real information as a standard for his behavior. which slows down her spiritual growth.

Thus, real emotions are elevated to values and, gradually accumulating, begin to displace truly personal value-sensory experiences. Thus, there is a spiritual degradation of the personality and a deformation of his consciousness, so the will of a person should be oriented not to empirical experience and emotions, but to truly personal value

experiences. For the spiritual growth of the consciousness of the personality, the same type of activity and the same type of value orientation are needed, that is, the constancy of the spiritual orientation must be ensured, and not its momentary changes under the influence of external circumstances or internal personal impulses.

The less a person focuses on specific content in his activity, the faster the spiritual development of the personality occurs, since it requires a constant rethinking of all the information received from the outside, its reassessment by the person and endowing him with personal value content. If a person does not treat external information critically and is not able to distinguish between a real spiritual and value orientation and an anti-spiritual external influence, then this leads to the destabilization of the entire personality, since, having entered the spiritual structure, anti-spiritual values require a large expenditure of spiritual forces in order to neutralize them or free themselves from their influence. But the anti-spiritual content, as a rule, disguises itself as a kind of "new spiritual values". Therefore, the sooner a person can understand their true essence, the faster he will stabilize his spiritual powers. Only a spiritually mature person can preserve the purity of spiritual values [6].

The spirit appears to man in feelings, reason, and will. In our study, we have characterized such spiritual phenomena as human experiences and his mental activity, so we will analyze the phenomenon of will as a manifestation of the human spirit more deeply.

Will is a free (curiously, in the Russian language this concept is synonymous with freedom) and conscious aspiration of a person to achieve a certain goal, which becomes a value for him in some way. In other words, will is the ability of a person to set a goal for himself and make all the necessary internal efforts to achieve it.

In the history of human thought, the concept of free will has had different interpretations. For example, Thomas Aquinas believed that man himself possesses free will, and is not directly guided by God in each specific case. The choice of the goal depends, according to Thomas Aquinas, on reason, which is based on spiritual goals and values.

Freedom follows reason and will. Aquinas considers freedom as a program for the development of personality. A person "achieves freedom to the extent that he performs an act of free choice, perceiving values that he himself learns to recognize... His freedom also depends on the way in which he reconciles his bodily and rational principles" [2].

Thus, the spiritual life of man consists in the realization of creatively free acts of choice, which are comprehended only by faith. "Good works, being a consequence of the presence of the Holy Spirit, are, according to Aquinas, completely voluntary" [2]. Therefore, the spirituality of man is connected with reason and his free will, guided like a compass, and this does not contradict its definition as "free" by the Holy Spirit, that is, in secular language, a system of spiritual values. Thus, in the Middle Ages, will was interpreted mainly as a consequence of natural or supernatural activity - the Absolute, God. Schopenhauer and Nietzsche began to understand it as a self-sufficient and self-positing force that directs all human life. They asserted the priority of the will over other manifestations of the spiritual life of a person, including thinking. They take the will as a blind, irrational principle of the world, which dictates its own laws to man.

A person turns into a slave of the "will to live". The world around us is a struggle of individual "wills". A person's consciousness is realized according to his will, or more specifically, "by the entire will to live". Moreover, the will of a person is always not satisfied, which makes a person struggle. The beginning of the volitional process is laid in the needs, interest, and emotional reaction of a person, which cause the need to satisfy them. But at the level of emotions, this striving ("tension") does not yet have an objective character. The objective content is introduced only by consciousness. As a result of cognition, an ideal image of what is desired arises in human consciousness, so the volitional act presupposes cognition of the object of interest. But any theoretical knowledge is contained in practical activity.

Cognition and will are inseparable. There is no will without intellect, just as the will contains cognition in itself in a "withdrawn form", so the beginning of the cognitive process is already an action of the will. The will has a complex structure. Volitional action itself is divided into three links: setting and realizing the goal to satisfy one's interest, making a decision to act and choosing the most purposeful means and ways of carrying out the action. The decisive change in this chain of volitional action is the execution of the decision, for which the so-called "willpower" is necessary. But this decisive moment does not exhaust the act of will. Setting a goal and its awareness only determine what action arises in an individual, giving rise to "ideal aspirations", i.e. "willpower". These forces or "willpower" create "energetic" possibilities that are translated into reality in the last performing action. But willpower is not given to man by nature. The ability and ability to choose goals, make the right decision and fulfill them, i.e. to bring the started work to the end, is the result of knowledge, experience, education and self-education.

Man's interest as a prerequisite for an active volitional process is already manifested in striving. Depending on the varying degrees of awareness, a person's aspirations can manifest themselves as drives, desires, and desires. The first stage of the volitional process is associated with drives. Attraction is an aspiration in which only dissatisfaction with the state is realized, but the goal, the way and the means of achieving it are not realized. At the second stage, as a result of setting a goal and realizing it, the process of choosing between human instincts takes place and the leading one is determined, i.e. as a result of the struggle of instincts, the main thing is singled out, which is objectified, or in other words, passes into desire. The appearance of desire completes the second stage of the volitional process, which leads to the emergence of an opportunity in the organization of action: the desirability of the object, i.e. the complex relationship between the desire and the object, appears.

One desire, being affirmed among others, becomes a wish (since in the process of objectification of the instinct several mutually exclusive desires may arise and an internal "struggle of desires" occurs, and as a result, the choice of one of them occurs). Desire, therefore, is already a conscious goal, but where the ways and means of achieving it have not yet been revealed. Desire is the awareness of an object that can satisfy interest. It is the basis for motivating behavior. In desire, there is still no orientation towards the realization of the goal. It manifests itself most often as imagination, a dream. A dream is a mechanism for processing and assimilating external influences to design the future with the help of conscious imagination that generates

images of the desired future. In a dream, in a colorful picture of achieving a goal, with a huge range of corresponding experiences, a person has a premonition of the desired emotions. Needs and emotions arising on their basis generate interest. As awareness expands, desire turns into willing, which is already the third stage of the volitional process and the beginning of the volitional action itself. Desire is the desire to realize the goal, confidence in its achievement, the orientation to master the appropriate means, the aspiration to master the object of desire, which is accompanied by the conviction of its necessity.

A person rejoices in the fulfillment of a desire or a satisfied interest the more stubbornly he fought for it, the more he wanted to achieve some goal. What a person receives by chance, with a small expenditure of his work, does not always cause a deep and lasting feeling of satisfaction. In the process of struggle for the realization of consciously set goals, large or small success can cause a feeling of joy, the same feeling can appear as a result of a premonition of a successful end of the struggle [4].

A person's volitional qualities are largely determined by his genes, but a large role in their formation is played by his upbringing, in the course of which a person develops a value orientation. The hierarchy of value attitudes becomes decisive in the spiritual world of the individual, so value attitudes become the energy guiding force that makes the innate volitional qualities of a person manifest themselves in action.

However, not every conscious action that is associated with overcoming obstacles can be called a volitional act. The main thing for a volitional act is goal-setting itself: the goal must correspond to the values, ideals, principles and norms that the person has developed for himself in the process of life. Therefore, an act of will is most often a spiritual effort of an already mature person. A person's will is exercised not according to the principle of "I want", but according to the principle of "I must", "this is how it should be". Very often, an act of will contradicts the immediate desires and needs of a person. This phenomenon causes a state of choice, when a conflict of motives occurs in human consciousness. Thus, the will is a spiritual phenomenon that expresses the duty of a person. It cannot be reduced either to the activity of consciousness or to practical efforts. It is the opposite of impulsive desires and represents the free and conscious aspiration of all the inner efforts of a person to achieve a goal that has become a value for a person.

Conclusions

Based on the above, the following conclusion can be drawn. Spirituality is an attribute of a person, expressing his ability to create his inner world, for which purpose to combine all the emotional, mental and volitional efforts of a person into a single whole in order to rethink all the information received, turning it into personal value experiences that are significant both for oneself and for others. Thus, the spirituality of a person is a property of the human mind, reflecting the world, to carry out free value-based self-construction and to be responsible for one's own life in the universe. The essence of spirituality includes: the integrity and harmony of body and soul, natural energy and semantic assessments, a meaningful system of ideas and value orientations, humanistic mercy and orientation towards universal moral values, free will and personal responsibility for one's actions, life and activities.

Spirituality as a potential for human self-development turns into reality under the influence of social processes and becomes a means of humanizing social relations. Spirituality serves the self-improvement of a person, revealing the results of personal development and rebuilding itself against their background. Spirituality ensures the integrity of the inner world of a person through his openness to other people. Morality can be rightly considered the core of spirituality, its essential core. The transition to the spiritual level of being is an act of conscious choice of the individual, since the essence of spiritual existence is expressed by freedom. Therefore, a person cannot be forced to live spiritually. But the basic law of spiritual existence is obedience to what is due. Moreover, obedience to this law should be the result of a free moral choice.

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MORAL AND ETHICAL PROBLEMS OF TRANSHUMANISM

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Annotatsiya. Ushbu maqolada texnologiya orqali insonning jismoniy va kognitiv imkoniyatlarini yaxshilash bilan bog'liq bir qator murakkab masalalar ko'rib chiqiladi. Transgumanizm - bu texnologik innovatsiyalar orqali hayot sifatini sezilarli darajada yaxshilash uchun inson tabiatini o'zgartirishga qaratilgan harakat va falsafa. Biroq, bu yondashuv ko'plab axloqiy dilemmalar va axloqiy savollarni tug'diradi.

Kalit so'zlar: transgumanizm, inson mavjudligi, adolat, texnologiyadan foydalanish, hayot sifati, axloq.

Аннотация. Данная статья затрагивает ряд сложных вопросов, связанных с улучшением человеческих физических и когнитивных возможностей через технологии. Трансгуманизм — это движение и философия, направленные на преобразование человеческой природы с целью значительного улучшения качества жизни посредством технологических инноваций. Однако этот подход порождает множество этических дилемм и нравственных вопросов.

Ключевые слова: трансгуманизм, бытие человека, справедливость, доступ к технологиям, качество жизни, нравственность.

Abstract. This article addresses a number of complex issues related to improving human physical and cognitive capabilities through technology. Transhumanism is a movement and philosophy aimed at transforming human nature to significantly improve the quality of life through technological innovation. However, this approach raises many ethical dilemmas and moral questions.

Keywords: transhumanism, human existence, justice, access to technology, quality of life, morality.

Introduction

In our pursuit of progress and the enhancement of human life, modern technology presents possibilities that were until recently unimaginable. Transhumanism, a philosophy and movement focused on radically altering human nature through advanced technologies, holds the promise of overcoming biological limitations such as disease, aging, and mortality. However, these prospects carry not only technical challenges but also profound ethical dilemmas.

Literature Review

Moral and ethical issues in transhumanism encompass a range of significant works that delve into the philosophical, ethical, and social dimensions of transhumanist technologies. In «Human Enhancement Ethics: The State of the Debate», Bostrom provides a comprehensive analysis of the ethical considerations surrounding human enhancement. He explores potential benefits and risks and offers criteria for assessing the ethical acceptability of various forms of enhancement [2]. Francis Fukuyama, in «Our Posthuman Future: Consequences of the Biotechnological Revolution», offers a reasoned critique of transhumanism, highlighting its potential social and political implications. He contends that altering human nature could lead to unpredictable and potentially hazardous consequences for societal order [3]. Julian Savulescu and Nick Bostrom investigate diverse aspects of human enhancement, spanning from cognitive to physical enhancements, and engage in discussions regarding the ethical considerations [10]. These works collectively contribute to our understanding of the ethical principles that may govern the utilization of such technologies.

Michael Sandel, in «The Case Against Perfection: Ethics in the Age of Genetic Engineering», raises concerns about the pursuit of perfection through genetic engineering, arguing that this pursuit may undermine our morality and our ability to appreciate the human in its diversity. Leon Kass, in «Life, Liberty and the Defense of

Dignity: The Challenge for Bioethics», examines the ethical and philosophical challenges posed to humanity by biotechnological innovation. He stresses the importance of preserving human dignity in the face of increasing technological control over nature. Peter Sloterdijk, in his «Rules for the Human Zoo: a response to the Letter on Humanism», offers a provocative look at humanity's role in its own 'zoo' of biotechnological experimentation and discusses how technological enhancement can change the very nature of being human [11].

Taken together, these works provide the basis for a thorough understanding and analysis of the ethical dilemmas facing transhumanism. They help to assess both the potential benefits and possible risks of adopting technologies designed to alter human nature.

Research methodology

This study employed various methods of scientific inquiry, including analysis and synthesis, complex and systematic analysis, hermeneutic approaches, existential methods of cognition, and the comparison of conceptual theories.

Results and Discussion

The ethical challenges of transhumanism raise fundamental questions about the nature of humanity, justice, equality, personal identity and moral responsibility. While proponents of transhumanism see it as an opportunity for everyone to achieve phenomenal mental and physical capabilities, critics stress the risks of creating new forms of inequality and possible threats to human individuality and morality.

In this article, we attempt to understand the complex interplay between rapidly advancing technologies and the moral and ethical principles that should guide their development and use. By exploring various aspects of the transhumanist movement, we seek to illuminate both the potential benefits and the possible dangers it poses to society as a whole.

Francis Fukuyama - author of «The End of History» - writes that the transformation of human beings by technology calls into question the very essence of what it means to be human. «The introduction of technologies that can change our minds and bodies requires extreme caution, as the consequences of their use may be irreversible», warns Julian Savulescu, Professor of Practical Ethics.

On the one hand, transhumanism promotes inequality of access to technology, as «the deepening technological divide between "enhanced" and "natural" humans can lead to new forms of social and economic inequality», points out Nick Bostrom, founder of the Future of Humanity Institute [2].

Transhumanism offers exciting prospects for enhancing human capabilities, but these prospects are fraught with serious ethical challenges. This article highlights the importance of developing an international regulatory framework that can govern the application of transhuman technologies, ensure fair access and minimize risks. Issues related to the ethics and morality of transhumanism will continue to be the subject of public and academic discourse for the foreseeable future, requiring careful analysis and responsible action.

«Should we decide for our descendants in matters concerning their biological nature?» warns Michael Sandel, professor of political philosophy, of the impending catastrophe [9].

More generally, the integration of transhumanist technologies into everyday life will lead to profound social changes. The process of «human enhancement» through biotechnology, neuro engineering or genetic engineering may lead to the emergence of new social classes based on the degree of technological modification.

The scientific community faces questions of responsibility for the results of its research. The development and implementation of technologies that affect human nature require consideration of long-term consequences and potential risks. «Science cannot confine itself to the pursuit of knowledge; it must also consider the moral implications of its discoveries» stresses Karl Popper in his writings.

Equitable access to enhancement technologies is an important aspect of the debate. Issues of fairness may be exacerbated if only the wealthy segments of society can afford transhumanist enhancements. «Justice requires that we develop policies that ensure universal access to the benefits of transhumanism while minimizing social stratification» emphasizes economist and philosopher Amartya Sen.

The development of transhuman technologies also requires a new approach to legislation. There is a need for an international legal framework to regulate the research and application of enhancement technologies.

Law professor Lawrence Lessig emphasizes that legal systems need to be ahead of technological progress, not behind it, thereby contributing to the many challenges posed by technological development.

The prospects of transhumanism may seem promising, but they require thorough moral and ethical reflection and a rigorous legal framework. This is the only way to ensure that the development of new technologies contributes to the common good and does not deepen existing social divisions.

In the context of moral and ethical discussions on transhumanism, particular attention should be paid to the impact of technology on personal autonomy and freedom of choice. Technological enhancement of human beings should not lead to loss of individuality or subjection to technological norms without personal consent.

Martha Nussbaum writes that self-determination and personal autonomy are fundamental principles that should guide the development and application of transhumanist technologies.

The ethical dialogue also includes debates about how far we should go in altering the 'natural' human condition. Some philosophers and ethologists argue that some aspects of human life should remain unaffected by technological intervention.

Bioethicist Leon Kass emphasizes the need to distinguish between enhancements that serve human health and well-being and enhancements that erode the human essence [8].

Transhumanism faces objections from various cultural and religious traditions that emphasize the value of human life in its traditional form and concerns about «playing God».

The Dalai Lama points out that we must be sensitive to cultural diversity and religious» beliefs that may be incompatible with transhumanist goals.

Given the potentially radical changes that could be made to human nature, it is important to intensify the dialogue on the «ethics of responsibility». Scientists and technologists should not only strive to innovate, but also actively engage in discussions about the social and ethical implications of their developments.

Transhumanism offers unprecedented opportunities for humanity, but it also raises complex ethical questions. The development and application of transhuman technologies requires a thoughtful approach that considers both technical possibilities and moral constraints. Ethical discourse in the field of transhumanism is integral to its future, and each new step in this direction must be accompanied by deep moral and ethical reflection [7].

As transhuman technologies continue to develop, it is crucial to involve public opinion in the decision-making process. Understanding and accommodating diverse views and opinions not only ensures broad support for scientific and technological initiatives, but also facilitates the development of ethical solutions that take into account the interests of different groups.

Jürgen Habermas believes that involving the public in the process of discussing transhuman technologies promotes democratic control and increases the transparency of scientific research [4].

The regulation of transhuman technologies should be transparent and multidisciplinary. This requires the participation not only of bioethicists and scientists, but also of lawyers, politicians and public figures. Transparency of processes is important to ensure public trust and to prevent abuse.

Examining the philosophical foundations of transhumanism allows for a deeper understanding of its goals and premises. It is important to analyze what philosophical ideas underlie the quest for human enhancement and how these ideas relate to traditional ethical theories. Predicting the future of transhumanism involves assessing both technological advances and ethical challenges. Is it possible to apply technology in a realistic and balanced way in accordance with ethical principles? How can society prepare for possible future scenarios?

Transhumanism offers promising opportunities for human development, but these opportunities are accompanied by serious ethical dilemmas. It is important that the scientific community, policy makers and society at large actively engage in discussions about the future of transhumanism to ensure that its development is conducted responsibly, taking into account all possible risks and consequences. This will not only promote safer and more equitable progress, but also help to preserve fundamental human values and dignity.

To maintain ethical standards in transhumanism, it is necessary to develop and integrate technologies that independently incorporate ethical algorithms into their work. This means creating systems that can assess the possible ethical consequences of their actions and adapt them according to established standards.

Ensuring public participation in ethical decision-making in the field of transhumanism will not only help to increase public trust, but also promote a greater diversity of opinions and approaches to solving complex ethical problems [6].

The inclusion of ethics courses in training programs for engineers, programmers and other technology professionals is becoming increasingly important. This training will

help future professionals to better understand the social and ethical implications of their designs.

Transhumanist technologies know no borders and therefore require a global approach to regulation. International cooperation can help to establish common standards and principles that are sensitive to different cultures and peoples.

Policies to manage the development of transhumanism must take into account not only technological capabilities, but also deep ethical, cultural and social dimensions. The balance between innovation and ethical constraints will determine the future of humanity in the context of transhuman development. A responsible approach to the introduction and development of new technologies will ensure that their application contributes to improving the quality of life of all people, while preserving fundamental human values and dignity.

For the effective implementation of transhumanist technologies, it is essential that regulatory systems and normative instruments are flexible enough to adapt to the rapidly changing technological landscape. Ethical adaptation must go hand in hand with innovation, ensuring that new technologies are consistent with the basic moral principles of society.

The development of sustainable ethical standards that can be applied in different situations and adapted to different technological realities is a key element in the management of transhuman innovation. Standards must be clear, understandable and universally accepted to ensure their international applicability.

Public awareness and understanding of the ethical dimensions of transhumanism play an important role in shaping approaches to innovation. It is important to promote and develop ethical awareness among citizens so that everyone can make informed choices and participate in public debates on the direction of technological progress.

Conclusions

In formulating ethical principles of transhumanism, it is crucial to take into account both global and local cultural and moral norms. This will ensure broad acceptance and respect for the differences that exist in the worldviews of different societies.

Transhumanism is a broad and multifaceted field that requires a balanced and multidimensional approach to ethical issues. It is necessary to consider not only the opportunities offered by new technologies, but also the ethical risks they pose. Creating a sustainable ethical environment in which transhuman technologies can be safely and equitably integrated into society is key to a successful and responsible future for humanity.

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MODERN PROBLEMS OF PHILOLOGY AND LINGUISTICS

FRAME ANALYSIS OF "MA'NAVIYAT" CONCEPT IN THE UZBEK LANGUAGE

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Annotatsiya. Ushbu maqolada o'zbek tilidagi "ma'naviyat" semantik maydoni tahlil qilinib, uning doirasi, kognitiv tahlili ko'rib chiqiladi. Idrok insonning "ma'naviyat" tushunchasini anglashi va idrok etishi sifatida turli olimlar tomonidan tahlil qilingan.

Kalit so'zlar: *Semantik maydon, freym tahlil, kognitiv tahlil, tushuncha, kognitiv xarita, kognitiv metafora.*

Аннотация. В данной статье анализируется семантическое поле «маънавият» в узбекском языке и рассматривается его рамка, когнитивный анализ. Познание как понимание и восприятие человеком понятия «маънавият» анализировалось различными учеными.

Ключевые слова. *Семантическое поле, фреймовый анализ, когнитивный анализ, познание, когнитивная карта, когнитивная метафора.*

Abstract. This article analyzes semantic field of "ma'naviyat" in Uzbek language and discusses its frame, cognitiv analysis. Cognition as a human's understanding

and perception of the concept "ma'naviyat" has been analyzed by various scholars.

Keywords: *Semantic field, frame analysis, cognitive analysis, cognition, cognitive map, cognitive metaphor.*

Introduction

In order to determine the different aspects of the semantic field of spirituality in the compared languages, it is necessary to analyze its linguocognitive features. We know that cognitive linguistics has methods to fully understand this subject. These are:

1) frame analysis;
2) cognitive metaphor;
3) cognitive map.

When we analyze nominative units within any semantic field, we need to create its frame. A frame is the scope of knowledge gained from experiences in the human mind and the process by which a person receives, perceives and applies information within this frame. A person uses his experience and knowledge, that is, the frames of his memory, to understand certain events. In linguistics given different theories based on frame to the term as follows definition can be given:

1) frame is cognitive language event;
2) frame summarizes details about object;
3) knowledge about object and subject relationship;
4) mutual social relationships set.

Literature Review

According to professor E. Begmatov, systematicity in the lexicon is not as obvious as in other levels of the language. Lexical units are much more numerous than phonemes and morphemes and have periodic instability. Therefore, it is not possible to identify and research the lexicon in its entirety. Nevertheless, there are certain methods and methods of scientific classification of the lexical system. Professor Sh. Rakhmatullayev made reasonable conclusions about the semantic nature of phrases, internal syntactic construction, paradigmatic forms, syntactic environment and variation [2, 5-30]. We can say that these, in turn, together with other scientific views served as an impetus for the development of the third direction of systemic structural linguistics.

D.U. Ashurova defines the frame analysis and the term as follows: in the process of perception, special language forms take a special place, with their help, the structure of knowledge is prepared, and they are called frames [3, 53-58]. There are also terms such as scheme, scenario, plan and so on. Despite some minor differences, all these terms give rise to the idea that knowledge is not a collection of isolated facts, but a complex hierarchical system, a cognitive model of information representation.

Research Methodology

The study of the relationship between language structure and their mental models is called frame analysis. Text frame analysis is a step-by-step process that includes:

a) search for verbal signals representing conceptually important frames;

b) finding their frame semantics, interdependence, connections;

d) activation of knowledge structure, contextual and problem tasks;

e) conceptualization of information in the form of text (generalization, drawing conclusions, creating knowledge based on verbal signals and their frames).

At this point, we will analyze the reception of the lexeme of spirituality in the Uzbek cognitive world, its meaning in connection with the realities of life stored in the memory of members of the society, and its reflection using different language units. Spirituality is considered a primary concept for the Uzbek people, and it is integrally manifested in the annals of the year, in the profession, in every aspect of the life of the society. Concepts specific to the construction of statehood related to spirituality: *Respublika Ma'naviyat va ma'rifat markazi va xududiy bo'linmalari; hokimiyat tizimida yoshlar siyosati va ma'naviy-ma'rifiy ishlar bo'yicha viloyat, shahar va tuman hokim o'rinbosari lavozimi; Oliy o'quv yurtlarida yoshlar masalalari va ma'naviy-ma'rifiy ishlar bo'yicha rektor o'rinbosari, ma'naviy-ma'rifiy ishlar departamenti, ma'naviy-ma'rifiy ishlar bo'yicha dekan o'rinbosari lavozimlari; maktablarda va ijod uylarida ijodiy-madaniy masalalar bo'yicha targ'ibotchi [2].*

Annals of independence related to spirituality: 2004 - Year of Kindness, 2010 - Year of Perfect Generation, 2012 - Year of Strong Family, 2020 - Year of Science, Enlightenment and Development of Digital Economy, etc. These words clearly indicate the positive meaning of "spirituality" that the frame and thought form.

The units of the semantic field of spirituality form macro groups of spirituality and non-spirituality with "positive" and "negative" meanings according to their differential sign, and these units are divided into micro groups. The lexemes of this group are combined on the basis of their unifying and differentiating themes and form positive and negative thematic groups of the field of "spirituality".

The frame "ma'naviyat" consists of the following: *mandatory* (participation required) and *optional* (participation is not mandatory) features. Mandatory features of the frame - when expressing linguistic reality, the parts of the language unit and the parts of the semantic structure are interrelated. And optional properties perform the function of clarification in the frame structure.

The main purpose of frame analysis is that the concept given in the language appears in our mind as a whole situation or situation, that is, it rejects that only one concept enters our mind:

1. Spirituality is a means of uniting citizens, realizing national identity and awakening the cultural memory of generations through the high moral ideals of society.

2. Spirituality forms a model of collective action that is important for the benefit of society and the state.

3. Spirituality is a necessary link between the past, present and future, a set of behavioral norms.

4. Spirituality is a person's personal spiritual improvement

5. Spirituality is developed on the basis of religious concepts and religious beliefs.

Analysis and Results

Mandatory and non-mandatory features in frame analysis also create certain "cells" (slots) in the structure of the frame, and in the process of perceiving the object in reality,

these cells must be filled with appropriate examples and information. The words in the horizontal direction are called slots, and when we hear the main word (spiritual person), the first thing that comes to our mind is the word that comes close to this word (value, confidence, personal improvement...) or the word that expresses these concepts. sounds will come. At the same time, the words in the vertical line are called sub slots (small cells), and they are the smallest of the slot, that is, the words that appear in our brain after the slot.

As a result of creating a frame analysis, cognitive metaphor and cognitive map of the concept of spirituality, the structure of the concept in the brain, the realization of the concept and its use in language take place. We know that we cannot understand the meaning of an abstract concept in a wider sense until we analyze it or analyze it through the auxiliary connectors of the concept, i.e. works of art, proverbs, texts, dictionaries and other texts. The external structure of the concept is the state from meaning to form. The linguistic status of such a concept consists of a grammatical form, a lexical form, and a syntactic form. A cognitive map covers almost all features in this linguistic analysis.

In the first half of the 19th century, the concept of "ma'naviyat" was directly related to religious and church life. Spirituality as a multi-component meta-value undergoes changes during the development of civilization. During the existence of this concept for two hundred years, a semantic shift (change) took place, the meaning of connection with religious beliefs and morality decreased significantly, and in the 20th century, the secular interpretation of spirituality began to dominate, as a person's life experience began to be accepted. However, the understanding of the concept of "ma'naviyat" refers to the mental and intellectual state of a person associated with the desire to know and identify with a certain higher reality. In the scientific discourse, spirituality is considered as a process of internal development of a person, work on oneself, a way to overcome passions and selfish desires that interfere with life, a spiritual way to find the essence of life and the universe, existence and its meaning. A person's spirituality is the first contact with the truth and the continuity of goodness, spirituality allows a person to establish a relationship with the whole world; this is a very important deontological task of spirituality. A number of researchers take spirituality as a cognitive metaphor synonymous with the concept of "social mentality", and understand it as the culture, social code of a certain ethnic group or nation. As a meta-value, it is understood that spirituality causes a person to go beyond the limits of his personal existence, striving to meet the needs of the society in which he lives. The differential feature of the semantic field of spirituality is that orientation to the interests of the general society is an integral sign of spirituality. Therefore, the moral pluralism established in multi-ethnic developed countries changes the meaning of spirituality and results in atomized individuals, who lose their sense of patriotism, easy prey for external political control system.

Conclusions

In linguistics, there are the following structures of the cognitive map:
1) meanings in the dictionary and comments in lexicology;
2) paradigmatic connectors;

3) syntagmatic connectives;

4) auxiliary connectors;

5) phraseological combinations;

6) natural conceptuality of the concept.

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THE CONCEPT OF "PRIDE" IN ENGLISH POETIC DISCOURSE

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Annotatsiya: Ushbu maqola ingliz she'riyatida XVI - XX asrlar boshlariga qadar "g'urur" kontseptsiyasining semantikasini o'rganadi. U she'riyatda g'ururning qanday tasvirlanganligini o'rganadi, uning turli ma'nolari va kontextdagi boshqa so'zlar bilan aloqalarini tahlil qiladi. G'ururning ijobiy va salbiy kontekstlarini qamrab, uning she'riyatdagi diniy, ijtimoiy va shaxsiy mavzular bilan bog'lanishini kuzatadi.

Kalit so'zlar: Ingliz she'riyati, semantika, faxr, ijobiy kontekst, salbiy kontekst, diniy diskurs, uyat, xavfli g'urur, ijtimoiy holat, jins aspekti, kibir, o'zini baholash, ma'nolar, metafora, tabiiy dunyo, jamiyatning ko'rinishi, Xristiyan etikasi, ikki ko'rinishli dunyoqarash, leksik manbalari.

Аннотация: В этой статье исследуется семантика концепции "гордость" в английской поэзии с XVI по начало XX века. Она погружается в то, как гордость изображается в поэтическом дискурсе, анализируя её различные коннотации и ассоциации. Обсуждение охватывает как положительные, так и отрицательные контексты, в которых гордость изображается, прослеживая её связи с религиозными, социальными и личными темами в поэтических произведениях.

Ключевые слова: английская поэзия, семантика, гордость, положительный контекст, отрицательный контекст, религиозный дискурс, грех, семь смертных грехов, демоническое проявление, разрушительная гордость, порок, социальный статус, гендерный аспект, аррогантный самооценка, коннотации, метафора, природный мир, общественная перспектива, христианская этика, двойная перспектива, лексические источники.

Abstract. This article explores the semantics of the concept of "pride" in English poetry spanning from the 16th to the early 20th century. It delves into how pride is depicted in poetic discourse, analyzing its various connotations and associations. The discussion covers both positive and negative contexts in which pride is portrayed, tracing its connections to religious, social, and personal themes within poetic works.

Keywords: English poetry, semantics, pride, positive context, negative context, religious discourse, sin, seven deadly sins, demonic manifestation, destructive pride, vice, social status, gender aspect, arrogance, self-worth, connotations, metaphor, natural world, societal perspective, Christian ethics, dual perspective, lexical sources.

Introduction

Texts of English poetry from the 16th to the early 20th century served as material for studying the semantics of the concept of "pride". The concept of "pride" in English poetic discourse is used both in positive and negative contexts. However, it should be noted that for English poetic consciousness, a negative attitude towards pride is relevant. Among the analyzed texts, the semantic feature "haughty behavior, arrogance" predominates. A small number of words uses (8 examples) were identified for the feature marked in dictionary definitions as "self-respect, dignity".

In the examined texts of English poetry, the phrase "Satanic pride" is encountered, which is associated with the understanding of pride in religious discourse: "And kin to Milton through his Satan's pride"; "The Rhine was red with human blood, / The Danube rolled a purple tide; / On the Euphrates Satan stood / And over Asia stretched his pride"; "His locked, letter'd, braw brass-collar, / Show'd him the gentleman an' scholar / But tho' he was o' high degree, / The fient a pride na pride had he, / But wad hae spent an hour caressan" [7].

The assertion that pride is a sin traces back to the concept of the seven deadly sins in Christianity, to which pride belongs: "Wouldst tell me I must brook the rod, / And chastisement of human pride', / That pride, the sin of devils,"; "And the Devil did grin, for his darling sin / Is pride that apes humility" [1].

Literary Review

Perceiving pride as a demonic manifestation probably explains the appearance of epithets such as "dark", "gloomy", "serpentine" pride: "And, O thou Lamb of God, whom I / Slew in my dark self-righteous pride, / Art thou returned to Albion's land, / And is Jerusalem thy Bride?"; "By a Premier's sullen pride, I Louring on the changing tide!"; "Back on herself her serpent pride had curl'd" [5].

And since "pride brings about God's just punishment and from the monster of pride, as it were from certain roots, all evil arises", the appearance of such a semantic component as "destructive pride" is quite understandable: "But, since His own Domestic Birds have try'd / The dire Effects of their destructive Pride".

Pride is also considered a vice: "What the weak head with strongest bias rules! Is Pride, the never-failing vice of fools" [2].

In everyday consciousness, the manifestation of pride is often associated with cruelty, despotism, audacity, arrogance. This is indicated by negatively evaluated adjectives in such phrases as "tyrant pride", "haughty pride", "presumptuous pride", "self-contented pride", "tumid pride", "lofty pride". For example: "Twelve ridges of stone frown over all the earth in tyrant pride"; "The Sun that overhangs yon moors, / Out-spreading far and wide, / Where hundreds labors to support / A haughty lordling's pride'; "And every dark pursuit allied / To curious and presumptuous pride"; "Men, women, children, slunk away, / Whispering with self-contented pride, / Which half suspects its own base lie"; "To compare, in thy tumid pride, with me?"; "that rob sense from the hart: / he louely pleasance and the lofty pride".

Analysis and Results

Analysis of the contextual use of the concept of "pride" shows that the linguistic image of pride in the English language is connotatively associated with the idea of

loneliness: "With indignation turned himself away, / And with the food of pride sustained his soul I In solitude"; "My shame in crowds, my solitary pride". The meanings of the lexeme "pride", such as "self-respect" and "dignity", are represented by phrases with positive connotations, for example, moral pride, honest pride, honor's pride, heroic pride, stainless pride.

Pride is endowed with a class-social or status-political character through definitions such as "royal pride", "aristocratic pride", "clerical pride". It should be noted that both aristocracy, as the highest feudal estate, and the clergy, starting from the Middle Ages, belonged to the highest social estates of Western European, including English, society. From this logically stems the appearance of appellatives specifying the lexeme with the meaning of "pride" in such lexical constructs as "royal" = "noble" / purple pride or noble pride. It is known that purple was the exclusive prerogative of imperial power, serving as its symbol both in the Late Roman and Byzantine Empires, whose political rituals later became a model for European monarchies. Let's consider the following examples: "Neglectful of wealth, on the margin of it lies; I am poor in fortune's smile, / Yet who can more nobly pride"; "And thou shalt talk, in our fire-side's recess, / Of purple pride, that scowls on wretchedness"; "The purple pride! Which on thy soft cheek for complexion dwells / In my love's veins thou hast too grossly dy'd"; [8] "ay, hide / In the dust thy purple pride"; "On one side swelled aristocratic Pride"; "Of peremptory feature, cleric pride, Whose reddening cheek no contradiction bears" [1].

In English poetic texts, there are also examples where pride becomes characteristic of youth: "While, to swell my young pride, such applauses resounded"; "And he named with his boyish pride The heroes, the noble throng"; "I am not as these are" the poet saith / In youth's pride".
Presumably, the arrogance associated with social inexperience and youthful maximalism created the perception among others of "excessive pride" not corresponding to the socio-age status.

In English poetic consciousness, female pride is also emphasized: "I calmed her fears, and she was calm, / And told her love with virgin pride"; "With maiden pride the maid concealed"; "The false Duessa leaving noxious Night, / Returned to stately palace of dame Pride"; "The pride of Ladies, and the worth of knights"; "The gentle lady turned her eyes away, / Grieving that he such sacrifice should make / And kill his falcon for a woman's sake, / Yet feeling in her heart a woman's pride, / That nothing she could ask for was denied". Obviously, phrases such as "pride of Ladies", "woman's pride", "dame Pride", "maiden pride" have positive connotations, while the lexeme "pride" itself is predominantly presented in English poetic texts with negative characteristics. Such pride aligns with the notion of honor and dignity. The presence of pride in a woman is encouraged both in interaction with the opposite sex and in appearance (proud posture, proud gait): "An Amaout girl, in costly garb, walks with graceful pride" [4].

Discussion

The manifestation of pride in a positive sense implies the subject's awareness of their value as a human being, or as a member of a certain social group. This property also implies the existence of ideas about how the subject should behave in order not to

lose it (value). The awareness of one's value is manifested externally: "A pride not in your beauty, but your conduct"; "Looked with pride upon the beauty / Of his tall and graceful figure".

With this property, the noun "pride" is also associated with its ability to be used in relation to animals: "Behind them followed the watch-dog, / Patient, full of importance, and grand in the pride of his instinct". The subject of pride can be not only a person: "He was a cold, good, honorable man, Proud of his birth, and proud of everything"; "He was proud of the book", but also a nation, a people, for example: "His Country's pride, he came down to the country"; "A bowl, a bowl of double measure, Cries Benjamin", "a draught of length, To Nelson, England's pride and treasure"; "Thames, proud of thee, and of his fate In entertaining late The choice of Europe's pride-. The nimble French"; "Thus Israel safe from the Egyptian's pride". "The cumbrous pomp of Saxon pride, accords not with the freeborn soul, which loves the mountain's craggy side, and seeks the rocks where billows roll".

Often poets attribute human qualities - pride - to the natural world. In English poetry, pride is attributed to flowers (rose's pride, tulip's pride), and even to the moon. For example: "As a white rose in its pride, By the wind in summer-tide Tossed and loosened from the branch"; "And sun this frozen side, Bring hither back the robin's call, Bring back the tulip's pride"; "I stood tip-toe upon a little hill, The air was cooling, and so very still, That the sweet buds which with a modest pride Pull droopingly, in slanting curve aside"; "And more of beautiful and strange beside: For on a silken couch of rosy pride"; "Then the moon, in all her pride, Like a spirit glorified, Filled and overflowed the night With revelations of her light".

Contextual uses show that pride, in the sense of "what one takes pride in", i.e., the object of pride, can also be a belonging of the world surrounding a person. For example, a theater - the pride of a city, the Pantheon - the pride of Rome. "Shiver upon thee - sanctuary and home Of Art and Piety - Pantheon! -pride of Rome!"; "In one dread night our city saw, and sighed, Bowed to the dust, the Drama's tower of pride-, In one short hour beheld the blazing fane, Apollo sink, and Shakespeare cease to reign". Phrases like summer pride, gardener's pride are also common: "Even thus a lovely rose I've viewed In summer-swelling pride"; "The wild rose and the barberry thorn Hung out their summer pride Where now on heated pavements worn"; "As late each flower that sweetest blows I plucked, the Garden's pride Within the petals of a Rose A sleeping Love I spied"; "Look but at the gardener's pride — How he glories, when he sees Roses, lilies, side by side, Violets in families!"; "Three winters cold Have from the forests shook three summers' pride"; "Pride of the Vale! thy useful streams supply The scattered cots and peaceful hamlet nigh"; "O spare the dear blossom, ye orient breezes, With chill, hoary wing as ye usher the dawn! And far be thou distant, thou reptile that seizes, The verdure and pride of the garden or lawn!"; "Sweet brushing the dew from the brown heather bells, Her colors betrayed her on yon mossy fells; Her plumage outlasted the pride o' the spring, And O! as she wantoned gay on the wing" [4].

Analysis of poetic texts shows that the linguistic image of pride is connotatively associated with the idea of height, inaccessibility. Those who display pride behave arrogantly, looking down on others. In English poetry, there are often examples where this human behavior is metaphorically applied to the natural world. For example, "pride

of columns", "pride of the towering Egyptian pyramids": "The mouldering marble lasts its day, Yet falls at length an useless fane; To Ruin's ruthless fangs a prey, The wrecks of pillar'd Pride remain"; "Los beheld undaunted; furious His heaved hammer - he swung it round & at one blow, In unpitying ruin driving down the pyramids of pride" [3].

It's interesting to note the emergence of the expression "pride of place" in the English language, which means the highest point of a falcon's flight (a term of falconry), and now metaphorically refers to the highest position or priority. For example: "An eagle towering in his pride of place Was by a mousing owl hawk'd at and killed". This hunting expression is considered outdated now. In contemporary English, this idiom means "a position of highest importance or prominence". In humans, all emotions are localized in the soul, heart, or chest. English poetic consciousness places pride in the heart. For example: "but this ne'er nursed Pride in his heavenly bosom, in whose core No thought, save for his Maker's service"; "Now let it tear thy beard in idle grief: Thy pride of heart, thy bride for Osman's bed, She, whom thy Sultan had but seen to wed, Thy Daughter's dead!" [6]; "I had the pride of honour, of your honour, Deep at my heart"; "Suddenly breaking the silence, the diligent scribe interrupting, Spake, in the pride of his heart, Miles Standish the Captain of Plymouth"; "The gentle lady turned her eyes away, Grieving that he such sacrifice should make And kill his falcon for a woman's sake, Yet feeling in her heart a woman's pride, That nothing she could ask for was denied"; "And now his heart Distends with pride"; "The Rhine! the Rhine! a blessing on the Rhine! Oh, the pride of the German heart in this noble river!"; "but your heart Is cramm'd with arrogancy, spleen, and pride"; "Faire sister, ill beseemes it to upbraid A doleful heart with so disdainful pride"; "The strong spring wind blows notes of praise, And hallowing pride of heart" [2].

The biblical view of pride as a sin, the consequence of which will be downfall and disgrace, is also reflected in English poetic texts, for example: "In vain he struggles, the Fates behind him press, And clamorous hell yawns for her prey below: How fallen That, whose pride late scaled the skies!".

Conclusions

In English poetry, there is a connection between pride and shame as two opposing emotions, as well as a Christian view of pride leading to shame: "At length the bride Pressed her hand hard against her side, And trembling between shame and pride"; "Thou their fair life, and they thy fouler grave; Thou loathed in their shame, they in thy pride"; "How vicious hearts fume frenzy to the brain! Parts push us on to Pride, and Pride to Shame". In English poetic texts, we often encounter the stable phrase "false pride", while the phrase "false shame" is also used: "If still, from false pride, Your pangs she deride, This whimsical virgin forget; Some other admire, Who will melt with your fire, And laugh at the little coquette".

The contextual usage thus shows that there's a dual perspective on pride in society. On one hand, there's the religious view of this feeling, and on the other hand, there's the everyday attitude towards pride. Christian ethics typically condemn manifestations of pride as sin. In the English linguistic consciousness, the concept of "pride" has two main meanings: pride as arrogance and pride as a sense of self-worth. These meanings

are also reflected in dictionary definitions. In poetic texts, pride is presented as both an emotion and an object of pride. An analysis of the contextual use of this concept allows for the identification of its social dependence and gender aspect, which may not be reflected in lexical sources.

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CLASSIFIED STUDY ON THE DIPLOMATIC LEXICAL UNITS

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Annotatsiya. Maqolada diplomatik terminologiyaning paydo bo'lishi va rivojlanish tarixi, xalqaro munosabatlar tizimining shakllanishi, diplomatik terminlarning o'zlashish orqali tilga kirib kelishi, diplomatik tilning terminologik tizimiga XX asrda xalqaro til maqomini olgan ingliz tilining ta'siri haqida gap boradi. Diplomatik terminologiya sohasida ilmiy tadqiqot olib borgan olimlarning ilmiy-nazariy qarashlari hamda ularning diplomatik terminlarni tadqiqiga tasnifiy va tavsifiy yondashuvlari yoritib berilgan.

Kalit so'zlar: diplomatiya sohasi, diplomatik leksik birliklar, diplomatik termin, terminologiya, diplomatiya tili, lug'at, o'zlashma so'zlar, termin.

Аннотация. В статье рассматриваются историческое возникновение и этапы развития дипломатической терминологии, становление системы международных отношений, внедрение дипломатических терминов в язык посредством заимствований, а также влияние английского языка, получившего статус международного языка в XX века, о терминологической системе дипломатического языка. Освещены научно-теоретические взгляды ученых, проводивших научные исследования в области дипломатической терминологии, их классификация и описательные подходы к изучению дипломатических терминов.

Ключевые слова: область дипломатии, дипломатические лексические единицы, дипломатический термин, терминология, язык дипломатии, лексика, заимствованные слова, термин.

Abstract. This article highlights the history of the emergence and development of diplomatic terminology, the formation of the system of international relations, the introduction of diplomatic terms into the language through assimilation, the influence of English, which gained the status of an international language in the 20th century, on the terminological system of the diplomatic language. Scientific-theoretical views of scientists who conducted scientific research in the field of diplomatic terminology and their classification and descriptive approaches to the study of diplomatic terms are covered in the article.

Keywords: field of diplomacy, lexical units of diplomacy, diplomacy term, terminology, language of diplomacy, vocabulary, borrowed words, term.

Introduction

It is known that diplomacy appeared in ancient times along with the development of the state as a social institution. Diplomatic activity of ancient politics was manifested in intense negotiations, exchange of ambassadors, convening of interstate meetings,

conclusion of defense and offensive alliance agreements. [1]. Organizations, methods and tools of diplomacy have gradually developed in this way, including its language and special terminology.

Gradually, many special "international" terms began to appear, such as "negotiations", "truce", "peace treatment", and they had to be understood in the same way by the contracting parties. It required a deep study of the terms related to the field of diplomacy from the point of view of linguistics.

The history of the emergence and development of diplomatic terminology is related to such extra linguistic categories as the formation of the system of international relations and the emergence of diplomacy.

Literature Review and Research Methodology

As we mentioned above, the terms of diplomatic speech has begun to appear in the process of waging wars, signing treatments and agreements, since the moment of the emergence of government system.

Terminology in the field of international relations has been constantly improving with the development of the language. Over time, the classification of diplomatic terms is also enhancing.

Since the original language of diplomacy was Latin, most international terms in the field of diplomacy are derived from Latin or French.

In the 20th century, the terminological system of the diplomatic language began to be influenced by the English language, which received the status of an international language at that time. German, Russian and Uzbek languages are no exception to the development and continuity of the diplomatic system within a language. So, most of the diplomatic terms in these languages are borrowings from the above mentioned languages. Acquisitions in the language of diplomacy can be divided into two types: Private acquisitions; copyrighted words [2].

Among the private borrowings from Latin and French in diplomatic practice, today there are the following lexemes: attaché, diplomat, demarche, agreement, communiqué, consul and etc.

It is known that the lexicon derived from the Latin language was the majority not only in the German language, but also in other languages. These terms are mainly expressed in the texts of verbal notes, where borrowing is clearly visible. Including de-facto, persona non grata, status quo, modus vivendi - these terms are not assimilated during borrowing.

Some terms have German and Russian versions, such as Veto, memorandum, diplomatic corps and so on.

It should be said that there is a tendency to replace borrowed words with real German, Russian and Uzbek terms in modern German: Lettre de creance - Beglaubigungsschreiben; верительная грамота; credentials, Ambassadeur - Botschafter; посоль; ambassador and others. In this regard, we emphasize the existence of synonymy inherent in diplomatic terminology. For example, Memorandum – Denkschrift.

Often, dictionaries do not provide a clear definition of whether a certain term belongs to the terminological system of a certain field of activity, which indicates that the

boundaries between them are blurred. An example of this is the documents created as a result of negotiations, for example: contract, agreement, protocol and right.

The lexical-semantic component of the language system of diplomacy and international relations is a special dictionary (Fachwörter), which is actually terminological and non-terminological (for example, a professional dictionary or only in a certain context their terminological meaning half) is divided into terms.

According to K. Heller, special diplomatic terminology is divided into: general usage (Diplomatie, Diplomat, Botschaft usw); narrow specialty (Exquatur, Botschafterebene, Empfangsstaat etc.); transition group (Ceremonial, Consular agent, Agreement etc) [3].

As it exists in any living language system, there are no clear boundaries between diplomatic terms in this category.

It should also be noted that despite the fact that the terms and concepts of the diplomatic field remain almost unchanged in comparison with other fields of science, diplomatic terminology is not static at all.

In her work, L. G. Farafonova cites the division of diplomatic terminology according to the paradigmatic principle and emphasizes the following terminological classes or subsystems: Individuals with official positions, diplomatic representatives (Gesandter, Gesandschaftsrat, der 3..., 2..., 1... Secretary, Attaché etc.); names of organizations and diplomatic missions (Auswärtiges Amt, Mission, Gesandtschaft, Botschaft etc.); names of documents and their components (Note, Verbalnote, Konzeption, Artikel usw.); terms denoting processes in diplomatic practice (akkreditieren, abberufen, bestellen, Beglaubigungsschreiben); diplomatic protocol terms (Sitzordnung, Tischordnung, Empfang etc.)[4].

Researchers consider consular terminology to be an independent terminological system that works alongside the diplomatic system of the language. This fact is related to the existence of a special consular service institute formed in accordance with the norms of international law [5].

Analysis and Results

Thus, consular terminology is characterized by a division into the same subsystems: persons with official positions, consular levels: (Consul, General Consul, Vice Consul, etc.); names of consular offices (Konsularabteilung, Konsulat, consularische Vertretung etc.); names of documents (Visum, Exequatur, Ernennungsschreiben etc.); lexicon from consular practice (konsularischer Schutz, Konsulargericht, Konsulargebühr usw.).

In the language of diplomacy, terms from other areas of society are also used, that is, diplomatic terms are related to the general vocabulary. The system of diplomatic terminology is distinguished by its polysemanticity: the term has a certain meaning in the language of diplomacy only when it is used in a certain context. N.L. Konstantinova calls this phenomenon semantic conversion, that is, terminology of words in common literary language [6]. For example, the terminology of etiquette words: Frühstück (breakfast), Tischordnung (seating order), Protokoll (protocol), Verordnung (position) is not a term in itself. These lexemes receive a terminological component only when they are used in diplomatic protocol.

M.D. Stepanova presents a classification of diplomatic terms of the modern German language, which, according to the author, are divided into simple, artificial and complex types [7].

Simple terms include word-forming nouns or root words: Diploma, Visa, Attache, Protocol, Consul. Artificial words formed by adding a suffix include the following terms: Diplomat, Diplomatie, Konsulat. Complex terms or compositions are represented by the following series of word combinations created using word combinations: Diplomatenpass, Diplomatenausweis, Dollardiplomatie, Geheimdiplomatie; Einreisevisum, Ausreisevisum, Durchreisevisum; Militärattache, Presseattache, Luftattache; Protokolabteilung [8].

A characteristic element of the lexical system of the language of diplomacy is the use of abbreviations. For example: UN, SCO, etc.

Recently, the following terminological units have appeared in the language of diplomacy: sanction, threat of sanctions, separatist, refugee avalanche, anti-state propaganda, etc.

International relations covers several areas of relations. As a result, we come across terms from other fields.

H.A. Saidov calls this effect "repetition of terms" [9].

T.A. Volkova introduces the concept of "speech formula" to define clichés and clichés, cliché terms in diplomatic texts and nomenclature names of international law, economics and other fields of activity are examples of this [10].

Conclusions

- World scientists have divided diplomatic terms into several groups according to their appropriation, paradigmatic principle, meaning, and the opinion of the author as a special type of diplomatic terminology, a field term. In our opinion, it is appropriate to classify diplomatic terms according to their usage in everyday life, in the immediate neighborhood, in a street, in trade, in everyday conversation;

- As we have seen, the terminology of the field of diplomacy consists of general and narrowly specialized terms with a very large scale in terms of origin, subject relevance and characteristics, but they also have a certain systematic connection and relationship, which makes us call this type of lexicon the language of diplomacy;

- The rapid development of international relations, changes in internal political regimes, positions of states in the foreign political arena, changes in the geopolitical situation among other phenomena, lead to the emergence of new lexical units in the diplomatic language.

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ACTUAL PROBLEMS OF NATURAL SCIENCES

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AGROBIOTECHNOLOGY OF CULTIVATION *RICINUS COMMUNIS* L. IN THE CONDITIONS OF THE BUKHARA

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Annotatsiya. Ushbu maqolada dorivor Kanakunjut (*Ricinus Communis L.*) ni Buxoro viloyati sharoitida yetishtirish agrobiotexnologiyasi ko'rib chiqilgan. Shuningdek, kanakunjut o'simligi urug'larining unuvchanligi laboratoriya va dala sharoitida amalga oshirilgan. *Chlorella vulgaris* suspenziyasi bilan ishlov berilgan tajriba variantidagi urug'lar unuvchanligi, nazoratga nisbatan 18-20% gacha yuqori bo'lishi aniqlangan. Shu bilan bir qatorda, *Ricinus Communis L.* o'simligining urug'i tarkibida, oqsil miqdori nazoratga nisbatan tajriba variantida 18 – 21% ga, moy miqdori esa 45-59 % ga yuqori bo'lishi aniqlangan.

Kalit so'zlar: Kanakunjut, Ricinus Communis L., dorivor, sutlamadoshlar oilasi, manzarali o'simlik, agrotexnika, alkaloidlar, sirka, izovalerian, saponin, nastoyka, lipaza fermenti, agrobiotexnologiya, Chlorella vulgaris.

Аннотация. В данной статье рассматривается агробиотехнология выращивания лекарственной клещевины в условиях Бухарской области. Кроме того, было проведено проращивание семян клещевины в лабораторных и полевых условиях. Установлено, что всхожесть семян в опытном варианте, обработанном суспензией хлореллы обыкновенной, была на 18-20% выше, чем в контрольном. В качестве альтернативы было обнаружено, что в семенах клещевины содержание белка в опытном варианте на 18-21% выше по сравнению с контролем, а содержание жира на 45-59% выше.

Ключевые слова: Клещевина обыкнове́нная, Ricinus Communis L., лекарственное, семейство молочайных, декоративное растение, агротехника, алкалоиды, уксус, изовалерианин, сапонин, настойка, фермент липаза, агробиотехнология, Chlorella vulgaris.

Abstract. This article discusses the agrobiotechnology of growing medicinal castor oil plant in the conditions of the Bukhara region. In addition, the

germination of castor seeds was carried out in laboratory and field conditions. It was found that the germination of seeds in the experimental version treated with a suspension of *Chlorella vulgaris* was 18-20% higher than in the control version. Alternatively, it was found that in castor seeds, the protein content in the experimental version is 18-21% higher compared to the control version, and the fat content is 45-59% higher.

Keywords: Castor oil plant, ricinus communis l., medicinal, euphorbiaceae family, ornamental plant, agrotechnics, alkaloids, vinegar, isovalerian, saponin, tincture, lipase enzyme, agrobiotechnology, Chlorella vulgaris.

Introduction

There are 10-12 thousand species of medicinal plants on Earth. And there are more than 1000 species whose pharmacological and medicinal properties have been studied. There are more than 750 types of medicinal plants. 112 types of medicinal plants are used in pharmaceuticals. The active substance of medicinal plants includes alkaloids, various glycosides, saponins, flavonoids, coumarins and other mucous substances. These can be vitamins, essential oils, resins and other compounds.

There are 2 types of descriptions of medicinal plants:

    1. Depending on the composition of the active ingredients.

    2. Depending on the pharmacological indications.

Medicinal and spicy plants are cultivated over large areas all over the world. At the same time, China (460 thousand hectares), India (300 thousand hectares), Hungary (34-40 thousand annually), Poland (30 thousand hectares), France (25 thousand hectares), Spain (19 thousand hectares), Germany (5.7 thousand hectares), Austria (4.3 thousand hectares) occupies a leading place. The species of medicinal plants of the family of Asteraceae and Lamiaceae grown in these fields provide supplies of high-quality raw materials for the pharmaceutical industry.

To a certain extent, this article will serve to implement the tasks defined by the decree of the President of the Republic of Uzbekistan dated November 26, 2020 No. PQ-4901 "On measures to expand the scale of scientific research on the cultivation and processing of medicinal plants, the establishment of their seed production" and other regulatory legal acts in this area [1].

This scientific research to a certain extent serves to implement the tasks set out in the resolutions of the President of the Republic of Uzbekistan dated May 20, 2022 № PP-251 "on measures to organize the widespread use of medicinal plants in cultivation and processing in culture and treatment" and other regulatory legal acts related to this area [2].

R.K. Singx, M.K. Gupta [4] and other scientists conducted a pharmacognostic study of the stem of the Ricinus communis plant. In this work, scientists are trying to generalize the pharmacognostic features of the Ricinus communis stem. Ash and extract values, chemical test, HPLC, histological color reactions, performed fluorescence analyses

Lin J.Y. and Lin S.Y. [5] conducted research on antitumor lectins isolated from Ricinus communis seeds.

Chigozie F. Uzoh; Joseph T. Nwabanne [6] noted that castor seed oil affects the type and concentration of the catalyst for the conversion of functional groups in the production of alkyd resin.

Botanical description: castor plant - *Ricinus Communis L.* is an annual herbaceous plant of the *Euphorbiaceae* family, reaching 2 m in height. The stem is branched. The leaf is large, glabrous, with 5-11 palmate lobes arranged in a row on a stem with a long stripe located in the center of the leaf plate. The leaf blades are oblong-ovate, with a serrated edge. The flowers are gathered in a brush. The flower is unisexual, the inflorescence is simple, the maternal flowers are located in the upper part of the calyx, and the paternal ones are in the lower part. The fruit is a three-seeded, triangular. As the capsula ripens, it cracks and the seeds are scattered [3].

Application: castor plant is used in medicine as a good laxative, in gynecology and eye diseases, for healing wounds, burn areas of the body, and the oil promotes hair growth. At low pressure, heating the oil to 240-300 °C, ricinoleic acid in the plant is cleaved to form ethanthol heptaldehyde and undecylenic acid. The resulting undecylenic acid has fungicidal (killing parasitic fungi) properties and is used to treat skin diseases – dermatoses, as well as psoriasis diseases [3].

Research Methodology

The plant castor ordinary (Ricinus communis L.) was taken as the object of the study. During the research, the agrobiotechnics of growing the castor plant in the conditions of the Bukhara region was studied. The research used laboratory and field experiments, phenological, morphological, biometric, environmental and statistical methods. Biometric measurements and analyses were performed in accordance with the generally accepted methods of Borisova, Beydeman [11], Panomarev, Zaytsev, [12] Yarash, Terexin and the requirements of state standards. The experiments were conducted at the scientific experimental site of the Faculty of Agronomy and Biotechnology of Bukhara State University.

Analysis and Results

Seed productivity: The seed productivity of a plant is a determining factor in the prospects of this species. To give a biological description of any species, it is necessary to determine its seed productivity. This indicates the possibility of using this species in nature and in conditions of acclimatization (introduction) [7].

The studied seed of the plant is egg-shaped, covered with a shiny hard flower skin of gray or light brown color, as well as reddish-brown spots, dots and stripes. There is a small white seedling at the tip of the seed. 1000 castor seeds weigh 800 g. The length of the seed of the largest is 16-21 mm, and the smallest is 6-8 mm.

Table 1. Morphological features of castor seeds.

Plant name	Seed color	Dimensions, (mm)		Seed mass, gr.
		length	width	
Ricinus Communis L.	Gray or light brown	16-21	6-8	800

In 2024, experiments were conducted to determine the effectiveness of germination of seeds of the castor plant (*Ricinus Communis L.*) in various nutrient media.

The experiments were carried out in laboratory conditions. First, the seeds of the plant were sorted and placed in Petri dishes of 25 pieces. As a control option, the selected container was sprayed with plain water, and in the experimental version, a suspension of Chlorella vulgaris in an amount of 10 ml was sprayed on seeds and placed in a thermostat, providing a temperature of 240 °C [9].

Figure 1. Germination of kanakunjut seeds in laboratory conditions in experimental versions of plain water (a) control and suspension of Chlorella vulgaris (B) on day 1.

Seed germination was checked every 2 days for 10 days. During the experiment, the seed germination rate and the timing of shell cracking are shown in Table 2.

According to the results of the experiment, it was found that the actual yield coefficient of the seeds of the castor plant (*Ricinus Communis L.*) in the experimental version is relatively higher (up to 20%) than in the control one. The quality indicators of the seeds are good, no damage by phytogenic and zoogenic organisms was observed.

Table 2. Seed germination rate and the timing of shell cracking.

№	Day	Control (water), %	Experiment (Chlorella vulgaris), %
1	2	-	-
2	4	8	16
3	6	20	40
4	8	48	64
5	10	72	92

In addition to proteins, carbohydrates, fats, Chlorella vulgaris suspension contains macro- and microelements, vitamins and important physiologically active substances that positively affect seed germination [10]. This is due to the fact that these substances are more effective in the fight, having a positive effect on the germination of castor seeds in the experimental version.

Figure 2. Germination of castor seeds in laboratory conditions in experimental versions of plain water (a) control and suspension of Chlorella vulgaris (B) on 8th day.

The experiment was conducted both in the laboratory and in the field in order to study the intensity of growth and development of the castor plant (*Ricinus Communis L*).

The seeds of the castor plant contain 40-56% insoluble oil, 14-17% protein substances, 0.1-1% ricin and nicotine alkaloids, 18-19% clematis, the enzyme lipase, a strong toxic protein substance – ricin and other substances [8].

It is known from the literature that the seeds of the castor plant contain 14-17% protein, during our study it was found that when studying the composition of the seeds of this castor plant, the protein content is 18-21%, and the oil content is 45-59%.

When growing castor plants in the field, an average of 35 thousand bush plants are grown on 1 hectare, feeding them during the growing season with 90-100 kg of nitrogen, 70 kg of phosphorus and 50 kg of potassium mineral fertilizers [3].
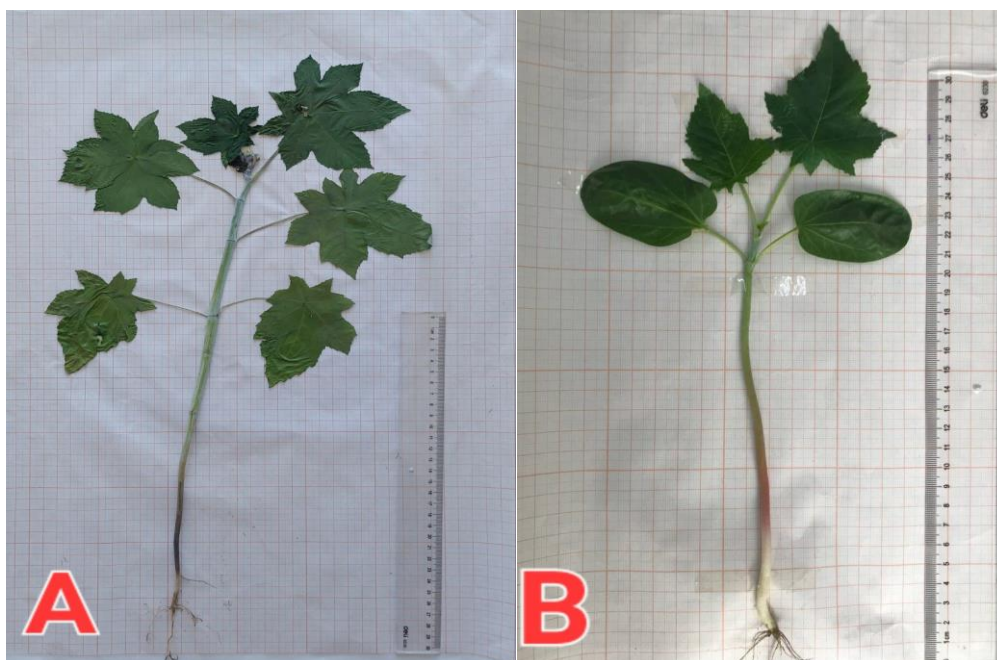

Figure 3. In the field, the castor plant was grown and cultivated in a suspension of Chlorella vulgaris (a) plain water (B) in control experimental variants.

In the field, castor seeds were sown by a control method on 1 m^2 of area and an experimental version on 1 m^2. It is established that the soil temperature in the conditions of the Bukhara region is 12-14°C. After seed germination, the control variant was fed in the traditional way at the virginyl, herbal, juvenile, immature, mature virginyl stages of vegetation. The plants of the experimental variant were fed with an additional suspension of Chlorella vulgaris. The result was very different from the control version in the number of pods and seeds of plants grown in the experimental version, as well as in size, speed of maturation and maturation, as well as a higher protein and fat content in the seeds.

Conclusions

Thus, the castor plant was studied in the conditions of the Bukhara region. Experiments conducted in laboratory and field conditions have shown that the germination of seeds treated with Chlorella vulgaris suspension, the rate of growth and development of the plant, the stages of vegetation of virginil, grass, juvenile, immaturity, mature virginil, the number and size of seeds and seeds, the rate of maturation and maturation, controlled by a high content of physiologically active substances in seeds. it was different from its variants. In particular, it was found that the germination of the seeds of the Ricinus Communis plant is up to 20% higher than the control one, the protein content in the seeds is 18-21%, and the oil is 45-59% higher.

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HYDROCHEMICAL COMPOSITION OF PONDS IN BAHA 'AL-DIN NAQSHBAND SHRINE, BIOTECHNOLOGY OF DETERMINATION AND PROPAGATION OF PHYTOPLAKTONS

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Annotatsiya. Ushbu maqolada Bahouddin Naqshband ziyoratgohida joylashgan hovuzlardagi fitoplanktonlar aniqlash va ularning gidrokimyoviy tarkibini o'rganish to'g'risida ma'lumotlar keltirilgan.

Kalit so'zlar: hovuzlar, fitoplankton, probirka, shtativ, eritmalar, distillangan suv, tekshiriluvchi suv, indikator.

Аннотация. В данной статье представлены сведения по идентификации фитопланктона в прудах, расположенных на территории святилища Бахауддина Накшбанда, и изучению их гидрохимического состава.

Ключевые слова: пруды, фитопланктон, пробирка, штатив, растворы, дистиллированная вода, тестируемая вода, индикатор.

Abstract. This article presents information on the identification of phytoplankton in the ponds located in the shrine of Baha 'al-Din Naqshband (Bahauddin Naqshband) and the study of their hydrochemical composition.

Keywords: ponds, phytoplankton, test tube, tripod, solutions, distilled water, tested water, indicator.

Introduction

The Baha 'al-Din Naqshband monument complex is located 10 km north-east of Bukhara and has been formed for many centuries. This complex was created after the

death of Baha'al-Din Naqshband. Baha 'al-Din Nqashband's full name is Baha 'al-Din Muhammad ibn Al-Bukhari lived in 1318-1389.

He was known by such names as "Shahi Naqshband" and "Khojayi Buzruk". Baha 'al-Din Naqshband is known as the seventh Pir Baha 'al-Din Naqshband memorial complex begins with a small domed gatehouse. In 2003, 28 verses of Surah Ra'd were written in calligraphy by the calligrapher Habibullah Salih in "Babi Islam", i.e. the Gate of Islam. The name of the masters and the year of construction of the building are written in the nastaq letter on the muqarnas part of the gate. A ruby inscription was written on the gate of the chillakhana in the complex. The mausoleum in the complex was arranged by the order of Abdulaziz Khan and was erected now. In 1544-1545, the largest building of the complex was built and in the rooms of the house, poems were written in nastalik script. There is a minaret in the memorial complex, the year 1885 is written on it. It is known that after the gate, there was a small mosque on the right and various buildings for pilgrims on the left. Along the way, on the left is the tomb of the Khans - Dakhmai Shahon. Dakhmai Shahon is rectangular, 2.5 m high, covered with gray marble. It has wonderful examples of marble carving and calligraphy.

Literature Review

Bukhara ponds were built in the memorial complexes of Bukhara and were used for drinking water, purification and various other purposes. Pools are mainly built in city squares, in front of mosques and madrasahs, in palace and palace gardens. In the 19th century, there were pools in the city of Bukhara in Labi pool, Boli pool, Sitorai Mokhi Khosa and other architectural complexes [1].

At the beginning of the 20th century, there were more than 100 ponds in the city of Bukhara, and there were more than 250 ponds around it. The pools were filled once every two weeks in the summer months, and the households were supplied with pool water by water bearer. Pools are mostly surrounded by marble or stones. There was a playground by the pool. There was a leak in the ponds, and water came from them. Pools are usually rectangular in shape and have 6-8 sides. A cistern was built over the pools of Khalifa Khudoidod and Eshoni Imla. By 1925, water pump (water dispenser) was installed in houses in Bukhara and water pipes were installed [1].

The size of Bukhara ponds is different, and the water capacity of all ponds reaches 82,580 cubic meters, i.e. 6,606,376 cubic meters [9]. Construction of ponds in the city has become important. The pools of Bukhara were built in the Central Asian style, and craftsmen made stone walkways from the bottom of the pool to its shore. The construction of the pool was mainly funded by the state, officials and local nobles. Pools are named after their builder or the place where they were built. Covering the Mir-Dostim pool with stone was built at the expense of the treasury at the initiative of Qazi Badruddin, a resident of the neighborhood [2]. Some of Bukhara's ponds have now been renovated.

Depletion of natural resources on Earth, environment, climate change providing the population with nutritious and safe food is one of the primary tasks. Phytoplankton in open water bodies it is important to identify the species and study the biotechnology of their breeding. Through photosynthesis, phytoplankton consume carbon dioxide on a scale equal to that of forests and other land plants. Some of this carbon is transferred

to the deep ocean when phytoplankton die, and some is transferred to different layers of the ocean because phytoplankton are eaten by other organisms, which themselves reproduce, creating waste and perish [4].

Figure 1. Baha'al-Din Nashqband Pond.

Five priorities for the further development of the Republic of Uzbekistan Strategy of actions of the Republic of Uzbekistan President's "On further development of the Republic of Uzbekistan Decree" № PF-4947 dated February 07, 2017 "on action strategy" in paragraph 3.3 of "...further strengthening of the country's food security such important tasks as expanding the production of environmentally friendly products defined". In this regard, the usual, national and ensuring the stability of water bodies at the local level, hydrobionts study of phytozooplankton in preservation of biodiversity, their reproduction and development of appropriate recommendations for the study of biotechnology of application in fisheries is considered important in output [3].The fisheries sector plays a potentially important role in the development of Uzbekistan's agriculture, although the sector's contribution to GDP has been less than 0.1% in recent years. Despite the availability of large water resources (ponds, reservoirs, lakes, rivers, canals, etc.), fish production has decreased from 27,000 tons in 1991. Up to 7,200 tons in 2006. There are several reasons for this decrease: the general economic crisis, the breakdown of relations in the industry of the former Soviet Union and problems related to the supply of food, equipment, education, scientific research, etc. As a result, the average per capita consumption is 16.6 kg, and the minimum healthy consumption is less than half a kilogram compared to the global consumption of 10-12 kg (5-6 kg in the late 1980's) decreased. Until 1961, fishing was mainly carried out in the Aral Sea [5]. The monograph introduces readers to the developed and promising freshwater aquaculture technologies in deep continental Uzbekistan, which has a seasonal climate, including hot summers and rather cold winters. A section on pond polyculture of carp fish is presented. Under the condition of water fertilization, fish productivity of ponds reaches 10-20 s/ha with additional feeding, productivity increases by 25-30 s/ha; Sections for cage aquaculture (minimum fish productivity 40 kg/m^3) and trout farming (productivity 20 - 70 kg/m^3) are presented. It is promising to grow cages for lowland lakes, and trout breeding for the

foothills and mountain zones of the republic [6]. The indicator of vertical weakening of the daylight flux c is one of the main hydro-optical properties that determine the parameters of the light field in the sea. In particular, it is necessary to know the value of α when calculating the thickness of the euphotic layer, an important ecological characteristic of reservoirs. As a result, the determination of α values is one of the current problems in marine optics. α is determined by measuring the irradiance from above with a photometer immersed in water. a is calculated using the formula [7].

$$a(D), m^2 = [E(H)/E(H_2)]/(H_2 - H_1), = H = (H_1 + H_2)/2, H_2 > H_1.$$

A review of modern literature sources on the problems of mass intensive cultivation of microalgae was carried out. The main problems hindering the development of the field of biotechnology in our country were analyzed and modern approaches were determined. Currently, the problem of intensive cultivation of microalgae is widely studied not only in the former CIS countries, but also in the USA, Japan, France, Italy, Czechoslovakia, Bulgaria, Russia and other countries [3], [6], [17], [26], [30], [32]. This is due to the wide application of microalgae: the use of cultivated micro-water plants, the use of biomass as a raw material for the production of any valuable substances, as well as the use of assimilation properties of microalgae for reclamation. water environment. The effectiveness of the development of these areas is determined by optimizing the processes of controlled cultivation of algae cells and, accordingly, ensuring their potentially high production characteristics [8].

Research Methodology

The experimental method used in this study is the determination of water hardness, residual chlorine in water, ammonia in water, and nitrite group in water using a titration method. This experiment involves using an indicator and titration method with $AgNO_3$ solution to determine residual chlorine levels in water samples, with Trilon-1 to determine water hardness levels in tested samples, adding zinc and Nessler's reagent to a water sample and the presence of nitrite groups in the tested water sample based on color changes observed during titration process.

Analyses and Results

Experiment 1: water hardness was determined. For this we take 50 ml of tested water. We put 6-7 drops of chrome dark violet indicator on it. Mix well and add 5 ml of acetate buffer solution. Then we titrate with 0.05 normal Trilon-1. Until a blue color is formed. How many ml of Trilon-1 have been used when the color is dark blue, and this is an indicator of hardness. According to the test results, the water hardness level is high.

Hardness of ponds: 4.7; 5.4; 4.5 mg/l.

We calculated as follows:

$$4.7 \times 1.0 \times 0.05 \times 1000 \div 50 = 4.7 \text{ mg/l}$$

Normal hardness is in the range of 7-10.

Figure 2. Experiment to determine water hardness.

Experiment 2: determination of residual chlorine in water. For this, we take 40 ml of distilled water and 10 ml of tested water, then we drop 15 drops of chromicyanide potassium K_2CrO_4 indicator and titrate with $AgNO_3$ (yellow) solution 0.5 n. We do this until a reddish color is formed.

$$Cl=2\times10\times0.5\times1000\div10=100 \text{ mg/dm}^3$$

2 ml of $AgNO_3$ was used and 100 mg/dm^3 of Cl_2 chloride was determined by the formula. The norm should be 350 mg/dm^3.
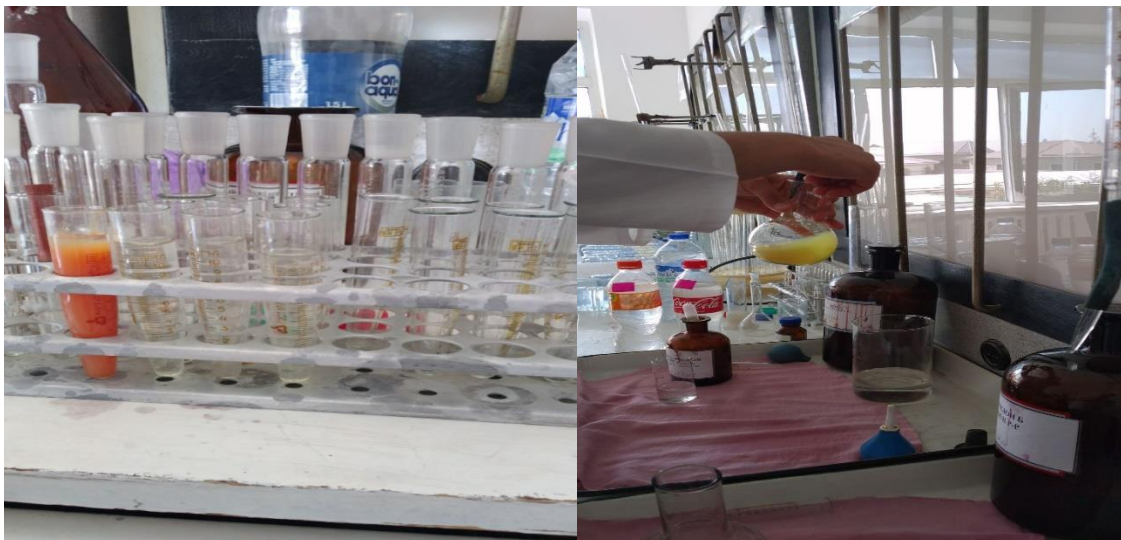

Figure 3. An experiment to determine the nitrite group in water.

Experiment 3: determination of Ammonia in water. Determination of the N_2 group in water. We add 1 ml/l of zinc and 1 ml/l of Nessler's reagent (K_2 Hg $J_4 \times$ NaOH) on 10 ml of tested water. If the water contains NH_3, the water will turn yellow. Otherwise, the color of the water will remain unchanged. NH_3 was not detected in the tested water.

Experiment 4: determination of nitrite group in water. We put reactive Grissa on 10 ml of tested water. We mix a small amount and put it in a water bath with a temperature of 60-70 °C. The sample turned pink. It was concluded that it contains a nitrite group.

Conclusions

Further development of pond networks, study of hydrochemical composition, use of high-quality, natural nutrients proved to be economically effective. Effective use of the proposed species to increase productivity at the expense of phytoplankton will greatly increase the income of ponds. For this purpose, the expansion of scientific research in this area, obtaining clear results, is of great importance in solving many of the problems facing us.

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BUKHARA REGION MOKHI-KHOSSA WATER BASIN SANITARY-HYGIENIC INSPECTION

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Annotatsiya. Ma'lumki, insoning yashash tarzi, hayot mamoti suv bilan bog'liq. Shuning uchun bo'lsa kerak, yer yuzidagi qadimiy manzillardan tortib, toki hozirgi kundagi zamonaviy qishloqu shaharlargacha, hammasi suv manbai-buloqlar, soylar, daryolar, ko'llarga yaqin yoki bevosita ular bo'yida joylashgan. Qadimdan xonliklarda shahar atrofi va chekkasida joylashgan saroylarda hovuzlar qurilgan. Buxoro shahrida bir qancha saroylar majvud bo'lib, shulardan mashhuri Mohi xossa bog' saroyidir. Saroyda katta hajmda hovuz bo'lib, hozirgi kunga qadar saqlab qolingan. Sitorai Mohi xossa – Buxorodagi Mang'itlar sulolasining III avlodiga mansub saroy-bog'. Buxoro shahridan 4 km uzoqda. Bog'ning janubida ikki qavatli masjid, katta hovuz 1917-1918 yillarda qurilgan. Hovuz kulrang G'ozg'on marmari bilan qoplangan. Mohi xossa xalq tilida "Amir Olimxonning dachasi" deb yuritiladi. Sababi Buxoroning so'ngi amiri Sayid Olimxon asosan eski shahar markazidagi Ark qo'rg'onida istiqomat qilgan. Hordiq chiqarish uchun Mohi xossani afzal bilgan. Mohi xossa forscha - "oyga o'xshash yulduz" degan ma'noni anglatadi.

Kalit so'zlar: *zooplankton, aralashma, gidrokimyoviy holat, nitrit, nitrat, sulfat, azot, ifloslanish, fiziologik eritma, mikroskop.*

Аннотация. Известно, что образ жизни и быт человека связан с водой. Вероятно, поэтому, от древних поселений на земле до современных сел и городов, все они расположены вблизи или непосредственно на берегах водных источников – родников, ручьев, рек, озер. Издревле пруды строили в ханствах на окраинах и во дворцах на окраинах. В городе Бухара имеется несколько дворцов, самым известным из которых является садовый дворец Мохи Хоса. Во дворце есть большой бассейн, который сохранился и по сей день. Ситораи Мохи Хоса — дворец-сад, принадлежащий III поколению династии Мангит в Бухаре. В 4 км от города Бухары. На юге сада в 1917-1918 годах построены двухэтажная мечеть и большой пруд. Бассейн покрыт серым гозгонским мрамором. На языке Мохи Хоса он называется "Дом Амира Алимхана". Причина в том, что Сайид Алимхан, последний эмир Бухары, в основном жил в крепости Арк в центре старого города. Для отдыха он предпочитал Мохи Хоссу. Мохи Хоса в переводе с персидского означает "луноподобная звезда".

Ключевые слова: зоопланктон, смесь, гидрохимическое состояние, нитрит, нитрат, сульфат, азот, загрязнение, физиологический раствор, микроскоп.

Abstract. It is known that a person's way of life and life is connected with water. That is probably why, from the ancient settlements on the earth to the modern villages and towns, all are located near or directly on the banks of water sources - springs, streams, rivers, lakes. Since ancient times, ponds were built in khanates in the suburbs and in the palaces on the outskirts. There are several palaces in the city of Bukhara, the most famous of which is the Mokhi Khosa Garden Palace. There is a large pool in the palace, which has been preserved to this day. Sitorai Mokhi Khosa is a palace-garden belonging to the III generation of the Mangit dynasty in Bukhara. 4 km away from Bukhara city. In the south of the garden, a two-story mosque and a large pond were built in 1917-1918. The pool is covered with gray Gozgon marble. In the Mokhi-Khosa vernacular, it is called "Amir Olim Khan's cottage". The reason is that Sayid Olimkhan, the last emir of Bukhara, mainly lived in the Ark fortress in the center of the old city. He preferred Mokhi-Khosa for recreation. Mokhi Khosa means "Moon-like Star" in Persian.

Keywords: zooplankton, mixture, hydrochemical state, nitrite, nitrate, sulfate, nitrogen, pollution, physiological solution, microscope.

Introduction

Various research methods are used in hydrology in order to fully study the laws of phenomena occurring in water basins, draw appropriate conclusions and effectively use them in practice. Among them, the most important are stationary, expedition and experimental-laboratory methods. We have also conducted several studies in order to determine the hydrochemical composition of the Mokhi-Khosa reservoir. Today, the safety of the water in the pool is under constant control due to the fact that the Mokhi-Khosa ancient object is under state protection and is a tourist zone. Research works are carried out in different seasons of the year depending on the air temperature. Preservation of the natural microflora and microfauna in the pool is one of today's urgent issues [1-3].

Literature Review

Strategy of actions on the five priority areas of further development of the Republic of Uzbekistan, in paragraph 3.3 [10] "… further strengthening the food security of the country, expanding the production of environmentally friendly products" is the most motivated for the Uzbek scientists.

In Republic of Uzbekistan, recently certain scientific results are being achieved in the field of reproduction of phytozooplankton of water bodies and biotechnology of their use in fisheries. In this regard, ensuring the stability of water bodies at the usual, national and local levels of the cultivation of microscopic algae, the study of phytozooplankton in the preservation of the biodiversity of hydrobionts, the study of the biotechnology of their reproduction and application in fisheries is important in the development of relevant recommendations. is considered important [2].

These research works are collected within the framework of laboratory experiment conclusions, scientific literature, articles published in popular scientific magazines and newspapers. Plankton is composed of the phytoplankton ("the plants of the sea") and zooplankton (zoh-plankton) which are typically the tiny animals found near the surface in aquatic environments. Like phytoplankton, zooplankton are usually weak swimmers and usually just drift along with the currents. Plankton are comprised of two main groups, permanent members of the plankton, called holoplankton (such as diatoms, radiolarians, dinoflagellates, foraminifera, amphipods, krill, copepods, salps, etc.), and temporary members (such as most larval forms of sea urchins, sea stars, crustaceans, marine worms, some marine snails, most fish, etc.), which are called meroplankton. Along with phytoplankton, zooplankton are key components of marine ecosystems forming the base of most marine food webs [7]. The correct place to begin any exposition of a major component in biospheric functioning is with precise definitions and crisp discrimination. This should be a relatively simple exercise but for the need to satisfy a consensus of understanding and usage. Particularly among the biological sciences, scientific knowledge is evolving rapidly and, as it does so, it often modifies and outgrows the constraints of the previously acceptable terminology. I recognized this problem for plankton science in an earlier monograph (Reynolds, 1984). Since then, the difficulty has worsened and it impinges on many sections of the present book. The best means of dealing with it is to accept the issue as a symptom of the good health and dynamism of the science and to avoid constraining future philosophical development by a redundant terminological framework [8].

Research Methodology

Spring and autumn samples are taken to study the phytozooplankton in the water of Sitorai Mokhi-Khosa pond. The chemical composition of the pond water, the level of oxygen, the distribution of organisms was studied. Water was sampled early in the morning. In the process of determining the pH of the water, the color of the indicator paper turned yellow. It corresponded to the indicator of pH=7. In the process of determining the color of the water using a special scale, it corresponded to the XVI index, and it was determined that the water is normal according to the color.

After that, a sample was taken from the water basin through special phytozooplankton living nets. Our catch net was floated across the pond to a certain — distance for the water to enter. We put the phytoplankton sample that fell into our net into a special container. We put the zooplankton set in the same order. We also went to take samples from the South-Eastern part of the pond. The water is polluted with grass and leaves. The sample was collected in special containers. All samples obtained were examined in a biological laboratory. Phytoplankton and zooplankton organisms in the pond were observed under a microscope.

Daphnia feed on small, suspended particles in the water. They are suspension feeders (filter feeders). The food is gathered with the help of a filtering apparatus, consisting of the phyllo pods, which are flattened leaf-like legs that produce a water current. As the current flows anterior to posterior, the Daphnia collect particles that are transferred into the food groove by special setae. Although the feeding apparatus is so efficient that even bacteria can be collected, the food is usually made up of planktonic algae.

Green algae are among the best food, and most laboratory experiments are done with either Scenedesmus or Chlamydomonas, both of which are easy to culture in monoclonal chemostats.

Figure 1. Digital image of Mokhi Khosa property complex.

Daphnia usually consume particles from around 1 μm up to 50 μm, although particles of up to 70 μm in diameter may be found in the gut content of large individuals. The gut is more or less tubular with three parts: the esophagus, the midgut, and the hindgut. There are two small digestive ceca (diverticula) that are easily seen in the head section of the midgut. The midgut is lined with an epithelium and bears microvilli. Peristaltic contractions of the gut wall pass food through the gut, but a peritrophic membrane contains the food and prevents it from entering the ceca. Epithelial cells do not phagocytose particles but absorb molecules. The pH is 6 to 6.8 in the anterior part of the midgut and 6.6 to 7.2 in the posterior part. Food is expelled from the hindgut by peristaltic movement but also requires the pressure of more recently acquired food particles. The color of *Daphnia* adapts to the food that is predominant in their diet. *Daphnia* feeding on green algae will be transparent with a tint of green or yellow, whereas those feeding on bacteria will be white or salmon-pink. Well-fed animals are more strongly colored than starved animals [9].

The dynamics of food uptake follow a functional response type 1. Below a certain food concentration (the incipient limiting level), the food uptake from the water (feeding rate) is proportional to the food concentration, and the filtering rate (amount of water filtered per unit time) is maximal. Above this level, the feeding rate is constant because the filtering rate decreases with increasing food concentration in the water. For parasites that enter the host with the food particles, infection rates depend on the food concentration in the water. Highest infection rates are expected when filtering rates are maximal.

We took the samples we took for testing to the "Microbiological Analysis" and "Communal Hygiene" laboratories and relevant departments of the Bukhara City Sanitary-Epidemiological Peace and Public Health Center.

Figure 2. Digital images from the laboratory process.

Analysis and Results

In experiment 1, the hardness of water was determined. For this we take 50 ml of tested water. We put 6-7 drops of chrome dark violet indicator on it. Mix well and add 5 ml of acetate buffer solution. Then we titrate with 0.05 normal Trilon-1. Until a blue color is formed. How many ml of Trilon-1 was used when the color is dark blue, and this is a hardness indicator. According to the test results, the water hardness level is high. The hardness was 28.2 mg/l. We calculated as follows:

$$28.2 \times 1.0 \times 0.05 \times 1000 \div 50 = 28.2 \text{ mg/l}$$

Normal hardness is in the range of 7-10.

Determination of residual chlorine in water in experiment 2. For this purpose, we take 40 ml of distilled water and 10 ml of tested water, then add 15 drops of chromium oxide potassium K_2CrO_4 indicator and titrate with $AgNO_3$ (yellow) solution 0.5N. We do this until a reddish color is formed.

$$Cl = 14.6 \times 10 \times 0.5 \times 1000 \div 10 = 730 \text{ mg/dm}^3$$

14.6 ml of $AgNO_3$ were used and the formula determined the amount of Cl_2 chloride at 730 mg/dm^3. The norm should be 350 mg/dm^3.

Determination of Ammonia in water in experiment 3. Determination of the N_2 group in water. We add 1 ml/l of zincian and 1 ml/l of Nessler's reagent ($K_2 HgJ_4 \times NaOH$) on 10 ml of tested water. If the water contains NH, the water will turn yellow. Otherwise, the color of the water will remain unchanged. A small amount of NH_3 was detected in the tested water.

Determination of nitrite group in water in experiment 4. We put reactive Grissa on 10 ml of tested water. We mix it in a small amount and put it in a water bath with 60-70 °C. The sample turned pink. It was concluded that it contains a nitrite group.

Figure 3. The process of taking water samples from a pond in the Mokhi-Khosa area.

According to the conclusions of the inspection, today the level of water pollution has increased significantly. But in this water environment, various zooplankton, phytoplankton and fish species grow and develop naturally. The field of science that studies these is called hydrobiology. The parts of hydrobiology that study the natural (physical) properties, chemical and biological processes occurring in water bodies, as well as the natural properties, quality, and biological reserves of water masses in them are called hydrochemistry, hydrobiology [2].

Since ancient times, the water demand of Bukhara region has been met at the expense of the Zarafshan river. However, due to the increased demand for water in the upper part of the Zarafshan river, the water in the part that reaches the territory of the region has decreased over the years, and now the water of the river has been completely stopped in the territory of Navoi region. Today, the part of the Zarafshan river passing through the Bukhara region is called the Central Bukhara Zovuri, where sewage and ditch waters are discharged. Every year, 1.5 million m3 of sewage and ditch water are discharged from the oasis. In the biological treatment of wastewater, together with the scientists of the Bukhara State University and the employees of the water and poultry enterprise, 90-95% of waste water was achieved [6].

The salinity level of water reserves in the existing collectors of Bukhara region varies. The main reason for this is the hot weather, the composition of the water for irrigation and the high salinity of the soil. The main source of water coming to the Mokhi-Khosa reservoir is the collector waters (see in Figure 2).

Conclusions

From the conducted experiments and observations, it was found that the water content of the Mokhi-Khossa reservoir contains nitrite, nitrate, sulfide, sulfate, etc., which are important salts for the reproduction of various zooplankton and phytoplankton. Our mission is to breed zoos and phytoplankton's in order to improve water microflora and create a natural food supply for fish there.

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MODERN PROBLEMS OF TOURISM AND ECONOMICS

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ESSENCE, FUNCTIONS, METHODS AND TOOLS OF TAX ADMINISTRATION

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Annotatsiya. Mazkur maqolada soliqlar jamiyat hayotining ajralmas qismi ekanligi, mamlakat byudjet tizimida to'plangan va davlat va jamiyat ehtiyojlarini qondirishga yo'naltirilgan moliyaviy resurslarning asosiy manbai hisoblanishi, beqaror bozor sharoitida jahon moliyaviy inqirozi, davlat byudjeti taqchilligi, soliq va soliq barqarorligini ta'minlash, ratsional soliq siyosatini yuritish va samarali soliq ma'muriyatchiligi tizimini yaratish orqali erishish mumkin bo'lgan mamlakat byudjetiga soliqdan tashqari tushumlar muhim hisoblanishi haqida ma'lumotlar keltirilgan.

Kalit so'zlar: soliq, byudjet tizimi, ehtiyoj, moliyaviy resurslar, jahon moliyaviy inqirozi, soliq siyosati, tushumlar, soliq ma'murchiligi.

Аннотация. В данной статье говорится, что налоги являются неотъемлемой частью жизни общества, что они считаются основным источником финансовых ресурсов, собираемых в бюджетной системе страны и направляемых на удовлетворение потребностей государства и общества, в условиях мирового финансового кризиса, в условиях нестабильного рынке, дефиците государственного бюджета, обеспечении налоговой и налоговой стабильности, дана рациональная информация о том, что неналоговые доходы считаются важными для бюджета страны, чего можно достичь путем проведения налоговой политики и создания эффективной системы налогового администрирования.

Ключевые слова: налог, бюджетная система, потребность, финансовые ресурсы, мировой финансовый кризис, налоговая политика, доходы, налоговое администрирование.

Abstract. This article states that taxes are an integral part of society's life, that they are considered the main source of financial resources collected in the country's budget system and directed to meet the needs of the state and society, the global financial crisis in the unstable market, the state budget deficit, ensuring tax and tax stability, rational information is given that non-tax revenues are considered important to the country's budget, which can be achieved by conducting tax policy and creating an effective tax administration system.

Keywords: tax, budget system, need, financial resources, world financial crisis, tax policy, revenues, tax administration.

Introduction

Tax administration is a part of the tax process that covers all areas of society. The presence of serious shortcomings in the field can lead to a decrease in the level of economic security of the country: a lack of tax revenues by the state, an increase in the level of tax crimes, a worsening of the environment in the tax sector, an increase in the opportunities for tax evasion, tax liability, violation of the principles of fiscal federalism, etc.

Improving the tax administration of our country is mainly aimed at increasing the efficiency and quality of tax relations between taxpayers and the state, which is one of the main directions of tax policy. For this reason, the President of the Republic of Uzbekistan considers it an important direction of tax policy to increase the level of tax administration by providing a potential reserve that reduces the tax burden, ensuring the equality of the competitive regime among honest taxpayers and reducing the costs associated with the operation of the tax system.

Literature Review

In the PD Decree No. 5116, adopted on July 18, 2017, the President noted the following problems in the implementation of the current tax system, in particular, the tax administration, which is an important aspect of it:

- the complexity of the taxation system and the insufficient unification of taxes with the same taxation base, the variability of the tax legislation, do not allow taxpayers to fully fulfill their tax obligations [6];

- in the context of increasing the legal culture of taxpayers, aimed at ensuring voluntary fulfillment of their constitutional duty to pay taxes, the work carried out on the ground, especially, has not been improved to the required level;

- the absence of external control mechanisms over the activities of tax authorities to ensure the completeness of revenues to the State budget does not allow expanding the tax base, increasing the collection of taxes and accounting for taxpayers;

- the organizational structure of tax authorities allows for full coverage of taxation objects and expansion of the taxable base, as well as timely collection of taxes and other mandatory payments, replenishment of state and local budget revenues, mobilization of available resources does not give [7];

- the state of introduction of modern information and communication technologies in the activities of tax authorities does not ensure the transparency of tax administration, cooperation with interested ministries and agencies in matters of taxation, and the efficiency of using state services;

- the imperfection of the tax control organization mechanisms reduces the effectiveness of identifying tax violations and their early prevention, and leads to an increase in taxpayers' appeals to judicial authorities [3];

- to analyze the state and development trends of tax-related legal relations, to improve the activity of reliable forecasting of tax revenues, to develop medium-term and prospective directions of tax policy, to develop its regulatory legal framework, organizational and methodological aspects for the sustainable development of tax administration It requires formation using foreign experience.

Research Methodology

There are different opinions about the tax administration in the world economic development. There are different views on the nature of tax administration in the economic literature.

For example, according to the opinion of the English scientist O. Nogina, he emphasized that "tax administration is a set of activities related to tax collection" [1] American scientist A. Tate considers the tax administration as a set of activities aimed at collecting all taxes as much as possible at a minimum cost. Other scientists believe that one of the manifestations of tax administration is the activity of tax authorities related to legal relations. In general, the tax administration can be considered as a specific management mechanism in the tax system. The tax administration is the main tool that manages tax relations between the state and taxpayers, or in other words, ensures and serves the implementation of the state's tax policy, and it reflects the main directions of tax policy. That is, through the state tax administration, the tax system coordinates the activities of tax authorities. This situation becomes clearer in the conditions of the digital economy and is gaining special importance [4]. Different definitions of tax administration are given in foreign literature. In this regard, some researchers consider tax administration as the day-to-day activities of tax authorities, some consider it as the control function of the tax service in ensuring budget revenues, and some researchers consider it as a relationship related to tax administration [8]. In some countries, tax administration is considered an integral element of the state management system of tax relations. In most countries, tax administration is the main part of the Ministry of Finance, while the tax office retains some of its autonomous functions.

For example, in the United States of America and Great Britain, these apparatuses are called the Internal Revenue Service (IRS), in France they are the General Tax Office, and in Germany they are the Federal Tax Administration, land and other tax offices [2].

Analysis and Results

The concept of "tax administration" in the field of taxes and taxation was first used in Russia at the end of the 20th century, but only from the 2000's it began to be used in the legal framework of the state [9].

The idea of defining tax administration and tax control appeared in the late 20th and early 21st centuries. Supporters of this approach L.Y. Abramchik, M.R. Boboev, V.A. Kashin, M.O. Kleimenova, M.Y. Orlov, A.B. Paskachev, G.Y. Chukhnina and others. Among them, the idea put forward by the Russian scientist L.Y. Abramchik stands out, according to him, tax administration is a regular management activity aimed at controlling the calculation and timely payment of taxes and other mandatory payments to the budget by tax authorities [3]. In addition, the researcher M.O. Kleimenova also defines tax administration with tax control, that is, tax administration is the organization and implementation of the effective activities of tax control subjects, tax inspectorates, and the system of managing tax relations [4].

Definitions of tax control given in the economic literature are explained by the fact that they are targeted activities of tax authorities within the scope of their authority:

- checking the correctness of the calculation of taxes (fees, contributions);

- checking the completeness and timely payment of taxes (fees, contributions);
- check compliance with tax legislation [10];
- identification and elimination of offenses in the field of taxes and taxation.

Conclusions

In our opinion, within this approach, the essence of tax administration has not been revealed, but rather, it has been replaced by the concept of "tax control". The main difference between tax administration and tax control is their purpose:

- the main task of tax control is to check compliance with tax legislation in order to identify and eliminate tax violations;
- the object of tax control is to quickly identify committed violations and eliminate their consequences by applying tax liability measures;
- consists in checking the activities of the bodies that control tax payers' compliance with the tax legislation;
- the tax administration is necessary for the effective implementation of the mechanism for the collection of mandatory payments provided for in the tax legislation of Uzbekistan, therefore its main goal is to prevent intentional violations of the tax legislation, to eliminate tax violations;
- implementation of activities by issuing warnings about tax violations by the taxpayer;
- the object of tax administration is the relationship between taxpayers and tax authorities.

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