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Numerical Simulation of Thermoelasticity Problem

The paper considers the coupled quasi-stationary linear system of equations for temperature and displacement, describing the thermoelastic behavior of the body. The stability estimates of the studied differential problem are presented. For the numerical solution, we approximate our system using the finite elements method, and for approximation by time we use the standard two-layer weighted schemes. The discrete problem has proven stable. The results of the numerical simulation of the model problem of thermoelasticity are presented.

Key words: strain-stress state, thermoelasticity, Lamé's equation, heat conduction equation, differential and operator equations system, two-layer weighted schemes, stability estimates, a priori estimate, finite elements method, numerical simulation.

Many applied problems mathematical simulation are related to the need to calculate the strain-stress state of solids. In many cases, deformations are caused by thermal dilation. To study the deformations, the models of thermoelasticity are used [1-4].

The basic mathematical models of thermoelasticity include Lamé equation for displacements and the heat equation. The fundamental point is that the system of equations is tied up: the equation for displacement comprises volume force proportional to the temperature gradient and the temperature equation includes a term describing the compressibility of the medium.

In this paper, we describe a computational algorithm for solving problems of thermoelasticity. It is based on the finite element approximation of the temperature field and the displacement field in space [5-8]. The

quasistationary problem (stationary for displacements and non-stationary for temperature) can be solved through the use of two-layer weighted scheme [9]. The approximate solution for the initial data and the right-hand side under standard weight limits has proven absolutely stable. We have obtained a priori estimate of the approximate solution, which is consistent with the corresponding estimate for the solution of the differential problem. The possibilities of computational algorithm are illustrated by the computed data on the model two-dimensional problem for the body of rectangular cross section with a circular cutout.

Problem statement. From mechanical and heat impacts, displacement \mathbf{u} , deformation ε and stress σ fields occur in the elastic body. Suppose T – constant absolute temperature at which the body is in an initial equilibrium state, and θ – the temperature increment. Mechanical impact on the body shall mean the impact of outside forces (volume or surface ones), and heat impact shall mean the heat exchange processes between the surface of the body and the environment, and release or absorption of heat by the sources inside the body.

The simulation model of the thermoelastic behavior of the body is described by the coupled system of equations for displacements \mathbf{u} and the temperature increment θ in the system Ω :

$$\mu\Delta\mathbf{u} + (\lambda + \mu)\text{graddiv}\mathbf{u} - \alpha\text{grad}\theta = 0, \quad (1)$$

$$c\frac{\partial\theta}{\partial t} + \alpha T\frac{\partial\text{div}\mathbf{u}}{\partial t} - \text{div}(k\text{grad}\theta) = f. \quad (2)$$

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Here λ, μ – Lamé constants, k – thermal conduction coefficient, c – volumetric specific heat without strains, $\alpha = \alpha_T(3\lambda + 2\mu)$, where α_T – temperature coefficient of linear expansion, ε – tensor of strain:

$$\varepsilon = \frac{1}{2}(\nabla \mathbf{u} + (\nabla \mathbf{u})^T),$$

and σ – stress tensor:

$$\sigma = \lambda \nabla \mathbf{u} \mathbf{I} + 2 \mu \varepsilon.$$

We supplement the equation (1), (2) with the corresponding initial

$$\theta(\mathbf{x}, 0) = 0$$

and boundary

$$\partial\Omega = \Gamma_D^u + \Gamma_N^u = \Gamma_D^\theta + \Gamma_N^\theta \quad \text{conditions:}$$

$$\begin{aligned} \sigma \mathbf{n} &= 0, & \mathbf{x} \in \Gamma_N^u, & & \mathbf{u} &= 0, & \mathbf{x} \in \Gamma_D^u, \\ -k \frac{\partial \theta}{\partial n} &= 0, & \mathbf{x} \in \Gamma_N^\theta, & & \theta &= 0, & \mathbf{x} \in \Gamma_D^\theta. \end{aligned}$$

Assume $H = L_2(\Omega)$ – Hilbertian space for pressure with inner product and norm as:

$$(u, v) = \int_{\Omega} u(x)v(x)dx, \quad \|u\| = (u, u)^{1/2}$$

and $\mathbf{H} = \mathbf{L}_2(\Omega)$ – the space for displacement.

Let us note the basic property of the problem operators in the introduced spaces [10-14]. We define the operator on a set of functions, satisfying the above conditions on the border set:

$$A\mathbf{v} = -\mu\Delta\mathbf{v} - (\lambda + \mu) \text{grad div } \mathbf{v}.$$

The operator A is self-adjoint and positively defined \mathbf{H} :

$$(A\mathbf{v}, \mathbf{u}) = (\mathbf{v}, A\mathbf{u}), \quad (A\mathbf{u}, \mathbf{u}) \geq \delta_u(\mathbf{u}, \mathbf{u}), \quad \delta_u > 0.$$

Analogous to in H , we define the operator B :

$$B\theta = -\text{div}(k \text{grad}\theta).$$

Also, we define the operators of the divergence D and the gradient G , where

$$(G\theta, \mathbf{u}) = -(\theta, D\mathbf{u}).$$

The problem considered for the system of the equations (1), (2) using the operators introduced can be written in the form of Cauchy problem for the system of differential and operator equations:

$$A\mathbf{u} + \alpha G\theta = 0, \tag{3}$$

$$\frac{d}{dt}(C\theta + \alpha D\mathbf{u}) + B\theta = f(t). \tag{4}$$

At this time $C\theta=c\theta$ and non-dimensionalization of temperature by T is conducted. The initial condition for temperature is specified for (3), (4):

$$\theta(0) = 0. \tag{5}$$

Let us assume that R – the self-adjoint positive operator, applied in H . Then, we can introduce the energetic space H_R , consisting of H elements, with the

inner product $(u, v)_R = (Ru, v)$, and norm

$$\|u\|_R = (Ru, u)^{\frac{1}{2}}.$$

Theorem 1. For solution the problem (3)–(5), the prior estimate is valid:

$$\begin{aligned} \|\mathbf{u}(t)\|_A^2 + \|\theta(t)\|_C^2 &\leq \|\mathbf{u}(0)\|_A^2 + \\ &+ \|\theta(0)\|_C^2 + \frac{1}{2} \int_0^t \|f(s)\|_{B^{-1}}^2 ds \end{aligned} \tag{6}$$

Proof: In \mathbf{H} , we multiply scalarwise the equation (3) by $d\mathbf{u}/dt$, and the equation (4) by θ . This gives

$$\begin{aligned} \left(A\mathbf{u}, \frac{d\mathbf{u}}{dt}\right) + \alpha \left(G\theta, \frac{d\mathbf{u}}{dt}\right) &= 0, \\ \left(C\theta, \frac{d\theta}{dt}\right) + \alpha \left(D \frac{d\mathbf{u}}{dt}, \theta\right) + (B\theta, \theta) &= (f, \theta). \end{aligned}$$

Summing up the equations, we obtain

$$\left(A\mathbf{u}, \frac{d\mathbf{u}}{dt}\right) + \left(C\theta, \frac{d\theta}{dt}\right) + (B\theta, \theta) = (f, \theta).$$

We employ the inequation

$$(f, \theta) \leq \|\theta\|_B^2 + \frac{1}{4} \|f\|_{B^{-1}}^2,$$

and obtain

$$\left(A\mathbf{u}, \frac{d\mathbf{u}}{dt}\right) + \left(C\theta, \frac{d\theta}{dt}\right) \leq \frac{1}{4} \|f\|_{B^{-1}}^2.$$

Using

$$\left(\frac{d\mathbf{u}}{dt}, \mathbf{u}\right) = \frac{1}{2} \frac{d}{dt} (\mathbf{u}, \mathbf{u}),$$

We can write

$$\frac{d}{dt} (A\mathbf{u}, \mathbf{u}) + \frac{d}{dt} (C\theta, \theta) \leq \frac{1}{2} \|f\|_{B^{-1}}^2.$$

From where the estimate to be proved arises directly (4).

Approximation by space and time. For the numerical solution, we approximate our system of the equations (1), (2) by time, using the finite elements method.

For all functions \mathbf{v} and q in the computational domain Ω

$$\int_{\Omega} \sigma(\mathbf{u})\varepsilon(\mathbf{v})dx + \int_{\Omega} \alpha(\text{grad } \theta, \mathbf{v})dx = 0, \quad (7)$$

$$\begin{aligned} & \int_{\Omega} \alpha \frac{d\text{div} \mathbf{u}}{dt} q dx + \int_{\Omega} C \frac{d\theta}{dt} q dx + \\ & + \int_{\Omega} (k \text{grad } \theta, \text{grad } q) dx = \int_{\Omega} f q dx, \end{aligned} \quad (8)$$

where

$$\theta \in V_{\theta} = \{ \theta \in H^1: \theta(\mathbf{x}) = 0, \mathbf{x} \in \Gamma_D^{\theta} \}$$

$$\mathbf{u} \in \mathbf{V}_u = [H^1(\Omega)]^d \quad d = 2,3$$

For approximation by time, we use a time grid that is proportional for the sake of simplicity with the step of $\tau > 0: t^n = n\tau, n = 0,1, \dots, M$ and let us set

$$\mathbf{u}^n = \mathbf{u}(\mathbf{x}, t^n) \quad \theta^n = \theta(\mathbf{x}, t^n).$$

We use the standard two-layer weighted schemes and set the following bilinear and linear forms

$$c(\theta, q) = \int_{\Omega} C \theta q dx,$$

$$d(\mathbf{u}, q) = \int_{\Omega} \alpha \text{div } \mathbf{u} q dx,$$

$$b(\theta, q) = \int_{\Omega} (k \text{grad } \theta, \text{grad } q) dx,$$

$$l(f, q) = (f, q) = \int_{\Omega} f q dx,$$

$$a(\mathbf{u}, \mathbf{v}) = \int_{\Omega} \sigma(\mathbf{u})\varepsilon(\mathbf{v}) dx,$$

$$g(\theta, \mathbf{v}) = \int_{\Omega} \alpha(\text{grad } \theta, \mathbf{v}) dx = 0.$$

We use the variational adjustment: we shall find $\theta \in V_{\theta}$ and $\mathbf{u} \in \mathbf{V}_u$ such that

$$a(\mathbf{u}^{n+1}, \mathbf{v}) + g(\theta^{n+1}, \mathbf{v}) = 0, \quad \forall \mathbf{v} \in \mathbf{V}_u, \quad (9)$$

$$\begin{aligned} & c\left(\frac{\theta^{n+1} - \theta^n}{\tau}, q\right) + d\left(\frac{\mathbf{u}^{n+1} - \mathbf{u}^n}{\tau}, q\right) + b(\theta_{\sigma}^{n+1}, q) = \\ & = l(f_{\sigma}^{n+1}, q), \quad \forall q \in V_{\theta} \end{aligned} \quad (10)$$

Now

$$\begin{aligned} \theta_{\sigma}^{n+1} &= \sigma \theta^{n+1} + (1 - \sigma) \theta^n, \\ f_{\sigma}^{n+1} &= f(x, \sigma \theta^{n+1} + (1 - \sigma) \theta^n) \end{aligned}$$

and the weight parameter $0 \leq \sigma \leq 1$.

We note that for all \mathbf{u} and \mathbf{v} , there is the relation

$$d(\mathbf{u}, \mathbf{v}) = -g(\mathbf{v}, \mathbf{u}).$$

Theorem 2. Where $\sigma \geq 0.5$ for solution of the problem (9), (10) prior estimate is true

$$\begin{aligned} & \|\mathbf{u}^{n+1}\|_a^2 + \|\theta^{n+1}\|_c^2 \leq \|\mathbf{u}^n\|_a^2 + \\ & + \|\theta^n\|_c^2 + \frac{\tau}{2} \|f_{\sigma}^{n+1}\|_{*,b}^2, \end{aligned} \quad (11)$$

where $\|\cdot\|_{*,b}$ is the norm in the space adjoint to H_b .

Proof: we substitute

$$\mathbf{u}_{\theta}^{n+1} = \sigma \mathbf{u}^{n+1} + (1 - \sigma) \mathbf{u}^n$$

in the equation for displacements (9)

$$a\left(\mathbf{u}_{\theta}^{n+1}, \frac{\mathbf{u}^{n+1} - \mathbf{u}^n}{\tau}\right) + g\left(\theta_{\sigma}^{n+1}, \frac{\mathbf{u}^{n+1} - \mathbf{u}^n}{\tau}\right) = 0$$

and let $q = \theta_{\sigma}^{n+1}$ in the equation for pressure (10):

$$\begin{aligned} & c\left(\frac{\theta^{n+1} - \theta^n}{\tau}, \theta_{\sigma}^{n+1}\right) + d\left(\frac{\mathbf{u}^{n+1} - \mathbf{u}^n}{\tau}, \theta_{\sigma}^{n+1}\right) + \\ & + b(\theta_{\sigma}^{n+1}, \theta_{\sigma}^{n+1}) = (f_{\sigma}^{n+1}, \theta_{\sigma}^{n+1}). \end{aligned}$$

We put up the equations obtained

$$\begin{aligned} & a\left(\mathbf{u}_{\theta}^{n+1}, \frac{\mathbf{u}^{n+1} - \mathbf{u}^n}{\tau}\right) + c\left(\frac{\theta^{n+1} - \theta^n}{\tau}, \theta_{\sigma}^{n+1}\right) + \\ & + b(\theta_{\sigma}^{n+1}, \theta_{\sigma}^{n+1}) = (f_{\sigma}^{n+1}, \theta_{\sigma}^{n+1}). \end{aligned}$$

By virtue of the fact that there is the inequation

$$(f_\sigma^{n+1}, \theta_\sigma^{n+1}) \leq \varepsilon \|\theta_\sigma^{n+1}\|_b^2 + \frac{1}{4\varepsilon} \|f_\sigma^{n+1}\|_{*,b}^2,$$

then as $\varepsilon=1$ we obtain

$$a\left(\mathbf{u}_\sigma^{n+1}, \frac{\mathbf{u}^{n+1} - \mathbf{u}^n}{\tau}\right) + c\left(\frac{\theta^{n+1} - \theta^n}{\tau}, \theta_\sigma^{n+1}\right) \leq \frac{1}{4} \|f_\sigma^{n+1}\|_{*,b}^2.$$

We employ the relation

$$\begin{aligned} v_\sigma^{n+1} &= \sigma v^{n+1} + (1 - \sigma)v^n = \\ &= \frac{v^{n+1} + v^n}{\tau} + \left(\sigma - \frac{1}{2}\right)(v^{n+1} - v^n) \end{aligned}$$

and the fact that for the symmetrical bilinear form $r(u, v) = r(v, u)$ there is

$$r(\mathbf{u} + \mathbf{v}, \mathbf{u} - \mathbf{v}) = r(\mathbf{u}, \mathbf{u}) - r(\mathbf{v}, \mathbf{v})$$

Taking this into consideration, we obtain the following inequation:

$$\begin{aligned} \frac{1}{2} (\|\mathbf{u}^{n+1}\|_a^2 - \|\mathbf{u}^n\|_a^2) + \frac{1}{2} (\|\theta^{n+1}\|_c^2 - \|\theta^n\|_c^2) + \\ + \left(\sigma - \frac{1}{2}\right) (\|\mathbf{u}^{n+1} - \mathbf{u}^n\|_a^2 + \\ + \|\theta^{n+1} - \theta^n\|_c^2) \leq \frac{\tau}{4} \|f_\sigma^{n+1}\|_{*,b}^2, \end{aligned}$$

from which as $\sigma \geq 0.5$, the stability estimate to be probed by the initial data and the right member arises.

Numerical results. Let us conduct the numerical simulation of thermoelasticity problem in the computational domain shown in Fig. 1. The problem parameters are shown in Table 1 (International System of Units). The computational grid contained 5,825 triangular meshes and was built using the software package Gmsh [15] (Fig. 2). The simulation was performed for the estimated time of one hour. The distribution of temperature for different moments and displacements at the finite point is shown in Fig. 3, 4.

The simulation was carried out with the use of the linear polynomial approximation for the temperature and the quadric polynomial for the displacement. To solve the arising system of linear equations, we used the standard direct method of ILU-factorization. For the numerical solution, we used the software package FEniCS [16, 17], and for visualization of the results

obtained, we used the software package Paraview for research data [18].

The calculations demonstrate the high efficiency of the computational algorithm and its robustness. The calculations are performed on a computing cluster ‘‘Arian Kuzmin’’ in the North-Eastern Federal University named after M. K. Ammosov.

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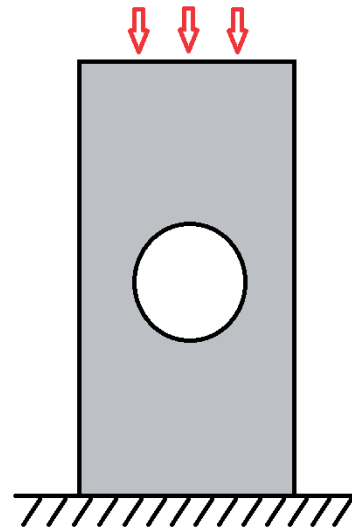


Fig. 1. Computational domain

The problem parameters

Table

Name	Обозначение	Значение
Elasticity modulus	E	10^6
Poisson's ratio	η	0.3
Volumetric specific heat	C	$4 \cdot 10^6$
Thermal conductivity	k	30
Linear expansion coefficient	α_T	10^{-4}
Set temperature	T_0	10
Temperature on the inner boundary	T_1	200

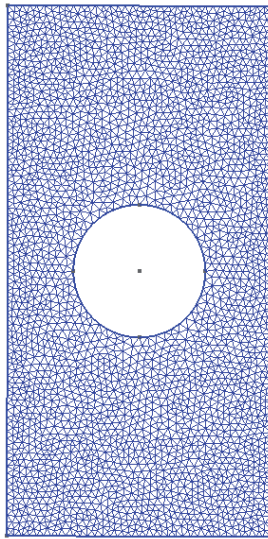


Fig. 2. Computational grid

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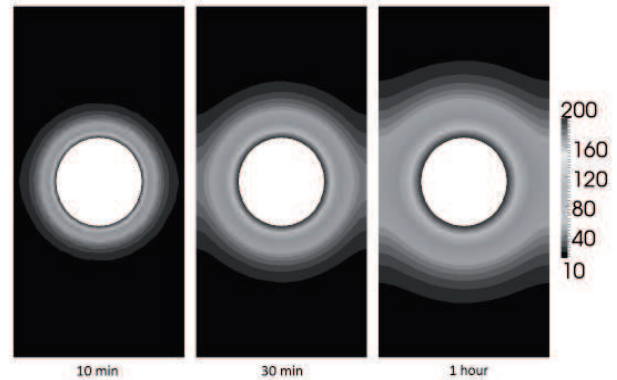


Fig. 3. Distribution of temperature

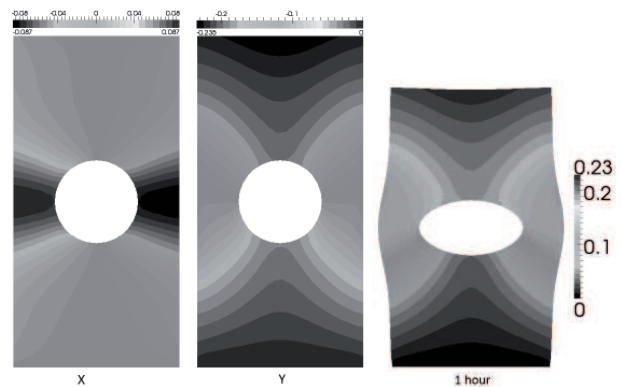


Fig. 4. Distribution of displacements

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BIOLOGICAL SCIENCES

UDC 643.4

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Soil Covering in the West of Yakutia

In the context of widening of systematics and classification of cryogenic soil new for discussion, never learnt before types of cryogenic soil are suggested. As a base of the research the classification of L. G. Elovskaya was used. Some characteristics and indexes of natural and climatic conditions of the middle taiga subzone where new soil types were revealed are given. Brown and gray soil types are characteristic for broad-leaved forests of non-cryogenic soil zones and the occurrence of them under small-leaved and softwood forests in conditions of cryolithic zone is nonsense. The determination of the genesis of the soils and the probability of the natural zones shift caused by climate change demands linking and detailed research.

Key words: cryogenic soil research, classification and areas of distribution, soil types, gray and brown forest types, characteristics and properties of soils, small-leaved forests, softwood forests, conditions of cryolithic zone, natural and climatic conditions.

Development of natural resources in Yakutia is accompanied by learning new unexplored territories of the republic. One example is the western part of the country, where oil and gas fields are currently being developed and operated intensively in order to ensure filling of the Eastern Siberia - Pacific Ocean pipeline (ESPO).

Southwestern part of Yakutia is richest in biomass productivity and diverse of species of plants and animals. Relatively high-bonitat tree plantations grow there, and the canopy of pine and larch stands reveals species of trees that can't be found anywhere else in the republic. They are Siberian larch (*Larix sibirica* Ledeb.), fir (*Abies sibirica* Ledeb.), cedar (*Pinus sibirica* (Rupr.) Mayr.), rowan (*Sorbus sibirica* Hedl.) etc.

Explored reserves of hydrocarbons lie on the same grounds. That is why the production is accompanied by extensive deforestation for the construction of infrastructure for the exploration, mining, transport and servicing industries. Oil and gas production is accompanied by construction of waste earth pits, disposal of oilfield brines, use of various chemicals in application of drilling fluid, possible spill during transportation,

etc [2]. Often burn-in of associated gas and accidental spills result in extensive forest fires causing degradation of cryolithic zone, manifested in subsidence in relief due to defrost of ground ice, waterlogging, solifluction, thermal erosion, etc.

Thus, development of minerals involves a complex of negative impacts on natural landscapes of cryolithic zone. In addition, significant transformations are observed in land cover and further impact other components of ecosystems.

Earlier, in the 50s of last century, alluvial soils have been studied mainly in lowland areas of agricultural lands [1]. Nowadays, pedologists are fragmentarily investigating the licensed areas of deposits [3, 4, 5].

In this context it is relevant to study the changes occurring in the soil due to technogenic impact to develop recommendations to mitigate negative impacts and further develop ways and measures to remediate disturbed areas. Therefore, the main objective of our papers was to study the characteristics and properties of the soil in the West of Yakutia. The vastness and inaccessibility of areas, the lack of equipped roads and funding led to the lack of study of soil of the above area.

Schematic map of the survey area is shown in Figure 1.

The climate of southwest of the Republic of Sakha (Yakutia) is continental, which manifests in very low winter (up to -58 -62 °C) and high summer (up to +36 °C) temperatures. Compared with the Central Yakutia the winter is slightly warmer here and the summer is cooler

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with a lot of precipitation. Precipitation is unevenly distributed in time. Annual cycle is characterized by pronounced summer maximum precipitation and relatively dry winter. Average annual precipitation is 482 mm.

Western Yakutia occupies the eastern half of the Siberian platform. Dominant types of relief are structurally denudation stratified stepped plateau with accumulative lowland plains [6]. Area of our survey includes Prilenskoye plateau representing denudation relief with deep erosional truncations developed by rivers on deposits of the Upper Cambrian and Ordovician. The singularity of the relief is due to complex tectonic structure and young tectonic movements. Expressed relief ridges are large anticlinal folds, which alternate with flat and broad synclines.

Geological aspects of these structures involve

Lower Cambrian rocks, on with concordant rocks of the Cambrian, Ordovician and Permian coal-bearing deposits. All these rocks are intruded with bedded and discordant bodies of basic rocks. Cambrian and Ordovician rocks are overlain by continental and marine sediments of the Lower Jurassic.

Propagation pattern of permafrost rocks is intermittent; they take from 20 to 50 %% of the area and are usually confined to waterlogged goosefoot sites. The thickness of permafrost rocks layer is typically 20-30 m and does not exceed 70 m, with minimum temperatures of -1.5°C . Outside the area of development of permafrost, the temperature of rocks at the base of the layer of annual fluctuations is much higher and reaches 2°C .

Depths of seasonal thawing and freezing of soils are



Scale 1: 10 000 000

Captions:
 Survey area

Fig. 1. Schematic map of the survey area

close and vary in the range of 2.5 - 3.0 m [7]. Volumetric ice content in sandy loam is 35-50 %, and 30-50 % in the sands. Seasonal freezing of soils outside the development area of permafrost rocks is 2-3 m.

According to soil and geographical regionalization, the territory of investigated area refers to Yakut East Siberian taiga-bottomland province, Srednelensky region with most widespread, according to the atlas [7], humus-carbonate medium and heavy-soil (sometimes rubble) sod-podzol residual carbonate and peat soils.

By forest vegetation zoning, the investigated are is a part of Leno-Vitimsk piedmont district of South Yakut medium taiga forest province of pine-larch taiga with dark coniferous forests [8]. The northern boundary of the range of many plants, penetrating from the southern and western Siberia passes there. Reserves of stands make up more than 140 cubic meters per hectare.

Our exploration consisted of field and laboratory studies. We used method of comparative geography in field studies. We laid soil profiles, made their morphological description, sampled for chemical and geochemical analyzes according to existing methods in key areas in the field. [9]. Chemical analyzes of soil were performed by standard methods [10].

When exploring the territory of Western Yakutia we used a conventional transect line, passing perpendicularly to the river bed and covering all elements of relief from the valley to the watershed areas. In the course of works, as far as we were moving away from the catchment area of the Lena river basin, we discovered cryogenic gray forest soils under mixed forests in Lena region. We first discovered and described these soils in Tympuchikansky license block in 2006. Then the typology of these soils has been confirmed by subsequent exploration of other areas (Otradninsky and Chayandinsky license blocks, etc.). These soils are not included in the classification by L. G. Elovskaya [11] and are not explored in the cryogenic region though they are enough spread in Lena region and widely spread in the neighboring areas of Russia. According to the classification of the USSR they are divided into three subtypes: dark gray, gray and light gray forest [12].

The next explored type of soils is cryosolic brown soil on the flat territory, discovered in Vakunaysky license block relating to the Irkutsk region and Mirny region of Sakha (Yakutia). By geographical location, Vakunaysky block is located next to Tympuchikansky oil and gas field at the same latitude in similar geographic and geological conditions. We described the same type in Srednebotuobinskoye gas field included in Mirny Administrative Region of the Republic of Sakha, geographically located north of Lena region. However, we and other researchers have earlier described brown forest soils in the mountains on slopping lands (in hollows) of Aldan Mountains under clean Ayan spruce forests.

Mountain brown soils differ from the plain ones by their climatic conditions of the formation and physical and chemical properties of soils themselves. This is due to the relief, growing vegetation and parent rock.

The paradox is that soil types of subboreal (warm temperate) zone have been found in the boreal (moderately cold) bioclimatic zone of Yakutia in conditions of continuous permafrost.

Permafrost grey soils are formed on ancient alluvium sediments and characterized by acidic reaction and light grain texture. However, given the high fertility of the soil of this type in relation to other permafrost soils, productivity and diversity of vegetation indicate that the optimal ratio of agrophysical and hydrothermal conditions of permafrost gray soil. Formation of grey soils is due to the weakening of podzol-forming process favored by special biological cycle of substances, humification conditions and water regime (Fig. 2). The genesis of grey forest soils is far debatable. Here is the morphological description of the soil.

P5 AII. Left bank of North Purisovo River. Herb birch forest from the water edge 50 m. Microrelief: small and hilly. 1m of drop. H = 15 m, L = 18 cm. Density: 0.4. Undergrowth: pine, cedar, single larch. Herbage: mesophytic grasses, meadow fescue, meadow geranium, *Limnas stelleri*, willow-herb, sedge, meadow horsetail. Moss-lichen cover: green moss, lichen. Coverage is 100 %. Nano-relief: hummock.

A₀ 2-0 cm Litter of birch leaves, lichen, moss.

A₁ 0-2 cm Semi-decomposed organic residues

A 2-27 cm Dark gray, fresh, loamy, loose, fine-lumpy, penetrated by roots. Gradual transition. Smooth boundary.

B 27-50 cm Dark brown, darker than the previous one, with yellow veinlet of clay, fresh, loamy, loose, unstructured, with roots. Clear transition. Wavy boundary.

BC 50-74 cm Dark brown, homogeneous without interlayers, fresh, loamy, slightly compacted, layered textures, permafrost horizon with ice.

Type: cryogenicgray forest soil

A significant portion of humic acids is neutralized with the feet of herbs and the litter itself, mostly represented by hardwoods, which results in significant attenuation of the destruction of soil minerals in gray forest soils. Fulvic acids predominate in the humus of the upper horizons of grey and light grey soils. Humus content is very high and makes up 15 % in organic horizons, and has a growing profile distribution with depth [13]. Humus is of fulvic-humate type.

Degree of humification of organic matter is very high, while humus enrichment in nitrogen is low. Content of non-hydrolyzed humus residue is medium. Phosphorus supply is high. Humus and eluvial horizons of grey soils are light coarse-silt fine sandy loam. Soil-forming rock is light silty clay. Due to the predominance of coarse-silt fraction in these soils, the height of capillary



Fig. 2. Herb birch forest with an admixture of cedar (a), with forming frozen grey forest soils underneath (b) (photo by A. Pesterev)

ascension is maximal and reaches 91 cm. Predominance of clay fractions in the parent rock causes significant molecular soil water capacity. According to literature, field capacity varies from 40 to 45 %. However, the difference of soil grain texture of the parent horizon indicates binomial profile of grey soil. These soils are strongly acid in upper horizons; base saturation is 70-85 %. The soils are not saline.

Illimerization process is occurring in grey soils and accompanied by formation of eluvio-illuvial profile of genetic horizons. Steppe type of soil formation is predominant there. In general, the soils of this region are impregnated with humic substances across the entire profile, which sharply distinguishes these soils from soils of the Central region of Yakutia and indicates high fertility and huge potential reserves of humus under forests. We have discovered grey and dark grey soils differing in total humus content. These soils on sloping and watershed areas are combined with rendzina soils that are mostly attributed to the Valley of Lena River.

As mentioned above, many explorers have described brown soils on the mountainous region of the South Yakutia, but they are found for the first time in even land of cryolithic zone. Fertility of brown soils is inferior to that of grey soils; as to profile distribution, humus content is sharply decreasing here.

The explored area is smooth steeply-sloping plain, dissected by river network, with abundant marshes and small lakes. Geology of brown soils distribution (cryogenic forest brown soils) is represented mainly by the Jurassic system in combination with Cambrian and Ordovician systems of Paleozoic group. Rocks are covered with a coat of Quaternary deposits, which is represented by the upper Pleistocene-Holocene (deluvium), consisting of loam, sandy loam, gravel, blocks of bedrock. However, due to boundary conditions of Lena plateau and Vilyui syncline, diluvial and diluvial-solifluction deposits, being parent rocks of the area, are combined together.

Cryogenic brown soils are formed under productive multistoried mostly mixed stands on plateau-like watershed spaces of the explored area in relatively favorable climatic conditions (Fig. 3). Here is the description of morphological profile.

P 2АП -12 С 61040/23.8// В 113003/35.6// height of 202 m. Blueberry-cranberry larch wood. Two-storied mixed forest. Ist storey 8ЛЦ1С1Е; IInd storey 4ЛЦ3С3Б, density is 0.8. H = 20 m, Д = 0.2 m. Shrubs: blueberries, juniper, willow. Grass-shrub cover: cranberries, sedge, horsetail. Moss-lichen cover: green moss, lichen. Nano-relief: medium hummock.

А0 2-0 cm Litter of leaves of birch, larch needles and twigs.

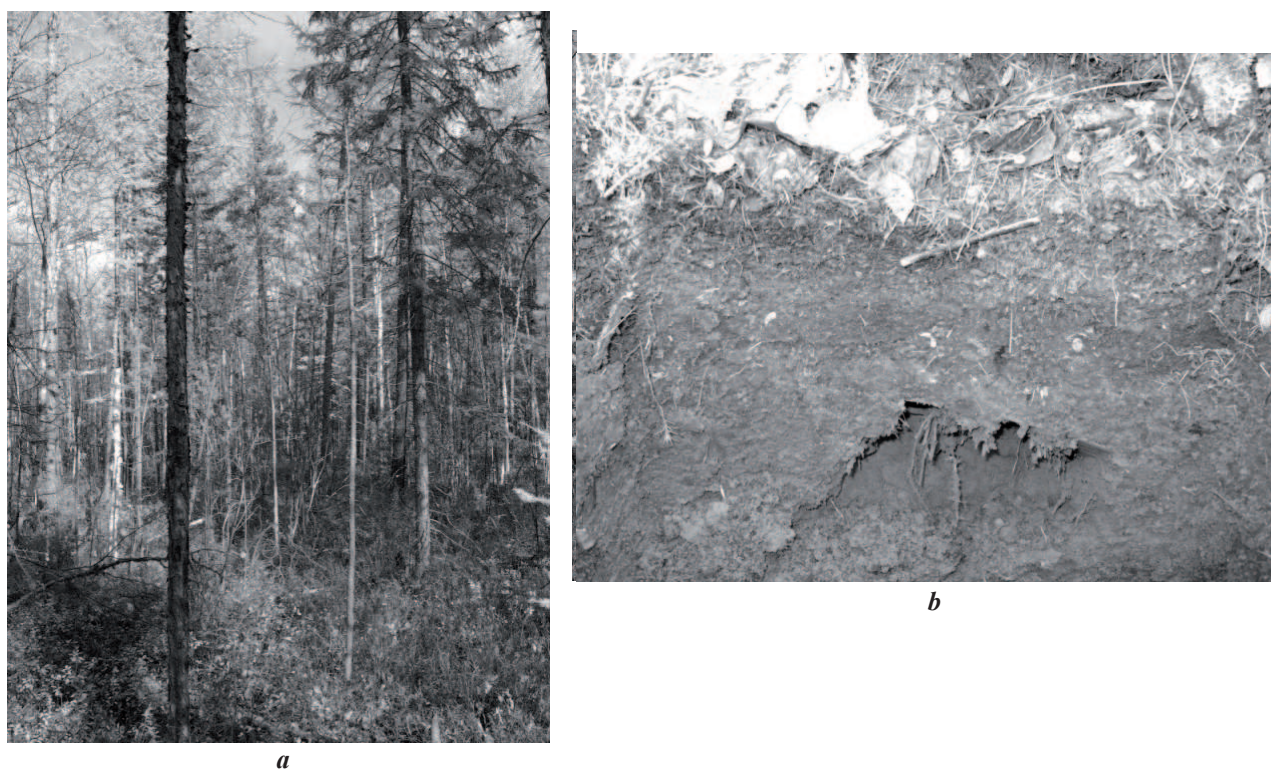


Fig. 3. Under blueberry-cranberry larch wood (a), a formed cryogenic brown forest soil (b) (photo by A. P. Pesterev)

At 0-4 cm Brown, fresh, loose, layered, penetrated by roots. Raw humus. Noticeable transition, smooth boundary.

A1 4-8 cm Dark gray, fresh, medium loam, fine-grained, penetrated by roots. Gradual transition, uneven boundary.

B 8-26 cm Taupe, fresh, medium loam, root hairs. Noticeable transition, smooth boundary.

Ап 26-34 cm Buried humus horizon.

B 34-55 cm Oatmela, fresh, medium loam, fine-grained, horizontally layered.

Cryogenic brown forest soil

The soils have water-resistant structure, high porosity, good air and water permeability. Lamination of mineral horizons (having mainly heavy texture) is due to cyclic process of freezing and thawing of soil, associated with around zero fluctuations of diurnal temperature range and, therefore, phase transitions of water in spring and gradual and phased thawing of permafrost. Such lamination in certain conditions occurs only in the illuvial horizon and over-permafrost screen. The first one relates to the fact that diurnal variations subside at a depth of illuvial horizon, and the second one is due to the fact that the temperature changes that occur over the permafrost screen, are associated with atmospheric variations of certain moveout pitch and cyclic reduction of heatwave.

This type was not included in Elovskaya's classification [11], but is present on the soil classification of the USSR [12]. Brown forest soils are widespread in Western Siberia and the mountainous regions of Russia. According to the latest classification [14] the brown soil is included in the section of metamorphic soils. Soils of the section are characterized by morphologically poorly differentiated profile with differing mull or hystic accumulative organic horizon and metaphoric horizon of brown (brown, pale yellow) tones generated by ferrugination in place and pedogenic restructuring. They contain 10 % of humus in A1 5... horizon, dramatically decreasing downwards along the profile (0.4 % in total at a depth of 10 cm below). Ulmic acids prevail in humus. Soil reaction is slightly acidic and near-neutral (pH 5.5...6.0), turning to neutral at depth; C : N ratio is 13... 19, that means that humus is low-enriched in nitrogen. On slopes, brown soils are replaced by cryogenic podzol or cryogenic pale-brown (cryogenic taiga) soils that are being formed under cranberry pine forests.

For comparison, here is the morphological description of zone type – of pale brown cryogenic soils. Early it was called cryogenic taiga soil. It is formed under the canopy of larch forests on carbonate-free, often rocky or rubbly eluvium of sedimentary and igneous rocks, rarely on sandy loam in the lower part of small slopes.

Table 1

Chemical values of cryogenic soils

№	Section	Horizon	Depth, cm	pH of waters	Humus, %	Ntot, %
Cryogenic pale-brown soil						
1.	P4AII-12	A1	0–5	5,5	10,6	0,025
2.		B1	5–53	6,9	1,3	0,015
Cryogenic grey soil						
3.	P 5 AII	A1	2–27	3,1	15,89	0,719
4.		BC	50–74	3,14	34,75	1,773
Cryogenic brown soil						
5.	P2AII-12	A _г	0–4	4,9	13,4	0,050
6.		A1	4–8	5,5	5,2	0,050
7.		B	8–26	6,8	0,4	0,015
8.		A _п	26–34	7,3	0,4	0,008
9.		B	34–55	7,4	0,4	0,008

P4 AII-12 350 m in height. Blueberry-moss larch forest. Composition 9ЛЦ1С Н = 20 m, Д = 0.15 m, density is 0.6, spruce and birch of 10m in the undergrowth. Shrubs: blueberries, willow, ledum, juniper. Grass-shrub cover: cranberries, sedge, crowberries. Moss-lichen cover: lichen (moss), leaf lichen, and green moss.

A0 5-0 cm Litter of birch leaves, moss and grass.

A1 0-5 cm Dark grey, fresh, light loamy, fine-layered, loose, penetrated by roots. Noticeable transition, smooth boundary.

B1 5-53 cm Gray-brown, moist, medium loam, fine-layered, penetrated by roots.

Cryogenic pale-brown soil

Cryogenic pale-brown soils are poorly differentiated on genetic horizons. Humus content is 7.9 % in the organic horizons, which sharply decreases with depth and it is 0.6 % in the mineral horizon. Medium reaction is acidic and ranges from 5 to 5.6.

Comparison of some chemical values of cryogenic pale-brown soils is shown in Table 1.

We conducted similar explorations on northern taiga subzone [15], and their results reveals significant differences of soil characteristics of middle and northern taiga soils.

In fact, human impacts throughout the country on the taiga ecosystems [16] have been intensified in recent times, which causes degradation of Cryolithic zone and intensification of global warming. Felling of stands and fires reduce the oxygen content in the atmosphere by increasing carbon dioxide, besides when thawing, permafrost causes deformation of the surface and releases methane which is in 20 times greater than CO₂ to create the greenhouse effect. These processes are irreversible and therefore require further systematic

research.

Thus, exploration of soil of the western territories of the Republic of Sakha (Yakutia) makes us come to the following conclusion.

1. Grey cryogenic soils are formed under the small-leaved forests in the continental climatic conditions on ancient sediments.

2. Grey cryogenic soils are geographically located in the middle course basin of the Lena River by local sites in the Lena area of the Republic of Sakha (Yakutia).

3. Brown cryogenic soils are formed more widely under coniferous multistoried forests on Pleistocene-Holocene deposits, coupled with cryogenic podzol and pale-brown soils.

4. Explored brown cryogenic soils cover watershed areas of Western Yakutia and are highly fertile compared with zonal pale-brown soils.

5. Brown forest soils are northerly formed on drained slopes, and they occupy watershed plateau-like spaces in passing to more southern areas.

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New to the Algal Flora of the Republic of Sakha (Yakutia) Macroscopic Algae Species (Zygnematales, Vaucheriales)

The locality of the two macroscopic algae species is given: *Spirogyra majuscula* (Zygnematales, Chlorophyta) and *Vaucheria sessilis* (Vaucheriales, Xanthophyta) new to the algal flora of the Republic of Sakha (Yakutia). The information represented is about morphological parameters and ecological-phytocoenotic relations of the found out macroscopic algae species in the investigated hydroecotopes.

Key words: the Republic of Sakha (Yakutia), Vilyui river basin, *Spirogyra majuscula* (Zygnematales), *Vaucheria sessilis* (Vaucheriales), fertile stages.

Two types of microscopic algae have been found when conducting engineering and environmental survey in Chuonalyyr creek in the vicinity of the city of Mirny: *Spirogyra majuscula* Kütz. (Zygnematales, Chlorophyta) and *Vaucheria sessilis* (Vaucher) De Candolle (Vaucheriales, Xanthophyta), not already identified in Yakutia.

The inspected area is located within the north-taiga landscape which is characterized by open forests with dominance of *Larix gmelinii* (Rupr.) Rupr. and *Picea obovata* L., occupying elevated stepped and deeply truncated plateaux of ancient platforms on Triassic tuffaceous stratum [1].

Chuonalyyr creek is 28 km long and tributary of Kiueliliakh River (tributary of Kharyia-Yuriakh River in Basin of Vilyui River). A small reservoir and recreational landscape and ethnographic complex of sports facilities and parks, have been built in the Valley of Chuonalyyr River 12 km northwest of the city of Mirny, which causes increase in anthropic load experienced by the hydro and ecosystem of the creek compared to ambient load. During the inspection in July 2012 the width of riverbed of Chuonalyyr River was 6-13 meters, and its depth on shallows reached

0.1-0.5 m, and up to 1.5 m on stretches. During the inspection the water of Chuonalyyr River had neutral reaction (pH 7.6) and its total mineralization did not exceed 366 mg/dm³. Content of suspended solids was 3.1 dm³. Dissolved oxygen concentration was equal to 8.0 dm³. According to values of BOD and COD in 5 days which reached 25.5 and 17.8 mgO₂/dm³, respectively, the water on the inspected area of Chuonalyyr River fell in the category of dirty waters, according to GOST 7.1.2.04-77 [2]. The main benthic substrata were rocky and pebbly soils in the riverbed, and sandy and muddy soils on reaches. Hydrobotanic inspection of the section of Chuonalyyr River was performed downstream from the reservoir on the area of up to 3 km (62.62° N, 113.82° E) at a minimum water level. Collection and processing of samples of Zygnematales was performed in accordance with the procedure set forth in the paper by Rundina L. A. [3]. Vaucheriales are collected according to the procedure described in the paper by Zauer L. M. [4]. Thallome was collected manually on the whole explored area of the water body where macroscopic algae had abundantly developed and so were clearly visible. From 2 to 10 samples of 5-10 ml have been collected in each locality and fixed with ethyl alcohol. All types of hydromacrophytes, including Zygnematales and Vaucheriales have been simultaneously herborized. Study of all samples was performed using binocular magnifier (МБС-10) in Petri dishes, and then the material was examined through microscopes Levenhuk-850, Micmed, and МБИ-3 at 80–800-x magnification. Measurements necessary to determine species are made using ScopePhoto. Photomicrographies of Zygnematales are obtained using DCM digital camera. Lower plants are identified by manuals [3, 4, 5, 6]. Hydrophilic mosses are defined in accordance with briological works [7, 8, 9, 10]. Taxons of vascular hydrophytes are given according to "Flora of Siberia" [11] with regard to the determinant [12].

Basic information about species of *Spirogyra* genus in Vilyui river basin is furnished in papers by

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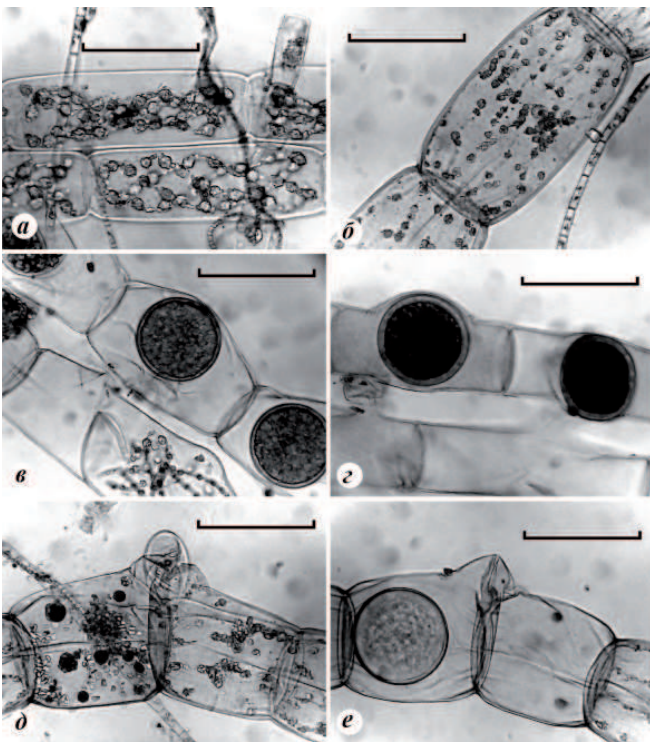


Fig. 1. Photomicrographies of fertile samples of *Spirogyra majuscula* from Chuonalyyr River: *a, b* – vegetative cells, *c* – immature zygospores at ladder pairing, *d* – mature zygospores at ladder pairing, *e* – start of lateral pairing, *f* – immature zygospore at lateral pairing. Measuring bars – 100 μ m

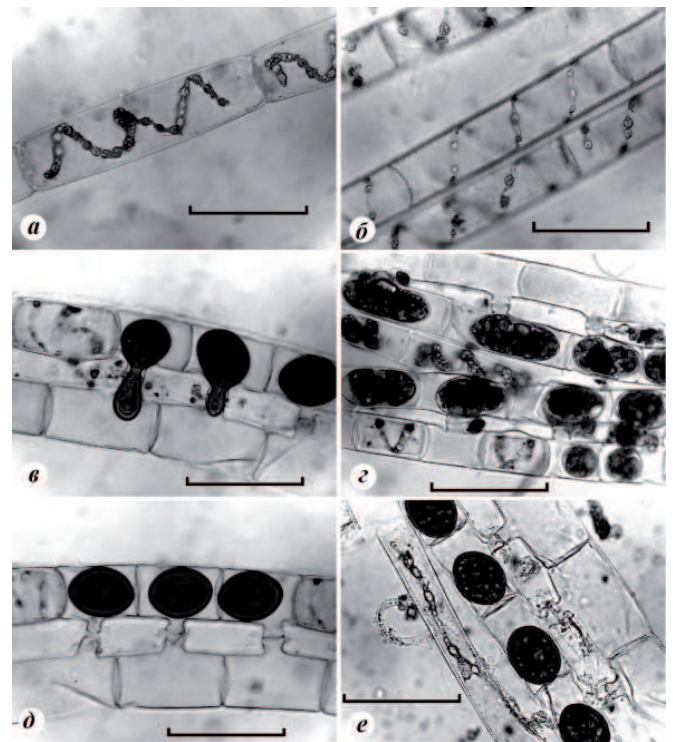


Fig. 2. Photomicrographies of fertile samples of *Spirogyra decimina* from Chuonalyyr River: *a, b* – vegetative cells, *c* – start of pairing, *d* – immature zygospores at ladder pairing, *e, f* – mature zygospores at ladder pairing. Measuring bars – 100 μ m

L. E. Komarenko and I. I. Vasilieva [5, 13], as well as in modern bulletin by I. I. Vasilieva-Kralina et al. [14]. L. E. Komarenko [13] found *Spirogyra insignis* (Hass.) Kütz. and *Spirogyra calospora* Cleve by conjugate (without zygospores) and sterile samples in the basins of Markha and Tiung rivers. Later in Yakutia there were found 10 species of the genus *Spirogyra*, including *S. calospora* (= *S. protecta* (Cleve) Wood), *S. condensata* (Vauch.) Kütz., *S. fluviatilis* Hilse, *S. insignis*, *S. lagerheimii* Witt., *S. laxa* Kütz., *S. mirabilis* (Hass.) Kütz., *S. punctiformis* Trans., *S. tenuissima* (Hass.) Kütz., *S. varians* (Hass.) Kütz. [4]. I. I. Vasilieva-Kralina et al. [14], in the bulletin dedicated to the inventory of biological diversity of Yakutia algae, specified 18 species of the genus *Spirogyra*, in addition to the previous species are also given: *Spirogyra borysthenica* Kasan. et. Smirn., *S. decimina* (Müll.) Kütz., *S. inflata* (Vauch.) Kütz., *S. kuusamoensis* Hirn, *S. major* Kütz., *S. planum* (Wolle.) W. et G. S. West, *S. punctata* Cleve, *S. velata* Nordst., *S. weberi* Kütz.

In 2012 we found *Spirogyra majuscula* Kütz at fertile stage in Chuonalyyr River that are new species to algal flora of Yakutia (Fig. 1), and *S. decimina* (Müll.) Kütz. (Fig. 2) that are rare species to Yakutia, now known for Vilyui river basin [14]. Below is a brief morphological description of the collected fertile samples of *Spirogyra*.

Spirogyra majuscula - big spirogyra. Vegetative cells are 68-77 microns in width (73 microns on the average) and 132-277 microns in length (175 microns on the average). Transverse septa are smooth. Chloroplasts are 6-10. Pairing is ladder and lateral. Donating and receptive cells are involved in the formation of conjugation channel, with a predominance of a donating cell. In ladder pairing receptive cells are swollen on both sides, but more clearly on the side opposite to conjugation channel. Cells without conjugation pair also swollen. Conjugated cells in lateral conjugation are somewhat widened on the side of conjugation channel which protrudes by a quarter the width of the cells. Zygospores are lenticular, round and

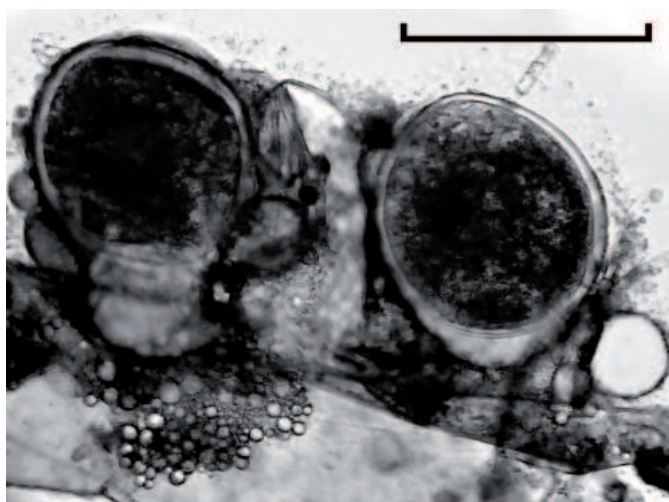


Fig. 3. Photomicrography of gametangium *Vaucheria sessilis* from Chuonalyyr River. Measuring bars is 100 μ m

elliptical in two positions, 68-78 microns in diameter (73 microns on the average) and 55-62 microns thick (59 microns on the average) (Fig. 1, a-e). The species are widespread and frequent in Russia, but have not been previously reported in Yakutia [3, 14].

Spirogyra decimina – decimal spirogyra. Vegetative cells are 40-44 microns in width (42 microns on the average) and 82-178 microns in length (149 microns on the average). Transverse septa are smooth. 1 chloroplast (2 chloroplast are rare). Pairing is ladder. Donating and receptive cells are involved in the formation of conjugation channel.

Conjugating cells and cells without conjugation pair are not swollen. Zygosporangia are ellipsoidal, some are with slightly pointed apex, 39-42 microns in width (41 microns on the average) and 57-71 microns in length (63 microns on the average) (Fig. 2, a-e). The species are widespread and frequent in Russia, but have been previously reported in Vilyui river basin in Yakutia [14].

According to the generalizing paper by I. I. Vasilieva-Kralina et al. [14], there are three known species of the genus *Vaucheria* (Vaucheriales, Xanthophyta) in Yakutia: *Vaucheria totra* Pasch., *V. thuretii* Woronin, *V. stelata* Woronin [14]. New to algal flora of Yakutia species *Vaucheria sessilis* (Vaucher) De Candolle at fertile stage was found in Chuonalyyr River in 2012 (Fig. 3). Below is a brief morphological description of the collected fertile sample of *V. sessilis*.

Vaucheria sessilis – sedentary vaucheria. Plants are monoecious. Thallome is siphonal as slightly branched filaments to 87-98 microns in width. Antheridia are hornlike curved, up to 34 microns in width, with a short stem without limiting cell, single, located next to the oogonium or between two oogonia. Oogonia are ellipsoid and ovoid, up to 106 microns long and up to 89 μ m wide, are located by ones or by twos on the thallomes, sessile

or on short stems. Oogonium's beak is oriented up or at a slight angle to the thallome. There were no mature oospores on collected samples.

Species of the genus *Spirogyra* (*S. majuscula*, *S. decimina*) and *Vaucheria sessilis* have been found on the stretches of Chuonalyyr River at a minimum flow rate, which had been involved in the composition of algal synusia in plant groups with dominance of flowering hydromacrophytes: *Sparganium angustifolium* Michx., *Potamogeton alpinus* Balb., *P. perfoliatus* L., *Hippuris vulgaris* L. Along with higher hydrophytes other macroscopic algae were involved in the formation of these plant cenoses: *Cladophora rivularis* (L.) Hoek, and *Zygnema* sp. ster., *Mougeotia* sp. ster., *Spirogyra* sp. ster. collected in a sterile state. Total projective cover of algal sinusiae ranged from 10 to 100 % in groupings, and 10-50 % in projective cover of flowering hydromacrophytes. Degree of overgrowth of stretches did not exceed 10-30 % (Fig. 4).

The basis for plant grouping on shallow stretches and reaches with rocky bottom soils and higher flow rate were mosses *Drepanocladus capillifolius* (Warnst.) Warnst. and *Fontinalis antipyretica* Hedw., that provided projective cover up to 10-20 %, and the green alga *Cladophora rivularis* (projective cover of 10-80 %) and *Vaucheria sessilis*. In addition to fertile *Spirogyra decimina* and *S. majuscula*, other collected Zygnematales were sterile in these hydroecotopes (*Spirogyra* sp. ster., *Zygnema* sp. ster., *Mougeotia* sp. ster.) and had projective cover up to 5 %. The overall degree of overgrowth of shallows was 10-50 % in different sections (Fig. 5).

Main types of hydromacrophytes of the investigated groupings (*Fontinalis antipyretica*, *Sparganium angustifolium*, *Potamogeton alpinus*, *Hippuris vulgaris*) are native and very static representatives of macroscopic photoautotrophs in aquatic ecosystems of Vilyui river



Fig. 4. Synusia of *Spirogyra decimina* + *S. majuscula* + *S. sp. ster.* + *Zygnema sp. ster.* + *Mougeotia sp. ster.* in cenosis of flowering hydromacrophytes *Sparganium angustifolium* + *Hippuris vulgaris* (Chuonalyyr river, 07.28.2012)



Fig. 5. Synusia of *Spirogyra decimina* + *S. majuscula* + *S. sp. ster.* + *Zygnema sp. ster.* + *Mougeotia sp. ster.* in cenosis of *Fontinalis antipyretica* + *Drepanocladus capillifolius* + *Cladophora rivularis* + *Vaucheria sessilis* (Chuonalyyr river, 07.28.2012)

basin [14]. These species belong to oligotrophic and oligosaprobic organisms [15, 16]. The group of native oligo-mesotrophic oligo-beta-mesosaprobic species (*Cladophora rivularis*, *Drepanocladus capillifolius*, *Potamogeton perfoliatus*) is close to them.

These species correspond to the background environmental conditions of natural water bodies of

the region, with prevailing oligotrophic oligosaprobic hydroecosystems. As compared to them, species *Spirogyra majuscula*, *S. decimina* and *Vaucheria sessilis* probably constitute an invasive and highly dynamic component of groupings of macroscopic aquatic plants. These species are considered mesotrophic and beta-mesosaprobic [15, 16]. Massive growth of *Spirogyra*

decimina with the participation of *S. majuscula* and *Vaucheria sessilis* on explored sections of Chuonalyr River indicates intensification of eutrophication and organic pollution in the course of anthropic impacts on this waterbody.

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Peculiarities of the Geomorphological Structure of the River East Khandyga Upstream

Peculiarities of the geomorphological structure of the Southern Verkhoyanye in the area of the federal motorway “Kolyma” reconstruction are observed. The most important relief-forming factors and connected with them relief’s forms taking into account their origins are characterized. General relief-forming processes and their confinedness with different relief’s forms are lighted. New quantitative data of the analysis of the tectonic dislocation speed and the scheme of the tectonic microblocks are represented.

Key words: external relief-forming processes, slope processes, solifluction, desorption, trough valley, leveling surface, the new tectonic dislocation.

Development of the transport complex of the Russia’s North-East territories is a crucial direction of modern economy so is the development of oil and gas production, electric-power and mining industry. Currently the prospects of the transport system in the Sakha (Yakutia) Republic are linked with the completion of the construction of the motorway “Kolyma” (Yakutsk – Khandyga – Ust-Nera – Magadan), and with its access to the Sea of Okhotsk. These two factors guarantee transport accessibility to gold-bearing Allakh-Yun and upper Indigirka sub-districts as well as year-round interregional motor transport

connections between the Republic and the Magadan Region and Khabarovsk Territory. Apart from it, providing a basic year-round terrestrial transport network defines the possibility of constructing the railway from Yakutsk to Magadan that in prospect will arrive to Chukotka and North America via the Bering Strait.

The geomorphological aspect of the researches on external relief-forming processes in mountain regions of the cryolithozone has primary significance for the engineering and geological substantiation of the construction and exploitation of the linear structures.

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The Southern Verkhoyanye is a term that emerged in the community of Yakutia's geologists and is defined as the upper part of the Verkhoyansk Range that represents a folded mountain arc of Siberian platform [1]. This extremely vast zone, about 300-350 km in width, spreads eastward of the Aldan River for more than one thousand kilometers. Its northern part is presumably located in the structures of the Yana river basin and the Western Verkhoyanye region, while the southern part is delimited by the structures of Stanovik and Dzhugdzhur. Its north-western corner is limited by the Delinya river valley, the northern and eastern borders go through the Seykimnyan-Brungade and Agayakan river valleys. The south and south-west the territory is delimited by western and north-western branches of Suntar-Kayata Range, which being a watershed dividing the basins of the two oceans – the Arctic and the Pacific – is a main orographic unit of the region. On the whole, the territory described belongs to the basins of the two largest rivers – Aldana and Indigirka. In geological and tectonic dimension the territory of Sothern Verkhoyanye belongs to the Chukotka-Verkhoyansk area of Mesozoic folding [2]. The main folding process occurred there predominantly during the second half of the Mesozoic era, but the formation of the current relief is mainly determined by the new tectonic dislocation, that started in the beginning of the Pliocene and continues nowadays [3]. The territory lays in the interaction zone of the North-American and Eurasian plates as well as

of the Sea of Okhotsk microplate that defines its high seismic rate – up to 9 points [4].

This territory also coincides with the northern hemisphere cold pole – Oimyakon, where the average temperature in January amounts to $-48 - -50$ °C. With the weather that is mainly clear, the high aridity of the air and the short daylight time the intense cooling of earth surface occurs. Winter temperature inversions in the lower layer of the air, where the temperature increase depends on the height, locally amounts to $1.5-2$ °C for each 100 m that is a characteristic of the mountain regions [5].

According to the concept of A. V. Chayko, A. A. Mystryukov [6] the main principle behind the classification of the external relief-forming processes (ERP) is the system of watershed - slope – valley with allocating intermediate formations in the ideal profile and defining their qualitative characteristics (Fig 1. 1) In these circumstances this approach is appropriate due to the fact that the territory is mountainous with distinct alpinotype features [6].

On the other hand, the severe climate conditions and the development of frosted rocks not only have a profound impact on the development of exogenous processes but also define the development of cryogenic such as soliflucation, aufeis formation, thermokarst, stone run formation, pingo.

Watershed complex of the ERP has very distinct morphology and can be easily mapped. It can be classified by its genesis and age, these are the fragments of the

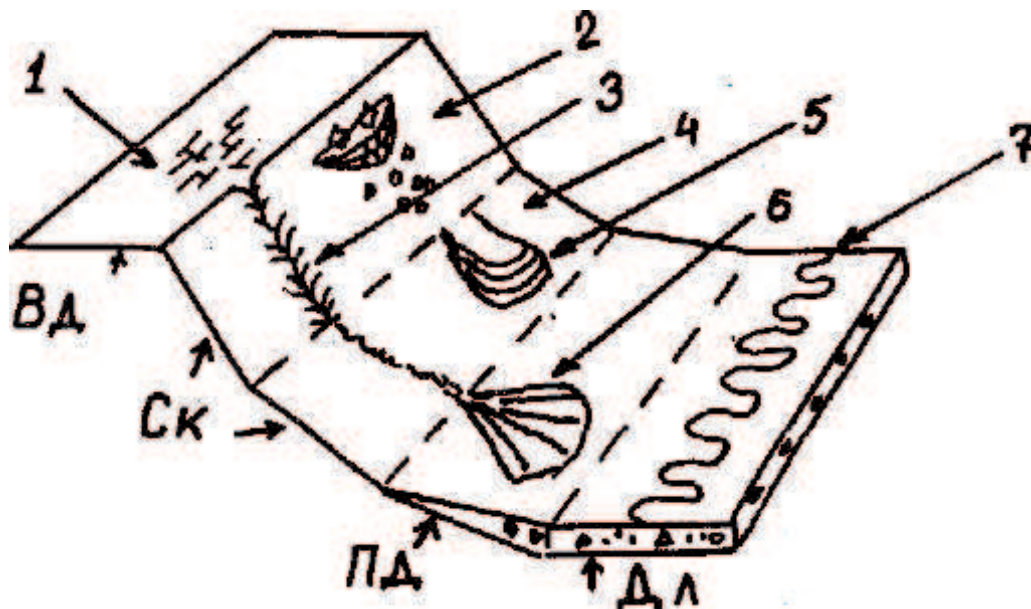


Fig. 1. Scheme of the complexes of relief-forming processes comparatively with the ideal geomorphologic profile. ВД – water-shed, СК – slope, ПДЛ – near the valley, ДЛ – valley. 1 – cryogenic eolation, 2 – avalanche and tallus ablation, 3 – linear erosion, 4 – rainwash, 5 – soliflual sinter, 6 – alluviaal cones, 7 – alluvium

leveling surface, as well as the parts of denudation plains or piedmont torrential plains in the early Quaternary period.

The next watershed complex of the ERP is placed in the middle of the classification, it has unclear genesis and mostly represents some transitional regions from slopes and flat watershed.

The slope complex of the ERP includes different by origin slopes that can be subdivided into several groups from avalanche and talus ablation to deluvial-solifluction types and that are predefined by tectonic processes. We consider that the valley complex of the ERP includes the flat surfaces in the pediment of the slopes that are characterized by massive movement of weak material and its aggregation. The transit to the valley complex is gradual; nevertheless the crest line can be traced with sufficient grade of certainty. The main peculiarity of the ERP valley complex is the unusual for mountainous regions volumes of unconsolidated sediments.

The proposed cartographic approach allows to make long-term relief-forming forecast by identifying geomorphological surfaces and constantly monitoring the territory.

The Suntar-Khayata range stretches out across the South-Verkhoyansk sector from the north-west to south-east. Being the principal orographic structure of the territory, it is a chief point of the geomorphological demarcation. To the west and north-west from the range there is an area of much dissected alpinotype high mountain region with typical relief-forms. To the east and north-east from the range the territory of solid high mountains gradually is replaced by firstly the sectors of the middle altitude than by low-hill terrain. The latter sometimes includes the areas of gently-rugged relief (Agayakan hollow) formed by ice-laid deposits (moraine) [7].

The axial crest of Suntar-Khayata range is a very distinct alpinotype highlands, its absolute height of hilltop differs from 1800 to 2600m and the relative height of the watershed above the bottom of the valley rivers does not exceed 800-1300 m. Central and the most elevated part of the range has a plenty of modern glaciers, their ice-flows run down not only to the basins of the river Indigirka and Aldan but also to the South into the catchment basins heading to the Sea of Okhotsk. The glaciers are predominantly presented in the north and north-west, their condition has been affected by the climate warming in last thirty years, as a result the Suntar-Khayata glaciated area was diminished by 20 % [8].

Due to the high latitudes and its severe extreme continental climate of the territory the local latitude limits defining the spread of the corresponding mountainous relief forms differs from those of the southern regions. Apart from that, such processes as nivation, solifluction and congeliturbation have a profound impact on their formation [9]. The forms of permafrost relief-forming

also play the important role, while the fresh traces of the Quaternary period congelation are typical even for the elevated plains and low-hill terrains [10].

In general, in the high mountainous regions no distinct ranges or ridges can be observed. The latter are oriented by the direction of the large stream flow valleys, and the absolute height of some summits amounts up to 2400 – 2600 m. There are some well-developed vast glacial valleys which in their outlets often meet low (from 1400 to 1500 m) swamped passes, and sometimes even form big ice-catchment lakes – the sources of the past transection-type glaciers [11].

The study of leveling surfaces and the analysis of its results allows at a first approximation to define the amplitude (and speed) of the new tectonic dislocation and form the model of the tectonic relief of the territory [12]. The approach is based on the assumption that initially the leveling surface in paleogenic period in the moment of its formation was horizontal or gently inclined to the denudation basis [13]. The following processes are reflected by the deformation of the surface given the fact that the degree of the deformation diminishes from the ancient to the new leveling surfaces. (Fig 2).

Taking into account the observations mentioned above and assuming that the speed of tectonic movement in all the points was permanent and that the hypsometric level of the upper leveling surface is the maximum value of uplift in Neogene-Quaternary period, one can calculate the amplitude of ascending tectonic movement while forming the first, second and third levels of the relief which amount to 600-800, 300-500 and 500-700 m correspondingly.

The slopes of watershed are characterized by great diversity that is defined by the nature of the denudation process (ablation, transit, aggregation), lithological composition of the constituent reservoirs, gradient and absolute height of the slope and other aforesaid factors [14]. Nevertheless, the slope pattern and the processes that are taking place there can be described by an integrated model (Picture 3).

In general, there three types of slopes that can be distinguished in the region:

- abrupt, often bluff (gravity strip more than 40°);
- slopes of deluvial talus ablation of mean steepness (around 30°);
- slopes of deluvial ablation and gently inclined slopes of deluvial and solifluction aggregation.

The first type is characterized by the high steepness (more than 40°) and is clearly distinct near the upper parts of the watersheds, in the heads of the streams and temporary streams intensively digging into the rock as well as in the flanks of canyons and ravines. Predominantly it has the north exposure. Those slopes are of rockfall and deluvial talus ablation. In summer and fall there often occur the large-scale rockfalls, in winter and spring the

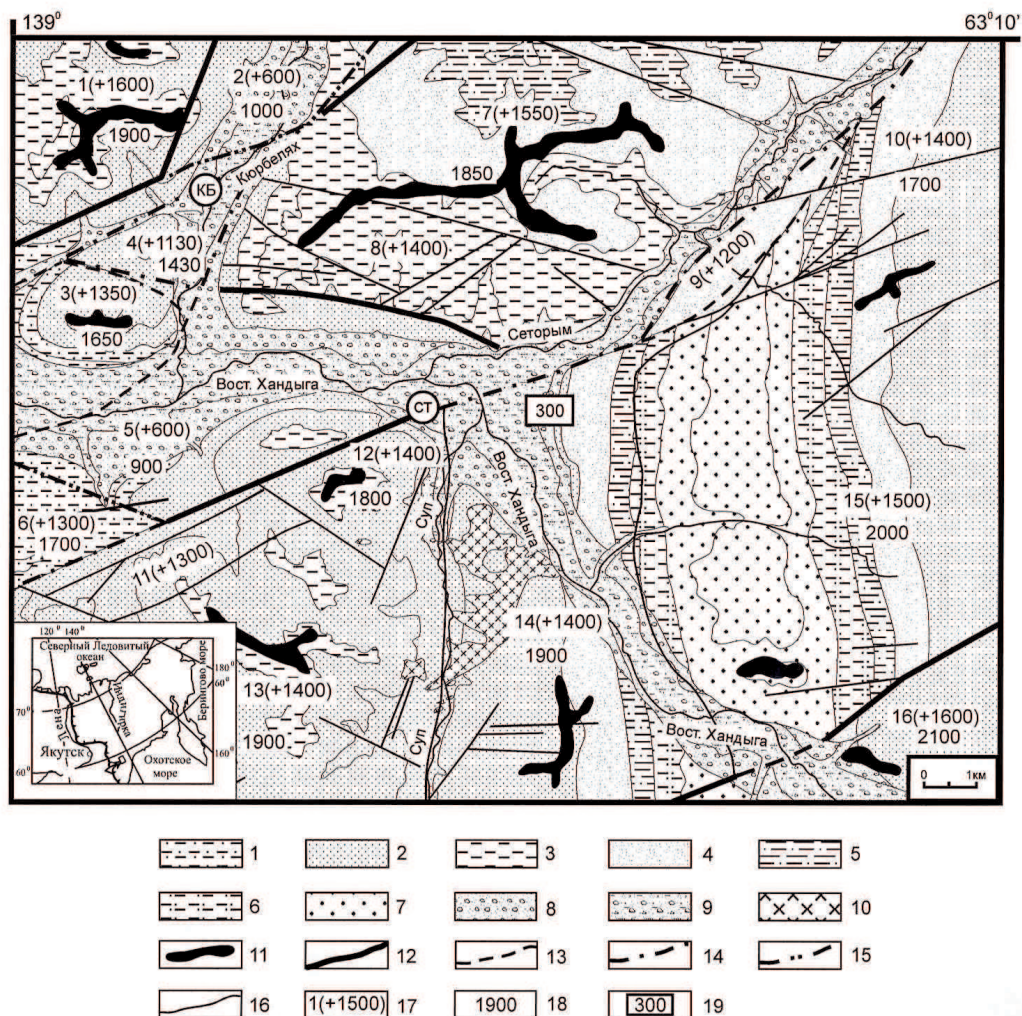


Fig. 2. The model of tectonic relief in the bounds of the Eastern Khandyga River upstream.

Captions: Different suits deposits in the river Perm upstream: 1 – Menkechnskaya, 2 – Chambinskaya, 3 – Imtachanskaya; Trias suits: 4 – Nekuchanskaya, 5 – Kharchanskaya, 6 - Setorymskaya, 7 – Maltanskaya; 8 – early Quaternary period deposits, 9 – modern deposits; 10 – diorites, granodiorites and quartz diorite; 11 – leveling surface relics (Cretaceous–Paleogene); relief-forming splits: 12 – uplift for 1600m, 13 – uplift for 1400m., 14 – uplift for 1100m., 15 – uplift for 600m, 16 – line of passive low-relief split; 17 – number of block, sign and amplitude of the vertical movement in meters; 18 – modern hypsometric level of the block surface; 19 – level of background surface; splits: КБ – Kurbelyaksky, СТ – Setorymsky; inset – location of the region

avalanching often precedes the process. These slopes are specific for, e.g., the river East-Khandyga, the stream Setorum, the stream Ukhun-Kurung, the stream Sup etc.

The slopes of deluvial and tallus ablation type are less abrupt, often have the southern exposure and partly coincide with the aleurolitic and clay structures. The typical example of these slopes are the left-bank side of the East Khandyga river, where an array of subparallel drainage lines of the temporary streams with the alluvial cones in the lower part of the slope (delle) can be observed.

On several parts of the slopes there can be seen the subsurface deluvial process that are determined by washing

off the microgranular fracture from the rudaceous rubble deluvium (thermo-suffosion).

The deluvial ablation is specific for the slopes of low steepness (under 15°) with the predominant nothern exposure. Those slopes are usually very turfed and specified by pit-and-mount surface due to the prevalence of the soliflucation rampart, terrace and knobs.

The deluvial and soliflual aggregation slopes are characterized by mostly low steepness and sometimes represent something similar to the merged together alluvial cones of the temporary streams forming colluvial tail at the foot of all other types of slopes. These slopes are

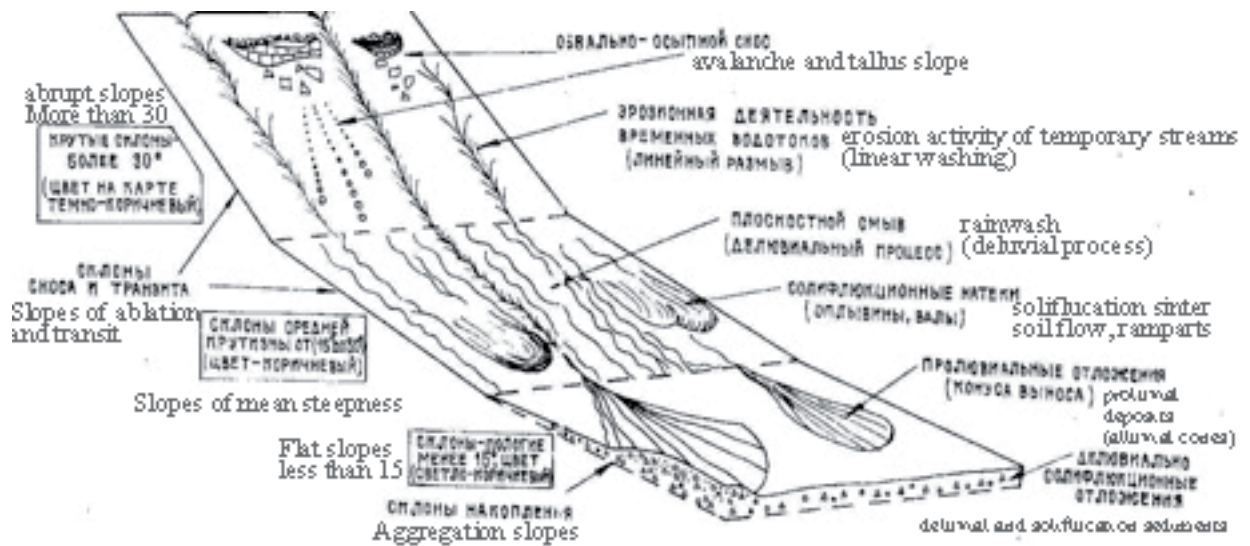


Fig. 3. The model of the slopes that is typical for the territory and the defining process [15]

formed under the influence of deluvial as well as proluvial and soliflucation processes. The cryogenic process that is developed on the whole territory of the northern part of the Southern Verkhoyanie stimulates the formation of the diversity of micro – mesoforms of the new relief, including polygonal “soil” and stone polyhedron, landslides, rock glacier (rock rivers), soliflucation terraces, ramparts and seasonal and permafrost glacier [16].

The formation of all these types of relief is connected with the sequence of seasonal thawing and frosting of the permafrost layer surface. In this regard, the cryogenic denudation processes, such as soliflucation and creep, have an important meaning.

Also the cryogenic processes are closely connected with the formation of the thermokarst funnels and basins as well as thermoerosion bank-caving after which the negative land microforms (thermokrast) are created. Those forms of microrelief are well exposed on the glacier terrace surface on the left bank of the Kurbelakh stream in its outflow.

Many features of the new relief in the region are determined by intensive river activity. As it was already mentioned, the territory has a well developed «feather-type» hydrographic network [17]. The form of the cross direction profile and the morphological features along the five types of the river valleys are distinguished:

- 1) vast mature trough valleys with flat bottom and terrace complex of different genesis and levels with the predominance of the lateral erosion (the East Khandyga river, the Kurbelyakh stream and the Setorym stream);
- 2) narrow trough valleys with flat bottom and low

alluvial terrace complex and intensive process of the lateral erosion (the Vera stream);

3) narrow trough valleys with canyon-shaped cut of the modern outflow and fragmentarily preserved low alluvial terraces (the Sup stream);

4) canyons and canyon-shaped parts of the valleys with abrupt cataracted cross profile and intensive deep erosion (the Yulgin stream, the Kanareyny stream, the Wilka stream);

5) V-shaped young valleys with intensive process of new cutting (the Lager stream, the Khmury stream).

The valleys of the East Khandyga River, the Kurbeyakh River, the Setorym River and other large water flows of the region constitute the first type. They differ from other types by the trough form of valleys, its significant width (under 2 km and more on the bottom), small longitude angle (under 12 m/km) and impressive complex of different types of terraces from 1-3 m flood-plain terraces to 40-60 m rock-defended glacial terraces. In the river beds the seasonal glacier can be seen as well as their permafrost variations along the rivers Kurbelyakh and Setorym and the Naledny stream.

The confinedness of the valleys of the Setorym and Kurbelyakh to the splits of the same names determined some of their differences from other large valleys. Here the erosion-tectonic relief forms are well developed: rock cliffs, tectonic outlier and pendants, narrow canyon-shaped segments, hanging glacial valleys of the lateral inflows etc.

The second type of the river valleys is a characteristic feature of the Nekucha, Kharchan and Naledny streams and another array of rather small and narrow water flows.

There the intensive process of deep and lateral erosion takes place, as well as the seasonal glacier, rock and coastal cliffs and alluvial terraces can be seen.

The third type with special trough form (the Sup, Laguer, Dolgochan, Vera, Chertov Brod and others) is most wide-spread across the region. The river bed of those water flows is usually cut in the bottom of the trough for 20-50 m and forms here and there very narrow canyons. The width of these water flows does not exceed 400-500 m, in the upper-streams the bottom usually transforms into kars or cirques.

Last two valley types comprise small water flows in the region with V-shaped forms characterize both shallow streams and upper parts of the larger streams.

There exist the fragments of the terraces of different heights in the large and small scales valley sides. There are three different types among them:

- a) flood-plain aggradation terrace 1-3 m height;
- б) above the flood-plain aggradation terrace under 5 m height;
- в) rock-defended glacial terrace 5-10 m height;
- г) rock-defended glacial terrace 15-20 m height;
- д) glacial terrace 40-60 m height;
- е) bottoms of the «upper trough» 300-500 m height (can be found very rarely).

First two types of the terraces usually characterize all hydrological network and are notable for their big size and good state of preservation; the flood-plain terrace are often densely afforested and are characterized by distinct edge, back suture and the surface slightly inclined to the river bed.

The terraces of 5-10 m height (rock-defended terraces) are represented by the fragments and can be traced on the valley sides of the largest water flows (the East Khandyga, Kurbelyakh, Setorym rivers). They stretch for hundreds of meters across the valley and their width attends 200 m. The surface of these terraces is usually covered with the reindeer lichen, here and there mixed with the glacial deposits (moraine).

The glacial (rock-defended) valleys of 40-60m height are the highest in the region. Some of their fragments are found in the East Khandyga river valley, but the largest parts of these terraces still remain on the left bank of the Setorym river midstream. The terraces which are based on the parent rock are covered with the glacial deposits. The terrace edges are clearly distinct while back suture gradually transforms into altiplanation terrace and blurred with the soliflucation relief microforms in many places.

On the basis of the conducted research and interpretation of the results following conclusions were drawn:

- 1) modern geomorphological structure of the territory is mostly determined by the process of tectonic territory uplift.
- 2) glacial and external relief-forming processes formed the most widely spread plain relief forms, which are

concomitant by nature.

3) The leveling surfaces characterize the stages of the tectonic quiescence, on the base of the interpretation of the findings in the region three types of leveling surfaces were distinguished structurally.

4) region's three types of leveling surfaces correspond with three levels of the relief; average absolute mark of the upper level is 2000 m, middle one – 1600m and the bottom level – around 1000 m;

5) the average height of the slopes and benches dividing the relief levels is 400 and 500-600 m correspondingly;

6) the upper leveling surface is inclined to the north, the middle one is almost horizontal and the lower part is inclined to the west and the north-west;

7) the age of the ancient (original) leveling surface is apparently Late Cretaceous – Paleogenic period, the middle surface – middle and late Quaternary period and the lower level – modern period;

8) nowadays the lower leveling surfaces on the stage of active formation.

9) In the future the acquired results would allow to create groundings to organize the activities to define the vulnerability of the trial trace to dangerous external processes.

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ECONOMIC SCIENCES

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Regional Aspects of the Land Use and the Administrative Region's Land Resources Protection

The economic-geographical characteristics of the land fund of the region are given. The transforming shifts and results of the intensive impact of the environment are analyzed, the dynamics and problems of the agricultural land use are researched, the trends and goals of the rationalization of the system of the land use and the region's land protection are determined.

Key words: land fund, land resources, land category, land, land use, land of especially protected territories, ecological frame of a territory, soil, soil fertility, fertilizers.

Due to its multifunctionality, land (land resources) is an exceptional type of natural wealth, without which human life is impossible. Land resources are reproducible. In addition to their geopolitical importance, they are the basis of economic activities to use the other natural resources (minerals, forest resources, biological and soil resources, etc.).

Land resources are of particular importance for such a remote area of the country as is the Far East. In addition to geopolitical function and being a natural larder of diverse mineral resources, they, as a primary means of agricultural production, play a strategic role in ensuring food security of the region. Therefore, the rational use and conservation of land resources is one of the most important contemporary social and economic problems.

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The subject and object of our research is the land fund of the huge administrative region, the constituent territory of the Russian Federation - the Amur Region. It is located in the western part of the Far Eastern Federal District, stretching in the latitudinal direction by more than 2 thousand km and to 700 km in the north-south direction. In its present borders, its area is 361.9 km² (for comparison, the area of the Republic of Korea - 98.48 km², that of Japan - 377.835 km²) [1].

In geopolitical terms, the region's cross-border location is its particular feature: for more than 1,200 km along the river Amur it is bordered to China, mainly to Heilongjiang, the largest northern province.

The most characteristic economic and geographical feature of the region is the fact that having predominantly mountainous nature (the mountain and elevated areas occupy 60 %), it has vast plain spaces with relatively favorable conditions for living and life activity. There are three large plains: the Zeya-Bureya, the Amur-Zeya and the Upper Zeya ones [2]. The steppe, almost treeless Zeya-Bureya Plain, located in the south, in the basins of the rivers Zeya, Selemdzha and Bureya, is the largest and economically developed of them. Within this plain, there are vast agriculturally-used areas of the most fertile meadow and chernozem-like soils, many large agricultural enterprises and farms operate. For the period of many years, a highly agro-industrial zone, which is the major agricultural base of the Far East, has been formed here.

As a result of intensive economic development, large-scale plowing in the 50-60s of the last century, by the present time, $\frac{3}{4}$ of this area has been converted into

agricultural landscapes, 15 % of it is occupied by residential areas and road network, the degree of forest cover has been reduced to a critical level of 1-2 %, extensive forms of farming dominate. All this has led to significant degradation of the soils, about 140 thousand hectares of arable land is in a dangerous erosion condition, the area of acid soils exceeds 600 hectares.

The Amur-Zeya plain is located in the middle basin of the river Zeya. It is characterized by slightly undulating surface, with elevations of 300-500 m, its south-eastern part is covered by deciduous forests. Within the boundaries of the plain there are about 20 % of agricultural land of the region that is being used. The agricultural potential of this territory is still underutilized; there are reserves for both the expansion of cultivated land and the increase of their efficiency through intensification.

The Upper-Zeya plain is located in the north-east of the region and is an intermountain basin bounded by the mountain ridges Stanovoy, Tukuringra, Dzhagdy, its significant part is submerged by the reservoir of the Zeya hydroelectric station. In economic terms, it is poorly developed, the agricultural land is suitable for focal agriculture, the development of the fodder and stock-raising farms.

The specific natural and geographical features of the land resources of the region include the presence of vast areas of space-intensive types of the indigenous nature management of the indigenous peoples of the North (reindeer farming, hunting, and gathering). Only the area of reindeer pastures is 5127.1 thousand hectares [3]. They are located in the region mainly in Tynda, Zeya and Selemdzha districts, where the Evenk live. The federal law on traditional nature management of the territories of indigenous smaller peoples of the North, Siberia and the Far East of the Russian Federation declares the exclusive right of these peoples to natural resources in these areas [4].

The objective natural and geographical conditions have largely predetermined both the spatial structure of the land use and the character of the whole system of the nature management of the region under study. The highlands, the midlands and lowlands are used only for forestry and pasturing livestock farming, and the flat area and their topsoil favor the development of agricultural production. Currently, the industries of nature management form the basis of the regional economy, mining (subsoil management), forest management, water management are relatively developed there, the land use for agricultural purposes is of priority importance.

Thus, the land (land resources) is not only a living space, but also, that is the most important, a very valuable form of natural, largely renewable wealth, demanding scientifically grounded approaches to its use and reproduction.

To manage the land use and decision-making on rational and efficient use of land resources, the state

registration of land is carried out in the Russian Federation, which is, in accordance with applicable law and established practice, performed subject to the categories of land and land resources. The current Russian legislation provides seven categories of land:

- the lands of population aggregates;
- the lands allotted for industry, energy, transport, communications, etc.;
- agricultural lands;
- the lands of specially protected areas and facilities;
- forest resources lands;
- water resources lands;
- reserve lands.

The concept of 'agriculturally used areas', in contrast to the category of land, which is the concept of collective and conditional, has specific boundaries and characterizes the target economic development of natural land areas, their records are carried out in accordance with the actual conditions and use.

Agriculturally used areas are divided into two major groups:

- agricultural land, including arable land, hayfields, pastures, plantations of many years, fallow land;
- non-agricultural land, including wetlands, land under bushes, roads, buildings, that of being under the surface waters.

The features of the structure of the land fund, as well as the land-use system of the region are determined by a set of objective factors of natural conditions and those of historical and economic nature. In this regard, studying the dynamics of the land fund, we note that the Amur Region has been reckoned among the most intensively developed areas of the Russian Far East and the country as a whole due to its geographical location and availability of natural resource potential since the 70s of the last century. For the period of forty years, such large-scale transportation projects of federal significance as the Baikal-Amur Mainline (more than 1500 km within the region), the Auto-Amur (a motor road in the direction of the Chita-Khabarovsk), ESPO oil pipeline system (more than 1400 km), the energy projects (the Zeya and Bureya hydroelectric power plants) have been implemented there. A number of regional projects in the mining sector has been also implemented (the development of the Kuranakh titanium-magnetite and the Malomyr orogenic gold deposits, as well as the development of the Garinsky iron ore deposit, the Erkovetsk brown coal and Ogodzha coal fields).

This intense economic development of the area has entailed a significant impact on its natural complexes. The areas of forest land, reindeer pastures (reindeer moss), hunting areas, goosefoot landscapes. The construction of two large hydroelectric power plants has led to the creation of the Zeya and Bureya reservoirs, followed by submerging 3159 km² of land, including more than

2,000 hectares of the "Zhelundinsky" refuge. The floodplain ecosystems characterized by the highest biological productivity and diversity of species of flora and fauna were submerged, there were irreversible changes in the microclimate, animal habitats and other environmental parameters.

We believe that the proposed construction of the lower Zeya HPP in the Amur Region (the Draft Program of socio-economic development of the Amur Region for 2013-2017) is economically unjustified and will exceed the reasonable limits and environmental security of the territory, taking into account the fact that environmental requirements have immeasurably increased. Such intense anthropogenic processes in the last forty years have led to considerable changes both in the spatial structure of the land fund and in the condition of the land in the region, the sizes of disturbed lands have significantly increased.

Figure 1 shows the current structure of the lands of the Amur Region in the context of the individual categories. As can be seen, forest lands (74.5 %) dominate, the forest area is almost 23 million hectares. The share of water resource lands, which account for 324.9 thousand hectares, has been increased, the area of the population aggregates land, the area of the land for industry, transport, energy has exceeded 400 thousand hectares. There has been significant increase in the area of reserve land, in accordance with the Land Code of the Russian Federation the reserve land includes the land owned by the state and of the municipal property and not intended to be used by individuals and legal entities. As of January 1, 2012, the area of such land was 879.4 thousand hectares (21 %).

Along with the negative and positive points, we shall also note a positive process of very important qualitative transformations to which we attribute a significant growth of the areas of the land-use category, as the land of specially protected territories. According to our calculations, in 2001, in the land of specially protected territories of all types of the Amur Region amounted to 3795.4 thousand ha, that is 10.5 % of the total land fund, which corresponds to the world average. In the structure of the regional land resources, this category ranks second. The process of formation of the land of specially protected territories accelerated after the Presidential Decree No. 1155 of 2 October, 1992, which established that the preservation and development of the land of specially protected territories is one of the priorities of the State Environmental Policy of the Russian Federation. In 1995, the respective Federal law was passed [5]. For the period of more than forty years, a wide network of reserves, wildlife preserves, etc. has been created. At present, the system of the land of specially protected territories of the region includes three state wildlife reserves, two federal preserves, and 118 nature monuments of regional significance and 34 wildlife preserves of region significance. In the region, 60

hectares medical and health areas are also registered, it is 40 % of the total area of this type in the Far East. [6] The expansion of the land of specially protected territories was exclusively at the expense of the creation of new preserves of regional significance, they account for 85 % of the total area of the land of specially protected territories.

The land of specially protected territories is a specific type of land use, having a special routine of the protection of the environment and restrictions of economic activities. It's kind of a way to solve problems for the conservation of certain ecosystems, ecological balance, and the balance of the natural environment in the region. But, of course, the territorial possibilities of expanding the system of the land of specially protected territories in the region are limited, taking into account that it does not cover the entire block of environmental problems. However, the opposition of land use within the land of specially protected territories to that within the industrialized economies systems is not methodologically constructive, it is necessary to search for compromise methods in the form of transitional forms of nature management (Seville Strategy, 1995). The strategic goal of these systems is the formation of land space for sustainable environmental management. Scientific search in this direction has led to the development of a methodology of singling out the category Econet – the ecological frame of the territory that includes all the areas with restrictions on the use of natural resources, and in this the land of specially protected territories basic, but not the only element [7].

For the Far East at the present stage, when the public policy of large-scale industrial development of the eastern territories gets its real implementation, the land of specially protected territories is of particular relevance and practical significance in terms of rational use and protection of land potential. The main objective of improving the effectiveness of the system of the land of specially protected territories and ensuring the conditions of its development is creating a system of state ownership and management of land for nature protection purposes, in order to improve the federal law number 33 of March 14, 1995, it is necessary to eliminate the departmental dissociation of environmental and conservation structures, by creating a special state authority or the concentration of the relevant control and legal functions at the Ministry of Natural Resources of the Russian federation. It is also necessary to establish the order in which the independent state ecological examination should precede implementation of all large-scale economic projects (and not vice versa), to assess the potential risks and foresee the extent of environmental damage and the sources of compensation, as well as the establishment of protected areas. It is also necessary to increase the level of state support, since the existing funding is inadequately to the objectives of the land of specially protected territories, and they do not have the support of local budgets. It would

Table

Structure and dynamics of agricultural lands in the Amur region, thousand ha [1]

Structure of lands	1997	2000	2005	2011
Agricultural lands, total	2682.2	1828.2	1781.8	2198.0
including:				
- plough land	1783.7	1225.8	1143.3	1324.0
- fallow land	94.6	72.3	122.7	271.7
- perennial plantings	7.2	7.1	7.0	7.0
- hay-fields	230.3	225.0	223.9	264.4
- pasture lands	310.3	298.0	284.9	328.9

be advisable to create a special reserve fund. Generally speaking, it is crucial to elaborate a new federal law on the land of specially protected territories that would provide a fit between land, forest and water codes.

At the regional level, there is an urgent need for adoption of the law of the Amur Region “On the territories of the traditional nature management of the indigenous peoples of the North” with giving them the status of the land of specially protected territories and the preservation of the rights of traditional management and trades in accordance with applicable federal laws [4, 5].

The analysis of the land fund by categories gives a general idea of the ratio and dynamics of the land areas. The main element of the governmental economic and practical accounting, as already noted, are the areas of land that are divided into agricultural and non-agricultural ones in accordance with the laws.

A distinctive feature of the Amur Region is a relatively high share of agricultural land. Subject to the value of intensively used arable land per inhabitant, the region belongs to the regions that are abundant in land (1.8 ha), not only in the east of the country, but also in Northeast Asia (the south (the Amur Region - 1.8 hectares), Russia’s Far East - 0.33 ha, North-East Kazakhstan - 0.11 ha, Japan - 0.04 ha, North Korea - 0.13 ha, South Korea - 0.04 ha). Currently, the Amur Region accounts for nearly 60 % of arable lands, which are crucial in ensuring the food security of the Far East region. According to the estimations of the scientists of the Pacific Institute of Geography of the FEB RAS, the shares of the resources in solving the food problem are as follows: land resources account for about 50 %, the sea ones – 30 %, the freshwater resources – 10 %, the forest resources – 10 % [7].

Table 1 shows the dynamics of agricultural land in the region.

Analyzing the dynamics of farmland, we shall particularly emphasize that this type of land is not only the most valuable strategic resource, but also being rationally and carefully used they self-restored, i.e., they are the guarantee the sustainable development of the region virtually unlimited in time.

The situation in the transformation of farmland that has been existed in the region since the period of agrarian reform (1990) can be characterized as unfavorable. The total area of farmland has decreased by more than 600 thousand hectares. Such a situation is extremely alarming due to the fact that the farmland has decreased mainly at the expense of the most productive part – the arable land. At the turn of 1980, the size of arable land in the region exceeded 1.8 million hectares. In fact, during the period of 1980-2010 its area was reduced to 1,282 thousand hectares, i.e., more than 700 thousand hectares of fertile arable land were derived from economic circulation. These lands were transferred to the state reserve fund; they have covered with weed vegetation, overgrown with low forest. The considerable areas of the land are allotted for thoroughfare, power transmission lines. This process has intensified in the region due to the implementation of the projects for the construction of the pipeline system (ESPO) and the federal motor road “Amur”. In the structure of agricultural land, the share of the land under roads has reached 0.4 % (in 2011 - 25.3 thousand hectares).

The sphere of land relations has many problematic issues. In particular, we can cite the public declaration of the Governor of the Amur Region: “The region does not have any benefit from the fact that the pipe of the pipeline (ESPO system) went through its territory. We get neither land tax nor property or profit taxes. At this, 33 hectares of our agricultural land is used for the pipe. Shall we have any compensation?”[8]. By the way, at the beginning of the construction of the pipeline, when discussing of the project materials of the state customer OJSC “Gidrotuboprovod” we substantiated the directions and compensation payments for damage that would be inflicted on the environment of the region by the project implementation. The sum of land resources payments only was determined at the level of 220 million rubles.

The reindeer pastures are another problem. Since 1998, government statistics has not referred them to a separate type of lands, so they are recorded in different land categories. In our opinion, such a decision cannot be

considered rational, because it contravenes both federal laws No. 49 of May 7, 2001 and with the current economic practice [4]. First, the reindeer pastures are large spatial areas covered with unique vegetation, suitable for the reindeer feed - reindeer moss, which is the most valuable natural food source. We consider it necessary to revive the system of accounting for reindeer pastures as farmland (forage grassland), as it is also related to the conditions of the state support of the farms of the smaller indigenous peoples of the North, where reindeer farming is the basis of economic life.

Thus, the Amur Region has a huge land fund, the main part of which is geographically located within the area with favorable soil and climatic factors of economic land use and comfortable living conditions.

At this, the area of the Amur Region is a major agricultural base of the Far East, it has considerable land resources which are potentially suitable for the expansion of agricultural production, and there are reserves for increase of arable land to 2 million hectares in the nearest future. At the beginning of 2012, in the structure of the agricultural land of the region, forest plantations (not included in the forest fund) accounted for 146 hectares, more than 446 thousand hectares were occupied by swamps, almost 25 thousand hectares were considered as part of the so-called other land (testing areas, dumps, ravines, etc.), and 35 thousand hectares of land were in the reserve lands. There are more than 270 thousand hectares of deposits in the farmlands.

Land is the main national treasure that must be carefully used and protected, however, the current practice is far from these requirements. Taking into account the spatial aspects of the dynamics of the land resources of the region noted in this article and summarizing the results of the previous studies carried out by us on the subject, we note the following [10 - 12].

1. In the public mind and the current practice, the land, the soil is still perceived as an inexhaustible source of fertility. For this reason, agricultural lands are used unsustainably; they are mindlessly withdrawn to place the objects of transport, civil and industrial construction, contaminated with waste, flooded by reservoirs.

2. The current situation in the agricultural land-use of the Amur Region is characterized by the predominance of unsustainable trends, when the soil fertility, systematically reduced by the removal of nutrients with the harvest, is not compensated by regular introduction of organic and mineral fertilizers. Currently, mineral fertilizers, in doses that are below the recommended, are introduced only in one-third of cultivated areas, and the organic fertilizers are applied in even less quantities. The works on phosphorizing and liming the soils have been nearly ceased, despite the fact that the soils of the Amur Region are mainly acidic (70 %) [13]. As a result, the removal of

nutrients from the soil exceeds the introduction several times. The lack of phosphorus is the most pressing problem; it is one of the main factors hindering the efficiency of soya bean production as profiling regional agriculture industry. In this context and in view of the solutions of long-range objectives of the food security of the Far East, the creation of the regional base for the production of industrial organic and mineral fertilizers, especially phosphorus, based on the use of locally available agronomical ore resources is, in our opinion, of crucial importance.

3. Being a major agricultural base of the Far East (1.5 million hectares of arable land area are concentrated there), the Zeya-Bureya Plain is now the part of the region that is severely damaged by the economic activities, in particular, the forest-land percentage of the Plain fell to a critical level [15]. This negatively affected the formation of local climatic characteristics. In the Soviet period, they actively used creating tree belt areas, which proved its value. We consider it necessary to revive such measures, which are to be planned and funded under the regional program "Conservation and restoration of soil fertility of agricultural land and agricultural landscapes of the Amur Region as a national asset," as well as under the federal program for increase of soil fertility.

4. The trans-border position is a specific natural and geographic feature of the Zeya-Bureya Plain. Occupying a vast area of the upper and middle basin of the Amur River and its tributaries Zeya and Bureya, geographically it extends beyond the state border into northeast China (Heilongjiang Province). This territory is geographically fringed by the ranges on each side. In fact, nature has created a unified ecosystem, which we have called the Upper Amur trans-border system [11]. It is divided into the Russian (the left bank) and Chinese (the right bank) parts by the river Amur. A very important feature of this formation is that having vast agricultural land areas, it has unique natural agronomic resources (apatites, phosphorites, alunites, zeolites, sapropel, peat, etc.) that can be used for production of fertilizers and various organic-mineral mixtures, which are necessary to improve the efficiency of the agricultural industries of Russia and China, i.e., there are favorable conditions for establishment of joint ventures [11, 16].

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About the Condition and Development of House Northern Reindeer Farming in the Republic of Sakha (Yakutia)

Social-economic analysis about life in the northern regions in the Republic of Sakha (Yakutia) at the conditions of economic crisis of the last decade is held. The stages of house northern reindeer farming in the Republic of Sakha (Yakutia) development are observed. The concept of perspective development of the field which is a base of economics, culture, and life style of the indigenous small-numbered peoples of the North is planned.

Key words: house northern reindeer farming, development, reindeer-breeder team, reindeer-breeder, tent housekeeper, nomadic family, pasture, controlled pasturage, indigenous peoples, meat products.

The North is a territory including 6 republics, 3 krais (territories), 10 provinces and 8 autonomous okrugs (areas). More than 11.7 million people live there, and more than 200,000 of them are the representatives of more than 30 smaller indigenous peoples. In the northern regions, there are the main reserves of hydrocarbon, phosphorus and aluminum raw materials, diamonds, rare, non-ferrous and precious metals, 93 % of gas, 75 % oil, including gas condensate are produced, 100 % of diamonds, cobalt, platinum group metals, apatite concentrate, 90 % copper, nickel, 2 % gold are mined, and half of the forest and fish products are produced [1].

The Northern regions have surplus in the budgetary relations with the federal center and provide more than 60 % of foreign exchange earnings. Only 8 % of Russia's population lives there who produces about 20 % of its gross house product. In the region there are national transport arteries - the northern air and sea routes [2].

The transition to market economy, accompanied by sharp weakening of the government regulation, has affected the social situation in the northern regions badly. Despite the fact that a significant proportion of revenues to the federal budget is formed there, the state of the budgets of the constituent territories of the Russian Federation, having in their composition the northern regions, is worsening. Decline in the real income of northerners and the unemployment rate are significantly higher than the Russians have in general. The level of life of the indigenous peoples has lowered especially sharply (Table).

Russia has about two-thirds of the world's livestock of house reindeer. Russia is the only country in the world that keeps house reindeer in the herd. The total population of reindeer decreased from 2260 thousand heads in 1990 to 1571 thousand heads in 2011.

Reindeer pasture on the territory of more than three million square kilometers in the tundra, forest tundra, taiga and mountain areas. Reindeer farming in Russia is the basis of many indigenous cultures of the northern peoples with diverse traditions and experience of breeding deer in different landscapes. The house reindeer gives them an opportunity to live in harmony with the harsh nature of the Far North. Many reindeer breeders say, "Our people will live as long as reindeer do. When the reindeer disappears, our people will cease to exist [3, 4]. The Nenets, the Sami, the Khanty, the Dolgan, the Even, the Evenk, the Chukchi and the Koryak have the most developed reindeer breeding. These peoples' cultural traditions are related to reindeer farming most closely, their way of life and economy depend on reindeer husbandry.

By the number of house reindeer population, the Republic of Sakha (Yakutia) was consistently ranked third (361 thousand heads) in the Russian Federation after the Chukotka (491 thousand heads) and the Yamal-Nenets (490.5 thousand heads) autonomous okrugs to the 1990s, currently it is the second (174.5 thousand heads) after the Yamal-Nenets autonomous okrug (665.2 thousand heads).

Reindeer farming is the only branch of the northern sector, in which only representatives of the indigenous peoples of the North are engaged. It is the only branch where the indigenous people do not have to compete with new settlers ('alien' people) [5]. The official list of the "smaller indigenous peoples" includes 39 ethnic groups, which differ significantly both in size and the nature of demographic processes. The size of twelve of them does not exceed one thousand people, another 16 ethnic groups have a critical radius of population of less than 5 thousand people [6].

In the age structure of the rural population, the proportion of children of the peoples of the North exceeds 36 %, and the proportion of people of retirement age is less than 8 %. The 'young' age structure of the smaller indigenous peoples makes topical issues of employment of the younger generation, their education, participation in traditional sector, etc.

In the Republic of Sakha (Yakutia), 20 ulus of 36

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Table

Dynamics of population of reindeer and the size of the indigenous population in some regions of Russia based on the materials of the Ministry of Agriculture of Russia

Region	Reduction in 1998 against 1991, %	
	Reindeer population	Size of the indigenous population
The Republic of Komi	1	12
The Republic of Sakha (Yakutia)	46	7
Taimyr Autonomous Okrug	41	15
Evenk Autonomous Okrug	83	20
Amur Oblast (Province)	60	11
Nenets Autonomous Okrug	10	14
Koryak Autonomous Okrug	58	19
Magadan Oblast	71	39
Murmansk Oblast	8	16
Sakhalin Oblast	27	18
Tyumen Oblast	+ 5	+7
Chita Oblast	86	18
Chukotka Autonomous Okrug	68	44
On average	34	14

ones and one urban municipality are engaged in house reindeer farming. Reindeer breeding farms own 2456.5 thous. km of 3103.2 thous. km of Yakutia’s territory, that is 79.2 % of the territory.

In these vast tundra, forest-tundra, taiga and mountain taiga reindeer pastures there were 361,556 heads of house and more than 200 thousand heads of wild reindeer in 1991. In those years, 32 large reindeer breeding state farms were engaged in house reindeer farming, they had 276 reindeer-breeder teams and more than 2,100 reindeer breeders, 775 of them roamed with their families. There were more than 30 thousand heads of reindeer in Nizhnekolymsky (35,138 heads), Momsky (31,911 heads), Ust-Jansky (31,888 heads), Bulunsky (30,021 heads) districts.

In 2011, these uluses had the following number of deer: Nizhnekolymsky – 20,062 heads, or 57.09 %, Momsky – 14,820 heads, or 46.44 %, Ust-Yansky – 17,859 heads, or 56 %, Bulunsky – 12,892 heads or 42.94 % of the 1991 level. A particularly difficult situation with reindeer has emerged in Abyisky, Allaikhovsky, Verkhnekolymsky, Gorny and Oleneksky uluses, where there is a real threat of reduction of reindeer population. In 1991, there were 56,179 (Abyisky – 6,115, Allaikhovsky -20,515, Verkhnekolymsky – 8,528, Gorny – 974, Oleneksky – 20,047) heads of reindeer, but in 2011 there were only 7,798 (Abyisky – 418, Allaikhovsky – 1,189 Verkhnekolymsky – 1,178, Gorny – 98, Oleneksky – 4,915) heads of reindeer.

The situation in the Republic of Sakha (Yakutia) shows how differently reindeer breeding farms could be transformed under conditions of economic crisis. In the

northern and southern regions of the Republic changes occurred in different directions. Before the reforms, the reindeer farms of northern Yakutia were large farms specialized in the production of meat. They received substantial government support and were well provided with equipment and manufacturing equipment. Reindeer-breeder teams had ATVs, motor sledges, motor boats, radio stations, rifles, etc. They were served by small aircraft and helicopters. A number of state farms were involved in pre-slaughter fattening reindeer with the use of combined fodder and mineral supplements [7]. Much attention was paid to breeding and veterinary services. After the reforms of 1990, all these activities were quickly reduced, resulting in dramatically decreased efficiency of the industry. Reindeer-breeders lost interest in their job, loss of reindeer began to grow, the reindeer-breeder’s income decreased. Their survival was ensured solely through government subsidies [8]. As a result, reindeer farming became an unprofitable industry, and since hunting and fishing are also developed in all the reindeer-breeder farms in northern Yakutia, and income from them is real, much of reindeer-breeders turned to these industries. Hunting in the areas where there are a lot of wild reindeer acquired especially great value.

The reduce in the reindeer population caused great losses in the economy of the northern agricultural farms, against this background the qualitative indicators of reindeer farming that determine the productivity of the industry remains low and unstable, and they do not allow reindeer breeding farms to get stronger economically. There is a massive outflow of experienced reindeer breeders and skilled specialists engaged in production, which

has a detrimental effect on the development of the main traditional sector of the North - reindeer farming. The indigenous peoples of the North began to suffer from a negative phenomenon - mass unemployment, which has led the representatives of these peoples to poverty [2]. In recent years, the nature of life of reindeer breeders has changed for the worse dramatically. A number of issues related to their service in the field of production remains to be unsolved, which adversely affects the performance of reindeer farming. In recent decades, the institute "Rosgiprozem" has carried out no exploration work on the land utilization of reindeer farms due to lack of centralized funding, which is a flagrant violation of technological schemes of reindeer farming. During this period, the pastures have been greatly damaged which was caused by the random movement of the tracked vehicles of geological and industrial enterprises and by fires in the hot summer, as well as by pasturing and overpasturing the pastures by wild reindeer that was unforeseen by the projects of land utilization (Ust-Jansky, Allaikhovsky, Anabarsky, Oleneksky, Bulunsky uluses). After carrying out the recent works on land utilization, the reindeer pastures have lost a large amount of space allotted for the construction of roads (Deputatsky - Ust-Kuiga, Deputatsky-Omchikandya, North Kular-Vlasovo, etc.), some areas have been allotted for industrial settlements, mines, small airfields, etc.).

Privatization of large state reindeer breeding farms has led to the formation of privatized small collective farms and tribal communities. After a rather long period of the settled way of life and the concentration of population in the integrated settlements the creation of nomadic tribal communities is, to a certain extent, a throwback to the past way of life. If nomadic families were transferred to the settled life gradually under a comprehensive program and with the full support of the state, the restructuring of reindeer farming in the early 1990s was going under difficult economic conditions and the weak interaction of the states [2].

These small farms have proved to be unable to independently carry out a compulsory industrial-technological complex of works, ensuring the effectiveness of reindeer farming. As a result, the production volumes, marketability and sale of reindeer farming products have decreased significantly. The production and technological infrastructure of the industry has not been modernized. The costs for removal, storage and sale of reindeer farming exceeded production cost, and as a result all the production of reindeer farming became unprofitable.

Since the beginning of economic reforms, the northern agricultural enterprises have been in a deep economic crisis. The disparity in prices for the products of agriculture and industry, the remoteness of the production centers of logistical resources and increased prices of transportation services, as well as reducing the level of state support led to a sharp decline in production in the 1990s [2].

The rates of decline in agricultural production in northern regions were higher than in the whole in Russia.

Over the past years, the volumes of reindeer sales for breeding have reduced due to lack of funds, reindeer breeding farms and reindeer-breeder teams have not exchanged with stag getters that reduces the productivity of reindeer, leads to the non-viability of young animals, causes diseases. Large unproductive waste and predatory animals' attacks on reindeer cause huge economic and financial losses in small reindeer breeding farms.

The deterrent and undecided point is the procurement, collection, storage, processing and marketing of reindeer farming products, which does not enhance the status of reindeer products among consumers.

The decline of reindeer farming has been stimulated by reducing logistics, closing state farm fur workshops that produced warm fur clothes and special shoes for reindeer breeders, as well as irregular providing radio communication with remote reindeer-breeder teams.

For most farms one of the main reasons for the decline of reindeer breeding is the replacement of the twenty-four-hour protection and the controlled pasturage with the inspection of the run, i.e. reindeer have no shepherd [9]. Therefore, predator animals attack reindeer and reindeer herds are driven away by wild deer ones more frequently, etc.

The study of developmental processes of the reindeer farming in the areas of the republic allows developing its concept to improve the socio-economic conditions of the indigenous peoples through the further development of house northern reindeer farming, which is the basis of their economy, culture and lifestyle.

Preservation and development of reindeer farming should be based on a differentiated approach, taking into account the national and territorial characteristics of running and the current level of the development of the industry in the territories.

The decline of many years in the number of house reindeer in the Republic of Sakha (Yakutia) has been suspended, the further development of reindeer farming was supported by the adoption and implementation of the Presidential program "The socio-economic development of the rural areas of the Republic of Sakha (Yakutia) in 2002-2006" and the following State goal-oriented Program "The social and economic development of the rural areas for 2007-2011", in which the Government of the Republic provided for more funds to support the development of house reindeer farming. The Presidential development program for 2002-2006 allocated from 137 million rubles to 341 million rubles, and the State Program for 2007-2011 allocated from 317 million rubles to 482 million rubles [10, 11].

A special impetus to the stabilization and development of the reindeer farming was given by the realization of the Decree of the Government of the Republic of Sakha

(Yakutia) No.536 of October 24, 2002 “On wages and material incentives for the workers engaged in reindeer farming,” where guaranteed wages to be paid to reindeer-breeders and chum housekeepers were established. This Decree of the Government of the Republic of Sakha (Yakutia) provides determining the number of members of a reindeer-breeder team based on the volume of work for keeping the herd and life support of the team members and the volume of the annual work of a reindeer breeder. This calculation determined the number of members of a reindeer-breeder team as 13 people: 9 breeder-shepherds and 4 chum housekeepers. At this, the status and monthly salary of the chum housekeepers were equated to the status and monthly salary of a reindeer breeder-shepherd [12]. This decision was especially important, as women-chum housekeepers in reindeer-breeder teams play an important role not only in catering of the reindeer-breeders, but also in the creation, as far as possible, the normal living conditions of the reindeer-breeders. When the working day is 16 hours or more chum housekeepers everywhere spend more than 11 hours a day. They get up the earliest and go to bed later than the other workers. During the day chum housekeepers prepare food from 4 to 9 times, lay and clear the tables and wash the dishes. Furthermore, they dry and repair clothes, bake bread, find and procure firewood, ice and water. It is noted that if there are no chum housekeepers in the reindeer herds and, therefore, there no warm homes, care and hot food, the young people leave the herds [9].

In our view, further development of house reindeer farming in the Republic of Sakha (Yakutia) should foresee significant improvement of the socio-economic conditions of the indigenous peoples through the further development of house reindeer farming, which is the basis of their economy, culture and lifestyle.

The main measures of this concept are aimed at implementing the laws of the Republic of Sakha (Yakutia): “On reindeer breeding”, “On the nomadic housing for employees of traditional industries of the North of the Republic of Sakha (Yakutia)” and the creation of working and living conditions for reindeer-breeders and their families, nomadic reindeer-breeders teams under any form of ownership and management in all the reindeer farming areas and districts of the Republic of Sakha (Yakutia), in implementing the technology of keeping reindeer in the herd in accordance with technological standards of keeping reindeer in the herd [13].

For stabilization of the whole reindeer farming and life of therein-breeders teams in all the regions of the Republic of Sakha (Yakutia), it is necessary to provide maintaining and increasing state financial support in the federal and regional budgets.

Economic incentives of the industry should be focused on the preservation and growth of the reindeer population, improvement of their breeding qualities and organization of above-plan sales of livestock to other farms and areas of the Republic.

Measures of this concept for the further development of house reindeer farming should be directed to:

- the organization of improving the productive qualities of reindeer through a systematic and purposeful breeding. To this effect, to organize the purchase and delivery of valuable species of male studs and she-deer from the other regions of the Russian federation and make inter-(intra-) economic exchange of studs, as well as to carry out work to optimize the size and demographic structure of the herds;

- forming specialized breeding reindeer herds and farms in the areas of reindeer farming;

- organization of work on the rational use of reindeer pastures by the introduction of rotational grazing and on the protection of reindeer pastures from overpasturing. Carrying out the works on the construction of fences and corrals, as well as for submitting the applications for land utilizing, geo-botanical, landscape, and soil works;

- organization of work on the establishment and development of the ‘factory’ forms of barter to improve the collection and purchase of the products of reindeer farming, hunting, fishing, wild plants and other products of traditional crafts and trades from the population in the farms, improvement of supplying reindeer-breeders with food, essential commodities and production and household equipment;

- organization of agrischools in the inhabitancies of the representatives of small nations in the traditional sectors of the North, where the children of the families of reindeer-breeders should be trained to be a ‘reindeer-breeder-hunter’, ‘chum-housekeeper-radio operator’, etc.

In the course of the implementation of the concept of development of reindeer farming, it is necessary to carry out works for improvement of the organizational and structural system of the branch management.

To this end, the administration of the ulus and members of local government must determine the stabilization level of the number of deer, ensuring employment of the population and demand for meat products among the indigenous population. To do this, it is necessary to use the reindeer pastures in the area rationally.

In the struggle for the preservation of the reindeer farms as the main industry preserving the ethnos, it is necessary to create the conditions under which in the settlements-farmsteads the reindeer-breeder would be the highest-paid, respected and socially protected worker in the most northern prestigious industry [14].

The continued successful development of the industry demands a conceptual staged solving the three main objectives:

1. In the period until 2015 - to increase and stabilize the total number of reindeer to 200-220 thousand heads considering rational use of reindeer pastures, which is especially important for large deer farms.

2. By 2020, to achieve a significant and sustained improvement in the structure of the main herd and the main livestock productivity (proportion of broodmares

to 60 %, the business output of young animals to 70 % and more. Due to this, to get the opportunity to implement 70 thousand and more heads of reindeer or more than 2600 tons of meat in slaughter weight).

3. By 2025, it is conceptually foreseen to develop industrial processing of meat in the shops under the EU certificates, with the release of this product in the Russian and foreign markets, as well as deep processing of the other products of reindeer farming (antlers, breakage of horns, milk, blood and endocrine-enzyme raw materials), thereby greatly enhancing the employment, the income and standard of living of the indigenous people of the North, primarily – the smaller ones.

Implementing production technology with a scientific approach does not require public funds to carry out the aforementioned main objectives for the development of reindeer farming in the Republic of Sakha (Yakutia).

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A. I. Sofronov and Spiritual Humanism

A. I. Sofronov was an atheist, but strongly believed in spiritual humanism, established on the moral basis of humanity. On the basis of the spiritual humanism, he synthesized East and West cultures and interpreted this process through his fictions, journalistic works and socio-cultural activities. His spiritual humanism ideas organically entwined into the modern global concept of spiritual education.

Key words: spiritual humanism, rational humanism, moral basis of mankind, spiritual hierarchy, law of culture and soul.

Works of Anempodist Ivanovich Sofronov-Alampiev, a classic writer, a founder of the Yakut drama, a poet and a public figure, attracts the attention of the XXI century's readers in the context of a multicultural world and the society consolidation. From this point of view, it is necessary to have understanding of his works in terms of new cultural and spiritual aspects of modern age. Nowadays his philosophical, ethical and aesthetic, pedagogical views became high-demanded on account of new ideas in social, political, cultural, philosophical, scientific and technical spheres of society caused by globalization processes. Taking into account above-mentioned it becomes currently central to have in-depth examination of his "life philosophy, focused on tolerance, friendliness, search of informed decisions and best course of action, his tendency to perceive every phenomenon dialectically ..." [1, p. 3].

A. I. Sofronov's world outlook was formed under the influence of native Yakut people philosophy, reflected in folklore, especially in olonkho. As G. P. Basharin notices origins of humanism and philosophical depth of A. I. Sofronov's works on psychology should be looked for in his difficult childhood, preadolescence and

adolescence [2]. Self-education and study of Yakut writers of that time experience served its purpose in becoming of A. I. Sofronov's worldview. Immeasurably great importance in the process of an overall cultural radiation of the Russian people had the works of Russian literature classics as well as democratic revolutionary ideas of 1905, 1917. Among these factors, that had high priority to his ideological becoming, the social injustice should be named first. "Colonial oppression, the conditions of life itself, the study of the Russian literature classics, the impact of the events of the 1905-1907 revolution and reading "under the mood of 1905" the newest literature led A. I. Sofronov to the idea of necessity in changing the autocracy into republican system of the state and progressive, democratic ideas which were associated with these"- this is how G. P. Basharin characterizes an important stage in the evolution of his worldview [2, p. 16]. A. I. Sofronov's inclusion to world literature, enriching with its achievements proceeded through the Russian language too [3].

It should be noted that, despite the commitment to democratic ideas, A. I. Sofronov was not a supporter of extremism and violence. It is appropriate to quote B. S. Gershunsky: "Knowledge is not completed only with the concept of "science". Faith is not completed only with the concept of "religion." Even atheism does not mean disbelief" [4, p. 508]. Despite the difficult conditions, A. I. Sofronov's childhood and adolescence were filled with natural values and norms of the native people culture, that became a powerful educational potential in developing his moral basis: Personality – Family – Class – Nation – Country – Earth – Nature – Time,

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which together form the concept of God. A. I. Sofronov deeply believed in the spiritual humanism, due to the moral foundation of humanity. This hierarchy formula of spiritual values is a way of being for culture and it also should be the law to the soul culture for each person, the basis of the personal self-actualization. Subsequently, on the basis of this spiritual humanism A. I. Sofronov synthesized East and West cultures and aired this process through his artistic, journalistic works and socio-cultural activities.

In the drama "Love" [5] A. I. Sofronov did not limit himself on showing love relationship between Catherina and Peter. The model of life perception through the paradigm of love was consigned in the image of Catherina. But heroine's own spiritual work in the context of love was not in demand in the real, cruel life which surrounded her and eventually killed. Catherina, a young girl, an orphan, despite the inhuman conditions of existence, grew as an open, cheerful person, full of love for the world and people. This state is represented through her monologues, through games, songs of youth. She found a huge vital resource in their improvisational, free fun. Therefore, the world is spiritualized for her; she has a meaning in life and optimism. Her poetic life metaphorization becomes stronger after meeting with Peter; her life is filled with bright happy content.

The images of Catherina and Peter in the drama "Love", Yefim in the drama "Game of life", Daaiys and Maya in the drama "The mud of life", Daiay in the story "Gorodschik" and others show that only love can help survive all severities of fate and emotional pain. Their bright spiritual energy, boundless need to give people the care and attention, faith in love, honesty and pure soul, the ability to clear the space with love were not needed and defamed in an environment where animal instincts and greedy desires reigned Semenov [5], Ivanov [5], Vasiliev [5].

After unfair cruel punishment with imprisonment, Yefim, full of love and energy instead of fear and offence, feels constant, radiant love for his wife and son, thereby opening the way for their moral purification and development. Yefim is not looking for guilty people; he is not offended because he sees the cause of injustice in the imperfection of people. He tells his son Tit, that imperfection is a lack of love and energy in the soul. Yefim taught his son the ability to create love space around him and spiritual harmony. That's why Tit grows as a person capable even in severities of life to find the strength to love with even greater force. This quality is revealed in his relationship with Martha, the daughter of Ivan, who destroyed Yefim's life [5].

The basis of spiritual humanism, anthropocosmism is the ability to bear, to understand and to accept, no matter what and in spite of everything. These qualities of the soul and mind A. I. Sofronov shows in the image of

Yefim [5]. If rational humanism based only on a logical, rational calculation, instead of love begins to dominate in the soul, the person falls into degradation. Rational humanism (priority of human happiness and the preservation of the sanctity of life, the worship of stability) is a limited worldview: anthropocentrism, sociocentrism, high priority of material values that is a characteristic of technocratic thinking: moral values as a measure for evaluation of human activity pushed into the background. The main assessment of the individual's consistency is his intelligence, the wealth that he possesses. Instead of love goodness is considered as fame, high priority of talent and spirituality.

The hallmark of rational humanism is not a synthesis of opposite sides, but the choice of only one of them. Discarding the pain, a person chooses only pleasure. These are Michael, son of Yakov ("Poor man Yakov") [5], Nicholay, son of a rich Baybal ("Poor man Yakov") [5], Ivan ("Game of life") [5], and others. Such people depend on the future: i.e. on material stability. Instead of joy of helping others, they break and subject them, hardening themselves. Their iron self-righteousness destroys not only others but also themselves.

Only active, shining and pure love, constantly living in the soul, that is spiritual humanism, can unite opposites in the same time comes up the dialog, multiplicity of solutions to the problem situation, the ability of understanding, patience and acceptance. Such qualities of spiritual humanism are common for Peter ("Love") [5], Yefim ("Game of life") [5], Daaiys and Maya ("The mud of life") [5]. Peter does not fall into despair and depression as Kyulyuk ("Love") [5], Boltoso ("Game of life") [5], Nikolay, Michail ("Poor man Yakov") [5]. He has the level of love and humanity increased along with the education. As A. I. Sofronov notes, if education does not raise the level of divine love, the person is simply destroyed by life (Nikolay's death) ("Poor man Yakov"), leads to betrayal and sneaking (Michail) ("Poor man Yakov") [5], etc.

A. I. Sofronov did not accused, did not hate, did not condemn, did not become despirited, despite the unexpected, unfair twists of fate. This quality of his soul is clearly expressed in poetry. His soul never stopped feeling love. Both the pain and the happiness he perceived as a whole. His faith and determination to spiritual humanism gave him forces to vigorous active to transform lives. His inner movement to love, purification and development of the soul is revealed in poetry, allowing him to take a number of different attempts to resolve any conflict, to search for multivariant solutions for any situation. These qualities, especially his submission, saved him from low spirits in hellish conditions of prison and exiles, and from ostracism of the authorities. Fates of people like A. I. Sofronov are fully disclosed in the statement of S. N. Lazarev: "The more erroneous views

and society ideology, the greater the risk is for a sane and decent person. System arises, backward selection, when it is better to be a scoundrel and a villain than a moral and decent man. Today in Russia we see the results of the backward selection”[8, p. 62].

Soviet power structure, unlike the royal one, lived only with the future for which it destroyed the past, and the present was neglected. Love was lost, people’s philosophy and uniqueness was extirpated for ideology. Foundations of human morality - spiritual humanism was added to the remnants of the old century, the petty-bourgeois soul-searching, and was replaced by a class, ideological thrust. That is why millions of people were ruthlessly and recklessly exterminated in the repressions. Such adoration of the future caused intolerance, arrogance, was the reason for hastiness and rashness in actions. Reflection of A. I. Sofronov’s rejection in his poetry is shown in the works of A.A. Burcev [9, p. 38-59], V. G. Semenova [10, p. 137-145], [11, p. 5-24].

With the loss of continuous love - the product of the spiritual hierarchy: Personality - Family - Class - Nation - Country - Earth - Nature - Time – God – the pain of soul becomes unbearable. That is why people for whom the main purpose of life became power, money, social status: Ivan (“Love”) [5], Nikolay, Yakov (“Poor man Yakov”) [5], Kuzma, Ivan (“Game of life”) [5] – dies because of lack of love energy. Michail, Nikolay (“Poor man Yakov”) [5], Ivan (“Game of life”) [5], Vasily, Ivan (“The mud of life”) [5], who idolize spirituality without love and humanity, can live only in opposite conditions: either suppression and superiority over weak, as Ivan (“Game of life”) [5], or uncontrolled, reckless confrontation, like Nikolay, Yakov (“Poor man Yakov”) [5], Boltoso (“Game of life”) [5]. A. I. Sofronov shows the way of freedom from worshipping of the future – you need to be a moral person and to safe love in your heart.

You may notice that under the influence of spiritual humanism, watching developing of divine love in a Catherina and Peter’s relationship Kyulyuk, Fedor [5] awakens from spiritual lethargy, he is ‘thirsty’ to understanding of life and to struggle against injustice and inhumanity. What is the power of Peter and Catherina’s love? Peter loves Catherina primarily as a child is loved with a holy, paternal love. It is a divine level, the level of sacrifice; then - as a partner on a spiritual level; the last is the bodily, sexual level.

In real life A.I. Sofronov loved his wife Evdokia Konstantinova the same way. Even after the divorce he was not offended, did not blame, did not condemn her, he loved her in spite of all the demonstratively expressed negative feelings for him. He loved, respected, guarded her as before. This rare phenomenon is a manifestation of love and spiritual humanism, A. I. Sofronov's divine love, in which he always had a permanent feeling of love along with the pain of the soul. Spiritual nature of humanity is clarified in the docking of two diametrically opposite biblical phrases: “And a man's enemy – his household, and “love thy neighbor as thyself.”

A rational humanism chose only the second sentence, throwing first. Household becomes enemy when people choose only the pleasure, joy and pain, negativity they can not accept or forgive, changing themselves and the partner. How this becomes a reason why relatives turn into enemies, is strongly reflected in the dramatic works of A. I. Sofronov.

Neglect of spiritual humanism is fraught with danger of destruction of coherent system of convergence relations and integration paradigm. Unity of collectivism and individualism, public and private is a pledge for harmonious convergent evolution. Full convergent development of any system: individual, family, class, nation, country – offers opportunities to integrate with their own kind. This phenomenon is clearly revealed in images of A. I. Sofronov’s works. Thoughts and experiences related to the crisis of convergent evolution of personality, people, in the 1912 took shape in poem “Homeland” [12, p. 25].

Anthropocentrism, sociocentrism, biocentrism, and scientism are pieces of a single system of spiritual hierarchy, i.e. the moral basis of humanity: Personality – Family – Class – Nation – Country – Earth – Nature – Time – God, united and inspired with divine love. Philosophy of love, which is a result of this spiritual system formula should be the basis of anthropogenic and humanistic education in the XXI century.

Only synchronization of independent, individual development and integration is the basis and the condition for the development of consolidating society, based on such qualities of the society members as communication, personal and professional self-determination. This goal-setting of training and pedagogic areas of education is a stimulating factor for competency paradigm, which provides the formation of cognitive and personal abilities in a schoolboy that make him ready for the professional and social self-determination in a changing multicultural interaction” [13, p. 22].

If global integration is possible only with self-determination systems, then a competence paradigm of education, fueled with spiritual humanism, can be considered as one of the directions to achieve a certain level of self-identification of the particular junction in the chain of world culture. The phenomenon of spiritual humanism is one of the components of our cultural development of mankind. Spiritual humanism as a reality is common to all peoples, cultures and religions of the world. This worldview is confirmed in comparison with parallel notions in the works of A. I. Sofronov and Hans Christian Andersen.

Technocratic civilization is characterized by rational humanism, which essence is revealed by A. G. Asmolov: “Very rich mosaic of cultures in the course of human history can be positioned at the two poles - pole of utility and pole of dignity. In cultures where the balance is

tilting in the direction of utility pole, impersonal sociotypical behavior begins to predominate over individual behavior in a person's life. ... In this kind of cultures the time that is devoted to childhood is reduced and old ages have no value [16, p. 340]. When cold reason prevails over kindness in the mind and in the hearts of people, trampling humanity and "dignity", "the time devoted to childhood is reduced." We are persuaded in this by A. I. Sofronov's poem "Lullaby" [12, p. 103] and H. C. Andersen's tale "The Little Match Girl" [17, p. 171].

In the A. I. Sofronov's poem "Lullaby" [12] foreign policy is not mentioned, but a real bloody event of Red terror in 1921 is hidden. Instead of the open message that Red killed the mother of three children, it is said figuratively and with seeming indifference in Aesopian language, as if she was accidentally killed by the edge of the unknown tool or weapon. Instead of saying that the death of the child's mother is absurd and she is an unfair victim of Red terror, it is told us allegorically and impersonally about some unimaginably difficult time. Instead of expressing condemnation on anyone specifically, in sorrowful appeal to the child there is a call not to forget, to love his mother. The protest against the Red terror in text of the "songs" is sublimated with expression of grief for the fallen mother – a young woman, and with anxiety about the future of the child. The chorus, sounding as a refrain, rhythmically creates a feeling of deep, unspeakable exquisite heartache of the author. Thus, the divine love of Anempodist Ivanovich Sofronov-Alampiev, emanating from the spiritual humanism unites that seems incompatible contradictions of life, leading the reader to the thoughts of eternity through the image of the child.

Like a drop of water reflects the whole world, the sad fate of a little girl selling matches in the New Year's Eve, reflects scream of the soul, deep philosophy of love of the author Hans Christian Andersen. Externally attractive New Year's Day atmosphere contrasts with the unfortunate situation of girl who is trying to sell matches on behalf of cruel stepfather. She's afraid of her stepfather, she is hungry, she is very cold. She does not get any sympathy, any kind words of sympathy or help from anyone. Full life gloss of the city kills the girl with the poison of indifference.

Lack of love, warmth and understanding from living people she "gets" from gone grandmother in her mind. Unfortunately, dreams and girl's imagination go unnoticed in a suicide hallucination. Her death is allegorically transmitted through the image of a shooting star. The end of the fairy tale about magical, happy girl's dreams suddenly brings the reader back into the cold, dark winter night, city world: the girl freezes on the street. In this tale, as in the A. I. Sofronov's "Lullaby" there is no external expression of the open protest, accusations, or blaming anyone specifically. There is only a blank, deep

pain of the soul from the people's indifference, it is exacerbated only with internal image, instant flash aspirations of the poor girl to happiness and joy. As in A. I. Sofronov's "Lullaby" [12] radiance of God's love of Hans Christian Andersen aspires to eternity that lives deep in the soul of each of us. This is the mastery of the great literary artists of two different nations, completely unrelated on the level of the macrocosm, real life, but totally related by the origins of spiritual humanism.

Thus, the pictures of death, depicted in the works of the two authors of different nations, awaken sorrow, compassion, longing for goodness and love in the soul of the reader. A silent reproach settles in the deep layers of the soul, prompting it to thinking, to desire of changing itself and the world around.

This silent reproach, longing for love and happiness, prompted great minds of the mankind to create the doctrine of humanism. Thanks to their teaching we began to consider personality as the absolute value of human, instead of satiety, excellence, a sense of security, wealth and money. In the Renaissance and XVIII-XIX centuries due to the adoption of the humanism ideas the concept of holistic development of the individual appears and attempts are made to implement it. This is evidenced by the "School of Joy" W. de Feltré, the theory of free education of Rousseau, and I.G. Pestalozzi's idea of a full development of man's essential powers. Gradually in the course of world-historical development of the idea of holistic human personality evolution becomes dominant in the content of modern civilization.

Cultural and humanistic function of education aimed at the harmonious development of cognitive and personal sphere of students. This process of humanization of education is based on philosophy. It accumulates leading breakthrough ideas: understanding the world, society and human rights in the XXI century. The need to overcome the power culture of technocratic civilization, with its dominant aggression, violence, oppression and humiliation of personality is affirmed through philosophy. In this complex transition from the dominant culture to culture of rationalist humanism dignity (A. G. Asmolov), spiritual humanism, adopted a global scale from the second half of the XX century, society looks to the heritage of the classics, philosophers, claiming and developing the idea of spiritual humanism. Works of Sofronov A. I., his ideas about the spiritual humanism are organically woven in the modern global concept of spiritual education.

V. V. Dementieva's saying ensures us in importance of the spiritual humanism education: "We still have not developed a clear, bonding everybody and everything, the idea of community, solidarity, integrity. We learned how to conjure about "united and indivisible Russia", but what with content to fill the form - we do not know" [16, p.15]. Spiritual Humanism as a dominant social and moral guidelines of XXI century gives us the criteria of

culture, humanism and understanding of the hierarchy of values. On the background of spiritual humanism development of cultural dialogue, consolidation of society, the unity of convergence and integration in a multicultural society will become possible. Spiritual Humanism will unify the processes of humanization of the competence-based education and training of the younger generation.

V. V. Sinelnikov warns about possible final path without spiritual humanism: “Energy opportunities of humankind has increased dramatically, and the fullness of his love, kindness, understanding the higher laws are on the same level. How does it threaten mankind and the world? With the catastrophe [17, p. 53]. We must remember that “the fullness of love, kindness, understanding of the higher laws” are brought up by spiritual humanism.

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Revisiting the Origin of the Prosodic Phenomenon in a Phonological System of Tuvian Language

The work is devoted to studying of a unique phenomenon in a sound order of the Tuvian language. It is defined that due to lost features of general Turkic phonetics, separated from a parent language, Ogus-Uyghur Old Tuvian dialect eventually acquires patchy prerequisites for appearance of a tonal phenomenon in a vocal sound system, associated with a prosodic phenomenon in a speech current.

Key words: ethno-linguistic roots, ancient signs, linguistic affinity, pharyngealisation, intra-linguistic factors, language features.

A tonal language feature is connected with complicated multilateral relations on such levels as phonemic, syllable-morphemic, phrasal, in particular, with existence of original laryngeal signs of consonant segments in the sound system, which disappeared later or changed their feature structure [1, p. 3]. In the majority of languages the only one function of tones is an oppositeness of different lexical units, having the same segmental content. For example, in Classical Chinese a collocation 施氏食獅史 from a humorous poem read as Shī shì shí shī shǐ “A story about a man called Shi who eats lions”. (Researchers note that in Old Chinese really these syllables were read in different way and not always were homonyms [See 2]).

There are languages, a movement of the tone in which can combine with such prosodic phenomena as aspirate phonation, pharyngealisation [3, p. 7]. The corresponding tonal features are discovered by the researches in the Uralic languages [See 4]. As for the modern Tuvian, in its sound system there is a phonetic phenomenon, connected with a peculiar vocal tonality in the first syllable and this distinguishes it from other relative languages.

It is typical that the tonality with additional aspiration is used in Tuvian for meaning distinction.

Articulatory this phenomenon is connected with a throat narrowing when pronounce an initial syllable in a word, conditionally it is called pharyngealisation. A phonetician Bicheldey K. A. devotes his research to a detailed examination of this phenomenon. In his monograph he considers in detail an articulatory-acoustic characteristic of pharyngealized vowels, studies them in a speech current. In a preamble of his work he touches a problem of origin of the pharyngealisation [5, p. 17, 29, 46].

In a phonological respect the pharyngealisation in Tuvian as often as not serves as means of distinction of lexical meaning and graphically is marked in a syllable by a hard sign (ь). For example, *am* = ‘to shoot’ - *a(ь)m* ‘horse’, *ым* = ‘to send’ - *ы(ь)m* ‘dog’, *кам* ‘berry’ - *к(ь)m* ‘layer’, *алгы* ‘scream’ - *a(ь)лгы* ‘skin’, *ом* ‘fire’ - *o(ь)m* ‘grass’, *арга* ‘procedure, method’ - *a(ь)рга* ‘forest’, *кызар* = ‘to try hard’ - *кы(ь)зар* = ‘to catch, clench’ and so on.

The researchers have not still determined a question whether this phenomenon is connected with influence of an ancient substrate, or is a lost sign of general Turkic phonetics, or refers to late region specific features, appeared under the influence of language contacts. In whole, there is no consensus. To determine the beginning and estimated time of formation of the phenomenon of the pharyngealisation in the history of Tuvian is also of interest.

It is determined that in the first place Old Turkic tribes participated in formation of a basis of a gene pool structure of Tuvians. Separate materials of researches show a kinship of the Tuvians with Khalkha-Mongols, who played, in accordance with them, a significant role

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in an ethno genesis of the Tuvinians. An analysis of a genetic material also showed up a participation of the Northern Mongoloids of Siberia (Kets and Tungus-speaking tribes) in a mitochondrial gene pool of the Tuvinians [6, p. 18].

In accordance with Kormushin I. V. there was an ancient and strong enough Mongolian influence on the language and the ethno genesis of proto-Tuvinians and proto-Yakuts. An ancestry of the Tuvinians underwent Turkisation under the influence of ancient Uyghurs in such a way, the scientist assumes, that the original ethnical substrate of the proto-Tuvinians, possible, was Mongolian-speaking tribes of the western Baikal area [7, p. 61]. An opinion of Nadelyaev V. M., a founder of Novosibirsk School of Experimental Phonetics, is of interest. In his opinion, a mass systematic experimentally phonetic research of articulatory skills, typical to speakers of the modern Mongolian, gives grounds to say that Old Turks played a huge role in the ethno genesis and formation of the language of the Mongols [8, p. 26]. In such a way, it can be assumed that Turkic-Mongolian ethnic groups historically have interdependent ethno-linguistic roots in terms of the origin and the formation.

A specific feature of the phonetics of the modern Tuvinian is a strict opposition of consonants accordance with “strength – weakness”, at that aspiration is typical to some strong consonants. According to materials of a Mongolian scientist Bold L., features of the language of the Tuvinians, called themselves Uyghur-Uryankhay and living in Tsaagan-Nuur of Khubsugulskiy aimak of Mongolia, are clearly coming closer with data of neighboring Todzhinians dialect and Tere-Kholsky parlance of Tuvinian. With that, as distinct from the features of the said dialects of Tuvinian, in the phonetic system of the speech of Uyghur-Uryankhay strong (with aspiration) consonants are presented in all word positions [9, p. 12].

In strong aspirated voiceless and unaspirated (positionally vocalized) weak consonants of Tuvinian some researches see a possible influence of the phonetics of Mongolian. But, comparing “strong” and “weak” consonants of Tuvinian and Mongolian it can be seen that they, despite some similarity in respect of acoustics, significantly differ in combinatory terms. In Mongolian “strong” and “weak” consonants are presented not only in an absolute beginning of a word, but also in other positions.

In terms of the origin of the phenomenon of the pharyngealisation in the phonetic system of Tuvinian there are different opinions. Some researches assume that the pharyngealisation, observed in Tuvinian, has the substrate origin. So, Verner V. G. sees a reflection of features of Kets language in this phenomenon [10, p. 20]. Illich-Svitych associates this phenomenon with changes of quality of non-initial strong consonants [11, p. 25]. Analyzing the features of the pharyngealisation of

Tuvinian, irrespective of Illich-Svitych V. M., Nadelyaev V. M. also has come to a conclusion that weakening of post-vocal strong consonants led to appearance of the pharyngealisation [8, p. 28].

Touching a question of the pharyngealisation in Tuvinian Malov S. E. in his time pointed out an inextricable connection between a degree of aspirated catch (incursion) of a pharyngealized consonant and a release nature (recursion) of a neighboring consonant. An explanation of features of semi-long (i.e. pharyngealized) vowels of Tuvinian, in accordance with Palmbakh A. A., can be found in spirants of type *h*, which later dissolved in a previous vowel, for example, Mong. *a^hma* “gelding” Tuv. *a^hm* (*a^hm*) [12, p. 127]. Almost the same view is held by Mongush D. A. But, unlike Palmbakh, he assumes that a comparative analysis of words with a final sound combination “*üm*” in separate Turkic words (for example, Alt. *uüm* K. –Kalp. *uümetep* – “to push”, Alt., K-Kalm. *uüm* “dog”) with the corresponding equivalents of Tuvinian (with pharyngealized vowels *u(ʷ)dep* – “to push”, *u(ʷ)m* – “dog” and so on) can at least throw light on the origin of Tuvinian pharyngealized vowels [14, p.198].

Indeed, apparently, prosthetic consonants (*h*, *j*, *b*), connected somehow with the phenomenon of aspiration played not the last role in the origin of pharyngealized (with a glottal release) vowels in the said languages. Obviously, a strong expiratory stress, formerly having fallen on the first syllable of Tuvinian, promoted an appearance of aspirated consonants, intensified in separate events due to environment. As a result of certain phonetic changes under the influence of different factors the weakening (or strengthening?) of aspiration of one of strong consonants could improve the appearance of a prosthetic consonant or cause a specific sound of neighboring vowels.

In favor of this assumption, data of Saryg-Yugursky language counts. In this context dialects of the modern Uyghur, Salar give an extremely interesting material. In the language of the Saryg-Yugurs strong aspirated consonants are characterized by a specific catch, distinguished in several cases in an independent articulation (*x*) (after back vowels) or (*u*) (after front vowels) [14, p. 163]; *ышм* “dog”, *ушм* = “to push”, “to push off”, *ушм* “meat”, *ушкү* “two”, *ушм* = “to drink”, “to eat”, *ушмуз* “sharp”, “witty”, *опрк* = “to get a scare”, “startle”, *уджа* “sacrum”, *ахс* “mouth” and so on. This position, apparently, formerly existed in Tuvinian. But as a result of the weakening of aspiration and the strong catch of non-initial consonants, separated insignificant sounds (*x*, *u*, *ü*, *ö*) disappeared, but previous vowels acquired melodious “glottal” gradation.

In the language of Yellow Uyghurs words like *am* “horse”, *om* “grass” are pronounced with a strong aspiration, as if *-axm*, *-oxm*. If to pronounce these words with less incursion, there will be *am* “name”, *om* “fire”.

As noted by Shcherbakov A. M., in the languages of Saryg-Yugur and Salar in a final position aspiration is fixed in single-syllable words, which in Tuvinian are appeared with pharyngalized vowels, and on the contrary, it is not detected in Tuvinian words [15, p. 241]. Compare:

S.-Yugur	Salar.
<i>am</i> “name” - <i>a'm</i> “steed”	<i>ак</i> “white” - <i>a'к</i> “to flow”
<i>om</i> “fire” - <i>o'm</i> “grass”	<i>эм</i> - “to do” - <i>üэ'm</i> “meat”

Tuv.
am “name” - *a'm* “steed”
om “fire” - *o'm* “grass”
ак “white” - *a'к* – “to flow”
эм – “to adjust” - *э'm* “meat”

In many Uyghur parlances of Xinjiang words with front vowels, having an insignificant sound “u”, are noted. These vowels are presented only in an initial position of a word. It is possible that they are remote echoes of a phonetic phenomenon, resulted in Tuvinian in the modern phenomenon of the pharyngealisation. In such a way the same front vowels with the insignificant sound “u” are absent in Lopnor dialect of the modern Uyghur, genetically close, according to expert opinion, to the Medieval Kyrgyz [16, p. 116]. Pharyngalize vowels in Tuvinian, as a rule, correspond to words with the abovementioned vowels in other dialects of Uyghur, and also on Saryg-Yugur and Salar languages.

Compare:

Languages: Word meaning	Old Turkic	Tuv.	S.- Yugur.	Modern Uyg.	Salar	Uyg.- Uryankh.
steed	<i>am</i>	<i>аьт</i>	<i>а'т</i>	<i>am</i>	<i>а'т</i>	<i>аь't</i>
meat	<i>em</i>	<i>эьт</i>	<i>і'т</i>	<i>і'т</i>	<i>с'т</i>	<i>эь't</i>
two	<i>уки</i>	<i>уьйи</i>	<i>і'уки</i>	<i>і'уки</i>	<i>і'уки</i>	<i>уьхи</i>
sharp	<i>йитиғ</i>	<i>чиьдиғ</i>		<i>ш'тик</i>		<i>дь'тиғ</i>
to push	<i>ит-</i>	<i>иьт(ер)-</i>		<i>і'т-</i>		<i>и'тер-</i>
to scare	<i>урк-</i>	<i>урьгут-</i>	<i>ор'к-</i>			
to write	<i>буми-</i>	<i>биьжи-</i>			<i>ну'му-</i>	

In such a way, a genetic link between the pharyngealisation of the vowels of Tuvinian and specific vowels, pronounced with different insignificant sounds in the dialects of Uyghur, in Salar and Saryg-Yugur, does not cause doubts. Please note that the same vowels are not distinguished in Khakas and Shor languages. Sr. Alt. *uim* “dog” – Tuv. *ыьт* – id.

Tenishchev E. R. admits the existence of a deafen *i* (with an insignificant sound s) (*і't* “dog”) in Old Uyghur [17, p. 128]. In the language of the Old Uyghurs the sounds, examined by us, apparently, were presented wider. In a just opinion of Illich-Svitych V. M. the language

of the Yellow Uyghurs, separated earlier, has better preserved features of its initial system [18, p. 16]. The phonetic system, which began to form in the Old Uyghur period, apparently, was partially inherited by Tuvinian.

It is worth noticing a usage in the modern Uyghur (in its dialects) of a pharyngeal *h* in the beginning and in the middle of a word (extremely rare at the end) [19, p. 177]. Due to this fact it differs from some relative Turkic languages.

In terms of the origin in Turkic languages of a phoneme *h* there are varied opinions. The initial *h* act irregularly, mainly in languages of Ogus and Karluk-Uyghur groups. In Kiphal languages, Yakut, Khakas and Altaic it is not presented. In old written monuments *h* is an extremely rare phenomenon, at that in Runic, Manichean and Uyghur texts it is absent at all.

Without going into details of this complicated question, note that Mahmud al-Kashgari in his famous work detected the presence of the sound *h* as a part of interjections and imitative words [20, p. 134]: *куррыh* is a word, used to call foals. (Sr. Tuv. *куух* – *куух* – id); *h ач* – *hач* – a word, used to goad a cattle. Sr. Tuv. *хаччу*, *хаччу* – id. The initial *h* is met in some other Turkic languages, in particularly, in Azerbaijani (in dialects), and also in speech of people of Khalaj (Iran). Dorfer G. considers the language of people of Khalaj the most ancient among Turkic. Some features in the phonetics, morphology and lexis of the said languages served as a basis, in his opinion. Among the phonetic features – the presence of the consonant *h* in the beginning of Khalaj words: *hom* “fire”, *haii* “moon”, *hazach* “tree” and so on. [21, p. 67].

The initial *h* in the modern Uyghur parlances is characterized by instability, due to which in some cases it is conceived by a speech community as prosthesis, and in other – as a sound, close to back voiceless or voiced consonants *x*, *к*, *г* in accordance with articulation [22, p. 60]. Sr. Uyg. *hажэт* “necessary, needed ~ каз. *кажет эжет* – id; Uyg. *hэкик* “hiccup” ~ каз *ыкылык* – id. The prosthetic initial *h* is fixed in the language of the Sarug-Yukurs, where it exists in two types: (1) before a group of “wide vowel + sonant” нарка (<*арка) “back”; *hртекы* (<*ертеги) “early”; (2) when the closest to the beginning of a word consonant – strong voiceless aspirated – *ham* (*,a'm*) “steed”; *ham* (<*a'm*) “to shoot”, *hака* (<*a'ка*) “elder”, *hомаг* (<Mong. *омоу*) “tribe, generation”, *hemek* ~ *himik* (<*e'mek) “lap” and so on. [23, p. 29].

It is notable that words in Tuvinian with pharyngalized vowels correspond to the examples with the initial *h*, given in this group. Compare: *hem* – (<(ü) *e'm-*) “to achieve” ~ Tuv. *чөьдөр* – id; *hau-* (< *au-) “to open” ~ Tuv. *аьжар*- id; *hesыр-* (< *e'cip-) “to get drunk” ~ Tuv. *эьзир*- id; *hesкен-* (< *e'sken) “to stamp” ~ Tuv. *эьшкенне*- id; *hiш-* (*iшэ*) “drink!” ~ Tuv. *и'ш* (*иьжер*) – id.

By the presence of the initial spirant separate dialects and parlances of Tuvinian come closer with the modern Uyghur and Saryg-Uyghur. Words with the initial *h* in Tuvinian are detected, mainly, in an original (Turkic) part of the lexis. So, one of peculiarities of Tere-Kholsky parlance is a usage of a sound “*x*” (very close to the pharyngeal *h* in accordance with articulation) in the beginning of a word instead of “*κ-*”, addition of an epenthetic *x* // *h* in the beginning of some words [24, p. 109-110].

Compare:

Tuv. Lit.	Tere-Kh, parlance
<i>күрүтү</i> “black-cock”	<i>һүртү</i>
<i>кымыскааяк</i> “ant”	<i>һымыскааяк</i>
<i>ары</i> “bee”	<i>һары</i>

The same sound is used in a position between vowels, between a sonant and a vowel (-*x*~ -*z*-).

<i>ийи</i> “two”	<i>иһи</i>
<i>мөһгеле</i> – “deceive”	<i>мөһеле</i>
<i>кыргызыс</i> – ethnonym	<i>кырыһыс</i>
<i>тыһва</i> – self-designation	<i>туһа</i>

As it is seen from the previous examples, in the dialectic words with the sound *h* the vowel pharyngealisation is absent.

The initial prosthetic *h* is detected in Todzhinians dialect: *һары-* ~ Lit. *ары* “bee”, *һала* ~ - Lit. *але* “in fact”, *һай дээр* - ~ Lit. *ай дээр* – “to chase”, “shoo” (cattle), *һ өкне* ~ - Lit. *өкне* “lungs” [25, p. 47] and so on, and also in the speech of people of some other regions of Tyva [26, pp. 334-335; pp. 297-298].

In accordance with Gadzhieva N. Z., the expiratory stress, formerly having fallen upon the first syllable, promoted an appearance of prosthetic consonants (*й, һ, ө*) in Turkic [27, p. 88].

Talipov T. assumes that a question of the existing pharyngeal *h* in the sound system of the modern Uyghur and other Turkic languages somehow is connected with aspiration [28, p. 92]. Apparently, the prosthetic consonants (like *й, һ*) in their turn played a certain role in the appearance of pharyngealized vowels in Tuvinian.

In our opinion, the sound system of Old Tuvinian dialect of the initial period of its development, apparently, was characterized by some regularities, being patchy for its further development. It is quite possible that due to the phonetic features, the separated Uyghur-Ogus Old Tuvinian dialect eventually has acquired backgrounds for the appearance of peculiar tonal-pharyngeal vowels with the features in vocalism and consonantism. In accordance with Tatarintsev, in Tuvinian a trend to changes of quality of strong consonants in all positions of a word, excluding an absolute beginning, was implemented

earlier than the XIII century, i.e. before the beginning of intensive Tuvinian-Mongolian language contacts [29, p. 93]. Under the determinant influence of the parent language, apparently, some shifts occur and gradually in the course of the further development on a base of Old Tuvinian under intra-linguistic factors, they gradually form into features, known to us today.

The backgrounds of the appearance of the vowel pharyngealisation in proto-Tuvinian dialect (or language), apparently, began to form approximately in Telessky or Ogus-Uyghur period, covering the VIII-XII centuries, i.e. with the beginning of the Old Turkic language divergence on the territory of Sayano-Altai.

In whole, the development of the phonetic language system, certainly, is closely connected with the development of other parts of its structure, first of all of the morphological and lexical systems. It is determined and explained by the fact that changing of sounds, changes of pronunciation are made not isolated from words, but in words of the language and in their forms. It is even more important that changes of the phonetic part of the language lead to transformation of word roots that, eventually, results in creation of new roots, new words in the language and so on. That is in some cases different morphological and lexical phenomena of the language find their explanation, eventually, in changes, which formerly touched its phonetic system in the course of its historical development.

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Revisiting Comparative-Historical Study of Olonkho and the Epos of Turkic People (problem statement)

An effort to pose a problem of a comparative-historical research of the Olonkho and eposes of the Turkic people of the Southern Siberia new to the modern Olonkho study was undertaken. The idea that only a historical approach allows to solve the problem of Yakut heroic epos genesis, determine the place and time of its origin, is proved.

Key words: the Olonkho, epos, Turkic ethnic groups, linguistic community, ethnic contacts, Altai tribes, southern ancestors of Yakut people.

In 1945 a future academician of AS USSR Okladnikov A. P. manifested his conclusion that “the Yakut Olonkho initially was formed on the South, far away from the Middle Lena, when its creators had no a social soil for execution of the later periodic epics like *Manas* and *Jangar*, but an ancestry of the Yakut and relative tribes had already left behind an ancient mother tribe system and entered an age of a father tribe. The execution of the Olonkho had passed under conditions of tight cultural and historical connections and constant cooperation of the Yakut ancestry both with their next kinsmen, an ancestry of current Sayano-Altai tribes, and with ancient Mongols” [1, p. 276-277]. For studying of the problem of the origin of the Yakut heroic epos Olonkho this conclusion of Okladnikov A. P. is essential as two directions of a comparative study of historical-cultural roots of the Yakut epos, i.e. Turkic and Mongolian, have been planned. Today science does not have convincing data to answer a question which of these roots was an original one, and which was concurrent. Many things depend on the answer, including clarification of a location of a historic place and determination of a historic time of the execution of the Olonkho as a special genre of an oral work of the Yakut ancestry. Where did locate the Yakut ancestry, who were the ethnic Yakut ancestry – there were enough attempts to solve this question, but we still have no a decisive answer. Really, all researchers agree with the fact that the Yakut ancestry geographically had the southern origin and that in ethnical terms they referred to the Turk community, but it is not obviously enough for understanding of deep basis of ethnical history and ancient culture of the southern Yakut ancestry.

An addressing to a historiographical tradition explains that in posing of questions, connected with a study of an origin of some people, its culture, a special place is given to a language. This condition is an axiom; if it is true, we

should address to an opinion of linguist-Turkologists, i.e. to an expert opinion. In accordance with their investigations the language of the ancestry of the modern Yakut initially belonged to Turkic languages. But there is a question – which ethnical community was a bearer of these Turkic languages? Where did it locate? Attempts to answer these questions were made by Malov S. E. and Ubryatova I. – recognized specialists of Turkic languages [2, 3]. Generalizing their views, Okladnikov A. P. wrote: “...studying of peculiarities of Yakut gives a ground to state the presence in it of quite ancient elements in the development of Turkic languages. Particularly noted The presence of number of features in Yakut, which bring Yakut with a language of Orkhon-Yenisey Runic scripts of the VII-VIII centuries a.d, is noted specifically” [1, p. 278].

In such a way, the researchers of Old Turkic languages advance a view that the Yakut ancestry were in close relations with bearers of Orkhon-Yenisey Turkic linguistic community. In accordance with achievements of classic Turkology, Orkhon-Turks are a confederation of Turkic-speaking tribes of Central Asia of the V-VII centuries headed by Ashina clan. In 265-460 Ashina was a part of late Hun states, having conquered Hexi (Western China) and a part of East Turkestan. In 460 the clan was under the control of Juan-Juan and resettled to Altai, where it headed a tribe union, called Turkic. In 551-555 it shattered Juan-Juan and established in 552 the Turkic Khaganate with a center on the Orkhon River (Mongolia) [4, 5, 6]. As evidenced by this data, the ethnical community of the Turks was formed in Altai in the middle of the V century a.d. and, consequently, the beginning of the ethnic history of the Turkic-speaking ancestry of the Yakut can be referred to this historical time and to this historical territory, knowing that a name “Turk” initially had only a political meaning. For us it is important that there is an interesting study line of the origin of the Yakut heroic epos – the Olonkho. But the study of the problem is made difficult by a complexity of the history of the Turkic Khaganate itself.

The Turkic Khaganate, which had established in 552 a.d., existed up to 745, gone through continuous

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internal and external wars and inter-tribe quarrellings, dissolution to hostile to each other Eastern (Central Asian) and Western (Middle Asian) parts. Western Khaganate broke up in 740, Eastern was shattered by the Uyghur in 745 [7]. Almost 200 years of the Turkic Khaganate's existence were lost in the course of history. Its historic value is that the Khaganate played a very important role in consolidation of the Turkic-speaking people of Eurasia and promoted the further development of ethnic groups, which later composed the basis of the modern Turkic-speaking peoples. It is time to clear up the question – which ethnic group of the Altaic Turks did compose a basis of the modern languages? Gumilev L. N. tried to answer this question, taking without any reservations a statement of Okladnikov A. P. that the ancient Yakut ancestry were Kurykans, a habitant of whom corresponded with an archeological “Kurumchi culture”, geographical center of which was Lake Baikal with its highly populated banks, and the main area of its distribution was upstream waters of the Angara and the Lena, up to Baikal, including Olkhon Island [1, p. 265].

A weak argumentation of the belonging of the Kurykans to the Altaic Turkic ethno-linguistic community keeps the question of the most ancient ethnical origins of the modern Yakut ancestry open and allows us to perform an examination of a correctness of a hypothesis of the Kurykan origin of the Yakut ethnic group.

It is obvious that without a clear answer to the question of the origins of the ethnic history of the modern Yakut it is impossible to imagine a solution of other questions, including an ancient spiritual culture of the Yakut. All the more it concerns the most ancient origins of the Yakut heroic epos Olonkho. That's why we again have to see into the question of the origin of the Yakut people from the Kurykans, of its ancient cultural and historical and ethnogenetical contacts.

We noted above that Okladnikov A. P. connects the Yakut ancestry with Orkhon-Yenisey bearers of the language of the Turks of the VII-VIII centuries a.d. Of course at that he supports the opinions of his predecessors Malov S. E. and Ubryatova E. I. An advantage of this method of the archeologist is that it is more competent – the initial place of settlement of the Yakut ancestry is attached to a certain region, the time – to a certain period of the Turkic Khaganat history. Therefore, on further studying of the Olonkho genesis we can start from this place and time.

The second way to study the topic, pointed by Okladnikov A. P., takes us to the Mongolian-speaking peoples, with whom “the bearers of the ancient Turkic linguistic heritage were in contact”, at that “the longest and the deepest ones due to certain historically established reasons” [1, p. 278-279]. An indication on the fact that the contacts of the bearers of the ancient Turkic language with the Mongolian-speaking peoples occurred historically

later, when under the influence of some large-scale events a destruction of a unite Turkic world had happened, is of great significance for us. An assumption of Okladnikov A. P. on time of penetration of the Mongolian-speaking peoples to Baikal area in XI-XII centuries a.d. and on a replacement of local, Turkic-speaking aborigines is well known [8]. But the modern specialists affirm that a satisfactory solution of the question of time of the appearance of the Mongolian-speaking tribes in Baikal area only on the basis of archeological materials does not seem possible. But however, there is still an opinion that the Turkic speaking ethnical community in Baikal area had existed there before the appearance of the Mongolian-speaking ethnic group. It is very important as this conclusion can be connected with the study of the origin of the Yakut heroic epos Olonkho and it gives an opportunity to define many unknown historical circumstances of the most ancient Turkic-Mongolian contacts. In our case this question has a specific place, and its results could clarify a detection of the historical roots of the Olonkho epos. First of all the question how “long and deep” was the contact of the bearers of the Turkic and Mongolian, about which Okladnikov A. P. spoke, and are we capable to consider the question of the Mongolian origins of our epos, is still not clear.

In this situation it is necessary to perform a special comparative-historical investigation of the epos of the bearers of the ancient Turkic and the ancient Mongolian languages with an obligatory touching of ethnogenetic problems. It is worth noting that the attempts of such comparative investigation have already been made. First of all, in generalizing works on the history of Yakutia on the background of the origin of the Yakut ethnic group somehow the problem of the Yakut epos with the reference to the cultural and historical community of the Turkic-speaking and Mongolian-speaking ethnic groups was touched upon, but not more. Secondly, in works of specialists of epic poetry, studying the Olonkho, it was said in general terms about its most ancient southern origin with a loose comparison with eposes of the Turkic-speaking and Mongolian-speaking origin. Thirdly, only from the middle of the XX century a work on the historical-comparative study of the Yakut Olonkho with eposes of other peoples has begun. It is, of course, referred to special investigations.

Researches of this format are connected first of all with a name of a famous specialist of the Olonkho Pukhov I. V., the author of a monograph [9]. In his work the author focuses his attention on a characteristic of main characters in the Olonkho without comparing with fissures of other eposes. In 1959 he for the first time performed a comparison of enemies of a hero in the Yakut Olonkho and in Uzbek Alpamysh [10]. In theoretical terms his approach to the comparative-historical method to

folkloristics, in particular, in the epos study, is interesting. He wrote: "It is well known that in many works the most important part of the comparative-historical method – a historical basis – was dropped off, and comparisons were performed without grounding of any regularities in each separate case. For example, plots, images, separate details of epic works of separate peoples were compared that is possible and necessary. Often this was done in accordance with accidental attributes, but real historical connections or concordances were not established. As a result the comparative method turned out to be one of varieties of a formal method" [11]. It appears that Pukhov I. V. is really right, as it is impossible to understand historical roots of epic works, appeared in time immemorial and due to any reasons disconnected between each other. That's why in studying of the genesis of any epos, determination of historical connections, beginning with kinship, is fundamental. And, of course, a comparative study of the genesis of the Yakut Olonkho should begin with a study of the Turkic-speaking peoples.

Following this understanding of the comparative-historical method in the folkloristics, Pukhov I. V. was gradually extending frames of his seeing, using advantages of the method in analyzing of a genetic community of the Olonkho with the eposes of other Siberian peoples and in 1971 published a special article [12]. The main conclusion of the article – on the existence of the genetic community of the Yakut Olonkho with the Altaic heroic epos, such community between the ancestry of the Yakut and the Altaian existed in a period not later the IX-X centuries, maximum in the XI century a.d. from this time the epos of two relative ethnic groups split, but within almost a thousand of years under conditions of separate history stylistic and narrative-compositional elements of the most ancient unite epic works are kept in a remarkable manner [9, p. 73]. Then (in 1972) Pukhov I. V. performed the historical-comparative analysis over the Yakut Olonkho and Kalmyk Jangar, in which more differences than similarities in these two eposes were detected [13].

In 1975 Innokenty Vasilyevich published an article, in which wider problems were posed – consideration of a community, similarities and differences in a heroic epos of the Turkic-Mongolian peoples of Siberia: the Yakut, the Altaian, the Khakas, the Shors, the Tuvinian and the Buryat [14]. This Article is of interest as in it the peoples (the Altaian, the Khakas, the Shors, the Tuvinian), who never broke direct contacts among each other, therefore, preserved some community in the folklore, in particular, in a heroic epos, are stand out. The Buryat also did not loose their connection with tribes of the eastern Turks, especially with ancestry of the modern Khakas and Tuvinian (and through them with tribes of Altai). But the Yakut, separated from their southern ancestry, lost connections with them in all following times, but some time

(approximately "in the beginning or in first centuries of the second millennium a.d.") they communicated with the Buryats [14, p. 12]. In the context of our topic the author's conclusion seems the following: "the Yakut Olonkho had genetically common features with the most ancient layers of the epos of other Turkic-Mongolian people of Siberia", but this "community covers main peculiarities of the Olonkho: its style, plot and composition, main characters" [14, p. 63]. This observation of the author can be one of starting points in the study of the genesis of the Yakut epos.

Pukhov I. V. generalized his work on the historical-comparative study of the epos of the Siberian peoples, started over at the end of 50s, in a special monograph, published after the death of the author in 2004 [15]. A central question of the monograph is the most ancient origins of the Yakut heroic epos Olonkho. The author is right in methodological terms, connecting this question with the origin of the Yakut people, with their most ancient cultural-historical and ethnogenetic contacts. That's why he considered it necessary to "give a special analysis of possible ancient connections – the Olonkho with the epos of peoples, relative to the Yakut" [15, p. 5]. To do this he considered the epos of three peoples modern to the Yakut among a group of Altaic-Sayan: the Altaian, the Shors and the Khakas.

It is obvious that the interest to this question is huge. The author notes that "the Yakut and the Altaic-Sayan peoples, disconnected by a huge space, during almost all further historical period of their existence, did not have any connections" [15, p. 6]. In accordance with the author, all that makes determination of features of similarities of the Yakut Olonkho with the epos of the Altaic-Sayan peoples, both in special (for the ethnogenesis of the Yakut and the genesis of their epic works), and in general-theoretical terms, interesting. Further his statement that "the Yakut knew the Altaic-Sayan peoples before the Buryat (in memory of the Yakut the Buryat are kept, and the Altaic-Sayan peoples – not) is of interest" [15, p. 8]. This condition, naturally, should be taken into account in development of the questions of the genesis of the Yakut epos.

The main advantage of the Pukhov's investigation is a genetic approach to comparison of the eposes, that's why the author advances the following as more or less reliable data, which could testify the community of the epic works:

- a. compositional similarity of the eposes of the peoples;
- b. similarity of technique for describing, characteristics and figures of speech;
- c. similarity of certain details;
- d. similarity of names of traditional, more stable characters in the eposes.

As it is seen, it is referred to the performance of an

analysis of “inward nature” of the epos, a look on the epos from inside, but not to a mechanical concurrence of its elements. This is a new approach with the help of which Pukhov I. V. analyzed:

- plots and characters of the heroic epos of the Altaic-Sayan peoples and the Yakut Olonkho;
- an epos about a white wolf and his upbringing (Altan-Kyuchkash and Ak-Toychi);
- the Shors heroic legends;
- the Khakas heroic legends.

On the basis of the performed analysis Pukhov I. V. came to a conclusion that the separate existence of the Altaic-Sayan ethnic groups reveals in majority of the works of the epos only a similarity in details, some motives, but not in the whole [15, p. 160]. However he was amazed at a circumstance that separate works of the heroic epos of the Altaic-Sayan peoples are similar to the Yakut heroic epos Olonkho not in some details, but almost completely: in style, composition, character interpretation. This conclusion is fundamentally based by the very detailed (“step by step”) historical-comparative analysis of the Altaic heroic legend Maaday-Kara and the Yakut Olonkho [15, p. 163-313].

In general, the historical-comparative study of the heroic epos of the Altaic-Sayan peoples and the Yakut Olonkho led to the conclusion, made by Pukhov I. V. that the ancient community of the origins of the Olonkho and the heroic epos of the Altaic-Sayan peoples appears quite clearly, that they are “undoubtedly relative epic works, the beginning of which refers to time when the Yakut ancestry in the antiquity directly communicate with the ancestry of the Altaic-Sayan peoples” [15, p. 292]. As for the relations of the Yakut and the Buryat eposes, they originated historically later, than the connections of the Yakut epos with the epos of the Altaic-Sayan ethnic groups. It occurred “not later than the XIV century” [15, p. 292].

Later Pukhov I. V. co-authored by Egris G. U. brought some nuances in his thoughts over the time of the origin of the Yakut epos. They wrote: “It is possible that the Olonkho was created in the period when the Yakut ancestry kept in their memory hostile relations with the ancient Turks in the VI-VII centuries. It does not mean, of course, that the formation of the epos should be obligatory referred to the VI-VII centuries. But, it is possible, that it was formed in the period, when the ancient ancestry of the Yakut sang song about their battles with the Turkic Khaganate” [16]. Such explanation of a historical age of the Olonkho did give nothing new to the solution of the problem of the genesis of the Yakut epos.

The problem of the historical-comparative study of the genesis of the Yakut heroic epos was touched upon in works of other authors. But here we purposely won't dwell on their characteristic, taking into account that there are no differences with statements of the authors, the

works of whom we considered above. There are difference in the approach to the topic, in determination of notion contents and keywords in the eposes, in interpretation of historical events, somehow reflected in the epic works. For example, in a monograph of Nikiforov V. M. [17] stages of evolution, etc., allowing to establish a connection between the epic time of the legends and historical facts, are distinguished. This perspective of the research should be welcomed.

In such a way, our predecessors laid a foundation of the comparative-historical development of the problem of the genesis of the Yakut heroic epos Olonkho, especially Pukhov I. V., who left the respectable monographic research. The main advantage of this method is that a discovery of the origins, roots of the formation and the development of the epic heritage is proposed. With its help an overall picture of the most ancient connections of the bearers of the Yakut epos and the eposes of the peoples relative to the Yakut, first of all the Altaic-Sayan Turkic ethnic groups, is created. But we think that not all questions of the genetic order are considered satisfactory; there are new aspects of the study of the epic heritage; there are also disputable moments. It appears that the topic of the comparative study of the eposes needs the further development, mainly, from the point of view of a search of more effective methodologies and methods of the research. We think that a complex approach with the use of a methodology and procedures of other sciences, i.e. archeology, ethnography, history, philology, historical sociology, etc. is necessary in this sense. But a fundamental principle of researches should be a principle of historicism, assuming a successive and systematic study of a complex of questions, connected with the question of the origin of the Yakut heroic epos.

Such approach provides the solution of the following tasks:

- study on the basis of new scientific achievements of the ethnogenesis and the ethnic history of the Yakut in close connection with the ethogenesis and the ethnic history of the relative Turkic-speaking peoples of Altai and Baikal area;
- determination of the character and the historical time of the communication of the Yakut ancestry with the Buryat ethnic group;
- determination of common feature and differences in the epic heritage of the Turkic-speaking and Mongolian-speaking ethnic groups;
- determination of peculiarities of the historical development of the epic heritage, etc.

It appears that the solution of these tasks will become possible on the basis of new researches of specialists of ethnogenesis and ethnic history and while carefully analyzing of monuments (published) of the epic heritage of the peoples with the use of the historical-comparative method.

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The Linguistic Status of Russian in the Republic of Sakha (Yakutia)

The article is devoted to the study of general characteristics of Russian status (its real usage, functional load, linguistic behavior, preference, native speakers' orientations) on a certain socio-linguistic material – an inquiry of the population of 14 settlements of Yakutia with 1829 respondents interrogated. Data on a linguistic identity, a level of language proficiency in dynamics, positions in issues of interlanguage liaison, the balance of languages in general communicative spheres in comparison with similar data of various researches of 1968, 1980, 1985, 2008 years is represented.

Key words: Russian, linguistic status, ethnic identity, communicative spheres, linguistic behavior, linguistic preferences, linguistic orientations, contact bilingualism, social functions.

Functioning of languages in a multi-ethnic society requires a constant study and regulation. An attempt to disclose a content of an actual status of regional Russian in accordance with main socio-linguistic parameters is made in the work. If a legal status in a social-communicative system is established legislatively, the actual status of the language assumes its real usage, its functional load.

Changes of an ethnic socio-linguistic reality in the Republic, in particular, of demographic, migration indicators, reflect a narrowing of Russian-speaking communicative space. In general, reasons of this phenomenon is understandable and in fact objective – a new balance of languages is established, especially in the Republic's capital, and it must be said, in accordance with many signs, closer to a harmonious bilingualism, than in 70-90 s. Therefore, there are adaptational phenomena among Russian-speaking, both among the Russian, and the Yakut – gradually their linguistic behavior, linguistic orientations, preferences undergo changes. And in this situation it is important to observe how the status of the Russian language is changed, what the balance of social functions of the Yakut and Russian languages is in our everyday usage.

The status of Russian in the Republic of Sakha (Yakutia) is defined by its functioning as: (1) the native language for the ethnic Russian and people of other nationalities; (2) functionally first language for the large majority of the ethnic Russian and Russian-speaking population of other nationalities; (3) the second language, the language of official communication for the ethnic Yakut with native Yakut language; (4) the language of international communication for almost all population.

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In the Article main characteristics of a subject of the research on a certain socio-linguistic material – an inquiry of population of Yakutsk, Vilyuysk, Megino-Kangalassky, Oymyakonsky uluses, Mirninsky, Neryungrinsky districts – are given. A sampling population of respondents is 1829 persons (including 1083 of the Yakut, 485 of the Russian, 249 of the representatives of other ethnic groups, selected under quota sample).

Data on a linguistic identity, a level of language proficiency in dynamics, positions in issues of interlanguage liaison, functioning of Russian in restricted and non-restricted communicative spheres, a linguistic orientation of the population in the sphere of education, Mass Media, in consumption of mass visual information; a language behavior in the sphere of services, orientation in the sphere of public communication and a personal communicative space in the context of dynamics of changes versus analogous data of different researches of previous years, is presented. Questionnaire materials of not only ethnic Russian but also the ethnic Yakut with direct, shifted and multiple (double) identity, and also of the representatives of other ethnic groups, united in a group “the other”, among whom the respondents from native indigenous peoples of the North of the Republic, the Buryat, the Tatar, are presented.

Peculiarities of the modern ethno-linguistic situation in the Republic in many respects are pre-determined by the migration indicators, defining a formation of a new balance of the languages: a narrowing of the Russian-speaking space in the Republic due to a mass departure of the Russian and the Russian-speaking people to other regions; an increase of a role of an internal migration; a crossflow of rural population to an urban area. A census of 2010 shows an increase of a proportion of indigenous population, ongoing since a census of 2002; a flow-out beyond the Republic has assumed a moderate character (37,022 persons) in comparison with 2002 (almost 160,000 persons). So, 466,492 of the Yakut and 353,649 of the Russian lived in the Republic in 2010 [1].

Ethno-linguistic Identity. This parameter of the

Table

The native language of the respondents along the Republic of Sakha (Yakutia)

Languages	Your nationality		
	The Yakut	The Russian	Other
Yakut	87,4 %	2,8 %	27,8 %
Russian	5,5 %	95,7 %	44,4 %
Both (Russian and Yakut)	10,3 %	2,4 %	8,3 %

status of the languages can be traced in accordance with the population censuses. In a program of the census of 2001 there was not a question about the native language, but a long period since a census of 1989 demonstrates changes in self-determination of the population of their native language – a proportion of persons, who called their native language Russian, has increased in 14 peoples (excluding the Russian). To the greatest extend it was observed in case of the Kazakh, a proportion of persons, who called their native language Russian, has increase in 2.4 times, in case of the Buryat – in 61%, the Tatar – 44 %, the Mari – 40 %, the Bashkir – 37 % and the Ukrainian – 33 %.

Russian is considered the native language, besides the Russian, by the majority of the Belorussian (83 %) and the Ukrainian (76 %), about one third of the population – the Udmurt, the Mordovian and the Armenian, and also from 21 % to 29 % of the population – the Chuvash, the Kazakh, the Mari, the Buryat and the Tatar.

The highest proportion of persons, who indicated the language, corresponding to the nationality, as the native one, is the Russian (99.9 %), the Chechen (99 %), the Ingush, the Avar, the Kumyk, the Dargin and the Kabardin (98 % each), the Lezgin (95 %), the Yakut and the Ossetian (93 % each) [1].

Our inquiry shows that the national identity and the native language of 95.7 % of the Russian and 87.4 % of the Yakut coincide (Table 1). With a prevailing direct linguistic identity 2.8 % of the Russian respondents recognize Yakut as the native language and 2.4 % recognize both languages (Russian and Yakut), 5.5 % of the Yakut recognize Russian as the native language; 10.3 % - both languages.

Russian as the native language is up-to date for 95.7 % of the Russian and 5.5 % of the Yakut. A linguistic shift between the last ones has two types: with preservation of knowledge of the language of their nationality and without this knowledge. In accordance with a formal indicator (recognition of a non-ethnic language as the native one) the language shift is more typical for the Yakut. But a transfer to Russian is exceeded by indicators of the multiple linguistic identity, which is typical for the Yakut young people and has an upward trend. It is interesting that the Yakut with the language shift (5.5 % among the respondents) have a different level

of Yakut proficiency – from fluency to non-proficiency: 32.1 % – do not speak Yakut; the remaining portion (67.9 %) – speak Yakut fluently or have writing or communicative skills. Among the Russian with Yakut as the native language (that composes 2.8 % among the Russian respondents) 13.6 % can speak Yakut in active form; 6.8 % can parley Yakut; 5 % can parley Russian with difficulties. In such a way not only the ethnic identity, but also the linguistic identity are not determined by a linguistic competence. In uluses, where a contact Russian-Yakut bilingualism prevails, difficulties with the ethic self-determination appear more often (in the village of Tomtor of Oymyakonsky ulus, the city of Vilyuysk of Vilyusky ulus); among the ethnic Russian a number of people who recognize Yakut or both languages as the native language is higher (in Tomtor – 7.7 %; 7.7 % in Vilyuysk – 6.7 %, 6.7 %), for comparison in Yakutsk this number is 2.8 %. In general, both languages as the native ones are most of all represented in answers of young people with secondary-level education and decreases with increase of an educational level. In such a way, a relevance of the multiple linguistic identity with the upward trend of the youth is observed.

At the same time a striving to self-determination through the native language is very strong among three interviewed groups, for the Yakut the knowledge of the native language (73.2 %) and a national consciousness, self-consciousness (51.6 %) are the most important at determination of their ethnic identity; for the Russian and representatives of other ethnic groups – only the knowledge of the native language, correspondingly – 62.1 % and 45.3 %.

It is interesting that the Yakut extremely seriously refer to questions of a language, national cooperation. In researches of ethnologists [2] it is noted that those who do not accept the multiple ethnic identity are along with Grozny in Yakutsk. At that answers that the ethnic identity of a person can be only one, prevail in case of the Russian – 64 %, and the Yakut – 68 %.

In the aggregate of the answers to many questions of our questionnaire, signs of a regional identity, typical to the Yakut in whole, both for the Russian and the Yakut, can be seen.

Level of Proficiency. In 2010 the proficiency of Russian was pointed out by 138 mln people (99.4 %

among respondents to a question of the proficiency of Russian), in 2002 – 142.6 mln people (99.2 %). Among urban residents 101 mln people (99.8 %) speak Russian, and among village population – 37 mln people (98.7 %).

Almost all population (from 90.6 % to 99.8 % who pointed out the language proficiency) of the abovementioned nationalities can speak the state language of the Russian Federation – Russian.

The lowest level of the language proficiency, corresponding to the nationality, is of the Belarus (24 %), the Ukrainian (35 %) and the Buryat (45 %). The highest indicators of the language proficiency, corresponding to the nationality, are among the Russian (99.9 %), the Chechen (94 %), the Kabardian and the Yakut (86 % each) [1].

Our data showed that 99.2 % of the Russian feel at home with Russian, 99.6 % actively speak Russian. Among other nationalities a percentage of the proficiency is high – 100 % including 94.4 % feel at home, 97 % – actively speak. 11.1 % of the respondents speak Russian with difficulties, including 8.7 % of the Yakut, 0.2 % of the Russian and 2.2 % of the others. It is also known that a proportion of the Russian, who feel at home with Russian, has increased a little: in 1989 – 1.4 %, in 2002 – 2 %. We managed to obtain more detailed content of a fact of involvement of Yakut in Russian linguistic competence: 41.2 % of the Russian in a varying degree (feel at home – 4.3 %; in active form – 5.8 %), but mainly in a passive form, speak Yakut. Including a greater proportion (25.5 %) who understands a purport of what was said, but does not speak; 58.8 % – is lack of knowledge.

Data of the censuses shows that a proportion of the Yakut, who speaks Russian, has increased: 1970 – 45.4 %; 1979 – 60.3 %; 1989 – 65 %; 2002 – 87.1 %. Census returns of 2010 showed 89.5 % (428,280 of the Yakut among 478,085), including 94.9 % (183,389 of the Yakut among 193,251) of urban residents and 85.9 % (244,891 of the Yakut among 284,834) of rural population [1].

In accordance with our data 99.8 % of the Yakut speak Russian in a varying degree: including 87.2 % of the Yakut – feel at home; 89.4 % - in active form; 10.3 % – in a passive form. In such a way, a prevailing part of the Yakut population is bilingual, at that, better Russian proficiency than the native language is shown by auto answers. Versus results of a republic inquiry *Mezhnatsionalnye Otnosheniya*, performed in 1990 [3], the following quality changes were revealed: a number of the Yakut, who feels at home with Russian, increased in 2.6 times, a number of those who speaks with difficulties decreased in 2.5 times, and a number of those who does not speak decreased in 1.5 times.

A problem of a linguistic stability can be defined through a revealing of directive of obligation/ non-

obligation of proficiency of the ethnic language: this imperative in the Republic is very significant for the Yakut (96.2 %), the Russian (83 %) and the representatives of the other nationalities (86.7 %) rate it high. Answers to a question: “How do you treat people of your nationality, who do not speak the native language?”, asked for the purpose of revealing of strategies of inter-ethnic linguistic exception, turned out to be complex (from negative to positive), and this question was one of the most complicated for definition – a lot of people (mainly the Russian and the other) could not give an answer. But significant results speak well for tolerant attitude to this phenomenon: the Russian – 45.6 %; the Yakut – 39.4 %; the other – 38.8 %.

Family Communication Sphere. A communication in a family depending on the ethnic identity has its peculiarities, derived from many extra-linguistic factors. The Russian – stable and steady positions of the language of their nationality, insignificant inclusion of Yakut is observed in the communication with older relatives (grandmother, grandfather) – 2.1 %. But, a functional use of Yakut in a family has its gradations: in general, among urban residents the ethnic language consistently is a complier of the language in a cross-cultural communication (with a grandmother, grandfather) – 88.7 % (% are sum up with an answer variant “Yakut prevailing”); in inter-generational (with parents) – 72.3 %. The use of Yakut is decreasing in the inter-generational communication with children – 66.5 % and even more rarely it is used in an intra-generational communication (with a spouse) – 62.3 %. More than obvious shift of the linguistic behavior in a family from Yakut to Russian is detected. All this phenomena and particularly penetration of Russian in the family sphere, which traditionally is conservative in terms of susceptibility to external influence, speak for trends of progressive language assimilation among the urban Yakut.

A language distribution in a public communication is characterized by a different volume of social functions, performed by it. So, a linguistic correlation in cases of addressing to authorities, public presentations is determined by established social functions, i.e. a prevailing significance of Russian in a records management, document flow: 47.7 % of the Yakut in oral speech address to the authorities using Russian, in an official correspondence also Russian prevails – 81 %; an oral/written form of speech is in linguistic preferences of the Yakut to a greater degree, and in a lesser degree it plays a significant role for the Russian and the other – 76.9 %. In a written form the use of Yakut and an equal use of both languages have significantly decrease, that is objectively considered and explained by an undevelopment of an official-business style and terminology in Yakut. Oral nature decreases a volume of the use of Russian, giving part of its function to the bilingualism. In perception and

reproduction of the public speech the Yakut population mainly are oriented more on Russian, the use of which in comparison with 1985 increased correspondingly in 3 and 6 times, and on the bilingualism [3].

Inside the prevailing Yakut-speaking community a dependence of choice of the language on a written/oral form of speech organization is also observed, a predominance of Russian in the official sphere is consistent, has an upward trend.

In the service sphere Russian is important for the Russian, for the other Russian prevails and the bilingualism is less significant. Among the Yakut there are different language practices, depending, obvious, on a level of the ethnic consciousness in the part of a positive self-appraisal, linguistic loyalty, established during a long-term period of communication, linguistic tolerance: Russian prevails – 47.0 % (in Yakutsk – 67.2 %), in Bilyuysky ulus Yakut prevails – 40.8 %, in Oymyakonsky – the bilingualism (46.3 %). The service sphere in these circumstances of the research represents as maximum implementing parity Russian-national and national-Russian bilingualism: 4.3 % of the Russian feeling at home with Yakut and 5.1 % using an oral form of Yakut, use it in this sphere 1.5 % Yakut and 3.5 % bilingualism; 8.5 % of the representatives of other ethnic groups speak Yakut and 14.8 % both, while using oral speech on 52.8 %. A declared level of the proficiency of Yakut in an active form is not realized in full, or data is overestimated for subjective reasons.

In a personal communicative space (personal correspondence; personal notes, diaries; making verses, prose) distribution is quite complicated, different in interviewed subjects – conditioned by different factors. In Yakutsk Russian prevails in all three situations. Comparisons specify a negative dynamics of Yakut and the bilingualism in the personal correspondence, and positive dynamics in realization of Russian [3]. In general, along the republic the Yakut are in situation, having the deepest level of intimacy – in making notes, diaries the Yakut prefer Russian.

Orientation in the Educational Sphere. Preferences in selection of the languages during study at school are the following: a need to learn the native language with studying of Russian of the Yakut prevails (30.0 %), the Russian and the other need Russian schools with advance study of foreign languages (40.2 % and 31/1 %). In all points under question a selection of the language of upbringing and education in pre-school institutions turned out to be complicated for the young Yakut – a lot of people could not give an answer. In all groups there is a strategy of exposure to other, non-native language – one of the dominating languages of the Republic: in such a way the Yakut for the purpose of the early active exposure to Russian choose a kindergarten with Russian as an educational language and with study of the native language.

The Russian and the other choose this variant for the purpose of exposure of children to a local language, culture and this opinion consolidates with aging. An opinion of the Russian concerning education and upbringing in a pre-school institution with study of Yakut prevails in all age groups, consolidating with aging.

Also we can see that the indigenous population see the future of their children connected with the native language, but a widening of a communicative space in a modern society actualizes significantly for parents a component of the foreign languages. In such a way, the orientation of the Yakut parents in the sphere of education in comparison with 1989 only on Russian or Yakut has decreased, a re-orientation to the foreign languages is happening, a need in a bilingual type of schools is constant.

Linguistic Preferences in the Sphere of Radio and Telecasting. The Russian prefer Russian-speaking programs as a source of obtaining of TV information, but there are programs in Yakut and bilingual programs. The bilingual programs prevail in consumption by the Yakut. An audience is mainly satisfied with a volume of telecasting of NVK Sakha in Russian. The Yakut consume the press (newspapers, magazines), fictions mainly in Russian. A question of a speech culture of show presenters, of a level of literacy of publications of the Republic press gives an opportunity to understand a linguistic and ecological element of a linguistic person of the Yakut: the society worries about the status of Russian, but not Yakut. The integrity of Yakut is observed 2 times less, the majority of the Yakut are satisfied with the level of literacy of the Republic press.

In questions of rating of the languages in visual information (banners, signs, insertions) there is mismatch of demand and supply in consumption of this information product. All interviewed groups are unanimous in widening of the use of the bilingualism, Yakut, sporadic – of a component of the foreign language and in decrease of only Russian information.

Also in the course of the questioning an important conclusion of the stability of functioning of Russian in all communicative sphere was made – this is an assessment of the majority of three interviewed groups.

Motivation to Language Study. The linguistic behavior in relation to acquisition (improvement) of Russian correlates with a level of linguistic competence: the higher the linguistic competence, the lower an interest to the study. In an ethnically homogeneous mono-ethnic Yakut environment a need to study Russian is really high. In ethnically heterogeneous communities the linguistic behavior due to occurrence, demographic and communicative strength of Russian in the region, is less complicated by differences of strategies of a linguistic integration.

A formation of a balanced linguistic situation at

existing typological signs as exoglossism, polycomponents, an active contact type of the bilingualism, mainly Yakut-Russian, assumes a formation of conditions for counter directed bilingualism. In studying and the use of Yakut by the Russian population a determinacy from mono- and polyethnicity, urbanization is up to date. As it is seen, a wish to integrate in a greater degree through the language is higher for the Russian population, living in the conditions of the contact bilingualism. The Russian population in general have a positive attitude to the necessity to study Yakut, that can be easily explained: (1) in general from the perspective of a civic awareness "...I live in Yakutia and should know a local language"; (2) by pragmatic purposes – the knowledge of the language of a titular nation provides a social mobility; (3) by psychological advantages – the mono-lingual Russian as distinct from the bilingual Yakut are limited in obtaining of information in Yakut, information on actual local topics, lack of access to Yakut culture, that undermines their psychological well-being.

In general, the answers reflect the openness of different ethnic communities, the high enough ethnical and linguistic tolerance and peculiarities of a strategy in studying of the languages. The results of the experimental research of the motivation to study Yakut, a potential motivational structure are connected with extra-linguistic, social, psychological factors, internal individual aims. A body of motives of the ethnic Yakut who do not speak Yakut, by which the respondents at studying of Yakut are motivated, reflects institutional needs – an adequacy of communication in an international family, at work with mixed or prevailing Yakut-speaking colleagues. The need for the ethnic identity is not clearly detected, and is in some spontaneous form. The need in the direct ethnic identity is shown in the answers of the older respondents. Offsprings of mixed Russian-Yakut marriages have quite intended civic position in connection with the necessity of the functional bilingualism, but not implemented in a real life due to lack of personal motivations to study Yakut or its improvement.

Bearers of other languages, who do not speak Yakut, are motivated by institutional and lingvoculturological needs: to learn the language deeper besides its functional use, for example, to understand humor.

In general, field researches show ambiguousness of linguistic and ethnic cooperation in the region at prevailing neutral well-being of the Russian – at the absence of visible contradictions in the overall communicative space the problem is revealed in the answers to a question: "Do you agree that Yakut is capable to be a language of the following spheres (science, education, diplomacy, Mass Media, records management, business, interethnic communication, state management, service sphere)?" The majority of the Russian answers in the negative. It is understandable that the answers do not reflect a real social status of the language, but only explicitly express ethnolinguistic well-being. The Yakut striving to equally high-status contact due to impermanence of an adaptive period creates this tensivity. Hetero-stereotype as an element of the identity and as an indicator of relations is very demonstrative in this case – full denial of capability of Yakut to serve any communicative sphere in real using of Yakut in some given areas, clearly specifies a conflictogenic zone. At the same time autostereotypes of the Yakut reflect the lack of exaggeration of the ethnic self-consciousness, undermining the tolerance – assessments are relevant to a real functional status of Yakut in these spheres, some part of nihilism is present, a typical citizen – a bearer of Yakut is objectified.

In conclusion it should be noted that despite changes in the ethnolinguistic well-being of the Russian the status of Russian keeps increasing, the linguistic competence in Russian is increasing, the need in study of Russian is high, Russian is consistently functioning in the majority of the communicative spheres. The Yakut in general appreciate the regional identity, in strategies of the language selection there are lots in common; the ethnolinguistic tolerance is expressed.

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Lexical-Semantic Parallels of Yakut and Uyghur Languages (nouns)

The comparative analysis of lexical-semantic and phonological peculiarities of nouns in Yakut and Uyghur languages which are divided into 4 lexical-semantic groups is held. The main goal of a research is to determine a definition of the criteria of a historic connection of nouns in Yakut and Uyghur languages. The analysis of quantitative-statistic and structural-semantic peculiarities of Yakut-Uyghur lexical parallels is made. A character of stability and mobility of lexical definitions of reflexes in certain structural types as well as the stability and mobility of structural stems formalization is determined.

Key words: lexical-semantic groups, Yakut language, Uyghur language, Yakut-Uyghur parallels, phonological characteristic, structural-semantic peculiarities, monosyllable stems, dissyllable stems, structural type.

Uyghur language is a part of a south-eastern group of Turkic languages. In historic terms this is a language of Yellow Uyghur, who preserve many archaic characteristics of the most ancient period of Uyghur language; this is Old Uyghur language – a language of monuments of Old Uyghur written language; this is a language of several literature monuments of post-Islamic period – medieval Uyghur language and modern Uyghur language.

A study of Uyghur began in the second half of the XI century by Mahmud al-Kashgari, who investigated not only lexis but also a grammatical system of Uyghur. Among national scientists, who worked at monuments of Uyghur written language, we can call Radlov V. V. and Malov S. E.

An interrelation of Yakut and Uyghur is one of understudied issues of Turkology. In these terms a comparative investigation of peculiarities of phonosemantic reflexes of these languages is one of key issues of a historical phonetics and lexis of Turkic languages.

An investigation subject is nouns of Yakut and modern Uyghur, specifying names of parts of a body and an organism, natural phenomena and landscape objects, animals and birds, and also terms of kinship.

1. Names of Parts of a Body and an Organism

There are 34 underived stems, specifying parts of a body and an organism of a human and animals, in Yakut-Uyghur.

Among revealed 35 Uyghur-Yakut parallels 14 (40 %) are monosyllable, 21 (60 %) are bisyllable. The monosyllable stems are presented by structural types VC, CVC, the bisyllable stems – VCVC, CVCV, CVCVC, VCCVC, CVCCVC. In accordance with a number of

lexical units, included in the structural types, they form the following decreasing sequence: CVCVC – 15 (42.8 %); CVC – 11 (31.4 %), VC, CVCV – 3 (8.5 %) each; VCVC, VCCVC, CVCCVC – 1 (2.8 %) each.

A quantitative analysis of stability of phonetic appearances of Uyghur in relation to Yakut is presented in the following way:

a. *stems without phonetic changes* – 2 (5.7 %): (1) Uyg. **эт** // Yak. **эт**; (2) Uyg. **мәң** // Yak. **мән**; b. *stems, having regular phonetic changes* – 28 (80 %): (1) Uyg. **эл** // Yak. **илин**; (2) Uyg. **баш** // Yak. **бас**; (3) Uyg. **бэл** // Yak. **бинил**; (4) Uyg. **сас** // Yak. **ас**; (5) Uyg. **сан** // Yak. **сарын, санны**; (6) Uyg. **тал** // Yak. **таал**; (7) Uyg. **тил** // Yak. **тыл**; (8) Uyg. **төш** // Yak. **түөс**; (9) Uyg. **қан** // Yak. **хаан**; (10) Uyg. **көз** // Yak. **көс**; (11) Uyg. **айак** // Yak. **атах**; (12) Uyg. **мәмә** // Yak. **мэмэ**; (13) Uyg. **терә** // Yak. **тирин**; (14) Uyg. **төпә** // Yak. **төбө**; (15) Uyg. **бағир** // Yak. **быар**; (16) Uyg. **сирай** // Yak. **сирэй**; (17) Uyg. **жүрэк** // Yak. **сүрэх**; (18) Uyg. **тамак** // Yak. **тамах**; (19) Uyg. **тами(р)** // Yak. **тымыр**; (20) Uyg. **ғанат** // Yak. **кынат**; (21) Uyg. **туйақ** // Yak. **туйах**; (22) Uyg. **бурут** // Yak. **мурут**; (23) Uyg. **йанақ II** ‘щека’ // Yak. **сыңаах**; (24) Uyg. **қулак** // Yak. **кулгаах**; (25) Uyg. **бурут** // Yak. **бытык**; (26) Uyg. **бойун** // Yak. **моой**; (27) Uyg. **өт** // Yak. **үөс**; (28) Uyg. **чиш** // Yak. **тиис**. It must be noted that among 28 Yakut-Uyghur parallels the stability of structural types is observed in 24 stems; c. *stems, undergone the strongest phonetic changes* – 5 (14.3 %): (1) Uyg. **бөрәк** // Yak. **бүөр**; (2) Uyg. **липэк** // Yak. **һылбэк**; (3) Uyg. **тирмак** // Yak. **тыңырах**; (4) Uyg. **ултаң** // Yak. **уллуң**; (5) Uyg. **(йан)даш** // Yak. **таас**.

From a phonological part phonetic variations are observed: a. *correspondence of vowels in the first syllable*: [a~aa]: Uyg. **тал** ~ Yak. **таал**; [э~и]: Uyg. **эл** ~ Yak. **илин**, Uyg. **бэл** ~ Yak. **бинил**; [е~и]: Uyg. **тери** ~ Yak. **тирин**; [а~ы]: Uyg. **тами(р)** ~ Yak. **тымыр**, Uyg. **ғанат** ~ Yak. **кынат**, Uyg. **йанақ** ~ Yak. **сыңаах**; [ө~үө]: Uyg. **төш** ~ Yak. **түөс**, Uyg. **бөрәк** ~ Yak. **бүөр**; [а~ыа]: Uyg. **бағир** ~ Yak. **быар**; [и~ы]: Uyg. **тирмак** ~ Yak. **тыңырах**; [у~ы]: Uyg. **бурут** ~ Yak. **бытык**; [a~aa]: Uyg.

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қан ~ Yak. **хаан**; *b. correspondence of vowels in the second syllable*: [a~aa]: Uyg. **кулак** ~ Yak. **кулгаах**, Uyg. **йанак** ~ Yak. **сыңаах**; [y~ы]: Uyg. **бурут** ~ Yak. **бытык**; [и~ии]: Uyg. **тери** ~ Yak. **тирии**; *c. correspondence of consonants in anlaut*: [й~с]: Uyg. **йүрэк** ~ Yak. **сүрэх**; Uyg. **йанак** ~ Yak. **сыңаах**; [б~м]: Uyg. **бойун** ~ Yak. **моой**; Uyg. **бурун** ~ Yak. **мурун**; [ҕ~к]: Uyg. **ғулак** ~ Yak. **кулгаах**, Uyg. **ғанат** ~ Yak. **кынат**; *d. drop-out of [s] in anlaut*: Uyg. **сас** ~ Yak. **ас**; *e. correspondence of consonants in auslaut*: [ш~с]: Uyg. **баш** ~ Yak. **бас**, Uyg. **төш** ~ Yak. **түөс**, Uyg. **(йан)даш** ~ Yak. **таас**; [з~с]: Uyg. **көз** ~ Yak. **көс**; [к~х]: Uyg. **айак** ~ Yak. **атах**, Uyg. **кулак** ~ Yak. **кулгаах**, Uyg. **йанак** ~ Yak. **сыңаах**, Uyg. **тамак** ~ Yak. **тамах**; [к~х]: Uyg. **жүрэк** ~ Yak. **сүрэх**; *f. formation of diphthongs at dropping-out of [ҕ], [p]*: Uyg. **бағир** ~ Yak. **быар**, Uyg. **бөрэк** ~ Yak. **бүөр**.

The presence of a diphthong [yø] in an initial position of Yakut root **үөс** can be considered a secondary phenomenon, i.e. derived from a proto-linguistic long vowel **өө**. Such assumptions were presented by Shcherbak A. M. [1, p. 143-144], Sleptsov P. A. [2, p. 26] when investigating a diphthongization of Turkic languages. In this case we should pay attention to the fact, which characterizes the parallelism of Uyg. **өт** // Yak. **үөс**. In Old Turkic there are phonetic oppositions **өд**, **өз**, which have one semantic frame “*time, core*”. For example **өз** “time” [DTS, 395] – **өд** “time” [DTS, 376] – **өд** “core” [DTS, 377] – **өз** “core” [DTS, 395]. It is possible that this phenomenon played a role in a process of evolution of Yakut forms of **үөс** “center”.

LMS in compared languages is presented in the following way:

a. stems, having LMS – 24 (68.6 %): (1) Uyg. **эл** “arm” // Yak. **илии** “arm”; (2) Uyg. **өт** “bile, gall bladder” // Yak. **үөс** “bile, gall bladder”; (3) Uyg. **эт** “flesh, body, meat” // Yak. **эт** “meat, flesh”; (4) Uyg. **ваш** “head, leader” // Yak. **бас** “head” (5) Uyg. **бэл** “loins, waist” // Yak. **биил** “waist, belt, loins” (6) Uyg. **сас** “hair” // Yak. **ас** “hair” (7) Uyg. **чиш** “teeth, tooth” // Yak. **тиис** “teeth, tooth, canines”; (8) Uyg. **тал** “spleen” // Yak. **таал** “spleen”; (9) Uyg. **тил** “tongue” // Yak. **тыл** “tongue” (10) Uyg. **қан** “blood, value of blood” // Yak. **хаан** “blood” (11) Uyg. **көз** “eye, eyes” // Yak. **көс** “old eyes”; (12) Uyg. **мән** “mole” // Yak. **мэн** “mole” (13) Uyg. **терә** “skin, fell” // Yak. **тирии** “fell, skin”; (14) Uyg. **бағир** “liver” // Yak. **быар** “liver” (15) Uyg. **бойун** “neck” // Yak. **моой** “neck” (16) Uyg. **жүрэк** “heart” // Yak. **сүрэх** “heart” (17) Uyg. **липэк** “knee” // Yak. **ньилбэк** “knee, knees” (18) Uyg. **кулак** “ear” // Yak. **кулгаах** “ear, ears” (19) Uyg. **тирмак** “claw, nail” // Yak. **тыңырах** “claw, claws, nail, nails”; (20) Uyg. **туйак** “hoof” // Yak. **туйах** “hoof”; (21) Uyg. **бурун** “nose” // Yak. **мурун** “nose”; (22) Uyg. **бурут** “moustache” // Yak. **бытык** “moustache”; (23) Uyg. **ултан** “sole” // Yak. **уллун** “sole”; (24) Uyg. **(йан)даш** “hip” // Yak. **таас** “hip”; *b. stems, having ILC* – 9 (25.7 %): (1) Uyg. **төш** “breast, forebody” // Yak. **түөс** “breast, keel,

breastbone”; (2) Uyg. **айак** “foot, stand, leg” // Yak. **атах** “foot” (3) Uyg. **мәмә** “breast” // Yak. **мээмә** “women breast, nipple, dummy, bottle for baby feeding”; (4) Uyg. **бөрэк** “anat. kidney, hernia, sexual glands” // Yak. **бүөр** “kidney” (5) Uyg. **сирай** “image, face” // Yak. **сирэй** “face” (6) Uyg. **йанак** “cheek bone” // Yak. **сыңаах** “jaw, cheek, jaw-bone, cheek-bone”; (7) Uyg. **тамак** “food, throat” // Yak. **тамах** “throat, gullet”; (8) Uyg. **тами(р)** “blood vessel, pulse” // Yak. **тымыр** “vein” (9) Uyg. **ғанат** “wing, patronage, to patronize” // Yak. **кынат** “wing, wings”; *c. stems, having SLS* – 2 (5.7 %): (1) Uyg. **сан** “hip, thigh” // Yak. **сарын** “shoulder” (2) Uyg. **төпә** “top, peak” // Yak. **төбө** “head, peak”.

A high percentage of the parallels with LMS are revealed in the following structural varieties: MS: VC – 3 (3), CVC – 9 (11); DS: CVCV – 1 (3), CVCVC – 8 (14); CVCCVC – 2 (2), VCCVC – 1 (1).

2. Terms of Kinship

In this topic group 14 parallels, specifying kin relations, are revealed.

Among 14 Yakut-Uyghur parallels 1 (7.1 %) unit is mono-syllable, 12 (85.7 %) units – bisyllable. The monosyllable stem is represented by a structural type VC, bisyllable – VCV, VCVC, CVCV, VCCVC, CVCVCV. In accordance with a number of lexemes, included in the structural types, they form the following decreasing sequence: VCV – 5 (35.7 %); VCVC – 3 (21.4 %); CVCV, VCCVC – 2 (14.2 %) each; VC, CVCVC – 1 (7.1 %) each.

A qualitative analysis of stability of the structural types of Uyghur in relation to Yakut is presented in the following way:

a. stems without phonetic changes – 2 (14.3 %): (1) Uyg. **ә(р)** ~ Yak. **эр**; (2) Uyg. **хотун** ~ Yak. **хотун**. In this case both forms of Uyghur in accordance with the structural types corresponds to the basis of Yakut; *b. stems, having regular phonetic changes* – 11 (78.5 %): (1) Uyg. **аса** ~ Yak. **аҕа**; (2) Uyg. **ака** ~ Yak. **аҕа**; (3) Uyg. **апа** ~ Yak. **аҕа**; (4) Uyg. **ата** ~ Yak. **аҕа**; (5) Uyg. **киши** ~ Yak. **киһи**; (6) Uyg. **адаш** ~ Yak. **атас**; (7) Uyg. **оғул** ~ Yak. **уол**; (8) Uyg. **аймак** ~ Yak. **аймах**; (9) Uyg. **оғлан** ~ Yak. **уолан**; (10) Uyg. **уруғ** ~ Yak. **уруу**; (11) Uyg. **инә** ~ Yak. **ийэ**. It should be mentioned that among 10 Yakut-Uyghur parallels the stability of the structural types is observed in 7 lexemes, excluding Uyg. **оғул** ~ Yak. **уол** и Uyg. **оғлан** ~ Yak. **уолан**. *c. stems, undergone the strongest phonetic changes* – 1 (7.1 %): Uyg. **таға** ~ Yak. **таай**.

From the phonological part the following phonetic variations are observe: *a. correspondence of vowels in inlaut*: [с~ҕ]: Uyg. **аса** ~ Yak. **аҕа**; [к~ҕ]: Uyg. **ака** ~ Yak. **аҕа**; [п~ҕ]: Uyg. **апа** ~ Yak. **аҕа**; [т~ҕ]: Uyg. **ата** ~ Yak. **аҕа**; [ш~h]: Uyg. **киши** ~ Yak. **киһи**; [d~т]: Uyg. **адаш** ~ Yak. **атас**; [н~й]: Uyg. **инә** ~ Yak. **ийэ**; *b. formation of a long vowel at dropping-out of a slit [q]*: Uyg. **уруғ** ~ Yak. **уруу**; Uyg. **таға** ~ Yak. **таай**;

c. *correspondence of consonants in auslaut*: [ш~с]: Uyg. адаш ~ Yak. атас; [ґ~х]: Uyg. аймағ ~ Yak. аймах; d. *formation of a diphthong at dropping-out of a split consonant* [ɣ]: Uyg. оғлан ~ Yak. уолан; Uyg. оғул ~ Yak. уол; e. *correspondence of vowels in the second syllable*: [y~yy]: Uyg. уруғ ~ Yak. уруу.

LMS in the compared languages is presented in the following way:

a. *stems, having LMS* – 8 (57.1 %): (1) Uyg. ә(р) “man, husband, spouse”// Yak. әр “husband, spouse, man of courage, man”; (2) Uyg. ата “father, ancestry” // Yak. аҗа “father, paternal”; (3) Uyg. инә “диал. “mother”// Yak. ийә “mother, maternal”; (4) Uyg. киши “man”// Yak. киши “man”; (5) Uyg. таға “maternal uncle” // Yak. таай “maternal uncle without reference to sex of a speaker”; (6) Uyg. адаш “friend, mate”// Yak. атас “friend, pal, mate”; (7) Uyg. оғул “son, sonnie, boy” // Yak. уол “son, boy, young man, lad, juvenile”; (8) Uyg. аймақ “kin, family division” // Yak. аймах “relatives, kinship”; b. *stems, having ILC* – 1 (7.1 %): (1) Uyg. хотун “married woman, wife” // Yak. хотун ‘1. old lady, 2. mother-in-law, 3. spouse, wife; c. *stems, having SLC* – 5 (35.7 %): (1) Uyg. аса “older sister”// Yak. аҗа “father, elder”; 2) Uyg. ака “older brother, respectful address to older men” // Yak. аҗа “father, elder”; 3) Uyg. апа “father, older sister” // Yak. аҗа “father, elder”; 4) Uyg. уруғ “family, tribe”// Yak. уруу “relatives” 5) Uyg. оғлан “son, courage son”// Yak. уолан “young man”.

A percentage of the parallels with LMS are revealed in the following structural types: MS: VC – 1 (1), VCV – 2 (5); DS: CVCV – 2 (2), VCVC – 1 (3), VCCVC – 1 (1).

3. Names of Natural Phenomena, Landscapes Objects

In this lexico-semantic group 27 lexical parallels, specifying natural phenomena, landscape and flora, are revealed.

Among 27 revealed parallels 18 stems are monosyllable and 9 stems are bisyllable. Monosyllable roots are presented by the structural types VC, CV, CVC, bisyllable – CVCV, VCVC, CVCCVC. In accordance with a number of lexical units, included in them, they form the following decreasing step structure: CVC – 14 (51.8 %), VCVC – 5 (18.5 %), VC – 3 (11.1 %), CVCCVC – 2 (7.4 %), CV, CVCV, CVCCV – 1 (3.7 %) each.

The stability of the phonetic appearances in the compared languages is presented in the following way:

a. *stems without phonetic changes* – 4 (14.8 %): (1) Uyg. от ~ Yak. от; (2) Uyg. күн ~ Yak. күн; (3) Uyg. тоң ~ Yak. тон; (4) Uyg. күл ~ Yak. күл. Here in all 4 Yakut-Uyghur parallels the stability of the structural types is observed; b. *stems, having regular phonetic changes* – 20 (71.4 %): (1) Uyg. ай // Yak. ый; (2) Uyg. от ~ Yak. уот; (3) Uyg. су ~ Yak. уу; (4) Uyg. йә(р) ~ Yak. сир; (5) Uyg. йол ~ Yak. суол; (6) Uyg. көл ~ Yak. күөл; (7) Uyg. күз ~ Yak. күһүн; (8) Uyg. киш ~ Yak. кыһын; (9) Uyg. муз ~ Yak. муус; (10) Uyg. қа(р) ~ Yak. хаар; (11) Uyg. таң

~ Yak. тын; (12) Uyg. таш ~ Yak. таас; (13) Uyg. түн ~ Yak. түүн; (14) Uyg. булут ~ Yak. былыт; (15) Uyg. қуяш ~ Yak. қуяас; (16) Uyg. таммақ ~ Yak. тамах; (17) Uyg. долқун ~ Yak. долгун; (18) Uyg. толғун ~ Yak. долгун; (19) Uyg. йил ~ Yak. сыл; (20) Uyg. йоруқ ~ Yak. сорук (борук-сорук). Among 20 Yakut-Uyghur parallels the stability of the structural appearances of the stems is revealed in 17 cases, except the following roots: (1) Uyg. күз ~ Yak. күһүн; (2) Uyg. киш ~ Yak. кыһын; (3) Uyg. су ~ Yak. уу. c. *stems, undergone the strongest phonetic changes* – 3 (11.1 %): (1) кечә ~ Yak. кизһә; (2) Uyg. тәңри ~ Yak. таңара; (3) Uyg. сеғин ~ Yak. этин.

From the phonetic part the following phonetic variations are observed:

a. *correspondence of vowels in the first syllable*: [a~ы]: Uyg. ай ~ Yak. ый; [ә~и]: йә(р) ~ Yak. сир; [и~ы]: Uyg. киш ~ Yak. кыһын, Uyg. йил ~ Yak. сыл; [y~ы]: Uyg. булут ~ Yak. былыт; [ә~а]: Uyg. тәңри ~ Yak. таңара; [o~yo]: Uyg. от ~ Yak. уот; Uyg. йол ~ Yak. суол; [ө~үө]: Uyg. көл ~ Yak. күөл; [y~yy]: Uyg. муз ~ Yak. муус; [a~aa]: Uyg. таш ~ Yak. таас; b. *correspondence of consonants in inlaut*: [к~г]: Uyg. долқун ~ Yak. долгун; [ґ~г]: Uyg. толғун ~ Yak. долгун; c. *correspondence of consonants in anlaut*: [т~д]: Uyg. толғун ~ Yak. долгун; [к~х]: Uyg. қа(р) ~ Yak. хаар; [й~с]: Uyg. йол ~ Yak. суол, Uyg. йә(р) ~ Yak. сир; d. *correspondence of consonants in auslaut*: [з~с]: Uyg. муз ~ Yak. муус; [к~к]: Uyg. йоруқ ~ Yak. сорук; [н~ң]: Uyg. сеғин ~ Yak. этин; [ш~с]: Uyg. қуяш ~ Yak. қуяас; [ґ~х]: Uyg. тамағ ~ Yak. тамах; e. *drop-out of [s] in anlaut*: Uyg. су ~ Yak. уу.

LMS in the compared languages is presented in the following way:

a. *stems, having LMS* – 19 (70.4 %): (1) Uyg. ай “moon, half moon”// Yak. ый “moon, half moon”; (2) Uyg. от “flame, fire”// Yak. уот “flame, fire”; (3) Uyg. от “grass, hay”// Yak. от “grass, hay”; 4) Uyg. су “water”// Yak. уу “water”; (5) Uyg. йол “route, road”// Yak. суол “route, road”; (6) Uyg. көл “lake”// Yak. күөл “lake” 7) Uyg. күн “sun, day”// Yak. күн “sun, day”; (8) Uyg. күз “autumn”// Yak. күһүн “autumn”; (9) Uyg. киш “winter”// Yak. кыһын “winter”; (10) Uyg. муз “ice”// Yak. муус “ice”; (11) Uyg. қа(р) “snow”// Yak. хаар “snow”; (12) Uyg. таң “dawn, daybreak”// Yak. тын “dawn, daybreak”; (13) Uyg. таш “stone”// Yak. таас “stone”; (14) Uyg. түн “night”// Yak. түүн “night” (15) Uyg. йил “year”// Yak. сыл “year”; (16) Uyg. күл “ash, ashes”// Yak. күл “ash, ashes”; (17) Uyg. долқун “wave”// Yak. долгун “wave”; (18) Uyg. толғун “wave”// Yak. долгун “wave” 19) Uyg. булут “cloud, thundercloud”// Yak. былыт “cloud, thundercloud”; b. *stems, having ILC* – 4 (15 %): (1) Uyg. йә(р) ‘earth, place, land // Yak. сир ‘earth, globe, soil, ground, firm ground’; (2) Uyg. тоң “frozen earth”// Yak. тон “frozen, cold” ; (3) Uyg. кечә “evening, night”// Yak. кизһә; (4) Uyg. тәңри “God, sky”// Yak. таңара “God”; c. *stems, having SLC* – 4

(15 %): (1) Uyg. **сегин** “lightning”// Yak. **этин** “thunder”; (2) Uyg. **қуйаш** “sun”// Yak. **қуйаас** “heat, swelter”; (3) Uyg. **йорук** “light, bright” // Yak. **сорук (борук – сорук)** “twilight”; (4) Uyg. **тамағ** “creek”// Yak. **тамах** “center, hub, between”.

A high percentage of the parallels with LMS are revealed in the structural types: OS: VC – 3 (3), CV – 1 (1), CVC – 12 (14); DS: CVCCVC – 2 (2).

In this word group a peculiar change of the phonetic structure of word is observed in lexemes Uyg. **сегин** “lightning” and Yak. **этин** “thunder”. In Uyghur forms in the majority of cases the presence of an initial “s” is observed, in Yakut a drop-out of this sound is observed. In accordance with Ubryatova E. I., this phonetic process was originated due to influence of Evenki language on Turkic languages before the XVII century.

Yakut-Uyghur parallel Uyg. **долқун** “wave”~ Yak. **долгун** “wave” has a lexical reflex in Mongolian language долгион “hush, wave” [MRS, p. 152].

4. Names of Animals and Birds

In this lexeme group 14 Uyghur-Yakut parallels, specifying names of birds, wild and domestic animals, are revealed.

Among eight structural types the most of correspondences are revealed in a structure CVCVC. In accordance with lexical units, included in it, they form the following decreasing sequence: CVCVC – 4 (28.5 %), CVCV – 3 (21.4 %), CVC – 2 (14.2 %), CVCCVC, CVCCV, VCVC, VCC, VC – 1 (7.1 %) each.

The stability of the structural appearances in the compared languages is presented in the following way:

a. stems without phonetic changes – 1 (7.1 %): (1) Uyg. **ат** ~ Yak. **ат**; *b. stems, having regular phonetical changes* – 11 (78.6 %): (1) Uyg. **ғаз** ~ Yak. **хаас**; (2) Uyg. **тай** ~ Yak. **тый**; (3) Uyg. **инэк** ~ Yak. **ынах**; (4) Uyg. **ғунан** ~ Yak. **қунан**; (5) Uyg. **бөри (бөрә)** ~ Yak. **бөрө**; (6) Uyg. **тиши** ~ Yak. **тыһы**; Uyg. **киши** ~ Yak. **тыһы**; (7) Uyg. **кийик** ~ Yak. **кэйиик**; (8) Uyg. **ишт** ~ Yak. **ыт**; (9) Uyg. **жилқа** ~ Yak. **сылгы**; (10) Uyg. **белиғ** ~ Yak. **балык**; (11) Uyg. **тийин** ~ Yak. **тинн**. So, in these 11 examples the stability of the structural appearances is observed in 9 cases, except Uyg. **ишт** ~ Yak. **ыт** и Uyg. **тийин** ~ Yak. **тинн**; *c. stems, undergone the strongest phonetic changes* – 2 (14.3 %): (1) Uyg. **байтал** ~ Yak. **байтаһын**; (2) Uyg. **сиши** ~ Yak. **тыһы**.

From the phonetic part the following phonetic variations are observed:

a. correspondence of vowels in the first syllable: [a~ы]: Uyg. **тай** ~ Yak. **тый**; [и~ы]: Uyg. **инэк** ~ Yak. **ынах**; Uyg. **тиши** ~ Yak. **тыһы**; Uyg. **ишт** ~ Yak. **ыт**; Uyg. **жилқа** ~ Yak. **сылгы**; [и~э]: Uyg. **кийик** ~ Yak. **кэйиик**; [e~a]: Uyg. **белиғ** ~ Yak. **балык**; [a~aa]: Uyg. **ғаз** ~ Yak. **хаас**; *b. correspondence of vowels in the second syllable*: [ә~a]: Uyg. **инэк** ~ Yak. **ынах**; [и~ө]: Uyg. **бөри (бөрә)** ~ Yak. **бөрө**; [и~ы]: Uyg. **тиши** ~ Yak. **тыһы**; Uyg. **киши** ~ Yak.

тыһы; Uyg. **белиғ** ~ Yak. **балык**; [и~ии]: **кийик** ~ Yak. **кэйиик**; [a~ы]: **жилқа** ~ Yak. **сылгы**; *c. correspondence of consonants in inlaut*: [ш~h]: Uyg. **тиши** ~ Yak. **тыһы**; Uyg. **киши** ~ Yak. **тыһы**; [к~c]: Uyg. **жилқа** ~ Yak. **сылгы**; *d. correspondence of consonants in anlaut*: [ғ~x]: **ғаз** ~ Yak. **хаас**; [ғ~к]: **ғунан** ~ Yak. **қунан**; [ж~c]: Uyg. **жилқа** ~ Yak. **сылгы**; [с~т]: Uyg. **киши** ~ Yak. **тыһы**; *e. correspondence of consonants in auslaut*: [з~c]: Uyg. **ғаз** ~ Yak. **хаас**; [к~x]: Uyg. **инэк** ~ Yak. **ынах**; [ғ~к]: Uyg. **белиғ** ~ Yak. **балык**; [т~н]: Uyg. **тийин** ~ Yak. **тинн**; *f. drop-out of a split mediolingual [ʏ] in inlaut*: Uyg. **тийин** ~ Yak. **тинн**.

LMS in the compared languages is presented in the following way:

a. stems, having LMS – 11 (78.5 %): (1) Uyg. **ат** “horse, steed”// Yak. **ат** “horse, steed”; (2) Uyg. **ишт** “dog”// Yak. **ыт** “dog”; (3) Uyg. **ғаз** “goose”// Yak. **хаас** “goose”; (4) Uyg. **инэк** “cow”// Yak. **ынах** “cow”; (5) Uyg. **жилқа** “horse”// Yak. **сылгы** “horse”; (6) Uyg. **ғунан** “3-year old foal” // Yak. **қунан** “young bull (three-four years)”; (7) Uyg. **бөри (бөрә)** “wolf”// Yak. **бөрө** “wolf”; (8) Uyg. **киши** “female”// Yak. **тыһы** “female”; (9) Uyg. **тиши** “dial. Female” // Yak. **тыһы** “female”; (10) Uyg. **белиғ** “fish”// Yak. **балык** “fish”; (11) Uyg. **тийин** “squirrel”// Yak. **тинн** “squirrel”; *b. stems, having ILC* – 1 (7.1 %): (1) Uyg. **тай** “foil”// Yak. **тый** “two-year old foil”; *c. stems, having SLC* – 2 (14.3 %): (1) Uyg. **байтал** “mare”// Yak. **байтаһын** “grazer”; (2) Uyg. **кийик** “wild goat”// Yak. **кэйиик** “wicked”.

A high percentage of the parallels with LMS are revealed in the following structural types: MS: VC – 1 (1), VCC – 1 (1), CVC – 1 (2); DS: VCVC – 1 (1), CVCCV – 1 (1), CVCVC – 3 (4), CVCV – 3 (3).

In this lexico-thematic group in lexical stems of Yakut the strong phonetic changes are observed. Attention must be drawn to monosyllable stems Uyg. **ишт** “dog” and Yak. **ыт** “dog”. In all probability, vocalism in a word **ит** initially was hard. This change towards making sounds front is noted also for some other words, and, in such a way, acts as a common linguistic tendency. But there are other hypothesis, which define that stem **ыт** is a more ancient form, than **ит**. A historical-biographical script in honor of Mogilyan-Khan, where the Old Turkic form “**ыт**” is found, can serve as a proof. Also one of supporting details of the priority of Yak. **ыт** in comparison with Uyghur is that Uyghur form **ишт** appeared with the help of adding of flowing **ш-** after root **и-**. This is a distinctive feature not only of Uyghur, but Saryg-Uyghur and Salar languages.

An interesting change of the phonetic system is observed in Uyghur **байтал** “mare” and Yakut **байтаһын** “grazer” stems. Attention must be drawn to an opinion of Shcherbak A. M., who assumes that etymology of the word **байтал** is not clear enough. In his opinion **бай** is a nominal stem, **та** – a verb forming affix, **л** – a nominal suffix.

In such a way, in Uyghur 90 nouns, which have

correspondences with Yakut, are revealed. Among them 37 (41.1 %) stems are monosyllable, 53 (58.8 %) are disyllable, 0 (0 %) is trisyllable.

Among 11 analyzed structural types the most parallels are revealed in the phonetic structure CVC. In accordance with the included we present a decreasing sequence: CVC – 27 (30 %); CVCVC – 25 (27.7 %); CVCV – 9 (10.5 %); VC – 8 (8.8 %); VCVC, VCV – 5 (5.5 %) each; CVCCVC – 4 (4.4 %); VCCVC – 3 (3.3 %); CVCCV – 2 (2.2 %); CV, VCC 1 (1.1 %) each.

The stability of the structural appearance of Uyghur-Yakut parallels is in the following way: VC, VCV – 6 (9.1 %) each; VCV – 22 (33.3 %), VCVC, CVCV – 5 (7.6 %) each; CVCVC – 18 (27.3 %); CVCCVC – 2 (3 %); VCCVC, CVCCV – 1 (1.5 %) each.

A subject representation of these roots is characterized in the following way: names of the parts of the body and the organism – 35 lexemes, terms of kin – 14, names of natural phenomena, landscape objects – 27, names of animal and birds – 14.

The phonological characteristic of the lexical parallels are presented in the following way: (1) stems, coinciding in accordance with phono-structural indicators – 9 (10 %); (2) stems, coinciding in accordance with the structure, but having regular phonetic changes – 70 (77.7 %); (3) stems, undergone the strongest phono-structural changes – 11 (12.2 %) units.

The lexico-semantic characteristic of the lexical parallels is presented in the following way: (1) stems, having LMS – 62 (68.9 %); (2) stems, having SLC – 15 (16.6 %); (3) stems, having ILC – 13 (14.4 %).

So, the phono-semantic analysis of the lexical parallels shows a genetic affinity between Uyghur and Yakut. The phonological and semantic analysis of Uyghur-Yakut parallels shows that the interrelation between Uyghur and Yakut existed in the ancient and later periods of development of Yakut. The ancient connection of Yakut and Uyghur is explained by the fact that these languages

genetically dated to common Turkic proto-language. In this relation the high figures of the stability of the phonological structure and the stability of the lexical meanings of the parallels (structures VC, CVC, CVCVC) are the main criteria of the genetic affinity.

The later interrelation of Uyghur and Yakut, obviously, occurred in Old Turkic and Middle Turkic periods. This research reveals that in Yakut-Uyghur parallels many Mongolian words are present. This fact shows that in the Middle Turkic epoch (Mongolian period) these two languages had a close interconnection.

List of Acronyms

Dictionary Acronyms: OTD – Old Turkic Dictionary, MRD – Mongolian-Russian Dictionary. Languages: Uyg. – Uyghur, Yak. – Yakut. Other acronyms: V – vowel, C – consonant, MS – mono-syllable, BS – disyllable, TS – trisyllable, LMS – stability of lexical meanings, ILC – insignificant lexical changes, SLC – significant lexical changes.

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The Philosophic Novel in the Yakut Prose of 1990th Years of the XX th Century

The origin of a philosophic novel genre in works of I. M. Gogolev-Kyndyl is observed. Each novel of the writer is specific and has new novel thinking features. A philosophic novel affirms human universal values. The novels of I. M. Gogolev are based on the national mythosyncretic structures expressed in archetypically eternal images representing themselves as the synthesis of myth and history, reality and fantasy, earthly and cosmic that allows the author to show a multisided world, the interminable truth of life.

Key words: genre, novel, philosophic, novel thinking, mythosyncretic, myth, history.

In the Yakut prose of the last decade of the XX century there were phenomena, for diversity of which decisively novels of Gogolev I. speak, to which a “new type of artistic motivations of essence of being” is typical [1, p. 253]. The Yakut author follows, in fact, the path of “magic realism” in the world literature of the XX century, characterized by names of Amad J., Marquez G., Aytmatova Ch. and others, by joint efforts of who types of conscious intellectual usage of myth in a prose were developed.

A modern mythology is closely connected with a philosophic artistic thinking, is characterized by a fusion of subjective and objective, fantastic and real, rational and irrational. A problematics of the writer’s novels are distinguished by tension of moral-philosophical questing. The author concerns about the whole range of world outlook questions, posed behind a modern man. Characters of Gogolev I. search for answers to the most pressing problem of being: a reason for human existence, internal opposition of the good and the bad, earth and sky. Problems of faith, which were not touched upon during the previous decades for known reasons, take a significant place in these meditations.

The first experience of a wide epic narration in the creative work of the writer is represented in a form of a novel-trilogy *Black Crane* (1977-1987) [2]. In this work a life of the Yakut peoples in the beginning of the XX century in a complicated interweaving of realistic and fantastic, ethnographic and social-household principles is shown. The first novel of the writer is distinguished by an attraction to a traditional realistic narration.

In the basis of a narrative-compositional structure of the novel there is an interweaving of fates of characters, real and legendary: shaman-Oyuun, Udaganka,

Olonkhosut-story-teller, folk philosopher. In recovery of a mental “portrait” of the people of Sakha in the beginning of the XX century the following concepts are significant: “Olonkho”, “serge”, “booth” (yurt), “harp”. In a concept-sphere of the national world in the novel they are backbone symbols, bearing an important load in a narrative-compositional organization, in a characteristic of the characters.

In the novel a philosophical content of a metaphor “Black Crane” is made wider, this is not only wasted talents, but also a weakness, darkness of a past life of the people. The main character sees an aim of his life in a struggle against “black crane”, for education and cultural development of his native people.

The author’s principle defines emotionality and lyricism of the narration. In speeches of the characters thoughts, which became a keynote of the whole work of the author, are heard. An idea of a defining meaning in the life of the people of the native language is implemented in all complexity of the problematics, in the fates of the characters. They are convinced that in wise creations of the folk poetic creative works moral-esthetic ideals of the people, attraction to beautiful were expressed.

Comparing the fate of the shaman and the Olonkhosut, the author sees a high aspiration of the folk-teller in worship to the good, in ability to consolidate the faith into life by power of a magic word, in good principles. In a story about Udaganka Dyrilaan, the main character with the help her playing the harp, singing, algys-blessing dignifies hearts, rescues, heel the afflicted. An old music instrument Harp symbolizes a striving of the people to beautiful, worship to ideals of the good and beauty. Strings of the harp connect times and generation, embodying mental memory of the people.

In a system of the characters in the novel reflecting characters are the most significant: Khabyryys, elder Nikon, Mooloy. The folk philosopher Mooloy says that thoughts of a philosopher as a star in the night is lighting a path to knowledge, and a word of a philosopher as a lightning clears everything around. A political exiled Staroverov confesses that fairy tales, legends and the Olonkho helped him to understand a soul of the Yakut

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peoples, their philosophy and moral principals. Thoughts over a role of the native language are supplemented by a conviction in a saving grace of the faith. So, elder Nikon preaches that a good word can save the world, and a man is capable to come closer to God, if he perceives wisdom of the faith with his soul and mind.

In such a way, in this first novel problems are posed and artistic peculiarities, getting development in the following novels of the writer, appear.

A new stage in the development of the novel thinking of Gogolev I. is presented in a novel *Goddess of Mercy* (1993) [3]. A specific character of an artistic thought defines peculiarities of a compositional and image structure of the work.

The author consistently regards as paramount importance traditional moral-philosophical, religious beliefs of the peoples of Sakha, expressed in a belief in Aiy – presiding deities, in a belief in three kut of a human being, composing his essence (buor kut, iye kut, salgyn kut) – earth soul, mother soul, air soul.

Meditations over the fate of the native language compose a conceptual basis of the novel *Goddess of Mercy*. The main character - a teacher of Yakut Kulugun – is concerned about the fate of the native language most of all. He is sure: the fate of the people is in the fate of the language, they are closely connected.

Mediations over moral values of the people are connected with a central problem: as in accordance with Sakha beliefs, the people soul, their vital force – “kut syur” - are in the language. And the mother soul (iye kut) is a spirit of the native language, without which a man cannot live. If the language disappeared, the people would perish. In the novel a call concerning the necessity of protection, rescue of the native language is passionately expressed. Again the concepts “Olonkho”, “Serge”, “harp”, illustrated in a close connection with the main topic, are in the center. Within the same framework is a legend about Segen Serbeke, who had seven sons. The main wealth, which he bequeathed to his children, is three treasures: three kut – salgyn, buor, iye. In such a way, in the philosophic problematics of the Yakut classic novel the meditations over the role of the native language acquire a conceptual meaning.

In the work, written in a manner of “magic realism”, real and fantastic, historical and mythological come side by side, getting multiplicity and a complicated philosophic implication. In the center of intellectually rich narration are the characters of philosophic cast, thinking a lot over an essence of life, over complicated relations of a person with the world around in its multidimensionality and inconsistency.

The philosophy of relations of a person and time organize a complicated structure of the novel, consisting of chapters-novellas. In certain fates subject of a historical epoch are shown, i.e. bloody conflicts of a civil war, years

of political repressions, a tragedy of the people during the Second World War, contradictions in a public life of postwar decades. Waves of the time go through a fate, soul of a person. An image of the main character fastens a novella structure of the work.

A unity of a complicated inner world of the work is defined by the author’s humanistic conception, expressed in a belief in a person, in intelligent principles of life: whatever difficulties fell to a man’s lot, he in any circumstances has to keep his human essence, not to lose his belief in life.

The fate of the main character is autobiographical. An enormous woe of the father, who lost his son, is expressed in the novel psychologically soulful, filling with a high tragic tension. For the novel abundance of monologues and dialogues are typical. Unread letters from the father to the son are considered as monologues-confessions. In the letters of the main character secret thoughts of the author are expressed, i.e. over principles of the national culture, over the native language. Words of love to the native language sound as poems in a prose.

One of the central problems of the modernity – ecological – is open in the novel. Relations of a man with nature are decisive in a world-view of the peoples of the North. The character of the novel makes a discovery to himself: “In moments, when merging with nature by soul, it seems, that this is a real earthly happiness” [3, 71]. He conceives life as a priceless gift and at the same time as an unsolved mystery of being.

Lessons of moral attitude to nature Kulugun received from his grandfather – a folk craftsman, who put serge as a sign of worship to the native mother-nature. Due to the closeness to nature a blind Kuyugutar became a great Olonkhusut, “saw the light” by his heart and saw a beauty of the world around. Wisdom of a heart, old people say, is that to worship to the native nature, protect it as your own soul.

In comparison with a novel *Khara Kytalyk* in this work a character of landscape descriptions is changed, they become more dynamic. Nature on the novel pages is always animated: lives, breathes, and feels with man. Pictures of the first snow, winter, etc. are expressed in this way.

In revealing of the humanistic concept of the novel, dialogues of characters, carrying an intense conversation of the meaning of life, faith, fate of the earth civilization, become meaningful. One of the first in the modern Yakut literature Gogolev I. inserts in the problematics of his novels a thought over a role of Christianity. The character of the novel – a writer – is sure: “The real poet should be like Christ for his people”, as he loved his people not only in his teaching, but with all his soul, sacrificed himself for their sake.

A dialogue – dispute on a role of the faith – acquires a pivotal meaning in meditations of the characters. Teachers of the humanity – Buddha and Christ – guide that the

main strength, capable to establish the good on the Earth, is the faith. Here a motive of the faith in One God appears, i.e. each man should have his own God in his soul.

In the novel *Goddess of Mercy* in an expression of the philosophic conception legends and myths acquire a decisive meaning. In general, a folklore poetics as a style-forming principle in the prose of Gogolev I. acquires new deep qualities, limitation. A legend on an amazing man Uraty, who tried to learn everything by himself, and in search of the truth, the real faith on the Earth he came to the Pope, is filled with a symbolic meaning. In response to his question where is God, he heard: "You've performed an unexampled deed of valour. God is in your soul" [3, p. 140].

About mysteries of being the character of the novel talks with an alien – Egos, who notes: "Your huge wisdom is that you perceive everything in the world around as living, having soul" [3, p. 24].

In their dialogue a motive of fragility, vulnerability of life on the earth appears: Egos compares the earth from a height of a space distance with tears. He warns: if the good beginning does not triumph on the earth, the eternal darkness – apocalypses will await the humanity.

Gogolev's work is tragic, a tragical note is defined by compassion to people, who themselves banish God from their souls and thus led their native nature to destruction, as it is shown in a fate of the Vilyuy River.

The novel is ended with a legend of people, banished the Goddess of mercy, who came to them in the likeness of a young girl. On the assumption of here-and-now profit, of gain, the characters of the legend perished their foster-daughter. A worry of the author that a spirit of profit, commerciality can lead a man to betray the best ideals, to loss of morality, is deeply modern. A concluding thought of the novel is only after hardships, at the cost of high efforts a man is able to accept the faith again and the Goddess of mercy will come back to him.

In such a way, strengthening of a universal human humanistic principle led in the creative work of Gogolev I. to a combination of the ecological and moral-philosophic problematics, to a fusion of real and mythological, fantastic and realistic principles. As the result, the philosophic novel first in the modern Yakut literature has appeared.

The new moral-philosophic thinking, in the basis of which a thought over unity of a man with nature, a man and space, over unity of all the human kind, is presented in a novel of Gogolev I. *The Third Eye* (1999) [4].

A mythological basis penetrates the whole complicated structure of the novel. Traditional religious beliefs of Sakha define a philosophy of people life. Real characters act along with legendary, mythological deities Aiy: *Ipul Aar Toyon*, *Iyekhsit Khotun* (the Goddess of Mercy), *Aiygut Khotun* (the Goddess of Childbirth).

Short stories, legends, myths, testifying deepening

of a people-poetic basis of the creative work of the writer and enrichment of his concept of the world and a man, give the novel a specific stereoscopy, deep philosophic meaning. Historical past of the people appears in legends about Munnan Darkha, Ellyay, etc. Notions, cross-cutting through the whole creative work of the author, again serve as supporting symbols-concepts: "сүрэх хараҕа" (vision by heart), "күн санаа" (sunny thought), "алгыс" (blessing), "үһүс харax" (third eye), "айыы ытык маһа" (sacred tree Aiy), harp, etc.

The novel *The Third Eye* is distinguished by a lyrico-philosophic principle, expressed in the author's determination of a genre of the work – "novel-poem". A mythologized narration is organized in accordance with laws of metaphoric associativity. Discontinuity of the novel time defines a peculiarity of the novel composition, consisting of three parts. If in the first part a life story of Kyrag'a – a main character - is given, the second part takes readers to a fantastic country of sun, and in the third part the scene is laid in several millennia later. A plot is based on a legend of a shaman-udaganka Kyrag'a with an unusual fate, in which real and fantastic interweave.

The main philosophic question on a human predestination is hidden in symbols of the work name: *The Third Eye* means to see with heart, super-sensitivity to everything. A people idiomatic expression "Yhyc xapax" – the third eye is synonymous to a notion "vision by heart", cross-cutting in the creative work of Gogolev I., especially in his meditations over relations of a man with nature. In the story *Don't Rock the Boat* (1986) the writer expresses his confidence that a man, who "see the light by heart", won't allow his native nature to die, he rescues it. A philosophic content becomes deeper in the novel: "The more the vision by heart is opened, the clearer a human mind. Among all wonders of the world the most amazing is to see everything with heart, better and safer – to understand by heart".

The concept of "vision by heart" is extended by the notion of "the third eye". A father, white shaman, worshipper of light deities – Aiy, prior to his death, gave his daughter a priceless gift – a skill to see with "the third eye". Kyrag'a gains an opportunity to enter into a hidden life of nature, a skill to hear and understand voices of birds and trees, perceive a connection of times as a unite flow of life in a cosmic space. Having become a shaman, Karag'a goes into specific relations with the world of nature, blessing all light and good in it. As predicted by a mistress – a spirit of mountain, "as fast as the vision by heart will open, the earth, nature more and more are opening behind you".

A geo-cultural picture of the region is characterized by sacred palaces of Yakutia: Saisary, Tuymaada, Chuchur Myraan, the Lena River, etc. A peculiarity of a nature-philosophy of Gogolev I. makes itself evident in the fact that nature is shown in the novel in a constant movement,

is always animated by the presence of a living being. A unity of a humane life with the world of nature is shown in a numerous landscape descriptions. So, a description of a summer night on a river is full of life: "Floating at night is significantly easier. Freshness is spread from the water. Somewhere a diver is gabbling, every other minute ducks, geese, swans are whisking. Here and there along the river shoot an elk or deer are swimming. And on the bank bears are moving awkwardly, or sitting as a man are staring Kyrag'a" [4, p. 50].

Nature on the novel pages as if breathes, have a gift of compassion. Kyrag'a thinks that in a warm fine day the river is singing "күн уотугар сыламны Эбэ Хотун бэйэтэ ыллыыр курдук". The river now is glad under warm sunny beams, than sighs heavily, thinking over its hidden-sad, and the mountain – Ebe Khaya stands in expectation of a key to an eternal mystery of life.

A system of comparisons of the landscape descriptions is also based on a likening of nature phenomena to living beings: the north sun is rolling over the sky as a red fox, branching of the great river are like elk horns, and a valley, edged with forests, is like a resting beautiful woman in an expensive sable fur coat. The comparisons, metaphors are conditioned by peculiarities of a world outlook of a northern man, nationally defined. On the novel pages nature often appears in a zenith of blossom, in joyful light colors, expressing an optimistic life-asserting pathos and humanism. A philosophic interpretation as the result leads to a conclusion that many things in the mutual relations with nature depend on a man himself. The young girl poses a question on the meaning of life: due to what is the Middle World held in place, what is a key to the mystery of being? "Why this land is called an under sun world? May be, it is created not for a curse but for a blessing. What does give a birth to blessings? Only the kindness and love" [4, p. 50].

A basis on national epic traditions defines a diversity of the narration style that is called prose-poetry – a free transfer from a prosaic turn of phrase to poetic, sometimes a boundary between them is hard to distinguish. In the prose of the poet alliteration plays a significant role, an inner rhythm appears, a turn of phase is distinguished by a specific expressiveness and richness with vivid expressions that allows to speak about traditions of an epic narration, the Olonkho.

In the structure of the novel songs, which appear in the most pathetic moments, are significant. In the mythological narration not only a man sings, but also the river, birds and the forest. Here is a triumphant song of a larch:

Аан дойду иччитинии	Like a master of the universe
Айхаллаһа турарбыттан	Blessing everything,
Алыс да астынабын,	Admiring all colors,
Орто дойдум оһуорун	The beauty of the middle world

Одуулуу турарбыттан	Cheerfully I greet!
Олус да үөрэбин!	
(перевод наш – А.М.).	

This is poetic declaration of love to the native earth, admiration of its beauty. Time-space [5] in the novel, typical for a work, based on a legend, is mythologized, there are not many certain-historical realias. As well as warm sunny beams indivisibly connect the sky and the earth, the past, the present and the future inseparably interweave in the fate of the main character.

In the modern mythologized narration the author, resting upon deep mythosincretic structures of the thinking, occasionally consciously violates cause-effect relations, fancifully combining different times and spaces, based on initial archetypical constants of a human being and nature, such as, fire, sun, mountain, water, childhood, old age, death, etc. In the second part of a novel Country of Sun in a description of a fantastic country of the past all phenomena of nature are symbolized, archetypical: the country of sun; a temple of a rainbow, a chapel of a star. Like the Olonkho, the time-space in the novel is really cosmic.

In the mythologized narration a motive of duality of characters is relevant. In the second part of the novel Kyrag'a appears as a grandson of a ruler of the sun country. Her teacher – a philosopher develops thoughts about predestination of a man: each man has his own guiding star, but he shouldn't be blind follower of an idea, teaching, faith, but should be really free: "Only a mind of a free man can be developed, that gives him unselfish valour. And then he becomes a real god on the earth. A man only then can fully realize his potential, when his mind-soul will sparkle with all colors of the rainbow". On the other hand, to get a true freedom does not mean to release yourself from any obligations and to pay attention only to yourself, this misunderstanding led to a tragic loss of the people, as it is shown in this fantastic plot.

A central image of the sun, which opens in a symbolic and realistic plan is multi-functional in the novel, i.e.: "Күн дойдута" (the country of sun), "күн санаата" (sunny thought). In the lyrico-philosophical prose of Gogolev I. there are a lot of light, an optimism, coming from the people world outlook, based on the faith in a man, prevails. By the high style in the novel a man – "an adornment of the earth" – is glorified:

Көмүстээбэр күндү,	More expensive than gold,
Күндү таастаабар кэрэ	In the under sun world
Үрүң күн анныгар өрүү	More beautiful than a precious gem
Үтүө сана эрэ.	Is only a human kindness.
(перевод наш – А.М.).	

The main idea of the novel is expressed in words of the Teacher: "The dearest for a man is the

mother-land, mother tongue, freedom”. In the work a firm assurance of the author that only happy people can have epic stories, handed down as a clear echo from generation to generation, is expressed poetically.

What is a real calling of a free man: “The most important thing – as it is said in the novel – to sow in minds and hearts of people the light of the world – the good, teaching - education”. The faith in mind and good will of a man sounds in a song of the father:

Өрүһүйдэбинэ биһигини	What will rescue us,
Өркөн өйбүт өрүһүйүө,	Is only intelligence
Абыраатабына биһигини	And good will of Aiy.
Айыы санаабыт абырыа.	

The problematics of the novel widens extraordinary, many complicated question of our time hit chord in it. “Philosophy” of a balance between wealth and poverty, different from understanding, which recently was cultivated in our society, is presented in a new light, i.e.: “A wonderful creation of God should live in dignity”.

One of the most complicated problems, raised in the novel is a question of relations of different faiths, religions. An idea of tolerance, indulgence, mutual understanding is presented as the main thing in the humanistic concept of the novel. We are witnessing an increasing interest to confessions of different nations. The fate brings Kyrag’a together with a Russian Monarch Foma-Bogomolov. Foma as a strong believer insists: “God is the kindness... God is in on the earth. In my heart, in your heart, in hearts of all kind people”.

An ataman says that wide men have no faith, that only great people can have great faith. Foma-Bogomol claims the opposite: “On the earth there are no bad peoples. All peoples are God’s children, all of them have a divine spark, you only have to see it”.

The characters of philosophic cast, such as Foma and Pavel-Bogomol, the Teacher, are thinking over complicated philosophic, world outlook questions. It is often expressed through an inner monologue. A grandson of Foma – Pavel-Bogomol thinks a lot about opposition of Christianity and Shamanism and comes to a conclusion: “In fact, they have common roots. All religions and faiths remind branches of one sacred tree. A real shaman is respected among his people as a son of God” [4, p. 224].

The character of the novel, and the author along with him, express confidence that time comes, when all peoples of the world will become relatives, but we should work at it move closer to this future by the light of teaching and the kindness. Words of the Yakut write have something in common with immortal lines of Pushkin about time, when “nations, forgotten about disputes, unite in a great family”.

Pavel cannot believe that an enmity of tribes is predetermined by nature: “there are no bad peoples on

the earth, everybody has good qualities, peculiarities, everybody longs to the good, the light. All of them are children of sun....The earth is a good mother for all peoples, and mother loves her children equally” [4, p. 224].

He is sure that the people, God of who is Mother-nature, cannot be wild. The Tsar Mikhail Fedorovich Romanov is amazed by wisdom of the Yakut girl. To a question how the Yakut survive in this sever region, Karaga answers: alive due to water and snow, everything that is swimming under water and running on snow – satisfied and dressed. As shown by the writer, cruel climate conditions define resourcefulness and endurance of the people.

Gogolev’s characters consider hate of one people to other as the heaviest sin. When after many hardships Kyraga got the “third eye”, she understood that indefeasible law of nature – to live in peace, in line with other peoples: “Итинник улуу омугу кытта иллээхтик-эйэлээхтик дьукаах олорор одун оноһуубут буоллаҕа! Итинник омугу кытта эн-мин дэсигэн сатаан ылыстахпытына-бэристэхпитинэ олохпут уйгулаах буолар, кулгаахпыт-харахпыт кэниһи!” (“our predestination is to live in line with such great people”).

In the poetry of Gogolev I. a special place belongs to celebration of the lightest human feeling – a feeling of love. In the novel *The Third Eye* “philosophy” of life as a life law is expressed again: “All people can come closer to God. When? When they learn to love everything living and nonliving as God does. Only love makes a man God. Only love gives a man clear, high mind, kind soul. Only love makes a man really free” [4, p. 166]. In a folk story *Khyka Kharakhsyn*, deprived from an opportunity to love, dies.

Through speeches of his characters the author expresses his conviction that no high aim, no great idea can serve as an excuse of calling for bloodshed, again and again confirming a saving grace of a word, blessing: “Айыы сирэ амарах алгыска туар” – “Aiy earth stands on a blessing”. The moral-philosophic, humanistic conception of the modern Yakut author is close to ideas of great humanists of the past, calling for all-encompassing unity, for brotherly unity of the peoples.

As in any philosophic work, the language of the novel is gnomic, there are a lot of proverbs, sayings: “Таптыыр харах үчүгэйи эрэ таба көрөр” (“loving eyes see only the good”), “кылыс кыайбатабын өй кыайар” (“what is beyond a sword strength, a mind could make”), “норуот эрэллээх кэриэппэнэ — кини ыраабы көрүүтэ” (“a safe castle of the people is their skill to see the future”).

So, in the lyrico-philosophic novel *The Third Eye* on the basis of an organic synthesis of myth and history, real and fantastic plans the humanistic concept of the faith in a man, in the future of the people. The increase of the interest to the universal values promotes a formation of the new moral-philosophic planetary thinking.

Despite the peculiarity of each writer's novel, features of the new novel thinking, which manifests above all in the genre of the philosophic novel, establishing the universal human values of being on the edge of two centuries, are peculiar to all of them.

The basis on mytho-moral structures widens genre-stylistic opportunities of the modern realistic prose. The works of the Yakut author testify that the modern mythologism is closely connected with the philosophic artistic thinking.

In such a way, there are grounds to consolidate that Gogolev-Kyndyl I. M. is a discoverer of the genre of the philosophic novel in the Yakut literature. The writer made a peculiar creative breakthrough in the Yakut Romance philology, created several unusual, based on a limited learning of folk-poetic traditions and conquest of the realism in the literature of the XX century, lyrico-

philosophic novels, distinguished by the high humanistic pathos.

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Ethnic Stereotypes in the Worldview of Russians, Yakuts, Evenks and Evens

The article presents results of a research of ethno-cultural features of auto- and heterostereotypes in the language consciousness of Russians, Yakuts, Evenks and Evens. The results of the directed associative experiment served as a material for the research. The author models fragments of the worldview of Russians, Yakuts, Evens and Evenks, revealing the identical and different aspects.

Key words: worldview, language consciousness, culture, ethnic stereotypes, autostereotype, heterostereotype, associative experiment, ethnic group, associative field, ethnic identity.

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A term “worldview” is one of fundamental notions for description of psychological, verbal and cognitive processes in a human activity, peculiarities of his being and mutual relations with the world around.

In a national psycholinguistics it is stated that peculiarities of the worldview, typical to one or another ethnic group, can be opened, studying a human consciousness, stated through a language. Consciousness, in accordance with Leontiev A. N., is “a worldview, opening to a subject, in which he himself, his actions and conditions are included” [1, p. 96]. The worldview gives an opportunity to each member of a society to adapt in the world around, assigning a particular system of values, work methods, typical to his ethnic culture.

A notion “worldview” is compared by psycholinguistics with a notion “language consciousness” [2, p. 268]. The language consciousness is considered “as a worldview, mediated by a language, representing an aggregate of perceptive, conceptual and procedural knowledge of a culture-bearer about objects of the real world” [3, p. 7]. Images of the language consciousness, in accordance with Tarasov E. F., “integrate within themselves linguistic knowledge, formed by a subject, mainly in the course of a conversation, and sensual knowledge, appeared in consciousness as a result of processing of perceptive data, obtained from sense organs in a substantive work” [4, p. 260].

Ufimtseva N. V. considers that “in an activity and consciousness of a certain individual definitions are functioning, they are “produced” by a society and exactly in them we can search for peculiarities of a mental outlook and self-appraisal of a representative of one or another ethnic group” [5, p. 58]. A key moment for our research is that the worldview, stated in a word meaning, is always culturally conditioned. Images of the language consciousness are considered as units of an analysis of national-cultural specifics of the language consciousness.

It is well known that “an express condition of initiating of a mutual understanding among representatives of different ethnic groups is an adequate perception of the most significant features and characteristics of surrounding people and their behavior” [6, p. 3]. A vital need to study stereotypes of international, interethnic mutual perception is obvious. During communication of representative of different ethnic groups the stereotypes play a role of conductors, they give an opportunity to forecast variants of behavior of the representatives of other cultures. Gladkikh S. V. considers that “with the help of ethnic stereotypes the culture accumulates within itself an experience, which was formed in a process of cooperation of ethnic groups in different spheres of life – material, spiritual, political” [7, p. 12].

Ethnic stereotypes perform several vital functions: ethno-integrating, adaptational, regulative, a function of preserving and protection of an ethnic identity. The ethnic stereotypes are a cultural barrier for protection of

a personality and act as means of a self-esteem in “own and “alien” ethnic environment.

Auto- and heterostereotypes as images of “own” and “alien” group can contain both positive and negative characteristics. Dashibalova I. N. points out that a “mechanism of stereotyping “activates”, when a man, giving an assessment of different phenomena, separates them to “familiar” and “unfamiliar”, at that his referent group is usually assessed positively, an alien one – with hostility. The stereotypes represent a peculiar projection of “own” values to “alien” ones” [6, p. 26].

The ethnic stereotypes, besides such properties as assessment, emotionality, massiveness, stability in time, informality, concrete definition, often inaccuracy, and sometimes full inconsistency with reality are attached to. But it is important to recall a statement of Leontiev A. N. that “image can be more or less appropriate, more or less full, sometimes false, but we always manage to “bail it out” from the reality” [8, p. 255].

After Ufimtseva N. V. we judge from an idea of the stereotype, at which it “can be referred to a class of definitions, with which systems of invariant “worldviews”, describing general features in an outlook of representatives of one and the same ethnic group, are compared” [9, p. 91].

One of effective methods of revealing of images of the language consciousness is an associative experiment. Goroshko E. I. considers that “a free associative experiment is one of the most powerful “devices”, allowing to indirectly “look at” peculiarities of formation and functioning of the language consciousness of a man, which is often unavailable or “closed” for other introspective methods” [10, p. 5]. In psycholinguistic researches several variants of associative principles are implemented, we use one of them – a directed associative experiment – in our research. In the directed associative experiment a researcher limits a freedom of a process of associating of probationers significantly, as if “targeting” associations.

To reveal an image of “self” and an image of “other” (auto- and heterostereotypes) of Russians, Yakuts, Evenks and Evens we used motivations, developed by Leontovich O. A., which she used when researching peculiarities of mutual perception of Russians and Americans.

Educational and age levels of informants play an important role in performing of the experiment. Most often students are involved as the probationers. It is considered that “an achievement of a language personality is over in general to 17-25 years, and it means that a developed linguistic competence of a participant of the experiment reflects in associations”. Karaulov Yu. N. notes that “an analysis of social, ethnic, historical-cultural and other evaluation reactions of the probationers in the experiment, allow a researcher to forecast some characteristics of

a status of a mass consciousness in the society for future 20-30 years, i.e. for a period when today probationers will be an active core of the society” [11, p. 193].

The probationers in our experiment were students of Yakut and Moscow HEIs. Among them: Russians1, domiciled in the Republic of Sakha (Yakutia) (hereafter – Russians1); Russians2, from Moscow and Podmosovye (hereafter – Russians2); Yakuts1 – bilinguals, considering Yakut language a native one (hereafter – Yakuts1); – Yakuts2 – who do not speak Yakut language, Russian – is a native language (hereafter – Yakuts2); Evenks – who speak Russian, Yakut and Evenk languages in deferent degrees; Evens – who do speak Russian, Yakut and Even languages in deferent degrees. A total number of the probationers, involved in the associative experiment, is 570 persons.

In this Article the results of the analysis of experimental data, obtained in response to one of motivations “Russians (Yakuts, Evenks, Evens) like. Who? What?”, are given. Fragments of the worldview of the ethnic groups under consideration, which were modeled on the basis of the probationers’ reactions, obtained in response to this motivation, can be presented in a form of associative fields (AF), which we conventionally called Values and Predilections.

For convenience of the analysis and comparison of AF all reactions were distributed by us in accordance with the following topic groups:

1) gastronomic predilections – words-reactions, specifying preferences in food, dishes of ethnic cuisine, food habits, gastronomic traditions;

2) favorite types of activity – words-reactions, specifying an activity, process, actions, conditions, feelings, associated with the motivation;

3) realias – words-reactions, specifying subjects of a material culture, concrete and abstract notions, animals, associated with the motivation;

4) personalias – words-reactions, specifying personalias, any persons (including names of family members), associated with the motivation.

AF Values and Predilections of Russians.

A comparative analysis of images of the consciousness, opening the autostereotypes of two groups of Russians, shows the following:

Two the most frequency reactions of Russians1 in response to the motivation Russians love are connected with not indifferent attitude of Russians to alcohol: vodka (13 %); to drink (8.3 %). Russians2 also often answered: vodka (5.6 %), to drink (9 %); beer (1.1 %), alcohol (0.5 %).

Stepanov Yu. S. in Dictionary of Russian Culture notes that for Russians vodka is in a close notional link with an alcohol abuse, as “in Russia people drink not for pleasure of taste, not to “try” one vodka or another, they drink to get drunk – simply “vodka”. And, of course, a lot. It is

ascribed to Russians as their distinctive feature, both by foreigners and Russians themselves” [12, p. 326].

The gastronomic predilections of Russians are also characterized by the following reactions: meat pockets, beetroot and cabbage soup, pan-cakes, herring, potatoes, black bread, soups, ice-cream, caviar, pickled cucumbers and cabbage, pickle, moonshine, etc.

A Russian proverb says about an essential involvement of alcohol and fest. Apparently, that’s why Russians1, 2 often named the following actions, which were brought by us in a topic sub-group Favorite Types of Activity: love fests, to celebrate; joy, to enjoy; festivals, to have fun; to recreate, food lover. Russian respondents also point out that they love drive fast, help others. The respondents pointed out that for them communication with relatives, loved ones, friends is important. Russians love to work, but they love to rest, to do nothing, or as a variant to work less, but gain more, (in accordance with a majority of answers) most of all. Russians from Moscow, in a greater degree than Russians from Yakutsk, pointed out a striving of representatives of their own nationality to a material wealth, prosperity, answering that Russians love luxury, to earn a good wage, go abroad, etc.

A fragment of AF, containing Realias, allows to say that Russians consider themselves patriotic enough, they love their Mother-land, Russia, their nation, country and Russians. Less often they pointed out love to family and relatives. In a topic sub-group Personalias there are gender differences of responses of Russians. Male respondents answered that Russians love women, young girls, opposite sex. Russians include Pushkin and Putin among favorite personalias.

Yakuts, Evens and Evenks also said about prejudice of Russians against alcohol drinks, joy and fests, and noted that more often, than Russians themselves (Pic. 1), but they evaluated higher industry of Russians, besides, they did not point out to the fact that Russians love to do nothing. As distinct from autostereotyped reactions of Russians, in heterostereotyped answers of Yakut, Evenks and Evens it was often spoken that Russians love Russian sauna (to take a sauna). A difference between auto- and heterostereotypes can be revealed in an assessment of communicative activity of Russians. Yakut, Evenks and Evens said that Russians love: to communicate, chat, talk a lot, speak, gossip, be rude, joke. It should be noted that judging by a number of reactions, Yakuts1 consider Russians to be more talkative and sociable, than other respondents. Besides, Yakut1, 2, as distinct from Russians, Evens and Evenks, did not point out that Russians love to swear. Yakuts, Evens and Evenks also named Russians patriotic, but less often than Russians did it themselves. They informed that Russians love the Mother-land, Russia, their people and their country.

AF Values and Predilections of Yakuts.

In response to the given motivation the most frequency

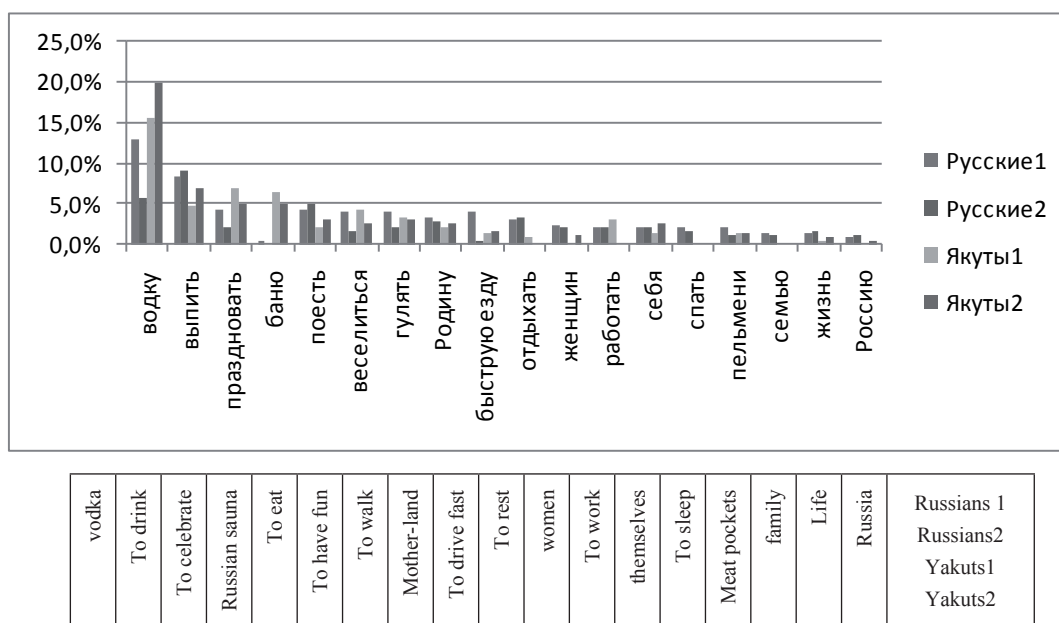


Fig. 1. Quantitative Relations of the Frequency Reactions in Response to the Motivation Russians like

autostereotyped reactions of Yakuts1, 2 reflected their gastronomical predilections: meat, slices of frozen meat or fish, served cold, fish, kumis, milk products, foal meat (horse meat), cakes (Yakut griddles). The respondents Yakuts1 noted that Yakuts like healthy food, real food: meat, fish; Yakut delicacies. Both groups of the probationers informed that Yakuts like their national dishes. But Yakuts2 more often than Yakuts1 called alcohol drinks, vodka and beer, and also that Yakuts like to work physically.

The topic subgroup Realias, separated in the associative field Values and Predilections of Yakuts, is one of the most numerous of both groups of the respondents, but also has significant quantitative differences. Yakuts1, more often than Yakuts2 (mean: Ya1 – 7.3 %, Ya2 – 1.9 %) noted that they like Ysyakh (Yakut national fest, celebrated in the beginning of summer and accompanied with a circle dance Osukhay, gamesmanship and kumis drinking [13, p. 98]). Yakuts1 also pointed out that they like Yakut national fest, to sing the Olonkho and dance Osukhay. Such quantitative differences of answers “Ysyakh” and the presence of nationally-culturally determined reactions testify that for Yakuts with the native Yakut language a preservation of cultural traditions, including the national fests, is of greater importance than for Yakuts with native Russian language. Apparently, the following quantitative difference in answers is connected with the same thing. Yakuts1 more often than Yakuts2 informed that Yakuts like nature, to spend time on nature (mean: Ya1 – 6.9 %, Ya2 – 2.8 %).

In the autostereotyped reactions Yakuts also showed themselves as patriots. In accordance with Yakuts1 they like the Mother-land, i.e. the Republic of Sakha (Yakutia)

(2.4 %); their people and land; their Republic; Yakutia; Yakutsk; their native language; their origin (0.4 %). Yakuts2 also noted love of their people to the Mother-land (2.8 %); Yakutia; Yakutsk; their traditions (0.9 %); their Republic; their nation; countrymen (0.4 %).

The topic subgroup Personalias of Yakut1 is presented by a bigger number of reactions, than of Yakuts2. Yakuts1 named their dear their relatives and loved ones (2 %); as distinct from all other groups of the probationers Yakuts1 informed that Yakut love wives (1.2 %). As well as Yakuts2, Yakuts1 noted that they love their children and their family (0.4 %). The fact that Yakuts named among favorite personalias wives, children, relatives and loved ones, family, underlines a relevance for Yakuts of their family relations. Mestnikova A. B. in her research, devoted to an investigation of ethnocultural factors, affecting moral principles and behavior of the people of Sakha, notes that “in accordance with Yakuts, a man is strong by his relatives and friends, that’s why family, country ties are supported in every possible way” [14, p. 109].

The most frequency reactions, which were given by the respondents of both groups in response to the motivation Yakuts love, are shown in Picture 2.

Russians 1, 2 most often respond to the given motivation, named the gastronomical predilections of Yakuts. In response to the motivation Yakuts like Russians1 most often gave a reaction – kumis (9.2 %), Russians2 – fish (17.4). It is worth mentioning that Yakuts themselves in response to this motivation responded in different way: Yakut2 most often answered meat, and Yakuts1 informed that Yakuts like to hunt. The following answers of Russians1 were on the second place in

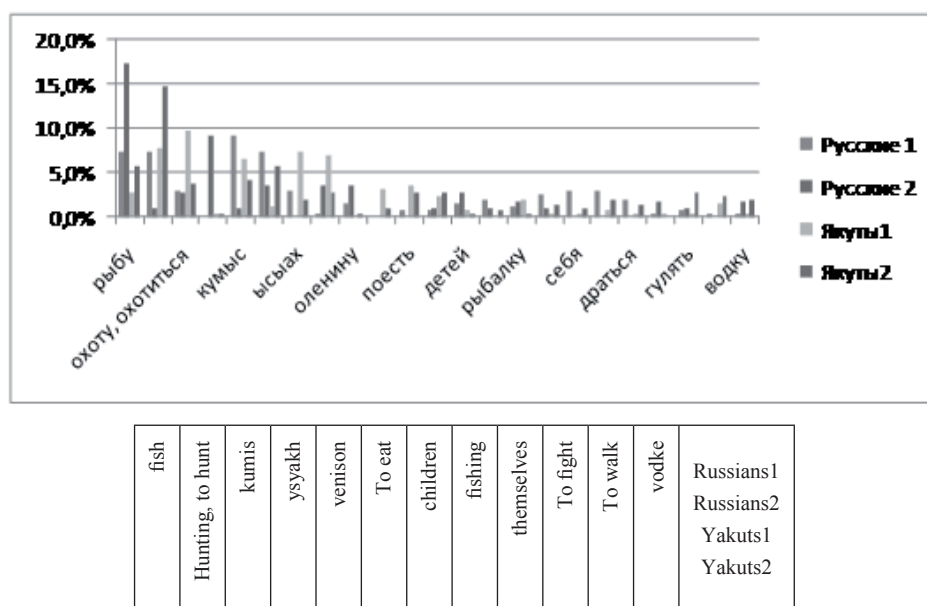


Fig. 2. Quantitative Relations of the Frequency Reactions in Response to the Motivation Yakuts like

accordance with frequency: slices of frozen meat or fish, served cold, meat, fish (7.3 %). The majority of the respondents from the group Russians2 considered that Yakuts like deers (9.1 %) and venison (3.6 %). Attention should be paid to the fact that the reaction “deers” of the Russians1 was absent.

In general, Russians1 more often than Russians2 gave reactions, reflected perception of elements of ethnic culture of Yakuts: the Olonkho, Ysyakh, choron, harp, high fur boots; to play harp, to dance and to sing Osuokhay, to dance in a round, named peculiarities of a national cuisine, that Yakuts love to drink kumis, milk and other milk products; to cook dishes of fish, meat – slices of frozen fish or meat, served cold; to fry crucian carps in a special way; to eat foal meat, horse meat, venison; a festive table of Yakuts is often covered with boiled tongue, blood sausages, umbles. It is natural that Russians2 know less about peculiarities of the ethnic culture of Yakuts, but they fairly named - slices of frozen fish or meat, served cold, venison, red bilberry, kumis and tea with milk and falsely attached seal meat and fat.

Russians1 noted that Yakut like Yakutia (1.9 %); their Mother-land (0.7 %); native language (0.7 %); their culture (0.7 %). Yakuts’ patriotism, in accordance with Russians1, is also connected with love to the mother land, nature (they love nature, to spend time on nature), with a striving to recover and preserve traditions (their different traditions (1.1 %), love their history (0.3 %), Ysyakh (3 %); national fests (0.3 %)), traditional beliefs (pagan religions (0.3 %), spirits, ancestry, pagan deities (0.3 %)). Russians2 also noted that Yakuts like their land, their Mother-land, Yakutia, but they were not limited to the territory of the

Republic and named the country, Russia, world. Russians2 associated Yakuts and their values with territorial and natural-climate peculiarities of the region, the students of Moscow HEIs inform that Yakuts like nature (3.6 %); warmth; cold; snow (1.8 %); snow and sun, forest; sea; cold season; to sit in a chum (0.9 %). Besides, as distinct from other probationers, Russians2 noted that Yakut love deers, to perform a deer breeding, ride on deers, diamonds.

Both groups of the probationers as Yakuts themselves noted a peculiar attitude of Yakuts to relatives and family, saying that Yakut like their children, their family, relatives, close people, ancestry, their home, homely home.

Opinions of Evenks and Evens concerning what Yakuts love are alike in many instances: meat, kumis, fish, Ysyakh, Mother-land, traditions, their gods, freedom, nature, fishing, to live well, to walk, to ranch in a village, Yakut delicacies, to watch TV, to fight, to be rude.

AF Values and Predilections of Evenks and Evens.

The autostereotypes of Evens and Evenks have several differences. The perception of Evenks of themselves contain information about manufacturing traditions (deer breeding) and material culture, that is practically hard to meet among Evens. Evenks informed that they like: deers (4), nature (3), to nomadise (3), meat, fish, venison, their culture, to eat well (to eat), to work, as Yakuts (2). Evens on the contrary do not consider themselves reindeer-breeders, as distinct from Events they do not attach to “favorite” realias – deers – a basis of their traditional existence. These facts are a result of a loss of the manufacturing traditions by Evens, they can testify a bigger change in their worldview than of Evenks. Evens the most often informed that they like meat (5), deer meat, fish,

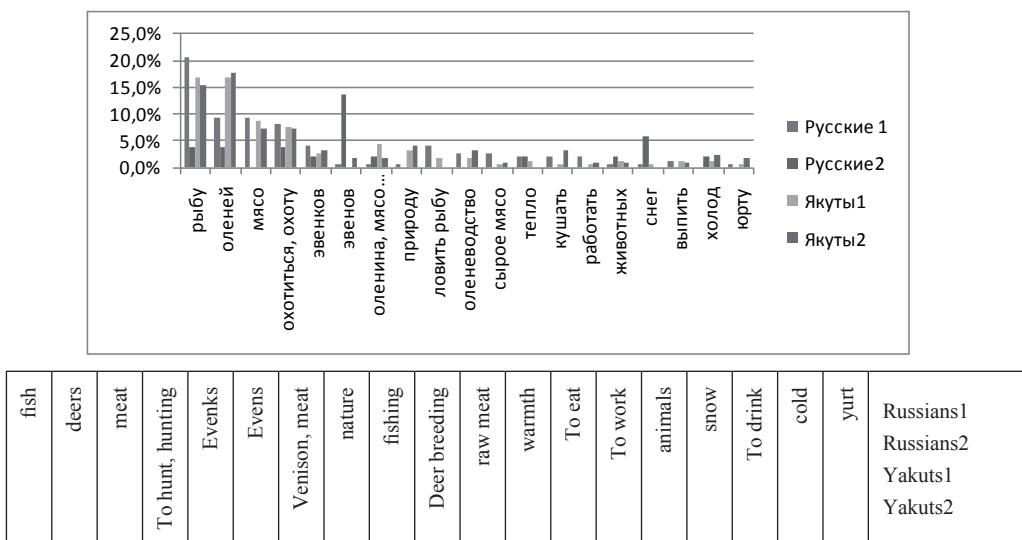


Fig. 3. Quantitative Relations of the Frequency Reactions in Response to the motivation Evenks like

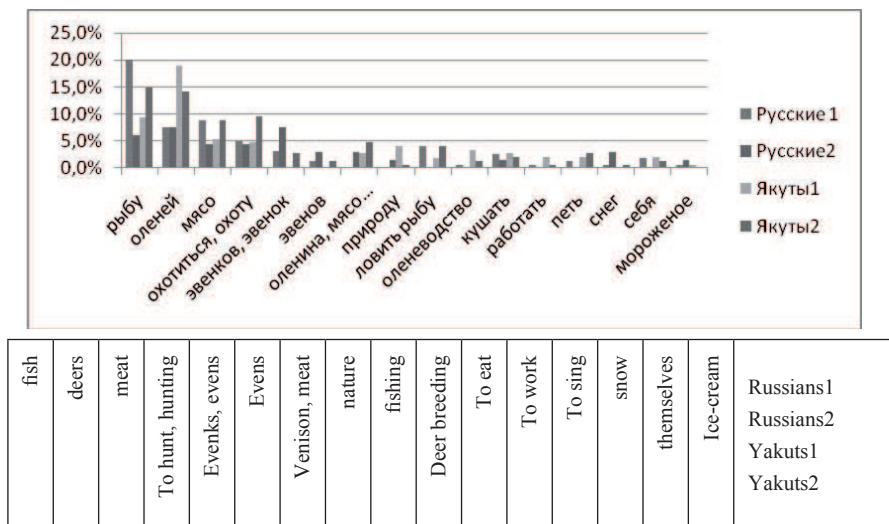


Fig. 4. Quantitative Relations of the Frequency Reactions in Response to the motivation Evens like

a lot of things (1); as Yakuts, winter, nature, animals, to eat, to sing, to dance, to cook, to work (1).

In general, the perceptions of Evens and Evenks of themselves are subject to a strong influence of “alien” cultures, in the experiment they often associated themselves with Yakuts, whose language for the majority of Evens and Evenks became a native one. A loss by Evens and Evenks of native languages led to a loss of the most important ethno-integrated sign and biethnic identity, which threatens to transfer into full assimilation.

It is important, according to our reckoning, to pay attention to the fact that not Evens, not Evenks did mention the Mother-land, native land, etc. in response to any of the motivations (in autostereotypes of Yakuts and Russians the Mother-land is one of central notions: Russians1, 2 – Russia; Yakuts1,2 specify as the Republic of

Sakha (Yakutia), Yakutsk and the native land, the land of ancestry). There are no such toponymic categories among Evens and Evenks. The heterostereotypes also do not contain statements that these nationalities are patriotic and feel love to the Mother-land (among Russians1 and Yakuts2 “a native region” is mentioned as favorite realias of Evens, and really rarely). Evenks and Evens are nomadic nations, on the one hand, that fact can explain the absence of affection towards one place, on the other hand – self-consciousness of the nation is always defined by a self-understanding of to what Mother-land do you belong, and the respondents (Evens and Evenks) did not show that.

The heterostereotyped AF Values of Predilections of Evenks and Evens in a nuclear part appear to be practically identical (Pic. 3, 4) and that’s why they are considered by us together.

Responding to the given motivation and naming what Evens and Evenks love, all respondents of “other” nationalities more often named fish, rarely meat, venison. Also the probationers mentioned a tradition of eating meat and fish raw, existing among many North peoples. Enumerating favorite types of activity of Evens, the participants of the experiment most often named hunting.

Thus, the worldview performs the most important link among different spheres of a human culture and promotes an integration of people in the society. The study of the stereotypes, which on the one hand form the consciousness, and on the other – represents the fragments of the worldview, allows to open the peculiarities of the worldview and the self-appraisal of the representative of one or another ethnic group.

The autostereotypes of Yakuts and Russians demonstrate the preservation by these ethnic groups of their identity, and as a result of a linguistic shift changes were made among Evenks and Evens in the images of the consciousness and ethnic stereotypes, that may testify a biethnic identity.

The heterostereotyped perceptions of Russians¹, Yakuts^{1, 2}, Evens and Evenks have more in common than differences. The images of Evens and Evenks in the consciousness of Russians¹ and Yakuts^{1, 2} in the nuclear part practically fully coincide.

The ethnic heterostereotypes of Russians² differ significantly from others, they are most often abstract, not accurate and even far from real that is explained by a territorial remoteness of living of the ethnic groups and the absence of personal contacts.

The autostereotypes and heterostereotypes in many instances are interdependent in accordance with Belova O. V.: “a role of your culture as means of learning of alien is huge, but also an alien culture is not less significant for learning of your own, as to draw for yourself a portrait of an “alien” – a neighbor, foreigner or an adherent of a different faith – it means in many instances to recognize yourself, your own unique character and singularity” [16, p. 10].

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Collective Activity of the Tattinsky Intelligence on the Folklore at the End of the XIX Century (on the materials of the Branch of Saint-Petersburg Archive of RAS)

On the base of the materials of Saint-Petersburg archive branch of RAS the activity of Tattinsky intelligence on the collection of folklore works is for the first time lighted under the leadership of Pekarsky E. K. It was revealed that twenty five texts of the Olonkho and songs, two note-books with riddles, collected by representatives of Tattinsky region intelligence are kept in the archive. Six of the texts are full, four of them are shortened variants of the Olonkho and one song-poem, they were published in academic series Samples of the Yakut National Literature. Other works have not been published yet.

Key words: Tattinsky intelligence, prerevolutional period, collecting activity on the folklore, fixation of oral poetical creation, collectors-bearers of folk traditions, collectors-judges of folk sources, informants of folk literature, archive materials, manuscripts of collectors, local tradition.

In the end of the XIX century representatives of the Tattinsky intelligence rendered invaluable assistance in collection of samples of oral folk creative works of the Yakut. Under the leadership of Pekarsky E. K. they started to write down folklore works, following a peculiar method. At that they marked when, where and who did write down a work and tried to preserve at maximum stylistic and phonetic language features of informants of folk literature. Manuscripts and originals, collected works with notes and comments of Pekarsky E. K. are kept in Saint-Petersburg Archive Branch of RAS (hereafter – SPAB RAS). Folklore works, written by the representatives of the Tattinsky intelligence, were published in five editions of the first volume of Samples of the Yakut National Literature, issued in 1907-1918 by the Academy of Sciences under the editorship of Pekarsky E. K. (hereafter - Samples).

The representatives of the local intelligence, who performed a collecting activity on the folklore, can be divided into two groups. Collectors-bearers of folk traditions, such as Orosin K. G. (I Igideysky agricultural community), Androsova-Ionova (II Igideysky agricultural community), Petrov A. A. (Yolbinsky agricultural community) and others, who had natural endowments to reproduce folklore and epic works, should be referred to the first group. They “took epic heritage from the older generations, kept it in their memory to render legends and songs, handed it down to new generations; they were bearers of epic knowledge and epic memory (both was not limited by knowledge of texts and ability to sing them,

or to declare), they were given an art of reproduction of an epos in traditional oral forms” [1, p. 7]. The second group includes collectors-judges of folk sources – Aleksandrov R. A. (Timofeyev), Bolshakov R. M. (Zhuleysky agricultural community), Orosin I. N. (I Igideysky agricultural community), Nikolayev II E. D. (I Zhekhsogonsky agricultural community), Shestakov V.V. and others. Their aim was only to fixate texts according to illiterate bearers of oral folk creation.

A bright representative of the first group of the collectors-bearers of the folk traditions is a native of I Igideysky agricultural community Konstantin Grigorevich Orosin (1859-1903). He was famous in his region as a talented Olonkhosut and a folk singer. In a fund of Pekarsky E. K. SPAB RAS there are originals of songs-improvisations of Orosin K. G.: “Сир Ийэ айыллыбыт ырыата” (“Song on Creation of Mother-Erath”) [2, p. 277-285, 367-370] and “Арыгы ырыата” (“Song on Vodka”) [3, p. 230-232, 286-288]. “Сир Ийэ айыллыбыт ырыата” was published in No 3 of a magazine Саха саҥата (Voice of Yakutia), and “Арыгы ырыата” has not been published yet. In the Archive, beside the manuscript, there is a typed text of this song. In an introduction to it we found a note, made by Pekarsky E. K.: “Written by Orosin K. G. February 3, 1889; his own improvisation” [4, p. 286]. It should be assumed that the last song should have been included in one or another book, but it did not happen. At the repeated fixation of the works Eduard Karlovich certainly made textological notes, different marks in manuscripts of the collectors, that is seen from the materials of the Saint-Petersburg Archive Branch of Russian Academy of Science. In accordance with a report of a famous local history expert Androsov E. D., besides above-mentioned songs, on the repertoire of Konstantin Orosin there are other works, which are unfortunately missing today in connection with their loss, for example, “Таатта ырыата”

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(“Song on Tate”), “Сайын ырыата” (“Song on Summer Coming”), “Ыһыах үҥкүүтүн ырыата” (“Song on Ysyakh Dance”), “Хомус ырыата” (“Harp Song”), “Кэбэ ырыата” (“Cuckoo Song”) etc. [5, p. 24]. Ergis G. U. wrote, that “Konstantin Orosin was always visited by many old men – old time experts, Olonkhosuts and singers. He was listening to them with pleasure, at that he remarked on young and armature Olonkhosus as the Olonkho expert, corrected words and poems, added plots. Konstantin was a gifted Olonkhosut, that is proven by a record of the Olonkho about Nyurgun” [6, p. 363]. Orosin K. G., apart from Pekarsky E. K., was on friendly terms with other political exiles: Vitashevsiy N. A., Troshchanskiy V. F., Ionov V. M. and others. Highly appreciating Konstantin Orosin as a wise, an experienced in oral folk creative works of his people and a decent man, in February 1895, being a participant of Yakut Sibiryak expedition, Pekarsky E. K. presented him a note-book with an inscription: “To a tribe member of I Igideysky agricultural community of Boturussky ulus Konstantin Grigorevich Orosin, for writing down Yakut fairy tales and songs. February 21 1895. Eduard Pekarsky” [7, p. 95-165]. In this writing book Orosin K. G. wrote down in 1895 “Дьулуруйар Ньургун Боотур” Olonkho (“Nyurgun Bootur Stremitelny”). He fulfilled an assignment diligently and heartily, this work lasted two months. The Olonkho was published in the first edition of Samples... 1907. In accordance with a teacher Egorov S. E., this Olonkho Konstantin heard when he was young from Olonkhosut from a neighboring Zhuleysky agricultural community Egorov – Миинэ уола Дьөгүөсэ Е. М. and remembered it in details [8, p. 24]. Later in 1947 a text of the Olonkho of Orosin K. G. Ergis G. U. translated into Russian and published in a separate book, after which it became an object of researches of Soviet and foreign specialists of epic poetry. Then the text of the Olonkho was translated into French by Jacques Karro. The collecting activity of Orosin K. G. allows us to name him a pioneer of a process of immortalization of the Olonkho of not only Tattinsky local tradition.

Another representative of this group is a famous folk singer, Olonkhosut, a huge expert of the native language and the folklore, a born of II Igideysky agricultural community Mariya Nikolaevna Androsova-Ionova (1864-1941). She gave the Olonkho “Күлкүл бөбө оҕонньор Силирикээн эмээхсин икки” (“Old Man Kyulkyul and Old Woman Siliriken”) to Pekarsky E. K., which was published in the third edition of Samples... 1909, and extracts from her Olonkho “Үүт-аас бэйэлээх Үрүҥ Айыы Тойон ыччаттара” (“Offspring of Yuryung Aiу Toyon”, “Орто дойдуну тупсарарга түспүт хара тыа иччитэ Баай Барыылаах” (“Baay Baryylaakh – Master-spirit of Black Forest”) were included in the fifth edition. Thereby she was the first one to participate in a research

work and is one of women-Yakut, who made a significant contribution in preservation of oral artistic creative works of the native people. As an expert of the native language Mariya Nikolayevna became an irreplaceable consultant of Pekarsky E. K. when composing Dictionary of Yakut Language. In the Archive there are her letters to Pekarsky E. K., in 1998 works of Androsova-Ionova M. N. were collected and published under the editorship of Professor Korkina E. I. [9].

A native of Uolbinsky agricultural community Arseniy Afanasevich Petrov – a bearer and an expert of the oral folk creation – can be referred to the first group. In 1888 he gave to Pekarsky E. K. a text of an extract from the Olonkho “Хара Холорукай балыстаах Эр Соботох” (“Single-husband, having a Sister Khara Kholorukay”), which was included in the fifth edition of Samples... 1911. In accordance with Androsova E. D., Petrov A. A. lived in the end of the XIX century – the beginning of the XX century, was born in a rich family, chosen as Knyaz and Head of the native agricultural community. He actively participated in an opening of the first school in Uolba village in 1907. He successfully rendered old folk songs, including the Olonkho [10, p. 32]. In SPB RAS manuscripts of his own works were found, i.e. “Күн ойорун хохуйар ырыа” (“Song, praising the Sunrise”), “Күн киирэрин хохуйар ырыа” (“Song, praising the Dusk”), “Сир” (“Earth”) [11, p. 326-327].

In the group of collectors-judges of folk sources we include collectors, who as distinct from the first group, being only judges of the folklore, voluntarily wrote down works. One of them is a native of I Igideysky agricultural community Ivan Nikolayevich Orosin (1868-1927), a cousin of Orosin K. G. On his instructions in 1895 a variant of the Olonkho about Nyurgun – “Тойон Ньургун бухатыр” (“Bogatyr Toyon Nyurgun”) was written down by a native of I Khayasytsky agricultural community of Churapchinsky ulus Popov N. F. This variant was published in the second edition of Samples... 1908. Orosin I. N. was chosen as Knyaz of the native agricultural community [12, p. 47-48]. He was close and active assistant of Pekarsky E. K., was among people, with whom Eduard Karlovich was in correspondence. In SPAB RAS a note-book with a manuscript of the Olonkho “Тойон Ньургун бухатыр” was found [13, p. 95-165, 170-198]. In a letter Ivan Nikolayevich asked Popov N. F. to rewrite the Olonkho to preserve it for future generations. But at first he began to write down the Olonkho text, sheets 95-165 with his hand-writing on them testify that fact, then notes of Nikolay Popov go. It is seen from their correspondence that the first collectors of the Olonkho texts treated their work with a greater responsibility. Moreover, Orosin I. N. gave Pekarsky E. K. texts of Yakut riddles [14, p. 244-261, 251-252]. Ivan Nikolayevich all his life collected old legends, fairy-tales and riddles. As a result of de-kulakization only materials of

the riddles, sent to Pekarsky E. K., were preserved.

The collector-judge of the folklore sources is a native of Zheleysky agricultural community Roman Aleksandrovich Aleksandrov-Alaacha uola (in some sources – Timofeev), who wrote down a text of the Olonkho “Өлбөт Бэргэн” (“Immortal Vityaz”), which was included in the second edition of Samples... 1908. A fixation was performed in 1886 from words of an Olonkhusut Abramov N. T. Then he wrote down a text of the Olonkho “Элик Боотур Ньыгыл Боотур икки” (“Elik Bootur and Nyugy Bootur”), published afterwards in the fourth edition of Samples... 1910. From whose words this text was written is still unknown. But according to Androsov E. D. this Olonkho also belonged to the Olonkhusut Abramov N. T. [15, p. 10]. In the fund of Pekarsky E. K. SPAB RAS there are originals, written by Aleksandrov R. A. (Timofeev). In files under the name Records of Yakut Folklore and Material on Yakut Folklore. Fairy Tales in Yakut such works as “Yakut Song” [16, p. 342-344], “Тобус уон биэс саастаах оҕонньор ойобо уон биэс саастаах; бу икки дьон быллар үнкүүлэхэ тураннар ылласпыт ырыалара” (“Song of 95 year old man and his 15-year old wife, singed by them in a round dance”), written down March 23, 1896, are kept [17, p. 331-317]. Also manuscripts of the Olonkho “Мүлүрүйбэт Мүлдү Бөбө” (“Unconquerable Myuldyu Bege”), written down in a form of a prosaic text and obtained by Pekarsky E. K. on June 29, 1895 [18, p. 577-602]; “Олонхо” (a text of the Olonkho “Өлбөт Бэргэн” is implied), written down on March 1886 from words of the Olonkhusut Abramov N. T. [19, p. 1-17]; “Stories”, written down in 1897 [20, p. 309-357], and also one fairy-tale without name, written down on February 11, 1897 [21, p. 46-95], were discovered.

The fourth edition of the academic series Samples... begins with the Olonkho “Баһымны Баатыр Эрбэхтэй Бэргэн икки” (Basymny Baatur and Erbekhtey Bergen), written down in 1896 by an elder of Zhuleysky agricultural community Roman Konstantinovich Bolshakov. He was born in a noble family, a son of a famous rich man Bolshakov K., who in his time had been chosen as Knyaz and Head of Zhuleysky agricultural community [22, p. 108]. The Olonkho “Баһымны Баатыр Эрбэхтэй Бэргэн икки”, written down by him, is kept in the fund of Pekarsky E. K. SPAB RAS [23, p. 82-135].

A native of I Zhekhsogonsky agricultural community Egor Dmitrievich Nikolayev junior (1868-1931), reported on October 26, 1888 an extract from the Olonkho “Өлүү Үөдүлбэ бухатыр” (“Bogatyr Elyuyyu Edyulbe”) should be also referred to the collectors-judges. He is considered one of the first educated people of the ulus, who had an authority with people. He was chosen as Head of Boturussky ulus, he made a great contribution in the sphere of education of Tattinsky ulus in 1913. Being a

teacher in accordance with his specialty, he helped with necessary means of teaching children from poor families; also he actively participated in openings of first schools in Oktyabrsky, Nizhneamginsky, Tattinsky agricultural communities, being an active participant of Yakut Sibiryak expedition. Nikolayev junior collected the folklore works, wrote down several texts of the Olonkho, which were lost within a period of de-kulakization and repressions [24, p. 115]. In the archive SPAB RAS there is the manuscript “Олохо” (an extract from the Olonkho “Лүмү Гүдүлбэ бухатыр”). There is a note: “Written down by a student of Yakut progymnasium. Reported to me by a foreigner Nikolayev E. D. on October 26, 1888” [25, p. 227-230]. Nevertheless the name of the collector is unknown, we imply Nikolayev E. D. junior himself. From the abovementioned it is seen that he actively participated in the collecting activity.

An overview of the second group is ended by a Yakutized Russian bourgeois Vasiliy Vasilevich Shectakov, being an ulus clerk, who wrote down a song-poem “Кириисэлиир Кирилэ” (“Kiriselir Kiriel”) from words of an unknown informant. He graduated from Yakut classical gymnasium, then he worked as the clerk in an ulus authority. He was a teacher under his specialty. In 1912 he was a delegate of Non-Russian Conference in Yakutsk. In the fund of Pekarsky E. K. SPAB RAS there is a manuscript of the song-poem “Kiriselir Kiriel” [26, p. 335-341]. Moreover, materials, collected by other representatives of the Tattinsky intelligence – a member-correspondent of Yakut Sibiryak expedition Sleptsov N. S. and a folklore specialist, ethnographer, artist Sleptsov P. V. – were discovered. Also it is necessary to point out that in the archive there is a file under the name Private Correspondence in Yakut Language from 1893-1900, collected by Pekarsky E. K., and Letters of Orosin N. G. to Pekarsky E. K. in 516 pages [27]. In this file there are not only letters of Orosin N. G. but also of the abovementioned representatives of the Tattinsky intelligence. In these letters the question is about the collection of the folklore works, different marks to notes are made. This testifies that they not only kept a close friendly connection with Eduard Karlovich, but also that kind of correspondence served as a basis for creation and writing down of the Yakut works.

In such a way, as a result of the joint collecting activity of the Tattinsky intelligence under the leadership of Pekarsky E. K., six full texts, four shortened variants of the Olonkho and one song-poem were published. In accordance with our data, twenty five texts of the Olonkho, songs and two note-books with the riddles, collected by the representatives of the Tattinsky intelligence, are kept in Saint-Petersburg Archive Branch of RAS. But it should be mentioned that this numbers are not final, as in the future other materials can be found. Among twenty five works eleven were included in Samples of the Yakut National

Literature, others have not been published yet. In such a way, the credit of immortalization and preservation of the oral folk creative works in the end of the XIX century is due to the Tattinsky intelligence. They made their contribution in study of the language and culture of the native people.

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Katanov N. F.: about Turkic Roots of Uryankhai and Kazakh Languages

Various indices of a phonetic alternation, comparisons and a dictionary of Uryankhai (Tuvan) language with Kazakh language, which are described by Professor Katanov N. F. in his scientific works, are presented.

Key words: Uryankhai, Kazakh, Turkic, study of Turkic languages, comparative contrasting.

Turkic-speaking peoples (Kazakhs, Uyghurs) of Eastern Tarbagatay were in a center of field researches of Katanov N. F. during an expedition. An important result of the expedition is a collection of a huge block of folklore materials: historical stories about wars in Eastern Turkistan, songs, sung during main Muslim fests, erotic songs, dream interpretations, puzzles and proverbs, and also a study of “Kazakh-Kirgiz language”. He chose a consolidation of Bakhty Semirechey Region [1, p. 5] as a place of his stay between his travels. Having finished his travel on May 1892 in Zharkent of Semirechey Region, he wrote: “A travel along regions of Tarbagatay and Ili... I finished successfully, collected rich ethnographic and linguistic materials and a huge collection of bills and coins. I researched life and language of Kazakh-Kirgiz (Kazakhs – S. R.) and Chinese Tatars” [1, p. 6].

In accordance with the scientist, among all monuments of folk work of Turkic tribes, living on the North and the East from the Syr-Darya, epic works are mainly famous. In Middle Asia the Kirgiz-Kazakhs are distinguished by major fruitfulness in terms of epos [3, p. 16].

Katanov’s scientific work on studying of history of Kazakhstan, his work in the Society for Archeology, History and Ethnography, the beginning of which referred to the end of 1884 (December 8, 1884 he was chosen as a member of this Society under Kazan University) are not less important. In three months after his move to Kazan (January 12, 1894) Katanov N. F. was chosen as a secretary, and on March 18, 1898 – as a Chairman of the Society for Archeology, History and Ethnography and within 16 years (1898-1914) he had directed activities of the Society. This very period was extremely fruitful both for the Society and Katanov himself [2, p. 42].

Worries of Katanov about local history and his close participation in fates of provincial oriental studies are directly connected with his deep and active interest in actions of “outlanders”. Being a native of an “alien” sphere, familiar with disastrous state of population of national borderlands of tsarist Russia, he tirelessly

made arrangements to give in print essays about “outlanders”, written by representatives of a so-called provincial orientalism. On September 1906 he had a long conversation with Kirgiz-Kazakhs of Orenburg Region to determine peculiarities of their dialects in comparison with dialect of Semirechey and Junggar Kirgiz-Kazakhs, familiar to him. That gave him an opportunity to determine clearly Kirgiz-Kazakh pronunciation at publishing a text of a legend about a giant Alif, written down by Abubakir Akhmedzhanovich Davaev in Tastyubinsky volost of Aulieatinsky district of Syr-Darya region from the words of mullah Tauk Nurabaev. During publication an employee of *Izvestiya Obschestva Arkheologii, Istorii i Etnographii* Anderson V. N. provided the legend with extremely valuable notes concerning an origin and variants of this interesting legend [3, p. 431-453].

A work of Kaliev S. with a preface, scientific interpretation, Russian translation and notes of Katanov N. F. and with additions of Voskresensky A. A. attracts some interest. This work was written by a Kazakh of the Inner Horde or the Bukey Horde, Sadyr Kaliev. The work is in a poetical form, includes 36 quatrains. The author narrates about Russian conquests for a period of time of reign of Mikhail Fedorovich up to the last year of the XIX century and about the most important deeds of Russian Tsars [4, p. 1-29].

In 1904 Katanov N. F. facilitated a publication of a book of Bekimov M. N. in *Izvestii* of the Society [5, p. 220-232].

In this book there are 6 fairy tales, written down from words of the Kazakh-Kirgiz of Ural region: Fairy-tale of a Bogatyr, who Conquers Evil Spirits, Fairy-tale about Richman Aldar-kosa and his Catchy Worker, Fairy-tale about Karasha Sulu and Karazhan Batyr, Fairy-tale about Aldar Kosa and his Tricks, Fairy-tale about Golden-haired Totambay and his Sister – Witch, Fairy-tale about one Murza, who Bought a Dream and Became a Tsar. In a preface to this book Katanov N. F. points out that while reading and listening to fairy-tales of different tribes sometimes it is necessary to wonder – how similar the fairy-tale of different locations can be; but due to lack of materials, it is hard to decide, whether these fairy-tales comprise a subject of a borrowing or they are similar purely accidentally. Further the scientist compares the fairy-tale About Aldar Kosa and his Tricks with fairy-tales

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with the same character of many Muslims: Kazakh-Kirgizs, Kirgizs and Sart of Middle Asia, even of Bessarab Gagauz.

A material of a full member of the Society Alektorov A. E. Song of Alash Baytoka on Death of Jangir Khan [6, p. 673-691] attracts some interest. In this lamentation Baytor, a representative of Alash family, describes activities of Jangir Khan, a son of Bokey Khan and the last Khan of the Inner (Bukey) Horde, who had died on August 11, 1845. In 1824 Jangir married a daughter of Orenburg mufti Fatima. She spoke German and French. In his short reign period of the Bukey Horde Jangir Khan built a big wooden house. His example was followed by rich men and sultans. This group of houses was called Khan stavka, which was restored and now exists. Jangir set up a garden, built a mosque and aul primary Maktabs. During Jangir rule a special management apparatus was created, at that in the wake of rising of a bureaucratic apparatus, a scope of taxation of population increased. Besides abovementioned works and materials Katanov N. F. facilitated a promotion of articles and materials of Divaev A. A. (about Arabian, Persian and Turkic inscriptions from a mosque of Akhmed Yasavi, and also on ethnography and folklore of the Kazakhs), Nesterov A. D. and Sarkin N. I. (on Kazakh folklore), Alekterov A. I. (on Kazakh language and ethnography, including the abovementioned Song of Alash Baytoka on Death of Jangir Khan), Kirgiz Proverbs, written down in Kopalsky district of Semirechey region.

Researching procedures and principles were formed by Katanov N. F. in 1895 in a review of a work of Divaev A. A. Ethnographic Materials: Fairy-tales, Fables, Proverbs, Beliefs and Bylinas of Indigenous Population of Syr-Darya region. Pointing out an original material about folk sayings of peoples of Middle Asia, Katanov N. F. wrote: "The author will be helpful to ethnography, if he applies his deep knowledge of the language and the life of the Turkic tribes of Middle Asia to compose a collection of beliefs". Further he, distinguishing perspective directions of an ethnographic study of the peoples of the region, wrote: "It would be preferably to know: 1. How are weddings, funerals, Christening of poor and rich performed; 2. How do widows celebrate weddings, etc." [1, p. 8].

An interest of Katanov N.F. to the study to the history of Kazakhstan appeared in the period of his teaching profession in Kazan University, which began in 1894. Up to this time a value of Kazan University as an Oriental center decreased significantly. A direct reason of it was an opening in 1855 in Petersburg University of the Faculty of Oriental Languages and a transfer of main scientific force of Kazan Orient Studies to Petersburg.

On January 24 there was a lecture of Katanov N. F. on "Ethnographic review of Turkish-Tatar tribes. An inaugural lecture in the course of survey of Turkish-Tatar tribes". This lecture is extremely indicative concerning its content as for clarification of views of Katanov to

issues of teaching of Turkological disciplines, as well as for characteristic of those scientific principles, which were formed by Katanov as a result of learning of huge Turkologists of that time in Petersburg and a long-term stay among Turkic-speaking peoples during the travel.

In the first academic year (1894-1895) the following courses were included within a scope of his educational obligations: 1. Turkish-Tatar language (Grammar of Kazan-Tatar language and reading of simple texts); 2. A review of Turkish-Tatar tribes (ancient and new countries, established by Turks, life of Turkic tribes and legends of Turks by foreigners); 3. History of Turkish-Tatar literature (Osman, Chagatai and general-Turkic literature); 4. Comparative grammar of Turkic parlance and text reading [2, p. 37].

A special interest is attracted to a lecture, given by Professor Katanov N. F. on February 12, 1903 in a lecture theater of Kazan University on "Kirgizs: their past and present" [7, s. 1-28].

In the beginning of his lecture the scientist points out that vast steppe spaces, which extend from the Volga mouth on the West to the Tarbagatay range on the East and from the Syr-Darya and the Amu-Darya on the South to the Irtysh and the Ob on the North, are occupied by a numerous nomadic people, known to us the most from the XVII century, but who was mentioned in the beginning of the XVII century in a book Big Drawing, composed in 1626 by order of Mikhail Fedorovich. In this book Kirgiz people was called "Kazak [Kazakh – S. R.] nomad horde". At the present time Kirgizs compose the population of Semirechey, Semipalatinsk, Akmolinsk, Turgaysk regions, Orenburg government, Ural region, Astrakhan government and Syr-Darya region. Moreover, Kirgizs occupy Tarbagatay region of the North-West China. Along the whole vast areas of more than 40 000 sq. miles, which are occupied by the Kirgizs, the climate is wonderful by the reason that it represents extreme oppositions: in summer there is a heat up to 500 C in the sun and 340 C in the shade, in winter there is a cold up to 450 C. The scientist describes a climate condition and its influence on life and the nomads in details. Fauna, a process of joining of Kazakhstan to Russia, traditions and customs of local population, peculiarities of an attitude of Russia to Kazakhstan during a period of reign of Ekaterina II, Aleksandr I and Aleksandr III, a management system in Kazakh tribal society, diplomatic relations of Kazakhstan with Russia, China, Bukhara and Khiva, a judicial system, family-marital relations of Kirgiz-Kazakh, a place and a role of a man and a woman in the society, national games, chronology, religious relations, main types of economy, etc. are described in details in the lecture. Professor Katanov N. F. specifically underlines that "The Kirgizs [Kazakhs – S. R.] have a strong physical strength... The Kirgizs, in accordance with observations of Russian and West European travelers, who visited them frequently

since Ekaterina II up to our days [i.e. 1903 – S. R.], - in general are smart, cunning and curious, and their curiosity is one of the main peculiarities of their character. On meeting a stranger the Kirgiz (Kazakh) notices everything: horses, horsemen and their arms, and details of decorations on horses and dressing-gowns of their owners... the Kirgiz is rich in relations of natural gifts – an acquisitive mind, sharp eye-sight and an excellent memory, as well as in relations to subtleties of the language. The language of the Kirgiz (Kazakhs) constitutes one of parlances of Turkic language, to which parlances of Turks, Crimean Tatars and many other tribes of Siberia and China refer, but differs from them by not only sounds and forms but also by richness of words and turns of speech” [7, p. 1, 4, 5].

Conversance with a language of any nationalities gives us an opportunity not only to learn its lexical content and structure, but also to present peculiarities of development of these nations. In this relation it is worth mentioning a scientific heritage of Professor Katanov N. F., who in his works enlightened history, ethnography and folklore of the Kazakh people. The field expeditions, performed from February to November 1892, are interesting for investigation of the history of Kazakhstan.

A central essay, the main scientific work of Katanov N. F. is Experience of Research of Uryankhai Language with Indications of its Kinship Relations to Other Languages of Turkic Root. It was initially published in Uchenye Zapiski of Kazan University. Then it was presented as a thesis for a magister’s degree in Turkish-Tatar Philology in Petersburg University (1903) and published in Kazan in 1903 (in 2 volumes). Then in 1906 he was given a Doctor’s degree of Comparative Study of Language for the same work by the Historical-Philological Faculty of Kazan Imperial University [8, p. 91].

The scientist himself considered a description of Uryankhai (Tuvan) language and a demonstration of its belonging to Turkic languages as the main goal of his work, because earlier many scientists claimed that Uryankhais (i.e. Tuvinians) in accordance of their origin are the nation of not Turkic, but Finno-Ugric origin (Adelung, Vamberi, Georgi, Miller, Castron, Pallas, Radlov, etc.). In accordance with Professor Katanov N. F. Uryankhai phonetics and morphology are absolutely Turkic. The author in appendices in 14 comparative tables compares sounds and forms of Uryankhai language with sounds and forms of other Turkic and Turkish-Tatar parlances: 42 modern and 5 ancient. In this work there is not only a grammar outline, but also a text with translations and a dictionary. There are different indices of phonetic alternations of comparison of phonetics and lexis of Uryankhai (Tuvan) language with Kazakh language. The relative comparison can be performed due to the author’s table, where under No. 10 the Kazakh-Kirgiz (i.e. Kazakh) parlance is denoted.

The following words, having similarities, can be given as an example: ака (elder brother), ай (moon), аймак (region), аяк (cup), ақ (white), ақсақ (lame), ал (take), аң (game), арт (back), артқа (back), артық (surplus), арық (aryk), ат (steed), атқыла (shoot), атпа (don’t shoot), аш (hungry, open), қабқ (hill), қабан (wild pig), қазақтар (Kazakhs), қайна (boil), қақпақ (lid), қал (stay), қар (snow), қара (look), қап-қара (deep black), қапта (in a sack), қашты (ran away), қой (sheep), қол (hand), құда (matchmaker), құлын (stallion), кум (sand), кул (slave), кулак (ear), қысқа (short), келін (bride), кок (blue), кол (lak), кул (ash, smile), ол (he), олар (they), оң (right), сай (river-bed), сана (read), су (water), табақ (dish), тай (foal), талқан (fried rye flour), таң (morning), тара (break up), той (fest, wedding), тон (fur coat), туман (fog), түн (night), улу (dragon), үн (voice), улус (nation), шай (tea), шыда (endure), шын (true). In general we counted more than 140 words, having similarities with words of Kazakh language [9, p. 79-305].

Mainly, this work of Katanov N. F. contains well systematized materials for the comparative grammar of Turkic languages. In the national study of Turkic languages since 30-40ss other languages have been involved in examination and investigation: Kazakh, Uzbek, Turkmen, Bashkir, Kumyks, Karakalpak, Khakas and others. N. F. Katanov made an invaluable contribution in the study of Turkic languages and dialects, in the laying of the foundation of the national study of Turkic languages.

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Allusive Nature of the Story by L. S. Petrushevskaya «Outburst»

A concealed allusion of the poem by A.A. Akhmatova Song of the Last Meeting in the story by L. S. Petrushevskaya Outburst is revealed and analyzed in this Article. The allusive nature of the text is opened on the level of plot-formation, composition and characterization.

Key words: modern Russian literature, allusion, concealed allusion, Petrushevskaya L. S., plot, composition, characterization.

An allusion represents a unique phenomenon of a fiction, a research of which points out on the existence in a work of a deep sense bearing level as a result of functioning of hidden or obvious references of an author to other texts. Modern scientists try to define nature of different types of allusions, addressing to figures of classics. So, Dubenik E. A. sets a varied description of devices of creation of associativity in a novel of Dostoevsky F. M. Demons as a goal and reveals a mock character of formation of some allusions [1]. Astashchenko E. V. comprehends an individual talent of Belyy through a prism of the allusions and comes to a conclusion about a motive space of a trilogy Moscow due to a focus on a literature hint on a creation of an “image of images” and an “image of ideas”, that corresponds to a writing super-task – to understand existential Chaos [2, p. 12]. A multiassociativity of an artistic thinking of Post-Modernists is their specific character. A focus of several researches of 2000s on an allusive poetics of the newer literature shines a light on organization of inner form of a work, often being of experimental, alternative nature. Dissertations of Arzhanova O. K. [3], Mikhina E. V. [4], Churlyayeva T. N. [5] can be referred to such works.

Associative-metaphoric fields, created and naturally inserted by prose writers in a tissue of a work of fiction, deconstruct eternal problems. A new philosophic level of their reading is directly connected with the allusion of classic works. A prose of Petrushevskaya contains elements, gone up to masterpieces, revealing at that its own polyphonic nature. Mikhina E. V. notes that the writer is referred to a creative category of recipients, that's why “creatively rethinks well-known texts” [6, p. 17]. Study of a dramaturgy of Petrushevskaya L. S. also cannot do without an analysis of an allusive level of plays. Kablukova N. V., based on materials of a cycle Colombina's Apartment, Grandma Blues reveals in

them a playing method of world organization, giving domestic realias a universal context [7]. In a fundamental work of Prokhorova T. G. [8] a creative work of Petrushevskaya L. S. is considered from the perspective of a discursive practice, while analyzing which a connection of a modern text with famous literature monuments is revealed. The researcher named features of a typological closeness of poetics of Akhmatova A. A. and Petrushevskaya L. S. (stories Violin (2002), Lullaby of Bird's Mother-land (2003), Nagayna (2002), Dear Daughter (2002), Changed Time (2005), Two Souls (2005)) [9, p. 26-27]. Prokhorova T. G. religiously studies forms of manifestation of the Akhamotova's discourse in the stories of Petrushevskaya L. S.

With that, a high frequency of researches of allusions of classic works of the XIX century, represented in modern works in general, and of Petrushevskaya, in particular, actualizes a necessity of analytical reading of references to classics of the XX century.

The story Outburst, included in an author's book of Petrushevskaya L. S. Black Butterfly (2008), is a unique, for a researcher, text, “attracted” in itself the “literature past” [10]. In this work a concealed allusion of a famous poem of Akhmatova A. A. Song of the Last Meeting (1911) is revealed. An identification of the allusion in the text is connected, firstly, with an analogues subject situation; its culmination; secondly, with a type of a lyric character; thirdly, with the author's indication on a “genius work”. A formal identification of the allusion is represented in the text by a device of detalization from “big baked mouth” to “steps”. The first element is connected with the Akhmatova's principle “mimic lips movement”, expressing emotion through articulation, as it is said by Eikhenbaum [11, p. 34]. The scientist considers a transfer “from tight position of lips to their wide opening” [12, p. 35] a sing, which increases an emotional expressiveness of a poetic work of Akhmatova A. A. in the story of Petrushevskaya L. S. This peculiarity of a poetic speech is “materialized”, embodied in a strong mental tension, represented by a lexeme “outburst”. The second detail is included in a group of “little things”, which disclose of hidden psychology of a character. The author's selection of recognized details points out on the presence of an “alien

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word” in the text of the story.

The main levels of influence of Song of the Last Meeting on the story Outburst are:

- 1) plot-formation, presented through key points of events;
- 2) composition, in which the center is an image of hopelessly woman as an object of the author’s representation,
- 3) characterization, given through detalization.

Let’s consider the abovementioned aspects of cooperation of two texts.

Plot-formation

A story line of the poem of Akhmatova A. A. as a short story about commotion of the spirits of a woman, lack of special colors, is creatively learnt by Petrushevskaya L. S.

Events of the story refer to a narrative dotted line of a story of parting of a lyric character of Akhmatova with a loved man, inherited its main features:

- 1) presence of a conflict – hopeless love,
- 2) node – cheating;
- 3) perception of being as an existence, having a tragic meaning.

The allusion of Akhmatova’s poem actualizes a worldly edge of a concept “love”. Typical semantic dominants of the plot of the story coincide with an incident on the poem. The event in Outburst is described by the author by symbolic details in the spirit of acmeist principles: “She (Darya, the main character – O. S.) spontaneously, without call (hereafter – *italic is our* – O. S.), ran to inform him that they were free for further twenty four days... Very quickly, catching a car, Dasha appeared near a familiar house...But, rifled in a bag behind a door, she discovered that she did not have a key!... But now she was standing under a window of an inaccessible flat, Aleshenka (a loved man of the character – O. S.) did not come yet... Quickly and promptly she climbed a balcony of the second floor... and appeared near the entrance to the flat... She came in... There was a neat half-opened suitcase, a lady’s bag was laying on a bedside-table, but a bed!” [13, p. 23-24]. Petrushevskaya L. S. does not change a subject situation of the poem in its culmination reading. The writer makes some plot additions and performs a replacement of background, psychologically significant realias, playing a hidden plot-forming role. The modern character does not see in cheating reasons, preventing her from marriage with her beloved. But a life exhaustiveness of the Akhmatova’s plot is realized and accented by Petrushevskaya L. S. in the end of the story, reminding an epilogue: “She understood that Aleshenka thoughtfully closed the door... being afraid that she would come, Darya! Yes: and where did the key disappear, who took it off from a bunch? When? But she never asked her husband about that, never in her life” [26]. The story line of the Akhmatova’s poem as a pre-determined by the known sources, “overgrows” with other details and there is a new plot, new artistic story.

A motive of inevitable betrayal, humiliating a person in

all times and striking a woman by its indifference, brings details of the modern poem with the Akhmatova’s one closer.

Only *bedroom* candles burning,
With a *yellow, indifferent*, flame.

A poetic utterance coincides with an explicit description of a sexual practice in the story: “prints of a ... battle”, “as if someone blows his nose in the towel” and “plainly smiling Aleshenka, sitting in the corner”. The motive of a male indifference acquires features of carnival, and an intense naturalistic narration, as in the beginning of the XX century, actualizes a hidden micro-motive of a male narcissics, which is present in the poem Song of the Last Meeting.

The Akhmatova’s lines about whisper of trees are undergone deconstruction and lost their tragic tone: Darya with Aleshenka went in a country house. In an artistic interpretation of Petrushevskaya L. S. being of a woman defines love as an unconditioned reflex.

A hint of the presence in the story of the Akhmatova’s story line acquires a symbolic meaning and reveals the author’s point of view on a worldly problem. A female devotion – is a centuries-long instinct, having no relations to a spiritual element of the lyric character of the beginning of the XX century. The revealing of an intention of the modern author, her point of view and idea is possible due to the allusion of the poet’s creative work.

In such a way, an event basis of the story somehow is pre-determined by the Akhmatova’s text, which is reduced. The betrayal situation from the part of a dear man is for Outburst an invariant structure, causing a micro-plot of the story, consisting in the motives of an accidental meeting and the cheating. The Akhmatova’s story motive of parting or the last meeting is transformed in a motive of forgiveness.

Compositional Level

An image of the woman, who is longing for mutual love, is a dominating object of understanding in the story, connecting lyric and dramatic episodes. A perspective of description of life of the main character defines an architectonics of the author’s narration. A lyrico-epic beginning of the story (micro-part 1) implements a problematic aspect of the topic: “A proud, proud, exhausted fighter for her love, she did a lot of things!... She managed to overcome a lot...” (21). An episode of the spontaneous visit of Darya in the flat of the loved man is presented in a tense dramatic key and informs that “Aleshenka ... has a woman” (micro-part 2). A lyric component is connected with a figure of the Akhmatova’s main character: “run away” (micro-part 3). The abovementioned micro-part of Outburst creates an integral image of the character, organizing the narration around her. A logic of building of each of three micro-parts is different. A compositional scheme [14] of the story is the following: A+(B+A2)+(B+A3), where group A – the author’s comment, group B – the

character's actions. Elements of the author's comment are built in accordance with the logic, referring us to the Silver Age with its ideals, i.e. in accordance with a specific principle (search – outburst - search), at the same time elements B reveal a perspective (visit – running away - trip). The allusion discloses a coded author's position: loneliness of a woman is eternal.

An antithesis as a compositional principle of the story is revealed when comparing the micro-parts of the story with the story line of the poem. A given by the author hierarchy of revealed fragments, among which allusive is noted, composes the basis of the composition of the narration of Outburst.

“An artistic chromatism” [15, p. 51], understood as a repetition in different places of the text of the same lexical units, is revealed by Nikina E. F. and Shuvalov S. V. in 1926 when studying of poetry. But a compositional function of this device – creation of a unity of a common impression – is traced in prosaic texts, in particular, the story of Petrushevskaya L. S. The principle of repetition of realias “house”, “home”, “dacha”, “bedroom” organizes the story compositions, sequence of the plot micro-parts, giving dynamics to the text. The repetition of a pronoun “I” performs in the poem the same function.

Another, motive principle of the text building, which in the context of the allusion discloses a problem-topic universal character of Outburst, is revealed. A maximum tense plot moment – departure of the character from home, giving implicit meaning – a motive of loneliness – is a compositional accent in the narration of the story.

A character of placement of a text material of Petrushevskaya L. S. is defined by genre specifics of the given text, its novella character. Principles of an internal structure of the text on the level of its sense-bearing division are subject to the author's conception of a woman, disclosed through connection of lyric, dramatic and ironic, in the center of which is notion “unpredictability”.

The composition of Outburst is conditioned by a micro-image of a modern woman, a key element of which is her emotional-mental being that is reflected in semantics of the story title. A priority of the narrative of the lyric character deepens her experience of her “last meeting” with the dear man. Appearing in conditions of modern realias, a spiritual homelessness of the character is reflected in the word “outburst”, which is a keynote of the author's narration.

Characterization of the Main Character

Petrushevskaya L. S. says about an adventure of a lonely lady, “looks like a lame duck” (24), who, as it is noted above, goes up to the type of the lyric character of Akhmatova A. A., representing a woman, loving hopelessly, who does not find mutual understanding of her beloved and suffers from it. A previous literature type Petrushevskaya comprehends in a new way, performing re-accenting of some characteristics.

A dynamic method of giving by Petrushevskaya L. S. of several details of the story repeats the poetics of Song of the Last Meeting. Psychological details, i.e. significant in accordance with Akhmatova, are:

- bedroom/home;
- glove/hand;
- steps in a porch.

A line “The bed looks like a half-cold battle field” indirectly is associated with a whole strophe of Song:

I see that dark house again.
Only bedroom candles burning,
With a yellow, indifferent, flame.

Influence of the Akhmatova's word on the modern work is revealed in an actualization of a confession motive of leaving the house as a parting with a loved man forever. At the end of the story a motive of orphanancy disappears: a man, who cheated on a woman, becomes her husband.

The modern contradictory female image combines within itself resolution and worldly mind, and the Akhmatova's devotion to a man, despite on a plot “zigzag”: “So, some woman was with Aleshenka... Forgetting herself with anger, full of disgust and suffer, our Darya, went to the kitchen and went off into hysterics...” (25). But, having her feet on the ground, self-assured, notwithstanding any circumstances, pragmatic woman satisfies an emotional need. The proof is an ironic remark of the author: “She for some purpose addresses for consolation to her loved husband, who has just cheated on her with other woman!” (25).

The author accents twice a nervous movement of hands of the main character and more than twice describes her spiritual condition: “Then she turned back, groaned and ran away. She pulled foot, not seeing steps through tears, she jumped on the road almost under a bus, a break chatter was heard, but she ran as quickly as possible, trying to be saved, ran among houses on a highway....” (25). This fragment as if revives the picture from the Akhmatova's masterpiece:

My heart was chilled and numb,
But my feet were light.
I fumbled the glove for my left hand
Onto my right.
It seemed there were many steps,
I knew – there were only three.

Let's note that the Akhmatova's detail “fumbled the glove for my left hand onto my right” is transformed into an image of the movement of the hand: “Dasha held to him (Alesha – O. S.) her hands” (25), “began to catch a car, shaking her hand and jumping” (25).

Surely, in Song the question is about a dramatic parting of close people, developing into tragic element:

Autumn, whispering in the maples,

Kept urging: 'Die with me!
I'm cheated by joylessness,
Changed by a destiny untrue.'
I answered: 'My dear, my dear!
I too: I'll die with you.'

The author of the story strives to "take off" a literature tragic element of intimate relations by an ironic comment: But, as it turned out, Dasha gave at this moment her the most genius work. Never before, never later her restless soul did not produce a text of such strength" (25). A comparison of the character's hysterics with the "work" has a non-metaphoric nature. An interweaving of known circumstances with new ones, in particular: the presence of the leased flat, the country house, "yaping", but not talking Aleshenka and his wife, inserts in the text a hidden opposition of the image of the main character of Akhmatova A. A. to the modern character, not capable to touch upon to the depth of existence, the mystery of being. The author laughs bitterly at the current situation: "An additional prize in this tragedy was not only the fact that he (Aleshenka – O. S.) turned off his phone, but also that the door of the flat was bolted..." (26). Darya, appeared in ambiguous circumstances, as the Akhmatova's woman, as distinct from her, did not understand her condition of dissonance with the world, but turned out to be able to fight for her feeling. Accepting with a conflict, solving it with the melodramatic hysterics, the character found herself in an area of cosmic, reflecting the Akhmatova's character, establishing a human spirit and moral values, consciously dooming herself to sufferings in the name of love. The allusive poetic image reminds about an archetype of a woman, a doom of whom is to protect a home sphere and to be soft. The striving of the poet to oppose her character to commonness is replaced by Petrushevskaya L. S. by the quite opposite: Darya – is a typical woman of 1990-2000ss, longing to correspond to a public stereotype – "every decent woman has to have a husband". Understanding by the Akhmatova's woman of dissonances of the external world, internal twists and turns, expressly presented in details – "heart was chilled and numb", "dark house" – is unknown to Darya. The modern woman sees a "bolt" of an inside lock and "laughed, crying", but her image, built in accordance with a principle of antinomicity, establishes the opposite to the epoch of the Silver Age – a moment of re-assessment of values with its denial of past ideals. In accordance with a moral element the decision of Darya – her consent to the marriage with a "cheater" – is asymmetrical to actions of the lyric character of Akhmatova A. A. The principle of the concealed comparison of the characters is leading in the artistic characterization of the story.

The Akhmatova's sketch of internal and external image of a loving woman gives the modern character of

Petrushevskaya L. S. a readiness to accept her fate that still does not exclude her melodramatic gesture as an immoral opposition to external obstacles.

In the story *Outburst* the concealed allusion demonstrates the concept "love". Akhmatova's heart feeling is presented through a dramatic collision as an existential emotion. Petrushevskaya L. S. underlines a tendency of changing of ideological parameters of love, when after "song of the last meeting" an emotional gesture – "outburst", robbing a meaning of a traditional female sacrifice in the name of love - comes.

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LEARNING AS A CAPACIOUS PHENOMENON – THE EXAMPLE SCHOOL MEAL

Arguing from a pedagogical perspective, the article combines the phenomena of learning and (social) environments. This clearly demonstrates that even beyond pedagogical arrangements (lessons, projects etc.) pedagogical potential is present and thus various learning causes and learning contents are available. This inherent learning potential (pedagogical valencies) is to be compared with a typing of learning forms and the example of school meals will give an exemplary display of that.

Key words: Learning, learning space, pedagogical valencies, eating at school, types of learning informal learning.

1. Introduction

Educational actions depend on hope. It is about the hope that contents which were chosen, didactically edited and taught by the educator, will eventually be learned by the educandus/learner. This assumption has been the fundament of educational history of ideas since its earliest efforts. It still guides many teachers, lecturers, trainers, educators as well as managers and personnel officers who continue to hope that specific further education may improve the productivity of their employees. This becomes most visible at schools where curricula are usually being equaled with learning plans. Contents of the curricula are to be learned by the pupils within a certain period of time, mostly one school year. This assumption is also the basis on which examinations are build on and justified with.

The crux is, however, that it is not implicitly what has been learned but what has been taught which gets tested in the end, much to the misery of the students. This does not only include cognitive contents but also the so-called social learning which is subject to that teaching-learning-short circuit. It is expected that rules of social behavior are being adopted through instruction and practice. Teachers seem to understand that this assumption is neither fully consistent.

Another belief of learning and teaching refers to the environment of learning, namely the learning spheres. Organized learning needs the protection of the environment as well as their own learning spaces. It is

advisable to speak of learning spaces as a continuum. In this respect, one can picture two historical examples as particular extremes: There is, on the one hand, Rousseau's learning space which is utterly controlled and sealed off, a total surrounding. On the other hand, there is the so-called community education with its main objective to shift learning into everyday life and to not differentiate between realms of learning and experience.

Different perceptions of learning stand in between those two extremes. Both premises lead from causalities which have been, pretty much, validated and which form the basis of many curricula, series of seminars etc.

1. Good teaching leads to high (maximal) learning achievements

2. Educationally designed rooms allow good teaching and thus support successful learning.

Due to their totality, both assumptions cannot be kept up. They have to face new findings of recent teaching- and learning research that is also essentially influenced by the knowledge of neuroscience and has, therefore, newly stimulated the reflection on learning.

In the following, I am going to sketch the notion 'learning' as well as the possibilities and boundaries of neuroscientific findings. Subsequently, I am going to discuss the question which influence environments have on learning. By doing so, I won't restrict the discussion to physical rooms such as the classroom or the seminar room but I will use the term for social rooms in general.

The example of school lunch/meals will point out that certain arrangements may enable learning experiences. Such arrangements suffice without a prior didactical preparation but still have the potential to be designed beneficially if recognized by educators.

I call those learning possibilities which are inherent

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in the situation or the environment pedagogical valencies. It is supposed to become clear that these pedagogical valencies cannot simply be listed in the conclusion or even be invented. They rather need to be recognized and increased by educational fantasy.

The final part will practically train the issues sketched out by taking a look at other social environments in order to detect their pedagogical valencies.

By doing so, it soon becomes clear that this concept can neither be restricted to one type of school nor to one learning space. It is rather permanently present as a learning possibility. Pedagogical valencies are, at best, the opportunities to occupy lifelong learning.

2. Learning and learning theories

I deliberately use the general term 'learning' and thus include other, strongly normatively coined terms such as schooling and education. There are countless definitions of 'learning'; however, there are two aspects which form the fundament of educational as well as psychological efforts in defining the term: Learning is the result of experience and leads to steady changes in behavior. I do endorse the following definition:

"Learning includes all actions of an organism, especially those within the central nervous system (brain) which cannot be observed directly. These actions are the result of experience (but not of maturation, imprinting, drug use or the like) and lead to a relatively permanent change or extension of the behavioral repertoire" Krüger & Helsper (2002, 97).

The psychological training of educators always includes learning theories. Mostly in a chronological order, the approaches of behaviorism, cognitivism as well as humanistic approaches are being discussed. Two very important impulses were recently added: learning as the result of individual construction as well as neuroscientific findings. Neuroscience and cognitivism strongly influence each other. The neurosciences indicate that it is possible to watch people while they are thinking. It is known by now which brain areas are in charge of which basal functions. Yet we also know that the outside-, this means the environmental influence on the brain is much less than assumed. Rather does the brain interact with itself more than with its environment. We call this self-organized systems (autopoies).

This finding poses a threat to classical learning theories since they assume that learning is mainly triggered by external impulses (teaching). Constructivism incorporates this finding and shapes, on the basis of biological assumption (Varela/Maturana), a theory which assumes that the human being as a matter of principle has no direct access to reality. Thus, reality is rather the construct of our brain. Our understanding of reality is, therefore, the performance of our brain and no image of some reality.

In education, especially in adult education where the belief was particularly absorbed, this radical assumption has been qualified by its representatives themselves. The consequence of the radical assumption would be that institutional learning in general needed to be called into question.

The question is to which extent neuroscientific findings may explain learning phenomena. One big issue is that neuroscientists utterly reduce learning to its physical substrate. By doing so, the question of its significance is completely dismissed. Rather is the process of learning described as a material process. It is, however, precisely the meaningfulness which makes up human life. Thus, what neuroscience investigates does not match the educational interest of studying the human being.

Up to today, learning psychology has generated countless, in part highly contradictory findings. To the present, there has been no generally accepted major learning theory. Thus, I am not going to analyze each learning theory even though they are important and momentous.

The following distinction does not present a learning theory. Still, it helps to classify learning phenomena with regard to learning opportunities in social environments. If we wish to recognize and understand the world, we will need to make clear conceptual distinctions. Only then observations are possible. Such conceptual distinctions never reflect reality as such and also do not reconstruct a reality. They are rather constructions. The question whether the chosen distinctions may be useful for an understanding of the world arises from the circumstance if communication has been enabled and if this communication was triggered, accelerated as well as structured by this distinction.

I suggest the distinction into three types of learning:

1. Intentional Learning
2. Functional Learning
3. Extensional Learning

Intentional learning describes learning which is supposed to usually happen in organized and institutionalized facilities.

Intensional Learning can be characterized with:

- It takes place on purpose and therefore consciously
- It is based on the anthropologic basic assumption that people have innate abilities which are alterable, extendable and discriminable; abilities which can be saved as well as retrieved
- The learner anticipates the outcome and directs his or her efforts towards the learning subject matter
- Time for learning is spent and organized deliberately
- Intentional Learning has a double limitation by individual biological options: 1. the individual is already capable of learning, 2. certain topics may exceed the

cognitive limitations

There are in part different terms for functional learning: Common ones are: casual learning, implicit learning. Characteristics:

- Learning effects as byproducts of other activities
- Even though the actual activity was planned, the learning-side effects were not
- They are not controlled (neither by the learner him-or herself nor by a third person)
- Presentiveness is assumed (the action must not be highly abstract)
- Certain homogeneity of experiences is assumed, i.e. absent irritating alternatives or by repetitions
- Functional learning relieves from planning, means and organization and saves resources
- Disadvantage: it takes time (repetitions ...)

Extensional learning derives from the Latin term "extensio" for extension, expansion.

The following aspects are typical of extensional learning:

- Extensional education expands the dimensions of time and space
- Learning takes place indirectly
- Extensional learning happens in a functional manner, however, it has been intended (planned and arranged) by a third person (intentional)
 - simple example: stay abroad as an Au Pair
- Extensional learning describes learning which is always initiated by a third person, namely as functional learning.
 - Aim: to create situations that allow functional learning. Advantage: There is no learning resistance to be expected
 - Disadvantage: From the viewpoint of the person in charge (e.g. teacher), extensional learning can never be guaranteed.

3. Spaces and their educational valencies

As implied above, learning spaces shall be understood in the widest sense. Thus, it is useful to speak of fields of experience which are certainly always located in some way rather than to speak of physical spaces.

Fields of experience describe social learning spheres in which a person takes action in any form. The spectrum of such fields of experience ranges from the classroom to the way to school (by oneself, with schoolmates, by bus...).

Fields of experience which are not directly related to lessons, seminars, further education are, seen from an educational perspective, "released" which means that they are not attached with educational value.

To remain with the example of the way to school: from a pedagogical viewpoint, the way to school is simply the overcoming of the distance from one's home to school. Frequently, this field of experience gets attributed negatively: it is said to be not pedagogically controllable

as well as not possible to be surveilled. On the way to school things might happen which are detrimental to schooling (e.g. violence).

Pedagogical valency implies that there are experience- and action impulses included in certain situations which offer learning stimuli. These impulses may be immanent in the event if it is arranged in a certain way, however, they can also be set by another person. Within these fields of experience, all learning types outlined above may appear. If the field of experience is arranged by a third person, the type of learning will mainly be extensional. Normally, the learner is not aware of the learning process. However, it can also be arranged in a way that intensional learning is initiated. The same holds true for functional learning. In the fields of experience such as the school lunch/meals, functional learning is fostered through repetition and homogeneity. The major advantage of such fields of experience thus is, all types of learning are getting addressed.

The higher the amount of pedagogical valencies, the bigger is the chance that learning takes place.

Pedagogical valencies include elementary

- physical
- acoustic
- visual
- spacial
- temporal
- communicative as well as
- social

experiences and perceptions.

Examples of such pedagogical valencies are:

- the physical and mental well-being
- to not feel pressed
- the perception of an aesthetic quality of the environment
 - to experience a low noise level
 - to move in sufficiently big rooms
 - the feeling of not being rushed (to have enough time)
 - the repetitive experience of a regular procedure in terms of a ritual
 - to get inspired by varying tasks/actions
 - to listen and to be able to express oneself (Böhm 2010)

As it already came across quite clearly, pedagogical valencies cannot completely be listed. One needs to detect them and they need to be fostered if one wants to make use of them. In this respect, pedagogical fantasy is required. Furthermore, pedagogical valencies are shapeable and convertible; they can, in their characteristic, be assimilated to different environments.

It is also obvious that pedagogical valencies always need to be considered within their cultural context. Certain orientations as well as behavioral dispositions are culture-bound and thus cannot be found in other cultural

environments in the same way.

It is crucial to state that there are various and numerous pedagogical valencies immanent in pedagogical fields of experiences. On the contrary, there are the actual lessons or seminars in which a pedagogical valency is usually aimed at, the cognitive potential of creating incentives.

Considering other typical pedagogical situations such as parties or theatre plays, several pedagogical valencies are addressed in the first place.

4. Example: School meals

Using the example of school meals/lunch, I intend to show by example which pedagogical valencies are immanent in this pedagogical social environment.

It is due to a lack of time that the following remarks will merely focus on the listing of valencies but not on an elaboration or description of observations.

These valencies are the result of a long-standing research in more than 30 schools in 24 countries.

Category: Formation of habits

- Education for a moderate and restrained behavior.
- School meals as an opportunity to concentrate on the consumption of foods.
- Collaborative school meals as an opportunity to practice and abide by explicit and implicit rules.

Category: To acquire directed activities

- Fulfillment of tasks based on the division of labor to prepare the common meals.
- Perceive an operation within the workflow by serving the meals by individual students.
- Complete processing of an event by cleaning up and clearing the table after the consumption of foods.
- Taking over the economic aspect of school meals by operating a school kiosk independently.

Category: Ability to have table talks

- Acquire the ability to develop and direct topics for table talks.
- Observe and Abide by communication rules as a precondition for the learner-centered table talk.
- Teacher-centered table talk- to enlarge communication with teachers beyond lessons and to get the chance to extend one's pedagogical relation with them.

Further pedagogical valencies:

- Safe handling of cutlery as a precondition to enjoy meals.
- To learn to realistically self-assess one's intake of food (self service).
- Dealing with food products as a chance to increase one's knowledge of individual ingredients.
- The opportunity for hygiene education (Böhm 2010).

It becomes clear that certain pedagogical valencies arise from their own situation, others, however, were induced or increased by a certain arrangement (individual

serving of foods to fellow students ...). Considering the latter case, one can definitely speak of extensional learning. The practice of rules and rituals can be called functional learning.

5. Conclusion

Learning is not a function of teaching. At the most, there is a rather loose linkage between them. Nevertheless, learning takes place all the time, even without didactics or professional educators. Learning is the foundation of human life and human development. Thereto, life long learning is the educational postulate. Neuro-scientific findings have newly fueled the reflection on learning processes as well as on the possibilities of teaching.

There is a consensus about the fact that teaching cannot guarantee learning. This ultimately means that even a good didactical training cannot force learning to take place. However, learning can be stimulated. One possibility is to have organized and systematic lessons. Within these lessons learning is organized in closed-off and highly structured environments.

Learning also takes place in social environments which have not been arranged beforehand. Still, this learning can be educationally valuable and wished-for and it may lead to similar or even equal outcomes as planned pedagogical practice.

A good possibility to allow such learning is the design of fields of experience which contain various and diverse pedagogical valencies. Since there is mainly functional and extensional learning taking place in these fields of experience, only a little or even no learning resistance is to be expected. Moreover, even intentional learning processes may be motivated.

This does not mean that planned and organized learning possibilities can be substituted with well arranged environments (this brings us back to Rousseau) but they offer a useful and pedagogically valuable addition to the institutionalized types of learning.

It can be assumed that learning effects are the more intense the more learning forms are addressed. Thus, a maximum of learning outcomes can be expected if institutionalized learning as typically taking place in lessons and seminars gets complemented and intensified by functional and extensional learning.

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Intellectual Property Management: Problems and Prospects (from the experience of the NEFU named after M. K. Ammosov)

The actual problems of supplying the legal protection of the intellectual property and practical introduction of the intellectual activity results in conditions of the Federal University are observed.

Key words: legal protection of intellectual property, intellectual property management, corporate knowledge, commercialization, Federal University, invention, innovation, inventor potential, innovational infrastructure.

Basic conceptual positions of the state strategy with regard to intellectual property assert the property in today's world to be an essential element of innovation, without which a detailed logic of relations in each innovative project and industry cannot be built.

The North-East of the Russian Federation is the region of most important geo-strategic interests of the country, and its natural and economic potential is becoming a major resource for the Russian economy that is innovation driven. Government policy in the North-East of the country is aimed at ensuring national security, the sustainable development of the northern Arctic regions, modernization and technological upgrade of the entire manufacturing sector. Specific national interests of Russia in the Northeast include: the introduction of new industrial, medical, energy and information technology, the development of transport and telecommunication systems, energy-efficiency measures.

One of the main tasks of the North-Eastern Federal University named after M. K. Ammosov (the NEFU) in the development of innovation is the dissemination and implementation of scientific-technical and technological knowledge of applied and fundamental nature providing increased competitiveness of scientific and technical products, including through the commercialization of science, knowledge and technology, promoting the introduction of high technology developments on the domestic and foreign markets.

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Over recent years the Center of Intellectual Property of the NEFU (the Centre of Investigation and Certification) has introduced a system of protection of intellectual property rights of the University, which main components are the legal and regulatory framework in the field of legal protection and management of intellectual property, well-established relationship between the structural units of the university, the establishment of representative contacts at the regional, national and international levels, forming a unique library and information collection of patent documentation and specialized literature, the implementation of a regular program of training and retraining of workers in the field of intellectual property.

Thus, in the period from 2010 to 2012, the NEFU filed 62 requests for legal protection of the results of intellectual property altogether, 38 of them received the decision to grant security documents. The authors-developers in the field of material sciences proved to be the most active ones; for example, they obtained antifriction polymer composites intended for mechanical engineering; in the construction industry, building blocks, facade panels, ways of improving and maintaining the thermal insulation properties of buildings and structures are of particular interest. Inventions in the development of mineral deposits can be used at mining and processing enterprises, for production of drilling equipment, etc. Good results with high commercial potential were produced in biotechnology. For example, methods for producing biological products on the basis of lichen thalli and materials obtained on their basis arouse considerable international interest.

Global experience shows that the relationship between science and industry is one of the ways of effective implementation of economic and social projects. It is noteworthy that a number of collaborative applications is increasing – this confirms the effective cooperation of industrial enterprises with higher education institutions. The specialists of JSC “ALROSA”, OJSC “Anabar Diamonds”, institutes of the Yakut Science Centre of the Siberian Branch of Russian Academy of Science, representatives of individual entrepreneurship and others have acted as co-inventors. The practice of joint patenting

with small innovative enterprises has commenced. There is also activity at the state registration of computer programs and databases that are subject to copyright. Here, undergraduate and graduate students are most common co-inventors.

It is known that for most states recent years were the ones of struggle for the effectiveness of economic development and improvement of competitiveness through the development of key elements of the national infrastructure, in which the main integrating role is given to higher education institutes and science. As a result, the state has become more interested in higher education institutes in terms of their potential for financing, creation and implementation of special projects aimed at strengthening cooperation between science and industry, including providing effective commercialization of knowledge. The NEFU important step in this direction was the implementation of a comprehensive project for the organization of high-technology production with the largest diamond mining company "ALROSA" under the program of government subsidies for cooperation between higher education institutes and organizations. [1] The results of the project are the new ways of opening and development of deposits and fields, ore dressing, mineral surface activation. The work on the project has made it possible to develop new approaches to ensure the legal protection of the results produced by the joint efforts both the production company and the university. The project holds 27 patent research reports for 55 objects of exploration, more than 20 joint protectable results have been obtained. In 2013, we expect our work with a new business partner close corporation "OptoGan" on the project "Intelligent systems of energy efficient agricultural production under cover using LED lighting" to have effect. These projects show how highly the industrial enterprises appreciate the potential of the university and they have undoubtedly become a guarantor for the development of high-tech industry and stimulation of innovation activity.

Within the framework of the tasks on the formation of international contacts in the field of intellectual property the NEFU carried out a series of events in the first half 2013. In February 2013, the Federal University signed a cooperation agreement and proceeded to execute it with one of the leading companies of patent attorneys in the USA. The cooperation will be implemented in the area of intellectual property rights, implementation of joint projects, commercialization of innovation, dissemination of knowledge on international intellectual property protection, development of innovation and technology transfer and commercialization of high-tech inventions and their promotion. This will use best practices of the U.S. universities in these areas. In June 2013, the NEFU was the first in our region to host an international scientific-practical conference of the Federal Service for Intellectual Property (Rospatent, www.rupto.ru) on

"Topical issues of legal protection and use of the results of intellectual activity." It should be noted that being submitted by the NEFU the Conference was included in the "Plan of conferences and seminars in the regions of the Russian Federation in 2013, financed by the federal budget with the participation of employees of the Federal Institute of Industrial Property" (www.fips.ru/wps/wcm/connect/content_ru/ru/regions/plan_2013), which indicates a high assessment of inventive potential of the university and the region as a whole by Rospatent. The papers of leading experts of the Federal Institute of Industrial Property Rospatent (Federal Service for Intellectual Property, www.fips.ru) devoted to the legal protection of industrial property (inventions, utility models and industrial designs), as well as computer programs and databases, presented at the conference, have stirred a resonant interest in connection with the draft of the Federal law "On Amendments to the first, second, third and fourth parts of the Civil Code of the Russian Federation and certain legislative acts of the Russian Federation", which is under discussion. If being approved, it will cause changes in the scope of protection of intellectual property rights. The authors of application software and databases were introduced to the peculiarities of their protection as intellectual property – by copyright or by state registration, which confirms the presence of exclusive rights to protectable results of intellectual activities (RIA) of the applicant and gives him freedom of action when entering this result into civil circulation.

The reports of colleagues from other regions aroused great interest. Thus, the representatives of the Republic of Tatarstan briefed the conference participants with the experience of creating a republican system of information resources implemented under the Action Plan on the Development of the Strategy of Scientific and Innovation activities in the Republic of Tatarstan and the program "The development of the intellectual property market in the Republic of Tatarstan for 2013-2020."

The issues of organization and functioning of the technology transfer centers, which are known to occupy a significant place in the innovation economy of Western European countries, were discussed in the framework of the conference. Colleagues from the law firm "Jacobacci" (Italy) shared the experiences of technology transfer in Italian universities. In addition, the participants of the International Internship within the "SABIT", the special program of business training of the United States Department of Commerce, in "The Intellectual Property Rights: technology transfer and commercialization," made a report on the experience of American universities for sales, marketing, licensing and intellectual property management and market research [2].

Please, note that the key proposals of the participants were presented in the recommendations of the

Conference, in particular, the need to:

- development of regulations on the use of RIA;
 - creating a resource (including in the Internet) for rapid deployment and exchange of information about the objects of intellectual property of the Russian Federation in respect of which the holders of rights are ready to conclude agreements on the disposal of the right;
 - preparation of a draft of the state program for development of the system of legal protection and use of RIA, including directions of forming a regional system of intellectual property protection in the light of issues of public policies of intellectual property based on the development of invention and innovation, enhancing the process of implementation of RIA in various industries and branches of knowledge, with stating priorities, evaluation criteria and sources of financing, the expected results for the socio-economic development of regions of the Russian Federation;
 - creation of the Fund for Support of scientific, technological and innovation activities of the Republic of Sakha (Yakutia) to finance scientific and technological developments, including support during the pilot testing or prototyping, and encouraging the authors of RIA;
 - creating the Unified system of state accounting the results of civilian research scientific, development and technological works in the Sakha Republic (Yakutia), the financial support which is funded from the budget of the Republic of Sakha (Yakutia);
 - state support of the regular program of training and retraining of workers in the field of patent and licensing activities implemented in the NEFU.
- The research, educational, creative and social organizations, the business community, the media were also recommended:
- carry out scientific and practical and educational activities on topics of intellectual property in order to enhance interaction with entrepreneurs, institutions of education, science and culture, creative and professional associations on an ongoing basis;
 - enhance international cooperation and participation in the framework of preparation of proposals for the improvement of international legislation and expand the range of exchange of practical experience and expertise;
 - put into practice the activity of the branch funds for financial incentives of the authors-developers of intellectual property to stimulate the development of advanced, industrialized and commercially viable competitive technologies;
 - introduce a system of financial incentives for workers in the field of legal protection and use of RIA, including the method of enhancing supplements to the basic salary with a glance of the complex nature of the research and creative work;
 - expand the scope of cooperation with leading scientific and educational institutions of the Russian

Federation in order to carry out works and to implement the results in the formation of intellectual property management system, training and retraining of specialists in the field of patent and licensing activities;

- introduce training courses on the basics of intellectual activity for students of technical specialties at institutes of higher and secondary specialized education, with the practical part of the training program aimed to identification and examination of patentable technical solutions.

Both the Russian and foreign participants were particularly interested in the experience of the Federal University, which is the leading university in the implementation of the patent and license cover and commercialization of the results of intellectual activity in the North-East of the country. Currently, the Intellectual Property Center of the NEFU coordinates all activities in the field of intellectual property management and formation of the university patent policy, in particular, legal protection and effective use of RIA created, ensuring consideration of the interests of the state, sponsors and investors, creating the conditions for the transfer of technology and intellectual property items.

It should be emphasized that the implementation of the above identified tasks is impossible without the organizational and technical instruments of accounting and protection, as well as without strengthening the personnel component of the infrastructure of the university. Higher school requires patent specialists, marketers, managers, capable of operating in any area of intellectual property, owning experience and knowledge in the field of international relations for the protection of intellectual property, patenting of industrial property abroad. According Rospatent, there is no patent specialist registered in the Republic of Sakha (Yakutia) as of today.

The existing infrastructure of the Centre of Investigation and Certification is the great achievement of the NEFU under the program of the development of the Federal University, which was the key to concluding the Agreement between it and the FIPS on the creation of the university based status structure under the joint project of Rospatent and the World Intellectual Property Organization (WIPO, www.wipo.org) – the Center for Support of Technology and Innovation (CSTI), whose mission is to effectively disseminate knowledge on the legal protection of the results of intellectual activity, to stimulate the creation and use of such results.

However, when implementing innovative programs, the Federal University faces the problems associated with weak development of mechanisms to encourage the development of inventive activity, the lack of systematic approach to the management of intellectual property, especially in the area of commercialization of RIA. Major regulatory problems are stipulated by the contradictions between the provisions of federal laws, the lack of

specific and clear guidelines at all stages of commercial use of RIA, for example, when business entities are created. Many questions arise when enjoyment of the rights to RIA is ascertained, formalized in the social sciences and humanities, and businesses are created on their base. For example, there are obvious difficulties in assessing and registering RIA in teaching methodology, the technique of advanced training, i.e. in the field of educational activities and humanitarian technologies.

In his reports, the head of Rospatent B.P. Simonov [3] has repeatedly stated systemic causes of low commercialization of intellectual activity in Russia:

- budgetary institutions' lack of authority to dispose the income from the sale of intellectual property rights;
- authors-developers' lack of interest in the commercialization of the results of scientific and technological activity created in the framework of performing government contracts;
- lack of qualified personnel in the organization departments that are responsible for carrying out the works to provide legal protection and commercialization of RIA;
- lack of foreign experience of patenting ;
- lack of proper control, which government customers are to exercise for fulfillment of the conditions of government contracts for research, development and engineering works .

Another systemic problem was formulated by Professor of the State Academy of Intellectual Property (RGAIS, www.rgiis.ru) I.S. Mukhamedshin in the report addressed the scientific and practical conference of Rospatent in 2012 [4]. This is the legislative uncertainty of the concepts of 'innovation' and 'innovation activity.' There are different approaches formed to the concept of 'innovation' as the activity associated with a new development, which is to create RIA and ensure its legal protection, as well as to apply (implement) these results practically.

Today, part of the outstanding problems is being actively solved at the state level with involving the regions.

In his address, the President of the Russian Federation emphasized, "... development institutions should search for and select promising projects throughout the country, provide financial assistance to innovative enterprises, including small ones, which are now being created at institutes of higher education and research institutions, as well as share risks with private investors [5]."

Thus, the year of 2013 is expected to be the beginning of solving crucial tasks aimed to further development of cooperation between science and business in the innovation sector. These tasks are included in the Order of the President of the Russian Federation, which were formulated following the meeting of the Presidential Council for the economic modernization and innovative development of Russia held on October 24, 2012 [6]. Some of them are:

– creation of economic partnerships by budget scientific and educational institutions;

– the possibility for budgetary institutions to contribute the right to use intellectual property owned jointly with others in the charter capital of business entities and in the share capital of the business partnerships created by them;

– encouraging the practical application (implementation) of intellectual property in economic societies and partnerships created by autonomous educational and research institutions.

The paper presents a new form of legal entity – economic partnerships, the creation of which is based on the provisions of the Federal Law "On Economic Partnerships" [7]. At this, an economic partnership should serve as the project company, which will be used in the implementation of innovation (including that of venture) activities. The undoubted advantage of the economic partnership is the absence of requirements for the minimum capital and the lack of the need to observe a number of administrative requirements arising from the increase or reduction of the capital of other commercial organizations. One of the main features of the economic partnership lies in empowering the participants with considerable freedom in the choice of the management method, structuring the internal relations between the participants, the ability to establish the different state of rights and obligations of the participants of the economic partnership. In addition, the partnership will have the share capital, the presence of which and the responsibility for violation of the terms of consecutive paying up of contributions to it make the economic partnership very attractive form for the implementation of innovative investment projects with venture funding.

The adoption of new drafts of legislation in the field of innovation will undoubtedly require an adjustment of existing laws, governing the principles of organization of the legislative and executive public authorities of the constituent entities of the Russian Federation, and adoption of new ones, including the science and state scientific and technical policy laws, which is aimed at creating favorable financial and credit and fiscal conditions for the implementation of innovation activity.

In the nearest future, the CIP of the NEFU is planning to create and implement a management system of the corporate knowledge of the university, which should be based on the provisions of new laws in the development of innovations. Then, the procedure of providing the scientific community of the university with best scientific and technical information will be adopted, the methods of accounting the results of scientific and technological activities and conditions for their effective and lawful use will be established. In order to improve the existing order of RIA commercialization, it is necessary to practice other schemes of management, at the outset including the use of the outsourcing opportunities to attract leading

experts and pool resources of universities and research institutions, providing full services in the field of identification, legal protection, defense and introduction of the RIA created into the stream of commerce at the international level too. To address these long-term objectives, it is necessary to be familiar with the existing international experience, to deepen existing ideas about the system of intellectual property rights, including its organizational, methodological and technological support. The major gaps in this can be solved:

- after studying the best management of intellectual property rights in universities, research institutions, governmental organizations and private companies, including in their international cooperation;
- by obtaining knowledge in organizing effective public-private partnership in the development of innovations;
- through the establishment of business contacts with universities, research institutions, governmental organizations and private companies for cooperation in the field of intellectual property rights;
- implementing the provisions of the state support of scientific research effectively, etc.

Further development of the innovation infrastructure of the North-Eastern Federal University will contribute to the introduction of modern technologies, the generation of innovation solution and knowledge, the graduation of competitive specialists and managers in the field of innovation. This will allow realizing effective integration of science, education and business, which is extremely necessary for the modern economy of our region and Russia as a whole. The creation of modern innovation cluster in the North-East of the country will change the image of the region, which is regarded today primarily as a supplier

of raw materials and the world “cold pole”, will give impetus to turn it into a strategic outpost of Russia.

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Social-Pedagogical Peculiarities of Educational Process Organization at Schools of Indigenous Peoples of the North

The most optimal forms of work at school (ungraded, nomadic and communal schools) of the indigenous peoples of the Republic of Sakha (Yakutia) are observed. The content of education in these schools should stimulate the reserving and keeping the folk pedagogics, folklore, native language, traditions and customs of the peoples of the North.

Key words: ethnic groups, ethnic pedagogics, ungraded schools, nomadic and communal schools, folk pedagogics, traditions and family education.

The harsh climatic conditions of living, nomadic and semi-nomadic lifestyle, the socio-ethnic characteristics of the region, the territorial sparsity of settlements, transportation difficulties, etc. constitute the specifics of the uniqueness of the life and activities of the peoples of the North.

These circumstances, in turn, require a special approach to the organization of the educational process at the schools of the indigenous peoples of the North. Education of modern man, combining the national spiritual wealth, moral purity, natural manliness and honesty is an integral part of a democratic society based on humanistic basis, giving the ultimate right to “the memory of ancestors passed on to us the love and respect for our homeland and faith in good and justice” [1]. Throughout the life a person is under the constant influence of public relations, environmental conditions and the nature of the social environment. The situation of children living in the North, where life circumstances give rise to the problem of the gap between generations, between school and family is of particular concern.

First of all, programs and methods of education and training should be focused on the specific needs of ethnic groups with regard to their history, culture, social values, and ethnic pedagogics. Loss of contact between education and life is often determined by the placement of schools, by their location. If the school is located away from economic life, from production, any attempt to establish a connection between education and life will be unnatural and ineffective. V. I. Lenin denounced abstraction in cultural work, separation of the work from life. He always emphasized, “... it is necessary to establish links between the general rise of culture and knowledge and the most troubling economic needs everywhere” [2].

Therefore, the most optimal form of schools in the North (ungraded, nomadic and communal schools) must be found and identified. All this will contribute to the revival and preservation of the folk pedagogy, folklore, language, traditions and customs of the people. Only the school and the family in close rapport with each other will be able to prepare the younger generation for life of full value in the future. Their joint efforts largely determine the individual and social well-being of the individual and the place, which they will take in Russia and the world community.

The practices of the ungraded nomadic schools of Anabarsky and Olenek uluses have shown that in the conditions of tundra and forest tundra there is direct communication between school (teachers, educators and administration) and parents (reindeer breeders, hunters and fishermen). In the trading station of Ulakhan-Kel in Anabarsky Ulus, in which a nomadic ungraded school has been working for several years, senior high school students (7-11 grades) work in reindeer herding, hunting, and fishing crews during summer vacation, i.e., in their home farms, helping their families considerably. The pupils of 1-6 grades study at an ungraded nomadic school. Parents are very pleased that they do not have to take their children to school located at a distant village, because the children can be brought up on their own ground and be engaged in helping in the works and at home in their spare time. The children themselves are also very pleased that they are staying with their families. Girls learn from their mothers to treat skins, suede, to make hats, bags, mastering a full production cycle from start to finish. Thus, the involvement of parents in the work of the school, their children's life and study ensures the timely beginning of classes, makes it possible for all children to attend school, organize their life and leisure, attracting the attention and assistance of the community and the public authority.

To educate the next generation, it is necessary to use ethno-cultural traditions as extensively as it possible. Traditions are the historically established relatively stable and most generalized forms and principles of human behavior that reflect their lifestyle, experience, views,

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ideas, transmitted from generation to generation by virtue of certain social values, they are observed because of internal beliefs and protected by public opinion. Traditions have reflected the experience of many centuries of gained by older generations and the use of them in the educational process will enhance the national identity of students. Reliance on traditional culture and creative using its achievement can create real conditions to improve the efficiency of the educational process. Traditions have fostered such type of personality that is well adapted to life and activity in certain natural, socio- economic conditions. Therefore, the rural ungraded (with fewer students in classes) schools of the peoples of the North of the Republic of Sakha (Yakutia) should contribute to the objectives of educating the younger generation on the basis of the traditional culture, to reveal the uniqueness of ethnic nature of different ethnic groups, traditional features of their material and spiritual culture, and respectful treatment of other nations, their culture, language and customs.

Nowadays, emphasis is being given to the activities of ungraded schools, including the nomadic schools of the North, in close connection with the family upbringing. The family in any society is a primary cell of multifaceted human relations (economic, moral, spiritual, psychological, aesthetic). When using folk traditions and spiritual culture in the educational process, it is necessary to be aware of their psychological and emotional impact on pupils and the ways of applying them. In their psychological essence, folk traditions is a channel through which the older generations pass their moral beliefs and feelings, the ways and means of activity, experience of social and ethical values to the younger ones. The term 'tradition' (from Latin) means 'transfer', sharing of values, social institutions and norms of behavior. Traditions provide a special psychological environment and act as an important means of educating people. Development occurs by gaining the socio-historical experience of humanity in the process of material and practical activities and learning standards of human relationships. These standards are clearly stated in the traditions. Particular attention is paid to the revival and development of traditional industries, occupations and crafts of the indigenous peoples of the North with the closest bringing the children to their own ground, familiarization with the original material and spiritual culture of the ancestors [3, 4].

In recent years, the indigenous peoples of the North of the Republic of Sakha (Yakutia) there has been rapid formation of communities, farms, private enterprises, etc. Many families have return to the former camps. Educational institutions also have taken the path of the organization of nomadic schools and community nursery schools, and if possible under the terms of the settlement, ungraded ones (with fewer students in the classes).

In the process of creating a new model of school there

are problems that require to be solved as soon as possible. These include questions relating to the content and scope of education, training and retraining of teachers, development of educational literature of the new generation. The content of education should be nationally focused, that is to be determined not only by the presence of specific subjects – the native language and literature, the geography and history of the native land, but should include other elements of the culture of the indigenous peoples of the North: life, traditions and customs of the native people, etc. it is possible to integrate the educational material into the subject or to make it interdisciplinary one. At this, the logic of the subject should not be broken and the minimum of knowledge sufficient for continuing education at the following levels of education should be provided, too.

Organization of the traditional labor practices and recreation of the senior high school students has always been one of the main problems of the schools in the North. In order to effectively address this important and necessary for the indigenous children's life issue, it would be useful to organize summer working practice of the students of middle and older age at the trading stations and tribal communities. At this, the administration of the ulus (nomad camp), the nasleg (agricultural community), the trading station, the tribal community, crews and schools should work in close cooperation to engage senior high school students in the reindeer herding, hunting, fishing crews and other organizations as:

- assistants of shepherds, hunters, masters working in the chums (traditional raw-hide tents), the ones in tailoring shops, fishermen;
- pickers of the berries growing in the North, mushrooms, herbs, etc.;
- teachers of nomadic nursery schools;
- assistants of the doctor's ones at the trading station and community;
- organizers of cultural activities, etc.

Then each student in the trading station, in the community, and in the crews will be engaged at his or her sole discretion, i.e. he or she will be engaged in his or her parents' (fishermen, herders, hunters) business and in that of specialists' of the trading stations and communities.

The national regional autonomy creates favorable conditions for synthesizing the ethnocultural traditions and modern scientific knowledge of natural disciplines in the educational programs of traditional schools. This direction is attractive by the fact that such programs are formed on specific regional material and provide students with a comprehensive knowledge of nature and its present state it is in their region, suggesting the ways of conservation, restoration and wise use. This is precisely the knowledge that will be needed for school graduates for their future living in their own land, in their fishing and hunting areas, in their rural communities, at trading

stations, in their settlements and villages.

Developing mineral deposits on the territory of the indigenous settlement of the Republic of Sakha (Yakutia), the new industrial population should have an idea of ethno-cultural traditions of the region and its nature. Especially, taking into account the fact that in previous decades the natural resources have been developed improperly, which was caused by the environmental incompetence of guest workers and engineering and technical personnel. In general, the content of school education should foster civilized, with moral and historical points of view, attitude to the national values, the integration of national ideals in the common system of value orientation of the individual in the younger generations.

The work of ungraded nomadic schools and communal nursery schools in the communities and the trading stations of the Republic of Sakha (Yakutia) contributes to the increased labor productivity, since parents (herders, hunters, fishermen) do not have to leave their jobs and they can work, hunt, fish peacefully, because their children of preschool and primary school age live with them. Creating these types of schools require preparation of variant curricula for them. The peculiarity of the curriculum lies in the implementation of the following two ideas.

The first idea is to bring together related subjects in a single block: mathematics and natural sciences all form one unit, while the humanities with the basics of Cultural Studies form the other one. Thus, taking into account three grades of primary school we have three blocks of subjects. The second idea is to introduce into the curriculum academic hours for independent work of students and monitor their activities. In this regard, there is a problem of training multidiscipline teachers for

ungraded schools. To solve this problem in a proper way, it is necessary to start specific training in teaching groups of students with participation of natural and human faculties of the University in accordance with specializations in blocks or profile of subjects.

Thus, firstly, the revival and development of traditional activities in conjunction with other traditional aspects of life is not only a trivial political slogan for the indigenous peoples in the Republic of Sakha (Yakutia), but it is a necessary condition of survival in the current economic climate, when they hardly rely on subsidies from the state.

Secondly, due to the sparseness of settlements, limited transportation options and the specific character of life of the indigenous peoples of the North in the Republic of Sakha (Yakutia), it is unacceptable to reduce the number of rural ungraded schools, because it causes undesirable socio-economic consequences. Closing the ungraded schools in settlements and villages, communities and trading stations creates an environment of hopelessness not only for the development of the settlement or the village, the community or the trading station, but also for the sector of the economy, in the name of which they exist.

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Traditions of Physical Upbringing in an Altai Family

Traditions of physical upbringing in an Altai family including rational nutrition, nature factors usage, games and work that are directed to formation of healthy and strong generation are observed.

Key words: national traditions, folk pedagogics, family, physical development of a child, physical upbringing, factors of physical upbringing, methods and tools of physical upbringing, national games, national medicine.

The Altai people begin to take care of the physical development of children very early, from the inception of a family, when parents and grandparents find out the relationship between the bride and the groom. Marriages are prohibited if the young people are of the same blood, since the children to be born can have physical and mental defects. The parents advise their sons and daughters when meeting girls and boys to ask them about their lineage, to pay attention to their health, exercise performance, and cleverness [AFM-1].

Parents express their desire to have healthy children during the wedding party when the newlyweds are greeted and said good wishes:

Одырган одыгар чокту болзын,	Let your hearth be always on,
Орында балдар ойнозын.	Let kids play on your bed.
Кабайда бала экчелзин,	Let there be a baby in the cradle,
Казанар кайнап турзын.	Let your cauldron always boil.
Јаш агашты јара тарткадый	To be able to break a young tree,
Јакшы, кадык јадыгар!	Live well, be healthy!
Как агашты кастай тарткадый,,	To be able to split dry wood,
Как агашты кастай тарткадый,	Be healthy, live well!
[1, p. 87].	[the author's translation – E.E.]

The physical state of a pregnant daughter-in-law is of great importance. The parents of a young husband realize that the level of her health may affect the health of the child, so they watch over their daughter-in-law nutrition, try not to involve her in hard work about the house and the household. It is believed that if a young wife has good health, she will give birth to healthy children.

An Altai family wishes to have many children who are treated with tender and love. They used to ligate the umbilical cord of a newborn baby with thread, “the dusting powder for the cord was made from the mother’s burned,” and “the next days they used to apply a piece of mutton interior fat or the broadtail fat to the navel of the baby, fixing it by girdling cloth” [1, p. 424; 2, p.142].

Then the woman, which took the delivery (*кин эне*) bathed the baby with strongly brewed tea that contained salt and broth. Later, the baby were bathed in a such way again, but it was done not very often and until it was 2 months old [2, p. 142, 144]. According to SP Tyukhteneva, “during the warmer months, the baby was bathed in salted water every other few days to be quickly improved in strength. It is literally called *баланын эди бышсын деп* (“let the baby’s flesh or body grow more quickly), as it is *су јаш бала* (“very small”) in the first month of life [3, p. 424-425].

The lamb’s skin was applied on the baby’s belly to keep its navel warm and the baby’s legs were wrapped in goat down (*таакы*) or fleece (*јайлык тек*), the baby was swaddled “in kidskin (lambskin) of soft finishing or thin felt (*эне чуу* – the mother’s diaper) [2, p. 142, 144]. Instead of the drawsheet, the baby was underlain with dry leaves of bergenia (*кылбыш*) or zagad (*чолбык өлөң*) [4]. Currently, these traditions are rare and observed by the Telengits (Altai subethnos), who live in the territory of Kosh-Agach District only.

Wanting to see children healthy, strong and courageous, parents give them meaning names: Баадай (sturdy fellow), Балбан (strongman), Баатыр (hero), Болот (steely), Дьалтанбас (brave, courageous), Ийделу (hardy), (Кезер-уул warrior), Темир (irony). These names are given to boys [5].

From birth to the time when a child begins to walk and talk (about under 3 years old), he or she is fondly called: “*су јаш бала* – a newborn, very small; – a babe in arms; *эмчек бала* – a crawling baby; *тиш чыккан бала* – a child, having milk teeth; *базын баштаган* – a child, who has begun to walk, and *тил чыккан бала* – a child, who has begun to speak” [3, p. 425].

The forms and methods of physical upbringing in the early days after a child’s birth are peculiar. The peculiarity lies in the fact that a baby under one year old cannot participate in physical self-upbringing, his mother takes care of it: she keeps the body of the baby clean, feeds it in time, and walks it.

To raise the child healthy, the mother breastfeeds him or her, if necessary, she gives him or her cow milk. According to informants, in the past, children were given soft cheeses (*быштак*), cream (*каймак*), broth (*мен*),

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a mush of oatmeal (*талкан*), prepared from roasted and ground barley, diluted with milky tea [AFM-2]. This tradition has been preserved in the diet of the Altaian's children, living in rural areas. Traditionally, children are breastfed up to 2-3 years old, sometimes – up to 5-7 years old. To improve lactation, the breastfeeding mother drinks tea with milk, salt and талкан.

Children are habituated to hygiene and toilet fairly early: when a baby turns 2-3 months, it is held over a basin until it eases itself. Therefore, the baby almost always lies dry in the cradle.

Rocking a baby in the cradle or in the mother or grandmother's arms, who are lulling to sleep, has a beneficial effect on the baby's health:

Бай-бай-бай,	Rock-a-bye, rock-a-bye,
Балам, ыйлаба,	Do not cry, my baby,
Бай-бай-бай, балам,	Rock-a-bye, my baby,
Ыйлабазав качанда.	Never cry.
Жакшы жадып уйуктазав.	Rest your head on the pillow.
Чыдап алзав, эр болорыв.	One day you will grow into a man.
Бай-бай-бай, балам,	Rock-a-bye, my baby.
Эр жакына жакшы жереп,	Coming of age,
Эне-адав азырарыв	You will feed your mom and dad,
Бай-бай, ой, балам.	Rock-a-bye, oh, my baby.
[6, p.55].	[Translated by the author – E.E.].

Massage, which is accompanied with special sayings – folk rhymes, used by the mother to make her actions metrical, (*эркеледер сөстөр*), for example, the mother is unswathing her awakened baby, stroking its head and body, making its arms and legs stretch and says:

Өс, балам, өс,	Grow, my baby, grow,
Керилип туруп өс!	Grow stretching!
Мына уzun бол!	Be taller than you are!
Мына чыйрак бол!	Be stronger than you are!
Өс, балам, өс	Grow, my baby, grow,
Өс, балам, өс	Grow, my baby, grow!
[6. 66].	

The mother is flapping the baby's arms and body with the sharp of her hand, making the baby's arms and legs move to the sides, holding it by both hands, making circular motions, making its hands clap and turning its fingers each after each [AFM-3]. Touching the child's hair, forehead, nose, chest, belly, the mother is playing with it, saying the following:

Мында чач,	This is hair,
Мында мавдай,	That is a forehead,
Мында тумчук,	This is a nose,
Мында төш,	That is breast,
Мында ич.	And this is belly.
[AFM -3].	

When a baby is 5 or 6 months old, it tries to sit, when it is 7-8 months old – to sit independently, when it is 9-10 months old - to stand independently, when it is 11-12 months old – to walk, using a support, and 14-18 months old is the age, when children start to walk by themselves [AFM -2 -4].

Fearing to damage to the baby's spine, the mother makes it sit cushioning, when it is 5-6 months old, and when the baby is 9-10 months old, the mother takes it by the hands and helps it to squat or bounce on the feet, saying:

Бөөл, бөөл, балам,	Bool, bool, my child,
Бөөл, бөөл, балам,	Bool, bool, my child,
Бек тур, балам,	Both feet on the floor, my child,
Вас, балам!	Walk, my child,
Бөөл, бөөл.	Bool, bool.
[6. 68].	

The parents put the child on their lap, rocking in different directions, as if he rides a horse or, turning the child round and face it, take it by its hands and bend in different directions. Fathers and grandfathers like to rock the kid on foot, legs crossed, in its sitting position or putting it on the toe of the boot, as well as to throw it up [AFM-1, 5-6].

By the end of the cradle period (when a child is 14-18-months old) the child begins to move by itself, has a certain vocabulary, understands facial expressions, responds to the tone the parents' voices [AFM-3]. At this age, children's favorite game is to play with the fingers, when the fingers are bent first and then named:

Башпарак,	The thumb,
Бажы-кырлу,	The forefinger,
Орто-Мерген,	The medium finger,
Кичибий, Кичибий..	The little finger.
[AFM-3].	

Later on, the most common means of physical upbringing of children in Altai families, like other peoples, are games and children's stay outdoors. The positive role of games in the physical development of children is evidenced by the fact that children raised outdoors and with the use of outdoor games, grow up healthy, strong and hardy.

In the past, when a boy was 3 years old, he was mounted on a foal, and by the time he was 6-7 years old, a saddle had been made for him, as he was in the saddle, rode a horse well, and at the age of 14-15 he used to participate in horse racing [AFM-1]. Boys are now hardly any given a saddle, but they ride a horse as well as before, and take part in horse racing, for example, at the "El Oyin" festival (traditional games), where other sports competitions and circle dances with songs are also arranged.

As before, the children of 6 and 7 contend for running

(*тоғжан жегереш*), ball games (тебек), exercising with weights (*таш көдерери*), archery (ок-ја адары), wrestling *кереш*, which has been the favorite sport of the Altai children. Wrestling relieves the children and adolescents' stress and aggression, their character becomes calm and patient. Adults are encouraging the children's physical exercise, contributing to the development of skills for wrestling, for example, children are taught to play alchiks (*кажык*). Astragalus, which is thrown up and caught flying, is used instead of dices. This game promotes manual dexterity (колы бек), vigilance (*көргүр*), attention concentrating (*ажарынкай*). Dicing is certainly a good training exercise to learn *кереш* [7, 8].

Outdoor games help develop physical strength and variety of mental qualities, develop quick reaction abilities, intelligence, hardiness, attention, memory, courage, agility, tolerance. Games help emotional release and enrichment.

Different kinds of household chores and activities on the farm are physical exercises for children. Boys are taught to be resolute and persistent in fishing and hunting; they are trained to be good at fast and quiet walking, running at different speeds and over long distances, marksmanship with a rifle in any position and even while running, trained to glide on short skis, to go down on sleds during the hunt masterfully, to climb a cedar pine for cones, to drive a horse, to be patient during the spring and autumn movements to stock stands [AFM-1, 5-6]. Adults train adolescents in order to develop skills to stalk and chase game for a long time, quickly and decisively act in a combat with the beast to survive in harsh environments (endure cold and hunger, often for a long time – up to several weeks) [AFM-1, 5-6].

Parents are aware of the various methods of cold training children from a very early age: a baby is left naked for a short time, when the weather is warm, they take it for a walk outside, teenagers are habituated to walk barefoot, swim in mountain streams, to stay out in winter as often as it possible [AFM-1-6].

Caring for the children's health, mothers know how to use herbs for cooking brews, teas for food and medicinal purposes (bergenia is for intestinal disorders, thyme and mint is for cough, celandine is skin diseases, etc.).

Thus, the Altaians aspire to the ideal of upbringing of children – the development of a healthy and strong generation. Rational nutrition, massage, games, and easy work are the main factors, methods and tools of physical upbringing of the children.

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Interdisciplinary Informational-mathematical Competence as a Factor of Improvement of the Quality of Lawyers Professional Training in the Conditions of the Higher Education Modernization

The necessity to review a number of the key concepts “mathematical competence”, “information competence”, established in the pedagogical science, is proved. A new basic concept “interdisciplinary informational-mathematical competence” is introduced, its components are determined.

Key words: education, competency, competence, paradigm, activity, mathematics, interdisciplinary informational-mathematical competence, information technology.

Mathematization of all human activity leads to a new appreciation of established views on the teaching of general mathematics courses in general education, secondary educational and higher vocational institutions, its relationship with other areas of spiritual, practical and scientific activity of man. Being an integral part of civilization, mathematics is not only a powerful tool for solving applied problems and the universal language of science, but also an element of general culture.

At the present stage of the development of legal

science, the amount of regulatory, criminological, criminal statistics and other information is increasing, and the mathematical analysis of research tools and methods of the variety of legal phenomena and processes is becoming particularly important. Currently, the mathematical model approach has gained great recognition in various fields of knowledge. It is based on an approximate description of a class of processes and phenomena with the use of symbols of mathematics and logic. Therefore, mathematics is increasingly becoming a necessary attribute of legal science, and it is accompanied by the following:

– mathematics as an academic subject has its own specific characteristics: the presence of different levels of abstraction, a great workload of the study of the provisions of the mathematical theory;

– a wide range of the individual differences of students in becoming familiar with mathematics, i.e. the main contingent of students of law faculties are students with low level of development of mathematical competence;

– dominance of collective forms of learning in high school that do not take into account individual capabilities of learning and applying the knowledge obtained by students;

– redundant number of lawyers as compared to demand in society.

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However, the intellectual labor market requires highly competitive professionals, which is achieved due to the high level of science study, which integral parts are mathematics and information technology.

One of the factors that provide a solution to this problem is the introduction of information and communication technologies in society and education. The use of opportunities of the global telecommunications network by a person creates the conditions to meet the information needs of citizens in education at all levels and stages.

The constant increase of volume and accumulation of legal information differentiates between the capabilities of traditional means of handling with it in the legal system and contemporary needs. This leads to overload of lawyers, reducing the quality of their work, as the information demanded for work sometimes may not be obtained and systematized within the required timeframe. One of the most effective ways to eliminate this disadvantage and improve the productivity and quality of legal activity is the computerization of the entire legal system.

In our view, the modern legal education should be directed not only at improving the level of education of a future specialist, but also at the formation of a new type of intelligence, the other mode and way of thinking, adapted to very rapidly changing economic, technological, social and informational realities of the world; new information outlook, based on understanding the defining role of the mathematization and informatization of processes in professional activities.

According to S. A. Beshenkov [1], K. K. Kolin [2], A. A. Kuznetsov [3] and S. D. Karakozov [4], those are considered competent in information, who are not only fluent in information and communication technologies, but also able to determine their information needs, to seek information, to handle it mathematically, to evaluate and use it effectively, who is capable of continuous self-development throughout professional life.

This type of professional competence is especially important for lawyers, since in the conditions of rapid updating of legal information they need not so much to memorize and accumulate legal information as, owning the complex of information technology to seek it competently and build the necessary analytical framework on this basis [5].

Traditionally, the development of information and mathematical competence among law students is carried out in the process of mastering the content of disciplines that study the patterns of information processes, methods of mathematical analysis of statistical information set under the State Educational Standard. However, in our opinion, this process cannot be carried out in isolation, as part of the narrow-subject field 'Computer Science' and 'Mathematics'.

In the context of the reform of education, the general mathematical training of future lawyers should be continuous and realized through the contents of education at the level of interdisciplinary competencies of students.

There is the need to integrate the subjects of special training and science through an interdisciplinary approach. This problem is of particular significance for higher legal education, which is associated with the pronounced integrative interdisciplinary nature of professional legal activity, determined by the formation of new areas of knowledge at the intersection of mathematics, computer science and law. At this, there are difficulties at the stage of the understanding of the object due to the inappropriateness of the scientific language to a particular terminology, in our case it is the creation of conditions for improvement of the level of the interdisciplinary information and mathematical competence of a future lawyer.

Introduction of the system of continuous information and mathematical training in high school is to ensure the optimization of teaching and educational process with the use of transition to a higher level of information and communication provision of the higher education institution; training of highly qualified specialists from among the faculty members who have the academic mobility based on the use of the network mathematical and information technologies; training the specialists to-be to be quickly adapted to the modern professional situation and diversification of educational documents.

The modern system of higher education focuses on the competence-based paradigm of education. As is known, the Council of Europe has defined five key competencies (key skills): political and social competencies; competencies related to life in a multicultural society; competencies related to oral and written communication command; competencies related to increasing the informatization of society; ability to learn throughout life as the foundation of lifelong learning in the context of both personal professional and social life. [6] In this regard, organizing and carrying out purposeful work aimed at students' mastering the universal professional competencies is crucial for educators' work that is set forth in the standard of higher education.

Competency is the readiness (ability) of a student to use acquired knowledge and skills, as well as ways of activity in life for solving practical and theoretical problems [7].

If a person owns a complex of necessary competencies, this state of his or her development is characterized by the term 'competence'.

In the scientific literature, there are different kinds of the representation of the essence of the concepts of 'information competence' and 'mathematical competence.'

G. K. Selevko defines the information competence as computer literacy plus the ability to seek information, to

use and evaluate information, as well as the knowledge of computer communications technologies, the ability to learn and use the capabilities of information technology to solve problems. [8]

I. A. Zimnaya defines the competency of information technology as receiving, processing, release, conversion of information (reading, note-taking); mass-media, multimedia technologies, computer literacy, knowledge of e-mail, the Internet technology; work with library catalogs; experience and willingness to work with the information flow in oral and written, printed and electronic forms. [9]

A. V. Voynov and N. A. Voynova define the content of information competence as a combination of information-technological and information-technical components: mastery of specific skills in the use of technical devices; the ability to use computer information technology in the work; the ability to extract information from different sources (both from periodicals and electronic communications), to represent it in an understandable form and use it effectively; the knowledge of the basic principles of analytical processing of information; the ability to work with different information; the knowledge of the characteristics of information flow in his or her topical area [10].

A. I. Fedorov defines the level of formedness of information competence of a specialist, first, as the acquirement of knowledge about information, information processes, models, systems and technologies; secondly, as skills and proficiency in the use of means and methods of processing and analysis of information in various activities; thirdly, as the abilities and skills to use modern IT in professional activity; fourthly, as the information mentality, vision of the world as an open information system [11].

K. A. Kuzmin defines the information competence of students as knowledge of methods and means of automation of data collection and processing, applied in their professional activity; the ability to use application software in the area of professional activity [12].

A. V. Khutorsky and S. V. Trishina consider information competence as one of the key competences that have both objective and subjective aspects: the objective aspect lies in the requirements that society imposes on the professional activity of the modern specialist; subjective aspect of the information competence of a graduate is a reflection of the objective side, which refracted through the individuality of the specialist, his or her professional activity, the factors of motivation for improvement and development his or her information competence [13, 14].

There are rather many research works devoted to the mathematical competence of students. So, M. A. Khudyakova defines mathematical competence as a system of knowledge: the adequacy of reflection; understanding of the world; predication (removal of

uncertainty, the orientation to the understanding of the subject essence, creation of its image); the breadth, diversity, polymathy, depth, consistency, integrity of knowledge; the outlook; awareness of naturally determined stable relations, their hierarchy; anthropomorphism (human knowledge of himself); the generality, categoricalness of knowledge; dialecticity; the system of values: the limit orientations of knowledge, interests and preferences of the individual; the system of intellectual qualities: curiosity; intuitively, spatially, geometrically, creatively, dialectically; the system of moral values: the culture of ethical thinking, the culture of feelings, the culture of behavior; the system of worldviews: beliefs, ideals; the system of mental qualities: the temperament, the character, mental abilities, intellectual abilities [15].

E. Yu. Belyanina defines the mathematical competence of students of economic specialties as part of the professional competence, including with mathematical competence the criticality, creativity, the disciplined mind, self-control, dialogueness; the system of skills: the ability to think empirically, theoretically, logically, algorithmically, figuratively, in a combined way. She considers mathematical competence as the personal characteristic, reflecting the readiness to study mathematics, the presence of deep and steady knowledge of mathematics and the ability to use mathematical methods in professional activity [16].

According to V. I. Baydenko, mathematical competence is the comprehensive education of the personality of an engineer that reflects the readiness to study disciplines requiring mathematical training, as well as to the use of applied mathematical techniques in professional activity [17].

The weak point of all the currently available definitions of the concepts considered is the fact that they are confined to a section of knowledge, studying competence and, therefore, can be applied only to a narrow, special, aspect of knowledge – either information or mathematical one.

In the concept of the essence of the interdisciplinary information and mathematical competence proposed by the authors, information competence and mathematical competence are equally important, inter-related and have a common orientation. Introduction of the concept of the ‘interdisciplinary information and mathematical competence’ into the scientific use brings a new content, simplifies the presentation and explanation of the newly discovered links that allow ensuring the improvement of the quality of education in training specialists.

We consider the content of interdisciplinary information and mathematical competence as complex integrative education, including the synthesis of components that represent a complex of fundamental knowledge in many areas of mathematics, computer science and information

technology, skills in mathematical modeling in the field of professional activity with the use of modern information technologies based on interdisciplinary integration of academic disciplines, aimed at overcoming their insufficient interconnectivity, fragmentariness of knowledge and providing fundamental readiness to implement the practical activity related to information and mathematical process in the light of modern requirements of modernization of Russian education.

The necessity of introduction of the concept of the 'interdisciplinary information and mathematical competence' is explained by the fact that in modern conditions of quick-interchanging generations of software and hardware, the emergence of new mathematical and information technology, the changing and updating of their content requires a single term, explaining (showing) the common process regardless of its content.

Thus, the analysis of the current state of national education, in particular that of legal, and prospects of its development leads to the conclusion that the formation of interdisciplinary information and mathematical competence of students is one of the ways to improve the educational process.

However, the training of lawyers in the process of higher education in the direction of readiness to master mathematical and information technologies is characterized by the presence of the following problems:

- the lack of scientific-theoretical and pedagogical support of the formation of interdisciplinary information and mathematical competence of the students;
- the high current requirements for professional competence laid down in the standard of the third generation do not correlate with the relatively slow innovative changes in the approaches used to information and mathematical training of specialists, which should be sufficient for them to address complex and knowledge-intensive tasks of the future professional activity.

The interdisciplinary information and mathematical competence of a specialist based on an interdisciplinary integration of the content of mathematics, computer science and special disciplines through information and communication technologies can act as integral characteristic of such training.

Identifying the nature and structure of interdisciplinary information and mathematical competence has enabled us to construct a model of its formation in law students during their training in mathematics, computer science and information technology.

In the model, we have identified the main components of the interdisciplinary information and mathematical competence of future lawyers in the processes of higher school education:

1. The value-motivational component:
 - the motive of professional orientation;
 - the motive to expand knowledge in the field of

mathematics and computer science, information and mathematical models and to master information and mathematical technologies;

- the motive to use information and mathematical technologies in their professional activities;

- the motive to achieve the desired goals.

2. The cognitive component:

- basic knowledge of the mathematical and information methods, models, and technologies;

- the ability to apply this knowledge in the respective fields of professional activity (systematization, processing of legal information, identification of patterns for the implementation of legal regulations, etc.);

- the ability to analyze the acquired knowledge, to evaluate them, to use them effectively in the professional activity.

3. The activity component:

- mathematical and information technologies act as a means to solve professional problems;

- mathematical and information technologies act as a vehicle for learning, self-fulfillment and creativity.

Let us consider the contents of each of the components:

The value-motivational component includes the motives, goals, needs of learning mathematics, computer science and information technology as the basis for mastery of mathematical and information technology for the formation of interdisciplinary information and mathematical competence as part of the professional competence of the lawyer. The component implies the presence of the interest in the profession, which is characterized by the realization that in solving legal problems, it is impossible to do without the help of mathematical and information technologies, which is expressed in an effort to master the fundamental knowledge in many areas of mathematics, computer science and information technology, the skills of mathematical modeling in the field of professional activity with the use of modern information technologies.

In addition to theoretical knowledge on the subject and skills of operating information and information objects, the cognitive component involves mastering technology, computer communications, the use of applied mathematical techniques in professional activity, knowledge of interdisciplinary relations of the courses of general theoretical training (i.e. mathematical and information) and special disciplines, etc. The level of development of the cognitive component is determined by the fullness, depth, and the consistency of knowledge in the topical areas.

The activity component is an active application of mathematical and information technologies in the rule-making, law-enforcement, law protection, and expert advisory activities in the professional sphere.

All the components form an integrated system aimed at creating the multidisciplinary information and

mathematical competence of the future lawyer, which is an integral and important part of the professional competence of the future lawyer, and as, a result, the readiness of the students for future professional activity.

Thus, the formation of the multi-disciplinary information and mathematical competence of lawyers is the most important factor for:

- improvement of the quality of training the competitive specialist;
- assistance in the development of the ability to acquire consciously and apply practically the complex of the competencies laid down in the Russian educational standards of higher legal education;
- ensuring the intensification of the practice-oriented focus of educational process at a law higher education institution.

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To the Issue of Substantiation of Professional-pedagogical System of Multilevel Training of Instructors-conductors of Sport Health-giving Tourism

Due to the fact that in 2007 year in the Law of the Russian Federation «About touristic activity» the concept «instructor-conductor» – a person responsible for the security of tourists on a tour itinerary conducted in the environment was added the substantiation of professional-pedagogical system of multilevel training of instructors-conductors of sport health-giving tourism is given. General theses of the scientific research of professional-pedagogical system of multilevel training of instructors-conductors of sport health-giving tourism are formulated.

Key words: the Law of the Russian Federation “On tourist activities”, qualified characteristics, injury rate of participants, instructor-conductor, local balks of tour itinerary, age category, qualification level, touristic-sport union.

The scientific and practical relevance of the present study is determined by the amendments to Federal Law “On the basis of tourist activities in the Russian Federation” of October 24, 1996 that were made in 2007. In addition to other amendments the Federal Law, the notion of an instructor-conductor, who is defined as “... a professionally trained person, who accompanies tourists and ensures their security on tour itineraries conducted”, was introduced into Article 1 for the first time.

However, if the commercial and industrial areas and forms of the main tourist activity in the Russian Federation have got the developed vocational qualification structure of specialists, comprising qualified characteristics (occupational standards) to the basic positions of workers of the tourism industry, the field related to the accompanying a tourist or a group of tourists, making the journey under natural conditions, has not such standards developed so far. The existing occupational standards do not take into account the variety of particular types and forms of tourism, the difficulties and dangers of overcoming local natural balks of tour itineraries and other travel dangers associated with human, natural or technical factors.

Currently, sport health-giving tourism in general is part of fastest-growing active tourism in the open environment, and in particular, it is a group of different types, kinds and forms of tourism, united by the sport health-giving motives of activities, the nature of a tour itinerary, and the organizational forms of carrying out of tourist activities [1].

Since tour itineraries differ from each other through their complexity and extremeness, they should be provided

with monitors - qualified instructors-conductors, providing the security of tourists. Instructors-conductors should be professionally trained to work on a tour itinerary of any difficulty and certified by an authorized organization for sports and extreme kinds of tourism. Currently, tourist firms – operators in the sphere of “active tourism” (active tourism includes all kinds of hiking trails and travels, which are characterized by an active way to travel along the itinerary, i.e. where tourists spend their own physical effort) - decide issues of providing groups of tourists with instructors-conductors at their discretion, in the absence of their professional-pedagogical training in the education system of the Russian Federation and the qualified characteristics of the Ministry of Labor for this category of workers.

The organization of active hiking and active tourism travels in our country of this sort naturally and inevitably leads not only to the injury of the participants, but also often leads to fatal casualties. Thus, according to the information base of the Russian Union of Travel Industry, which uses all the open source to collect occurrences, somehow related to tourists, about 100-130 people die in travels in Russia annually for whatever reason. More about 300-400 people get injuries of varying severity [2].

An analysis of the accidents in the active tourism indicates that more than 70% of all the tragedies with tourists in the open environment occur for subjective reasons – because of ill-preparedness both the instructors-conductors accompanying tourist groups on the tour itinerary and the participants of hiking trails themselves.

In this regard, the development of the structure and content of multilevel training of instructors-conductors on different kinds of sport health-giving tourism is relevant and serves as the basis for solving the problem of training of instructors- conductors of the tourism in our country.

The scientific and theoretical relevance of this study lies in the fact that the modern trend of growth in popularity of sport health-giving tourism as a means

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of person healing and sports perfecting requires finding new science-based ways to improve the system of training of persons accompanying tourists on tour itineraries in the environment and responsible for their security. Today, however, most guides-monitors of tourist groups (instructors-conductors), engaged in sport health-giving tourism, do not have full understanding of all the features of camp life and the dangers of hiking in the environment. Taking into account the fact that the active tourist activities of varying complexity involves some 30,000 tourist groups (often with children) in our country every year, and according to statistics, every other monitor does not have a normative ideas about the basic rules of hiking trails and procedures to ensure security, one can understand what is happening in the "hiking trials." The system of public itinerary-qualification commissions, which used to be responsible for hiking groups admission to itineraries of varying complexity at Soviet times, is minimized and practically does not work in the new economic situation in our country. Therefore, control over the activities of such groups, their guides training and assistance in the preparation and conduct of sports tours and travel has been brought to nought. The situation with the leading cadres of tourist and sports organizations is even worse. There are practically no qualified specialists in active tourism, especially in sport health-giving tourism among them.

In Russia, sport and health-giving tourism is a traditional national sport and a kind of active recreation, which, in addition to the sports component, includes Russia's peculiar national mentality, the spiritual realm and lifestyle of the lovers of hiking themselves.

In Russia, the theory and practice of sport health-giving tourism in the open environment have been developed, to one extent or another, by: Yu. N. Fedotov, Yu. A. Shtyurmer, V. D. Shimanovskiy, Yu. S. Konstantinov, V. I. Vostokov, V. I. Ganopoliskiy, Yu. I. Evseev, A. V. Ivanov, L. G. Rubis and others, the specialists armed with both professionalism of researchers and qualification of topnotch tourist-athletes. However, their works do not address the training of monitors of sport hiking or instructors-conductors of sport health-giving tourism. This serves as another confirmation of our statement that the problems of training of specialists guiding tourists on active itineraries of sport health-giving tourism are understudied. In addition, the issues of professional and pedagogical competence of the future specialist in active tourism (in particular, the instructor-conductor of sport health-giving tourism) – as a teacher of physical culture, sport and tourism – have not been considered in the literature so far, and no approaches to formation of their qualification requirements at different stages of tourist activities have not been studied. The analysis of the existing social system of training of staff in sport health-giving tourism shows significant discrepancies

between programs and teaching methods in the mentioned areas. Training programs for public staff in tourism focus mainly on athletic performance and are insufficiently adapted to the professional activities of the above staff, and, moreover, do not have the State educational status required under the conditions of the professional activities of specialists in the field of sport health-giving tourism [3].

All this points to the necessity and timeliness to study and improve the structure and content of the system of training of instructors-conductors for different kinds of sport health-giving tourism. Alongside with that, it is necessary (at the domestic level) to address the substantiation of the programs of training of instructors-conductors of active tourism, taking into account the new economic conditions at the present stage of development of society and the features of professional activity of tourism trainers, instructors, escorting interpreters, organizers and monitors of hiking trails, excursions and travels of sport health-giving kind.

Thus, creating the perfect professional-pedagogical system for effective management of the organization and implementation of multi-level training of instructors-conductors of sport health-giving tourism is an important scientific problem that requires theoretical and methodological development and justification.

The basic contradiction in the available scientific knowledge on the problem under study lies in the fact that under rising popularity of sport health-giving tourism as a means of healing a person and that of his or her sports perfection, there is no single state system of professional and pedagogical training of instructors-conductors, guides-conductors, and trainers in tourism in Russia. This dramatically increases the risks of legal liability of tourist companies, organizing active sport health-giving tours for the security of tourists under the laws of the Russian Federation.

In addition:

– the statistics on unfavorable development of the nation (increase in drug addiction, alcoholism, antisocial behavior, among the youth especially, poor physical fitness of young people for military service, gerontological problems in the society) show a decrease in moral and ethical standards of behavior in society, the absence of focus on a healthy lifestyle of most its members. At the same time, only 10.5 % of the needs of society in an active tourism are satisfied;

– the existing system of training and certification of the staff, accompanying tourist groups and leading cadres of sport health-giving tourism in Russia is a public one and cannot be recognized as the official employer, which hinders the development of sport health-giving tourism in the country as a whole;

– the existing scientific and theoretical basis of sport health-giving tourism treats mainly the problems of athletic and hiking training of competitive sportsmen of

different age categories and qualification levels. However, there are practically no works devoted to the training of the monitors of hiking trails and instructors-conductors of different types of tourism in research studies on the range of problems of active tourism.

Thus, the contradiction between the increasing demands of society for practicing active tourism and hiking of various types or travelling with sport health-giving purposes and the lack of scientific and methodological support of the process of training of the accompanying persons – hiking guides and instructors-conductors has served as the prerequisite of our work. The need to overcome this contradiction, in turn, has determined the purpose of this research.

The goal of the research is the theoretical justification, development and experimental verification of the effectiveness of professional-pedagogical system of multilevel training of the instructors-conductors of sport health-giving tourism.

The target of the research is a system of multifaceted and multilevel training and retraining of specialists in sport health-giving tourism.

The subject of research is the structure and content of professional-pedagogical multilevel training of instructors-conductors for the basic types of sport health-giving tourism.

To achieve this goal, the following research objectives were supposed to be solved.

1. Based on the analysis of theoretical statements, reflected in the specialist literature, and empirical studies, to reveal the specifics of professional-pedagogical problems of training of specialists in the field of active tourism in our country and abroad.

2. Carry out a correlation analysis and to identify the main factors of professional and sports activity of the instructors-conductors of the basic types of active tourism in terms of training and accompanying the participants tourist sports, recreational hiking, travels and business tours, and to use its results to set out the priorities of the professional-pedagogical training of instructors-conductors as the basis for the strategy of formation of the educational programs for their training.

3. Develop and scientifically prove the concept of the multilevel professional-pedagogical training of the instructors-conductors of the basic types of sport health-giving tourism as the basis of their professional education and define the integrated assessment characteristics of their preparedness for various qualification levels of tourist activity.

4. Identify the ways of intensifying and optimizing the training of instructors-conductors of sport health-giving tourism, taking into account the peculiarities of the structure and content of the system for training of instructors-conductors and the introduction of new state educational standards.

5. Develop the arrangements of standardized training grounds and methods of the use of them for the solution of professional-application tasks on the training of instructors-conductors of the basic types of sport health-giving tourism.

6. Try out in practice the efficiency of the developed system of multilevel professional-pedagogical training of the instructors-conductors of the basic types of sport health-giving tourism.

The main hypothesis: it is expected that the professional-pedagogical system of multilevel training of the instructors-conductors of the basic types of sport health-giving tourism, developed by us and aimed at forming the specialized qualities, knowledge and skills, will contribute to the process of intensification and optimization of their vocational training in the new economic environment and under the introduction of new state educational standards of the third generation in our country.

The specific hypotheses: 1. Development of the professional qualified characteristics (occupational standards) of the activity related to accompanying of tourists making active tours in the environment will reduce the injuries of participants and increase the security of sport health-giving tourism.

2. Designing and developing the methods of the use of training tourist grounds for solution of the professional-application tasks of training of instructors-conductors will foster their learning the technique of the basic types of sport health-giving tourism.

3. Creating an integrated evaluation system of the professional-pedagogical characteristics of the instructors-conductors of the basic types of sport health-giving tourism will allow determining the degree of their readiness for professional activity at various qualification levels of training.

As the information base of this research, we have used the official documents of the Ministry of Education and the Ministry of Sport, Tourism and Youth Policy of Russia, the Resolution of 1996, 2002 and 2011 of the Government Russian Federation on the development of recreational and sport health-giving tourism in the country, as well as regulations on training and certification of the public tourism staff of the Tourist Sports Union of Russia [4].

Moreover, the functioning of the active tourism industry in the new economic conditions, created in the Russian Federation in the early 90s of the last century, revealed a number of legal problems, the solution of which entailed the inclusion of the amendments, which envisaged the presence of an accompanying person, a professionally trained instructor-conductor, ensuring the security of tourists during on the active tour itinerary conducted, to the "Law on the tourist activity in the Russian Federation" in 2007. At that, neither this "Law ..." nor its annexes

contain the official status of instructors-conductors in the occupational skill structure of the tourism industry, as well as the content of their qualified characteristics (occupational standards), or the requirements for their training and personal assessment characteristics of the readiness of this category of workers to their working practice.

The existing structure of the specialists personnel in the fields of sport health-giving tourism (including according to the Russian National Classification of Occupations of Employees, Positions of Civil Servants and Wage Category) [5, 6, 7] does not include the professional category of workers such as an instructor-conductor of sport health-giving tourism. The positions of specialists in sport health-giving tourism included in the list of the Russian National Classification (a trainer-instructor, a tourism instructor, a climbing instructor-training specialist, a tourism instructor-training specialist, a travel (excursions) planner, a large-scale organizational work instructor, a personnel training center instructor) are mainly focused on human resourcing of the system of educational institutions of children and youth tourism and, to some extent, on staffing the few mountaineering and tourist camps that remained after the collapse of the USSR. The public personnel commissions at the territorial federations of tourism, which have been existing since the time of the tourism and tours boards under the All-Union Central Trade Union Council, currently supervising the preparation and certification of the instructors-conductors of active tourism, cannot fully meet the increasing demand of the tourist services market for the above instructors-conductors subject to both the professional-pedagogical components and legal and sports ones of their working properties. This is due, first, to the public training structures' lack of the pilot projects of new training programs, focused on the commercial orientation of the main forms of tourist activity in the Russian Federation, and, secondly, to the single-planeness of the proposed learning process, including the sport and tourism component only.

However, the Federal program of development of inbound and domestic tourism in the Russian Federation for the years of 2011-2018, approved by the Government of the Russian Federation in August 2011, drew special attention to the issues of the training of staff for recreational and sport health-giving tourism. Moreover, the "Regulation ..." stipulates that the training of the staff for the tourism industry should be carried out with a glance to both the best practice in training of this category of workers and the new state educational standards of the third generation.

Conclusions:

– The identification of a number of legal problems at the phase of functioning of the active tourism industry in the new economic conditions resulted in amendments, related to the necessity of the presence of an accompanying

person – a professionally trained instructors-conductor, ensuring the security of tourists on the tour itinerary conducted, made in the "Law on the tourist activity in the Russian Federation" in 2007.

– The "Law..." does not include the official state status of instructors-conductors in the occupational skill structure of the tourism industry personnel, as well as the content of their qualified characteristics (occupational standards) or requirements for their training and personal assessment characteristics of the readiness of this category of workers for their working activity [8].

– The current system of training of public personnel for sport health-giving tourism does not include the professional category of workers such as an instructor-conductor of sport health-giving tourism.

– The analysis of the existing social system of training of staff for sport health-giving tourism shows significant discrepancies between the programs and teaching methods in the mentioned areas. Training programs for public tourism staff focus mainly on the athletic instruction and are insufficiently adapted to the professional activity of these specialists.

– Taking into account all the above, we consider reasonable and necessary to build the process of training of the instructors-conductors of sport health-giving tourism, accompanying tourists on the active itinerary in the open environment, as part of the systematic multilevel instructional process of the training of educational specialists in the field of physical culture, sport and tourism.

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Pharmacotherapy Adherence under Diabetes Mellitus Type II in the Republic of Sakha (Yakutia)

Pharmacotherapy adherence of patients with diabetes mellitus type II under the supervision in the endocrinology department of the Republican hospital № 2 – REMC of Yakutsk is learnt. The estimation of various medical-social factors influence on the adherence of the given category of patients' treatment is held. According to the received data low adherence of patients to drug therapy remains to be one of the general problems during DM type II treatment. The high adherence to treatment is determined only in ½ of patients with DM type II.

Key words: diabetes mellitus type II, adherence to treatment, compliance, glucose-lowering drugs, medical and social factors.

There are currently more than 285 million patients with diabetes mellitus (DM), and according to the forecasts of the International Diabetes Federation (IDF) their number will increase to 483 million persons in 2030. According to the State Register, there are 3.1 million patients with DM in Russia (data as of 01.01.2010). Taking into account undiagnosed cases, the actual number of patients with the disease is 3-4 times more in the country. Over the past 10-15 years there has been a significant and rapid increase in the incidence of diabetes mellitus type II in the

Republic of Sakha (Yakutia), too. Thus, today there are more than 20 thousand follow-ups with DM type II, including 56.7% of working patients of 41-60 hypo.

DM type II is a disease the prognosis of which is largely determined by how the patient is involved in the therapeutic process. The extent of the patient's behavior that coincides with the recommended treatment is called compliance. This concept describes the behavior of the patient in the whole spectrum of medical prescriptions: correct medication, accuracy of performance of non-

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Table

Characteristics of questioned patients with DM type II

Sign	%
1. Sex	
Male	46.7
Female	53.3
2. Nationality	
Sakha	83.3
Russian	16.7
3. Education	
Secondary education	-
Specialized secondary education	53.3
Incomplete higher education	-
Higher education	46.7
4. Marital status	
Married or civil marriage	76.7
Divorced or lives separately	-
Never been married	10.0
Widower (widow)	13.3
5. Nature of work	
Intellectual	40.0
Manual	16.7
Unemployed	20.0
Retiree	23.3
6. Disability	
No	60.0
Yes	40.0
7. DM type II period	
Less than 5 years	36.7
More than 5 years	63.3
8. Type of pharmacotherapy	
Oral glucose-lowering drugs	7.4
Insulin therapy	48.2
Combined therapy (insulin therapy in combination with oral glucose-lowering drugs)	44.4
9. Awareness of modern glucose-lowering drugs and possible complications of MD	
Not aware	20.0
Insufficiently aware, according to relatives and friends	13.3
Rather complete information, obtained from the media and publications	16.7
Rather complete information, obtained during conversation with the doctor	50.0
10. Attending the "School of diabetes"	
Yes	16.7
Partially	16.7
No	66.6

pharmacological treatments, adherence to diet, restriction of bad habits, and formation of healthy lifestyle. However, by the term compliance they mean patient's compliance with drug therapy [1]. Many authors consider it more acceptable the term "adherence", as it is less associated with medical prescriptive approach, the use of which is not recommended in chronic diseases [2]. Both concepts in relation to diabetes and other chronic diseases have been widely discussed in publications in recent years [3, 4, 5, 6].

Adherence to pharmacotherapy is generally regarded as unsatisfactory when the patient takes less than 80 % or more than 120 % of doses of a drug prescribed for a long period [7]. The ideal target in the treatment of any chronic disease, including DM, is hundred percent adherence, which is however is difficult to obtain. Performed studies suggest that a considerable part of patients with DM commit violations in taking oral glucose-lowering drugs (GLD) showing insufficient, 70-80 %, adherence to the treatment. [8]. According to pooled data by Cramer J. A. et al., only 58 % of patients with DM take GLD regularly (more than 80 % of days a year) [9]. In addition, a fairly common is a complete cessation of drug therapy on the patient's own initiative, which is noted in 8-16 % of cases [10]. Dailey et al., using the number of issued prescriptions for assessing the performance of drug regimen, found that patients with DM type II are constantly taking the recommended drugs on average about 130 days a year [11].

Many methods for assessing adherence to pharmacotherapy are difficult to use in general practice due to their high cost (e.g. special bottles with microprocessors allowing to record the frequency and time of cover removal), spent time (counting the number of tablets by the researcher) or the complexity of the application (determination of the drug or its metabolites content in blood or urine) [8]. In this regard, questioning of patients may be of practical value.

The article presents the results of a study of adherence to pharmacotherapy by patients with DM type II.

Data used for the study was a random sample from the unorganized population of Yakutsk, Republic of Sakha (Yakutia), aged 21-71 years, having DM type II who undergo hospital treatment in the endocrinology department of the Republican hospital № 2 – REMC of Yakutsk. The study involved 30 patients. The average age of the population surveyed is 49.9±11.4 y. o. The average duration of DM type II is 8.0±2.0 years (Table 1).

All subjects were asked to fill a questionnaire about their age, gender, nationality, education level, nature of work, marital status, length of diabetes type II and its treatment, specifics of patients' compliance with medication regimen. We used Morisky-Green questionnaire to assess patients' adherence to glucose-lowering therapy.

Statistical processing of data was performed in STATISTICA 8.0 software package.

The survey showed that only 66.7 % of patients surveyed

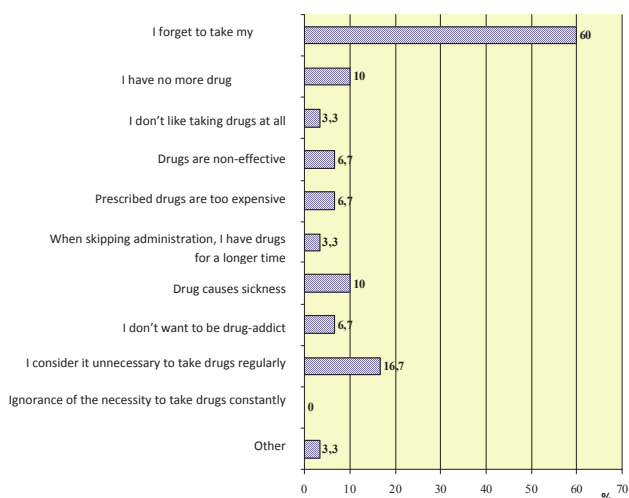


Fig. 1. Reasons why patients with DM type II skip the next administration of glucose-lowering drugs

considered the treatment of their DM type II effective, while in other cases patients were undecided. Only 2/3 of respondents comply with the doctor's recommendations, while 1/3 of them comply with it only partially. According to patients, the most frequent causes of violations of prescribed treatment are their forgetfulness (56.7 %), and underestimation of disease severity (40 %); 13.3 % of respondents mentioned the lack of money, and 6.6 % of them told about mistrust of their doctor and disbelief in the success of treatment and effectiveness of prescribed drugs.

Reasons why patients can skip the next administration of glucose-lowering drugs are shown in Fig. 1.

The survey results show that the patients' choice of a particular drug is determined by the recommendation, prescription (53.3 %), efficacy of the drug (36.7 %), its cost (26.7 %), and the lack of adverse effects (13.3 %).

The study showed that the high adherence to the

glucose-lowering therapy of the surveyed population only recorded in 53.3 % of cases, while the low adherence is recorded in 46.7 %.

The assessment of adherence to the treatment depending on gender showed that 57.1 % of men are highly committed to therapy, while women are 50%. No influence of age, education level on the adherence to glucose-lowering drugs has been identified in patients. (Fig. 2).

56.5 % among married patients, and 50 % among widowers/widows are highly committed, while the smallest adherence to drugs was observed in patients who had never been married (33.3 %). Assessment of the impact on the nature of work revealed that proportion of highly committed patients among manual workers is higher (80 %) than that among intellectual workers (50 %), unemployed (50 %) and retirees (42.9 %). (Fig. 3).

It was found that adherence to treatment of patients with DM type II increases with the length of the disease. Thus, 45.5 % of patients suffering from DM type II less than 5 years, and 57.9 % of patients suffering from it more than 5 years are highly committed to treatment. Survey results suggest that percentage of patients with high adherence among patients with disability is higher than among patients without disability (58.3 % vs. 50 %, respectively). High adherence to treatment is observed in 66.7 % of patients undergoing combined therapy (insulin therapy in combination with oral glucose-lowering drugs), and in 53.9 % of patients taking insulin drugs. No patients with high adherence to treatment have been revealed among individuals taking oral glucose-lowering drugs (Fig. 4).

Patients obtaining information about modern glucose-lowering drugs and possible complications of DM from a conversation with the doctor have high adherence to treatment more frequently than those obtaining information from other sources (media, special literature, talk with relatives and friends) (Fig. 5).

Thus, the survey results show that low patients' adherence to pharmacotherapy is a major problem in

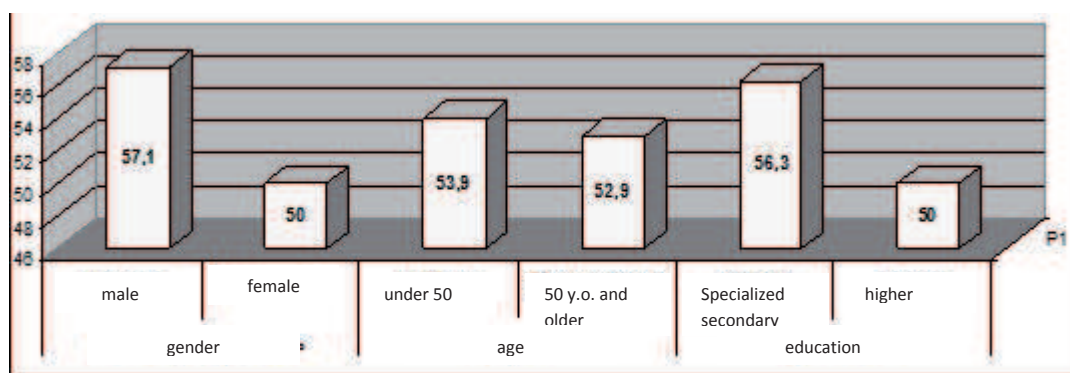


Fig. 2. High adherence depending on gender, age and education (%)

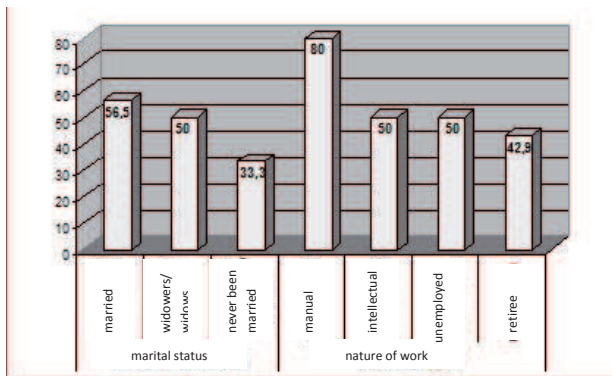


Fig. 3. High adherence depending on marital status and nature of work (%)

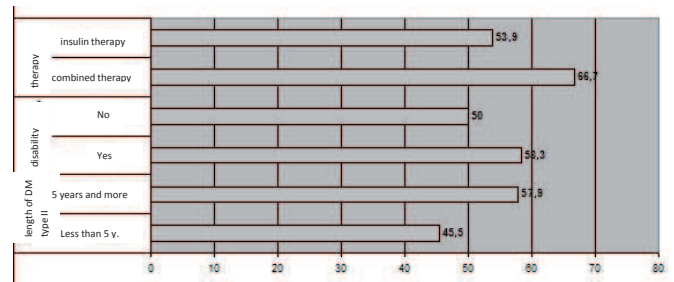


Fig. 4. High adherence depending on the length of DM type II, disability and type of therapy (%)

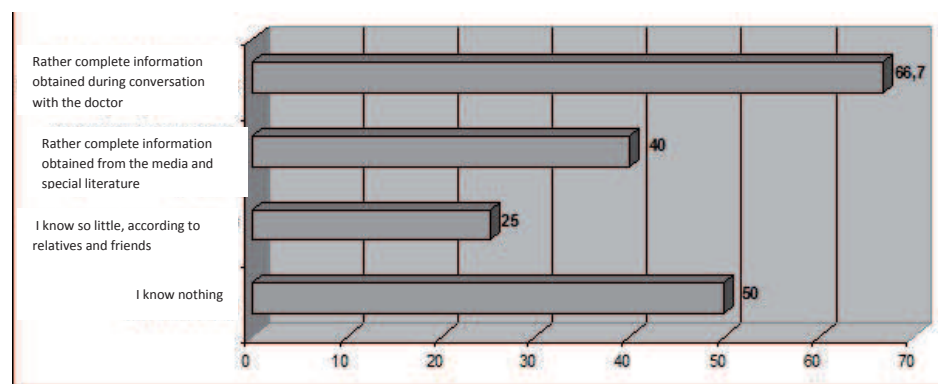


Fig. 5. High adherence depending on self-assessment of awareness of DM type II and its treatment (%)

the treatment of DM type II. According to the results, only 1/2 of patients with DM type II show high adherence to treatment (53.3 % of patients).

Conscious participation of the patient in the treatment, cooperation with the doctor, attending the School for diabetes, familiarization with the actions of oral glucose-lowering drugs and specifics of drug therapy are necessary conditions for improving patients' adherence to pharmacotherapy.

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The Composition and Properties of Mixed Saliva of Elderly People Living on High Latitude

Complex clinical-laboratory research on the composition and properties of elderly people's saliva, living in conditions of the North was conducted. The revealed defections, namely: low level of calcium, hyperviscosity of the saliva, the decrease of alkalotic phosphatase activity, misbalance of the cation-anion composition, decrease of remineralizing potential all they can be pathogenetic mechanism of the development of pathological processes of organs and tissues a mouth. In the Republic of Sakha (Yakutia) such researches were held for the first time.

Key words: mixed saliva, viscosity, salivation speed, type of micro crystallization, dental caries, periodontal disease, removable and non-removable dentures.

There is a global trend in life expectancy increase which is due to the improvement of quality of life [1, 2, 3]. The portion of elderly people is increasing in the total population [4, 5]. According to forecasts, elderly people in Russia will be up to 24.5 % in 2015. In this case dental status of Russian population is characterized by deterioration of the overall picture of the incidence in the last period [6, 7, 8, 9]. Hence, further improvement of

dental assistance to elderly people is of particular relevance. It should be noted that improving the quality of medical care is based on the knowledge of the physiological characteristics of the organs and tissues of the mouth.

Pathological and adaptive processes of organs and tissues of the oral cavity in geriatric patients have a number of features that is associated with chronic diseases of the internal organs, and especially with their combination i.e. comorbidity [10, 11, 12, 13, 14]. At the same time the prevalence of dental caries and periodontal disease remains high in the population [15, 16]. Dental disease in individuals over 60 years is at the top of the total incidence structure [17, 18, 19]. It should be noted that, according to some authors, up to 30 % of elderly persons experience a certain social isolation due to their oral health status [20, 21].

According to the Territorial statutory Medical Insurance Fund in the Republic of Sakha (Yakutia), number of elderly persons is 163 768 while the total population of the region is 959 [22, 23]. A large territory with several time zones, remote settlements, complex transport scheme and social structure cause some problems in providing medical assistance to the population. In addition, a low level of mineralization and lack of fluorine in the major source of drinking water in the North combined with other specific regional factors affect negatively functional status of organs and tissues of the mouth. [24, 25, 26]. Rational provision of dental care to elderly persons is therefore topical medical and social issue [27].

In the light of the foregoing, we have reasonably chosen a research trend related to the study of composition and properties of oral fluid in this group of population. Besides, there were no similar studies made in Yakutia previously, which identifies the theoretical and practical significance of the results.

During the study we were trying, on the basis of clinical and laboratory studies, to identify quantitative and qualitative changes of mixed saliva in elderly of Yakutia.

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Table 1

Properties of oral fluid in older age group

Age groups	Salivation rate, ml/min	Viscosity, un.	Microcrystallization, %	
			type I	type II
65-74 (n=31)	0,57±0,04	3,84±0,13	45,71±2,37	54,29±1,99
75 and more (n=22)	0,61±0,08	3,73±0,18	44,46±3,17	55,54±2,54

We conducted a comprehensive dental examination in elderly persons aged 60-93 y.o. living in Vilyuisk, Northern, Central and Southern regions of the Republic of Sakha (Yakutia). We examined 529 persons. Studies have been conducted at the geriatric center of the State Budgetary Institution of the Republic of Sakha (Yakutia) "Republican Hospital № 3", and at the orphanage for disabled and elderly persons in district "The city of Yakutsk". A standard screening record recommended by the WHO was used to conduct this examination (1997). We studied the properties of mixed saliva, such as salivation speed, type of micro crystallization; viscosity of saliva was determined using a viscosimeter (VK-4) by the method of E. A. Kost. Level of calcium and alkalotic phosphatase activity in oral fluid has been determined using «Photometer-5010" (Germany) photocolormeter and a standard set of "Olvex diagnosticum" in 53 people aged 65-74 years [28]. Cation-anionic analysis was performed in 53 persons aged 65-74 with measuring the mass concentration of anions and cations (ammonium, potassium, sodium, strontium, barium, magnesium, lithium, calcium, phosphate, fluoride, nitrate and nitrite) in mixed saliva by capillary electrophoresis method at a wavelength of 254 nm in the machine "Kapel103/103RT" (Russia).

Statistical processing of the material was performed using standard software package of applied statistical analysis (Statistika for Windows v. 6.0).

Results obtained during the study of properties of mixed saliva in elderly people characterize certain changes. Besides, average statistical data in groups showed its increase and, consequently, in a certain way predetermines formation and development of pathologic processes of organs and tissues of oral cavity in elderly persons. But at the same time, salivation rate indicators were within optimal values (optimal rate is 0.40 ml / min). But structure data of micro crystallization types of mixed saliva in examined age groups revealed predominance of micro crystallization of the 2nd type, with the average being 54.91 %.

Detected abnormalities of viscosity and microcrystallization types of mixed saliva in elderly persons to a certain extent affect its cation-anion composition (Table 2). Thus, study of anion composition of saliva showed the lowest concentrations of chlorides, fluorides, phosphates; they respectively, were in the range of values from 178.78 to 557.09 mg/L, with nitrites, sulfates and nitrates being at minimum values. Maximum concentrations of cation composition of oral fluid were in potassium, sodium and magnesium and ranged from 657.96 to 547.87 mg/L, while contents of lithium, strontium, barium, calcium were minimal. Calcium-phosphorus ratio was 9.63. In general, calcium content in mixed saliva in elderly persons is decreasing.

Data on alkaline phosphatase activity (optimum

Table 2

Cation-anion analysis of mixed saliva in elderly persons

№	Name of mineral components	Concentration (mg/L)	№	Name of mineral components	Concentration (mg/L)
	<u>Anions:</u>			<u>Cations:</u>	
1	chloride	557,09±10,34	1	potassium	657,96±51,47
2	nitrite	6,25±1,87	2	sodium	547,87±45,62
3	sulfate	10,35±1,42	3	lithium	18,37±0,31
4	nitrate	40,46±4,24	4	magnesium	255,28±53,83
5	fluoride	178,78±19,65	5	strontium	4,37±0,60
6	phosphate	395,14±48,81	6	barium	3,90±0,61
			7	calcium	41,06±7,30

enzyme activity is in the alkaline pH range of 0.7 and more) ranged from 0.36+0.09 to 1.48+0.31 mAbs / L in age groups. The data suggest reduction of its activity in the metabolic processes occurring in the mouth, which can be considered as compensatory and adaptive response to reduction of calcium content in the mixed saliva in order to maintain calcium-phosphorus ratio within its normal range.

It should be noted that changes in the composition and properties of oral fluid in elderly persons on the background presence of somatic disease is accompanied by a high prevalence of major dental diseases and defects of dentition. Thus, the average prevalence of dental caries in the examined age group is 44.45+0.58 %. The intensity of lesion of hard dental tissues with pathological demineralizing processes indicates a significant predominance of "extracted teeth" in the structure of components of DEF caries index, (decayed, extracted and filled teeth) which was 85.04+0.16 %. D and F components were 5.93+0.98 % and 9.03+0.95 %. It should be noted that the main cause of tooth loss in older persons are complications of dental caries and periodontal disease. Analysis of these periodontal diseases in elderly persons shows their prevalence. Thus, the frequency of pathological inflammatory and destructive processes of periodontal tissue was 44.44+0.58 %, while that of exchange-dystrophic processes was 26.52+0.77%. 44.80+0.58 % of elderly persons had wandering occlusion due to the loss of teeth. The more often detected defects in examined subjects were bilateral end dental defects (55.56+0.46 %), which are followed by bounded edentulous teeth of lateral portions – 21.15+0.92 %, and rarely observed Kennedy grade 2 and three defect, where indices were 6.09+0.98 % and 3.58+1.01 %, respectively.

Analysis of orthopedic status in elderly persons is indicative of their needs of specialized care. Thus, only 22.58+0.61 % had a partial denture only of the upper or lower jaw, while the corresponding figures of complete dentures, crowns, fixed prostheses, were in the range of 24.01+0.80 %, 10.75+0.93 % and 11.12+0.93 %, respectively. And only 2.87+1.02 % of examined persons had more than one bridge work on one of the jaws. Also, more than one third of older persons had no oral orthopedic prostheses.

The obtained results indicates qualitative and quantitative changes of mixed saliva, which can serve as one of the pathogenetic mechanisms of pathological processes in organs and tissues of the oral cavity, and determine the high level of dental disease of elderly and old persons. These facts necessitate improving dental care to persons of older age group living in Yakutia based on identified features of the composition and properties of mixed saliva.

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CHRONICLE

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Results of the 2nd International Conference “Supercomputer Technologies of Mathematical Modelling”

North-Eastern Federal University named after M.K. Ammosov in association with the Steklov Mathematical Institute RAS, the Institute of System Programming RAS, Lobachevsky State University of Nizhny Novgorod and with support of the Government of the Sakha Republic (Yakutia), financial support from the companies HP, Inline Group, NVidia, Compulink, INTEL, Display Group, CJSC “Resource Service” have conducted II International Conference “Supercomputer technologies of mathematical modeling” which lasted from the 8th till 11th of July, 2013, and was held in Yakutsk.

The decision about holding the II International Conference was made in 2011 on the basis of the results of the first International Conference “Supercomputer technologies of mathematical modeling”.

The order № 1196-OD on carrying the II International Conference “Supercomputer technologies of mathematical modeling” was signed by principal of NEFU Mikhailova E.I. on November, 21, 2012. In the order the Program Committee and the Organizing Committee were appointed, and the conference date was set: from 8th till 11th of July, 2013.

The main topics of discussion were the following:

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current problems of mathematical modeling of continuum mechanics, computational algorithms in multiprocessor systems, development prospects of the parallel computing technologies, exchange of experience in training of specialists in the field parallel computer technologies.

The issues discussed belong to the following areas:

1. Mathematical problems of continuum mechanics;
2. Computational algorithms of mathematical modeling;
3. HPC (High-performance computing) software;
4. Supercomputer technologies for solutions of applied problems;
5. Problems of specialist training in the field of parallel computing.

The conference brought together the leading scientists of Russia and foreign countries (Belarus, Great Britain, Hungary, Germany, Greece, India, Canada, China, and Korea), representatives of the companies HP, Inline Group, NVidia, INTEL. In total, the conference was attended by 131 people, including 64 non-local participants, of which 19 were foreign scientists. Among the participants there were 7 academicians of RAS, 5 Corresponding Members of RAS, 31 Science Doctors and 25 PhDs.

During the conference 11 plenary and 55 sectional reports were presented; the scope of the conference covered a wide range of issues associated with the use of high performance computing and parallel algorithms for mathematical modeling. The greatest interest was aroused by the reports on mathematical problems of continuum mechanics, computational algorithms of mathematical modeling, HPC software, computational hydrodynamics, computational technologies for solving applied problems, computational methods for solving the problems of filtration, numerical methods of mathematical physics, applied problems of mathematical modeling. The conference participants noted the high quality of the presented scientific reports and strongly pronounced applied orientation of the research works. The event



Fig. Opening of the II International Conference SCTEMM-2013

was supported by purposely-created conference site <http://sctemm.s-vfu.ru> and by publishing the book of abstracts and.

In follow-up of the International Conference the following agreements were concluded:

- on interuniversity cooperation in order to have two-way scientific and educational contacts, conduction of scientific and technological activities, joint research projects between NEFU named after M.K. Ammosov and Eotvos Lorand University (Budapest, Hungary, Professor Istvan Farago);

- on cooperation for solution of statutory objectives, development of research activities, improvement of material and technical resources of the research activities, for attraction of additional funding and encouraging the production between NEFU named after M.K. Ammosov and Bauman Moscow State Technical University (Moscow, Professor N.I. Sidnyayev);

- on establishing a HPC competence center NEFU-Intel in NEFU (Novosibirsk, operational director of R&D department of INTEL Corporation A.V. Avdeyev).

The participants of the II International Conference “Supercomputer technologies of mathematical modeling” have made a unanimous decision:

1. To express a high opinion with regard to the work of the Program and Organizing committees on organization and conduction of the international conference.

2. To publish the book of abstracts and the presentations of the participating reporters on the conference site.

3. To publish the book of reports of the International Conference.

4. Taking into account the relevance of the research topics and applied orientation of the conference, it is rational to recommend regular convening of international conferences dedicated to the problems of supercomputer technologies of mathematical modeling to the administrative personnel of NEFU.

5. To organize and hold the next International Conference “Supercomputer technologies of mathematical modeling” in NEFU named after M.K. Ammosov in 2016.



S. N. Arkhipova

In Hallowed Memory of Anna Vasilievna Mordovskaya (1958-2012)



On October 25 Anna Vasilievna Mordovskaya, an outstanding scientist, a talented teacher, a charming woman, a leader of workplace learning who devoted all her short life to the service of the home university would have turned 55 years old.

After graduating Philology Department at the Yakutsk State University in 1981, she was invited to komsomol work, where she showed her organizing and leadership skills and in 1983 at the komsomol conference for students and professors of YSU she was chosen as assistant secretary of komsomol committee. Anna Vasilievna's

talent always distinguished with multifacetedness, she could easily manage with dynamic public activity as well as with thoughtful research work. As soon as she became a SRI postgraduate of job training and workplace guidance of the USSR she defended her thesis on general pedagogy and as a young scientist in 1990 began teaching at the Department of Pedagogy of YSU.

In 1996 Anna Vasilievna as a high-skilled organizer and a professional who knows peculiarities of academic activity in higher school was designated as Dean of Academic Affairs Yakutsk State Pedagogical University. Upon her initiative Pedagogical University began to develop as a system of ceaseless teacher education, including pre-university, university and graduate subsystems. Over the years of her work at the university the list of specialties and specializations has expanded. The university started to perform training of highly qualified specialists in the new fields such as "Technology and Entrepreneurship", "Organization Management" ("Education Management"), "Psychology", "Speech Therapy", "Oligophrenopedagogics", "Pedagogy and Psychology", "Foreign Language", specializations "Logopedic work in preschool educational institutions", "Socio-educational work with preschool children", "Foreign language education for preschool children", "Organization of cultural and leisure activities in educational institutions", "Socio-pedagogical rehabilitation for children with deviant behavior", "Technological work", "Services".

As a leader Anna Vasilievna paid significant attention to creation of flexible organizational structure of Pedagogical University YSU, allowing to carry out training of specialists for the educational system of Sakha Republic (Yakutia), that has a high level of social demand on the labor market of the republic. Four departments were created in Pedagogical University, oriented at Pedagogical specializations, considering Ministry of Education Sakha Republic (Yakutia) social mandate. To create a system of ceaseless teacher education Anna Vasilievna developed Regulations on pedagogical classes and general education

ARKHIPOVA Suola Nikolaevna – Candidate of Pedagogical Sciences, Associate Professor of Department of Special (speech pathology) Education of Teacher Training Institute of the NEFU named after M. K. Ammosov.

university activities, approved by Collegium of MO Sakha Republic (Yakutia), which allowed forming regulatory framework for development of pre-university trainings for future teachers.

In 2000 she succeeded to defend her doctoral dissertation on “Ethnopedagogical basis for the formation of life and professional self-determination for upper-form pupils (based on the example of the Sakha Republic (Yakutia)” in dissertation committee at the Institute of General Secondary Education of the Russian Academy of Education. In 2003 she was awarded the title of the pedagogy professor of YSU.

Anna Vasilievna led a very dynamic social work in the republic as a President of the League «Women scientists in Yakutia», member of the Presidium of the Women’s Organizations Union of the Sakha Republic (Yakutia), a chairman of the Women Advisory Council at the mayor of Yakutsk. Upon her initiative was developed a program of supporting women research activities, encouraging their professional growth.

One of the important directions in her career was working as an assistant of the chairman of the scientific-methodical commission at the Pedagogical University, a member of interdepartmental council on teachers education YSU, a member of the Scientific Council of the Institute of Teacher Training of Sakha (Yakutia), a member of the Dissertation Committee on the defense of postgraduate

and doctoral dissertations; in specialty 13.00.01 – General Pedagogics, history of pedagogics and education; she successfully led the research work under the Federal Targeted Programme, carried out work on realization the NEFU Development Programme.

Last years of her life she worked as chairholder of Pedagogy Department, and only thanks to her purposeful activity degree’s level of the faculty lecturing staff reached 100 %. In 2008, the Department of Pedagogy was awarded the title “Russian Golden Department.” Under her scientific management 17 candidates of pedagogical sciences were prepared.

A. V. Mordovskaya’s professional activity was marked with award pins “Teacher of Teachers of the Sakha Republic (Yakutia)”, “Excellence in Education in the Sakha Republic (Yakutia)”, “Honored Worker of Higher Professional Education of the Russian Federation”, the honorary title “Honored Worker of Education of the Sakha Republic (Yakutia).”

Everyone who used to communicate and to work with Anna Vasilievna, knew her as thoughtful, demanding scientist, leader, and at the same as an extraordinarily kind, sympathetic person, who was always ready to help and to support in difficult times.

Bright image of Anna Vasilievna Mordovskaya will forever remain a model of high professionalism, kindness, tactfulness, integrity and responsibility.



DEMANDS **of publication in the academic periodical “Vestnik of the North-Eastern Federal University named after M.K. Ammosov”**

1. In the academic periodical scientific articles in Russian and in English of all scientific fields written by the NEFU lecturers, magistrands, and other authors who make scientific researches, from all RF regions and foreign countries can be published.

2. To the publication in the periodical articles with at most concretized annotations are accepted. Compositionally an annotation can be built according to IMRAD principle (Introduction, Methods, Results and Discussion): Actuality, goals and objectives of a research. The way in which the research was held; which methods were used. Basic conclusions, results of the research; what sort of perspectives of the research and directions of further work. Number of words in annotation must be no less than 150-200 words. Sections “Chronicle” and “Anniversaries” are given without annotations. Key words (no less than 10) are used for article searching in online bases, they must be laconic, represent the main idea and specificity of the article.

3. To the publication those articles which include new experimental data or abstract theorems never published before and articles with methodological character are accepted. Articles must be actual on thematic, significant from scientific and practical point of view, compositionally distinctly structured.

In the introduction the concerned problem description, shortened analysis of the known from scientific literature decisions (with quotations of authorities), disadvantages and advantages (peculiarities) of suggested approach comments. Detailed work goal setting is necessary.

The main body must be divided in sections. The sections should have substantial titles. Such titles as “Main body” are not accepted. Introduction, sections and Conclusion are not numbered.

Conclusion. General conclusions on the substantial part are given. One ought to escape enumerating the presented material in the article. The wordage of an article must be up to 24 pages (illustration material and reference list inter alia), chronicle and anniversaries – 1-2 pages.

4. The articles should be carefully edited. There must be 2 exemplars of the printed variant of an article. Editor Word, A-4 format, portrait orientation. Page setup: margins (upper – 2,0 cm, lower – 3,0 cm, left – 2,5cm, right – 2,5 cm); paragraph – setback 1,25 cm; feed pitch - multiplying factor 1,5; body size – 14 (with automated word shift); folio size – 12; face - Times New Roman. The second printed variant of an article must be given without author’s name (for blind review).

Before article’s title – UDC right upper (in bold type). The author’s (authors’) initials and family name (-s) is (are) given in the beginning of the article on the right side in bold type, the title of an article in upper case letters, bold type. The title in English – in lower case letters.

5. At the end of an article – author’s signature, on a separate list author’s (authors’) data in Russian and in English are given:

- full name;
- science degree (if any);
- work address, post;
- street address with an index (for the periodical author’s exemplar sending if an author is a foreigner);
- E-mail;
- Contact phone number (for a mobile connection with the editors office).

If an author is a postgraduate his curator’s review must be included.

6. Shortenings except generally accepted in a text and in tables are not admitted. All abbreviation and shortenings must be decoded at the first use in a text. All tables include headings and continuous numbering within the article denoted with Arabic numerals (for instance: table 1), in a text references are given in a shortened form (tab. 1). The text of a table is printed after two

intervals; tables' content should not be the same with the article's text. In works of biological cycle in the title and the text of the table only Latin names of species, genus and Alu-families. The comment to the table is under the table.

Given formulas include continuous numeration. Number is written in the end of a line with Arabic numerals in round brackets. Between formulas, separated into a single line and text and between formulas' lines gaps no less than 1,5 – 2 cm are left.

7. All illustrated materials: graphics, cards, schemes, photos – are named as pictures, include continuous numeration (Arabic numerals) and are written in a shortened form (for example: pic. 1). Colored pictures (graphics, diagrams) are not accepted since during printing in black-and-white regime colors are indistinct. If an illustrative material is given on a separate list on back-page of a list picture's numerical order, author's family name and the article's title are written with a pencil. Pictures and outlines are given in two exemplars. The size of a picture – no less than 40 – 50 mm and no bigger than 120 – 170 mm. List of pictures' outlines with dimension indications of quantities given in pictures is attached to the pictures. In the text and on margins pictures' places are shown. Pictures are put in the text.

References in the text are written as a number (Arabic numeral) in straight brackets.

8. Quoted literature is given in a separate list under heading "References" right after the text of an article. The references list is additionally duplicated in Latin according to the system of the USA Library of Congress (LC, website for transliteration: <http://translit.ru>). All works are enumerated in order of references mentioning in the text. For periodicals it is necessary to write authors family name, initials, article's title, periodical's name, year of publication, tome, number or publishing, the first and the last pages of the periodical.

9. An electronic variant of an article must be sent to the E-mail address, pictures are sent as separate files in jpg format.

Articles are reviewed on a first-come during 3-6 months.

An irreversible decision about article publishing is rendered by members of the editorial board.

Publication of an article is free (not paid).

Articles sent without abidance by the demands given above will not be observed.

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