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CLINICAL-PATHOGENIC CHARACTERISTICS OF PRIMARY CHRONIC BRUCELLOSIS

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The study of clinical immunologic values of 35 patients proved that primary chronic brucellosis is characterized by long-lasting progress, average $7,5 \pm 0,6$ years, and moderate and minimal activity. The alterations in cell-mediated immunity have immediate impact on the appearance of disorders in cytokine section of immunity both on the side of pro-inflammatory interleukins and counter inflammatory interleukins in the form of reliable increase of interleukins IL-1 β , IL-4, IL-6 and IL-10 with the background significant decrease of TNF- γ (1,7 times). For adequate evaluation of the status of patients with primary chronic brucellosis it is necessary to perform complex examination including not only traditional clinical methods but also the study of the values of immunologic status providing objective diagnosis of the disease.

Keywords: primary chronic brucellosis, long-lasting progress, cell-mediated immunity, pro-inflammatory interleukins

Brucellosis is acute infectious disease which is registered more often in comparison with other very dangerous zoonotic infections and it is still actual problem for health care in many countries with developed livestock sector, including Uzbekistan [1, 4]. Brucellosis is characterized by complex pathogenesis, polymorphic clinical manifestations, wave-like recurrent progress, damage of reticular-endothelial system, focal symptoms in case of sub-acute form with often chronization of the process together with background developing secondary immune deficiency [2, 5].

In the modern diagnostics of brucellosis a great interest is paid not only to bacteriologic and serologic researches, but also to the study of immune pathogenesis [3]. Differently directed, complex and dynamically altering parameters of immune homeostasis of a patient with brucellosis determine the difficulties in the evaluation of occurring shifts in the immune system causing ambiguous estimations of the detected disorders and determine the progress and outcome of the disease. In domestic and foreign literature recently there are many works dedicated to the study of cell-mediated and humoral immunity and the state of non-specific resistance of organism [1].

In case of primary chronic brucellosis complex researches of profound study of the importance of cytokines for the development of pathologic process, interrelation of cytokines with clinical-immunologic manifestations, stage of the disease, severity of the progress and outcomes of the disease determine working out of new scientifically based methods of differentiated immune-correcting therapy for that disease.

In spite of a lot of researches dedicated to the questions of pathogenesis, diagnostics and treatment of brucellosis, researchers continue the search for the most effective methods of diagnostics, treatment and prognosis.

In relation to the aforesaid, the aim of the research is study of clinical-pathogenetic manifestations of primary chronic brucellosis taking into account immunologic values including cytokines.

Materials and methods of the research

The research was based on the examination data of 35 patients with primary chronic brucellosis from 18 to 70 years old living in the endemic regions of the Republic of Uzbekistan. Among the examined patients 68.6% (24 persons) are men and 31.4% (11 persons) are women.

The diagnosis was made on the basis of epidemiologic anamnesis, clinical symptoms and laboratory data.

The analysis of detailed blood immunogram was performed among 35 patients with primary chronic brucellosis (main group) and 33 actually healthy individuals (control group) according to the following scheme:

A. Definition of the number of leukocytes and lymphocytes with the help of S.I. Zadorojniy and I.D. Drozdov's dyes. The absolute value of sub-populations in 1 mkl was determined according to the number of leukocytes and lymphocytes.

B. Definition of sub-populations of lymphocytes according to the common Boym method in ficoll-verggrafin density gradient ($\rho = 1,077$ g/l). Estimation was done on the basis of lymphocytes amount and the result was expressed in percents (relative value).

C. Definition of the concentration of immune globulins G, A, M in blood serum by means of radial immune diffusion method using mono specific serums of produced by Moscow Microbiology and Epidemiology Institute under the name of N.F. Gamaleii.

At the same time IL-1 β , IL-4, IL-6, IL-10, TNF- γ researches were performed for evaluation of the state of immunologic system response to inflammatory process at the level of cytokines.

The achieved results were statistically processed with Pentium-4 PC using the programs worked out in EXCEL package involving the library of statistical functions with the calculation of the arithmetic mean (M), average quadratic divergence (σ), standard error (m), relative values (frequency, %), Student's criteria (t) and possibility of mistake (P).

Difference of average values were considered to be reliable with significance level $P < 0,05$. The existing regulations of statistical processing of the data of clinical and laboratory researches were followed.

Results of research and their discussion

In the analysis of the disease duration we detected that in case of primary chronic brucellosis the infectious process differs by longer duration, average $7,5 \pm 0,6$ years characterized by its moderate and minimal activity.

Patients with primary chronic brucellosis applied to local polyclinics and outpatients' clinics for several times, but doctors failed to diagnose the patients and symptomatic treatment didn't effectively improve the general state of patients.

At the reception to hospital in 45,7% cases patients complained aching in the upper and lower limbs. Often there were total intoxication (weakness, headache) and sub-fibril temperature. Various changes in organs and systems were detected in objective examination. In the part of the organs of blood circulation there were registered tachycardia, bradycardia, dullness of tones of heart, hypotension, hypertension. Enlargement of lymphatic nodes, spleno and hepatomegalia.

In many cases there were damages in the organs of skeletal, nerve and sexual systems, such as arthritis, bursitis, spondylarthritis, orchitis, orchoepididimitis; most often were sacroileitis, disorders of sleeping, sweating, disorders of menstrual cycle, miscarriages and pre-term deliveries.

The values of peripheral blood of the patients with primary chronic brucellosis were characterized by moderate decrease of erythrocytes number (28,2%), decrease of ESR (26,9%), leucopenia (92,8%), neutropenia (95,1%) with the shift to the left, lymphopenia, monocytopenia and eosinophilia.

Considering the values of serologic reactions, the data of Helson's reaction, Rite's reaction, CBR, IFR and Burn's intracutaneous allergic test were of great diagnostic importance.

In the analysis of immunologic values of the patients with primary chronic brucellosis we detected the following changes depicted in the Fig. 1.

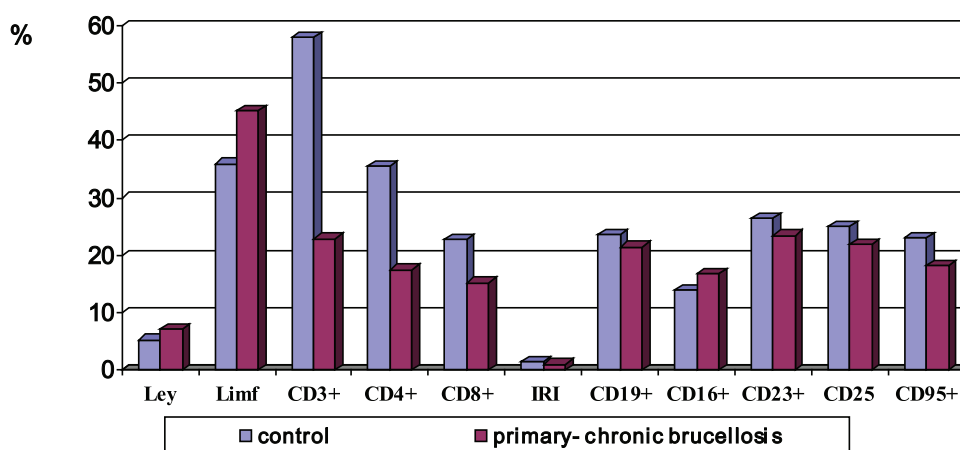


Fig. 1. The values of cell-mediated immunity of the patients with primary chronic brucellosis in comparison

As it is seen on the diagram there is misbalance of cell-mediated immunity, characterized by reliable rise of leukocytes and lymphocytes 1,3 times on the background of significant decrease of T-lymphocytes sub-populations (CD3+ – 2,5 times; CD4+ – 2 times; CD8+ – 1,5 times) in comparison with the control group values.

Alteration of B-lymphocytes level is proved by the values of its sub-population CD19+, CD23+ and CD25+ which are decreased in comparison with the control values.

Besides that, we noted activation of natural killers, rise of that value 1,2 times in comparison with the control one is obviously determined by the increase of the number of immature forms of natural killers in peripheral blood.

Insignificant decrease of IgA and IgM on the background of reliable increase of IgG was noticed in the study of the values of humoral section of immunity.

In cytokines status of the given category of the patients there were also alterations presented in the Fig. 2.

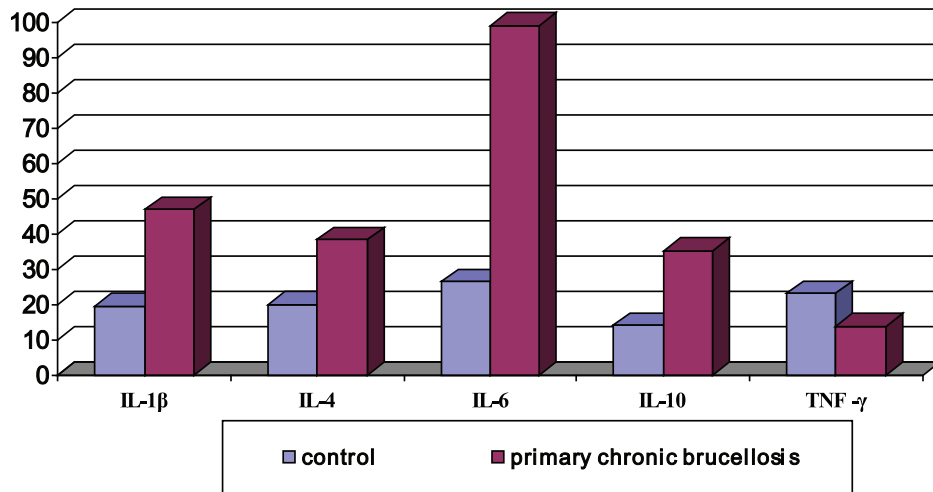


Fig. 2. The values of cytokine status of the patients with primary chronic brucellosis in comparison

As it is seen on the given diagram there was reliable increase of interleukins IL-1 β , IL-4, IL-6 and IL-10 in comparison with the control values. Especially high values are observed among counter inflammatory cytokines. Thus, IL-1 β increase 2,4 times, IL-6 – 3,7 times. Besides that, there is activation of counter inflammatory cytokines IL-4 (1,9 times) and IL-10 (2,5 times).

At the same time with the achieved results decrease of TNF- γ concentration (1,7 times) was detected. It certainly effects phagocytosis system by means of decreasing its functional activity and preventing its provision of complete elimination of the agent in the organism.

Thus, taking into account these results, it should be stated that at the present time for the adequate evaluation of the status of the patients with primary chronic brucellosis it is necessary to perform complex examination including not only traditional clinical methods but also study of the values of immunologic status, providing objective diagnosis and definition of the possibility of chronization and relapse of the disease.

Conclusions

1. It was defined that infectious process in case of primary chronic brucellosis differed by its longer progress and was characterized by moderate and minimal activity.

2. In case of brucellosis significant disorders of cytokines regulation such as misbalance of pro (IL-1 β , IL-6) and counter inflammatory cytokines (IL-4, IL-10) and γ -interferons are noted together with combined immune deficiency.

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*Materials of Conferences***NEW IN THE PATHOGENESIS OF THE ACUTE EPIDIDYMITIS**

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The problem of diagnostics and treatment of an acute epididymitis demands separate treating as often the choice of a method of treatment has empirical character and depends only on personal preferences of the clinician. As a research problem the proof of existence of a phenomenon of an intrascrotal hypertension (ISH) was nominated at acute epididymitis at men. It is known that pressure rising in the closed cavity harmful influences the course of the main pathological process. Under observation there were 80 patients with acute the epididymitis. Middle age of $28,3 \pm 3,6$ years. Existence of a serious form acute epididymitis, confirmed histologically was criterion of including in researches. At 34 (42,5%) patients the disease was accompanied by development reactive hydrocele among which at 21 (61,8%) the ISH was observed. The group of comparison consisted of 20 healthy men who don't have in the anamnesis of indications on transferred diseases of organs of a scrotum. Measurement of intrascrotal pressure was carried out by the technique offered by us. Research of a hemodynamic in a testicle and its appendage was carried out by means of an ultrasonic dopplerography. Average value of intrascrotal pressure made – $14,4 \pm 2,4$ cm of water column. During research it is established that depending on existence / lack of an ISH at acute inflammatory processes in organs of a scrotum profiles of development of disorders of a hemodynamic essentially differing from each other take place. At acute epididymitis, not being accompanied ISH, the blood flow in a testicle and its appendage undergoes changes in a type of hyper vascularization and depression of vascular resistance (R_i in intratesticle centripetal arteries $0,24 \pm 0,03$, and in arteries of an epididymis $0,37 \pm 0,01$). At acute epididymitis, being accompanied an ISH, the mechanical compression of vessels of a seed funicle, conducts to disturbances of hemodynamic that is at the bottom of rising of a resistance of a vascular bed (R_i in intratesticle centripetal arteries made $0,81 \pm 0,02$, and in arteries of an epididymis $0,67 \pm 0,02$). Disturbances of a blood flow in vessels of an epididymis develop much quicker and begin at lower level of an ISH, than disturbances of a circulation is immediate in the testicle. (the augmentation of intrascrotal pressure at 1 cm of waters of the Art. conducts to Ved depression on $0,35$ cm/sec. in a intratesticle artery and on $1,16$ cm/sec. in an appendage artery). Thus, development of an ISH at an acute epididymitis

causes specific disorders of a hemodynamic in an epididymis, consisting in change of an inflammatory vasodilation by a vasoconstriction, augmentation of peripheric vascular resistance. High resistance of vessels of an appendage aggravates expression of an inflammation and worsens the disease forecast. Existence of an ISH in combination with rising of a resistance of a vascular bed of an appendage at acute epididymitis dictates need of performance of decompression of a cavity of a scrotum, thereby defining indications to surgical treatment.

The work is submitted to the International Scientific Conference «Innovative medical technologies», Russia (Sochi), 26-30 September 2013, came to the editorial office on 19.09.2013.

TREE-FORM GROWTH AND SEGMENTATION OF BODY OF DEVELOPING ORGANISM

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Ontogenesis has two aspects – qualitative and quantitative. They correspond to two main components of development of all organisms:

- 1) growth is increasing of sizes;
- 2) differentiation is increasing of complexity by means of isolation of partes and appearance of every possible differences.

The both aspects of the development are inseparable interconnected. The considerable part of differentiation passes by means of uneven growth. Differentiative growth leads to division of body on the parts and may be called as segmentary growth. Differently say, the main mechanic of development of organism in its ontogenesis is intermittent, polyfocal growth of organism on its extent: centres of intensive growth alternate with intermediate parts, which grow slowly and narrow between isolated, increasing anlagen of organs. Epitheliums form the main, primary organizers (proliferative epithelial anlagen) of morfogenesis. Mesenchyma, its cells move from embryonic layers (epithelioformed stratum), is orientated on the epithelial anlagen of organs (differentiative parts of embryonic layers) and is divided between isolated organic, epitheliomesenchymal anlagen. Mesenchyma and its derivatives can form secondary organizers of morfogenesis. They modify growth of the primary organizers. The main types of epithelial growth:

- 1) by stratum, it can roll up (embryonic layers and neurulation, surface epitheliums);
- 2) tree-form growth – tubes of glandular epithelium and vascular endothelium repeatedly branch,

their branches introduce into surrounding tissues with division of organ on parts (new organs, lobes, lobules).

Epithelial tube of body growths and branches much slowly.

The work is submitted to the International Scientific Conference «Fundamental research», Jordan (Aqaba), 9-16 June 2013, came to the editorial office on 25.09.2013.

EFFECT OF ENVIRONMENTAL FACTORS ON THE DEVELOPMENT OF BRONCHIAL ASTHMA IN CHILDREN

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Bronchial asthma (BA) is one of the most common allergic diseases. The authors conducted a study to determine the role of the impact of environmental factors in the development of BA. We studied 148 children with a diagnosed of asthma in fact (the main group). As a control, we examined 156 healthy children with an early age recurrent episodes of bronchial obstruction. We investigated the medical documentation of the patients (outpatient cards). In the statistical analysis we used nonparametric methods. Differences in relative indicators were studied by Fisher's exact test. Among the study group of children for intermittent disease was observed in 53 (36,3%) children, mild persistent – in 46 (31,5%) children, moderate persistent – in 32 (21,9%) children, severe persistent – in 15 (10,3%) children. The duration of dispensary observation was on average 6,0 [4,0, 8,0] years. Early manifestations of allergy were observed in 137 (93,8%) children, including atopic dermatitis occurred in 128 (89,8%) children, food allergy- in 134 (92,6%), drug allergy – in 64 (43,8%) children, acute urticaria and angioedema – in 77 (53,1%) of the children, nasal congestion with no evidence of viral infection- in 76 (52,3%), contact dermatitis – in 54 (37,0%) children. Adverse environmental factors of the microenvironment are making a great contribution to the development of BA. We set significant differences between groups for the following factors: the presence of upholstered furniture and carpets in the bedroom (82,9%), keeping the books on open shelves (prolonged contact with house and library dust) (65,3% of children), the presence in the house of flowering plant (contact with pollen and fungi in soil) (86,3% of children); dampness and mold in the apartment (contact with fungi) (67,8% of children), the presence of gas stoves in the kitchen and the lack of fume cupboards (contact with nitrogen dioxide and other chemicals) (85,6% of children), living near major highways, industrial plants and other ecologically unfavorable objects (67,8% of children). In summary, we found that the studied group of children charac-

terized by intermittent course of the disease, early onset of allergic symptoms and more exposed to adverse environmental factors.

The work is submitted to the International Scientific Conference «Fundamental and applied problems of medicine and biology», UAE (Dubai), 16-23 October 2013, came to the editorial office on 05.09.2013.

AXIOLOGICAL ASPECT OF STUDYING THE HUMANITIES IN HIGHER MEDICAL EDUCATIONAL ESTABLISHMENTS

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The enormous progress made by medicine in recent decades requires life-long learning, permanent updating of knowledge, skills, and improving of personal qualities of a medical specialist. It is obvious, that a specialist possessing high intellectual and cultural potential and characterized by greater professional mobility easily adapts to the changing socio-economic conditions and to new achievements in his field of science. First-year students of medical schools are people with a shaped personality, and still not enough educated people, sometimes lacking willingness to consider complex phenomena of social and professional reality. Willingness of a future doctor for a holistic perception of the realities of professional work, mastering the experience of world culture, dialogical thinking as an integral part of the professional and personal culture, interdisciplinary synthesis of knowledge – these and many other factors suggest changing traditional approaches to medical education worldwide.

As a universal process, the humanization of medical education should be implemented in all components of education: in educational content, forms and methods of the educational process, requirements to the level of training. These are the conditions for establishing the priority of human values, for the development of creative capabilities of faculty members and students, whose joint activity is aimed at providing truly humane, competent deontological attitude to the patient. The researchers of the higher education humanization process note that it is very difficult to develop a universal recipe for the optimal combination of general scientific and humanitarian components of professional education. The key prerequisite here is to create a flexible system focused primarily on saturation of scientific and special disciplines with humanitarian content.

One of the promising models of educational process implementing humanitarian components into specialized medical subjects was developed and tested in the educational process at the Volgograd state medical university. The model involves creation of pedagogical environment (so-called

«pedagogical situations»), stimulating the development of required features (skills, experience). It comprises three stages:

1) situations of cognitive level – formation of students' perceptions of interdisciplinary links of the humanitarian component of education through demonstration of its relevance as a means of initiation to the professional, social, cultural, moral and other kinds of experience;

2) situations of professionally-oriented communicative interaction – the formation and development of the communicative level of professional competence and appreciation of the value of the partner as the carrier of a special system of philosophy, values, cognitive, personal experiences. These situations provide understanding of the multiplicity of beliefs, attitudes, fostering respect for the opinion of others, the development of ethical standards of debate and opposing.

3) situation of axiological problems solving. The sources of the problems are:

– the contradiction between the leading role of the methods of natural sciences (in medical training) and vast range of humanitarian issues, which can not be solved by these methods. These contradictions are modeled by a faculty member in problem situations that demonstrate the insufficiency of methods of natural sciences in addressing the humanitarian problems;

– the contradiction between the universal human values (altruism, loyalty and civilian professional duty, decency, morality, etc.) and the desire to achieve prosperity and social acceptance by any means. These situations are quite common in our lives when we observe the use of public office resources for private gain, the enrichment of the population by means of deception and deliberate advertising of useless, if not dangerous, medicines and procedures. There are worldwide known facts when new technologies were developed, the negative effects of which were not studied thoroughly and over a long-time period.

For the analysis of such contradictions, students evaluate the leading motives guiding the actions of certain people, form their own personal attitude and consider different humanitarian aspects of the problem. The presented model contributes to enhancement of interdisciplinary links of Humanities, forming a complete picture of humanitarian medical issues and willingness to be guided by universal values and ideals while addressing these issues. The outcomes of the model implementation into the teaching process demonstrated a significant professional axiological potential of the Humanities for the professional and personal development of a medical specialist.

The work is submitted to the International Scientific Conference «Fundamental and applied research. education, economics and law», Italy (Rome-Florence), 7-14 September 2013, came to the editorial office on 05.09.2013.

PSYCHOMOTOR DEVELOPMENT OF INFANTS BORN WITH INTRAUTERINE GROWTH RETARDATION

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The birth of infants with intrauterine growth retardation (IUGR) is an outcome of unfavourable circumstances in prenatal period, and may be the cause of pathological conditions at an early age, which considerably effects on all body functions including psychomotor development. Considering that the performance of psychomotor development is a reflection of the level of biological growth of the infant in the first months and years of life determines the quality of his life in later periods of growth, the relevance of the study of this problem is undeniable.

The aim of the study:

To study the psychomotor development and the formation of physical activity for children with intrauterine growth retardation during the first three years of life.

Materials and Methods: The study of NPD low-birth weight infants with IUGR was estimated with L.V. Druzhinina, I.D. Dubinin method for the first three years of life. It was formed two groups of infants;

I-group of infants included 41 term infants with IUGR born at term of 38–40 weeks' gestation, weighing less than 2500,0 g and body length of 47,0 cm or less; II-control group comprised 37 infants weighing 2800,0 grams or more, with a body length of 48,0 cm or more, born at 38–40 weeks' gestation.

Results: Evaluation of neuropsychic development (NPD) in infants with IUGR was conducted in the first three years of life. The analysis showed that the most pronounced deviations in NPD took place during the first year of postnatal development: with IUGR in 13 infants (31,7)%, and in control group – in 2 (5,4%). In small babies, backlog was primarily in motor and speech development. Quantity of overall motion in babies with IUGR was less in 10 (24,3%) cases, which was significantly ($P < 0,05$) different from the control group 3 (6%). Significant differences were obtained in infants when studied mental development of infants with IUGR.

Thus, to the end of first year of life in this category of infants backlog in speech development was observed in 7 (17%), whereas in control group it was only in 1 (2,4%) child.

In the second year of life NPD retardation in infants with IUGR was in 9 (21,9%) infants and in control group, only in 2 (4,8%). In the third year of life in 4 (9,7%) infants in control group of infants with such problems were not recorded, respectively. The formation of adequate behavioral skills was

observed in the first and second year of life in infants with IUGR.

But at the same time, when studied NPD of infants with IUGR 16 (39%) who began attending infant schools at the age of 2, in 4 (25%) children determined inhibition in the acquisition of new skills of speech and motor functions. From which it was concluded that such a regression may have been related to the difficulties of adapting to a new social environment, which can be considered as a failure to provide an adequate response of immature structures of central nervous system.

Thus, from the above it can be concluded that:

1. Inhibition in NPD in hypotrophic babies most pronounced in the first year of life.
2. In infants with IUGR in 2 and 3 year of life are revealed backlog in motor and speech development.
3. Low birth-weight babies require much attention and individual approach, for the first three years of life, not only to maintain their physical health, but also to create favourable circumstances for their full-grown mental and physical development.

The work is submitted to the International Scientific Conference «Fundamental and applied researches in medicine», France (Paris), 14-21 October 2013, came to the editorial office on 13.09.2013.

**CREATION OF INNOVATIONAL
PRODUCTION ON THE BASIS
OF SCIENTIFIC DEVELOPMENT
OF THE COMPOUNDING AND MODERN
TECHNOLOGIES**

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With the purpose of creation of innovational production family Parmeliaceae (Parmeliaceae) which is one of conducting families of the Bottom Volga region, including 16 kinds of lichens is investigated. By scientists of the Astrakhan state university at support «the State Fund of assistance to development of small forms of the enterprises in scientific and technical sphere of Moscow» it is received two kinds of new production: fitotea «Parmelin» and «Immunodelirijushchie sugar candies» with use of lichen *Parmelia wandering* (*Xanthoparmelia camtschadalis*) which is brought in the official pharmacopoeia of the Russian Federation as a herb. At research methods were used: definition of non-polluting routes, creation of modelling sites territories of gathering of raw material, studying of criteria of parameters of a condition of lichens as indicators, calculation of bioresources, biochemical researches.

For creation of innovational production gathering the lichens growing in the Bottom Volga region is carried out. At studying lichenoflora have paid attention to family Parmeliaceae (*Parmeliaceae*) which is one of conducting families of the Bottom Volga region.

In use of lichens in national medicine it is possible to plan a number of stages, since an extreme antiquity. They were used for the medical purpose by ancient Egyptians 200 years prior to AD. In XVIII c. and in first half XIX c. lichens are used in medicine on more scientific basis, then even bring in official pharmacopoeias of the different countries. According to the literary data gathering of lichens were carried out by V.P. Savichev in Leningrad region for development and creation of antitubercular preparation «Binan» [11, 12].

In 1940–1950 years in Shvetsary, Finland, USA, Japan, Spain, Italy and in Soviet Union – were studied antimicrobial properties of lichens.

In 1952 by German scientists was received antibiotic preparation from lichens – «Evozin-2», or parmicin which apply to treatment of the open form of a tuberculosis easy the person. In 1954 the Spanish scientists have received the new medical preparation consisting of lichens – usnimicin for treatment of skin diseases [5].

In Russia in a department of Laboratory lichenologiya of and of a briologiya Botanical institute V.L. Komarova of the Russian Academy of Science carries out biochemical researches of lichens, practical recommendations and techniques of reception usninovy acids and specific substances are given. The St.-Petersburg state chemical and pharmaceutical academy has created preparation «Islacet» for preventive maintenance and treatments of a tuberculosis in conditions of Far North. The Novosibirsk institute of organic chemistry of N.N. Vorozhtsov of the Russian Academy of Science (NIOCH-RAS) – created a way of receiving usninovy acid.

Materials and methods of researches. Special researches of lichens of family Parmeliaceae were carried out within the framework of research developmental works (FRDW) on revealing places of growth. Gathering and initial processing of a material in field conditions carried out on traditional in lichenologiya to a technique in which basis the anatomo-morphological method and application of reactants lays [9].

With the purpose of definition of non-polluting routes of the Bottom Volga region areas of growth of lichens of family *Parmeliaceae* were investigated;

- the buffer zone – soils (the bulk of population of lichens of family Parmeliaceae grows on alluvial cespitose saturated, alluvial meadow saturated, alluvial cespitose and carbonate, brown semidesertic soils) [10] is studied;

- cartographical modeling of studied sites of growth of lichens of Parmeliaceae family with the indication of the area of a covering and with entering of data is carried out to information system – the Database (Db) for further zoning (allocation of zones for environmentally friendly territories for collecting raw materials) [1, 2, 7];

For definition of natural stocks of family Parmeliaceae have made calculation of bioresources by standard geobotanical techniques.

During work the laboratory method of research of raw material was used:

- realization of laboratory researches of raw material (humidity, organic and mineral substances);
- development of technology of modes of processing of raw material: drying, a various degree of a grinding, temperature modes;
- dry combustion of the dehydrated and dried samples;
- extraction, determination of parameters of the received extracts;
- selection of a compounding of pre-production models with various flavouring qualities and definition of physical and chemical parameters of the received samples of finished goods;
- development of specifications on finished goods, certification and the declaration.

Results of research and their discussion. Researches lichenoflores the Bottom Volga region have shown necessity of development of the «know-how» of innovational production from local natural raw material.

In connection with uniqueness of vegetative raw material (powder *Parmelia wandering* – *Xanthoparmelia camtschadalis*), containing vegetative iodine, on modern manufacturing techniques of production is processed so, that in a result is opened the parmeliya cellulose, and useful yodoorganichesky connections become bioaccessible, that allows

to use vegetative iodine as a component for release iodated production of various purpose, and also as independent foodstuff.

Lichens of family *Parmeliaceae* are chosen us for research still because from ancient times are known as the richest source of useful organic and mineral substances (N, P, K, Ca, I). Besides in lichens there are organic acids, enzymes and antibiotics [6, 8].

For research of non-polluting routes of gathering of raw material of family *Parmeliaceae* by us criteria – parameters of a condition of lichens as indicators of an ecological condition of territory, according to the standard table for geobotanical researches are developed. For maintenance of reasonable wildlife management (gathering of lichens without infringement of integrity of all population), the information on a condition of kinds – indicators is. At gathering raw material have studied the processes determining seen changes of the indicator (the sizes, color, quantity tallomes on unit of the area). Kinds – indicators are easily accessible to supervision. For this purpose have made a bookmark of modelling sites in areas of gathering of lichens and mapping places of gathering, with the indication of the area of a covering for Database (DB) [13].

Biochemical researches of raw material of lichens of family *Parmeliaceae* are submitted in the Table.

Biochemical researches of lichens

The name of areas of the Bottom Volga region of gathering of samples	Moisture	Nitrogen	Phosphorus	Kalium	Calcium	Iodine	Protein	Fat	Ashes
Percenton absolutely dry substance									
1. Volodarsky area	9,8	0,46	0,42	0,16	0,03	0,05	2,88	10,11	7,44
2. Kamyzyaksky area	6,3	0,37	0,10	0,15	0,07	0,04	2,31	9,69	6,97
3. Ikryaninsky area	5,3	0,41	0,40	0,13	0,06	1,0	2,56	17,01	6,66
4. Chernoyarsky area	7,4	0,44	0,10	0,12	0,02	1,05	2,75	10,72	7,03
5. Krasnoyarsk area Baire hillocks	7,1	0,43	0,09	0,14	0,02	0,4	2,69	10,24	6,84
6. Enotayevsky area	7,9	0,41	0,20	0,11	0,03	1,05	2,56	10,97	7,01
7. Bogdinsko-Baskunchaksky reserve B.Bogdo's mountains	7,4	0,44	0,10	0,12	0,02	1,06	2,70	10,78	7,04

Biochemical researches have shown, that lichens contain various mineral substances, including vegetative iodine. And in Ikryaninsky, Chernoyarsky, Enotayevskom areas and vicinities of mountain Big Bogdo's Bogdinsko-Baskunchakskogo reserve of iodine on absolutely dry substance contains from 1% up to 1,06%. Production received from family *Parmeliaceae*, containing the vegetative iodine, convenient and effective means for completion of insufficient receipt of iodine with food.

After the carried out biochemical researches on the basis of the balanced composition pre-pro-

duction models: Fitotea «Parmelin» and «Immunodelirujushchie sugar candies» were created.

For industrial production of production design and budget and allowing documentation was developed and received.

Into composition Fitotea «Parmelin» also enter: a glycyrrhiza root, camomile flowers and calendulas, the leaves of mint having immunodelirujushchi effect.

Fitotea «Parmelin» it is recommended at bronchites, diseases of a gastroenteric path, at the ENT SPECIALIST diseases of the top and bottom

respiratory ways and for completion of a lack of iodine in an organism. Supplements a composition green tea which has expressed antiseptic and bactericidal an effect that makes a drink especially useful to a gastroenteric path. Green teas in composition with medicinal herbs not only interfere with adjournment of fats and zhiropodobny substances (lipids) on walls of vessels, but also destroy already available fatty deposits, having powerful antisclerous effect.

«Immunodelirujushchie sugar candies» also are created on the basis of an extract of lichens of family *Parmeliaceae*. Create good effect at the ENT SPECIALIST diseases of the top and bottom respiratory ways.

Both products are patented and received:

– The patent for the invention № 2366199 «FITOTEA PARMELIN», is registered in the State register of inventions of the Russian Federation September, 10, 2009 [3].

– The patent for the invention № 2402226 «IMMUNODELIRUJUSHCHIE SUGAR CANDIES», is registered in the State register of inventions of the Russian Federation October, 27, 2010 [4].

Innovational products are awarded with Diplomas VIII and XII Moscow International interior of innovations and investments. Moscow, the All-Russia Exhibition Centre, 2008 and 2012. The diploma of VI specialized exhibition «Education – investments in success – 2011».

Novelty of development of «know-how» Fitotea «Parmelin» and «Immunodelirujushchie sugar candies» on the basis of vegetative, regional raw material of families of the *Parmeliyevy (Parmeliaceae)* is, that such production never was created in the Astrakhan area earlier and there are no analogues on creation of this production on the basis of lichens in Russia.

Now the caramel production technology with immunomodelling properties on the basis of vegetable raw materials of family of *Parmeliyevy (Parmeliaceae)* is developed.

New FRDW are necessary to develop the modern competitive goods on the basis of unique natural raw material.

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BEAVER'S TECHNIQUE OF RISK ASSESSMENT IN THE ESTIMATION OF THE FINANCIAL POSITIONS OF COMPANIES

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Proposed technique of α_i rate estimation of Beaver's coefficient k_i in the portfolio, formed by these coefficients, allows us to minimize the average squared error estimation of portfolio efficiency. This technique allows an expert to get additional information about credit solvency of the experimental company.

Keywords: solvency, bankruptcy, portfolio, random quantity, risk of error, portfolio efficiency, measures of risk, quadratic programming

One of the indicators, characterizing the financial condition of the company, is its solvency, i.e. the ability to repay liabilities in time.

The necessity of implementation of borrower liability analysis is dictated by the lending policy and concerns of bank. The bank needs to be informed: will the borrower be able to pay back cash resources with a glance at interests fixed by the bank, does the bank have prospects for future development, and how high is the risk of not recouping the fixed sums?

The basic attention by borrower's solvency estimation is concentrated on the activity, characterizing his ability to provide quickly his quick credit and interests' repayment.

For bankruptcy forecast of a company financial analyst Williams Beaver offered a system of indicators, letting estimate the financial condition of a company to diagnose bankruptcy [1].

Target setting

The quantity of the existing bankruptcy threat of the company we can estimate (in the

rough) by pentad model of W . Beaver based on calculation of company activities: a_1 – net profit, a_2 – depreciation of production assets, a_3 – loan capital, a_4 – working assets, a_5 – current liabilities to juridical entities and individuals, a_6 – internal circulating funds, a_7 – non-circulating assets.

The rates a_i , $i = 1, \dots, 7$, let calculate the value of the coefficients:

$$k_1 = \frac{(a_1 + a_2)}{a_3}; \quad k_2 = \frac{a_4}{a_5}; \quad k_3 = \frac{a_1}{(a_4 + a_7)};$$

$$k_4 = \frac{a_2}{(a_4 + a_7)}; \quad k_5 = \frac{a_6}{(a_4 + a_7)}. \quad (1)$$

On the basis of the values k_i , $i = 1, \dots, 5$, valued by W . Beaver for three types of companies: successful, bankrupt during a year and bankrupt during five years, we can make a conclusion about the bankruptcy risk of the experimental company. System of values and regulatory indicators for these three types of companies is presented in the Table 1 [2].

Table 1

Metrics of W . Beaver

Coefficient k_i	Coefficient value k_i	Standard values of calculated coefficients and quantities		
		Group 1, successful companies	Group 2, 5 years before bankruptcy	Group 3, 1 year before bankruptcy
Coefficient of beaver, k_1	$k_1 = \frac{(a_1 + a_2)}{a_3};$	$k_1 > 0,4$	$k_1 \approx 0,2$	$k_1 < -0,15$
Coefficient of current liquidity, k_2	$k_2 = \frac{a_4}{a_5};$	$k_2 > 2$	$1 \leq k_2 \leq 2$	$k_2 < 1$
Return of assets, k_3	$k_3 = \frac{a_1}{(a_4 + a_7)};$	$k_3 \geq 0,06$	$0,01 \leq k_2 \leq 0,06$	$-0,22 \leq k_2 \leq 0,01$
Coefficient of financial dependence, k_4	$k_4 = \frac{a_2}{(a_4 + a_7)};$	$k_4 < 0,35$	$0,35 \leq k_4 \leq 0,80$	$k_4 \geq 0,80$
Share of own circulating funds in the assets, k_5	$k_5 = \frac{a_6}{(a_4 + a_7)}.$	$k_5 \geq 0,4$	$0,1 \leq k_5 \leq 0,4$	$k_5 < 0,1$

We will form a 'portfolio' from coefficients k_i , i.e. we will form sum total (k_1, \dots, k_5) from Beaver's rates. Let α_i – be share of coefficient k_i in total (k_1, \dots, k_5) (i.e. α_i – weight or coefficient of value k_i), $\alpha_i \geq 0$, $i = 1, \dots, 5$, $\alpha_1 + \dots + \alpha_5 = 1$. We'll suppose that k_1, \dots, k_5 are random quantities. Let σ_i – be the root-mean-square deviation k_i , $R = \alpha_1 k_1 + \dots + \alpha_5 k_5$ – efficiency of sum total (k_1, \dots, k_5) (R – sum points of all the rates of this totality).

The aim of this project – to work out the technique of shares estimation coefficients k_i , $i = 1, \dots, 5$, in the portfolio, when the risk lets make mean-square error in the portfolio efficiency estimation, i.e. when by estimation R is minimum.

This technique allows an expert receive to additional information about credit solvency of the company.

The results of investigation offered in this project are logical continuation of investigations, the results of which are stated in works [3, 4].

The technique of portfolio optimization from Beaver's values

According to suppositions from point 1 risk level to make mean-squared error evaluating credit solvency of the company is [5, 6]:

$$\sigma^2 = D[R] = v_p = \sum_{i=1}^5 \sum_{j=1}^5 \alpha_i \alpha_j v_{ij} \quad (2)$$

where v_{ij} – covariance between k_i , k_j , i.e. $v_{ij} = \text{cov}(k_i, k_j)$, $i, j = 1, \dots, 5$.

The task of share defining α_i , $i = 1, \dots, 5$, of different Beaver's values is brought to task solution of portfolio optimization:

$$\begin{cases} \sum_{i,j=1}^n \alpha_i \alpha_j v_{ij} \rightarrow \min, & v_{ij} = \text{cov}(k_i, k_j); \\ \sum_i \alpha_i = 1; \\ \alpha_i \geq 0, \dots, \alpha_n \geq 0; \\ i = 1, \dots, 5. \end{cases} \quad (3)$$

This task represents the task of minimizing of quadratic form from n variables $\alpha_1, \dots, \alpha_n$, meeting the conditions $\sum_{i=1}^n \alpha_i = 1$, $\alpha_i \geq 0$, $i = 1, \dots, 5$, i.e. the task of quadratic programming.

The solution of this task can be built with the usage of different instruments, for example, using software environment Excel.

Solving the equation (3), we'll get different values of α_i^* , $i = 1, \dots, 5$. The more value α_i^* , the more influence has the indicator i of k_i on the risk level, i.e. lets allow mean-squared error evaluating the efficiency of portfolio totality from Beaver's rates.

Example

Experimental data of Beaver's rates (see Table 1), calculated on the basis of balance sheet of the company, public corporation 'Lenmoloko' [7], presented in the Table 2.

Table 2

Beaver's values of public corporation «Lenmoloko»

Value	Values numbers				
	On 12/31 2011	On 12/ 31 2010	On 12/ 31 2009	On 12/31 2008	On 12/31 / 2007
Beaver's coefficient, k_1	2,186	1,271	0,432	0,315	0,653
Coefficient of current liquidity, k_2	0,238	0,551	2,967	2,486	2,054
Efficiency of assets, k_3	0,902	0,697	0,127	0,112	0,241
coefficient of financial dependence, k_4	0,413	0,549	0,294	0,357	0,369
Share of own circulating funds in the assets, k_5	-0,314	-0,246	0,579	0,531	0,389

We'll calculate arithmetic mean of Beaver's i indicator using the formula:

$$\bar{k}_i \approx \frac{1}{N} \sum_{i=1}^N k_i. \quad (4)$$

Using the data of Table 2 and formula (4) we'll find that $\bar{k}_1 \approx 0,971$, $\bar{k}_2 \approx 1,659$, $\bar{k}_3 \approx 0,416$, $\bar{k}_4 \approx 0,396$ and $\bar{k}_5 \approx 0,188$.

The elements V_{ij} of covariance matrix V of indicators k_i , we'll calculate by the formula:

$$V_{ij} = \frac{1}{N} \left\{ \overbrace{(k_i - \bar{k}_i)}^{\Delta_i} \cdot \overbrace{(k_j - \bar{k}_j)}^{\Delta_j} \right\} \approx \frac{1}{N} \sum_{i=1}^N \Delta_i \cdot \Delta_j. \quad (5)$$

We'll have:

$$V = \{V_{ij}\} = \begin{pmatrix} V_{11} & V_{12} & V_{13} & V_{14} & V_{15} \\ V_{21} & V_{22} & V_{23} & V_{24} & V_{25} \\ V_{31} & V_{32} & V_{33} & V_{34} & V_{35} \\ V_{41} & V_{42} & V_{43} & V_{44} & V_{45} \\ V_{51} & V_{52} & V_{53} & V_{54} & V_{55} \end{pmatrix} = \begin{pmatrix} 0,478 & -0,686 & 0,217 & 0,031 & -0,248 \\ -0,686 & 1,159 & -0,340 & -0,074 & 0,341 \\ 0,217 & -0,340 & 0,104 & 0,019 & -0,096 \\ 0,031 & -0,074 & 0,019 & 0,007 & -0,027 \\ -0,248 & 0,341 & -0,096 & -0,027 & 0,150 \end{pmatrix} \quad (6)$$

Solving the task (3) with the usage of the program environment Microsoft Excel, we'll find α_i^* , $i = 1, \dots, 5$:

$$\begin{pmatrix} \alpha_1^* \\ \alpha_2^* \\ \alpha_3^* \\ \alpha_4^* \\ \alpha_5^* \end{pmatrix} = \begin{pmatrix} 0,019 \\ 0,026 \\ 0,032 \\ 0,824 \\ 0,098 \end{pmatrix} \quad (7)$$

Minimum variance (minimum rate of error risk) is equal:

$$\sigma^2 = D[R] = 0,0011952.$$

From these calculations we can make a conclusion that by evaluation of mean-squared error of R , k_4 is more significant in comparison with k_1 , k_2 , k_3 and k_5 , α_1^* , α_2^* , α_3^* and α_5^* is much

less than α_4^* , that is k_4 has more influence on risk level.

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Materials of Conferences

**WESTERN UNION FROM THE POINT
OF VIEW OF THE OPPONENTS
OF THIS IDEA: KAZAKH NATIONALISTS
AND EUROSCEPTICISM**

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In this article integration of Kazakhstan in the Eurasian Union is considered from the European and national viewpoint. As authors of the article say, only the historical and national approach could explain this issue. According to the authors the Customs Union and the Common Economic Space should not compromise the political sovereignty of our countries in any way. Of course Russia will be a dominant party in the newly shaping structure. All decision-making processes are based first of all in Moscow. But, Kazakh politicians should not forget the national interests of the local people, we mean Kazakh national interests. If not, this geopolitical project may lead to the same negative historical results as was the collapse of the USSR.

Kazakhstan has always played significant role in many integration projects and processes in the Eurasian space. Kazakhstan has organized OSCE Summit in Astana in 2010, World Traditional Religious Leaders Congresses, chaired Organization of Islamic cooperation, Organization of Shanghai Cooperation and CICA, held Turkic summits, and initiated Customs Union, CIS, Eurasian Economic Union. Even, the idea of creating of Eurasian Union undoubtedly belongs to Kazakhstan. Now Kazakhstan is a part of Eurasian Union. In this paper the Eurasianism and Eurasian Union is considered from the point of view of the opponents of this idea: Kazakh nationalists and Western skeptics.

Starting from 1 January 2012 Eurasian Economic Space has been working. This geo-economic project includes Russia, Belarus and Kazakhstan. From this moment the Eurasian Commission started to operate in Moscow. According to the Agreements of Eurasian Economic Space all of above-mentioned countries will enter into more intensive and active integration. Kyrgyzstan and Tajikistan plan to be integrated with Russia too. After the twenty years of free journey, Kazakhstan decided to be integrated and to be closer economically with Russia. This means that some of the newly gained independence of Kazakh nation might be sacrificed for the unclear project which is to be a part of something bigger and greater.

Initially, Customs Union was created as a first step to the Eurasian Union. The Eurasian Economic Space that works now, is planned to be turned into

Eurasian Economic Union by 2015. Even though, USSR will not be reconstructed, it is known that something close to that is supposed to be created again. This Eurasianism will obviously strengthen Russia's potential resources and reinforce its weakened back. Despite of President N. Nazarbayev's sincere and idealist dream of re-construct something ideal between USSR or European Union, for now, it is far from being an ideal union in terms of national interests of smaller members, pro-Russian nature of the union, big brother-little brothers relations, strategic aims of the reunion etc. Possibility of that Russia will return to its old sphere of influence is high. Nevertheless, as an ethnic Kazakh I hope that, this time, it might be re-created more democratic structure, fair and open interstate economic system.

What are the real purposes of the Eurasian Union? This big question that I have been studying in the last period is about the possible impacts that Kazakhstan's entry in the Eurasian Union could create for our region in the future. As I am already living in the Common Eurasian Space for 10 months, I easily understand the first impacts of the mentioned union on the economic situation, especially general condition of small and medium business in Kazakhstan.

It's very important to understand, how, will the Eurasian Union could change the economic situation here, in Kazakhstan. Because it's already obvious that after the integration with Russia, some local companies were closed or bankrupted, some reorganized, some came into very difficult condition by the pressure of more developed Russian producers and better goods. The prices for all goods and products in our market dramatically increased in the last two years. In brief, our prices reached the Russian ones. All these questions have to be researched and analyzed more professionally. The main theory circulates in Kazakh experts' minds is that the integration will might be profitable for all local enterprises and traders in the next decades, despite that, for now, the situation is far from that. But, as young Kazakh academicians, I have checked facts, possible risks, chances and opportunities. The results of my works inspire no real economic dividends for at least next decades. It seems that, it did not worth to be engaged practically from the purely national viewpoint.

The original research questions that we already have are as follow: What are the main purposes of the theoretical bases of the Eurasianism? How Kazakhstan will be able to benefit from the Eurasian Union practically and pragmatically? The specific research questions are as follow: What will be the effect of the integration in regard to the national policy or political independence of Kazakhstan?

How will the integration of Kazakhstan with Russia impact on the national economy of the former?

First of all, the history of Eurasianism, the negative and positive effects from the integration with Russia, have to be tested and studied. The theoretical bases and purposes of the integration will directly concern the national policy or political independence of Kazakhstan. The most interesting question is about practical results and effects of the Eurasian Union for Kazakhstan. Theoretically, Eurasianism is a product of classical Russian thinkers and strategists from 19-th and 20-th centuries. Theoretical base of the ideology of Eurasianism was enhancement and expansion of Russia into the whole Eurasian space. By virtue of their strong rational culture and cold-blooded mentality Russians could implement their dream of creating the Biggest Super Power in the world. USSR may be interpreted as an unsuccessful example of implementation of Eurasianism in terms of national, ideological, spiritual, humanitarian, democratic and economic aspects.

We as a nation have passed through this integration once before in the USSR era. When we look at history of USSR, we clearly see it was characteristically built on bloodshed, repression, humiliation, lies and crimes. But, at same time, USSR made big contribution to development of science, technology, military, culture, geopolitics, economy and policy in the world. USSR is a prototype of Eurasian Union in any way. This fact points out to the controversial and contradictory character of any Russia-led integration projects no matter in the past or in the future. Russia always has a deficit of political elite which is able to lead to establishment of democratic, free and fair system for all the nations in the Eurasian space. In the Russia-led USSR integration freedom of speech and faith was always suppressed. It is historically proved. In comparison with the experience of European Union in integration, there is a serious lack of spiritual, democratic, intellectual and humanitarian values in the so-called Eurasian Union. Who can give us guaranty that history of USSR won't be repeated?

Nevertheless, Kazakh people historically have some appreciable benefits from the integration with USSR. Russia is always was an open window to the Europe for Central Asian nations for the last decades and centuries. Western science, culture, technology, knowledge, literature and even music reached Kazakhstan through Russian interpretation. It's the first privilege and benefit from our close relationships with the Great Northern Neighbor. The second benefit was all the infrastructure problems of the region were partly solved in the Soviet period. As for the negative aspects of the integration, Kazakhs were very close to lose themselves totally as a nation. The economic, cultural, traditional, linguistic, psychological, intellectual and spiritual aspects of Kazakhs' life were under pressure of the powerful and aggressive ideological machine of the Soviet system. Kazakh culture and language were

methodically and systematically subjected to total suppression and even, annihilation. Economically and politically, Kazakhstan was absolutely dependent on Moscow's decisions and preferences. For example, all of the strategically important plants and industrial entrepreneurship were deliberately built in Russia, Ukraine and Belarus. Kazakhstan was made just a supplier of some products, foods and goods for consumption of the more technically and industrially developed Western regions. This is why, after the 20 years of declared independence, Kazakh leaders were urged to recognize the fact that the country can not live apart from Russia both economically and industrially.

As President N. Nazarbayev said Eurasian Union will help Kazakhstan to become as independent on natural resources as Russia is. Relying on Russian technical support, industrial experience, military back, economic ties, intellectual and cultural impact, Kazakhstan really might be seen as a beneficiary. According to the authors of Neo-Eurasianism, both Russian and Kazakh markets may benefit from each other in terms of goods, services and employers exchange, i.e. mutual use of trade privileges and economic opportunities.

What about the smaller volume of Kazakh economy and less competitiveness of Kazakh companies in comparison with Russian ones? Kazakh people already see the influence of integration with Russia, as prices for foods and products has critically increased in the last couple of years, expenditures for different services including common transport has rocketed.

Will Russian colleagues or bodies seriously take into consideration what their Kazakh counterparts recommend or advise in regard to integration procedures? It is understandable that, in the Eurasian union Russia will have more to say and will control all the processes including institutionalization, customs procedures, tax regulation, benefits and profits distribution and other important aspects of mutual integration. So, was it worth deepening integration with Russia?

There were a number of substantial steps towards more integration the Customs Union. However, as write western experts, implementation of the integration remains only in papers. According to Katharina Hoffmann, Eurasian Union has little integration potential and has few to offer to the newly independent states. As for Putin, he successfully used the idea of Eurasian Union just as a political tool in his electoral campaign. Yet, the emphasis of the leaders of three authoritarian regimes on democracy, freedom, and free-market principles are hardly to be believed in.

Hoffmann says despite all the promises and declarations this union was not realized yet. Since 2010, customs issues have been dealt with under the common customs code, with only 48 out of 90 accords having been ratified so far. According to specialists, the Customs Union did not bring substantial changes to customs regulations.

Another author hints at the interesting point, that Putin has stolen the idea of Eurasian Union from Nazarbayev and declare himself as a father of Neo-Eurasianism or a founder of Eurasian Union. Initially, the Eurasian Commission's office were planned to be opened in Astana, but Moscow insisted on having it in the latter. Union's capital can only be in Moscow, nowhere else. That's Moscow.

As for the main reasons for Belarus's participation in the union has been to strengthen its own position in international trade. By means of the Customs Union, Belarus wants to benefit from the same trade conditions as Russia and Kazakhstan have. The three states created Single Economic Space for harmonization of common policy in energy, transport, and communication, as well as the establishment of comprehensive free movement of capital and workers. But, Eurasian commission which was formed by the deputy prime ministers of the three countries, however, remained far behind European Union model in terms of competencies and lacks set of conditions. It is an intergovernmental organ without competencies of its own.

According to above-mentioned Hoffmann, Eurasian Union mainly reflects the characteristics of earlier integration projects in terms of integration plans, structure, and the relationship between stated and realized intentions. Eurasian membership is now explained by short-term political and material gains. What is lacking in this case is the willingness of Russia to give up sovereign rights, which is necessary for long-term integration. This troika's initiative for an integrated customs union as the predecessor to an economic union in the post-Soviet space is not new. There was a CIS Economic Union in 1994. The second serious attempting step was a EurAsEC in 2000.

According to some of the Eurasia researchers, boosting the dynamics of integration will hardly be achieved without substantially changing the integration concept. Anyway, despite of its limited implementation, some practical achievements of Eurasian Union allow us to look at it with no emotions. The Customs Union is for the first time attracting interest.

According to one of the western experts the extent of the Union's effective integration will depend on the willingness of its members to accept the negative implications of multilateral integration projects for their countries' sovereignty. Russia's economic and political predominance in the CU will continue to create tensions between member nations. Russia will have to take into account the long-term national interests of Kazakhstan and Belarus.

A complete implementation of the Eurasian Union is unlikely to happen, though; it may be enlarged by inclusion of Tajikistan and Kyrgyzstan. Ukraine, Moldova, Azerbaijan, and Armenia will also have a certain limited interest in the Eurasian Economic Union as well.

If Eurasian Union will pursue the goal of aiming primarily for the accession of new members in

order to expand its own sphere, then achieving integration goals will be difficult. At the same time, it is likely that the Russia's Eurasian Union will struggle to find new members among the recently independent states. The new union has to refuse to be a USSR-style Empire which means Strong Russia and weak others. But, it seems that, as was always in the history, Russia fails to be a tolerant, wise and fair Soft Power.

As a result of my work, I have used Mill's Method of Difference. This Method suggests that initially there should be common features or similar peculiarities of something (characteristics of a phenomenon or regularity) and also there should be a reason for reason for different outcome or results. So, I have studied the future possible benefits for Russia and Kazakhstan in the integration process in Eurasian Economic Union.

The similar characteristics are as follow: From January 2012 both states are the equal active members of Common Economic Space which is the Eurasian Union's predecessor. Both of Russia and Kazakhstan are the main initiators and biggest players in the integration project. The first ideologist of Neo-Eurasianism is Kazakh leader N. Nazarbayev (1994) and from autumn 2011 it's used by Russia's leader V. Putin in his election campaign. Both states are strongest economies and geopolitical leaders in post-Soviet space. Russia is first economy in CIS with GDP level of \$1.850 trillion (2011), and 9th in the world. Kazakhstan is a second economic power in post-Soviet region with of \$180.0 trillion (2011), 51st in the world. Both are the most populous countries in the region: population of Russia in 2012 is 142.8 million people; population of Kazakhstan is 16.6 million people.

According to Method of difference, different outcome must be pointed out. Owing to the giant size of its economic power, significant capacity of productive forces, more developed technical and technological opportunities, imperial position, expansionist strategy and hard foreign policy, most influential information and intelligential policy, language policy Russia undoubtedly and uncompromisingly will as usually use Hard Power and its obvious privileges in the processes of organization, management, decision-making, strategies and institutionalization and so on. As for Kazakhstan, it will only lose in term of customs regulations (for example, Kazakhstan already lost nearly 300 million dollars in the first half of 2012), prices for all goods and products including benzene, public facilities, foods, transportation expenses, services, education costs, cars has abruptly and dramatically rocketed in 2010-2012 from the moment Customs Union started.

Since then life standards in Kazakhstan lowered, protest moods emerged, Kazakh nationalism increased, risks of international conflicts intensified, local firms and entrepreneurship closed and so on. It's clear that appropriate authorities

of Kazakhstan agree with every suggestions and plans of Moscow-based Eurasian Committee concerning the future development of interstate bodies or supranational structures. No national interests in integration are considered in a proper manner.

It is possible that it's designed for prolongation of status-quo in the country, conservation of political stability with one party system, strong state economic management, systemic corruption based on tribalism and state bureaucracy, Russian-thinking population's predominance in socio-economic life, restriction of any national rhetoric, only copying of Russia-made styles in every sphere including economy and technology, in short, more dependence on Russia.

Thus, we can say, many main questions that concern the Eurasian union and of course, national interests of Kazakh people still remain unclear. Only history shall prove whether this integration is convenient for us or not.

In this paper we tried to show how the Kazakh nationalists look at the Eurasian Union. This approach has right to exist. As, without criticism any idea or project will not survive or last. But the criticism should be constructive.

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*Short Reports***LAND-MORTGAGE FINANCING
AS A TOOL OF DEVELOPING
AGRICULTURE OF RUSSIAN FEDERATION**

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Modern stage of transforming economic relations implies an increase in efficiency of using land funds of the country, reviewing ideas on the part and place of land as the most important element of national riches as an object of business and economic relations in terms of market.

Institute of land mortgage occupies one of the leading positions within the system of function and development of agricultural sector, as mortgaging lands of the studied category is one of the most efficient means of security and should provide for attracting investments into the area of agriculture, mediating its development.

There is no universal concept of mortgage, the term is facilitated depending on the necessity to use it in a certain sector of economy. Problems that are set in front of this research, have defined the necessity to study mortgage as a unique phenomenon in Russian economy at a certain stage of its development, and also unification of the existing definitions from the position of participation of mortgage in the whole economic result at regional and macro level.

Mortgage is studied as an economic system that exists in terms of a single social-economic system of a state that includes six basic subsystems: mortgage loaner, lenders who provide credits against security of immovable property, three groups of mediators for organizing inter-system processes, and subsystem of regulation [1].

Thus, mortgage is a credit, obligation, return of which is provided by security of immovable property (real estate loan). Mortgage is a single mechanism of realizing relations that emerge about providing, selling, or serving real estate loans. Land mortgage is one of the possible schemes of financing business structures in agrarian sector of economy.

Contents of land mortgage can be studied from two positions. Land loan (in its wide definition) represents a totality of relations that emerge about charging property rights of an owner or renter of a land in order to receive and serve mortgage loan. In its narrow definition, mortgage represents a process of long-term financing against security of immovable property, usually to acquire a lot [2].

The essence of land mortgage lies in relations about financing against security of immovable property from the structure of lands of agricultural purpose, while lender – holder of security is able to

satisfy his demands in case his loaner does not fulfill his obligations at the account of secured land in priority, compared to other lenders.

Land mortgage is studied as a complex system of attracting funds of banks, population, and other participants of land mortgage market into economic turnover via mortgage loans through the market of land lots from the structure of agricultural lands. This conception of land mortgage corresponds to neoinstitutional approach towards studying economic processes and phenomena.

Land mortgage system bears all attributes of an economic institute, it has formal (legislative) and informal (customs, traditions) limitations, and is also exposed to the influence of tools of constraint. Integral approach (holism) defines essential characteristics of the studied land mortgage system that are crucial for apprehending mortgage place in the system of social reproduction.

Institute of land mortgage develops in a circular fashion, being overgrown by interrelated elements – separate institutional units. At the same time, it represents collective actions of control, liberalization, and broadening of individual act, in other words, it corresponds to the initial comprehension of the institute that implies neoinstitutional approach [3].

The system of land mortgaging represents a totality of institutes and mechanisms of realizing a special form of financial relations that are interrelated and form a certain unity that provides for the transition of financial resources at the mortgage market from lenders to loaners against security of land with an active participation of infrastructural elements and a state [4].

Increase in capitalization of banking system, formation of long-term financial resource market, formation and development of mortgage stock market are the necessary conditions for the development of land mortgage financing.

Obviously, real development of land mortgage in agriculture is linked directly to the provision of system approach in forming relations about mortgage against security of lands of agricultural purpose and its infrastructure.

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UNIVERSAL COMPENSATORY RECTIFIER

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Thyristor rectifiers (TR) have found a wide use in electric drive, electric technology, electrochemistry, and other sectors of industry. Efficiency rate of powerful TR equal up to 97%. However, consumption of reactive power Q under regulation of output power remains their negative side. A lot of various devices of artificial commutation (DAC), aimed to transit TR into the regime of generating Q into power network have been studied.

Keywords: thyristor rectifier, reactive power, artificial commutation

Analysis of their multiplicity allows one to conclude that only two of the known types of DAC provide for a free circulation of reactive commutation power between network, load, and commutative condensers [1, 2].

A tool that has been introduced in [2] is simpler than [1] and allows one to replace the function of transiting TR into the regime of regenerating Q into the network with the function of artificial commutation in load of current, autonomous inverter, direct frequency transformer, and other loads of active-inductive nature of frequency. Analysis and estimation of DAC

elements, and also examples of coupling compensatory thyristor rectifier with the mentioned loads is the objective of this article.

In order to generalize and simplify the analysis, we provide a «classic» example of using compensatory TR for powering a current engine anchor (Fig. 1). Matching transformer (MT) is supplied with low-voltage voltage-adding winding W_3 that is connected according to the secondary winding W_2 , therefore, voltage on the commutating condenser C_c is higher than the range of linear voltage at the clamps of winding W_2 in the beginning of commutation.

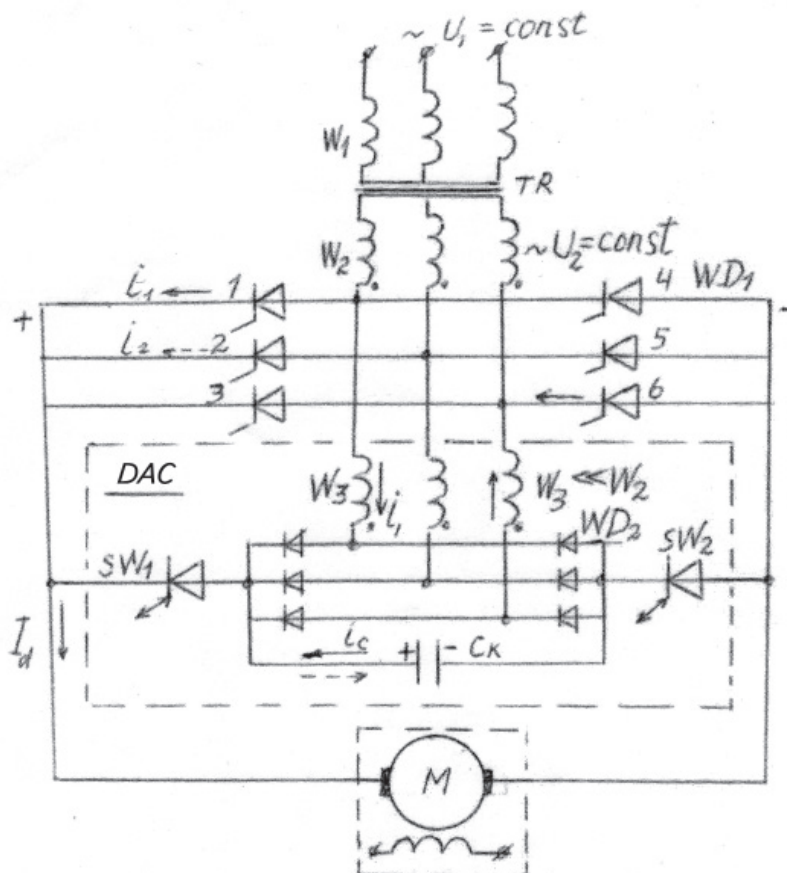


Fig. 1. WD_1 – bridge thyristor rectifier; DAC – device of artificial commutation; WD_2 – diode bridge; SW_1, SW_2 – keys; M – motor

At the moment of commutation start, for example, keys SW_1 and SW_2 close under leading angle β (Fig. 2), and current i_1 from thyristors 1 and 6 (Fig. 1) transits to the corresponding diods of bridge WD_2 and further to the load through SW_1 and SW_2 . Current i_1 decreases under the impact of voltage in condenser C_c , and all current of load I_d goes through the condens-

er by the beginning of the first stage. At this moment keys SW_1 and SW_2 close, thyristors 2–6 turn on, and a part of electromagnetic energy of the motor is inverted into the network under the impact of self-induced electromotive load, voltage in the condenser increases, and current in thyristors 2–6 increases up to the load current I_d .

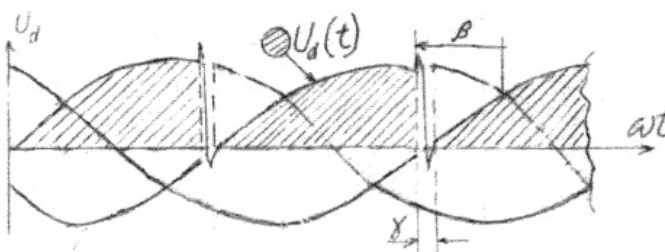


Fig. 2. Diagram of the rectified voltage for anode thyristor group of bridge WD_1 , $U_d(t)$ – instant values of rectified voltage

A special feature of the studied FAC is its ability to lock and unlock thyristor rectifier under any angle of activation: $0 < \beta < 180^\circ$, in other words, work with generation as well as with consumption of reactive power. Besides, presence of unipolar condenser of high capacity provides for a «gentle» commutation with overvoltage limitation at any defined level.

Traditional methods are used to calculate operation regimes and elements of DAC. They are characterized by forming and solving differential equations of commutation contour [4] that is relatively cumbersome and requires graphical constructions. Below we suggest the method of energetic balance that is based upon the equality of energies that flow from the network and return back within a commutation cycle (with no losses).

Commutation energy of the 1st stage:

$$E_{cc1} = U^{2l} m (K_1^2 - K_2^2) C_c / 2, \quad (1)$$

where E_{cc1} is energy under condenser discharge; Ulm is range of linear voltage considering voltage-adding winding W_3 (Fig. 1); $Ulm \cdot K_1$ is maximum and $Ulm \cdot K_2$ is minimum voltage on condenser, in other words, range of ΔU pulsation.

Suggesting that there are no losses in condenser, network voltage is permanent during the commutation period, and commutation current alter linearly, conditions of energy balance of condenser and network will look as:

$$C \cdot \Delta U^2 = L_S I_d^2 + Ulm \cdot I_d / 2 \cdot t_k, \quad (2)$$

where from (1) $U^2 = (K_1 - K_2)/2 \cdot U^{2l} m \cdot C$; L_S is inductivity of two phases; $I_d/2$ is an average current during the commutation period, and a $\omega t_k = \gamma$ does not exceed 10° el.

L_S can be easily defined through the voltage of short circuit U_s :

$$L_S = U_s \cdot U_1 / I_d \omega \quad (3)$$

$0,05 < U_c < 0,1$ (type value of U_c).

From (2) we can conclude that maximum value of C_c under $\beta = \pi/2$, and, therefore, $U_c = 0,1$:

$$C_{c_{max}} = L_S I_d^2 + Ulm \cdot I_d \cdot t_c / 2. \quad (4)$$

Calculations according to (1)–(4) show us that under overvoltage below 30%, pulsation range 20%, Ulm , and $Ul = 380$ V, $C_c \leq 70 \mu\text{F/kWt}$.

Relation of energy during the period π/m , where $\pi/m = 6$ for the bridge scheme, in other words, inter-commutation equals (%): то есть за межкоммутационный период составляет в %

$$E_{cc} \cdot 100 / P_d \cdot \pi / m \omega \approx (6-7) \%. \quad (5)$$

The example of connecting a rectifier (Fig. 1) to autonomous inverter is studied in [3]. In order to connect to reverse loads, for example, reverse electric drive of current or to a direct frequency transformer in parallel to the condenser, devices of artificial commutation are connected through a bridge of four thyristor distributors (Fig. 3).

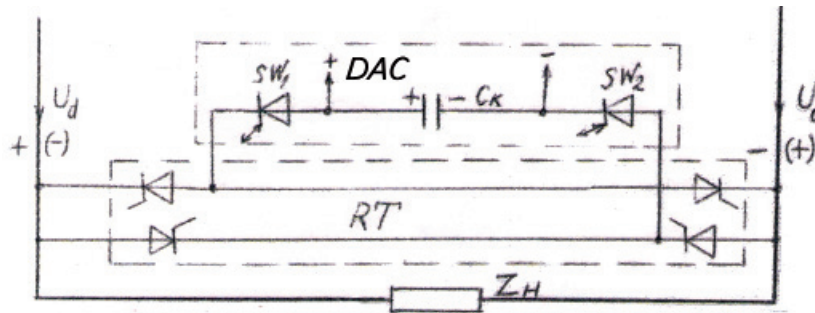


Fig. 3. Connecting compensatory rectifier to reverse load. RT – distributive thyristors

Resume

1. Output of current from all power thyristors of a rectifier can be carried out almost instantly in a compensatory rectifier, equipped with the described device of artificial commutation. It allows one to use the rectifier not only for current loads, but also for powering autonomous thyristor inverters, direct transformers of frequency, and other loads of alternate current with frequency up to 150 Hz. Commutation of the rectifier, as well as loads are carried out by a common commutation device.

2. Estimated efficiency of an artificial commutation device, in other words, relations between reactive commutation power and nominal load power equals no more than 6–7%. Therefore, elements of an artificial commutation device bear low heat load and small size, compared to the power part,

especially if the power of compensatory rectifier is high.

3. Since commutation device can manage commutation of the rectifier and load of autonomous inverter, for example, it takes place not on transistors, but on simple thyristors, it removes limitations in load power.

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Materials of Conferences

**ANALYSIS AND MAINTENANCE
METHODOLOGY EFFICIENCY
OF SHIELDING OF DESIGNS
OF ELECTRONIC EQUIPMENT
ON THE BASIS OF NUMERICAL
MODELLING OF ELECTROMAGNETIC
PROCESSES**

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For realisation of methodological aspects of the created automated subsystem of the analysis and maintenance of efficiency of shielding of electronic equipment (EE) on the basis of numerical modelling of electromagnetic processes ASONIKA-EMC methodological maintenance has been developed for maintenance of efficiency of shielding at designing EE on the basis of numerical modelling of electromagnetic processes.

Developed methodology includes following stages:

- project creation in subsystem ASONIKA-EMC;
- the analysis of design EE;
- input of parameters of influences in subsystem ASONIKA-EMC;
- adjustment solver and grids of final elements (FE);
- calculation of efficiency of shielding;
- depending on the received results, revealing of problem sites of a design and entering of necessary changes into a design [1–5].

Let's consider each of the stages set forth above in more details.

Following stage in the developed methodology is project creation in subsystem ASONIKA-EMC. The project is understood as a directory of file system in which are stored:

- the file of the project created in subsystem ASONIKA-EMC also contains all data entered by the user necessary for carrying out of calculation;
- a file of the imported three-dimensional model of a design if import was spent;
- a file of the generated macro in language VB-Script which is transferred to an input solver;
- files of results in a binary format solver;
- files of results in a text format which are read out and displayed in subsystem ASONIKA-EMC.

After project creation the three-dimensional model of the block is imported to subsystem ASONIKA-EMC, or the sizes of the typical block and the data necessary for calculation are entered.

The purpose of the preliminary analysis of a design is the choice of one of possible vari-

ants of representation of a design in subsystem ASONIKA-EMC.

In subsystem ASONIKA-EMC exists two kinds of representation of a design of case EE: in the form of the typical block or the imported model in formats STEP or IGES. If the block has one of typical forms (typical forms of blocks and a field for input of their geometrical sizes are presented in drawing 3) the geometrical model is created directly in subsystem ASONIKA-EMC by the task of its geometrical sizes.

If the block has the non-standard form the model of the block created in the CAD-editor, it is necessary to optimise preliminary for carrying out of certainly-element modelling of electromagnetic processes.

Otherwise, calculation can occupy unfairly considerable quantity of time and machine resources.

After optimisation carrying out on the above described algorithm, from formats STEP or IGES import of three-dimensional model is spent to subsystem ASONIKA-EMC.

Then it is necessary to enter parameters of electromagnetic influence to which the design will be exposed. For this purpose in subsystem ASONIKA-EMC there is a special master of input of parameters of influences.

With the help the master of input of parameters of influences the following data is entered: influence type;

- a format of the task of vectors;
- a position of a source of excitation (in system of co-ordinates of model);
- the data about a vector of polarisation of electric field;
- the data about a vector of distribution of an electromagnetic field.

Following stage in methodology is adjustment of a settlement kernel and a grid of final elements. Adjustment of parameters of a grid of final elements is a key stage in all design procedure therefore how accuracy and reliability of the received data depends on a grid of final elements about efficiency of shielding. Than more than final elements calculation contains in a grid, than more precisely. However with increase in number of final elements also calculation time, therefore adjustment of a grid of final elements proportionally increases is always the compromise between accuracy and speed of calculation.

Adjustment of a settlement kernel allows to define such parameters as frequency of calculation, an order of basic functions, to set a range of frequencies. Also at this stage adjustment of the adaptive analysis is spent.

Adaptive process of generating of a grid of final elements solver consists of following steps:

- 1) initial network which includes installations of approximation of a surface is generated;
- 2) if consolidation of a grid of splitting on the basis of length of a wave is required (λ refinement), a settlement kernel carries out it, using the length of a wave calculated in a material;
- 3) splitting mode, and degree of consolidation of a grid is calculated;
- 4) using the received grid of splitting, the settlement kernel calculates a method of final elements electromagnetic fields which exist in structure when they are raised on frequency of the decision;
- 5) other decision, with use of the condensed grid is generated;
- 6) settlement kernel repeatedly calculates an error, and iterative process (the decision – the analysis of errors – adaptive improvement) repeats, while criteria of convergence are not satisfied or the maximum number of adaptive passes set in options solver is not executed;
- 7) if calculation in a range of frequencies settlement kernel Ansoft HFSS solves a problem on other frequencies without the further consolidation of a grid of splitting is set. The adaptive decision is carried out only on the specified frequency of the decision.

Following stage in a technique is calculation of efficiency of shielding on the basis of the data about intensity of a field in settlement area under the following formula [1]:

$$S = 20 \lg \frac{E_0}{E_e},$$

where E_0 – average intensity of electric field in surrounding space; E_e – average intensity of electric field in the case.

Similarly it is considered efficiency of shielding for a magnetic field. Results of calculation of efficiency of shielding in subsystem ASONIKA-EMC are represented in the form of the schedule.

Then the calculated efficiency of shielding is compared with set under the technical project (TP). If the calculated efficiency of shielding satisfies TP on it the conclusion that the design is developed optimum from the point of view of efficiency of shielding becomes, the report on modelling and a technique is generated comes to the end.

If the calculated efficiency of shielding is worse set in TP, revealing of problem sites of a design which negatively influence efficiency of shielding is spent.

Essence of algorithm of revealing of problem sites of a design consists in the following. At first the material of which the case is made is analyzed. If it is not a conductor it is necessary to replace it with a material with good conductivity. If the case is made of a spending material a problem place are apertures and cracks in the case which influence is necessary for eliminating.

Apertures can be executed in the form of otherwordly wave guides, or to cover with a shielding grid, and instead of linings from dielectric rubber between case parts it is possible to use linings from spending rubber, or rubber in a metal braid.

After modification of a design, it is necessary to create anew model for calculation by a method of final elements and to carry out all technique set forth above until due efficiency of shielding will be provided.

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*Short Reports***MATHEMATICAL MODEL
OF DESTRUCTION**

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In this paper we propose a mathematical model of destruction (the relations connecting parameters of efficiency at the time of fracture characteristics material), based on the relationship of both these approaches to allow for the dependence of the limiting critical conditions at which the destruction, the time of stress, temperature environmental exposure, exposure, etc. This is especially typical for polymers [1]. Mechanical properties and the process of destruction of polymer materials substantially depend on time and operating conditions.

At the first stage the degradation of the properties of the material, the accumulation of damage, microcracks occur. The stage ends at a time when the merger of microdamage formed macroscopic crack. Because of the irreversibility of the process of destruction is determined not only the current values of parameters characterizing it, but the entire prior history change of these parameters. Because of the private nature of the experimental data on the effect of medium on behavior of plastic the composition of the general mathematical for all materials the phenomenological description of fracture based on mechanical ideas due to the difficulties and serious shortcomings. Thus, the phenomenological theory of time dependence as would provide a common framework, which must fit the theory of material behavior, and that put a

detailed mechanical theory of change of macroscopic and microscopic properties of the polymer. This need arises in the interpretation of the parameters of the phenomenological equation, allowing you to identify not only the common features, as well as the difference between the materials. Because of significant time effects for polymers the process of their destruction more difficult than traditional materials, the phenomenon of viscous and brittle fracture occur simultaneously. Fracture criterion in this case must take into account the achievement stress and strain of the instantaneous and destructive values, and their dependence on the development of degradation of material properties $\omega(t)$.

Analysis of experimental data suggests characteristics of the temperature dependence of relaxation processes and fracture for viscoelastic polymers with the same value of energy activation for each material. Both aspects of the strength of polymers depend on the local structural changes that primarily can be linked with the process of accumulation of damage, education grid hairline cracks. Combining different approaches to describing these processes, i.e. formulation of a general mathematical theory of deformation and fracture of polymers depends on the study of the relationship of deformation, destruction and action of strain, temperature, aggressive factors in the whole time interval of operation of the element.

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*Materials of Conferences***RELIGIOUS AND CULTURAL VALUES
OF ISLAM KNOWLEDGE
IN ISLAMIC FINANCE**

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Anthropology demands renewed attention to the knowledge practices of the accounting profession and anthropological analysis. Using data and theory from Islamic accountancy in Malaysia and the global network of Islamic financial engineers, this article challenges work on religion theoretical functions by attending to the inherent reflexivity of religion practice and the practice of accounting for accounting. Such a move is necessary because critical accounting scholarship mirrors, and has been taken up by, Islamic accountancy debates around the form of accounting knowledge. The article explores the work that religion literature shoulders in carving up putatively stable domains of the technical and theoretical, and makes a case for a reappraisal of the techniques for creating anthropological knowledge in the light of new cultures of accounting.

Moral precepts of Islam formed over hundreds of years under the influence of socio – political and economic changes in the lives of ethnic groups, sooner or later become followers of this religion. Following these changes, the spiritual image of a society is reflected in the religious morals and ethics laws, including the issues of ownership. Islam preaches the perfection of man, causing him to be patient, transference tests, confidence in the soul, truth, loyalty, justice, mercy, humility, beneficence to the people and provide them with assistance. Encourages generosity, frugality, and virtue, warning him of unjust, envy, fraud, weakness, laziness, deception, betrayal, curses and insults, hostility to the people, the manifestation of neglect and abuse of the weak and the poor [1].

The idea that everything is accounting and accounting is everything plays on the ambiguity of the term in English (accounting as audit, accounting as narration, and accounting as religio-cosmopolitical judgment), an ambiguity made material in the transformations of scale that accounting in all of its senses permits. If accounting is everything, can analysis, itself a form of accounts-keeping, achieve a critical perspective on it? This article seeks to demonstrate that this problematic takes on a particular significance in Islamic accountancy with far-reaching implications for anthropology. While Islamic accounting shares with anthropology and critical accounting scholarship the particular dynamics of

the analytical impasse of perspectival knowledge, it also, in some quarters at least, may provide tools for a reconfigured anthropological practice. This new kind of anthropology would forgo the sameness/difference models inherent in the discipline's conventional culturalist explanations, which have animated not only anthropology but also critical accounting scholarship. I develop the argument in light of a recent and ongoing transition in the field of Islamic finance, with reference to ongoing debates among Islamic accounting specialists in published, face-to-face, and on-line forums. The transition involves international accounting standards set by the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI), which is based in Bahrain and was founded by one of Gambling's former students in 1990. Islamic financial institutions employ AAOIFI standards in place of, or in addition to, «religious audits» by in-house «Shari'a Supervisory Boards» (SSBs). SSBs and the AAOIFI both exist to ensure that Islamic financial institutions are «Shari'a compliant», operating in accordance with Islamic law. To demonstrate the practical ambiguities of Shari'a compliance, this article briefly considers two Malaysian Islamic economic enterprises: a national Islamic bank, and a local co-operative credit union. In Islamic finance, some very anthropological ideas – including debate over the social construction of reality and the role of values and beliefs in bureaucratic practice – have become a terrain of struggle over meanings and their pragmatic uses. The same has occurred in critical accounting scholarship. As anthropologists turn to bureaucratic forms like accounting, we have begun to question the separation of text from context, form from content, and theory from data that stabilized the disciplines late twentieth-century knowledge practices. Those oppositions now seem to characterize the knowledge practices of those we study, and turn up in precisely those bureaucratic quarters to which we now turn our attention [2].

This places anthropology in an uncomfortable position, different from the reflexivity of an earlier era because concerned less with the partiality of a particular observer's perspective than with the metapragmatics of analytics of parts and wholes that make perspectival knowledge possible, yet guaranteed to exhaust itself. This article thus accounts for anthropology as much as for Islamic accountancy. «Islamic banking and finance» refers to a world-wide phenomenon centred in Malaysia, the United States, Britain, and the Arabian peninsula, and not the financial systems of those nation-states that have officially «Islamized» their economies. It grew out of the anti-colonial project of the Islamic modernists on the Indian subcontinent in the

years surrounding Partition [3]. Seeking to create a «modern» Islam that would stand in opposition to Western dominance without falling into romantic attachments that might hinder «progress», thinkers such as Maulana Maududi attempted to craft a new Islamic economic science. This new science, they hoped, would meet the needs of modern society and stay true to the Shari'a and Qur'an. The modernists sought to theorize an economy that provided a mechanism for the redistribution of wealth and that was not based on interest-bearing debt. The obligation to pay *zakat*, or alms, and injunctions against *riba*, glossed as interest, were the initial impetus for Islamic economics.

Islamic banking and finance world-wide derives its core assumptions and many of its practices from these early twentieth-century modernists. Just as importantly, global Islamic banking owes much to the immigration of Middle Eastern and South Asian students and professionals to the United States and Britain during the 1970s and 1980s, and the consolidation of large Muslim organizations such as the Islamic Society of North America and the Islamic Circle of North America. The 1970s Middle East oil boom fostered renewed interest in Islamic banking in many Muslim-majority countries. This period saw the emergence of a loose alliance of Muslim businessmen, with experience of Western regulatory and business environments who had come from employment with international oil and chemical companies as well as Western financial firms. The main nodes of this network were the financial and industrial centers of Europe and the United States, and not the Middle East or South Asia. Thus, although Saudi royals and entrepreneurs bankroll many Islamic finance conferences, journals, and academic institutions around the world, the main sites for intellectual production in Islamic economics are the Islamic Foundation in Leicester, the Institute of Islamic Banking and Insurance in London, and the Harvard Islamic Finance Information Program in Cambridge, Massachusetts [4].

In what follows, we rely on two sources of theory and data. The first includes the writings, commentary, conferences, and published reports of Islamic banking professionals who constitute the global network we have just described.

Their lingua franca is English, supplemented by Arabic terms that have their origins in classical texts but have been given new and often more precise meanings in Islamic banking and finance. Their principle media of communication are published and unpublished reports, academic and trade publications, and, importantly, the internet. The Islamic Economics and Finance internet listserv began operating in late 1999 as an outgrowth of the Islamic Banking Training Programme of the Xavier Institute of Management and Business in Bhubaneswar, India. That programme was the brainchild of a former student of the London-based Institute for Islamic Banking and Insurance, and quickly became

the most important face of Islamic banking on the internet. It now consists of around twenty separate specialist «salons», or chat rooms, and one main, all-purpose discussion group. While the participants in the Islamic banking and finance network we discuss here are admittedly only one subset of all those involved in Islamic economic ventures world-wide, they constitute a very important locus of intellectual power that translates into institutional authority. Some are the authors of significant books on Islamic banking. Others are executives or employees of financial services firms (both Islamic and conventional). Many are students who will assume such positions in the future. Debate does get heated at times, especially where there is uncertainty about whether certain financial practices are permissible in Islam – derivatives trading, for instance (see Maurer 2001). What is striking, however, is the overwhelmingly pragmatic orientation to Islamic knowledge. People are far more likely to mix and match concepts or perspectives from different branches of Islamic law in order to create or justify a particular financial practice in their on-line postings than they would in a formally published bulletin or at a conference. Similarly, they are far more likely on-line to entertain comparisons or convergences between Sunni and Shi'a jurisprudence, without resorting to insult or evangelical fervor [5]. Like the Islamic banking network itself, which we see as existing somewhere between the traditional centre and periphery of the Muslim world – indeed, confounding the scalar logic of centre/periphery – these internet postings lie between official publications and off-the-record conversations, and between the various branches of Islamic knowledge. The second source, which also constitutes «data» for the people who make up my first source, comes from two Islamic financial ventures in Malaysia: a large Islamic bank and a small credit association. These two ventures demonstrate the practice of Islamic accountability in action. In particular, they show how the debates raised in the international network sometimes fail to capture the imagination of those working «on the ground». That very failure, however, proves extremely productive for anthropological and accounting knowledge's. Since the 1980s, and more particularly in the wake of the 1991 Bank of Credit and Commerce International scandal, linked in the business press to Islamic banking in Caribbean tax havens, many Islamic banking professionals have called for clearer accounting standards. They have done so in the hope of removing any possible taint of illicitness, as well as to bolster confidence in the emerging Islamic market sector. Such standards, they hope, will also make their practices both transferable across a variety of regulatory contexts and «transparent» to outside observers. Founded in 1990 as the Financial Accounting Organization for Islamic Banks and Financial Institutions (FAOIBFI) and renamed in 1991, the Accounting and Auditing Organization for Islamic

Financial Institutions (AAOIFI) disseminated Islamic accounting procedures in 1996-7 as part of this effort. In doing so, the AAOIFI entered a field previously dominated by Shari'a Supervisory Boards. Even after the advent of the AAOIFI, most Islamic businesses of any appreciable size still rely on the seal of approval granted by an independent Supervisory Board made up of clerics and scholars. The AAOIFI has been careful not to tread on the toes of independent Boards, and relies on their standards-setting to guide its own. The AAOIFI itself boasts a Board made up of internationally prominent individuals [7]. The AAOIFI has drafted standards that are readily grasped by its counterpart non-Islamic organizations, most notably the International Accounting Standards Committee. Yet while its language and principles share common ground with those of key international accountancy codes, for example the scheme of conventions which has come to be known as the Generally Accepted Accounting Principles, it is not engaged in a struggle for authority with local, national, or regional Boards. Indeed, the AAOIFI needs Boards, and vice versa. The AAOIFI relies on Boards to provide the «data» from which it crafts universally applicable Islamic accounting standards. In a process analogous to the establishment of the Uniform Commercial Code in the United States during the early twentieth century (Llewellyn 1951; R.W. Perry pers. comm.), the AAOIFI collects information on existing Islamic accounting practices and distills from the available data «best practices» that will have the most universal transferability and, ultimately, transparency to both Islamic and non-Islamic businesspeople and regulators. Supervisory Boards, for their part, can gain legitimacy for their decisions by referring to the AAOIFI standards, and at the same time provide a clerical seal of approval for the standards themselves [8]. Understanding the transition from Supervisory Boards to the AAOIFI requires that we consider something other than the apparent shift in authority from religion to bureaucracy. Instead, we should turn to the way in which accounting in Islamic banking and finance creates particular kinds of «facts» and engages a specific rhetoric of rationality. Islamic society, as well as all of its members, is endowed with responsibilities for the preservation and practice of Islamic values and laws. In the doctrine of Islam society needs to achieve divine purpose, all individuals in the Islamic society are related to the acquisition, education and instilling the basic Islamic values, which ipso facto constitute a development of the Muslim holy way of life that is a model in which Islamic principles reflect the dialectical link in the socio-economic structure of society. This relationship corresponding to the teachings of Islam, is crucial in the formation of daily and economic behavior of the individual and the collective. The importance attached to the development of Islam moral qualities, strict adherence to moral principles and doctrines

involves a Muslim civic participation in society. It is an active moral position of the individual and the duty to «preach the good and forbid evil», along with the divine teachings, Muslims give the right and duty to participate in public affairs. The concept of justice shows the main goal of Islam – the creation of individuals just relations. This objective of the Islamic system is the main principle that determines the legitimacy of human thought and behavior, material, legal and regulatory rules of Sharia. It was this concept of justice fills all the rules governing the economic behavior of individuals and economic institutions [9]. The realization that justice is Allah's approval, and injustice – his dissatisfaction determines the direction, the meaning and effectiveness of the behavior of a Muslim. While in the Western sense of justice is the quality of human behavior in relation to the other and his actions could be considered unfair only in relation to others, justice in Islam is a multifaceted concept [10]. In other words, even when a person commits an injustice to anyone, there is always the principle of reciprocity – in the end, a person commits an injustice to yourself and reap the benefits. Modern Islamic banks can use *mudarabah* contracts to generate liquidity and turn a profit, acting as intermediaries between the depositor-investors and the managers of business ventures. In effect, modern Islamic banking takes the classic *mudarabah* contract and scales it up: the depositor-investor becomes the *rabb-al-mal* in relation to the bank, as *mudarib*, which manages the depositor-investor's money. At the same time, the bank assumes the position of the *rabb-al-mal* in relation to the business enterprise in which the bank invests, which is the *mudarib* in relation to the bank. Under this scaling principle, the bank can accept money from many depositor-investors via the *mudarabah* contractual form and, in turn, can invest it in several different enterprises through the same *mudarabah* contractual form [11]. Should the enterprises turn a profit, the enterprises, the bank, and the depositor-investors are entitled to a predetermined percentage of the profit. Should they turn a loss, the depositor-investors (and possibly the bank, depending on its operating principles) share in a predetermined percentage of the loss. The enterprises themselves (and also the bank) can pass off the loss to their depositor-investors, since the enterprises are considered to have «lost» the expertise and labour invested in prosecuting the contracts. *Mudarabah* provides a means for enterprise financing and a sort of consumer banking that are Islamically acceptable. Instead of financing its activities with interest-bearing loans, a business could accept funds from an Islamic bank and give up a predetermined percentage of its profits (and losses, effectively spreading some of the risk of doing business). Rather than a depositor earning interest on a savings account, the depositor-investor would earn a predetermined percentage of the profits (or losses, effectively bearing the risk of market activities)

of all the enterprises in which the bank had invested the pooled resources of its depositor-investors. *Mudarabah* presents a number of problems for conventional accounting. First, consider conventional accounting's «entity theory», according to which accounting draws meaningful boundaries around business entities for the purpose of audit [12]. Entity theory poses problems for Islamic banks using *mudarabah* accounts, especially when it becomes time to account for *mudarabah* holdings on a balance sheet. *Mudarabah* contracts confound the clear boundaries between the entity taken into consideration for the purposes of accounting and its owners. In a *mudarabah* contract, the depositor-investor who contributes capital in return for a share of the profit or loss «owns» that capital. The bank is «managing» it and investing it in productive enterprises. The bank sees the depositor-investors on its own balance sheets, but the enterprises which receive the depositor-investors' capital from the bank do not. Yet the depositor-investors are the «owners» of the ventures in which the bank has invested. And they are not merely financially responsible for them, but morally as well: should an enterprise engage in un-Islamic activities, then ethically the depositor-investors are just as much at fault as the bank [13].

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*Materials of Conferences***ENVIRONMENTAL SECURITY – ONE OF THE PRIORITIES IN THE PULP AND PAPER INDUSTRY**

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Pulp and paper industry refers to perspective sectors of Russian economy and introducing the cycle of enclosed water consumption is necessary to solve ecological problems on enterprises. It can be accomplished only with Total Chlor Free-bleaching (under a total absence of chlorous substances). Transition towards TCF-bleaching on the existing equipment is possible under the function of technological system with one stage of bleaching with chloric dioxide (soft ECF-bleaching) and its minimum consumption, for example, no more than 0,5% of sulfate pulp (E.I. Fedorova, A.V. Kuzivanova Patent of RF № 2413046. A method of bleaching sulfate pulp). Implementation of monosaccharides besides oxidants is possible during TCF-bleaching of pulp (as they have a reducing impact on structures of residual lignine), one can use arabinose, considering high contents of arabinogalactane in larches that are used to receive arabinose. Studies of schemes of processing deciduous sulfate pulp that include oxygenic-neutralizing procession (solidity 11,7 units of kappa) and high-temperature procession with acid have been carried out. The following stages include bleaching pulp: H₂O₂ under pH 10–10,2 with stabilizer (solidity 6 units of kappa, pulp whiteness 75%), arabinose, and hydrogen peroxide. However, implementation of monosaccharides in bleaching pulp is limited by their impact over certain structures of residual lignine (O.V. Lepilova Foundation of enzymatic methods of regulated slitting of carbohydrate additives and delignification of linen sliver: author's abstract on dissertation of candidate of technical science, – Ivanovo, Institute of solutions' chemistry of Russian academy of science, 2007, 19 p.) Therefore, whiteness index for deciduous pulp in acid environment equaled only 83% under viscosity index 740 ml/g that is acceptable in producing paper, when ecological factor plays the most important part. Besides, acid filtrates of bleaching sulfate pulp according to the developed scheme should be directed to areas of boiling in order to scour pulp, and then further to the system of alkali liquor regeneration. Absence of chloride ions in neutralizing filtrates of bleaching implies their secondary implementation after local cleaning with ozonation, and contents of phenols in them should be decreased down to 86% and lower, depending on the continuity of this process.

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POSSIBLE SOLUTIONS TO THE ENVIRONMENTAL PROBLEMS OF THE IRKUTSK AIRPORT

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Nowadays a plane has become the fastest mean of transport for a modern person, it allows one to travel between continents in hours, and an airport is a «business card» of any country of city.

Along with the development of aerial transport many airport complexes have transformed into large enterprises and come close to city borders. Therefore, residential areas, districts of mass recreation, and suburban areas have been exposed to an intense impact of aviation noise.

Nowadays noise atmosphere around airports that are located in heavily inhabited districts, becomes an urgent problem not only in Europe, but also other parts of the world. A special anxiety among the population is defined by an increase in a number of flights and night sleep disturbance. The level of noise pressure in residential areas exceeds the allowed limit significantly under the impact of terraneous plane engine operation. Its maximum can have the same digital value as the amount of transport noise on main streets of a big city.

However, the problem of aviation noise is not solved for a number of Russian cities. It refers to the population of Irkutsk. Sources of noise can't be eliminated, by they can be isolated. Regarding the Irkutsk airport we can say that re-locating the airport further from city borders would be the most efficient method considering the ecological side of the problem and measures of increasing safety. The problem of a new airport will be discussed closer to 2016. Limiting noise levels around airports is a condition of further aviation development.

At the same time, modern airports operate round-the-clock and require a constant supply of high-quality illumination. Normal operation of an airport requires a complete adherence to strict international regulations. It also refers to illumination, as incorrespondence with certain requirements can lead to emergencies and death of people.

Illuminating aprons is an integral part of modern airports. Basic directions of improving complexes of light-signal equipment are: increase in reliability, ecological compatibility, operation

period, decrease in consumed energy and mass-overall characteristics.

Incandescence lamps and luminescent lamps are generally used as the basic light sources. However, these sources of light affect a person's health and the environment.

A significant part of an incandescence lamp radiation lies in a short-wave part of infrared spectrum, and such radiation, unlike its long-wave analogue, is hazardous for a person's organism, especially for his eyes.

All luminescent lamps contain quicksilver, and, if any destructions take place a lamp body, organisms of people will be exposed to the affection of quicksilver fumes that are accumulated in an organism and damage a person's health, therefore, special conditions of utilizing such lamps are required.

Besides, such lamps consume a significant amount of energy, produced by city heat power stations. All discharges that enter aerial pool from heat power stations are toxic substances that affect people's organisms and environmental ecology.

An increase in requirements towards reliability of light-signal equipment complexes and omnipresent introduction of energy-saving technologies define a necessity to replace the used light sources

with more efficient and ecological analogues. Light-illuminating diodes possess the highest characteristics, their service period reaches 100 000 hours, and their luminous efficacy equals 170 lumen/Vt. In comparison, incandescence lamps of general purpose have 100 hours of service period with a luminous efficacy of 8–17 lumen/Vt. Considering the provided information, light-illuminating diodes can be used in construction of a new airport of Irkutsk, as they aren't only more ecological, but also energy-efficient and consume less energy from local heat power stations.

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Materials of Conferences

ECOLOGIC-GEOGRAPHICAL ESTIMATION OF CLIMATIC COMFORTNESS OF ROSTOV-ON-DON

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Climatic comfortness of a territory plays a prior part in establishing preservation of health, conditions of people's life and activity, therefore, it should necessarily be considered while estimating natural-resource potential of a region.

Our environment is exposed to simultaneous impact of a number of factors, and their influence cannot be estimated by simple addition. Optimal conditions of life environment for any person are individual and they are limited by stress areas and limits of survival, set by each single factor of the environment and their cumulative influence.

Climatic comfortness of a territory is defined as an integral characteristic of the degree of opportunity of its climatic and bioclimatic conditions that is expressed via a suggested [2, 7] integral rate of bioclimatic comfortness (IR_{bc}).

Special features of geoecological estimation of natural environment that also include climatic comfortness, are studied from different points of view: thus, E. Odum [4] considered that the main goal of ecological estimation of natural environment is to answer the question: how many organisms inhabit a given area, where they can be noticed, and why.

According to N.F. Raymers [5], ecological estimation of natural environment is a process of defining condition of life environment and the degree of its exposure to the impact of various factors (considering an impact dynamics).

Works of V.V. Dmitriyev [6] contain the following concept of the procedure of ecological estimation of natural environment:

1. Defining aptitude of natural complexes and their components for organisms' life.

2. Parametric definition of conditions of natural environment that provide for existence of living organisms' communities.

3. Receiving an «ecosystem portrait» according to multi-criterion basis, and comparing it to a «perfect portrait» of the same ecosystem.

4. Subject-objective criterion estimation of the condition of natural object from the position of stable function of biocenosis.

Besides, each of the provided definitions contains its special feature that is significant for different specialists (a geographer, biologist, ecologist, mathematician, etc.) that create «portraits of natural ecosystems».

The concept of climatic comfortness, suggested by S.S. Andreyev [1, 2, 3, 7], includes the following definitions:

1. «Comfort» (an optimal psychophysiological condition of a person the provides for his normal vital activity in places of permanent or temporal living).

2. «Subcomfort» (slightly disturbing conditions of natural environment, in which mechanisms of mechanisms of human adaptation establish near-optimal psychophysiological health of a person, thus creating conditions for his normal vital activity).

3. «Discomfort» (acute disturbing condition of natural environment, physiological mechanisms of human adaptation do not provide for its optimal psychophysiological health and additional protective measures that establish normal vital activity, are required).

Methodic of estimating climatic comfortness of a territory, suggested by the authors, implies realization of six stages:

a) analysis of physical-geographic conditions of a territory and creation of climatic database;

b) ranging and selecting the most informative indexes;

c) creation of bioclimatic database according to calculation of the selected indexes;

d) calculation of integral index of climatic comfortness;

e) zoning the studies territory according to indexes of the most informative indexes.

Calculation of indexes for estimation of climatic comfortness of Rostov-on-Dos and Sochi has been put into the Table.

Station	BAT			Q_s			REET			ET			kW/m ²			IR_{bc}			I		
	year	cold	heat	year	cold	heat	year	cold	heat	year	cold	heat	year	cold	heat	year	cold	heat	year	cold	heat
Rostov-on-Don	12,1	5,0	20,6	-1,1	-1,6	-0,6	8,8	-0,4	19,8	-3,9	-15	9,3	1,1	1,3	0,9	1,3	1	3,2	18,1	25,9	12,4
Sochi	18,9	15,2	23,5	-0,7	-0,9	-0,4	17,5	12,7	23,5	6,7	0,9	13,9	1,1	0,8	1,5	2,9	3,2	3,4	6,7	9,1	5

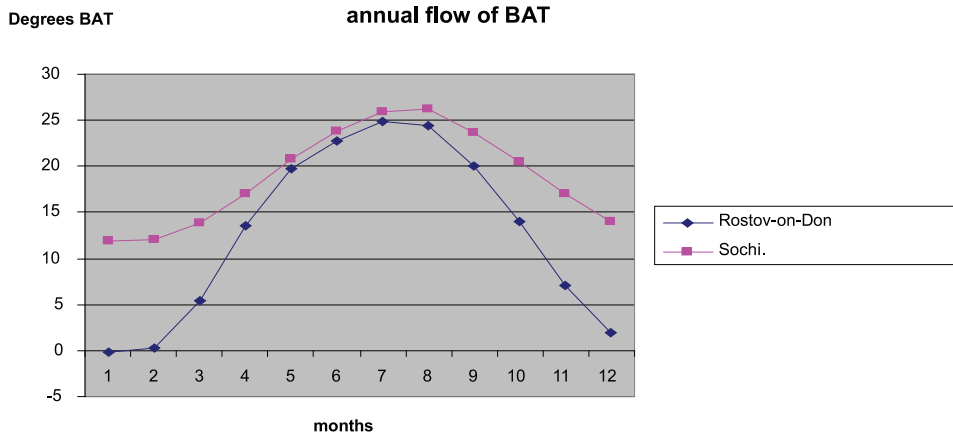


Fig. 1. BAT is biologically active temperature («comfort» equals 10-20 BAT, «subcomfort» equals 21–23,9 – 6 0 BAT, discomfort refers to over 23 and under 60 BAT)

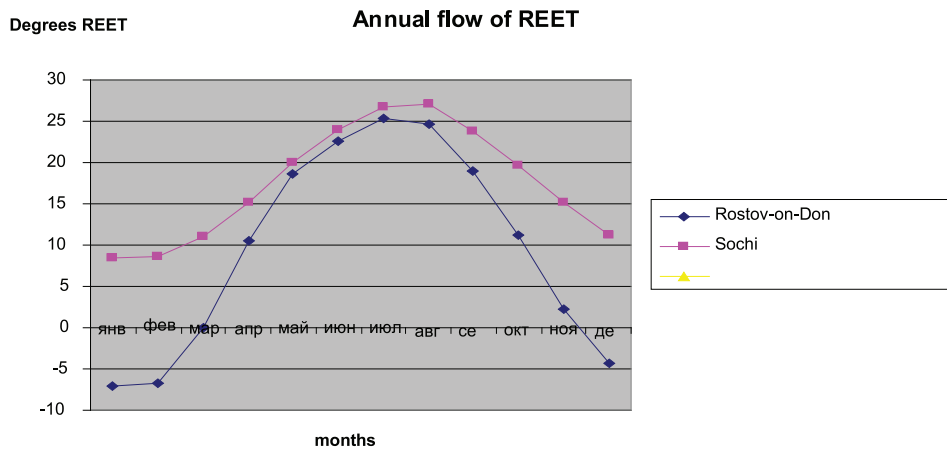


Fig. 2. REET is Radioactive equal-effective temperature («comfort» equals 21–27 °REET, «subcomfort» equals 27,1–32 °REET, 17–20,9 °REET, «discomfort» refers to over 32,1 and under 16,9 °REET)

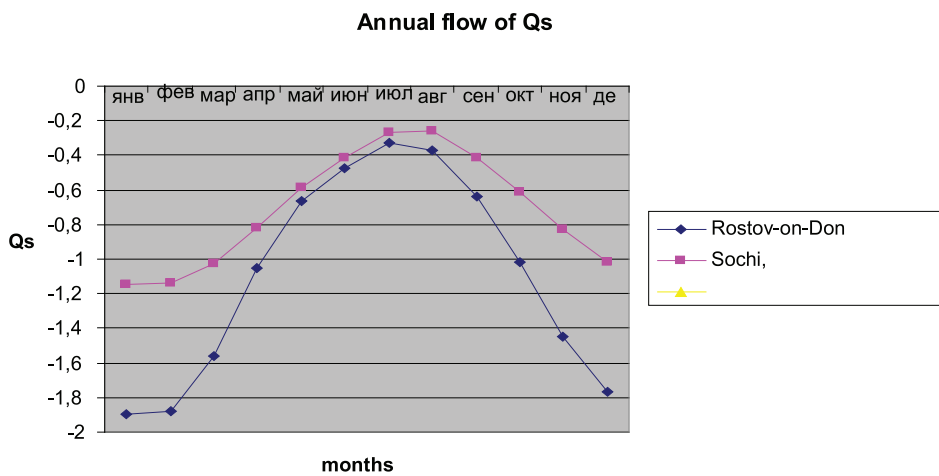


Fig. 3. Q_s is heat balance of a man («comfort» equals from $-0,06$ to $-0,3$ kW/m^2 , «subcomfort» equals from $-0,05$ to $0,1$ and from $-0,31$ to $-0,65$ kW/m^2 «discomfort refers to» over $0,1$ kW/m^2 and under $-0,66$ kW/m^2)

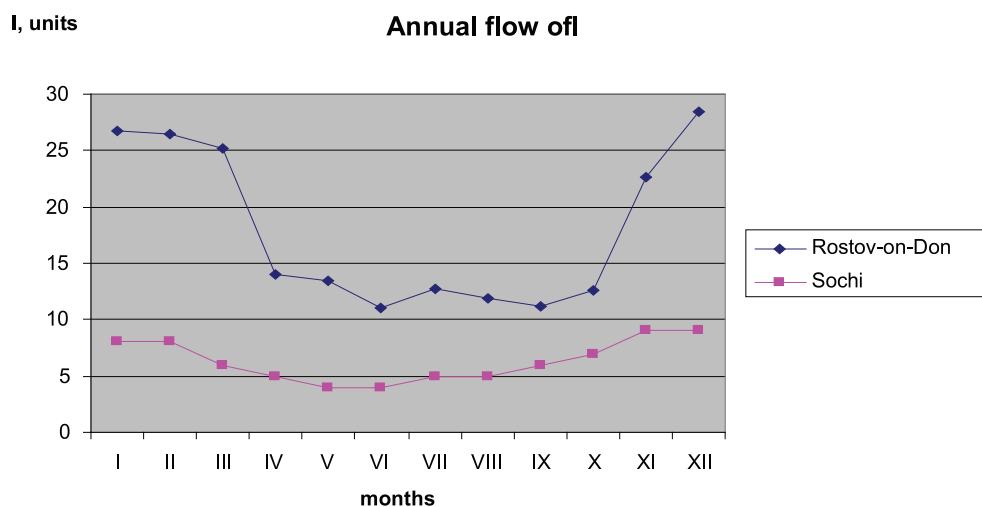


Fig. 4. I is pathogenicity index of meteorological situation («comfort» refers to 0 to 9.9 units, «subcomfort» equals 10–16 units, «discomfort» refers to over 16,1 units)

The analysis of the integral index of climatic comfortness has shown that subcomfortable conditions can be observed throughout the year in Sochi, while in Rostov-on-Don subcomfort conditions can be observed only during the warm season, and IR_{BC} indexes of cold season correspond to discomfortable conditions.

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MONITORING ENVIRONMENT CONDITION OF CHINESE INDUSTRIAL ENTERPRISES

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The main problem, linked to creation of corporate informational systems of management is development of models, methods, and algorithms that form the basis of program application and define an adequacy of the system to the set goals. Improving theory and practice of corporate program applications that allow one to monitor an internal environment of industrial enterprises has become urgent in China [1, 2, 3].

Analysis of modern methods and approaches towards systems of managing productive-technological activity of Chinese industrial enterprises

Solving the problem of industrial enterprises' efficiency is directly linked to automatization of financial-economic activity and all stages of productive cycle – from the developing design of a ware, its construction and production, to its after-sale service [1, 3].

Possibilities of modern means of automatizing enterprises' activity have exceeded limits of traditional functions and allow one to carry out analysis of productive activity in real time.

Corporate informational systems for industrial enterprises include an integrated set of program solutions that cover basic aspects of an enterprise's activity. An integrated solution represents a consequent process of automatizing separate productive, technological processes, and management activity. The pointed method covers all critical processes

and then provides for the transition towards automating auxiliary areas.

Most informational systems of managing an enterprise have wide databases. However, extracting information that is useful for making a decision from a database still represents a certain difficulty.

Functionality of informational systems of managing engineering enterprises is being widened due to formalization of a greater number of processes from different areas of organization activities. From this point of view, the basic limitation of developing informational systems are abilities of modern management theory in field of system analysis, mathematic modeling, methods and approached towards solving problems in a certain area of activity.

The main problem of creating informational systems of management is developing models, methods, and algorithms that form the foundation of a program application and define a system's adequacy to the set objectives. Studying action algorithms of informational management systems allows one to state absence of a compact methodical tool of modeling and managing organization-economic activity that allows one to carry out description and provision of integral characteristics of an enterprise's operations in real time, work out operative measures of management. Developing such tool bears a special significance for purposes of operative management of productive-technological activity of large industrial structures that are distributed between territories.

Operative monitoring of internal environment of industrial enterprises

The main problem, linked to creating corporate informational systems of management is development of models, methods, and algorithms that form the foundation of a program application and define the system's adequacy to the set objectives [2, 3]. It is necessary to develop theory and practice of developing corporate program applications that allow one to carry out operative monitoring of internal environment of industrial enterprises according to complex indexes of subsidiaries and also:

- work out operative managing impacts according to identification of significant parameters of enterprises' activity and their contribution into the final complex index;
- monitor and correct the fulfillment of enterprises' reconstruction programs in terms of defence-industrial holdings according to changes in key productive-technological and organization-economic parameters in real time;
- carry out comparative multidimensional analysis of financial-economic condition of subsidiaries of a given defence-industrial holding with jurisdictional organizations of other integrated structures;
- carry out visual dynamic analysis of the current condition integrated structures' subsidiaries according to ranging statistics.

One of the most complex problems in developing a method of estimating condition of enterprises according to the given criterions is always selection of the initial set of indexes [2-5]. It is a serious problem, since the excessive number of indexes can lead to loss of simplicity and uniqueness of defining the received result. On the other hand, reducing number of indexes can lead to loss of the approach complexity and underestimation of separate factors that impact the final image of the studied condition, phenomenon, situation.

Developing a method and algorithm of monitoring internal environment of an industrial enterprise in estimation of financial-economic condition of holding structures' subsidiaries has allowed us to decrease the number of controlled parameters under an insignificant error of final evaluations.

Creation of efficient methods of operative management of technological and organization-economic activity of machine building enterprises is an urgent problem at the current stage of developing corporate informational systems. Cumulative toolkit of an organization system of operative monitoring and managing productive-technological activity of industrial enterprises allow one to increase consistency and justification of management decisions. A presence of complex evaluations of enterprises allow us to carry out comparative multidimensional analysis of the activity of large defence-industrial enterprises, estimate correspondence of the subsidiaries' growth dynamics to the requirements, correct processes of restructuring and reforming operatively.

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*Materials of Conferences***THE DISTANCE LEARNING
IN RF HIGHER EDUCATION**

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The main challenges of the distance education, in the context of the education modernization program in the Russian Federation (RF), the distance education concepts in the RF have already been examined, and the education peculiarities and the specific features, and also the economic feasibility of its funding have already been shown in the paper.

The strategic goal has been set by the state program of the RF education modernization – to be developed the necessary measures and the corresponding arrangements for the further higher education development in Russia up to the best world standards level, with the subsequent its integration into the international scientific, research and education community.

The urgency of this indicated challenge solution has been laid in the fact, that the higher education system is being directly involved in the participation of the intellectual capital creation, the role of which is being constantly increased under the market economy. At the same time, the education expenditure is not regarded, as the deduction from the national income, but, as rather investments, having brought their return in the future.

This challenge statement is supposed the basic directions rethinking of the higher education development, which is, practically, included in itself the assessment of the previous gained experience in this sphere of the human activity, the rationale, which are applied to the current realities of the studied disciplines list, in the context of the current trends and their directions, and as well as also the professional skills enhance of the teaching faculty staff, at the forms and the teaching methods improvement. In the light of the foregoing, it can be stated, that the modernization has its own the peculiarities and the specific features. This is explained by the fact, that, under the errors assumption, the consequences are borne the long – termed, the heavy, and also the destructive character in the sphere of the higher education. If to be recalled the recent past, then, it is undeniably obvious, that it had been gained the considerable intellectual potential, the strong infrastructure of the higher education, which had no analogues in the world, in terms of the development level and by the obtained results, in the years of the Soviet power. But, at present, the available resource has already been limited and exhausted, in

this sphere, to that is put forward the solution of this considered challenge in the priority ones number.

In the recent years, one of the modernization areas and their directions of the higher education is the implementation and its further development and improvement of the distance education. In accordance with the distance education further development Conception of the RF, it is meant underneath «the educational services complex, having provided by the wide strata of the population and the general public, as at home, well as abroad, with the help of the specialized information educational environment, having based on the means of the educational information exchanging over the long distance (e.g. the satellite TV, the radio, the computer networks and etc.). The distance education is one of the continuing education forms, which is aimed the human rights to be realized to the education and the information obtaining» [1]. From the above – given definition, it is clearly seen, the distance education is just one of the elements, having belonged to the challenges complex, which are usually presented the teaching forms and their methods, so that it cannot be covered the full and whole range list of the development areas and directions of the higher education. However, many introduction supporters of the distance education are considered it, as the entirely new form of the teaching and the training. In our opinion, in this case, the modern information technologies application and the transfer, on their basis, of the educational services for any distances is, really, the new element in the educational services provision. As it is concerned for the essence, having provided the distance education that it is, in our opinion, the distance form of the leaning modification, with all its quite sufficiently known advantages and disadvantages.

In the light of the foregoing, the distance education organization and its further implementation cannot be carried out without taking into account the modernization overall directions of the higher education. Though, at their determination, it must be based on the goals and the tasks, which are set before the higher education, and that are determined by the needs of the national economy and the society, as a whole. The task had been set the reproduction provision of the qualified and skilled labor force before the reforms conducting for the higher education, which was due to the need to be more fully met the ever – growing material and cultural needs of the population. At present, this challenge is urgent and actual in the industrially advanced countries and the developed powers, but, at the same time, it is related to the intermediate stage in the development and the further improvement of the modern society. The primary purpose of the higher

education in the XXI-st century – is the all – round development ensuring of the personality, his and her spiritual, moral, physical improvement and their further perfection, which, in aggregate, will be created the intellectual and the scientific potential of the society. That is exactly, it will be the main and the decisive production factor, which will be acted, as the measure of the social wealth and the society further development, as a whole. In this connection, the education humanization has already been become in the number of the most priority objectives in the industrially advanced countries and the developed powers, and for the socio – economic sciences and the humanities reading is allotted up to 20% of the training and the study time. So, the distance teaching introduction can be made the significant contribution to the solution in this challenge, due to the computerization of the teaching process.

At the same time, the separately taken challenges will be solved quite difficult at the distance education introduction and the further implementation. This is the extra expenditures for the technical facilities, and the getting access to the information sources, the telecommunications infrastructure, that is, the challenge of the rational use of the funds is being arisen, having allocated to the education, in general, and to the higher education, in particular. Therefore, at this time, the independent branch development of the economic science, namely, the economics of the higher education is especially important and actual. So, it is seemed to us, that the object of this science should be the effective use provision of the allocated the material, the financial, and the human and labor resources, and which are directed into the sphere of the education, under conditions of their deficit and the scarcity to be achieved the objectives and the targets, which have been set before it. This is due to the fact, that the educational services provision is the specific final product item, under the market conditions. Thus, the main attention is practically paid to the optimal combination challenge of the paid and the free higher education. This is connected with the inability of the higher education financing only at the expense of the state and the public funds, as it has been evidenced by the experience of the industrially advanced foreign countries and the developed foreign powers. It is seemed appropriate to the presence of the state order for the specialists training, at the expense of the state and the local budgets, which is based on the personnel marketing, under conditions of the market economy, which is involved the production forecast of the demand for the specialists of the given profile.

As the practice has been shown, the distance learning is resulted in the significant reduction of the teaching workload on the traditional forms of the education, to the reduction of the existing faculty members staff, and, correspondingly, to the money saving. But, for this, it is much significant to be kept and preserved the leading scientific cent-

ers, the schools, which are in the higher education. But the new system introduction of the education, as it has been said earlier, is practically required the quite additional significant expenditures. Therefore, at the improvement of the distance learning system, it is appropriate to be compared these two indicators with the necessary comparative quality account of the educational services, having provided by the traditional and the new form of the education.

In accordance with the foregoing, the higher education modernization must be accompanied by the theoretical foundation development of the educational administration. As the formation – is the specific final product under the market conditions, then it should be subjected to the laws of the market economy and the economic management methods. In our turn, we support the position of those scientists – economists, who are considered, that the added value is being increasingly created in the service sector, including the impact upon the education system, under the current conditions. Thus, there should be overcome the viewpoint on the non – production sector of the national economy, as well as the scope of the minor one, in which the national income is not being created, and, which should be financed just from the budget. For all this, the residual method of the education financing was, practically, subjected to its removal and the further elimination, according, to which, first of all, the funds had been allocated for the manufacturing sector. So, it is advisable to be recalled the Academician's works of S.G. Strumilin, who still in the twenties of the last century, has been studied the dependence of the national income growth on the education level [2]. The further development S.G. Strumilin's ideas have already been got in the works of the national researches. Under the current conditions, the investing into the human factor and its capital are being considered the most promising, efficient, and effective ones in the industrially advanced countries and the developed powers.

As the national economy further development is, practically, followed and subjected to the general laws and its regulations, under the market economy conditions, then, its production and non – production spheres and the sectors management improvement should be conducted on the basis of the common principles. In particular, the management in the manufacturing sector and its sphere has been passed on the way of its decentralization, its significant functions change of the Ministry, the further their relationships reviewing with their subordinate enterprises. In this regard, it is presented quite appropriate to be expanded the higher education Institutes' and the local authorities' rights, the school boards and councils creation, which have been largely transferred the financing functions, including, on the basis, of their active in the entrepreneurship further development. So, the Ministry of Education and Science activities is being focused on the standards development, its implementation

constant monitoring, the labor force market study, the functions performance, having had the nation – wide significance.

Thus, the distance learning introduction can be the means of the education quality further improvement, provided the rational use of the funds allocated the means for all these purposes, the complex solution of the urgent and the actual challenges in the further implementation of the market – based methods of the education system functioning.

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AN INNOVATIVE STRATEGY OF STUDYING LEGAL ENGLISH

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This article describes a technique for helping teachers impose students' activity and make the ideas presented in this article instructive. The problem of studying legal English effective strategy can be illustrated by case study projects through Russian fairy tales, folk-tales of the British Isles and American funny stories.

The method «case study» was first applied to Harvard Business School in 1924. Its essence is that the students are offered to understand the real or fictional life situation. This situation reflects not only any practical legal problem, but actualizes a certain knowledge to be learned in the solution by means of a foreign language. The purpose is to teach students, both individually and in a group: to analyze the information given in a foreign language, to sort it out for solving a given problem, to identify key issues, to generate alternative solutions and to evaluate them, to choose the best solution and form a program of action etc.

As a specific method of teaching, the case study project is used to solve educational problems. The main problems of the case study project are technologization and optimization, methodological training in the use of various types and forms. Being an interactive method of teaching, it won a positive student attitude. The students see it as a game that provides development of theory and practical application of the legal foreign language material. The important fact is that the analysis of situations impacts rather strong on the professionalization of

students. The case study project helps to their growing up, creates interest and positive motivation towards learning a foreign language in the aspect of the upcoming professional lawyer.

Case study project is a role-playing system. This system combines the technology of the game with a fine intellectual development and total system control. But in any case, a Case study project is an effective means of building professional skills of learners. It has its source as an intellectual product: the real daily life, the situation relating to various aspects of the legal profession and the results of scientific research, etc.

Cases study project can be classified as follows:

– applied case that reflects real life situation; – educated case (the main task is training); – research case study (it focuses on the research activities).

The teacher can take easily the position of «consultant», and an «expert» depending on the type of interaction with the audience.

The work of case study project includes: planning, carrying out a project, and reviewing. It directs students for research and discovery learning. The students work out a wide range of initiatives: receiving stories and making from them a legal document, using their own strategies, explanations and proposals and develop their communicative competence. As students dive into a real situation the teacher must give them creative freedom and a sense of importance of their work from start to finish. Such activities create an atmosphere of trust and help students to escape the boring and routines during the process and make innovation easy. Moreover, the effective way in studying legal English is to put together interaction and collaboration among students. It requires the teacher to stimulate working towards his or her objectives.

Russian fairy tales and Americans funny stories are full of conflicts. Some of them are external or internal. It is a conflict that impressed students most and they make a great deal of efforts to make up legal documents (claims, brief, drafting memos, applications contract and so on) basing on the plot of the given material.

At the beginning of each task appropriate instructions are given. The first stage is explanation of the nature of the activity. The second stage is writing a legal document. Students have a story either a fairy tale or a funny story. They use cognitive strategies, and make a plan of the project. Having studied the problem, the students begin face to face communication, creating a stimulating polylogue and then producing case study project. The remarkable feature of the project is to use idioms, proverbs, sayings and idiomatic expressions. The idiom decorates student's oral and writing speech, accumulating mentality in changed forms. Using idioms the students get into English imagery world and improve metaphoric representation of reality.

Thus, the key words on which the idiom is built up help students to recreate the native speaker's

mental picture. It will inspire them to think and find out specific connotations and associations. At the final stage, students present factual case study project, formulating arguments and justifying their opinions.

The following example is based on «Moral speculation» after O. Henry *Step 1*. The students are to read the story and to give its summary: After a long search, a man (Jeff) who wanted to have a partner in business found a fellow. His name was Ruff. He was famous for pig stealing. As the man wanted to have an obedient servant, the fact of stealing pigs did not worry him. Jeff preferred fraud to honesty. Ruff had to come and help Jeff to trick people, by playing cards with some casual passers-by. Everything seemed to be going well, but Jeff could **feel in his bones** that something was wrong. As it turned out Ruff had not come and did not keep his promise. Ruff **showed his true colours**. He stole the pig. The stealing had become a habit for him. He brought the pig home. But the pig was squealing all night, disturbing people. Moreover, Ruff tried to sell Jeff the stolen pig, putting in the advertisement. And Jeff took it by this device and **got into a mess**. As the matter of fact, Jeff ran the Wall Street principles: buy low and sell high. However, he wanted to have a large fee too, buying this pig. He did it. But he couldn't realize the following principle: «Light purse is heavy curse».

Step 2. The students are to compose a brief of a possible case:

Factual allegations': Plaintiff Jeff, on December 19... at approximately 10 p.m. was at home. It was **a black day** for him. He was disturbed by the noise. He had just fallen asleep when a load squeal woke him, causing him to believe that something awful had happened. He knocked on the wall to keep the neighbour quiet, alleging that honest people couldn't get their rest. As it turned out, the load squeal belonged to the pig that has been brought by the defendant. The plaintiff was greatly frustrated by this situation. Next morning he had a deal with the defendant. He bought the pig in order to return it to the circus. He couldn't realize what was happening during the deal, because he was not **in the least sleepy** the night before the deal. The sum of the deal

(800 dollars), which was **like a bolt from the blue** for him. He **has his back to the wall**.

Cause of action: Infliction of emotional distress.

As a proximate result of infliction of emotional distress sustained because of the defendant, the plaintiff had suffered mental distress. Although he was a person of ordinary sensibility, he was greatly frustrated by the situation in which he had been involved intentionally. The plaintiff was unable to work and was placed on a long term disability. The plaintiff alleged that all charges for medical services and damages he had sustained during the deal because of his mental state should be imposed on the defendant. By the reason of the defendant's infliction of emotional distress, plaintiff has been damaged in sum of 800 dollars.

Total damages sustained: Plaintiff's health was damaged in the sum of 400 dollars.

Step 3. Practical part of the research. *Explain the idioms in the case mentioned above*.

So, case study project is a natural component of legal language teaching. It is the ideal way of making students to enhance their legal language proficiency for growing practice in writing and speaking skills by engaging them into legal language environment.

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Short Reports

ACTIVE METHODS OF THE EDUCATION IN PREPARATION STUDENT-DEFECTING

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In presented article is considered spectrum of the professional problems of the teacher- defecting, which successfully dare by means of introduction in scholastic process active technology education and education.

In relationship with strategy of increasing quality pedagogical formation particularly actual is a problem scientifically-methodical ensuring the training and refresher courses specialist. Many years pedagogical science developed educational technologies, allowing actuate cognitive activity trained and provide the qualitative assimilation of the programs. However, training student high educational institutions and presently доминирует reproducing activity, functioning to memories on thinking. To change the situation, representatives of the high educational institutions [2; c. 34] have paid attention technology educational in professional educational institutions. Technologies – not simple collection of the methods of the education student, but specific mini – a pedagogical system, having purpose, forecasted result, strategy as direction of the motion educational process participant leads to result. The Strategy dictates the selection of the methods and logic of their use, in particular, in pedagogical activity future teacher – defecting.

On sort of its activity specialist- defecting it happens to contact with children, having breaches of the development, with their family, often unhealthy climate, with colleague, a part from which has not a special defecting of preparation, and, as a whole, with society, ambiguous referring to people with breaches of the development. The spectrum of the professional tasks, which solves defecting. All this necessary to take into account when preparing future teacher- defecting. The most actual are questions of the introduction active technology education and education specialist. Use the separate active methods of the education in preparation student- defecting.

One of active methods is a lecture-dialogue, which allows the teacher to put before student questions for comprehension own subject of the experience. In particular, on one of the first occupation on any defecting to discipline (depending on curriculum) teacher can offer student for comprehension following questions:

- have you experience of the contact with people with breaches of the development?
- as, on your glance, attitude society to people with breaches of the development?

– as state policy in respect of these persons?

Depending on budget of time questioning can be organized in writing, its realize verbally, but on the second and the third question possible to organize the debate since there are miscellaneous standpoint beside student on this problem. The Form debate can be different: each of students voices and argues its standpoint or students are divided on groups on sign resemblance position and together motivate the argumentation etc. Frank discussing the questions on occupation helps the student is weakened, forces be conceived about each person and about attitude to each, teaches to be tolerance to one another. Except this, answers allow the teacher to judge about particularity given contingent student: as their general private about folk with breaches of the development as their personal attitude to given categories of the people, obliquely possible draw a conclusion about dominant motive of the choice given to professions.

Analyzing answers student several flows, we came to output that there are stereotypes in their consciousness in perception of the persons with breaches of the development. Subsequent to M. Bityanovoy we stereotype as firm image or firm belief about what – or phenomena's, folk, event, characteristic representative of one or another social group [1]. It is installed that stereotypes, either as habits, are pawnd in infancies. The sound children, as a rule, do not face with people with breaches of the development and with their problem, do not speak of them with its encirclement, with parent, have a no possibility to show to such people compassion and participation. Or have an inadequate experience of the contact with people given to categories. Thence in perception student important such extremities: person with breaches of the development – a person, having aside from psychic problems, else serious physical defect, ugliness, untidy and repulsing appearance, they have not, with their standpoint, person of the prospects of the development. At people with not brightly expressed problem (the speech defect, small reduction of the vision, spectacles) are not perceived as people with breaches of the development and requiring professional help and person of the human participation. So much it is important to form the professional glance beside student, bring up identical understanding to essence of the problems of the development, degree of their manifestation and possibility to compensations and correction, enable the student to reveal in itself need for compassion, in participation, in effective help and ability to be useful more weak.

For this purpose much it is important to introduce the student with regularity of the psychic development of the people with deflections of the development, sharpen their attention on idea, voiced

by G.TROSHINYM and creative designed by L.S. Vygotskim, about that that psychic development of the people same regularity will comply with breaches, as normative development. Theoretically and practically significant is an analysis existing theory to compensations [4; c. 23]. All are a theoretical positions necessary to illustrate the real example of the achievements of the people, having that or other deflections in development: fates O.I. Skorohodovoy, E. Keller, K.E. Ciolkovskogo and others About life's of these people can tell teacher itself, having offered student to analyses their life way with highlighting factor, promoting their creative activity. Effectively also attract student themselves to preparing the messages and report about life's of the people, having that or other deflections in development. In the course of this functioning aside from extension and revision of the knowledge's about folk with breaches of the development, about possibility and condition to compensations, students gain else very important scholastic of the skill: select the necessary literature on problem, analyses and generalize information, form the messages, increase the experience of the public appearance. The Negative stereotypes of the perception of the people with breaches of the development bring about that that before and during the practical persons students feel discomfort, awes and insecurity in their own power. These problems partly leave to account of theoretical preparation in the field of psychological particularities of the people with breaches, particularities of their education and education, special subject methods. However else much it is important to develop beside student professional significant communication quality: intuition. For development these quality necessary to introduce

in occupations such active methods, as training. The Modern special scientific literature offers the broad range like training, which has shown its efficiency. For instance, exercise «Blind and guide» helps the student at least approximately to feel and understand that feels the person, deprived visions. Besides, this exercise allows bringing up the feeling of the confidence to classmates.

One more active methods is a business play. For instance, in course «Psychology-pedagogical diagnostics and consultancy» can be organized business play «Psychology-physician-pedagogical commission», in the course of which students perform the role one of the specialist commission. The Students beforehand get acquainted with procedure of the functioning real PMPK, with functional duty of each specialist, prepare the diagnostic material, find in literature history developments child with that or other deflection for analysis and stating the diagnosis in the course of plays.

The Scholastic courses «Special methods of the teaching» enable for broad use such active methods, as modeling fragment or integer lesson and коррекционных occupation with the following analysis and рефлексией offered project. Thereby, active methods allow effectively preparing the specialist-defecting to the following creative and productive professional activity.

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*Materials of Conferences***SOCIAL PSYCHOLOGICAL CLIMATE AND INTERNAL IMAGE OF COMPANY**

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The analysis of research in the imagology, social psychology and organizational psychology shows the interrelationship and interdependence of the social and psychological climate and the internal image of the organization. However, there are almost no any empirical research on this issue, due to the insufficient development of the empirical research methods.

The aim of our study is to identify at the empirical level the impact of social psychological climate in the internal image of the company.

Obviously, healthy social and psychological climate is one of the conditions for increasing productivity, employee satisfaction and team work. On the one hand, it occurs spontaneously, on the other one it is the result of systematic psychological work with team members, special events aimed at creating and maintaining supportive, harmonious relationships between managers and staff.

The analysis of the literature (L.P. Bueva, E.S. Kuzmin, A.N. N.N. Lutoshkin Transports, B.D. Parigin, A. Petrovsky, K.K. Platonov, A.A. Rusalina, A.K. Ouled, V.M. Shepel, A.N. Scherban, etc.) shows that there is no certain agreement between the researchers do on a definition of the term «social psychological climate». So, along with the concept of «social psychological climate» the concept «emotional and psychological climate», «mental attitude», «psychological compatibility», «sociological climate», «collective psychology» and others are used. All of them are accompanied by differences in terms and in understanding of this phenomenon. The proposed definition is not sufficiently systematic and often they are either too narrow, reflecting only one of its sides (emotional, moral, social) or too broad, inclusive.

In our understanding social and psychological climate is the integral specific social and psychological state of the organization as a whole, which is characterized by a relatively stable psychological mood of the staff, which manifests itself in various forms of joint activity and communication in the relationship in which workers are with each other and the social environment. Formed on the basis of emotional and labor relations in the group and individual values and value orientations, social psychological climate defines a system of relations of employees to each other, their work, and all forms of life. Social psychological climate is the qualitative aspect of interpersonal relationships, which

manifests itself in the form of the psychological conditions that promote or hinder the development of productive activities of the person in the group.

The main indicators of the social psychological climate of the staff are the desire to preserve the integrity of the group, compatibility, harmony, unity, sociability, openness, and responsibility.

Social psychological climate in the organization depends on the level of compatibility and harmony of the group members. Compatibility and harmony determine the degree of the interconnectedness and interdependence of people. Effectively working group is a group of psychological integrity. Instead of many «I» there is the concept of «WE». Opinions, estimates, feelings and actions of the individual «I» come closer, there are common interests and values of complementary intellectual and personal characteristics.

One of the most important tasks of the company is the creation of an adequate perception of the values and meanings of its staff. An internal image or the image of the company forms for this purpose, reflected in consciousness (and subconsciousness) of the employees.

The concept of the image is interpreted in Russian and foreign studies in different ways. The Russian authors (A.A. Bodalev, F.A. Kuzin, A. Panasiuc, E.B. Perelygina, V.M. Shepel, etc.) adhere to, as a rule, the two points of view. On one side the image is understood as formed in a mass or individual consciousness emotionally charged image of someone or something, on the other – as an opinion about a person, organization, product, service, etc.

We view the image as an opinion about someone or something which is generated by professional efforts on the basis of emotionally colored image in the minds (and subconscious) audience (recipient) image.

Internal image of the company is an opinion (view) formed by professional efforts on the basis of emotionally colored perception of the organization image. The main determinants of the internal image are the corporate culture of the organization and the social psychological climate. You can say otherwise: the internal image is the image and perception of the psychological attitude to the company by its employees, managers, owners, shareholders, boards and parent organizations that make up the internal environment of the company. In addition, the presence of a positive representation unites the team, creates a favorable social psychological climate in the organization.

Internal image is not as important as the image in the external sphere, therefore creating a positive image is more than just a good advertising campaign, it is a complex and multi-faceted plan, all

the parts of which must be strictly interrelated and interdependent.

Internal image gives confidence in the future of each individual worker, encouraging them to greater degree of identification with the company, more active work and returns to the common cause, the desire to improve skills. It has a positive impact on the appearance of a stable professional organization, a good employer, etc.

In addition, it is the company's employees who are the major informants of the potential customers about its internal atmosphere and the real work. Through friends, acquaintances, casual companions it is possible to learn a lot about the company and create or change someone's mind about it. This is why the internal image is one of the important factors affecting the external image of the company.

The purpose and objectives of our empirical research requires to determine the structure of the internal image of the company, which elements would act as both the evaluation criteria of the image. We underlined the following elements of the internal structure of the image of the organization: a favorable emotional and psychological climate, high level of the corporate culture; well-established system of wages and non-pecuniary rewards of the employees, staff loyalty to the company; the personnel policy of the company provides the opportunity for career growth, trust of the company staff; healthy emotional and psychological relationships in the team, high level of communicative culture, adequate (healthy, positive) relationship between workers with management employees; a sense of pride for the organization, for belonging to it, the presence of team spirit in the company, a high level of transparency of company management.

The study was conducted on the basis of the «Fin Invest» – steadily growing and developing organization in the financial services of Chelyabinsk and Chelyabinsk region. The study involved the organization of branches in Miasse and Kurgan. The study involved 75 people (men and women aged 22 to 37 years) – the office workers of the head office and branches.

For the diagnosis of the social psychological climate of the company we used following methods: «Social and Psychological Self-assessment group as a collective» (Nemov R.S.) [1], and rapid method of studying the social psychological climate in the workplace (O.S. Mikhalyuk, A.Y. Shalyto) [2].

To study the internal image we specifically designed and tested a method created to determine the index of the internal image of the company. Subjects (company staff) proposed stimulus material in the form of a table, which reflects the judgment, the degree of agreement that should be expressed in points (from 1 to 10). Judgment as follows:

- 1) the company has developed a favorable emotional and psychological climate;
- 2) a high level of corporate culture;

- 3) the company has well established system of wages and non-pecuniary rewards of the employees;

- 4) staff is loyal to the company's management;

- 5) human resources policy of the company provides the opportunity for career growth;

- 6) trust to the management be the staff of the company;

- 7) the team has developed a healthy emotional and psychological relationship;

- 8) the company is characterized by a high level of communicative culture;

- 9) the relationship with the management of employees are highly commendable;

- 10) employees feel proud for their organization;

- 11) high level of the team spirit;

- 12) the level of information transparency of the company's management is high enough.

As you can see, all these statements reflect the image of the internal structure of terms (its criteria), as mentioned above.

Scores are summed up and interpreted as follows.

101–120 points – the index is very high. This figure shows a very favorable opinion of the staff of the company, on a very attractive interior image. In the organization has developed a healthy emotional and psychological atmosphere, the staff are quite happy with their work, relationships with colleagues and with management, they see the real prospects of its growth, proud of belonging to the company, loyal to it. Altogether, this indicates a high motivation of the professional activities of the staff in the company.

85–100 points – the index is high (high view). High view reflects a completely positive attitude of the staff to the organization, indicating generally positive opinion about the internal image of the company. Employees are satisfied with the relations established with the leaders and colleagues, feel cared about the employees and the management of the company as a whole. The company feels the team spirit, the high level of communication and business culture.

65–84 points – the average index – an indicator of a good opinion of the staff of the organization and, consequently, a good internal image of the company. Employees are generally satisfied with their work in the company, but do not always feel cared about motivating leaders of the staff. Not quite adequate personnel and social policy is typical for the company. There are or may be prerequisites to interpersonal conflicts, while not always the steps to prevent them are taken.

55–64 points – the index is low (low opinion). The low index of internal image reflects a decline in the internal image of the company. Emotional and psychological atmosphere is complicated, relationships between staff and between staff and management are strained. Often there is a growing dissatisfaction with the staff in their work and their company as a whole, the disappointment of social

policy, reduced loyalty to it, and, as a consequence, the high staff turnover.

54 points and below – the index is very low (very negative, bad opinion). This indicator internal image showing a trend of degradation of the company. The complex and intense emotional and psychological atmosphere, the lack of prospects for improvement. The company's management is not able to manage internal resources, only concerned about themselves, there is no any interest in what is happening in the workforce. This situation requires urgent intervention (including psychological) to review, reform, both external and internal image of the company.

Mathematical treatment of the data was performed using the Spearman rank correlation.

The results of studies using this technique have found a high opinion of the organization's offices in Chelyabinsk (85 points) and Kurgan (97,5 points). In the branch of Miass – average performance (67,5 points), indicating a good opinion of the staff of the organization.

Following the procedure of «Social and Psychological Self-assessment group as a collective» found that the scale of reliability office staff of Chelyabinsk is – 4,44; Kurgan – 4,88; Miass – 3,88. These indicators suggest that the employees of the company (head office and branches) somehow embellished social psychological situation in the collective answering the questions.

Study on rapid method allowed us to estimate the social psychological climate of the team in three areas (components): emotional, behavioral and cognitive.

The emotional component: at the head office in Chelyabinsk 1,00, a branch in Kurgan 1,00, a branch in Miass 0,67.

The cognitive component of the head office in the Chelyabinsk 0,42, a branch in Kurgan 0,83, a branch in Miass 1,00.

The behavioral component: at the head office in Chelyabinsk 0,35, a branch in Kurgan 0,83, a branch in Miass 0,33.

Average ratings falling within the range of from 0,33 to 1,00, is considered positive. The psychological climate of each component in this range is recognized as favorable.

The results of mathematical analysis using the Spearman rank correlation revealed the existence of a moderate closeness of the connection index and the internal image of the following factors of the social psychological climate: the desire to preserve the integrity of the group (0,44–0,5), cohesion (0,46–0,51) organization (0,4–0,41), awareness (0,45–0,49) and responsibility (0,41–0,5).

Thus, we put forward the hypothesis that the social psychological climate has an impact on the internal image of the company, to a greater extent was confirmed.

The practical significance of the study is to develop and test methods for determining the internal image of the company, and to develop recommendations for improving the management of socio-psychological climate and, therefore, the internal image of the company.

The company management is recommended: to carry out various actions of co-hosting non-working time, to create a healthy environment, not hostile competition between employees and to promote the professional development of employees, encouraging staff to professional achievements, inform and involve professionals for innovative projects that provide an opportunity for creative and professional development of people. Inform employees of the company about the history, standards, norms of behavior in the team, ethics and etiquette, by explaining the basic elements of the corporate culture in the relevant regulations, domestic statutes; adequately assess the performance of their employees and encourage them to work.

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