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SMALL MYOCARDIAL INJURY IN PATIENTS UNDERGOING PERCUTANEOUS CORONARY INTERVENTION

Gayrabekova F.R.

Polyclinic № 7, Grozny, e-mail: miss-orstho@mail.ru

The article presents the relevance of coronary heart disease and cardiac surgery technique of its treating – percutaneous coronary intervention. It has been described complication arising after the planned percutaneous coronary intervention: a small myocardial injury, manifested by increased serum levels of cardiac markers such as myoglobin, troponin T, creatine phosphokinase-MB.

Keywords: myoglobin, troponin T, creatine phosphokinase-MB, stenting, damage to the myocardium, coronary artery

In modern cardiology, coronary heart disease (CHD) is one of the actual problems because it is the most common disease, despite the high level of development of world medicine. In 2012, CHD mortality was 13,2% (7,4 million). In 2011 the total mortality of coronary heart disease in the Russian Federation – 52,8% [12]. CHD mortality in Russia is higher than in the USA, three times or higher than that in Japan – 9 times in [5].

Thus, the treatment of coronary artery disease in patients – the actual problem now. Annually it has been taken more than 3,0 million of revascularization procedures in the world. In recent years, the ratio of percutaneous coronary intervention (PCI) (angioplasty and stenting of the coronary arteries) and coronary artery bypass grafting is 2:1 in Europe, and 6:1 – USA, Japan [5].

The concept of using endovascular prostheses for the affected vessel and the preservation of its lumen was first proposed by C. Doner in 1964 [1]. The gained experience in 1987 of H. Rousseau on implantation of self-expanding stents in the coronary arteries of animals served as the basis for the application of stents for the treatment of coronary artery disease patients [13]. First self-expanding stent implantation in human coronary arteries was performed in 1986 by J. Puel [6].

In 2012, the Russian Federation there have been carried out 75,000 coronary stenting [5]. Observational study involving a large number of patients, confirm that PCI procedure is highly effective with a low rate of complications compared with other methods of myocardial revascularization. Nevertheless, the problem of PCI still has many open questions.

Today there have been thoroughly studied and described, according to the classification of ACC/AHA, such serious complications after PCI as death, myocardial infarction, stroke. Minor complications include transient ischemic attack, complications at the puncture site, renal failure, allergic reaction to the contrast agent; and specific complication – thrombosis, coronary artery disease, coronary artery

perforation, arrhythmias and tamponade [13]. However, the term “minor myocardial damage” (MMD) has been recently appeared in the literature, found in 8–15% of cases after a routine PCI and manifested only by increased levels of cardiac markers without clinical and electrocardiographic signs of myocardial damage [4].

Cardiac markers are highly sensitive and specific in the diagnosis of MMD, but relatively rarely used for their diagnosis after the planned PCI.

Changes occurring in the myocardium depends on the duration of ischemia duration – less than 30 minutes in the myocardium appear small foci of necrosis, which are subsequently replaced by connective tissue, leading to an additional coronary risk [15]. On 30 min time increase of ischemia there occur irreversible damage to the myocardial cells, by activation of lipid peroxidation and release of lysosomal enzymes into the extracellular space with microcirculatory occlusion of the coronary vessels. Persistent ischemia for 40–60 min leads to structural changes in the heart muscle, and ischemia lasting 60–120 minutes – to the death of cardiomyocytes. Thus 80% of the cells are killed for 3 hours, and nearly 100% – within 6 hours of myocardial ischaemia [7].

Cardiac markers released from damaged cardiomyocytes: myoglobin, troponin T, CK-MB [8] are secreted into blood during myocardial necrosis.

Myoglobin – heme-containing protein found in all muscle cells. Its molecular weight is 18 kDa [8]. Myoglobin functions are transporting oxygen from the hemoglobin in the blood to the muscle cells, passing his muscle mitochondrial cytochrome oxidase.

During myocardial necrosis myoglobin easily penetrates through the membranes of damaged muscle cells, as it is quite a low molecular weight protein. Thus, myoglobin is early enough sensitive marker, but not sufficiently specific.

Troponin – the structure of a protein nature, located on the thin myofilaments contractile

apparatus, universal for striated muscle. There is a troponin complex consisting of three subunits: T – is associated with tropomyosin, I – which is an inhibitory protein and C, which is connected with calcium ions. Troponin C is the same for all types of muscles, therefore is not used as a heart biomarker. Troponin isoform – T and I, specific for myocardium [11]. The molecular weight of T troponin is 37 kJ, I troponin – 23,8 kDa [8]. Blood contains in the cytoplasm 6–8% of troponin T and 2,8–4,1% of troponin I that indicates that the concentration of troponin T in the blood rises more quickly than of troponin I [10]. In this regard, troponin T is used in clinical practice.

After success of PCI and coronary artery stenting it is noted a slight increase in the level of troponin by 24–40% of patients with coronary artery disease [16]. The main reason of troponins increasing in such situations is transient ischemia caused by intracoronary balloon blowing up, intervention in the arteries, coronary artery dissection, microembolization of distal channel by plaques material. This is due to their high sensitivity and specificity; they are also used for the diagnosis of MMD. The results of these studies indicate poor prognosis of troponin-positive patients in terms of cardiovascular events risk [16].

Creatine phosphokinase (CK) – an enzyme contained in cardiomyocytes in skeletal muscle cells, brain, thyroid and lungs. Determination of total creatine phosphokinase in blood serums for the diagnosis of myocardial ischemia is currently impractical since it is contained in a large amount in the skeletal muscle and has low specificity for the myocardial necrosis [3].

CK is composed of two sub – M (muscle type) and B (brain type) which form three isoforms: CK-MB – heart isoenzyme, the concentration of which changes in cardiomyocyte injury; CK-BB – brain isoenzyme, reflecting the pathology of brain cells; CK-MM – muscle isoenzyme, located in skeletal muscle.

CK-MB isoform – heterodimer with a molecular weight of 86 kDa, which is used as the “gold standard” in immunochemical diagnosis of ischemic myocardial injury.

There are data in the literature that for the detection of myocardial damage in patients in the performance of PCI and coronary artery stenting CK-MB is a specific and sensitive marker of myocardial necrosis [2].

Thus, for the diagnosis of small myocardial damage in patients undergoing percutaneous coronary intervention and stenting of the

coronary arteries, one can use cardiac markers, such as myoglobin, troponin-T, creatine phosphokinase-MB.

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*Materials of Conferences***INTRAPERITONEAL COMPLETE RUPTURE OF BLADDER CUPULA (BOTTOM), COMPLICATED BY TEN-DAYS URINE PERITONITIS**

Baizharkinova A.B., Ergaliyev K.E.,
Highrullina Z.S.

*Western-Kazakhstan state medical university of Marat Ospanov and Railroad hospital of the city of Aktobe,
e-mail: bayzharkinova@mail.ru*

This article describes a case of successful treatment of a patient in a working-capable age, delivered from passing tracks by a medical assistant to therapeutic department of Railroad hospital of the city of Aktobe with a directing diagnosis: liver cirrhosis, ascites. After initial inspection of patient head of therapeutic department revealed delay of urine and invited urologist who introduced a soft catheter into bladder and left for consultation to a different medical institution. About 10 liters of urine was discharged, during the consultation with head of surgical department the catheter was advanced deeper, and discharge of blood drop with pus was observed, it allowed the specialists to suspect rupture of bladder and exclude the diagnosis ascites. Condition of the patients was characterized as heavy, acetone smell was coming from his mouth, intoxication clinic was observed, anamnesis on trauma was impossible to collect, as though the patient was conscious, he was sleepy. Palpation of stomach showed symptoms of peritonitis, but quantifiable data was stable. Skin in the area of groin, thigh, and external organs showed no pathologies. In urgency the patient was transferred to department of anaesthesiology and reanimation with primary diagnosis: closed trauma of stomach, intraperitoneal rupture of bladder, complicated by urine peritonitis and intoxication. During pre-surgical period, apart from laboratory examination, an urgent R-gram of pelvis was made, bone pathology was not revealed. For technical reasons additional consultation with urologist and ultrasound examination was not possible. After pre-surgical procedure the patient has been exposed to lower-middle laparotomy under general anaesthetization. After blockade of mesokolon with 80 ml of 0,25 % sol. Novokaini and during revision of stomach cavity pathologies of other organs were not found. Intrasurgically a complete intraperitoneal rupture of bladder in the area of cupula in sagittal direction was confirmed, in such cases bleeding is usually insignificant due to a low vascularization in bottom area. In this particular case urine ejection into stomach cavity took place through the wound of bladder, and it provided for contraction of small vessels and decrease in bleeding in rupture area. In the area of rupture and on the back surface of bladder rupture edges were covered with fibrin (this fact testifies for the inveterate nature of injury), dull end

of rubber catheter was seed from the wound. The implemented procedures included: aspiration of urine remains, sanitization, aspiration, and drainage of stomach cavity in 4 places. Then edges of rupture were "refreshed" from fibrin incrustations, bladder wound was closed according to the general methodic, and episcistostoma was placed. During the post-surgical period desintoxication therapy was implemented, the surgeons successfully managed treatment of post-surgical paresis of bowels via conservative method. Removal of drainages from stomach cavity, skin sutures, and episcistostoma was carried out in corresponding periods according to laws of surgery. A complete recovery came in 2,5 months, the patient was released from heavy work for 1 month.

PS: According to railway-engineer witnesses from the passing track who visited the patient, the injury took place in everyday life of the patient, he fell down in condition of alcohol intoxication being on vacation and did not call for medical assistance. His neighbor, after he learned about the condition of the patient, called for medical assistat after 10 days, thus the patient was delivered to the head railroad hospital.

Key words: intraperitoneal complete rupture of bladder cupula; 10-days urine peritonitis, acknowledged as ascites; sanitization and drainage of stomach cavity; closure of bladder wound, episcistostomy.

Urgency: During the recent 50 years of practice in surgical department of railroad hospital among operated patients with bladder traumas with the following complications: 10-days urine peritonitis, it has been the first case in which the patient was saved. According to literature data, even in case of isolated damage of bladder lethality equaled 4,4%. During the recent 10 years articles, devoted to ruptures of bladder with such complications, have not been published.

The main cause of bladder ruptures is trauma. V.A. Klyuzhev (2001) illustrates that bladder injuries and urine-discharging ways are very rare in peaceful times, it is defined by its anatomic location in encirclement of pelvis bones. However, in case of anthropogenic traumas bladder damages grew by 7%, and in case of traffic accidents bladder injuries take place in 86–90% of events, among those 70–80% of them are hazardous for life, and in combined traumas bladder ruptures form 25,7%. The Cause of rupture is a direct injury along the lower part of stomach: a kick, hit by a moving transport, fall from a certain height, overrun by an automobile, etc. More rare are indirect injuries: a strike to sacrum, buttock, thigh.

Works of such authors as (T.A. Revenko, 1981; P.S. Jalilov, 1985; S.B. Petrov, 1999; Tiquert R. et al., 2000) show us that bladder rupture depends not

only on a hit, but also the speed of traumatic force. In case of alcohol intoxication bladder rupture takes place much more frequently and grows two times (I.G. Ryabtsev, 1975; N.A. Shor, A.A. Chichetka, 1989), especially among men of able-to-work age. A cause of a complete rupture of bladder in case of an accidental trauma among the injured in condition of alcohol intoxication is lack of protective senses. Intraperitoneal rupture of bladder can happen to a person with an overfilled bladder in case of an accidental downfall under the own weight of the injured person or in case of a hit to the stomach with a dull object. Practical significance has the division of all bladder damages into extraperitoneal and intraperitoneal. Depending on the mechanism of trauma damage of bladder can be, as mentioned above, complete and incomplete. In case of incomplete damages partial rupture of bladder wall takes place: mucous membrane, sometimes mucous membrane and muscle tissue with preservation of wholeness in serous cover. On the contrary, in case fractions of pelvis bones are introduced from external environment, rupture of adventitia and part of muscle tissue takes place with preservation of wholeness in mucous membrane. The authors claim that incomplete ruptures can further transform into complete due to overflow of bladder with urine and sharp increase in intra-bladder pressure. Intraperitoneal fractures usually happen with fractures of pelvis bones, the mechanic of such rupture is basically defined by traction of pelvis ring at the moment of fracture with an overtension in ligamentous apparatus of bladder. As a result, rupture of bladder wall with rupture of ligaments takes place. More rarely bladder rupture happens due to a damage, caused by bone fractions of pelvis bones. As a rule, intraperitoneal ruptures of bladder aren't succeeded by fractures of pelvis bones, as the main part in the mechanism of trauma is played by hydraulic blow in an overflowed bladder.

In his "Guide on urology" of 1998, academy member N.A. Lopatkin illustrates location of bladder in small pelvis, and its volume equals 400-500 ml. In case of overflow of its volume increases hydrostatic pressure, and bladder walls become thin. The thinner bladder wall is due to a chronic urine delay, the greater is atrophy of bladder muscles and easier is rupture. That is why bladder ruptures are more frequent in case of senile atrophy of bladder, prostate adenoma, certain pathologies of bladder (diverticulas, tubercular ulcers, cancer, etc.).

A weak point and mobile part is cupula (top or bottom) of bladder, in this place rupture takes place in 35% of cases, and it happens on bladder wall in 42% of events. In peaceful times a combined trauma with damage of other internal organs leads to heavy complications that result in death of patient, death rate equals 20%. During war death rate equals 4,4% in case of isolated damage of bladder.

Of all intraperitoneal injuries bladder rupture among mature population happens in 5-12% of

cases, and in 4,4-11,5% of cases – among children. Bladder traumas are divided into open injuries (12-33%) and closed traumas (67-88%), penetrating, non-penetrating, intraperitoneal, extraperitoneal, complete and incomplete damages of bladder. As in case of "non-complicated" form of trauma ruptures usually happen at the top and back wall, they are mostly intraperitoneal, in other words, do not lead to ruptures of other regions of urine-discharging ways or organs of stomach cavity.

Among all patients who experienced surgery from traumatic damages of stomach organs, bladder traumas form 2% of cases.

Intraperitoneal complete ruptures of bladder happen in 25% of cases along sanital or longitudinal direction, can be single or multiple and have no definite shape. In case a rupture happens in sanital direction, bleeding is almost absent, the reason of that is lack of large vessels in this area, and small ones contract quickly in tissues of bladder. In case of intraperitoneal rupture concentration of urine increases as it is absorbed by stomach walls and internal organs, at the same time, protein exchange is disturbed, chemical reaction takes place, it causes aseptic peritonitis, in case of secondary infection it transforms into pus peritonitis. Such kind of peritonitis leads to death of patient in case medical assistance is not provided to them urgently. Complete and incomplete ruptures of bladder peritoneal clinic symptoms might not display immediately. In case of intraperitoneal ruptures of bladder signs of peritonitis develop in 10-12 hours since the moment of trauma. Signs of urine intoxication and urosepsis that are revealed on days 2-3 after trauma are also lethal unless an urgent surgery is carried out.

Extraperitoneal rupture is observed among patients with fractures of pelvis bones in 55-57% of cases, among those 36-39% are closed intraperitoneal ruptures, and 6% are combined type of traumas. No less heavy extraperitoneal ruptures are complicated by fractures of pelvis bones and heavy shock, from which is often hard to remove. Nitrous slag is accumulated, proteins break down, sodium of potassium, chlorides, organic acids increase in their volume, acidosis emerges. Water-salt exchange is disturbed. As a result of nitrous intoxication uraemia grows. A patient suffers from weakness, sleepiness, vomiting, diarrhea, edema, short breath, headaches, skin itching, memory loss, ammonia breath.

After three days of urine peritonitis nephritic deficiency takes place. Tongue becomes dry, the patient is thirsty, they feel sickness, urea and creatinine concentration in blood samples increases up to 100-200 and 12-15 mg/ml. rupture of bladder usually happens in longitudinal direction as longitudinal muscles of detrusor are significantly more solid than transversal ones. Bladder damages in case of fractures, on the contrary, often create holes of incorrect shape.

Combined ruptures of bladder happen in case of vast injuries, compression of pelvis ring, and bladder overflow. In case there is complicated damage there is no clear localization of rupture, therefore, ruptures can be intra- and extraperitoneal, though the latter are more common. A special form of ruptures is damage that some authors refer to bladder damage, and others – to damage of urethra. We speak of disconnection between the bladder and urethra.

According to bibliographic data, iatrogenic damage of bladder can happen in 0,23–0,28% of gynaecological surgeries, in other cases iatrogenic trauma happens in 30% of cases. In case iatrogenic damage of bladder happens during surgery, it is determined faster than other damages of urinal-discharge channels.

Demonstrative medicine is found upon cystoscopy, retrograde cystography, emunctory urography (cardiotrust, venographin, solution of Sergosin, 2- or 3-atomic X-ray-contrast liquids), standard radiography of computer tomography.; mostly R-gram of pelvis bones, for example, in case of determination of its fractures, can suggest a conclusion of extraperitoneal rupture. In about 60% of cases damage of bladder, cause by counterhit, is observed in the area across place of fracture and near it. Extraperitoneal ruptures of bladder form 54–56% of all cases of bladder rupture. Combined intra- and extraperitoneal ruptures happen in 5–8% of cases of bladder rupture. Usually they are determined during surgery. Intraperitoneal rupture of bladder is determined with ultrasound inspection and common introduction of catheter into bladder. Without operative intervention intraperitoneal bladder ruptures usually end in lethality.

Clinic. Closed injuries of bladder have no typical clinic image. During the first hours after the damage patients are usually shocked, though cases are described when even after a heavy trauma of bladder shock condition was not established and patients walked to the hospital. Shock, as well as pain is not a specific sign of bladder rupture and can be caused by damage in other organs.

The basic symptom of bladder rupture is deficiency of urination that is expressed in ceasing act of urination, painful tenesmus in area of bladder and straight bowel. Blood drops discharge from urethra is not typical for bladder damage, as it can also be observed in case of urethra damage. Unlike rupture of bladder, ruptures of urethra usually cause significant urethrorragy and strong urges for urination.

In case of extraperitoneal ruptures pressure of urohaematoma in surrounding tissue causes a false urge for urination and discharge of blood drops from urethra. Palpation of stomach usually reveals sharp painfulness in the area of symphysis, above the bosom a painful blunting of percutory sound and tension of front stomach wall in its lower departments is defined. Direct-bowel or vaginal inspection through straight bowel or vagina reveals stagnation of tissues, and it indicates to urinal infil-

tration, on days 2–3 after trauma symptoms of urine leakages and urine infiltration into the bladder-surrounding tissue are observed. Emerge skin redness and edema of hypodermic fiber in the area of symphysis, lower part of stomach, scrotum, and penis. These areas become extremely sensitive under palpation and in motion. Urine infiltration can spread into the area of small pelvis, perineum, straight bowel, thighs. The developing urosepsis leads to death even in case of extraperitoneal damage. As damage of bladder is often combined with fractions of pelvis bones, symptoms of pelvis bone fracture are also observed in these cases. In case of any pelvis bone fracture it is necessary to establish if there is no simultaneous damage of bladder and urethra.

In cases of intraperitoneal rupture general symptoms of peritonitis can be observed. They are caused by discharge of urine into stomach cavity and stomach growth: pains in the area of bladder with irradiation into inguinal areas, tension of the front stomach wall. Lack of urine and presence of blood in urine during catheterization is caused by sealing of bladder wound by epiploon or bowel loops, besides, in certain cases condition of a patient might improve, and diagnostics will become complicated. An important symptom of bladder rupture in such cases is lack of definite limits of dullness for percussion sound.

In case of intraperitoneal rupture of bladder tenesmus and disuric sign might not be present if urine discharges freely into stomach cavity, and a sharp pain emerges along with urination disturbance and development of peritonitis. Condition of patients degenerates rapidly. The symptoms are: sickness, vomiting, delay of stool and gases. If much time passes since the moment of rupture, along with urine exudate liquid accumulates in stomach cavity. Bowel peristalsis is not heard through auscultation. Patient's temperature increases, tachycardia develops.

In case of open damage of bladder urine discharges from the wound, and the whole image is clear. Urine peritonitis happens together with secondary infection, signs of pus intoxication, the latter can result in abdominal sepsis, urosepsis, and poly-organ deficiency. In case the rupture is combines with pelvis bones fracture, intraperitoneal bleeding is possible. Late diagnostics can complicate treatment.

Diagnostics. Diagnosis of bladder damage is based upon the data of anamnesis, the described clinical symptoms, and hematuria in urine analysis. In order to confirm the diagnosis data of catheterization, cystoscopy, cystography, emunctory urography, and R-graph of pelvis bones is used. During catheterization of bladder urine either does not discharge at all, or discharges as a thin stream with addition of blood. Sterile liquid, introduced into bladder through catheter, does not discharges back or discharges as a thin stream. In case of intraperitoneal rupture of bladder, after catheter is advanced

deeper into it, a large amount of turbid bloody liquid (urine, blood, exudate from stomach cavity) can discharge unexpectedly. Cystoscopy is implemented for intraperitoneal rupture in rare cases when other methods of diagnostic aren't able to provide clear information, and can be applied only in for partial or small damages, when bladder can be filled for examination. Ultrasound examination produced a mistake in 10% of cases. The leading part in diagnostics plays cystography: leakages of contract roentgen liquid outside of bladder are registered.

In verification of an open damage of bladder a great significance have probes with colorants (solution of indigocarmine-methylene blue) that confirm discharge of urine from the wound.

Treatment. According foreign scientists, only intraperitoneal ruptures require surgery, all other types of ruptures are treated conservatively. Of course, every problem of treatment is solved individually for a given patient, especially when there is a possibility to use modern medical technology.

A special feature of surgery for intraperitoneal rupture of bladder is that the damage can happen not only in bladder itself. Therefore, during laparotomy it is necessary to begin with revision of stomach organs and urination system. If less than 2 hours pass since the injury of bladder, and urine peritonitis has not yet happened, treatment can be limited to introduction of microirrigators for introduction of antibiotics, the wound is closed completely with placement of epicystectomy. In case urine peritonitis has happened, drainages are left in 4 places for washing, 8-10 liter of sterile isotonic solution of natrium chloride are introduced through the higher drainages during post-surgical period, the washing liquid is discharged from stomach cavity through the lower drainages.

Conclusion: Our article presents a rare case of 10-days old closed trauma of bladder that was received by patient in alcoholic intoxication. On insistence of medical assistant the patient was delivered to therapeutic department of railroad hospital with diagnosis cirrhosis of liver, ascites. A simple method of examining the patient – catheterization of bladder established the diagnosis: rupture of bladder, urine peritonitis, intoxication. During the surgery a complete isolated intraperitoneal rupture of bladder cupula was established. Other pathologies of stomach cavity organs and pelvis bones were not registered. Post-surgical adequate treatment led the patient to a complete recovery of the patient.

During the period of 50 years of work in surgical department of our railroad hospital we have operated patients with different ruptures of bladder that were found in literature, but were actually faced with for the first time. Intraperitoneal complete rupture of bladder, complicated by 10-days urine peritonitis was not found in the accessible literature. Severity of the patient's condition was evaluated adequately by our specialists who

even called specialists in for consultation. Guided by the practical experience, pre-surgical diagnostics of bladder damage, well-maintained pre-surgical preparation in reanimation department, and surgery itself: sanitation of stomach cavity with drainage, closure of bladder cupula wound with placement of epicystectomy, post-surgical treatment, and the corresponding adequate post-surgical treatment has led us to a positive result. According to the received data, after the surgery the patient continued working until retirement and now is having a well-deserved rest.

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CERTAIN ASPECTS OF DIAGNOZING AND TREATING ACUTE APPENDICITIS AMONG THE PREGNANT

Baizharkinova A.B., Iztleuov E.M., Ismailova I.V., Aibasov N.B., Nurgazin K.S.

Department of general medical practice № 2, railroad hospital of Western-Kazakhstan state medical university of Marat Ospanov, City of Aktobe, e-mail: bayzharkinova@mail.ru

The article presents data of retrospective analysis according to histories of 47 pregnant women after appendectomy who were released with a positive outcome from surgical department of railroad hospital in 2013–2014, when totally 810 patients with acute appendicitis were operated. During emergency duties in surgical department of the railroad hospital 2 times a week in different periods of pregnancy part of the operated women with diagnosis of acute appendicitis equaled 5,8% of total number of patients.

Urgency of the problem: According to foreign authors, acute appendicitis happens in 0,7–1,2% of cases among the pregnant. Frequency of this pathology equals from 1:700 to 1:3000 and has no trend to a decrease. Anatomic shift of appendix upwards and to the external tissues together with blindgut that happens according to an increasing period of alvus pregnancy, tendency to astriction that results in stagnation of bowel content and increase in flora virulence, hormonal shifts leads to degradation of immunity, and these are factors that provide for a heavy flow of appendicitis, especially in the second part of pregnancy. In 4–6% of cases it all leads to complications: termination of pregnancy and death of embryo. Acute appendicitis can happen at any period of pregnancy, simple (catarrhal) and destructive (phlegmonous, gangrenous, and perforative) forms of appendicitis are distinguished, the latter result in peritonitis. On the whole, $\frac{3}{4}$ of all observations happen in the first part of pregnancy. Most frequently appendicitis happen in the I (9–32%) and II trimester (44–66%) of pregnancy, more rarely – in the III (15–16%) trimester and post-birth period (6–8%). Clinic of acute appendicitis in the first trimester of pregnancy flows regularly in 25% of cases. However, diagnostic might be complicated because symptoms such as astriction, dizziness, vomiting that are typical for condition of pregnancy, cannot be considered as appendicitis in the 1st and the 2nd part of pregnancy.

Vomiting has no significance as it is usual for pregnancy in general. During palpation of an overgrown stomach according to period of pregnancy it is necessary to consider localization of worm-life sprout that moves upwards along with growth of alvus. In the 2nd part of pregnancy pains can happen not only in the right iliac area, but significantly higher, therefore, other symptoms of abdominal sensation: (defans), Schetkin-Blumberg, Voskresenskiy, etc. These and other symptoms of abdominal sensation are not typical for the pregnant or are not clearly expressed due to the tension of abdominal wall and tension of alvus ligaments. Pains begin in epigastrium (symptom of Kocher) with a gradual shift towards the place of localization of worm-like sprout (symptom of Volkovich) and happen in 1:4. When a patients lays on their left side: due to a certain shift of alvus to the left it is possible to feel out the area of worm-like sprout in detail and reveal symptom of Bartomier-Michelson. Intensification of pain in the right side can be caused by pressure of the pregnant alvus upon the area of inflammation. Pain in the right iliac area emerges – in the lower parts of stomach and higher, right up to the right hypochondrium, depending on degree of sprout shift by alvus and its anatomic location in stomach cavity. For the 2nd part of pregnancy symptoms of Obrastsov and Bartomier-Michelson are typical. Temperature reaction is less expressed than among regular patients, in other words, no rectal temperature (symptom of Krause) is observed. L-cytosis up to $12 \times 10^9/l$ can be observed among the pregnant. Expressions of acute appendicitis clinic is mostly dependent on pathological alterations in sprout. It should be considered that all symptoms can be unexpressed and take place lately. Development of peritonitis often happens in later periods of pregnancy, as conditions of limiting inflammation process degrade in stomach cavity. In case of peritonitis development pulse and body temperature increase, vomiting becomes more frequent, abdominal distention, short breath emerge. During differential diagnostics it is necessary to distinguish appendicitis and not only expressions of pregnancy, but also such diseases as pyelonephritis, urolithiasis, cholecystitis, enterodynia, gastritis, nutritional intoxication. Expressions of appendicitis can also be recognized as such pregnancy complications as late gestosis, threat of pregnancy termination, premature separation of placenta. Laboratory pregnancy tests allow specialists to establish diagnosis of acute appendicitis in 78% of cases, and also decrease frequency of surgical complications by 2, premature birth – by 1,35. Nowadays diagnostics of acute appendicitis among the pregnant is mostly carried out via such methods as ultrasound examination, modern doppler examination of bloodflow in worm-like sprout and laparoscopy at early stages of pregnancy. According to a number of authors (I.P. Korkan, 1991; Ayub J., 1992; Halverson A.C., and co-authors, 2008), obstetric and surgical complications after appendectomy among the pregnant happen only in 17% of

cases and worsen forecast of embryo development. In case of non-complicated appendicitis perinatal losses equal about 2-17%, and for destructive forms (perforation of sprout with peritonitis) it increases up to 19-50%. The most favourable perinatal results are registered when appendicitis is developed in the II and III trimester of pregnancy. Depression of blind bowel and worm-like sprout by the pregnant alvus causes a necessity to alter surgical access. Regardless of obstetric period, a patient should be transported to a surgical department for appendectomy and further post-surgical treatment, there both surgeon and gynaecologist should observe her. Surgical tactics for all forms of appendicitis among pregnant does not differ from general principals of its treatment. Methods of draining stomach cavity for different forms of appendicitis also preserve their special features of operative technique and methods. It is only necessary to maintain utmost caution during manipulations near the increased alvus, as trauma of it can serve as a direct cause of pregnancy termination or premature birth. We should underline that question on volume and nature of surgical interference in case of destructive appendicitis at the background of long periods of pregnancy must be solved together with obstetrician-gynaecologist with his direct participation in surgery. Access of Volkovich-Diakonov is used in case of reliable diagnosis of acute appendicitis in the first half of pregnancy. This method is not completely adequate for the second half of pregnancy, therefore it is modified according to the principle: the greater is period of pregnancy, the higher should the cut be located. It is allowed to widen cut of Volkovich-Diakonov via cutting rectus upwards in case it is impossible to carry out a detailed hemostasis or it is necessary to carry out tamponade and drainage of stomach cavity in case of prosection periappendicial abscess.

Nowadays due to existence of powerful antibacterial preparations it is possible not to apply cesarean section, without mentioning amputation of alvus. Principle of modern surgical tactic, used for complicated forms of appendicitis among the pregnant can be formulated as follows: maximum efficiency in regard to peritonitis, maximum conservatism in regard to pregnancy. Nowadays in case of laddled peritonitis of appendicitis origin among the pregnant middle laparotomy is carried out under general anesthesia, after it – evacuation of pus, toilet of stomach cavity, appendectomy, and draining. Surgical wound is then stiched completely. In case of mature pregnancy (36-40), due to inevitability of delivery at peritonitis background, the surgery begins with cesarean section, then, after stitching of alvus and peritonization of stiches appendectomy and all further manipulations take place along with treatment of peritonitis. Necessity of alvus amputation emerges only in case of its destructive damage that is observed rarely in terms of laddled pus peritonitis. It is also necessary to consider that in case of laddled pus peritonitis contraction ability of alvus is decreased significantly. Sometimes danger of atonic

bleeding emerges in this regard after cesarean section, and the only method of fighting it is immediate hysterectomy. In case of laddled peritonitis among the pregnant death rate remains extremely high and equals, according to different sources, 23-25% for mother and 40-92% for embryo, besides, the greatest number of deaths is observed in later periods of pregnancy due to polyorgan insufficiency of abdominal sepsis. Unfavourable results of treating laddled pus peritonitis among the pregnant defined the development of extreme radicalism of surgical tactic. It was considered necessary to carry out the following volume of surgical intervention: right after opening stomach cavity undertake cesarean section, then over-vaginal hysterectomy, then appendectomy, toilet, and drainage of stomach cavity.

A special attention should be devoted to acute appendicitis in delivery. Surgical tactic in case of appendicitis during delivery depends on the flow of delivery and clinical form of appendicitis. Thus, in case delivery flows normally at the background of clinical image of catarrhal and phlegmonous appendicitis, emergency delivery should be provided for, and appendectomy should be undertaken. In normal flow of delivery takes place at the background of gangrenous or perforation appendicitis, it is necessary to prevent contractability of alvus temporally, carry out appendectomy, and then simulate delivery again. In terms of aphylogical delivery it is necessary to undertake cesarean section and appendectomy simultaneously in case of any clinical form of acute appendicitis.

During the post-surgical period, apart from regular therapy, it is necessary to assign treatment, aimed to prevent miscarriage in early terms and immature delivery. The following measures are assigned: strict bedrest, folicium, vitamins, papaverine, intramuscular introduction of 25% solution of magnium sulphate in dose of 5–10 ml 2 times a day, introduction of vitamin E (acetate tokopherol) in dose of 100–150 mg per day as injection of 10% oil solution in dose 1ml 1 time a day. In case of lack in laboratory control over hormonal background, it is advised to avoid prescription of hormonal medications (progesteron, etc.), as in a number of cases their overdosing can result in an opposite effect. It is strictly forbidden to introduce metilsulphate neostigmine (proserine) and hypertonic solution of natrium chloride (10%NaCl) as they are preparations that provide for contraction of alvus. For the same reason hypertonic enema should not be implemented.

Goal and objectives of the research. Goal of this research is to study clinical data of different terms of pregnancy with diagnosis acute appendicitis and its examination by surgeons in collaboration with gynaecologists. The objective is to diagnose acute appendicitis opportunely among the pregnant in order not to allow complications of appendicular nature – peritonitis. For that it is critical to remember recommendations of a well-known surgeon S.I. Spasokukotskiy: «in case of peritonitis surgery during the first hours of it leads to recovery

in 90%, during day – 1 – in 50%, after day 3 – in 10%» The revealed clinical signs of acute appendicitis among pregnant women, discharged from the surgical department of the railroad hospital corresponded to pregnancy period in their comparison to bibliographic data.

Materials and methods. In surgical department of the railroad hospital of the city of Aktobe during years 2013–2014 total of 810 patients were delivered with diagnosis of acute appendicitis, of them 47 (5%) – pregnant women with diagnosis acute appendicitis.

Of total 47 pregnant women 5 patients (10%) were in the 1st trimester, 23 (50%) – in the 2nd trimester, and 1 (1%) – in the 3rd trimester. Age of the patients varied from 20 to 39 years. Clinic of acute appendicitis in the 1st trimester did not differ from non-pregnant (control group was formed of 5 patients who took treatment in the hospital at the moment). In trimesters 2 and 3 diagnosis was established within 2 hours with examination of gynaecologist and US. Testing control with small period of pregnancy allowed to establish diagnosis of acute appendicitis in 78% of cases. In all cases consultation with therapist and anesthesiologist took place as well as ECG. In one case laparoscopy was undertaken with diagnostic and medical purpose, lack of obstetric-gynaecological pathology after US with presence of clinical data on stomach cavity disease for one patient as well as her desire to take laparoscopic appendectomy served as a reason of this procedure. According to the studied histories of patients, discharged with favorable outcome, one of the 47 patients, whose pregnancy period equaled 40 weeks, was directed to the maternity clinic straight after surgical department.

Results and discussions: All pregnant women in trimesters 1, 2, and 3 were discharged after appendectomy with preservation of pregnancy, only one patient, whose period of pregnancy equaled 40 weeks was directed straight to maternity clinic after surgical department. Results of 47 histories of dismissed pregnant women were discussed collectively between surgeons, gynaecologists, head surgical department, and interns.

Conclusion:

1. The article presents data of retrospective analysis according to histories of 47 pregnant women after appendectomy who were dismissed with a favorable outcome from surgical department of railroad hospital in 2013–2014, when total of 810 patients were operated in regard to acute appendicitis. During emergency duties in surgical department of the railroad hospital 2 times a week in different periods of pregnancy part of the operated women with diagnosis of acute appendicitis equaled 5,8% of total number of patients. In 25% of cases clinic of acute appendicitis flows regularly during the 1st half of pregnancy. However, diagnostic can be complicated, especially in the 2nd half of pregnancy, as local pains can happen not in the right iliac area, since cecum

and its sprout are located behind the increased alvus, other symptoms of stomach damage can also be negative: (defans), Schetkin-Blumberg, Voskresenskiy, etc. Typical symptoms for the 2nd half of pregnancy are: Obratstov, Bortomier-Michelson. Development of peritonitis often happens in later terms of pregnancy, as conditions of limiting inflammation process in stomach cavity degrade.

2. An indication for undertaking diagnostic laparoscopy for patients at early terms of pregnancy with suspect of acute appendicitis is presence of a typical pain syndrome and objective signs of stomach disease or leucocytosis in lack of data of obstetric-gynaecological pathology from US examination. A counter-indication for undertaking laparoscopic examination is gestation period of over 20–24 weeks.

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PERFORATIONS OF CECUM THAT SIMULATE ACUTE APPENDICITIS

Baizharkinova A.B., Ergaliev K.E.,
Taishibayev K.R.

Western-Kazakhstan state medical university of Marat Ospanov, city of Aktobe, e-mail: bayzharkinova@mail.ru

This article presents three cases that happened in different years of surgical practice in which patients were delivered in emergency to the surgical department of railroad hospital with primary diagnosis of acute appendicitis, and clinic of acute appendicitis was established at the moment of delivery of every patient. However, during surgery in one case perforation of cecum by fishbone (sharp edge of spine) was discovered [1, 2]. In the second case perforation was caused by sewing needle, and in the third – by excrement stone. All three patients were operated and discharged in a satisfactory condition.

Except for the 3 described clinical observations, no more perforations of cecum that simulated acute appendicitis, have been discovered in surgical department. According to archive materials (disease history, etc.) of the surgical department of railroad hospital, 0 such cases took place before.

According to A.A. Dubrovskiy and co-authors (1977) [5], perforation by alien objects takes place more commonly in large intestine (33,8%) than in stomach (15,5%). According to foreign authors, perforation of gastrointestinal tract forms 0,04–0,2% [9] of the whole number of cases with acute surgical diseases in organs of stomach cavity and happens to men more frequently.

Urgency: According to the law of Laplas, cecum is the most exposed to damage – perforation, as it is located intraperitoneally and is the widest part of large intestine with diameter of 7,5–8,5 cm [9]. Cecum is a place that connects small and large intestine (where iliac intestine falls into large bowels), and where appendicular sprout is located. Cecum is blood-supplied from higher mesenteric artery with branches of iliac-colon, right colon, and middle colon. From there begins mesenteric vein that connects with vessels of spleen and forms portal vein of large intestine

According to statistic data, 40% of all pathological changes of intestine happen in cecum [6] that is a place of the most frequent localization of inflammations, innocent and malignant formations. Moreover, they develop slowly, especially cancer of cecum. Cecum is surrounded by peritoneum from all sides and can be moved from its place quite easily. It simplifies surgical interventions. Symptoms of disease can be different depending on size of inflammatory formation in cecum and also on presence of complications that can be linked to perforation of cecum wall. The following signs indicate the mentioned complications of cecum: stomach pains, tachycardia, vertigo. In cases of emergency it is difficult to distinguish perforation of cecum from acute appendicitis. All symptoms, typical for acute appendicitis, such as those of Schetkin-Blumberg, Sitkovskiy-Rovzing, Voskresenskiy, Obrastsov, etc. are positive for cecum perforation. During differential diagnostics of this pathology with perforation of cecum it is necessary to consider the most common complaint of patients – presence of blood in defecation. These symptoms are often attended by continuous pains that are localized in right iliac area of stomach. Due to frequent bleedings, anemia can be observed among patients, and patients themselves might feel sickness, caused by anemia – vertigo, constant weakness, disturbance of eyesight, unnatural skin color. Therefore, establishing such diagnosis as anemia is a reason to suspect internal bleedings that can also be caused by cecum cancer. Since defecation blood is often recognized by patients as a beginning of haemorrhoids, they don't hurry to receive medical assistance and undertake treatment of non-existing disease. At the same time precious time is lost that can help to accelerate the recovery. As until cancer has discharged metastasis, chances of recovery are relatively high. Constipations are not typical for cecum cancer [3] as the spacing of intestine remains wide, and defecation are not yet formed at this stage of intestine and are not an obstacle for normal intestine discharge. Meteorism and

sickness emerge, patient lose interest in food. In this case so-called «cancer intoxication» can take place – yellow shade of skin, insignificant growth of liver, weight loss. In case when tumor reaches significant size, edema can happen due to the pressure, placed upon the surrounding organs. When a patient is sent for roentgen examination [8], a large defecation is found in the picture, and it has no clear contour. In order to verify inflammation of cecum by tumor genesis, a doctor refers to irrigoscopy, colonoscopy, US, CT, and MRT.

Goals and objectives: Specific observations of the practice on problems of removing alien objects from gullet, stomach, sigma-like and straight intestinal have been published. In these cases objects were removed from patients via FGDS and colonoscopy. Rarely have been presented cases of operative treatment in regard to complications, caused by perforation of cecum by alien objects, that simulated acute appendicitis [7]. Our objective is to share experience of rare complications caused by perforation of cecum by fishbone, sewing needle, and fecal bolus that simulated clinic of acute appendicitis.

Materials: In different years three male patients were delivered to surgical clinic of railroad hospital, two of them of young age. The elder patient (participant of the Great Patriotic war), due to his inserted teeth, obviously, didn't notice a fishbone (vertebra) and swallowed it during meal, typical clinic of acute appendicitis was discovered during anamnesis and examination. After ECG and examination by cardiologist, the patient was taken to surgery under local anaesthesia, as one month ago he had experienced myocardium infarction. After anaesthesia of mesentery root, during revision of stomach cavity, cupola of cecum was withdrawn. Serous sweat, present in small quantity, was dried off. On the cupola of cecum, 5–6 cm away from appendicular sprout, that was intact, was discovered an inflammatory wave in diameter of 2–3 cm with perforated whole in its center, from which sharp edge of fish vertebra projected. Removal and toilet was undertaken along with refreshment of inflammatory wave edges in cupola of cecum, unbroken purse-string suture was placed, then second row of stitches, and then peritonization. Closed layered stitches were placed upon the surgical wound (according to cut of Volkovich-Diakonov) up to the drainage. The patient was discharged on days 10–12 in satisfactory condition after removal of drainage from stomach cavity and skin stitches, control ECG and examination by therapist.

The two patients of the same young age, delivered with emergency indications were received with diagnosis of acute appendicitis. Typical clinical symptoms of acute appendicitis were obvious. During surgery of the first patient via access of Mack-Burney under potentiated narcosis and local anaesthesia no inflammatory processes were found in appendicular sprout, but perforated whole of size 0,8x0,8 cm was found on lateral wall of cecum with a small outpouching. In the center of this «saccular» outpouching from the

perforated whole was seen a sharpened edge of fecal bolus, surgery of cecotomy with cutting off the «saccular» outpouching of mucous membrane was carried out, removal of fecal bolus sized 3–4 cm, round shape, was removed, stomach cavity drained. Stitches were placed on cecum wall according to the accepted rules of surgery. The patient was discharged on days 12–14 (after removal of skin stitches) to ambulatory observation by surgeon.

The third patient was a serviceman, he was also delivered by emergency carriage with a directed diagnosis acute appendicitis. Clinic of acute appendicitis was clear. In his anamnesis the patient denied the fact of swallowing sewing needle. The patient was operated under local anaesthesia with exponentiation. During revision of stomach cavity cupola of cecum was withdrawn, and from the perforated point was visible 1,5 cm of black sewing needing with «eye without a string». Around it insignificant hyperaemia was observed. It was impossible to palpate the sharp end of needle, therefore, soft clamp was used to grab the visible edge of the rusty needle and remove it completely from cecum cavity. In this case purse-string suture was placed around the inflamed point of injury, and above it – peritonization. The sprout was not removed in all three cases. As small amount of serous sweat was found in stomach cavity, drainage-microirrigator was left for introduction of antibiotics, layered stitches were placed on the wound of stomach wall and then removed on days 7-8, healing took place due to initial strain. The patient was provided with active immunization against tetanus, and he was discharged on days 9-10 to ambulatory treatment by surgeon. No signs of typhlitis or appendicitis were observed among these three patients, therefore, appendectomy was not undertaken.

Conclusion: Thus, three cases of practice in clinical observations with perforations of cecum that simulated acute appendicitis, present a certain practical interest as alien objects of large intestine happen quite often and treatment tactic, according to other reports, is developed separately for each individual case.

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PREDICTION OF FATIGUE IN ATHLETES

Kornyakova V.V.

Omsk State Medical University, Omsk,
e-mail: bbk_2007@inbox.ru

Intense physical exercise in sport often lead to the development of fatigue. The mechanism of this phenomenon is not fully understood. It is assumed that the basis of the development of fatigue in athletes is a violation of purine metabolism.

The study involved highly qualified swimmers males aged 17 to 20 years. The athletes according to the data functional methods of research were divided into two groups: no signs of fatigue (C1, n = 61) and having a their (C2, n = 20). The control group (K) consisted of 30 young men not involved in sports the same age. Blood sampling was performed in athletes after training. In blood serum was estimated concentration lactate, uric acid and glucose; in erythrocytes – the activity of glucose-6-phosphate dehydrogenase (G6PD), the content of malondialdehyde (MDA) and glutathione.

Found that at group athletes C2 efficiency reutilization lactate reduced, which contributes to the development of hypoglycemia. Deficiency of glucose and decreased activity G6PD leads to inhibition of the pentose cycle. All this contributes to the catabolism of purines. Concentration of urates in athletes groups C2 was reliably higher than in group C1 (42.4%) and K (41.2%). The consequence of the activation of xanthine oxidase is generation of free radicals, leading to a deficiency of glutathione and lipid peroxidation of membranes. Glutathione levels in athletes group C2 below on the 18.5% (P = 0.033) and 11.1% (P = 0.017) on relation to the groups K and C1 respectively. Content MDA in erythrocytes athletes group C2 above to 29.2% (P = 0.042) and 32.6% (P = 0.003) on compared with the this indicator in group K and C1 respectively.

Development of fatigue in athletes swimmers contribute lactic acidosis and hypoglycemia, leading to catabolism of purines up to uric acid. Last accompanied by the activation of free radical oxidation in cells, inhibition of the antioxidant system and enzymes of the pentose cycle.

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THE PROBLEM OF ENERGY EFFICIENCY IN THE INNOVATION ECONOMY IN RUSSIA

Levchaev P.

Mordovia State University, Saransk, e-mail: levchaevpa@yandex.ru

The article studies the problems of formation of an energy-efficient economy. The development of energy saving processes in the world economy. Shown financing options and prospects of development of energy saving projects in the Russian regions.

Keywords: National economy, saving energies, innovations, economic system, process of financing

In modern conditions of functioning of the Russian economy, the strategic importance of innovation development. International competition and the fight for the consumer is forcing producers strive to maintain a competitive level of products. The criterion "price-quality" is largely determined by the ability to influence the level of cost competitive and marketable products. In the race to meet the growing needs of human society is always relevant is the issue of energy efficiency. It comes as the world's leading manufacturers and famous brands, and producers of the defining trends of regional markets.

Modern economic structure is totally dependent on energy availability, and to produce and to sell products in an economy requires a leading role for the production of energy and its efficient use. Energy, being one of the main types of resources, ensures continuity of production processes in industry, agriculture, construction and other sectors of the national economy. The dynamic development of these sectors, as well as the widespread use of household appliances and electronics often accompanied by the emergence of energy problems at times of peak energy consumption. The economic system of any level, based on improved energy efficiency, *ceteris paribus*, more competitive in the present, as well as potentially competitive in the future, because maybe at a lower level of production costs, and to ensure the establishment of a minimally comfortable prices to the consumer. The importance of this issue increases with increasing scale of production, but also for manufacturers located at the highest technological levels of the pyramid of the division of labor.

Global politics of energy conservation and efficiency originates after the oil crisis in 1973 [1]. Under the Kyoto Protocol, signatory countries are reducing emissions of greenhouse gases or impose trade quotas on them. Priority in the practice of energy saving is the industry sector of transportation and the condition of the buildings. In the action Plan on energy efficiency the European Commission has acknowledged that cost savings is about 20%,

and when it comes to technology, the potential for even more. Under scenario accelerated development of technology, building energy efficiency in industry and transport will reduce energy use in 2050 by one third. For the design of smart and integrated energy systems (involving complex consistent use of wind, solar, geothermal and other forms of energy, biogas) future.

On the transfer of Russia to the energy-saving mode of development was announced in 2009, Dmitry Medvedev, although attempts to improve the energy efficiency of production had been made previously. The Russian government is implementing a program aimed at demonstrating effective from the point of view of energy projects in the Russian regions. In Russian practice, the main types of financial support measures to improve the efficiency of economic entities, perform the following: 1) self-Financing. Implemented at the expense of the entity engaged in the implementation of energy saving projects. 2) Budgetary financing. Is funded from: (a) subsidies to the subjects of the Russian Federation on the implementation of energy efficiency programs; C) targeted funding for the implementation of Regional programs of energy saving and increasing energy efficiency funds from regional and local budgets; d) tax credits. 3) Lending. Involves the use of resources of commercial banks and international financial organizations. It is also possible the implementation of energy service contracts, equipment leasing, public-private partnerships. 4) the Use of borrowed funds. Through grants in the framework of Russian and international programs energy efficiency of buildings, as well as project co-financing foreign foundations and international organizations.

Under the state program "energy Saving and increasing energy efficiency up to 2020" provides for the allocation of 9.5 billion rubles, of which about 7% are funds of budgets of the Russian Federation and the subjects, and 73% for non-budget sources.

In many Russian cities and regions are complex projects for energy efficiency

“energy Efficient quarter”, “Smart metering” [2]. So, in Moscow on funding attracted more than 117 billion, of which more than 99 billion from non-budgetary sources. Special attention is given to air conditioning systems, as the consumption of electricity by them reaches 70% of the total value consumed by the building. In St. Petersburg a similar financing of energy saving measures also exceeded \$ 100 billion and the saving is a priority in the public sector, and promotion of reduced energy consumption among citizens. In Yekaterinburg, Nizhny Novgorod and other Russian cities are “energy Efficient city”. Gaining popularity in almost all regions of Russia was the design and creation of “smart” or energy efficient homes. In such projects, the technology used renewable energy sources, reduce energy consumption. The main project solutions such houses is: heating by geothermal waters; the use of the solar collector; the use of insulated walls and glass with a thermionic coating, as well as energy-saving regenerative ventilation system and automatic lighting control, equipment accounting system of energy.

Notable is the experience of the Republic of Mordovia [3] where the energy-efficient housing construction is carried out in the framework of the program on resettlement of citizens from emergency housing. The mechanism of realization of this program is a complex of organizational measures and financial-economic nature, ensuring effective implementation of energy saving policy and the interests of all parties that involves the following elements:

- 1) providing energy savings through implementation of energy saving programmes and activities;
- 2) promotion of energy saving activities;
- 3) financial instruments providing for the rational use of budget funds;
- 4) budgetary financing of energy saving measures in the social sphere only if the developed project;
- 5) maintaining control over the targeted use of funds; 6) creation of infrastructure to support energy-saving activities.

The complex nature implemented in Mordovia programs highlights the fact that it focuses energy efficient lighting, and enterprises

this industry take the leading position in most segments of the lighting market in Russia.

Financing of energy efficient technologies in Russia is seen as the key decision in the face of rising energy prices, because the high level of energy companies, an incentive of investing in energy efficient technologies. This need led to the development of various types of financial instruments offered by banks to companies. Such schemes allow you to offset the cost of companies to invest in new equipment to help save energy costs. For example, leases, energy service contracts, and other specialized services are becoming more popular because they stimulate enterprises to implement the modernization of equipment without detracting from the circulation of substantial quantities of scarce capital.

Among established international practice options for reducing energy intensity of the economy there are various forms of direct and indirect impacts: the use of tax benefits, incentives saving energy end users and energy management in public buildings, intensification of development in the field of renewable energy.

In tune with international practice in Russia at full speed, are taking steps to transition to energy-saving technologies. This applies to both the public sector and all sectors of the economy, the ultimate consumers of services. Logistic schemes of optimization of the processes of conservation areas and industries, various financial and credit methods of enhancing the implementation of EE projects, the construction of “smart” houses, the transfer of urban transport on the supply – here is a list of the currently implemented programs. Russia has ambitious goals for improving the effectiveness of, starting from the production and distribution of energy and ending with its consumption.

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PROBLEMS AND PROSPECTS OF DEVELOPMENT OF RISK MANAGEMENT IN THE SECOND-TIER BANKS OF KAZAKHSTAN

Mirzhakypova S.

New Economic University named after Ryskulov Turar, Almaty, e-mail: bai_shalkar@mail.ru

The introduction of the risk management system is important from the standpoint of the efficiency of the bank, bank's reputation, and decrease in losses from realization of the bank resources. The article discusses the current issues on risk management in the banking sector. Furthermore, credit risk in the banking field was identified and recommendations for quality enhancement of risk management were given.

Keywords: management, bank resources, credit risk

The purpose of efficient risk management in banking activities is formed by divisions of risk management. In most meaningful procedure is considered to be a quantitative risk assessment and its bounding volumes. The problem of the banks is to choose portfolio of their clients which has an acceptable balance between active and passive operations, and also maintain the sufficient level of liquidity and profitability which is necessary for the smooth operation level.

The purpose of risk management is to ensure the existence and further development by detecting, analyzing and minimizing risks.

Bank crisis revealed significant drawbacks in risk management. Some banks do not properly built risk management system and also could not provide independence for this function. Top managers also could not properly respond for warnings and occurred problems from risk managers.

In crisis situations, one of the main tasks of bank manager are how quickly and accurately they can controls and eliminate the growth of bad debts of the banking sector and take appropriate action.

According to consultant B. Zhiger from the Institute for Economic Strategies – Central Asia, “crisis scenarios in the banking system include: volatility in oil price; decline in property price; redistribution of property, entry of foreign banks and the post-IPO risk” [1].

Prudential standards contributed decline in credit risks by taking into account the credit risk and maximum risk for per borrower, also including affiliates or insiders. These requirements are provided in the Regulations “On normative values and methods of calculation of prudential standards for second-tier banks”, September 30, 2005 № 358 as amended on 08.27.2014, the [2].

A risk manager, who is responsible for the management and coordination of risk, needs to examine at the proper level the specificity of the Bank's businesses and materials regarding general risk trends. The main responsibilities of risk managers is to provide risk management func-

tions with clear and meaningful information and sizes to what is necessary to ensure that: a continuous stream of information about the risks; control of correctness; interaction interest of the structural unit; monitoring of risks in the bank's activities; verification process performance measures for compliance with the requirements of risks; the use of approved risk assessments, models and prerequisites; promotion and implementation of elements of internal controls.

Risk managers in financial services are required to support structural units daily, while have been holding their interaction should be described in the specific rules, regulations and instructions. In addition, the position of risk managers in banks needs to be held by highly qualified specialists who are familiar with the individual banking products and services, and also operation in the banking business (in general).

The Basel 3 is the basic document according to the whole process of risk management in banks exists and evaluates. This document will undoubtedly contribute to the incentives for risk managers and the extent of the cost to implement and improve the process of risk management in banks.

Risk management is important and closely interrelated elements of banking supervision and regulation. In accordance with the decision of the National Bank of Kazakhstan on February 26, 2014 № 29 “On Approval of the Regulations for the formation of risk management and internal control for second-tier banks” banks should create a sufficient concept of risk management and internal control which considers the use of bank risk control methods that provide effective identify, analyze and reduce the risks of the bank based on the type and size of their operations [3].

Currently, all banks have a personal system of risk management, namely, risk management system, which brings together all kinds of databases for each individual type of risk. At the same time, banks also seek to implement the methodology of personal risk assessment and on the basis of the effective solutions to top-managers of the bank.

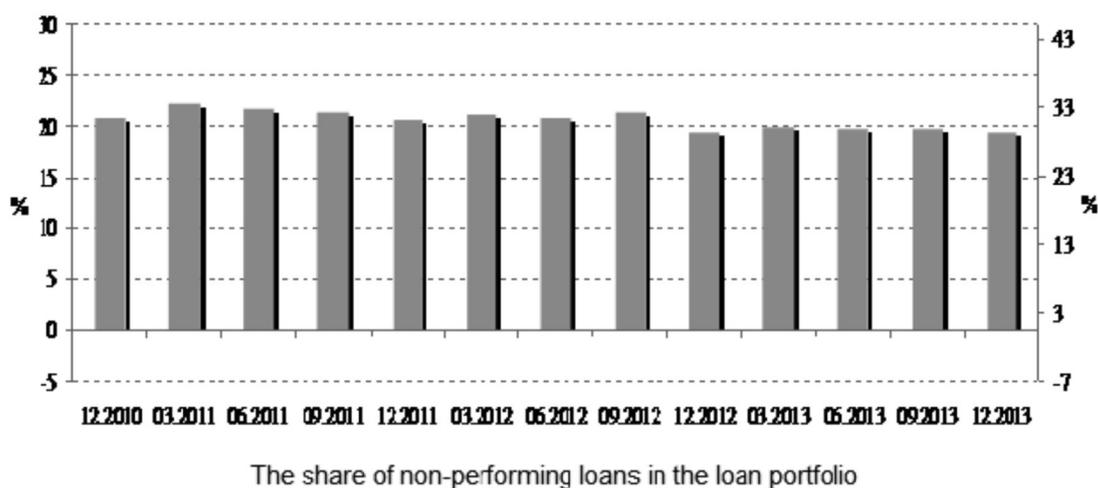


Fig. 1. Non-performing loans of banks RK for 2012–2013

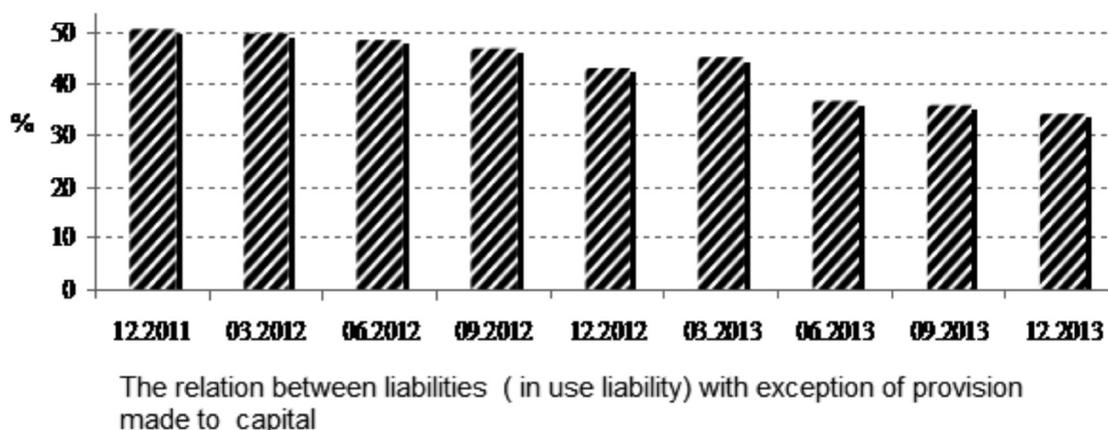


Fig. 2. The ratio of non-performing loans (net of provisions) of banks of Kazakhstan (to the total regulatory capital for 2012–2013)

In general, the procedure of risk management in banks must meet the requirements of corporate governance practices in the conduct of operations with different financial instruments, practice, asset and liability management, as well as the operating conditions to ensure the bank's work.

The concept of risk management makes it possible to obtain a quantitative assessment of the risks of banking activities and find a respective compensation for risk and also acceptable size (reserve) to cover potential losses.

The provision provides a more stable environment bank financial activities and avoids vibrations profit margins associated with writing off losses on credit [4].

The current state of risk management indicates a sufficient difference in the level of im-

plementation of risk management systems in banks. In particular, the larger the pot, the better the implemented risk management system. It shows the possibilities of ready-made software products created both in Kazakhstan and in foreign countries, where the most recommendations are taken into account according to Basel 3 capital adequacy. Furthermore, the big banks established special unit, an activity that was aimed at the management of the various risks, such as credit risk management is carried out by the Department of troubled loans, acting separately from the Risk Management Department. Accordingly, with such narrow specialized techniques used in the management of one or another risk, they received more thorough development and implementation. At the same time, medium and medium-sized banks have

a chance to establish a multi-purpose system of risk management and learn more regarding complex risks faced by the bank, and, consequently, higher effectiveness of the risk management system.

Consequently, the role of risk management in the banking sector is expressed as a function of the methods used and tested methods and systematization skills which affect the interest of the state. This involves the fact that the effective activity depends largely on banks welfare of the people and the economy.

Credit risk is one of the key risks of the banking sector in Kazakhstan. The qualities of loans in recent years are an important source of uncertainty analysis of the prospects and for development in both at the level of individual banks and the entire banking system of Kazakhstan. Banks have to decide on a number of difficult problems. In most of them are undeniable – a high degree of problem assets, as evidenced by the increase in the growth of non-performing loans from 7.4% in 2012 to 14.8% in 2013 (fig. 1) [4].

It should be noted that the increase in coverage of idle reserves portfolio in 2013 reflects the revaluation of a portfolio and decrease the reliability of collateral. Height compliance provisions for non-performing loans, accrued in accordance with IFRS, with 57.4% on 31.12.2012 to 65.6% as of 31.12.2013 that had a positive impact on reducing the proportion of non-performing loans in the total regulatory capital from 43.2% to 34.4% over this period (fig. 2).

The main objectives of the risk management for any bank is facilitating decision-making process – namely, to ensure the ratio of these decisions with the strategic objectives of the bank, lowering the costs of the various ongoing operations and increase profitability of the banking business.

In general, the course of risk management and the formation of methods of analysis of financial risks is an undisputed fact that the concept of an effective risk management system is not enough to entrust the function of analysis and control of risk on a single structural unit of the Bank and to provide for this software conforms with the exact installation. Procedures for the identification and analysis of risks should be integrated with virtually all processes of the bank [6].

The risk management strategy of Kazakh banks are an integral part of the audit report of the consolidated financial statements, which are prepared in accordance with IFRS and the NBK and should include analysis and justification of having a bank risk management systems. The review of results of the audit report shows that not all banks have an adequate

risk management system. Therefore, NBK is working, and aimed at motivating those banks that implement the risk management system in accordance with international standards of banking.

The predominant role of the banking sector in the financial system cannot be underestimated. So, it needs to carefully assess the financial stability of banks which a whole depends on the stability of the entire financial system. Therefore, first of all, an analysis of possible risks of the financial system should start with an analysis of the financial stability of the banking sector.

The purpose of risk management in banks is a complex sequential basis for the assessment and disclosure of risks, definition of tools for analysis and systematization, development of programs recommendations for their prevention, and the use of these programs.

In order to enhance the quality of risk management and improvement of corporate governance in banks need to reconsider the problem of the exact distribution of duties and responsibilities of the bank's management. Also needs to establish procedures for the timely interaction between its divisions and ensure the availability of an effective system of adoption of the conclusions on the performance of activities. Particularly, increasing importance and responsibility of the Board of Directors of the Bank for monitoring. Management of risks associated with the operations of the bank's various derivative financial instruments. Also requires revising the definition of more practical requirements in setting limits on possible risks associated with the operations of the bank in the financial market, the modernization of procedures, the use of bank stress-testing and planning of basic capital sufficient. Also taking risks that arise in the normal course of operations, as provisioning in the event of unexpected losses in order to maintain solvency at the set time, which helps to improve the efficiency of work due to profitable operations with regard to the relevant "risk-return" and provide additional help in making effective decisions.

The system of risk management and internal control systems should be improved mechanisms for prevention of money laundering and financing of terrorism (AML / CFT), and is subject to revision policy of rewards and incentives to banks to increase transparency and to ensure effective monitoring. Furthermore, this policy should be assessed as a necessary part of the analysis of financial stability and the determination of its inconsistency degree of stability risks inherent in the bank.

Compliance with the law is considered an important tool using which the bank may have to protect themselves from the risk of

being involved in money laundering and terrorist financing. In this case, the main purpose of the risk – oriented approach is to optimize the performance of the functions of labor costs for financial monitoring without harming the quality of the work performed in the field of AML / CFT. Practical action in recent time shows convincingly that the financial institution, which is unable and unwilling to carry out activities of internal control for AML / CFT, is uncompetitive in the international market.

The quality and effectiveness of risk management and general management should be based on ensuring the availability of effective decision-making procedures. It allows the authorized body to make appropriate decisions, have an unlimited list of information materials as the positive outcome of this decision, and the likely risks. Such decision-making procedure implies involvement in the course of the preparation of information and discussion of all divisions of the bank. The main attention

should be paid to increase the responsibility and the establishment of requirements for the competence of managers and employees of departments of risk management, as well as the government banks.

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**MOUNTAIN TOURISM
IN KYRGYZSTAN: NEW WORK
AND SERVICES IN RURAL AREAS**

Bekboeva M.A.

*Naryn State University, Naryn,
e-mail: bekboeva_naryn@mail.ru*

The Kyrgyz Republic is located in the Central Asia, between 39 and 43 degrees of northern breadth. The territory of the Kyrgyz Republic makes 198 thousand 500 square km., 925 km from the West on the East and 454 km from the North on the South. The general length of border is 4508 km. The highest point – 7 439 m (Pobeda Peak), the lowest point – 394 m (area Lejleksky). 90% of territory located above 1 500 m, the average height makes 2 750 m. Borders on the Chinese National Republic, Uzbekistan and Kazakhstan.

In total in Kyrgyzstan 88 powerful ridges, running long circuits from the west on the east. Among them world famous peaks: Pobeda Peak (7439 m), Lenin Peak (7134 m), Peak of Khan-Tengri (6995 m). The majority of them concern to a grandiose range Tien-Shan, that in translation means “Heavenly mountains”. Ridges, which tops are covered with snow even in the summer and glaciers have the name Ala-Too, that means “motley mountain”. In the territory of republic there are deserts, semi deserts, steppes, meadows, woods, bushes, bogs, mountain tundra. Eternal snows and glaciers borrow 4% of territory of Kyrgyzstan. The snow line lays above 3600 m. Of all in territory of Kyrgyzstan 8208 glaciers, the various sizes borrowing the area 8094,5 sq. km are totaled. Object of the nature of world value is east part of Kyrgyzstan, area of Pobeda peaks and Khan-Tengri. 760 glaciers by a total area nearby 1500 sq. km are located here. Among them, one of the greatest in the world – a glacier Southern Inylchek, its area is equal 623 sq. km, length – 58,9 km. In landscape shape of mountains of Kyrgyzstan the big place is borrowed with lakes. Of all is totaled about 2000 greater and small lakes, with a total area of a surface nearby 7000 sq.km (about 3,4% of territory of republic). 3 largest lakes – Issyk-Kul, the Son-Kul and the Chatyr-Kul. Issyk-Kul – one of the largest high-mountainous lakes of the world, the height is 1608 m, and the biggest reservoir in Central Asia It feeds 80 small mountain rivers bearing the waters with soluble salts in lake (1 liter of water contains 6 grams of salt), but any does not follow from it. Lake is looked through on depth more than 20 meters and concedes on a transparency of water only to Baikal. Issyk-Kul in translation means “hot lake”, and it means that it never freezes. The basic part of caves of Kyrgyzstan is in the south of the country in Osh, Jalal-Abad and Batken areas.

The Cave Can-I-Gud (Batken area) the deepest length more than 3000 m and depth about 100 m. The deepest – Fersmana – 240 m (the Osh area). The area of Kyrgyzstan makes only 0,04% of the area of a planet while in territory of the country 2% of kinds of world flora grow approximately, and than 3% of world fauna. There are more than 500 kinds of vertebrate animals, about 50 kinds of fish, 4 kinds amphibious, 28 kowtowing, about 350 birds and 86 mammals in Kyrgyzstan. The flora of republic numbering about 4000 kinds only of the maximum plants is diverse. Forests borrow the insignificant area (4,25% of territory of republic), but have the big economic value and play a huge soil-protective and water-security role. It is protected about 4% of territory of Kyrgyzstan. The **Red Book** of republic includes ten kinds of animals and plants. Among the maximum animals it is possible to allocate a snow leopard, the Central Asian otter, maral, Tian-Shan brown bear, the mountain ram (arhar) and a golden eagle. More than 1600 kinds of plants of Kyrgyzstan are useful, including more than 200 kinds – herbs [1; 2].

In connection with that 93% of territory of the Kyrgyz Republic occupies mountains, the greatest efforts from the state and a private sector is given development of mountain tourism.

Mountain tourism – is the tourism developing or prospective for development in the future in mountain territories (in the countries and regions), an including wide spectrum of kinds of the activity connected directly or indirectly. In such understanding mountain tourism predetermines wide existential and conceptual approaches to its studying. That is, mountain tourism is not only the kind of economic activities including of some subspecies of tourism, first of all interaction of people (tourists and local population, businessmen and state employees, both between these groups, and inside of groups) and use of resources of a mountain environment and culture [2; 4].

There are following natural preconditions for development of mountain tourism in Kyrgyzstan:

- The Relief and an orographical structure
- The Climate as the factor of treatment and restoration
- Hydrographic conditions: the rivers, lakes and water basins, glaciers
- Flora
- Fauna

Over 50 large, average and the fine companies among which are also foreign, render clients of service in sphere of mountain tourism [7].

Level of developing tourist-recreational resources of mountains. Kyrgyzstan as the mountainous republic, on a variety and riches of tourist-recreational conditions and resources concerns to unique regions of the world. The appeal of a natural

landscape connected with mountain character of territory and high-altitude completely – from semi-desertic foothill plains up to mountain-wood, sub-alpine and Alpine, eternal snows and glaciers – has no borders.

So, by the fulfilled techniques of scientists L.A. Chubukova, E.M. Ilicheva in Kyrgyzstan on the resort-recreational importance following high-altitude climatic zones are allocated: low mountainous (400–1000 m above sea level), middle mountainous (1000–2000) and high-mountainous (2000–2500). The areas placed above 2500 m above the sea level, for resort the purposes are not used [32].

The important factor essentially influencing accommodation of tourist-recreational establishments and objects, the climatic resources of mountains formed under influence of three basic elements – solar radiation, a condition of an atmosphere and structure of a relief. The maximum of solar light in foothill areas is marked in August-September (Bishkek-Osh). The valid sums of radiation at this time make here 77–84% from probable. (Karakol, Naryn) they are equal mountain areas of 65–74% and their maximum is necessary for September-October. Absence, first of all, ultra-violet starvation and the raised ionization of air with long frostless period – all this creates favorable condition for accommodation of various mountain resort-tourist establishments with carrying out -and thalasso therapy.

All analysis of existing materials testify, that optimum climate-recreational conditions in Kyrgyzstan observed in low mountainous and zones (with 1000 up to 2000) where mass rest and tourism is probably within 300–328 days in a year, beach bathing and climate-improving rest within 2,5–3,5 months. Probably here accommodation and tourist-recreational establishments for winter kinds of rest (skiing lodges with hotels, high-mountainous skating rinks tow rope)

Special place on recreational-climatic conditions the hollow which soft climate carries features “sea” and mountain simultaneously occupies in Issyk-Kul, it favorably influences to the organism of a person. The moderate temperatures with humidity of air up to 70% do not create sensation of closeness, and a combination of significant height above sea level, high solar radiation, affinity of mountain tops with coniferous woods, eternal snows and powerful glaciers, cleanliness of air pool create favorable conditions for development of all kinds of mountain tourism.

Optimum zones for climate development (air, solar baths, lake bathing and rest) at coast of lake Issyk-Kul are its northern and southern areas within the limits of middle mountainous zones up to 2000 m above the sea level. Unique-climatic conditions for accommodation of winter kinds of mountain tourism, including mountain tourism, in a southeast high-mountainous part of a hollow are unique.

Favorable tourist-recreational, and also the climatic period for all kinds of years occupations of mountain tourism lasts in Kyrgyzstan more than 6 months (April-September) [24].

One of the major conditions of development of tourist-recreational system of Kyrgyzstan is a presence of the natural medical resources, being a basis of creation of a sanatorium complex. In formation of resort complexes, the great role is played with a combination of various recreational elements and favorable natural-economic conditions.

So, in republic especial value deposits of mineral sources and medical dirt on the basis of which resorts Cholpon-Ata already function, Jety-Ogyz, Jergalan, Ak Suu, Issyk-Kul and Jalal-Abad, and also numerous sanatoria and rest houses.

On a variety and riches of types of mineral and thermal waters the Kyrgyz Republic concerns to the number of the richest countries of the world with rather favorable prospect for accommodation and development of mountain resort-tourist complexes and factories on pouring mineral waters. Here it is necessary to note, that in an extreme antiquity our ancestors aspired to use natural-recreational resources of mountains – air, the sun, medical dirt, mineral sources and many other things. So, for example, Bartold in the work marks that Jalal-Abad mineral sources were known and were used still in X century [4; 16; 20].

Within the limits of republic, it is totaled more than 130 sources of the mineral water having various physical and chemical structure and medical properties. By calculations of experts, the general prognostic stocks of mineral and thermal waters of Kyrgyzstan make 81866,2 j3/day, of them carbonic waters – 22100 j3/day, thermal – 35300 j3/day. These riches are located on territory of the country by non-uniform image: 42% from all known stocks are in the south of republic, 34% – in Issyk-Kul to a hollow, 15% – in Internal Tian-Shang and 9% – in Chui valley [2].

Many of them have analogues on known resorts of the CIS and the far abroad. However, the full information about debits sources and chinks of mineral and thermal water while is absent. Stocks are not reconnoitered yet, that complicates definitions of their economic, tourist -recreational importance. Thus, confirmed stocks make only 17% from the general prognostic stocks of mineral and thermal waters. Openly 13 deposits of medical dirt with the general stocks nearby 5225 thousand m³. Only 5 deposits from 13 have the confirmed stocks in the sum 573,1 thousand m³, that makes 11% from the general stocks of medical dirt. For the further studying, revealing and development of water and other resources work in scientific and practical directions are necessary.

Except for thermo mineral water and medical dirt the republic has still unique and huge, but poorly studied potential of resources of such non-conventional kinds health resort therapy as speleo-, kymyz, -herb and honey therapy.

Regional features of climate-recreational conditions and resources of Kyrgyzstan on high-altitude zones

Regions	Duration of the favorable period for development of mountain tourism (in days)				
	Suit beach	Climate health	Short-term vocation	Winter conditions	
				Snow cover	Recurrence of good weather
Issyk-Kul kettle					
Central part of sea-board (till 2000 m)	70–95	85–92	320–334	24–39	20–35
Eastern part of sea-board (till 2000 m)	50–60	70–84	312–326	97–116	83–92
Mountain gorges (over 2000 m)	–	56–65	290–305	112–179	97–109
Chui valley					
Piedmont zone	135–146	145–155	282–320	84–91	70–84
Middle mountain zone	–	55–65	200–250	150–250	125–170
Zone of Fergana					
Piedmont zone	140–150	160–175	295–320	39–85	25–75
Middle mountain zone	85–110	84–120	300–330	96–130	70–170
High-mountain zone	–	54–63	205–310	120–209	121–180

The Source: [2].

In mountain regions are available various and rich speleo sources, possessing high medical, cognitive and aesthetic value. By present time only within the limits of territory of the Kyrgyz Republic openly also it is studied more than 400 caves, being by nature sanctuaries. Caves meet in various high-altitude zones of the country, but the prevailing majority of the most interesting caves are placed on foothill, low mountainous and middle mountainous zones. Depths of a cave – storehouse of the most interesting history and it is a cognitive material. Among them the most interesting are “Cun-i-Gut” – a labyrinth in length more than 10 km, “Fergana”, having 240 m of depth, a cave “Kara Unkur”, “Haidarkan”, “Kadamjai” and “Ala-Myshyk”.

Alongside with development before known karstic zones, such as “Chil Ustun”, “Chil-Mairam”, “Tiua Moiun” is researched newer: “Chatkal”, “Gulcho-Karakulja”, “Sandalash” and others. The big cognitive value also high-mountainous glacial caves in the long term. The foreign and domestic experience testifies, that the unique real way of rational use and protection of the most unique resources is a creation of the mountain cave objects equipped for tourists.

The most suitable for accommodation speleo therapy complexes are such caves as “Chon Tuz”, “Jidali”, “Ak Turak” and “Arkalyk”, possessing a unique combination of natural-climatic factors. It is possible to treat successfully a bronchial asthma, an asthmatic bronchitis, chronic diseases of ENT-sphere, allergen skin, some diseases of lungs and other bodies.

Speleotherapy is one of the most ancient in the world of effective methods of natural treatment. It is widely used in many foreign countries – in the

USA, Germany, Hungary, France, Austria, and also in mountain regions of Russia, Georgia, Armenia, etc. In Kyrgyzstan, unfortunately, there is only one clinic on the basis of hydrochloric sough of the Chon-Tuz which operates already more than 30 years. This unique a high-mountainous hydrochloric cave is in the world at height of 2100 m above the sea level. Humidity, atmospheric pressure, high ionization and microcrystallization, speed of movement of air weights in sough essentially distinguish it on quality from other known caves. So, well-known “Zakarpate”, “Caucasian” and “Ural” speleoclinics on many parameters concede to our Chon-Tuz.

All above-stated speaks about riches of the Kyrgyz Republic natural resources for development of many mountain kinds of tourism, and needs deeper scientific research of these resources, hence, development of concrete measures on protection and their zealous use in market conditions [2; 16; 20; 25].

The SWOT-analysis. Its below-mentioned advantages, lacks, opportunities and problems have allowed to reveal the analysis of tourist production of mountains of Kyrgyzstan which lead by us.

Advantages

- high aesthetic quality of the surrounding mountain environment;
- a variety of the nature, starting from high mountains up to sandy beaches of lake Issyk-Kul;
- Hospitality of Kyrgyz people;
- historical communication of the country with Great Silk Road;
- availability of services of tour operators;
- a variety of tourist rest, starting from cultural rounds up to water kinds of rest;
- riches of the Kyrgyz culture nomadic traditions.

Lacks:

- insufficient quality and limitation of demanded places of residing;
- discrepancy of the price and quality for rendered services and production;
- shortage of the tourist information and an explanatory material;
- bad quality of an infrastructure, communication and transport system;
- underdeveloped mechanical branch;
- lack of cultural values of settled civilizations and traditional architecture in comparison with the next states;
- ignorance of foreign languages and absence of qualitative service, especially outside the city of Bishkek;
- lack of cultural/sports actions and festivals.

Opportunities:

- growth of the international tourism abroad;
- growth of interest to adventure tourism at the basic sources of the market;
- an opportunity of the control over development of tourism, (the poor development to existing production gives an opportunity to generate and regulate the future development);
- support of the World organization of tourism of round “the Silk Way Road” and growth of cooperation between private tour operators and public sector.

Problems:

- lack of the strategic integrated plan on development of the tourism based on the deep scientific analysis;
- growth of a competition within the limits of the international market as the majority of the countries concern to tourism as to a key source of economic development;
- inconstancy of the existing market;
- problems of safety, including the international terrorism;
- deterrents of the existing economic environment and an infrastructure (a high level of the taxation, high interest rates under credits, lack of investments, slow rate of privatization of tourist objects and reforms on land tenure, corruption, etc.).

Perfection of management by mountain tourism. Last years activity on service of tourists gets typical features of branch of economy more and more. Volumes of capital investments put in it constantly grow, cost of a fixed capital increases. In other words tourism in Kyrgyzstan acts as branch – nature user makes significant demands to material, financial, to a manpower and renders essential influence on character of regional economic structure.

It is naturally, that the system having so difficult structure, should possess well debugged administrative mechanism. However now in sphere of tourist branch of the country the structure of management adequate to complexity of object was not generated yet. At the same time system character of touristic-recreational process predetermines an op-

portunity of essential increase of economic, social and ecological efficiency of tourism due to perfection of management.

The Government in the Kyrgyz Republic is interfaced by tourist branch to serious problems.

At first, substantially tourism is, as a matter of fact, an inter-branch and interdepartmental complex. And, hence, in the decision of separate questions of tourist branch without participation of this or that department supervising one the set forth above spheres to not manage. Such situation and the general inefficiency of work of the post Soviet state controls as a whole complicate carrying out of a uniform state policy in the field of tourism of the country.

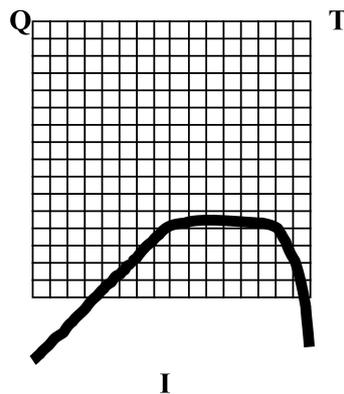
Secondly, incompetence professionally separate state employees who make key for development of tourism of the decision and great turnover of staff, and also low paid work – are those negative factors which distract from business, from due management of branch.

In the third, in our opinion, one of acute problems is weak scientific maintenance of tourism. Practically few investment projects in research and development that considerably reduces quantity and quality SRW (Scientific and research work) in republic. Meanwhile, use of scientific potential of the country is not only determining, but even necessary for economic growth. Exaggeration prompt development of such countries as Japan will not tell, that, “new industrial” and others is based on skillful use of own intellectual resources.

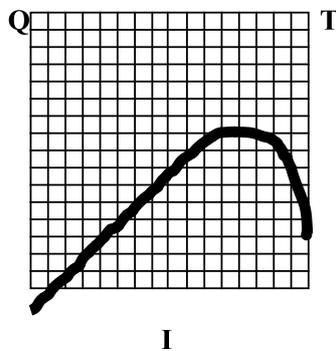
As scientific maintenance of tourism it is understandable that theoretical-methodological researches and development, and the practical recommendations based on them on development of tourism in the country or in separate regions. Unfortunately, in the official state documents, concerning developments of tourism in Kyrgyzstan there is no purposeful scientific maintenance and that’s why it is as the main problem. [15; 26].

Therefore tourism in Kyrgyzstan develops in the spontaneous image, chaotically, without the scientifically-proved ways, without possible management. The analysis of development of tourism in the countries and regions of the world where it is one of leading branches of economy, testifies, that strategy of development of tourism should have strong and reliable scientifically-information base.

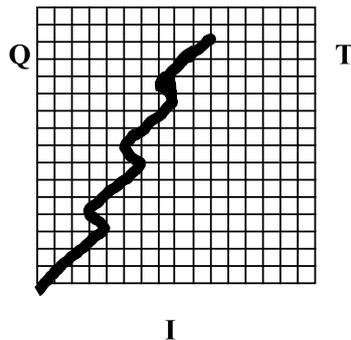
There are all bases to believe, that at adequate management of tourism, the period of its growth in the country or in region is maximized, and even can be accompanied by the further development of branch. Maximization of the period of growth of tourist branch predetermines its economic efficiency, ecological safety and social cultural responsibility. It is possible to fix the given assumption hypothetical graphic representations (fig. 1), constructed on the basis of materials of the analysis of long-term world practice of development of tourism (more than 50 years).



a) Cycle of spontaneous development of tourism;



b) Cycle of less operated development of tourism;



c) Cycle of the scientifically-provided and operated development of tourism

Fig. 1. Dependence of economic parameters of tourism from its ecological and social cultural consequences of negative character (or from by-effects of tourism). Q – economic parameters; I – ecological and cultural consequences of negative character (casual effects); T – time

The Fig. 1-a shows that is spontaneous-chaotic development of tourism by its effects which usually get character of negative consequences (degradation of natural landscapes, social cultural pressure among local population, etc). It will lead to the maximal reduction of the period of growth of tourism in region and can leave local population with

the exhausted resources, inflation (owing to high consumer ability of tourists), degradation of traditional cultural values of local population, etc.

The Fig. 1-b, shows that at the moderate management of processes of tourism (i.e. only at one level: republican or only on state) the period of growth of tourism can be extended, but by-effects

of tourist branch that can lead finally to the first script (fig. 1-a) will grow at the same time. The Fig. 1-c, shows the prospective cycle of the scientifically-provided and operated development of tourism, gives the basis to believe, that the period of growth of tourism can become rather steady and long-term.

This can be reached, for example, by means of definition of optimum, maximum-permissible tourist-anthropogenesis loadings (on landscapes, on an infrastructure of regions, etc.), the account probable negative economic, ecological and social cultural consequences and their distribution, it means that preventive measures which certainly demand carrying out of the certain scientifically-practical researches on these problems.

The above-stated three kinds of cycles of development of tourism practically coincide with three types of development of tourism in highlands and regions. The first type of development consists that development and the control of tourism over the country or region is made by external investors – the forces, aspiring to receive the greatest for it's profit. The role of local population in development of tourism comes to naught or it is very insignificant. This type coincides with a cycle of spontaneous development of tourism (fig. 1-a).

Opposite, the second type of development of tourism does not limit potential of participation of local population in development and the control over tourism. And accordingly the huge part of profit remains at indigenous population that pushes them more likely to keep and improve all the resources which make a basis of their economic development. This type of development of tourism is adequate to a cycle of the scientifically-provided and operated development (fig. 1-c).

The third type of development of tourism in highlands and regions, which is similar more likely to a cycle of less operated development of tourism (fig. 1-b), assumes presence of the basic components of first two types. That is, here the potential of participation of local population in the organization and management of tourism is proportional to potential of external investors.

From here for an establishment of a cycle of the scientifically-provided and operated development of tourism concerning management multilevel approaches of management (the international, national and local levels, and both state, and public character) are required, first, maximization of participation in development of tourism of local population, secondly.

Hence there was a question on necessity of creation of a uniform control system which includes both the state structures, and socially-branch private associations. Functions of each component should be precisely certain and divided among themselves, and vertical and horizontal connections between them shouldn't carry subordinate-unilateral, but logically-multilateral character [21; 23].

Now in the Kyrgyzstan, there are some objective problems which complicate an estimation of tourism and development of the scientifically-provided strategy of management and development of this complex phenomenon of economy. Following two circumstances concern to them:

First, as it is already known, the statistics on various aspects of tourism in the Kyrgyzstan, is rather limited and cannot be always used for the analysis. In fact tourism is very dynamical phenomenon that complicates its estimation. Official bodies seldom collect and not always the statistical data allowing adequately determining the tendency of development in various regions and as a whole in the country. Besides as the world practice shows, tourism is a branch with very high competition, and tour agencies reluctantly disclose the information which is important for growth of their market.

Secondly, tourism should be considered in a wide context of re-structuring of economy of Kyrgyzstan and its regions. Really, tourism can become the force bringing positive changes in mountain regions, but strategy of management by this phenomenon should be integrated not only with strategy of management by other sectors of economy, but also and with transport and other kinds of infrastructure, education and training, local and regional planning of development, welfare, ecological changes and many other parts of development.

Tourism has set of indirect influences on an environment, local culture and economy. These influences can turn back after a while negative consequences, reducing the received benefits. In general, if to think "on a global scale" tourism cannot enters into a number of forms of economic activities which can become a basis of steady development. It means, for example, that we should try to avoid as much as possible probable effects of climatic change which are consequence of distribution of hotbed gases in an atmosphere. And tourism is the great factor of pollution of an atmosphere because, promotes enormous increase in a stream of traffic-travelling movements in air, on a land and on water (planes, helicopters, trains, cars, steamships, steam-ships, etc.). And accordingly, distribution CO₂ increases and the ozone cloud is damaged. Also, the increase in movements as a result of tourism will lead to additional use of such not renewed resources, as gasoline and kerosene, to pollution of the cities over flown by tourists or the regions often visited by tourists. The mountain countries as Kyrgyzstan, ecological system which are very fragile and vulnerable, can lose much that involves tourists. For example, the same tops grasping spirit covered by "eternal" snows do not become those because of already appreciable deviation of glaciers, that, most likely, grows out warming a climate, as the reason of that strengthening "hotbed effect" serves in an atmosphere, absorption of infra-red beams promoting increase by an air environment of the Earth.

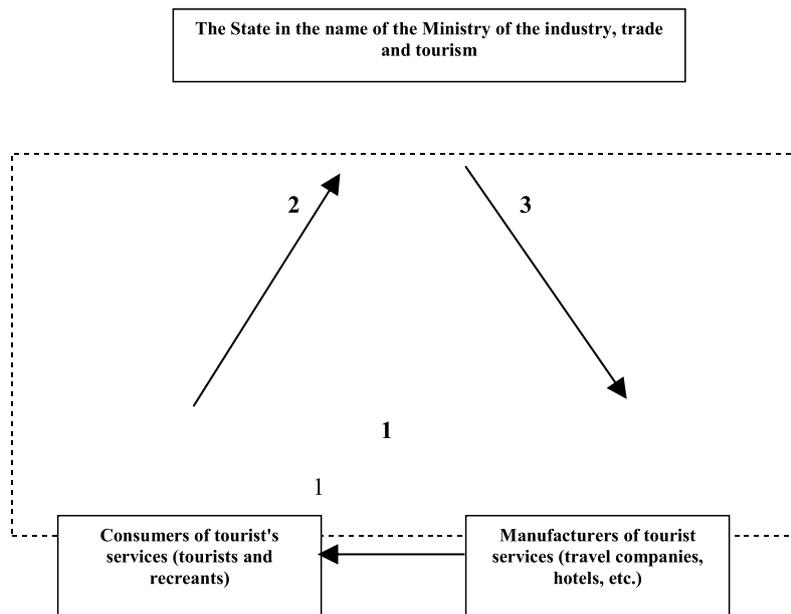


Fig. 2. The mechanism of influence on the tourist market a new information method of the management based on the concept of “feedback”. Borders of the market: 1 – services; 2 – a feedback (the information received from tourists through questionnaire); 3 – management on the basis of the scientifically-processed objective information

Further it is excessive to prove, that tourism not panacea from all illnesses of our economy. It needs the purposeful, scientifically provided management, especially at presence of the fact, that the quantity of tourists will be doubled during the following of 20 years, achieving 1,5 billion year – and from them 416 million tourists will have a rest on the Asian continent. Especially, if to consider, that the quantity of arrivals of foreign tourists in Kyrgyzstan tends growth [29].

Certainly, in present day Kyrgyzstan is hard to social and economic situation to define such priority measures which would be approved by all or the majority of participants of developments of tourism, not simply to find the necessary levers of influence on the tourist market as from a science, state management, and from businessmen and the more so local population of regions. Nevertheless, already revealing and comprehension of our general problems are necessary condition of advance.

The science as a field of activity, aspiring always to objectivity, is not limited only to revealing and comprehension of problems, i.e. ascertaining of the facts. Unlike other fields of activity of the person the science can show an optimum way of the decision of problems. And in a foreshortening told, it would be desirable to finish a statement new to management of tourist branch of the approach, as a matter of fact the new lever of optimum influence on the tourist market with the purpose of its steady development. This approach is based on the concept of “feedback” with application of new information technologies of management which are characteristic for any open systems.

In today’s conditions of Kyrgyzstan an effective method of management which in due course should become the optimum lever of influence on the tourist market can become application of new information technologies of the management based on a feedback. The feedback can be provided through a constant information stream from consumers’ tour service (i.e. tourists and recreants) to the main state controls by tourism. For this purpose it is necessary to conduct constant interrogation and questioning of tourists, i.e. the typical questionnaire which can be distributed at the main gate of the country on border (boundary posts, the airports, stations, etc.) should be developed to arriving tourists. And when they decrease from the country, in the same place on borders can leave already filled questionnaires. Then all these questionnaires should go to the state body on tourism (the Ministries of the industry, trade and tourism (MIT and T) where all collected information should be processed by an independent centre of science-analytical for granting the objective information to management MIT and Tourism.

Thus, if even 20–30% from total of tourists will fill and will leave questionnaires, i.e. the information on the rendered services, on problems during travel, etc., already it will be enough to see real blanks of the market and especially manufacturers. We are assured that volume of the information on the basis of which it is possible to receive a picture of the market, will gather, and the more so if to consider that “offended” on manufacturers of the market tourists will try to fill and leave questionnaires. Then on the basis of the received information, and scientifically-verified,

objective it will be possible to influence manufacturer tour services and really to operate tourist branch with a view to its steady development.

It is necessary to note, that such plan will be even more effective if, first, to develop the electronic version of the same questionnaire and to distribute it on the Internet. And secondly, not being limited only set forth above carrying out of sociological researches on places, for example in Issyk-Kul it is necessary for a resort-recreational zone. In this case it is three methods will be mutual supply with each other, and even more objective information on the tourist market of our highland will collect.

The above-stated is schematically shown on fig. 2.

Thus, introduction in practice of management by tourist branch of the new information mechanism based on the concept of "feedback" can become the most optimum method of influence on the tourist market. Thus introduction of such plan will enable: realization of constant monitoring and improvement of quality tour service; to see blanks in an infrastructure; to receive various pictures including marketing tendencies of the market; to reduce bureaucratic barrier to investments; to improve system of gathering of the statistical information.

In our opinion, useful one is offered method of management of tourism concern: efficiency, profitability and adequacy to system, and lack of virgin questions.

Conclusions. The role of tourism in economy of highland is very many-sided: it can bring both positive and negative changes. These changes can be substantially various depending on the common level of development of the country where tourism acts as branch of economy. Developing the highlands concern to the countries first of all accepting tourists which basic part is made by tourists of the developed countries. Therefore character of the international tourist communications in developing countries is rather difficult and inconsistent.

World experience of development of tourism shows, that there is an axiom of the tourist industry which says, that the maximal success of development of any resort (or a tourist-recreational zone) depends on an effective utilization of a natural environment. One of the basic purposes should be formation of such development which supplements key positive characteristics of a mountain landscape, but does not suppress them. Approaches to research of problems of mountain tourism should be complex, including and social cultural aspects of its development and accommodation alongside with economic and ecological influences. As for improvement of social consequences and conditions, and for preservation of natural-ecological equilibrium economic mechanisms should be used.

Present time, there were number of approaches and methods of studying of tourist-recreational activity which can be subdivided on economic, geographical, sociological, mathematical and mathematic-statistical. The general level of developing various and rich tourist-recreational resources of

mountains of Kyrgyzstan while remains insignificant and for their protection and rational use direct external investments are necessary. The last are possible in more favorable social, economic and legal conditions than nowadays.

Constant development tour production of Kyrgyzstan needs close cooperation of various official bodies and departments with an increasing private sector, especially in the field of maintenance with habitation and development of sights, creation of economic conditions for support of internal and direct foreign investments.

The tourist market of Kyrgyzstan is appreciated in 200–320 thousand tourists, basically visitors. Under our analysis aggregate profits of the existing tourist market of mountain Kyrgyzstan are appreciated in 50–80 million US dollar a year. 90% from the revenue of all market of tourism provide internal and regional (CIS) markets, though their one-day expenses very low.

The present condition of tourism in republic is characterized by significant volume of a "shadow" component, in view of which share of tourism in real gross national product of the country about 6–8%. In this connection purposeful measures on legalization of "shadow" capitals of tourist business are necessary. One of measures can become the taxation of entrance tourism as export of services.

Results of research show, that in the Kyrgyz Republic so-called mass resort-recreational tourism which probably makes economic profit more quickly, than, for example, ecological tourism strongly develops. But, the most important that mass tourism in mountain conditions is extremely unstable and short-lived as promotes degradation of an environment for short time and often generates conflicts between tourists and local population in social cultural to environment. Besides at us mass tourism can develop only on Issyk-Kul, as occurs this moment. Therefore, at present efforts of the state should be directed on uniform distribution of quantity of arriving tourists on time and in space according to available resources of regions, with the purpose of pressure decrease of tourism on the nature and an infrastructure of separate places. In our opinion, it can be reached by two ways: By the investments into other less visited regions, especially in their infrastructure; by the methods of fiscal politics.

Now there is a question of protection of tourist-recreational resources of Kyrgyzstan Mountain. The Most part from them is used spontaneously, unrestrictedly, without any account of the safe loads. Spent actions on protection of tourist resources have incidental character, are extremely inefficient and have more commercial character (periodic gathering of money for visiting). As a result, under influence of anthropogenous loadings, and also an environment already now tourist objects gradually lose valuable recreational properties. The complex of measures, which carrying out is necessary for their preservation and restoration, the main way of our opinion is hardly probable without special scientific researches and certainly investments.

Considering fragility and vulnerability mountain ecological system, we consider that the general

plan of development of tourism in the highlands similar to Kyrgyzstan should be under construction on following principles:

- Maximization of profit (incomes) at minimization of quantity of tourists;
- With growth of height should decrease material capacity of tourism infrastructures.

Observance of these principles will allow not only to keep vulnerable mountain ecological system, but also to satisfy escalating needs of tourists for close contact to a natural environment.

For preservation of wild unique fauna Tian-Shain, Pamir-Alai and creations of ecological image of the country it is necessary to encourage development of photo hunting and video hunting, incomes from which are many-sided and not disposable as, for example the same mountain rams it will be possible to take a photo or remove on a video camera some times and several tourists can do at various times. And the mountain tourism, rafting and other is extreme-sports kinds of tourism can develop within the limits of tourism on routes of the Silk way though their organization connected with difficult mountain conditions and it needs considerable capital investments.

There is a sharp necessity of creation of the special organization on marketing, planning and promotion of mountain tourism. One of functions of this organization should be introduction in practice of such information technologies of management, as system constant sociological interrogation and the questioning, providing a feedback from consumers and tourists. Such system promotes the simultaneous decision of such actual problems of mountain tourism, as quality management of tourist services, marketing and the statistical account.

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INTONATIONAL CHARACTERISTICS OF THE POETRY SPEECH

Bazarbayeva Z.M., Baisakalov A.B.

A. Baitursynov Institute of Linguistics, Ministry of Education and Science of the Republic of Kazakhstan, Almaty, e-mail: zeynepmb@mail.ru

The article considers intonational characteristics of the Kazakh poetry speech. Experimental methods of research are applied to analyze prosodic forms of small and big poetic forms presented on a large scale of linguistic samples. Various linguistic concepts and terms, such as rhythm, rhyme, syllable, stress, line, strophe, rhythmic group, syntagma, are investigated as well. Syllabic system of Kazakh is focus on as it is similar to other Turkic poetic forms. The Kazakh versification differs from European languages; meanwhile it is similar to French. Both languages, however, belong to different systems and do not have explicit word stress but rhythmic one, which unite words and syllables in one phonetic group with single rhythmic stress. The basic assumption for the rhythm to function in Kazakh versification is a definite quantity of syllables.

Keywords: rhythm, rhyme, syllable, stress, line, strophe, rhythmic group, syntagma

Intonational nature of the poetry speech is realized in the verse rhythm. Rhythm as a component of intonation ascribes to it a certain color. In linguistic literature the rhythm is interpreted as repeatedness of the opposites and periodicity in the flow of the poetry speech, in which the significance is assumed by the parallels, contrasts and transitions, as well as change of assonances, their combinations, alternation etc. Rhythmic structure of the verse is not a convention, not a simple limitation, but the core, which unites all the diverse sounding of words into the general harmony. This correlation of words and phrases in its certain structure produces the melody of a verse. Rhythm is turning in a lively continuous, various, changing rhythmic and intonational flow of poetic speech. It appears only in poetic speech itself, but out of that it exists merely in mental abstraction. Rhythm of poetic speech, which seems as something opposite to the rhythm of conventional speech, as a matter of fact is the mostly concentrated realization of intonational, sound expressiveness of language.

Peculiarities and regulations of versification depend on features and structure of every language. Metric system of versification is supported by contrasting with long and short vowels which is inherent in Greek and Latin vocalism but alien to Russian. And syllabic tonic is supported by contrasting with stressed and unstressed syllables which are strident in both Russian and German languages [3].

W. Radloff points out that in Turkic languages the function of stress is realized by vowel harmony: «The task of accented stress in Indo-European languages, Turkic languages is implemented by the harmony of vowels, {...} while in Indo-European languages verbal stresses are those of a morphological component, in Ural-Altai languages it is merely a means of euphony, i.e. it only has here a task to add to monotonously sounding row of syllables the pleasant for ear sequence, and to show

sharper the links of agglutinated words» [6]. Kazakh versification in its character is related to syllabic system of versification. .

Thus, the specifications of Kazakh versification, which essentially differ from Russian and other European languages, are rooted in its prosodic system with vowel harmony and covert verbal stress. Both in Kazakh and French the words, syllables shape one phonetic word with single rhythmic stress. L.V. Shcherba, who thoroughly studied phonetic system of French, pointed out that «The big distinction of French stress from Russian, German, and English is in that the difference between stressed and unstressed syllables in the latter languages is striking and in French is barely noticeable: all the syllables, for inattentive observer, seem to be approximately even-stressed. {...} In French we cannot talk about verbal stress at all, but have to talk only about phrase stress which further we will call it as a phrase stress» [7]. This assertion of the scientist can also be totally and fully appropriate for Kazakh.

Similarity in prosodic systems of the Kazakh and French languages was first pointed out by A. Baitursynov. In both languages verbal stress is slightly visible and does not have phonological distinctive contents as it is in Russian. In Kazakh and French in the flow of speech the autonomous and syntactic words are united in larger phonological units with rhythmic stress marking the end of rhythmic group. Rhythmic groups emphasized in the flow of speech by prosodic, intonational devices do not coincide in the Kazakh and Russian languages. In Russian, every word carries on itself a stress on a certain syllable; this allows identifying separate words in the sounding speech. So, it is not for nothing that they say about flexible, movable verbal stress in Russian which is characterized by contrasting modulations of voice and enlarged diapasons of tone. To Kazakh speech it is characteristic of rhythm-syntagmatic stress with smooth wavy contours [2].

Remarkable contribution to the development of verse theory has been made by A. Baitursynov. His valuable comments on rhythmic structuring in Kazakh poetry became a basis for prosodic system of Kazakh poetry development. When he studied rhythmic structure of Kazakh poetic speech he introduced into terminology various concepts and terms and carefully described them. When he studied the system of Kazakh versification in contrast with European languages he pointed out syllabic structure of verse which is based on a quantity of syllables in line [2]. Such a versification is attributed to the languages with slightly expressed verbal stress when all syllables are heard almost similarly, clearly and distinctively; and only syllable under rhythmic stress is characterized by a certain length in time.

In Kazakh, as well as in other Turkic languages, prosodic dominant is vowel harmony, not a verbal stress, so, in Kazakh versification a certain quantity of syllables in the line is an essential ground of the existence of rhythm. A. Baitursynov has also noted regularities which organize inner structure of verses [2].

Syntagma sometimes corresponds to a rhythmic group, but in larger poetic forms it mainly consists of several rhythmic groups. A relative independence of a line is reached at the expense of its intonational shape when it corresponds to certain intonemes in which there combine not only phonetico-phonological properties but also semantico-syntactical ones. Being realized in different variants of an intoneme, a line is carrying a certain meaning value depending on context and situation: completeness, incompleteness, quest, motive etc. Independence of a line and its borders are formed not only by changing the main tune flowing and melodic curve but also by prosodic pause and break of melodic contour on the edge of lines.

Studying rhythmic structure of speech in the Kazakh poetry in patterns of the works of Abai and Magzhan Zhumabayev, A. Baitursynov puts a focus on symmetric rotation of three- and four-syllabic rhythmic groups in the line [2]. Rhythmic group in Kazakh verses should not exceed three-four syllables, as it is said in the works of Z. Akhmetov: «Inner rhythm of poetry speech in Kazakh poetry is reached due to repeatedly rotation of proportionate or similar short speech sections – syllabic groups which having relative rhythmic independence are clearly distinctive in the process of live articulating of a verse».

The most common in Kazakh poetry are seven-eleven syllables verses: songs, big poetic forms, and four-five-six syllable verses – small poetic forms which can be found mainly in proverbs and sayings.

Intonational nature of poetic speech is expressed in a poetry rhythm. Rhythm as component of intonation is adding to it a certain color. A basic unit of poetic rhythm is a line; Kazakh poetry is defined as syllabic with the same number of syllables in a poetic line. The similar pattern can be found in African American poetry. In one of the W.E.B. Du Bois works, there are even larger – fourteen syllable lines, organized with the same rhythmic structure:

Dark daughter of the lotus leaves that
watch the Southern Sea!

Wan spirit of a prisoned soul a-panting to
be free!

The muttered music of thy streams, the
whisper of the deep,

Have kissed each other in God's name and
kissed a world to sleep. [1]

Necessary requirement for rhythmic organization is giving to every poetic line a certain number of syllables. Within a long line it is possible to identify intonational units – rhythmic groups and syntagmas. In small poetic forms – proverbs, sayings – rhythmic group, syntagma and line coincide in volume, but in big poetic forms a line, as a rule, consists of several rhythmic groups.

Rhythmic segmentation of Kazakh speech which is expressed by rhythmic stress plays an important role in rendering the meaning of expression and the meaning of information depends on its correct distribution. The basic prosodic components of accents in Kazakh, as experimental and phonetic data show, are length and, partially, melodic.

To small poetic forms, as mentioned above, we refer proverbs and sayings, edifying words, which are the best patterns of folklore containing various vital, social and other stirring sides related to traditions, rites and spiritual values of a society. Being polished by folk's mouth they assume linguistic shapes with corresponding syntactical and intonational characteristics. In small poetic forms mostly common works contain not more than two-four lines. Distiches and tetrastiches, as a rule, have from four to eight syllables. In such proverbs and sayings there occur various types of sentences: narrative, imperative, interrogative; in structure – complete, incomplete, expanding, unexpanded, which are shaped with different intonemes.

In the a majority of two-lined proverbs each line usually represents simple, unexpanded sentence in the structure of asyndetic composite sentence whereas in other – the lines are shaped in narrative sentences, or in hortatory ones. As a rule, syntagma (rhythmic group) coincides with the verse line in its volume being an indicator of lined and at the same

time intonational-syntactic segmentation [5]. The border of a line dictates a necessary active pause – break in sound. Keeping metric speech supposes strict coincidence of lined pauses in length. Determined length of pauses influences expressive effect of verse.

In some proverbs the first line can be characterized by rising melodic curve, in others the line can have falling melodic contour. In various non-ending syntagmas there can be found intonemes of incompleteness or, usually, final syntagmas are shaped with intonemes of completeness [4].

Hortatory sentences with the verbs in the imperative form are normally accented at the expense of dynamic and temporal devices. Melodic intervals of beginning and ending of such phrases are valuable, and shown by expanded tonal diapasons. In all prosodic characteristics and semantico-grammatical meaning the intoneme of categorical motive corresponds to the corresponding types of sentences.

Thus, small poetic forms (proverbs-sayings) represent by themselves repeated rising-falling intonational outlines, while large poetic forms (poems etc.) according to the syntactic aspect consist of compound sentences, compound syntactic units relevant to intention of expression. They are presented by various communicative types (narrative, hortatory, interrogative) being shaped by revealed intonemes of the Kazakh language. Intonemes and their variants are realized in all types of syntagmas creating intonational ornaments depending

on semantic and structural peculiarities of a phrase. Frequency movement direction of the main tone, tonal diapasons and levels, melodic intervals, intensity, pause, tempo, timbre, localization of stresses and other prosodic devices are contributing to intonational-rhythmic structuring of poetic works [8]. Intonational contours of large poetic form being repeated in lines and strophes represent symmetrical wavy ornaments reminding, as A. Baitursynov said, patterns on a Kazakh traditional carpet [2].

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Materials of Conferences

**COMPLIANCE OF THE COMMON NAMES
WITH SOUND STRUCTURE
IN THE ANCIENT TURKIC
AND KAZAKH LANGUAGES**

Nurbekova G.S.

Abai KazNPU Almaty, e-mail: shatnur71@mail.ru

Words from the distant ancient times to modern times have not been subjected to any changes, – independent morphemes in the language consist of a significant group [1, p 34–35.]. Names with the same sound structure found among the different parts of speech. The article investigates the matching words in the languages of ancient monuments in the Kazakh language, words are analyzed for total sound composition, internally divided into two groups: 1) names completely appropriate to the phonetic form and meaning; 2) names fully consistent with the phonetic form, but with different meanings. Words that comply fully with each other and phonetic form and meaning, as in ancient times, and now there were only mixed. Words, fully consistent with the phonetic form, but in the sense of having differences found among disyllabic. General on the sound composition in the ancient and Kazakh words in other Turkic languages have differences.

Keywords: morpheme, phonetic form, language of monument, voice composition, accordance, comparison.

Objective of research: demonstrate phonetic-morphological nature of vocabulary that is used since ancient times till modern days in modern Kazakh language and find their common legislations.

Object of research: ancient historical words that are included into modern vocabulary of Kazakh language.

Methods, used in research: during the research comparative-historical methods, analysis, synthesis have been used.

Research results: During historical development lexis of Turk languages has suffered numerous changes in lexical, phonetic, and grammatical aspect, words changes in their phonetic composition, but regardless of this fact, meanings of these words remained unaltered. Defined have been names that correspond completely in phonetic form, but differ in meaning.

Conclusion: The majority of modern Kazakh language vocabulary takes its origin in ancient ages, it is testified by names in ancient-Turk and ancient-Kazakh languages, common nature of sound composition, and words, unaltered in their meanings – writings on ancient monuments. Here we would like to underline that words that correspond completely in phonetic form and meaning have always been monosemantic in ancient times and modern days.

It is known that during its development lexis of Turk languages has suffered numerous changes

in lexical, phonetic, and grammatical aspect. All turkologists and linguists accept legislations of such development as an axiom. However, words that haven't suffer any changes since ancient times to modern days are independent morphemes and form a significant group within a language [4, p. 34–35]. Names with unaltered sound composition can be found not only among nouns, but also among verbs and adjectives, numerals, and other parts of speech. Nouns that are identical to language of monuments from XI–XII century and Kazakh language, can internally be divided into two groups: 1) names that are completely identical in their phonetic form and meaning; 2) names that correspond completely in their phonetic form but differ in meaning.

1. *The names, mentioned below, are completely identical in their phonetic form and meaning:*
monosyllabic: (бір буындылар). Сүт. /Milk. L Liquid substance of a great nutritional value, white, produced by mammary glands of women and udder of cattle as well as other mammals. [9, 624 c.] (author.). Қымыз сүт йа йүң йағ йоғурт курт ҚБ 320 (Қымыз, сүт, тоңдаған май, айран мен құрт / Koumiss, milk, frozen /solid/ butter, kephir and курт). **Сан. / Number. Numeral unit of a certain object, phenomenon. (literate)/** Это ол анда йатыбан берүү саныны ҺХ 276 (Өзі көрде жатып, малының санын береді/ Being placed in his grave, counts their cattle). **Қар. /Snow. White precipitations that fall out in shape of large flakes during winter /.** Қыш ерса йана түш көрүгли қары Ақар сув түшаса йа буз қар толы ҚБ 360 (Өмірінің ақырына (қысына) жақындаған қарт түс көрсе, Түсінде ағып жатқан суды немесе жер бетін жапқан қарды, мұзды көреді. / If an old man who is at the end (winter) of his life, sees a dream of flowing water or snow covering earth, ice/). **Қой. / Овца. Ruminant animal, light beast with a dense fur; one of our types of cattle./** Тонум қой йүңи тап йегүм арпа аш ҚБ 343 (Кийім – қой жүні, қанағат етер асым – арпа / My clothes is sheep fur, food that satisfies me – barley/. **Қаз. / Goose. Wild or domestic waterfowl with a long neck/.** Қаз өрдәк құғу қыл қалықығ туды ҚБ 14 (Қаз, үйрек, аққу, қылдар аспанды толтырды /Geese, ducks, swans feathers filled the sky). **Көл. / Lake. Closed in circle (by banks) in natural or human-made shape wide and large water pool /(author)/** Вафы көли суғлуп қуруп йоллары ҺХ 387 (Опа көлі суалып, көздері құрып / As lake Опа dried out, springs vanished (literate)). [1, 704 c.] **Күз. /Autumn. One of four seasons, following summer /.** Келүр күз кечар йаз барур бу умур ҺХ 453 (Күз келеді, жаз кетеді, бұл өмір өтеді / Autumn comes, summer passes, this life goes. **Ай. / Moon. 1. A planet that reflects (illuminates) a bright light upon the Earth during night/.** Йарутты ажунда күнүг һәм айығ ҚБ 21 (Күн мен ай әлемді жарық етті. /Sun and

moon have light up the universe/world/); 2. Season that embraces one twelfth of a year, 30-days term./ Түкал он сегіз айда айдым бу сөз ҚБ 392 (Толық он сегіз айда бұл сөзді баяндап шықтым. / For eighteen full months these words I have been reporting, this speech I have been saying/(author)). **Ат.** *Көлік ретінде саят мінілетін, арба-шанаға жегілетін және әр түрлі шаруашылық жұмыстарға пайдаланылатын еркек жылқы.* / **Steed.** *Male breed of horse, riding animal for hunt or as a transport, mounted into arbu – sleigh and used in various household works. (авт.)* / Атында коды түшти ҚБ 190 (Атынан жерге түсті. / Unmounted a steed onto the ground /). **Бөз.** / **Coarse calico.** *Thin, flabby, cloth (author)* / Қалы болса атлас унутма бөзүң ҺХ 354 (Егер атлас кисен, бір кезде киген бөзінді ұмытпа. / When you put on satin, don't forget you coarse calico that you wore some time before/). **Тай.** / **Yearling.** *Offspring of a horse that exceed one-year age, but has not yet achieved two years of age.* / Кевал мұндүң аркун йема тазы май ҚБ 415 (Асыл тұқымды жүйрік міндің, арабтың таза тайын міндің. / You rode pedigree runners, mounted neatly Arab yearlings/(author)). **Түн.** / **Night.** *Time period from evening to morning, dark part.* / Қараңқуда ердим йарутты түнүм ҚБ 39 (Қараңғыда едім, құдай түнімді жарық етті / Was in darkness I, the God light up my night./ (author)). **Кек.** / **Revenge.** *Hatred, anger, enmity towards someone, a rival, enemy, etc.; anger and fury.* / Неғү тер ешитгил билүр кеги йок ҚБ (Білімді кегі жоқ адам не деп айтады, есті. / What will an educated, unvengeful man say, reasonable/sensible/ (author)). **Таң.** / **Morning.** *Time period before the sunrise.* / Ешит бут бу сөзга камуғ таңда жан Қопуп тилга йүкнүп тазару қылу ҺХ 147 (Тыңда. Илан бұл сөзге. Бағзы біреулер күн сайын таңсәриде тұрып, тілге жүгініп, құлшылық етеді. / Listen, trust these words. Some prey every day getting up early in the morning, kneeling./ (author)). etc. [3, p. 523.]

2. **Duosemantic (екі буындылар) that correspond completely in phonetic form and meaning.** **Қалқан.** / **Shield.** *Protective tool (defensive) in hands of Batyrs, designed to parry strikes, bullets, arrows/ (author)* Тайақлық йағықа темүр қалқан ет ҚБ 306 (Таяқпен қаруланған темірден жасалған қалқан ұста. / Being armed with a stick, hold your shield, made of iron./ (author)) **Қайың.** / **Birch.** *A tree, growing upwards with a birch crust and heart-shaped leafs (author)* / Қайың тег бодум ерди оқ тег көни түз йа тег егри егилдим төниттим ҚБ 387 (Бойым қайың сияқты мықты еді, оқ сияқты түп-түзу болатын, Енді жақ сияқты иіріліп илдім, бүкірейдім. / I was thin and strong as birch, straight like an arrow, now, shrunk like cheeks I bent and stooped (author.). **Қарға.** / **Crow.** *Omnivorous black bird with an unclean meat that mostly feed on carrion.* / Бу алп ер секритип чериг тарғаны Лачын куш қовар тег қалын қарғаны ҚБ 88 (Бұл алып ер

атын секіртіп жау әскерін бытыратты, Лашын құстың көп қарғаны быж-тыж еткеніндей. / This giant spurred his horse to gallop, drove away the rival army, just like hissing peregrine, drives way a murder of crows./ (literate.)). [8, 591 с.] **Қымыз.** / **Koumiss.** *Cultured milk beverage of horse milk. (author).* / Қымыз сүт йа йоң йағ йа йоғурт курт ҚБ 264 (Бие сүтінен жасалған қымыз немесе тоң май немесе айраннан жасалған курт. / Koumiss, made of horse milk or kurt, made of frozen butter of kephir.). **Арпа.** / **Barley.** *Grain crop with a thick crust, similar to wheat / Тонум кой йуңы тап йегүм арпа аш ҚБ 343 (Киімім – кой терісі, қанағат етер асым – арпа. / My clothes is sheep fur, food that satisfies me – barley / (author)). Сақал. / **Beard.** *Hairy surface (bristle) that grows on men's chin and cheeks.* / Сақалың үрүң болса келди өлүм ҚБ 264 (Сақалың ағарса, өлім келді деп есепте / If your beard turns white, know that death has come), etc [2, p. 211].*

While comparing nouns of modern Kazakh language with nouns, taken from language of monuments of XI–XII centuries, we have found completely identical names that correspond totally in phonetic form and meaning. When one compares not only one part of speech, but the whole vocabulary, it becomes clear that the number of such completely identical names is significantly greater. Here we would like to underline that words that correspond completely in phonetic form and meaning have always been monosemantic in ancient times as well as modern days.

3. At the same time, there are names in language of monuments that **have differences in meaning maintaining a complete similarity in phonetic form.** According to monosyllabic, such nouns can be multi-semantic in basic language of monuments and modern Kazakh language.

АТ. / **Name.** 1. *Definition for a name of person.* / Атасы аты Махмуди Йүгінәки ҺХ 477 (Атасының аты – Махмуд Йүгінәки / Name of his grandfather is Makhmud Iugineki). 2. *Definition of "position"* / Атым кул тапуғчы көр орным қапуғ ҚБ 53 (Атым – қызметші құл, орным есік алдында. / My name is serving slave /servant/, my place is in front of the door (by the threshold) / (literal.)). 3. *Defined as a name of object, thing, phenomenon.* / Адибнің йери аты Йүгнәк аруп ҺХ 475 (Шайырдың жерінің аты – Йүгінәк деп аталады / Name of land Shaiyrda is Iuginek).

While in KB all three of these definitions, there are only the first and the third definition of it in hX. Of course, this phenomenon depends on volume of a work, its theme and genre, an author's mastery of speech. We should underline that when the word **АТ** is used in definitions: 1) name of person (Махмуд Йүгінәки), 2) position (қызметші құл), 3) name of territory (Йүгінәк), lexical meaning changes, obtaining different meanings.

Besides, the following definitions of this word are found in Kazakh language:

1. *Атақ – даңқ. /1. Fame, popularity/ Атың шықпаса жер өрте (Мақал). /Букв.: If your name becomes famous, burn the ground./ 2. *Үй жануарларына қойылған қосымша ат./ 2. Nicknames, names of domestic animals./ Мына сиырдың аты – “Ақшабақ” / This cow is called Akshabak./ [5, 696 с.]. Investigation shows wide possibilities of developing the mentioned word.**

ҚАН. /Blood. Defined as red liquid that circulates in veins and feed body cells (author)/ Қызыл ағзы қан тег қашы қап-қара ҚБ 18 (Ол құстың аузы қан сияқты қып-қызыл, қасы қап-қара /*literate*.: This bird has very red beak, just like blood, its brows are very black/). In Kazakh language this word also includes the concept *мегі бір тұқым, туыс /literate*.: one breed, relatives in blood/ Сенбегені ғой. Қаны басқа емес пе? /*literate*.: Means no trust. Is is not a different blood? [6, p. 624]. If in sentence: “1941 жылдың июні қан мен қайғы әкелген жексенбі болатын” /*literate*.: June of 1941 became a Sunday that brought blood and grief./ – it means *өлім, ажал /death, destruction, demise/*, in sentence “оның бүйірінде қатып жатқан қан бар ғой” /*literate, figurative*.: in his body there is stale / frozen blood/ used in definition because in his side (in him) there are stale / icy blood / *ашулы кек, ыза, намыс – angry revenge, anger, self-esteem [6, p. 624].*

ЕМ. /Treatment. Something (an object, a thing, etc.) provides for healing of a patient from their illness, disease (author) / Бу игга еми йоқ ҚБ 47 (Бұл аурудың емі жоқ /У этой болезни нет лечения/). Outside of this definition in Kazakh language it means *әрбір ауруға қарсы қолданылатын емдеу әрекеті, емдеу ісі / healing effect, medical treatment, used for every disease /*. Therefore, definition of this word has generalized, became much wider. In sentence “Мұның емі қайсы? Неңдей шара, қандай ықпал жасауға болады” / What treatment is he on? What measures can be taken? What influence can be applied? / The noun *ем* is defined as “*бір нәрсенің амалы, айласы, шарасы*” / effect of something, trick, a measure /. Sometimes this word can carry a poetic symbolism and used in meaning *heart medication, the desired choice [7, p. 735].* **ТОР. / Net, railing, fender. Defined as an object, bound of rope via railing fending method, in squares (author) / Усайуқ бу йаңлуқ ерди сүк көзі Қалы торқа кирмаз бу йаңлуқ өзи ҚБ 208 (Адам дегеніміз өзі ұсақ, көзі тоймайтын сүк емес пе? Қалайша ол өз еркімен құрылған торға кірмейді? / Is not one whom we call human small himself, insatiable, greedy? How is he not caught in nets that he himself placed on his desire? / (author)). In Kazakh language this idea also includes the definition of *fishing net / балық аулайтын ау/*. The latest examples demonstrate how formally monosemantic words can develop during time under the influence of various reasons [1, p. 704]**

Among words with identical sound form one can sometimes find, apart from multisemantic na-

ture, other conflicting aspects. At the same time, it is obvious that there can be a certain similarity and connection.

ҚОР. / Harm. Defined as harm, damage, loss, injury / Чықыш көрмаса иш болур ерка қор ҚБ 54 (Шығысын көріп байқай алмаған адам ақырында шығынға батады / A person who does not consider his costs, will bear heavy losses in the end (*literate*)). In sentence “Бұл ауылда менен қор адам жоқ па, неге басынасың?” / What, is there no person in this village who is more humiliated than myself? Why are you being neglectful? / **қор defines *сорлы, бейшара байғұс / poor man, unhappy [9, p. 624].* It is shown that as a person suffers costs and damage constantly, thy become humiliated.**

ҚЫР. Defined as “mountain ridge”. / Йазы тағ қыр опры төшанди йадып ҚБ 16 (Жазық дала, тау қырқасы ойпаң жерлер көк шөпке бөленіп масатыдай кілем төсенді / Plain steppe, mountain ridges, hollows, were covered with green satin of grass/). The Kazakh understand the name **қыр as a *stretched high ground, ridge*. Біз де демімізді ішке тартып, қыр басына көтерілген екеуге қызғана қарап қалдық / And we, holding our breath, were carried away by the couple that climbed the top of mountain ridge. [3, p. 962]. Obviously, according to the law of assimilation, mountain ridges and high grounds that do not refer to mountains at all, are now called the same name.**

ҚЫЛ. Defined as hair. Йолуң қылда йинчка өзүңни көнит ҚБ 434 (Жолың шаштың қылынан да жіңішке, өзінді тура жолға сал / Your road is narrower than a mane hair, guide yourself to the straight way. Definitions in Kazakh: 1. *Hairs of tail or mane (author); 2. Generally: woman’s hair, hair coat, bristle, fur of any kind*. Seems like in ancient – Turk language semantic of the word “шаш” in combination with “шаштың қылы” /hairs/ transformed into “қыл” / firm hair / (*author*) in process of its usage [2, p. 278].

Even in case of complete correspondence of phonetic shape, names with different meanings can be found among disyllabic nouns.

АТА. On the mentioned monuments this word was used only in one definition – *туған әке, өз әкесі /native father/*. In Kazakh language it had a number of definitions: 1. Elder father, grandfather; ancestor / 2. Relationship, affinity between people, blood relation; *kin*; 3. Kin/kind/, name, origin, *tribe, kind*; 4. *Father in law*. 5. *Қаруя (I. Polite address; 2. Old man, ақсақал /acksacal/ (in respectful meaning); 6. Foundation, origin of something, cause (of all causes)*. And also noun **АНА that is always used together with name “ата” and one definition, be that Orkhono-Yenisey monuments or ancient-Turk written monuments: *туған шешуе /native mother/*. Definition of this word in modern Kazakh language has broadened and become a generalized idea. Any woman is called “ана” / “mother”/. At the same time the mentioned name has absorbed such definitions as *foundation, kin, root*.**

Thus, it seems that all these definitions emerged in Kazakh language around the recent one and half years within a thousand-year period. Their usage in monument in only one definition allows us to conclude it.

ТАРМАҚ. In definition fingernail. Не йавлақ нең ол бу өлүм тармақы ҚБ 54 (Өлім тырнағынан артық жиіркенішті не нәрсе бар / What is more disgusting than a death's fingernail (*author*). [10, p. 724]. In Kazakh language there is also such name of object as **тармақ**. However, the definition isn't even close to match: *head, part, branch of some thing or object*. It is possible that the cause of all causes is in different homonymic words.

We can continue listing names that correspond completely in their phonetic form and meaning as well as names that might correspond in phonetic form, but differ in meaning. Here a question emerges: how so many words stayed unaltered and survived to our present days without suffering sound changes? In our opinion, syllables that consist of one vowel and one consonant, no matter if it is an open or closed syllable, will most likely be closed (*ар, ат, от, ас, ем, ақ* etc.). Also, vitality of closed syllables if not exceeds, is not less (*күн, түн, тор, қыр, көк, бек* etc.). Such feature remains in case of junction between two closed syllables (*тар + мақ, қал + қан, топ-рақ, қар + мақ, бай + лық* etc.). In the name **Ба + қыр** (*саре/copper*) an open syllable that consists of one consonant and one vowel, is combined with a closed syllable. In the name **Ар + қа** a closed syllable is combined with an open syllable. Thus, in order to preserve sound stability, a word must be constructed of syllables that consist of one vowel, one consonant, open, closed syllables, and also a closed syllable between two consonants. But, not all syllables will string in this fashion, as they suffer numerous alteration in their phonetic, phonological alterations.

In Kazakh language words that have not suffered phonetic alterations, are spelled differently in other languages. For example, **қар** (snow) of Kazakh language is spoken differently in Azerbai-

jan and Turk language – **ғар**. Besides, in Turkmen language **a** is spoken slowly. **Ат** (name) in Turkish, Azerbaijani language – **ад**. **Таң** (sunrise) in Turkish is **дан**, in Turkmen – **даң**. While Kazakh language preserves most of general-Turk letters in word beginning or end of it, in Oguz, Karluk-Yugursk language such legislation is disturbed, and a word oscillates from its phonetic form. Correspondence between names in ancient-Turk and Kazakh language, generality of sound composition, meaning, present a great interest for the further research.

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DEVELOPMENT PACE AND ISSUES OF DAIRY PRODUCTS INDUSTRY IN KAZAKSHTAN

Adiyetova E., Utepkaliyeva K., Mussayeva A., Mykasheva A.D.

Atyrau State University named after Kh. Dosmukhamedov, e-mail: dyusekenova_aina@mail.ru

For the purpose of Kazakhstan agro-industrial complex industrialization the government's action is focused on settling two basic tasks. The first is to ensure safety of food products, the second is to develop export-oriented production and diversify the export.

Keywords: industry, safety of food products, export

In the Message of the President N.A. Nazarbayev to Kazakstan people it was highly specified that "One of the main factors of developing countries (non-urban areas) is constant and dynamic development of agro-industrial complex".

It has been decided to continue developing such export-oriented investment projects as market-milk dairies, poultry farms, fattening farms, horticultural plant growing, agricultural equipment assembling manufactures, milk processing, developing grain export infrastructure and grain processing.

One of the main factors which is in great demand in the process of economics development and influences export and import exchange trends in terms of the state economics is stockbreeding, in particular milk and dairy products.

As regard to food industry milk and dairy products technology is developing well nowadays, there are many dairy plants in Kazakhstan and they are producing different kinds of dairy products. Food products are produced in accordance with established standards, undergo a state control. Milk is the most valuable food product which has no other analogs. There several reasons for this. As 95–98% of its components are ingested. And milk is the essential source of amino acids, macro and micro elements, vitamins. Milk is the most valuable product of the nature. Human organism consumes 98–99% of its nutritional value. We can see its nutritional qualities from the following data: 1 liter of milk consists 150 g of protein. It equals to protein in beef or 5 chicken eggs, or 1 kilo of bread. Half a liter of milk satisfies human's daily nutrient requirement for amino acids, and one liter of milk fully satisfies human's requirement for oil, calcium, phosphor, riboflavin, satisfies humans requirements for protein by half, satisfies 1/3 of human's requirements for ascorbic acid, retinol, thiamin. Milk positively impacts human's heart function. Milk and dairy products take the second place in provision of people with food. Therefore developing

dairy cow farms, establishing milk production and improving its quality, mastering different dairy products technology preserving original qualities of initial products is a primary objective of stock farmers, in particular, livestock specialists-zootechnicians. Effective use of nutrients in milk, preservation of protein in it within particular time period, methods of producing additional products, dependence of changeability of production and dairy products to seasons are related to one another.

To improve dairy production in our country it is necessary to develop pedigree cattle farming. In the Republic of Kazakhstan Industrial-innovative development strategy for 2003–2015 is improving usefulness of cattle farming products and its competitiveness have been put in the first place considering its actuality nowadays.

Cattle farming takes 40% of total agricultural products in the world, about billion people work in this filed all over the world. Cattle farming is one of intensive fields of agriculture. Within the recent 10 years the field has developed fast and demand for agricultural products will actively grow due to increase of population, improvement of their welfare and urbanization.

There are about 6,2 million herds in the republic. As of 1 January 2011 number of cattle has increased in the republic:

- herds –by 1,1%, i.e. up to 6 160,4 thousand animals;
- including cows – by 2,3%, up to 2 778,8 thousand animals;
- poultry – by 1,1%, up to 33 036,3 thousand.

Improving competitive ability of milk and dairy products is of great experiential significance in developing complex of domestic manufacturers, in supplying all groups of internal market consumers with high quality dairy products and in extending external economic relations. Settlement of these issues plays great role in developing county economics, improving health of population, improving their level of living, implementing scientific and technical progress achievements, ensuring safety of national products and improving competitive

industries and regions. Competitiveness indicators of the country are, first of all, improvement of people's living level and qualities, stability, clear future of the state, level of compliance with laws in the country and others. So, the higher competitive ability of goods and services the higher the efficiency of resource use and level of people's living.

Parameters describing competitive ability of milk and dairy products can be divided to quantitative and economic (setting selling prices) parameters. Buyer's first step starts from evaluating the quality of the product and its price.

Milk and dairy products are one of food products which supply human health with the most useful stuff. In foreign countries annual consumption norm of dairy products vary between 185–477 kilos.

According to the information of the Milk Union nowadays domestic milk and dairy products cannot fully satisfy people's need in quality goods. Only 1/3 of produced raw materials are processed in the industry. Domestic enterprises supply with processed dairy products only 27% of consumers' need.

According to "Kazagrommarketinga" information and expertise center information annual consumption of milk and dairy products per capita in Kazakhstan is 260 kg, in Russia it is 305 kg.

Thus, in table 2 we can see that share of milk consumption rate in Kazakhstan is 63,5% (consumption rate of dairy products 260 kg, milk consumption rate is 164,92 L), in Belorussia it is 39,5%, in Kirgizstan it is 25,6%, sour cream consumption rate in Kirgizstan is 23%. In this table it is shown that dairy products consumption rate in Russia, Belorussia and Ukraina is in the same level, it depends on their geographical position. The lowest annual consumption rate of dairy products is in Kirgizstan, in total 184,8 kg, as consumption of milk and dairy products mostly depends on paying capacity. Kazakhstan is left behind Russia and Belorussia in terms of this.

In the Republic of Kazakhstan milk and dairy products are produced by agricultural enterprises, peasant farms and private enterprises. In 2006-2010 number of cows, volume of milk and dairy products produced increased in all categories of farms (table 3).

Table 1
Basis indicators of cattle farming development as of 1 January 2013 (in all categories of farms)

			2012	
			±	%
Production of cattle farming products				
Live weight cattle and poultry for slaughter, thousand tons	1 646,0	1 598,2	47,8	103,0
Cow milk, thousand tons	5 341,2	5 269,0	72,2	101,4
Chicken eggs, milion pieces	3 700,9	3 286,4	414,5	112,6
Cattle and poultry, thousand animals				
Herds	6 160,4	6 095,2	65,2	101,1
Including cows	2 778,8	2 717,2	61,6	102,3
Sheep	15 167,4	14 660,8	506,6	103,5
Goats	2 672,9	2 708,9	- 36	98,7
Pigs	1 356,1	1 326,2	29,9	102,3
Poultry	33 036,3	32 686,4	349,9	101,1

Table 2
Suggested consumption norm of dairy products per capita in foreign countries

Name of food product	Kazakhstan	Russia	Belorussia	Kirgizstan
Milk and dairy products, kg	260	305	304	184,8
Milk, L	164,92	53,28	120	47,28
Sour cream, kg	3,28	1,2	1,56	3,6
Curd, kg	3,28	7,56	9,84	9,12
Cheese, kg	3,28	1,8	2,4	-
Butter, kg	1,9	1,92	6	3,72

Table 3

Quantity of cows and volume of milk and dairy products produced in the Republic of Kazakhstan in 2006–2010

Indicator	Year					Changes in comparison with 2010, %	
	2006	2007	2008	2009	2010	2006	2010
Quantity of cows, thousand head	2376,2	2442,6	2569,0	2605,6	2675,4	112,6	102,7
Milk, thousand tons	4749,2	4926,0	5073,2	5198,0	5303,9	111,7	102,0
Processed milk and cream, tons	154412	179673	225816	258733	265508	171,9	102,6
Butter, tons	13040	19736	18596	19707	16598	127,3	84,2
Cheese and curd, tons	13033	14952	17042	17154	15473	118,7	90,2

Table 4

Milk production, import and export of milk products in Kazakhstan in 2006–2009, tons

Product name	Production				
	2007	2008	2009	2010	2010 compared to 2009, %
Processed milk and cream	197433	239532	220241	196250	89,1
Powdered milk and cream	4412	4124	3345	2834	84,7
Butter products	14982	17658	14379	12930	89,9
Cheese and curd	15936	15412	13698	11570	84,5
Concentrated milk and cream	9286	10852	7534	8043	106,8
Cultured milk products	92961	97765	91375	81863	89,6
Ice-cream	12543	12749	12200	11663	95,6
	Export				
Processed milk and cream	195,5	185,7	386,4	419,9	108,7
Powdered milk and cream	966	1835,8	13,8	1545	112
Butter products	966,4	488,5	604,2	510	84,4
Cheese and curd	1373,3	1235,5	957,4	1257,6	131,4
Concentrated milk and cream	247,3	4,5	56,2	511,4	9,1 ece
Cultured milk products	208,5	452,3	241,5	108,5	44,9
Ice-cream	38,7	44,7	86,6	248,4	2,9 ece
	Import				
Processed milk and cream	26638	26511	32084,9	38819,7	121
Powdered milk and cream	9338	11289,1	13363	10028,6	75
Butter products	7686,8	7151,5	5560,8	8825,5	158,7
Cheese and curd	10744,3	17706,7	18723,1	20201,3	107,9
Concentrated milk and cream	39472	41962	46338	36132,8	78
Cultured milk products	19948,3	28885,3	28078,3	29346,8	104,5
Ice-cream	12101,1	13266,8	11294,5	10111,3	89,5
	Share of import, %				
Processed milk and cream	11,8	9,9	12,7	16,5	129,9
Powdered milk and cream	73,0	83,1	80	88,6	111,1
Butter products	35,4	29,4	28,8	40,6	140,9
Cheese and curd	42,4	55,5	59,5	66,2	163
Concentrated milk and cream	81,3	79,4	86,1	82,8	96,1
Cultured milk products	17,6	22,8	23,6	26,4	111,8
Ice-cream	49,1	51,0	48,3	47	97,3

As we can see from Table 3 production of milk in all categories of farms in the republic increased by 11,7% and production of processed milk and cream increased by 71,9% from 2006 to 2010. Regarding quantity of cows in all categories of farms in 2008 2569,0 thousand heads, in 2009 2605,6 thousand heads, in 2010 2675,4 thousand

heads of cows were bred up. Compared to 2006 in 2010 quantity of heads increased by 12,6%.

Researches show that domestic producers of dairy products cannot fully satisfy needs of the market in milk and dairy products. In this regard import of milk products has increased lately (table 4).

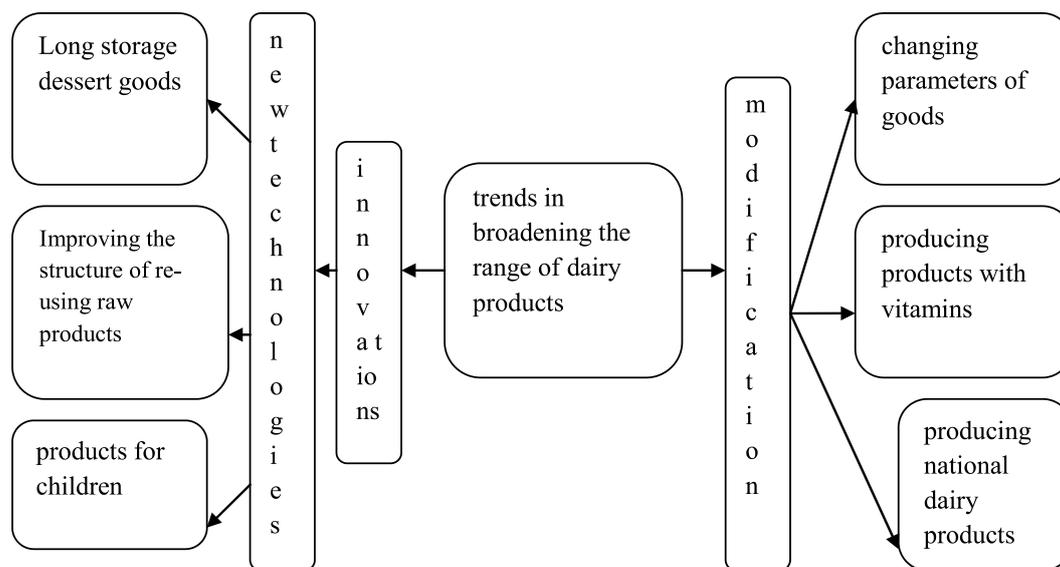


Fig. 1. Trends in broadening the range of dairy products

As we can see from Table 4 milk products import to our country is given in comparison of 2010 with 2007. During these years import of processed milk and cream products increased by 21%, import of cheese and curd increased by 7,9%, import of butter increased by 58,7%, import of cultured milk products increased by 4,5%. Besides, we can see that import of concentrated milk and cream, powdered milk and cream, ice-cream decreased. Main reasons of this is, firstly, low production capacity of milk enterprises, secondly, great demand for cheap sweet yoghurts and other dairy products from abroad (mainly, from Russia, Belorussia, Kirgizstan). Cheap dairy products from near and far abroad (yoghurt, hard cheese, curd etc.) are in great demand in internal market.

Switzerland is a motherland cheese production. pedigree cattle products are used in Switzerland. Main focus is maintained on development of cattle breeding. this should be practiced in Kazakhstan as well. Their pastures are very fertile as well. there are several land fertilization projects throughout Kazakhstan. As the fertility of the land is directly related to quality of the products. In Switzerland cows are at grass on top of the mountains. Thyme, jeerah, orchids grow on top of the mountains. and the sun warms the cattle. This land is called Gruyer. In middle ages earls lived there. Grewer cheese was first made there. At the end of summer cows eat white clover, blue clover, and in the winter they have dried hay. In this region a cow eats 100 kg of grass and 85 liters of water, and daily norm of milk is 25 liters. Cows are milked with special equipment and checked for dangerous

bacteria. Bactericidal flora, acidity percentage is checked again in cheese factories. 400 liters of milk is needed to prepare 35 kilos of cheese in a factory. milk is delivered to factories twice a day. Products are strictly controlled. “Tranch care” knives are used in milk factories. At the end products are stamped “Gruyer”. “Serak” curd is made of lactoserum-byproducts. Other byproducts serve as food for pigs. In total cattle is fed with 75 types of grass. Of course, quality of products is high as well. This experience should also be implemented in Kazakhstan, i.e. nowadays main issue in Kazakhstan is to increase heads of cattle and produce qualitative products.

“Sut” (milk) JSC in Pavlodar produces 250 tons of products a day. In his message to Kazakhstan people President Nazarbayev noted that by 2014 domestic goods should comprise more than 80% of food products in internal market. Main purpose is improving types and quality of goods and expansion of production volume. Starting from 2011 “Foodmaster” brand started to produce dairy products. Its products are consumed in many places including Atyrau region. Company specialists were trained at Milk University in France and got master degree in milk production. this enterprise produces more than 20 types of dairy products. In 2011 the enterprise shops were equipped with new equipment. “Foodmaster” is one of the first enterprises in Kazakhstan which implemented quality management system under food industry international standard ISO – 9001 – 2000. Milk packed in paper bag(tetropak) by using high technology equipment will not spoil for 21 days.

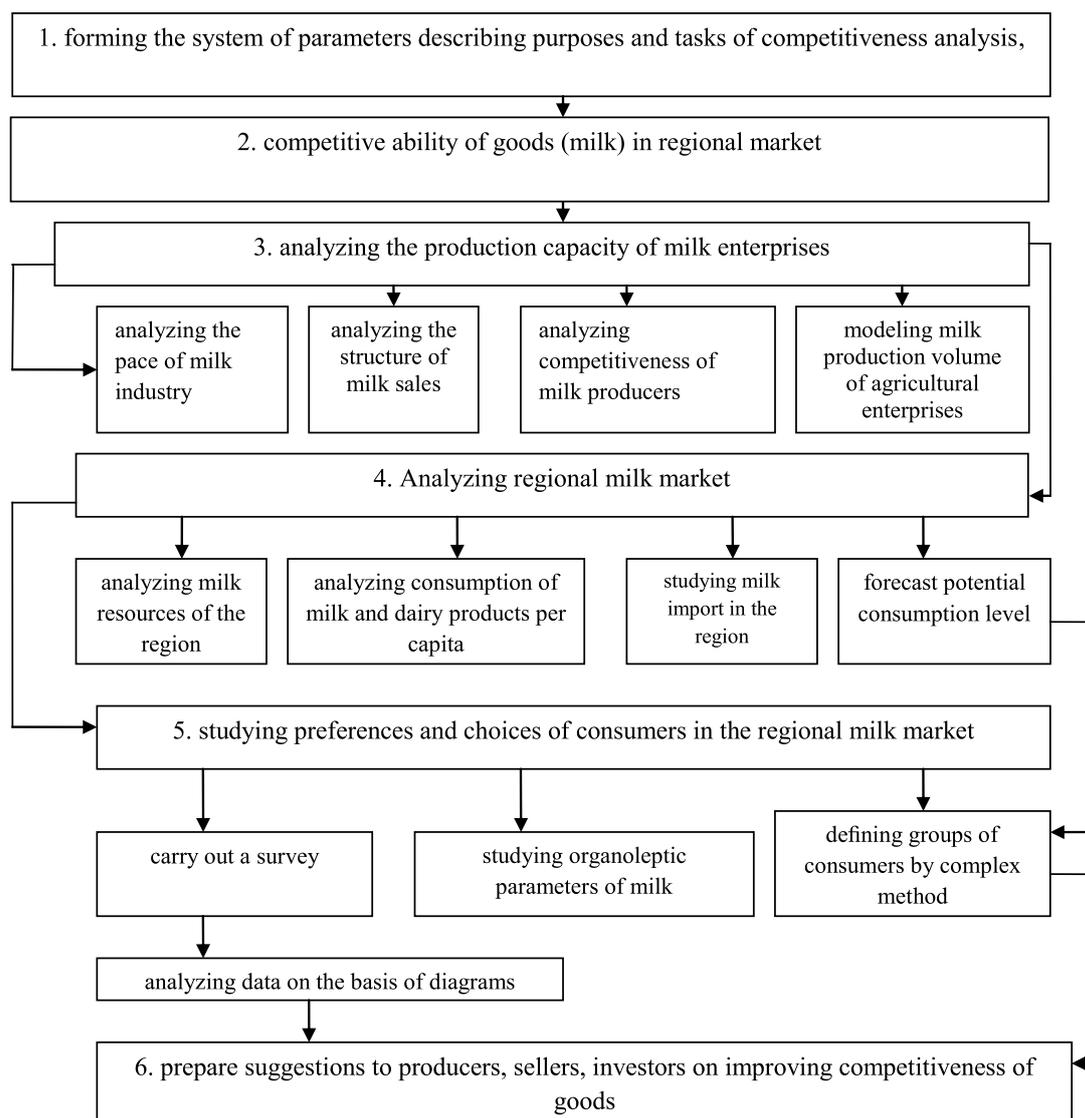


Fig. 2. Process of analyzing competitive ability of milk and dairy products in the regional market

First of all, it does not cause any harm to people's health, secondly, these products can be imported to far abroad countries. Besides, it is planned to buy "CIP" equipment to qualitatively wash packing. We need to contribute to usage of this equipment in Kazakhstan.

Currently, most dairy product enterprises in Kazakhstan produce only one type of product and processing technology of produced products is not well-established yet.

Another trend in improving the competitiveness of milk and dairy products is to broaden the range of products. Trends of broadening the range of milk and dairy products are shown in fig. 1.

To define the competitive ability of milk and dairy products it is necessary to carry out market researches showing the system of its parameters. In this regard we would like to present the process of analyzing competitive ability of milk and dairy products in regional market consisting of several stages (fig. 2).

As you can see from fig. 2 when conducting complex analysis of regional milk and dairy products market factors which directly impact competitive abilities are studied, they are actual competitors, actual and potential consumers and dairy products in the market.

Currently, milk supply in Kazakhstan is better. But low productivity of cows and

small range of goods produced by farms result in low productivity overall, consequently, dairy products suppliers try to increase prices and profits are very small. As a result, their products become very expensive in comparison with countries where salaries and pension benefits are very high. That is where the point is. Besides lots of competitive goods are entering our open market, which is bad for domestic producers.

Overall, population of the republic is fully supplied with milk and dairy products in accordance with national consumption rates. In 2010 each Kazakhstan citizen consumed 300 kilos of milk and dairy products on the average (according to Reprocessing and agrarian food market department of the RoK Ministry of Agriculture).

Thus, competitiveness is a multisided concept influenced by many different factors. Competitive product is a type of product which satisfies buyer's needs in the most optimal way. But if the market is full it may not be realized.

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*Materials of Conferences***THE EXPERIENCE OF ENZYME PREPARATIONS APPLICATION IN THE PROCESSING OF ANIMAL ORIGIN RAW MATERIALS**

Antipova L.V., Gorbunkov M.Y.,
Storablevtsev S.A.

*Voronezh State University of Engineering Technologies,
Voronezh, e-mail: c11111983@yandex.ru*

The significant progress in practical human activities has been achieved due to the emergence and development of biotechnology. It has deeply penetrated in food production as well. Vast knowledge of biological processes mechanisms in raw materials and products during storage and processing has allowed to develop products of high biological value based on the rational combination of food systems, to create environmentally friendly low-waste technologies, to get significant economic results with the application of living cells and enzymes, to implement intensive and non-traditional technologies of food and feed products, to create their new forms and sources. Currently enzymatic preparations for food and processing industry are very popular due to the possibility to change the structure of biopolymer molecules under mild conditions and at high speed, with the formation of substances adjusted to human physiology, where proteins are the most essential. Enzyme collagenase is produced by the joint-stock company "Bio-progress (Shchelkovo town, Moscow region) of hepatopankreas of Kamchatka crab (*Paralithodes camchatica*) in accordance with the approved documentation with the standard level of (proteolytic) activity equal to 70 units per gram. While studying the physico-chemical properties and biological activity we used recommendations [1].

It is established that the preparation has the highest activity in the range of 35 to 45 °C and pH 6, 7, 5. The calculation of kinetic parameters of hydrolysis of water-soluble, salt-soluble and alkali-soluble meat proteins showed that collagenase shows the least affinity with water-soluble proteins and shows a frank affinity with native collagen, differing by the highest rate of hydrolysis of the substrate. It gives to the preparation the advantage in the field of differentiated modifications of connective tissue proteins, and consequently of tissue in the structure of meat in general. The experimental studies found collagenase to be sustainable in saline environment within concentrations with technological value.

To study the influence of the preparation on the meat tissue we used microstructural analysis method after processing of objects with a solution of enzyme preparation and without it. Previously, crystal table salt (2.5%) and dry enzyme preparation (0,1%) had been put into distilled water, simulating

brine salting conditions. Processing of samples was carried out by dipping them into solutions in flasks with vibroshaking at a temperature of 0–4 °C. The sampling of prototypes was conducted at 4, 8, 12 hours intervals. The results are presented in fig. 1.

Reducing of the thickness of connective tissue membranes of muscle fibers, the reduction of loose connective tissue, weakening of the links between the fiber, and, as consequence, increase of the gaps between them, the weakened cross striation have been marked under the influence of the preparation on the meat of the superior quality (Fig. 1, c).

Such a character of changes confirms the activity of the enzyme preparation in relation to connective tissue proteins and actomyosin complex.

The described structural changes have a considerable effect on the functional and technological properties. It has been found in the course of experimental studies that moisture-adhesive and moisture-retaining power is significantly stimulated in large pieces of meat, but it is quickly decreased when the material is crushed due to the effectiveness of collagenase action. However, treatment with enzyme preparation leads to a sharp decrease in efforts of cutting along and across the fiber. Analysis of the output of meat after heat treatment has showed a positive effect of the preparation with 2,0–2,5 times reducing of exposure in salting.

Enzyme preparation "Protepsin" is produced on the base of CJSC "Plant of endocrine ferments", Rzhavki village, Moscow region.

Protepsin is an enzyme preparation of animal origin, made of chicken stomachs, it contains a complex of acid proteinases, its standard level of proteolytic activity is 100 u/g. As the results of research have shown, the preparation has the highest activity at pH 4,0–4,5 and 42–45 °C. Research studies of its substrate specificity, the calculation of kinematic characteristics in the hydrolysis of various substrates have allowed classifying it as a synergetic enzyme of the digestive tract, notably pepsin. Due to the effect on all of muscle protepsin increases moisture-adhesive ability and hydration of proteins without destroying the indispensable amino acids. This leads to a loosening of the meat structure, to an increase of the degree of penetration, to an increase of immobilized moisture volume and an increase of output by 10–20%.

Thus, the approaches and ways of application of the preparation in technology of processing of meat have been established.

The range of such products is quite wide. Domestic industry produces a wide assortment range of products on the basis of the developed technical documentation: rolls of beef, horse meat, mutton; ham of various types of raw materials and their combinations; various pork smoked products; protein-fat emulsion.

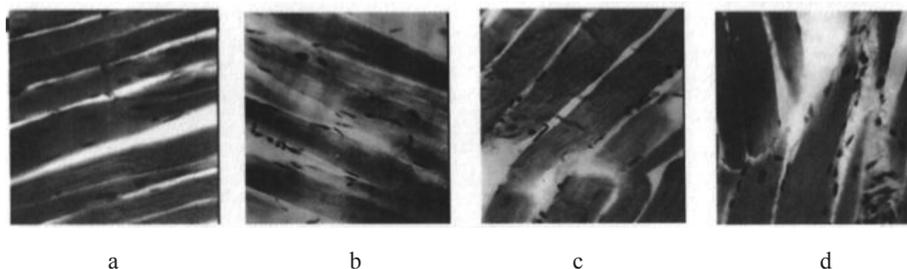


Fig. 1. The changes of the microstructure of superior quality beef under the action of collagenase: a) control (no treatment); b) the duration of treatment to 4 h; c) the duration of treatment – 8 h; d) the duration of treatment – 12 h



Fig. 2. The Range of cosmetic products on the basis of hydrolyzed keratin

The preparation “Protosubtilin G 10X” is derived from microbial source of *Bacillus subtilis* in conditions of the enzyme preparations plant, village Zelenogorsk, Tver region. The product is widely used for the production of hydrolysates from not assimilated proteins of meat origin and in preparative purposes. The active principle of enzyme preparation is endopeptidase with a molecular mass of 227000 kDa. Optimum action is pH 5–8,0, thermal optimum 40–45 °C. Standard activity is 100 U/g. Electro physical and chromatographic studies have shown high heterogeneity of protein composition of the preparation. It was interesting to explore its possibilities to influence on the protein keratin, which is the main component of the feather, horns, hooves, skin, hair. The interest to these proteins is that keratin-containing wastes make up to 7%. They have very limited application because of the specific chemical and spatial structures.

At the same time it is known that their amino acid composition is practically identical to the casein of milk, but by the content of sulfur-bearing amino acids (methionine, cystine, cysteine) they far exceed other natural proteins.

In the result of the fitting of conditions of disulfide bridges destruction, stabilizing molecule of keratin, we managed to get a soluble form of feather-downy raw material, which can be the basis for some

of useful products: hydrolysates of food and forage values, concentrate of sulfur-bearing amino acids for poultry. Even more convincing were the results in the receiving and application of hydrolysates in the composition of cosmetic products withing the conditions of production of concern “Techcon” (Moscow). The range of cosmetic products is successfully realized on the domestic market and it is in demand (fig. 2).

Thus, the promotion of enzyme technologies in industrial production is due to the scientific basis of the approaches and the development of innovative technical solutions. It is difficult to overvalue the availability, economic advisability, ecological and social importance of this direction of biotechnology in the practical human activity.

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ON ONE TECHNOLOGY FOR CREATING COMPUTER TRAINING PROGRAMS FOR MATHEMATICAL DISCIPLINES

Kaldarova B.S., Imankulova A.

*M. Auezov South-Kazakhstan State University,
e-mail: tan-1007@mail.ru*

The article deals with new computer technology designed to simplify the creation of computer models for the processes of teaching mathematical disciplines.

New computer technology, implemented in the form of tool system and designed to simplify the creation of computer models for the processes of teaching mathematical disciplines, is offered. In this technology all the advantages of following well-known technologies of similar purpose are reflected and their significant disadvantages are considered:

1. The use of technologies of object-oriented programming environments, such as Delphi, C++, C #, and others. This technology of the creation of computer training programs (CTP), called the “direct method”, may be applied by highly skilled programmers and it is beyond the power of users, which are not engaged programming. CTP, created by the direct method, are characterized by high quality of development. However, because of their closeness, there is a certain complexity of their modification.

2. The use of professional mathematical packages. Applying known mathematical packages such as Maple, MATLAB, Mathematica, MathCAD and others, one can develop CTP – virtual mathematical laboratories that quite successfully simulate the processes of teaching mathematical disciplines using libraries of appropriate packages. However, there is a certain complexity of using libraries of other packages in virtual mathematical laboratory and for the solution of similar problems it is necessary the participation of highly qualified professional with knowledge of the libraries’ features of mathematical packages.

Now among well-known mathematical packages MathCAD is the most effective tool in mathematical learning. The emergence of new versions of MathCAD is accompanied by the creation of effective tools related to the mathematical learning. For example, the appearance of the server version MathCAD Application Server (MAS) in 2003, allowed to transfer all the calculations from workstations to the servers, that opens up the wide possibilities of creating virtual mathematical laboratories for conducting distance learning.

3. Computer tool systems for the creation CTP. One manifestation of the use of computer modeling in IT-learning is the development of software tools for modeling learning processes on the example of tool systems (or TS CTP), which allow to create models (or CTP) with continuous feedback to the researcher, without programming. TS CTP are easy to learn and accessible to researchers,

who are not specialists in the field of programming. Nevertheless, the possibilities of CTP depend on quality indicators of utilities of TS CTP. This is a tangible restriction in creating CTP satisfying exquisite user requirements. [1-4].

Currently on the market of IT – technologies there is significant interest in the CTP, which mimic the processes of learning mathematical disciplines as they would take place in reality. Among the similar CTP greatest interest are open models with variable structure, which can use libraries of different packages and whose behavior changes in real time depending on upcoming events. Such relevance was the reason that we have dealt with problems of the development of computer technology, implemented as a tool system, which allows to create open models with variable structure for teaching mathematical disciplines.

The solution of the problem. To solve this problem it was proposed to use modern technologies (ADO, Internet, DataSnap, Real World) of object-oriented programming environment Delphi 7 Enterprise, and libraries of mathematical package MathCAD 2009 Professional, that allowed the development of tool system, later called “TS MASTER” and the kernel for open computer models with variable structure for teaching mathematical disciplines.

“TS MASTERS” allows to create various distros for given kernel, which are open virtual mathematical laboratories with variable structure. These virtual labs are designed to conduct teaching mathematical disciplines both on one PC, and in the local area network with a large number of workstations. Qualitative characteristics of such distros are directly dependent on tools used in the tool system and the properties of the kernel, where:

- as external utilities to create documents (files with the contents of lectures, laboratory and practical lessons, as well as test questions to them) for virtual mathematical laboratories, tool system uses components from libraries of known mathematical packages. Such arbitrariness in interaction with external tools allows “TS MASTER” to easily create open virtual mathematical laboratories of various levels of complexity and purpose. For example, to create virtual mathematical laboratories for teaching of general courses of higher mathematics, as external tools for the tool system the components of the package MathCAD are more preferred. As well as, for course on mathematical modeling the packages MATLAB and FEMLAB are best suited;

- built-in utilities of tool system make it easy to change the tree-like structure (graph) of the lessons content for distro to be created, as well as to link the vertices of graph (names of lessons) with access routes to created documents and save these connections in database (DB). As a result, created distro reacts to event of choice of any vertex of the graph by automatic forming SQL query to the appropriate database server (SQL Server), which executes

a query over the database. As a consequence, the distro opens the relevant documents and allows the computational experiments on them using appropriate mathematical packages.

Below the internal architecture of program complex is shown: “TS MASTER”, mathematical package, SQL Server, Remote Data Module, kernel for open computer models with variable structure and distro for the kernel, which is three-tier client / server application for conducting of distance learning in the local computer network.

Shown in Figure open three-tier virtual mathematical laboratory with variable structure consists of three parts:

– **Client part** consists of the kernel and distro to it, as well as the corresponding mathematical package. Kernel contains the objects of support of DataSnap technology on the client side (the objects encapsulated from the class TClientDataSet) and objects of socket programming TCP / IP (objects encapsulated from the class TSocetConnection) for its connection with the server part. To optimize queries to the server the language SQL is used. Distro is a user interface and interacts with the kernel through a data source from the class TDataSource. Objects that make up this distro allow to visualize the working with documents. Among them objects encapsulated from the class TWebBrowser are significant. They allow to use components from libraries of corresponding mathematical packages.

– **Application server** runs on the server side. It is mechanism of connecting of client application with SQL Server. It is also designed to minimize the load on the SQL Server. Its kernel consists of the remote data module (Remote Data Module – RDM). RDM contains objects of support of DataSnap technology on the server side (the objects encapsulated from the class TDataSetProvider) and objects that support ADO technology to access SQL Server, which works with the database that stores the table with the routes of access to documents (the content of lectures, laboratory works, exercises and tests). Due to the flexibility of technology ADO, there is an easy opportunity to optimize the operation of the three-tier virtual mathematical laboratory, replacing the database server by more powerful system with an appropriate choice of ISP connection. RDM is registered to the server SocetServer and runs for each access of client to the server.

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INFORMATION TECHNOLOGY PROJECT “ADANAT”

Khlopkov Y.I.

*Central Aerohydrodynamic Institute, Zhukovsky,
Moscow Institute of Physics and Technology (State
University), Dolgoprudny, e-mail: khlopkov@falt.ru*

The development of aviation and space technologies require reliable data on the aerodynamic and aerothermodynamic characteristics of hypersonic vehicles in the whole range of flow regimes, i.e., from the continuum flow regime up to the free-molecular regime. During de-orbiting, the spacecraft passes through the free molecular, then through the transitional regime and the finalized flight is in the continuum flow.

It is well known that for flight in the upper atmosphere, where it is necessary to take into account the molecular structure of gas and using Boltzmann equation and corresponding numerical methods of simulation [1]. While aircraft are moving in low atmosphere, the problems are reduced to the problems that can be solved in the frame of continuum theory or, to be more precise, by application of the Navier-Stokes equations and Euler equations. It is natural to create engineering methods, justified by cumulative data of experimental, theoretical and numerical results, enabling the prediction of aerodynamics characteristics of complex bodies in the transitional regime [2].

Computer modeling allows to quickly analyze the aerodynamic characteristics of hypersonic vehicles by using theoretical and experimental research in aerodynamics of hypersonic flows. The basic quantitative tool for study of hypersonic rarefied flows is direct simulation Monte Carlo method (DSMC) [3] and it is required large amount of computer memory and performance and unreasonable expensive at the initial stage of spacecraft design and trajectory analysis. The solution for this problem is the approximate engineering methods. The Monte Carlo method remains the most reliable approach, together with the local engineering methods, that provides good results for the global aerodynamic coefficients. In the work of [2, 12] indicated that local engineering methods could have significant effect on aerodynamic characteristics of various hypersonic vehicles.

At the Department of Aeromechanics and Flight Engineering (DAFE) of Moscow Institute of Physics and Technology (MIPT) was developed the

information technology project “ADANAT” (Aerodynamic Analysis of Ensuring the Establishment of Aviation and Space Techniques) by Professor Yuri Ivanovich Khlopkov. Many research grants from the Russian Foundation for Basic Research (RFBR) supported this project. The parallel calculation center of DAFE MIPT is equipped with the modern CFD software. DAFE with the famous organizations of Russia “TsAGI, TsIAM, Dorodnicyn Computing Centre of the Russian Academy of Sciences, Institute for Problems in Mechanics of the Russian Academy of Sciences, Sukhoi Aviation Holding Company, engineering company TESIS, etc” was defined many fundamental problems in the field of creation of new generation of aviation and space techniques. Development of the center allowed promoting in the solution of the most complex challenges of computing in aerothermodynamics problems. Some of these are the problems of hypersonic aerothermodynamics, rarefied gas dynamics and task about flows in turbojets, etc. Under the projects some books were published [4-12, 2].

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*Materials of Conferences***THE COMPARATIVE ANALYSIS
OF THE DEVELOPMENT OF BRANCHES
OF PLANT SCIENCE IN COUNTRY FARMS
OF THE TVER AND YAROSLAVL REGIONS**

Kulakov A.V.

*The Yaroslavl state pedagogical university named after
K.D. Ushinsky, e-mail: andrey-394169@mail.ru*

Country farms – one of the most important elements of agricultural production in modern economic realities. The analysis of the development of plant science in close to each other in many parameters regions of Russia shows that the specific weight of country farms of the Tver region is twice higher than in Yaroslavl region in a total amount of production of agriculture in actually operating prices, percentage of farms of all categories. The main cultures made by country farms of these regions are potato growing, cultivation of feeding and industrial crops. Thus, structure of yielding of crop production is not differed by farmers of the Yaroslavl and Tver regions – they consist of the identical components differing only in quantitative indices. However more advantageous geographical position of the Tver region gives indisputable advantage to the development of country farms.

Northern areas of the Central economic region (Yaroslavl and Tver regions) are chosen for comparison. Territories of the considered areas are similar in a number of the main natural indicators especially important for farming, and for creation and development of country farms. They are agro climatic and climatic conditions, provision with inner waters and land resources, type of soil and many other things. Development of agricultural production is non-uniform in these areas in spite of similar environment.

Specific weight of country farms of the Tver region made 4% in total production of agriculture in actually operating prices, percentage of farms of all categories, it is almost twice higher than in Yaroslavl region (about 1,7%).

Such distinction can be explained by the areas of the territory this regions. The Tver region is much more on the area than Yaroslavl region, it explains a large number of the registered country farms. It should be noted that the number of country farms in the Tver region in 1992 made 2310 and it is more than in the Yaroslavl region in 2009–2193 farms.

46,2 thousand hectares are used in structure of agricultural grounds of the Yaroslavl region, from them 39,9 thousand hectares fall to agricultural grounds, and 30,9 thousand hectares fall to farm fields [1].

The area falling on one farms of the Yaroslavl region makes about 21 hectare while in the Tver region it is 25 hectares now.

In 2013 the cultivated area of the Yaroslavl farmer sector made 8 thousand hectares, and of the

Tver region – 48,3tys. hectare. The greatest part of farm fields in Yaroslavl region and Tver region falls to forage crops (5,4 thousand hectares and 37,8 thousand hectares respectively), the smallest part to vegetable and industrial crops (0,2 thousand hectares at farmers of both areas). 0,3 thousand hectares are engaged under crops of small grains in farms of the Yaroslavl region, while in the Tver region it is 7,3 thousand hectare. 0,8 thousand hectares are engaged under potatoes in the Yaroslavl region and 2,7 thousand hectares in the Tver region.

The indicator of the Tver region exceeds Yaroslavl region on gross collection of potatoes in farms.

It is explained firstly by the big areas occupied under bedding of potatoes, faster warming up and drying-out of the soil (feature of climate of the Tver region), it gives the chance at the end of April to start bedding and influences favorably development of potatoes, and also high level of mechanization of agricultural works. The ploughing, dragging and unearthing of potatoes is completely mechanized in the Tver region [5].

Gross collection of vegetables in country farms of the Yaroslavl region is much higher, than in the Tver region. That is connected with historically developed prerequisites (first of all it is the Rostov municipal area which delivered vegetables to an imperial table as early as under Peter the Great), with the close arrangement of the districts of the Yaroslavl region which are engaged in vegetable growing to the centers of sale (Moscow, Yaroslavl) [5].

Gross collecting of grain and pulse crops is insignificant in the Tver and Yaroslavl regions that is connected with adverse agroclimatic conditions for cultivation of grain in both areas and also with increasing of prime cost and it reduction of cultivated areas.

The main industrial crop in country farms of the Yaroslavl and Tver regions is fiber flax. Number of gross collecting of flax and its cultivated areas are more in farms of the Tver region. It is defined by more favorable conditions for its growth (positive balance of moistness that is its arrival in the form of rainfall exceeds an expense on evaporation). Flax production is a traditional branch of farms of the Tver region. But even in this region the flax production isn't the leading branch that is connected with weak mechanization, shortage of manpower, violation in production technologies of flax. These are the main reasons of considerable reduction of cultivated areas, productivity, outputs and quality of flax in farms of Yaroslavl and the Tver regions. All large farms of production of flax in the Tver region are at the same time also the main producers of potatoes.

Thus, structure of production of crop production by farmers of the Yaroslavl and Tver areas is not differed essentially – they consist of the identical components differing among themselves in quantitative indices.

Why then the Tver region gives one of the highest rates of agricultural production by country farms?

The Tver region has more favorable economic and geographical position. It is located in the center of Russia as well as Yaroslavl. But the Tver region is unlikely to Yaroslavl region in close proximity not only to Moscow, but also to St. Petersburg. It represents the contact zone of the center connecting it with northwest and northern regions of the European Russia, the Baltics and Northland. It is inevitable the reorientation of economic interests of the Center and other regions of Russia from the southern directions on the northern in new geopolitical conditions essential. The role of the ports of Baltic and the North Sea grew. In this situation the Tver region receives new incentives for activation of economic life and use of benefits of a geographical position [8].

Under the conditions of the Tver region the plant science of farms is closely connected with animal industry and generally develops not as commodity branch, unlike farms of the Yaroslavl region, and as food supply of animal industry.

The Tver region can favourably use already existing transport infrastructure providing it steady contacts with the Russian and foreign regions. The immediate vicinity with the Moscow region and Moscow makes the area attractive to domestic and foreign investors.

Thus, many differences are found by comparison of two similar areas and they are to the disfavor of the Yaroslavl region. There are many things to learn at the farms of the Tver region by the Yaroslavl agricultural producers, heads of departments of agriculture of the Yaroslavl region

in spite of rather low indicators of farms of the Tver region.

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*Materials of Conferences***REGIONAL GEO-ECOLOGICAL ATLAS
OF EAST KAZAKHSTAN**

Egorina A.V., Lineva L.A., Peremitina S.V.,
Kaysina M.I., Bolusaeva K.M.

*D. Serikbayev EKSTU, Ust-Kamenogorsk,
e-mail: av_egorina@mail.ru*

The environmental conditions of East Kazakhstan are rich, varied and subject to centuries of economic use. Modern development of entrepreneurial activity in the mining and manufacturing industries, agriculture, urban development and transport only accelerated intensive antropogenization of all components of the nature from the geological substrate to biota, which is inevitably led to a change of the virgin image of geosystems disappearance from the face of the earth entire tracts and facies. Satellite imagery is a silent witness of progressive growth and areal development of the technological, agricultural, transport, residential and gerrogene classes of anthropogenic impacts on the surface of natural systems, and sometimes the complete disappearance of the latter.

Wealthy factual material on the natural environment and achieve scientific research in the field of regional geocology, practicality and the need for cartographic regional materials has led to the need to integrate ecological and cartographic research on integrated thematic mapping. It is regional geo-environmental Atlas of East Kazakhstan.

Preparing for the establishment of a regional small-scale geo-ecological atlas has the specificity and it is in our opinion the following:

1. Analysis and systematization of regional factual material;
2. Compliance with the principles and methods of modern theme – geo-environmental mapping;
3. Analysis of experience in creating similar regional maps of adjacent border areas (Altai Region, Russia);
4. Guided by the principles of content and structural features of the National Atlas of the Republic of Kazakhstan.

The work is carried out within the financing of the Committee on Science of the Republic of Kazakhstan on priority “Intellectual potential of the country” and on priority “Basic research in the natural sciences” in the scientific program of the project “Simulation of the degree of deformation of geosystems of East Kazakhstan under the influence of technogenic” (2012–2014).

On the content the Atlas is regional, small-scale and it is represented by 4 blocks: Introductory, Physical geographic, Economic geographical and Environmental. There are 90 cards, such as “Physical map of East Kazakhstan” (scale 1: 2,000,000).

The process of creating maps implemented in phases:

Step 1: Creating a project based cards structural-genetic principle display the content, purpose and basic requirements for the map: the main traditional elements of its content, thematic basis, the mathematical basis (projection scale), the thematic content, the legend, the auxiliary equipment.

Step 2: Creating a program card: name, scope, purpose, mathematical basis, cartographic representation, thematic content, cartographic design, the legend, the principles of integration, literary and cartographic sources, the description of the thematic content of the map.

Step 3: Creating an instance of copyright of map.

Step 4: Creating an electronic version of the map.

The work is carried out within the geographical approach to environmental mapping: orientation when creating maps of ecological unit on the methodological basis for environmental mapping (landscape basis, territorial and spatial integration of environmental information, the content of geo-environmental maps, geo-ecological zoning hierarchy of units).

There are *maps of human impacts and environmental changes under the influence of human activities* according to the classification of environmental unit maps.

They are classified as inventory as they reflect accounting and descriptive characteristics of contamination. Territorial structure of pollution is given in the complex physical, chemical, biological, short-term and long-term showing the main types of regional pollution: torch, compact, spotted and concentric.

We adhere to a relatively well-established and generally accepted classification of scientific and applied orientation in the matter of classification of ecological maps at all variety of classifications. Create maps are inventory (accounting and descriptive object), evaluation (state of the environment), the content – antropogene impact types of economic activity; on purpose – research and practical environmental activities, inventory and assessment, with the aim of administrative use and environmental education, education and training.

Remoting of sensing data (satellite images, aerial photos), statistics, results of field mapping in key areas, analysis of the literature and library materials are served by the reference point information for mapping.

The main methodological techniques when working on the creation of maps are visual, dimensions on landscape maps, graphics, statistical techniques and elements of geoinformation mapping.

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NEW OIL SORBENTS BASED ON WASTES OF PLANT MATERIALS PROCESSING

Myrzaliyeva S.K., Kerimkulova A.Z.

Kazakh National technological university named after K.I. Satpayev, e-mail: saulekerchaiz@mail.ru

One of the most important aspects of the protection of ecological purity of the hydrosphere of refining industry enterprises is the issue of improving the structure of water consumption and spillway. The main pollutants present in the wastewater are oil refineries, suspended solids, salts, organic compounds, phenols, ammonia nitrogen, dissolved hydrogen sulfide. The rate of accumulation of petroleum products as a result of anthropogenic pollution in water and soil ecosystems is far ahead of their rate of biodegradation in a natural way, and existing technologies do not allow to cope with such contamination quickly and efficiently. Perspective direction of intensification of treatment processes of wastewater containing toxic and difficult-oxidized substances is a biosorbent method that does not require significant capital expenditures. The essence of this method is the use of high concentrations of biomass on the media. In this case, the sorbent has a dual function: firstly, it is the carrier of immobilized microorganisms; secondly, because of its great sorption capacity provides quick adsorp-

tion of toxic substrate. New solution in our research is non-reagent physical-chemical treatment of natural materials (wastes of processing of agricultural products, wood processing enterprises wastes) for getting oil sorbents. The most attractive substances for their production are natural organic raw materials and waste products of plant origin. They usually are an integral part of ecosystems. Therefore, sorbents based on it are most relevant to environmental requirements. Natural sorbents are suitable for the process wastewater treatment from organic and oil products with medium and high molecular weight. Promising oil sorbents are sorbents based on the husk of cereals, rice, barley, wheat. Their action is particularly effective in the collection of the heavy oil fractions. Using microorganisms immobilized on various media during the process of the local sewage treatment allows to achieve a high degree of biodegradation (95-97 wt. %) of pollutants for a relatively short period of time. The proposed method of treatment has several advantages:

- ease of implementation;
- the ability to regenerate the sorbent;
- environmental safety of the cleaning process;
- relatively low cost of obtaining and using the sorbent.

During the regeneration of spent sorbent recovered oil products, which can be sent for recycling, are extracted from it or disposed. The spent sorbent not regenerated cannot be used in production of new materials of functional applications. The uniqueness of project is the development of modern rational technology of sewage treatment in the enterprises of oil industry with the introduction of new solutions in the technological scheme of sewage treatment, which allows to reduce the discharge of pollutants: oil is not more than 0.2 mg/l; phenol not more than 0.09 mg/l; suspended particles not more than 20 mg/l; chlorides (as Cl-) are not more than 600 mg/l; sulfates (as SO₄²⁻) are not more than 450 mg/l; surfactant not more than 0.4 mg/l.

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*Materials of Conferences***KAZAKH WOMAN – OIL IN THE GREAT PATRIOTIC WAR**

Berdyguzhin L.B., Shymanov Z.Z.,
 Muhanbedieva G.K., Dosetova A.A., Asimov K.S.
*Atyrau State University. H. Dosmukhamedov SIC
 im. Kabdulova, Atyrau, e-mail: berdyguzhin@mail.ru*

The expression “level of culture is reflected primarily in the legal status of women” becomes clearer if we look at the fate of the weak half of Petroleum victims and hunger, cold and the oil industry. Involvement of women in the oil industry was due to the discovery in 1930 of various technical courses and educational institutions.

Mass involvement of women in oil production was due to the Great Patriotic War of 1941–1945.

Article, which was published July 12, 1941 in Room 163 of the regional newspaper Guryev region “socialist construction” says: Bringing feminine power into production.

Currently, the entire Soviet people all his will and strength to making to defeat the enemy in World War II. Every honest citizen of his devotion to the Soviets of the Communist Party, the Soviet government, the people of the great leader Comrade Stalin proved his selfless work. Assists the Red Army and Navy to deal a fatal blow to the enemy. All Soviet boys and girls as one went to the front. Equal Soviet Red Army women help to strengthen the rear make the patriotic cause.

A lot of women are working in good faith by sending their husbands, brothers, fathers and children to the front. In one of the rooms of the newspaper “Pravda” of June 25 is the letter of working women to their husbands, brothers, fathers, drafted into the Red Army, which says: “Our Mother, favorite! At the call of the government you go to war with the enemy. Are you coming to the front, we remain in the rear. But for us there is no difference between the front and rear. We in the production of all its forces surrender to provide you with everything you need”. That voice of a real Soviet woman – patriot.

Women actively working for the good of the homeland, and in many oilfield Emba. In the oil mill Emba district work in 1116 women. Many of them show good examples of labor productivity. Names Stakhanovite Golovanova, turner oil irrigation office, awarded the badge “Excellence in oil production in the USSR”, Nazarova, electrician geological – search firm, awarded testimonial People’s Commissariat of the oil industry of the USSR, Zhubaniyazovoy, operator – Stakhanovite Makat fishing Baytuakovoy, Stakhanovite Dossor fishery, known to all workers of the area. They perform with dignity all their assigned responsibilities.

In Emba growing ranks of women – specialists who have mastered the new technique. You

can see dozens of women who successfully master the technique. 18 women who completed the course received a driver’s license. Among them Kolpakov, Lenshin, Romanova, Ermekpaeva perfectly finish the courses. Currently, they may drive and service it.

Personnel department oil combine Kazakhstan in the near future plans to train 500 professionals through various courses. In all of these courses prepare womens. Inter they have operators, tractor drivers, electricians and other construction workers.

Party, government, trade union and Komsomol organizations should assist in the implementation of measures for the development of the oil industry.

So far, the involvement of women in production work in the oil industry is not at the proper level. In the production of professional women was not enough. In the largest fisheries plant – Dossor – 71, Bayshonase- 78, Makat – 73 women – experts. Many of them work not in the production of, and in bureau. V one of the largest crafts plant – Gurievsk technical plant quite a few women.

Until recently, some party, trade union organizations and farm managers are not paying enough attention to the involvement of women in production.

Now it is time to involve more women in productive work force. If employees will be called to the front, they must take the place of women. Every woman, girl, takes the place of his father, brother, husband, should provide the Red Army with everything you need. Workers in the oil field, trained in driving tractors, machinery, repair drill wells instead of getting men and develops oil needed the Red Army. Each oil field industry and its work should lead respectively goals and objectives of the new conditions.

Women do not know who gave the absence of men who had gone to the front, rear become real soldiers in those years.

We need men with a strong will

Great for business – the poet – wars Mahambet Utemisov about people without whose efforts to win the war would have been impossible.

Emba oil came from many prominent leaders, past fire and water. They were proud of Emba oil.

Balganym Nurtaskyzy Dosbaeva then was a senior operator of the oil-producing area. The fate of early custodial parent Balganym was difficult. With 12 years was a servant in different people, and where seen how cruel life. But loving life and clean, she had been in this condition for a long time. Strive for equality bestowed by the Soviet government. In 1930, out of the wilderness came to work in the workplace. First worked in Dossor, then – in Eskene operator, where it was seen to be active in the development of observation and oil equipment.

“After coming into production, – she writes – quickly realized the essence of their work. Joined Stakhanovists. Since doing the norm over the plan”.

This is not limited. I was in school educational program, improved knowledge. Noticing this, the management of production sends it to a two-month training course at the Masters Guriev (Atyrau) Oil College. When the Great Patriotic War, she worked in the fishery Bayshonas. In difficult times of shortage of power, production managers, without hesitation, raised B. Dosbaevu to place a supervisor.

Now she began to work with even greater impact forces. Region Party Committee about her work, wrote in the Communist Party of Kazakhstan: “The senior operator communist comrade Dosbaeva caring for the wells carefully, the site keeps clean, without stopping productivity has been reduced to zero. In good faith to work; Wizard performs all tasks in a timely manner and without question”. On its proposal in the fishery was established Bayshonas female portion. His head was appointed operator Stakhanovite Balganym Dosbaeva. Thus, it has evolved from the former commander of workers in manufacturing. As a Communist, she had to do a lot of community work. If at first served as Secretary of the Party organization, was soon elected as a member of the party bureau fishing Party Committee. Activist public, industrial work, mentor youth B. Dosbaeva later than 3 times, was elected deputy of the Supreme Soviet of the USSR.

During the war, the name of a petroleum-girl N. Shagyrovoy (1922-1974) was an example for many. In those days, among the oil was an unwritten rule – put in running condition all wells, and other settings. If there were errors – you need to be quickly repaired; if you do not have time to tinker in his shift, then reconstituted with changer.

Operator Bayshonasa typing Shagyrova got the night shift in this situation. (of course, it was not first) cut short the tape well № 388, and she stopped. Become clogged. The operator communicates with the master and taken to repair. Making sure that you are ready to work, receives approval from the master. At 12 am well again gives the product.

This meant that Shagyrova held as oil and reached the level of an experienced specialist. A few years ago, coming to production, it was modest, thin girl. Dropped out of school, decided to go to production, because there was no one to provide sick mother and the old father. Head was horrified by her appearance, but she did not go and apply for a job. Only met by chance at the time familiar people were able to explain its position is superior and, thus, to persuade her to take on the job.

The girl worked tirelessly. And quickly mastered the technique. First, it was accepted as a trainee minder. Soon was an assistant cameraman. When all the forces were thrown on the increase in oil production for the front, picking up not left out. On the contrary, was in the forefront. Looking for ways to increase the product.

One of the founders in the fishery Bayshonas female section was typing. A lot, in spite of their affiliation, no lagged behind men. Because his boss was in no way inferior to men Balganym Dosbaeva and worked such dedicated people work like typing Shagyrova. Her work was appreciated. Was awarded the medal “For valiant work”. Later became the heroes of labor.

At the edge of the Emba, including oil, a man to be awarded such a high rank, began gaining Shagyrova.

Together with Kazakh girl oilmen worked shoulder to shoulder representatives of other nationalities who came by the will of fate in the Kazakh land. These were people like: T.A.Han, A.D. Kvashenkina.

Same Tatyana Andreevny Han way of life example of generations.

Born December 21, 1924 in Vladivostok, in the Far East of Russia. In 1942 he graduated from Guryev (Atyrau) College with a degree in petroleum exploitation of oil and gas wells, and goes fishing in Makati. Then the military action were the fiercest. 17-year-old girl is arranged by the operator in the plot № 7, which is considered the heart of the fishery. January. Severe frost. This time it was easy? Tanya was also one of them. She, too, like everyone else, immediately began to work. For her, it became commonplace to stand for 12 hours on duty, to observe the work well, if necessary, repair the hole. Useful knowledge gained in college. But Tatiana Andreevna worked as an operator only 3 months. Watching her work, foreman Abish Sulejmenov assigns it to a skilled worker section № 7. did not say that a little experience, and Tanya took the case. Organized by the youth of his shift, to ensure proper operation of wells. Six months later, her own appointed master of the site. This is a reason.

In the area № 7 though it was a lot of oil, but the work did not go. Lagged behind the others too it. Tanya began to work through their strength. For days on horseback went round hole. If honor, that the oil is extracted in swamp land, all this girl not only see, but also went through all the difficulties.

As a result of hard work site № 7 Tanya Khan broke 1-Place the shop, leaving the title lagging. Then attached great importance to Intl Politic komunist, among precinct competition. They added their authority. Argue with a plot two-time winner of the Order of Lenin Abdesha Bayarystanova in Bayshonase, she was again the winner. That was in 1943. For this decision of the People’s Commissariat of oil industry for the first time Tatiana Andreevna was given the title of Creation of the girls and women teams oil production was initiated triple deputy of the Supreme Soviet of the USSR Balganym Dosbaevoy. In fisheries Makat it supported Tatyana Andreevna Khan. About her such noble deeds was written in district, regional, national newspapers; in the magazine “Zhuldyz”, “Space” were published essays. She was awarded the Lenin Komsomol Prize.

Tatiana Andreevna Khan worked as a foreman in Makat oil until July 26, 1945. So, during the war to produce oil for the Great Victory; as said Bauyrzhan Momysuly "stood stone in the throat of the enemy". While Tatiana Andreevna was one of the first professional women oil technicians. And went down in history. Her career after the war continued in the second methodological workshop Makati. This method is also used for the first time in the history of the Emba. His trust only experienced people. Tatiana Andreevna here and showed their skills. First-class master of oil.

In the production was not an emergency, on the contrary, increased the volume of the water tower, and were achieved more success. Later she became a research engineer, safety specialist. In 1950, given its long-standing practice, the order of the association "Kazakhstan oil" she was sent to the deputy director of educational industrial plant. Then the director of the plant was a scientist and engineer Viktor Berezutski.

T.A. Han was awarded the Order "Red Banner of Labor", various medals. Letters of appreciation received from the People's Commissariat of oil, the Supreme Council of the Republic, the oil unions departments simply do not count.

Kvashenkina Augustine Davydovna – geological technician. Graduate college Guryevsky oil. (1941). Honored Oilman of the Kazakh SSR. He started his career as a geologist in the oil field Kulsary. In the years 1944–1947 was a geologist in the oil field Komsomol, chief geologist, pump house foreman, engineer in Dossor.

During the war and after it was revealed the talent of one of the graduates of the college Guryevsky oil – B. Zhumagalieva.

Zhumagalieva Balzhan (1917–2004) was born in 1917 in the city of Atyrau (ex Guryev). Since 1944, a member of the Communist Party. Education – secondary. In 1936 she graduated from Guryevsky Oil College with a degree in geological technician. He started his career in 1936 collector technician – geologist in the oil field Eskene. In the years 1939–1962 – geologist, Master, Head of Department, Deputy Director in the fields Sagyz, Dossor, Makat; was the director of fisheries Dossor. In 1968, the oilfield Kenkiyak was a senior geologist guide in the Atyrau Regional Council of Trade Unions. She was awarded the Order of "Honor", several medals, diplomas of the Supreme Council of the Kazakh SSR.

Among intensively fished "black gold" and took part in the competition of professional women were J. Segizalieva, L.G. Sofenreyter, V.A. Shilina.

Segizalieva Jibek (1925–2005) – oilman. Veteran Emba, graduated from trade schools № 16 in Dossor. He started his career in 1943 as an assistant cameraman in the oil field Dossor. '33 Worked in this field by the operator of oil production. She was awarded the Order of Lenin, Red Banner of Labor, the medal "For brave labor" (1999), diplomas.

Elected deputy of the Supreme Soviet of the USSR Kaz (5 times), was a member of the Central Committee of Trade Unions of Kazakhstan (1953–1957).

Sofenreyter Lydia G. (1915–1987) – geological technician. She graduated from the College Guryevsky oil. In 1935 he was a geological technician, senior laboratory assistant in the office of geological exploration association "Emba oil". In 1939 – the Chief of the Central Research Laboratory of Plant "Kazakhstan oil". In 1941 – the senior collector in geological exploration party Inder.

In 1943 – Accounting Technician interpreter, a senior interpreter, theme party chief in council "Kazakhstan oil geophysics" engineer seismic interpreter Party № 9, senior geologist Council. In 1960, senior geologist, senior geophysicist at the Geophysical Expedition Ile Kazakh geophysical trust.

Shilin Valentina was born February 20, 1926 in Atyrau (ex Guryev). In 1948 she graduated from the Polytechnic Guryevsky. After – came in 1948 in the Moscow Institute of Oil Gubkin, and in 1952, graduating, got geophysicist in the seismic party control "Kazakhstaneftegazrazvedka". Then – senior engineer, head of the party. Until retirement worked in this area. For the brave work was awarded two medals, the title of "Winner of socialist competition" and several letters. Working, engaged in social and political activities, led the women's committee of management, was elected to the city council, the Supreme Council of the Kazakh SSR 6th convocation in 1963.

Each heart was catchwords National Hero of Kazakhstan Bauyrzhan Momysuly:

Than to say that I did,
It is necessary to say a thousand.
Than to say that thousands,
Simple: the handiwork of the hero.
A hero – he was not alone,
He is one with the people after all.
Who would have created everything,
If I'm not out of a thousand,
And the hero is not popular?

Indeed, in the Great Victory has a lot all over the country, all our people. When the war killed thousands of compatriots who remained in the rear impressed by his actions, such heroism. If you submit a belligerent soldier flag of the country, the employee was the rear base of the flag.

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SOME ASPECTS OF THE HISTORY OF BUKEYEV KHANATE

Berdyguzhin L.B., Abdildina B.S.,
Asil K., Tashtanov J.

Atyrau State University. H. Dosmukhamedov SIC im. Kabdulova, Atyrau, e-mail: berdyguzhin@mail.ru

According to the historian of the 16th century, Mohammed Haydar Dulati Kazakh Khanate was established in 1465. In historical science, Kazakhstan has a number of statements on the date of formation of the Kazakh Khanate. The researcher calls T. Sultanov date education Kazakh Khanate in 1470-71 years N. Mynzhan in 1456, A Khasevov in 1445. Fruitfully engaged in the study of the Kazakh Khanate K. Pischulina, S. Zholdaspayuly and B. Karibaev fully agrees opinion M. H. Dulati. Founders Kazakh Khanate were the descendants of the founder of the Ak Orda Urus Khan Sultani Kerey and Zhanibek. On opinion of the investigator V.P. Yudina during the reign of Urus Khan, the Kazakhs were not called yet Kazakhs.

Only after carting Kerey and Zhanibek in the territory of the Chu River and Kozybasy word becomes ethnonym Kazakh. A Kazakh khans and Kerey Janibek are really headed Kazakhs. Soon then Kazakh word applies to the vast expanses of the Dasht-i Kipchak. According to researchers until the middle of the seventeenth century there Overall Kazakh unity. The rulers of this period Kasim Khan (1511–1518), Khaknazar (1538–1580), Shygyay (1580–1582), Tauekel (1582–1598), Yesim Khan (1598–1628) called the owners did not separate hordes, and hanami all Kazakhs. Kazakh Bies – supporters of unification into a single state-not in vain then, always mentioned Kasim Khan and Yesim Khan.

Calling for unity, have always said that we should go “straight road Kasim Khan and the old road Yesim Khan.” The division into three Kazakhs Juz has not yet found a clear explanation. There are

different opinions on this issue. Pre-revolutionary Russian scientists and orient lists of the Soviet period is the division into three Kazakh hordes to the seventeenth century (V. Velyaminov Zernov et al.), The researcher M. Krasovsky completely denies the existence of the unity of the Kazakh Union. By V.V. Bartold, the emergence of independent Kazakh lands associated with the isolation of their nomadic.

M.P. Vyatkin believes that the territory of the Great Horde was the center of all the Kazakhs, so she called the Great, the allocation of the same Middle Horde occurred in the seventeenth century, the beginning of hanstovaniya descendants Usyaka in Junior Zhuz begins with Abulhair and falls on the 20 years of the eighteenth century. The process of disintegration of the Kazakh Khanate was in the middle of the eighteenth century. Inside one Khanate appear Sultan individual ownership. After the death of Abul Khair Khan only in Junior Zhuz there were several possessions sultans, Abul Khair Khan himself during his lifetime exercised power through their sons. Each of his son ran a separate district. For example, Nuraly – bayulinskim, Aychuvak – tyurtkariyskim, Adil – chumekeyskim childbirth.

This Abulhair sought to expand the territory of their holdings and increase the amount of subordinated labor. But this division is not strengthened Khanate, but rather led to its weakening. Each tribal association and generation according to ancient custom ruler should be the sultan. Before 1750 in the generation Zhetruy sway Eset Batyr, despite this, in 1750 zhetruovtsy accepted as ruler Aychuvak-Sultan, Aychuvak distinguished courage and vigor. Therefore zhetruvtsam it was needed for solving intergeneric land disputes and other matters affecting the interests of an entire generation. In addition sultans rulers through Abul Khair Khan, in the Junior Zhuz considered independent owner and Batyr Sultan Kayipov.

The jurisdiction of the Batyr-Sultan was a large part of the generations alimulintsev. This property was inherited from his father Kaip Khan. Later, after returning from Khiva son Batyr Kaip actually rules this district. Kaip Jr. P47 – 1758. Hans ticipate in the Khiva, and in 1758, fearing a conspiracy Khiva Bolsheviks, fled to his father. Sultan-Batyr and his son Kaip Jr. behaved as independent owners and did not depend on Nuralyhana. In addition to these Junior Zhuz independent rulers sultans had another owner Sultan Khan's nephew Nuraly – dosa Niyazov. Power dosa-Sultan applies to certain labor-generation alimuly. Thus, in the 50-70 years of the eighteenth century, Jr. Horde was subdivided into several domains with the Sultan at the head of each.

In the last quarter of the eighteenth century in the Junior Zhuz happened many historical events in this territory in 1773–1775 he passed the peasant uprising led by Pugachev, and in 1783–1797 years of People's Liberation Movement podpredvoditstvom Srym Datov. With the approach of Russian military lines to younger zhuzu frequent raids Khiva became the Bolsheviks on the Kazakh border

villages. This prompted some Kazakh sultans, such as Sultan beech -son Nuralyhana, migrate to a safe place. Using the sub-support and personal friendship with the chieftain of the Astrakhan Cossack troops P.S.Popovym Sultan Bukei asked Emperor Paul I allow migrations to the area between the Urals and the Volga.

At this time, a huge space between the Urals and the Volga, where once roamed the Kalmyks, but then left the area, was empty. Empty seats do not bring any benefits to Russia, so the Russian government agreed to migrations villages Sultan Bouquet. Authorizing a decree went out March 11, 1801, but there was no migrations until December of the same year. December 20, 1801 crossed the Ural Sultan himself Bukei 183 tents of his village. On that day, all crossed over 740 people, and with them 24 camels, 1,366 head of cattle, 3,300 horses and 102,500 sheep. Migrations led esaul Astrakhan Cossack troops V.F.Skvortsov (also in 1818–1822 years chieftain of the Astrakhan Cossack troops). Thus was formed last Khanate in the Kazakh steppe (khan management in Kazakhstan abolished in the first quarter of the nineteenth century) – Bukey or internal Khanate (1801–1846), is located within the boundaries of the current Western Kazakhstan.

History Bukeyev Khanate very extensive and full of many historical events. Here hanstvoval Bukei Nuraliev (1801–1815), Shygaev Nuraliev (1815–1823), Zhangir Bouquet (1823–1845). In Khanate occurred in 1836–1838 years of the national liberation movement led by Isatai Taimanov and Makhambet Utemisov.

In 1841, in the khan's headquarters first school was opened. In recent years, many researchers have noted that for the first time in Kazakhstan tended capitalist land relations.

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Materials of Conferences

**ROLE OF QUALIFICATION
IMPROVEMENT AMONG PEDAGOGUES
OF A MEDICAL UNIVERSITY
IN REALIZING TRAINING OF DOCTORS
IN GENERAL PRACTICE**

Baizharkinova A.B., Zhakieva G.R.,
Iztleuov E.M.

Western-Kazakhstan state medical university of Marat Ospanov, city of Aktobe, e-mail: bayzharkinova@mail.ru

This article demonstrates role of qualification improvement among pedagogues of a medical university who train doctors of general practice which has changed completely since new problems arose before graduates of the 7th course. A pedagogue must not only be efficient in training a versatile specialist according to his communicative skills and knowledge in demonstrative medicine, but also form their personal qualities. In ancient Greece it was considered that “a pedagogue is not the one who teaches, but rather one who leads his students towards mastery”. Doctor of general practice must be a master of his trade after graduation. It is especially significant in case of differential diagnostics, when he must make a quick decision on where to transfer a patient. A specialist must be able to deliver emergency medical assistance in case of injuries, surficial burns, and frostbites, even treat. According to a new programme of DGP of years 6–7, he must fix displacements of shoulder and maxillofacial joints, perform plaster immobilization in case of uncomplicated fracture of spoke bone, place stitches, remove them, etc. In order to teach these skills, a tutor must develop themselves in problems of pedagogy, learn how it is better to deliver knowledge, master computer technologies, in other words, keep abreast of the times.

In Western-Kazakhstan state medical university of Marat Ospanov, in process of realizing standard of additional education in Republic of Kazakhstan in terms of improving quality of pedagogic work we take all possible measures, tutors of clinical departments take training in Center of continuous professional development from the position of practical significance of education.

Qualification training of a medical university tutor contains an integrated characteristic of a pedagogue's personality with implementation of basic knowledge in informational literacy, possession of skills on new medical technologies within training process in order to achieve the basic objective of training – form personality of a general practice doctor.

Knowledge of a university tutor include: skills in implementing modern technologies within educational process and also readiness to train within new educational conditions in accordance with international standards of training specialists of the new formation, who possess certain specific knowledge in combination with a high professional

qualification. The highest category of a tutor is a foundation for a future development of modern educational system [1].

Tutors of clinical disciplines possess less knowledge and skills on new informational technologies due to their basic education. Therefore, methods of developing informational competence of a tutor in our university are: thematic lectures at conferences on pedagogy, communicative skills, seminars, exchange of experience, and open classes. A special part is devoted to training in training-clinical center of Western-Kazakhstan state medical university of Marat Ospanov. In order to estimate a tutor's knowledge level within the system of qualification improvement, our university facilitates the following methods of control: indicator documents, certificates, and quality of meeting requirements in programme “Sirius”. We also consider published articles in university periodical editions, Kazakhstan and foreign magazines, annual reports of training and clinical work on the given course.

Conclusion: Thus, development of a tutor's qualification is determined by objective approach in education in regard to all subjects of educational process in accordance with requirements of informational society. Within the system of qualification improvement this principle is realized in 5-years interval. The basic method of defining competence level among tutors is to establish their knowledge level not only in their profile subjects, but also computer technologies.

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**THE STUDY OF THE NEED
FOR RETRAINING AND ADVANCED
TRAINING OF SPECIALISTS
IN THE FIELD OF OCCUPATIONAL
SAFETY AND IDENTIFY OPTIMAL
TRAINING PROGRAMS**

¹Sadykova J.M., ¹Suleimenova R.Z.,
¹Kulzhabaeva A.A., ²Zhanys A.B.,
³Tuyakbaeva S.B., ¹Iskakov R.M.

¹*Agrarian Technical University. S. Seifullin,
e-mail: didok05@mail.ru;*

²*Kokshetausy University Abai Myrzahmetova. Professor
of the Russian Academy of Natural Sciences № 7425;*

³*Kazakh University of Technology and Business*

The article deals with the study of the need for retraining and advanced training of specialists in

the field of occupational safety and identify optimal training programs.

According to the law of the Republic of Kazakhstan "On Education" [5] professional development and training are the main forms of additional professional education and be in accordance with educational institutions to deepen students' relevant knowledge, skills and practical skills, the acquisition of new skills and qualifications.

Training and retraining of personnel conducted educational organizations, as well as scientific and educational centers, regional employment agencies. They can be carried out by the state budget, and on a contractual basis.

Occupational health and safety (OHS) – is a complex, multi-faceted system that should be studied in a complex of interrelated disciplines (natural, technical and social), based on the views of the interaction of society and nature. In developing the theory of health and safety is necessary to identify its purpose and content, and the focus should be focused on the formation, development and functioning of labor and production processes, as an active ingredient of production is the man and his work. Occupational safety has historically been and is continually evolving based on the study and generalization of reality [6].

The labor protection of science at the present stage of development has become a direct productive force and represents a specific sphere of human activity having universal application.

Occupational health and safety as a universal system of scientific knowledge and practical activities aimed to create favorable and safe living conditions of people in the labor process, the preservation of health, prevention of occupational injuries and diseases, ensuring high performance and quality of work.

To implement these tasks discipline "Occupational Health and Safety (OH and S)" studies the structure of labor and production processes, the relationship and interaction with the subject of work environment work environment in all spheres of its manifestation. More precisely, the "Health and Safety" combines theory and practice to control the production process conditions in the interest of the subject of work.

Health and safety, as an organic component of the process of social labor and production reaches its general goal – the creation of favorable and safe working conditions – in two main ways: the constant improvement and development of the material elements of the productive forces and the continuous development of the person as the subject of production.

The content of occupational safety and health varied in accordance with the development of production and social restructuring of society; although no scientific and theoretical foundations to improve it did not exist. It is clear that, labor arises directly from the occurrence of work [7].

At the heart of the science of health and safety is the knowledge and use of the laws of nature. Creating tools and hand tools in order to facilitate the process of human impact on the environment is the material embodiment of human knowledge accumulated in the struggle for the conquest of the forces of nature.

Natural and social factors, which are associated with the flow conditions of the labor process, the relationship between people and the instruments of labor, the formation of the subjective world of the person in the process – all this, in the end, should be the subject study of labor protection science. In order to achieve the objectives of this science is paramount its accelerated development and above all the development of the methodological and theoretical framework, strengthening, streamlining and improving the efficiency of its links with social practice.

Occupational health should be addressed taking into account the interaction between science and differentiation of areas of knowledge.

Solving the problems of occupational safety, it is necessary first of all proceed from the laws of human interaction with the work environment, taking into account the structure of the mode of production.

The complexity, diversity of occupational health requires the allocation of the main objectives of its optimization, i.e., streamline the process of interaction between society and nature in general, as well as between man and the work environment in particular. Consequently, there is reason to talk about the theoretical and applied areas of labor protection science, the need for both basic and applied research.

Basic research should achieve the general goal of occupational safety by systematizing knowledge, establishment of laws and disclosure mechanism of human interaction with the environment in the process of social production. This problem can only be solved on the basis of the insight into, structure and properties of the object being studied, while investigating the process of emerging phenomena in it. Basic research should be organically linked with the natural sciences, engineering, social sciences and practice.

Applied research in the field of occupational safety and health should address specific practical problems.

Health protection, increase efficiency of workers, their personal safety are the subject of the highest concern of society and cannot be put on a par with other factors of production activities. Occupational safety as a set of links in the system of people – the working environment is, ultimately, the people, and with the help of their funds provides the conditions for a favorable and safe flow of labor and production processes. In turn, the informed use of occupational safety and health, as a rule, provides high performance of this system.

Thus, research in the field of occupational health can be carried out successfully only in close cooperation with them in such a search is not only natural, technical, and social sciences.

The successful development of labor protection science necessary developing models of individual work processes, and in the whole system of people – the working environment with direct and feedback.

It is therefore quite natural that at the present stage essential acquired problem of creating appropriate working conditions and activity, enabling the working people – the main productive forces of society – an active position, the desire and the will to carry out their duties productively and efficiently.

Recommendations for training, retraining and advanced training in the occupational health and safety in the sectors of the economy

Description of the existing training programs for professionals. At present and in the near future one of the key in solving the problems of industrial safety and health is to improve the quality of vocational training graduates in the occupational health and safety in the industry, especially at hazardous production facilities, targeted and continuous training of managers and specialists.

Security and safety in industrial plants associated with the need to clearly identify the key issues and ways to resolve them. Integral components of occupational safety and health are the legal framework, government regulation, special, technical and economic measures to ensure the safe operation of the enterprise.

Training in health and safety for the various sectors of the economy in the universities should be done in full compliance with the State educational standards for the specialty 050731 “Safety and Environmental Protection” curriculum included in the syllabus.

It should be noted that the level of preparedness of young professionals’ universities shows poor knowledge in the field of industrial safety. This is understandable, since in university curricula SYLLABUS such discipline is not provided. When training in specialties “Occupational safety and activity” (higher professional education) and “Safety” (bachelor) prevailing social trends.

This is certainly important, but not sufficient to ensure industrial safety. Therefore, you need a thorough training on industrial safety of young professionals, particularly taken at hazardous production facilities. Training courses should prepare young professionals to act in case of accidents and to provide additional training on industrial safety.

After analyzing the training and professional development of existing training centers, it is necessary to note the following: educational programs and technical center apprenticeship SAIT-Kazakhstan training and improve the professional competence of local specialists not covering the legal framework of the Republic of Kazakhstan on health

and safety. NEBOSH program also focused only on the international level in the field of occupational safety and health.

At the same time, it should be noted many positive data in educational programs. The program SAIT-Kazakhstan, for example, to address the challenges of learning and improving professional competence of local specialists to implement the State nationalization program of Kazakhstan. Together with representatives of industry and the Government of Kazakhstan, Kazakhstan SAIT-program generates industry standard training and certification. The program NEBOSH, internationally recognized qualification for professionals in the field of industrial safety, as well as other professionals responsible for TB issues in organizations. The training course is designed for multi-national organizations working to international standards and regulations adapted to local conditions and needs. Staff training in this program allows companies to go global standards of TB and health.

Popular management training of labor protection and industrial safety courses are DNV. The courses studied practical methods used in modern safety management. Formed a proactive approach to risk management and loss control. DNV recommended courses for professionals’ health and safety, middle and senior level, which are responsible for ensuring the safe operation of the enterprise. However, among the subjects studied in courses not provided: topical issues of health in different sectors of the economy and the best practices of leading companies to improve conditions of work and rest; industrial and fire safety; providing first and first aid.

Working curriculum of the Institute of Labor Organization and Safety KSTU to improve the skills of specialists Coal Department of JSC “Metal Steel Temirtau” at the proper level covers the issues of industrial safety, open industry-specific topics of modern mining equipment and information and measuring equipment [8].

However, do not study the laws “On compulsory insurance of civil liability of an employer for causing harm to life and health”, “On industrial safety at hazardous production facilities”, “On Technical Regulation”, the Labor Code of Kazakhstan, the international standard OHSAS 18001: 1999 rules of certification of production facilities in terms of labor, hygiene criteria for evaluation and classification of working conditions in terms of hazards and risks in the industrial environment, the severity and intensity of the work process, and does not cover issues providing first and first aid to victims of various types of injuries and drowning.

Training topics oil and gas industry to improve the skills in matters of health and labor protection built in that branch and includes only the issues of industrial ecology, fire and explosion on the oil and gas companies.

Subject workers training programs training in occupational safety and activity of the East

Kazakhstan State Technical University, the most comprehensive and contain volumes of information in accordance with state educational standards, but they are designed to educate and train students in higher education.

The training program for professionals' health and safety in modern conditions. To managers and specialists of enterprises, Research Institutes and design organizations have a comprehensive understanding of the various manufacturing processes; it is necessary to continuously improve staff qualifications, which should be an integral part of the training and retraining in the field of health and safety in various industries.

This largely relates to hazardous industrial facilities. In these industries among the main targets for health and safety is the willingness of companies to localize the accident occurred and the elimination of its consequences, the maximum minimization of injury deaths among staff. Moreover, in addition to knowledge and skills to act in emergency situations requires appropriate psychological preparation.

The knowledge of managers and the basic concepts of specialists, principles and general industrial safety requirements – a necessary condition for ensuring safety at hazardous production facilities.

However, no less important, and for middle and junior management levels is particularly important, knowledge of special security requirements, which are assigned to their competence. To managers and specialists at the proper level focused in addressing contemporary issues of industrial safety and health, could ensure reliable operation of control systems and procedures to prevent accidents, you need a refresher course for professionals to carry out the

three main categories of employees: management, engineering and technical personnel, and working specialty.

We offer the best training programs for the three categories of employees for the purpose of uniformity in conducting training and retraining of specialists in the field of health and safety for specialized courses.

Based on the analysis of training programs and advanced training should be for production managers, the main part of the program is to study the laws of the Republic of Kazakhstan in the field of occupational health and safety, and for engineers and technical workers – the emphasis in education should be directed to the study of the basic rules of work on the health and safety of various technological processes. For working specialties proposed program includes at its core regulations and standards necessary for the direct reference works and maintenance of equipment in the workplace.

Based on the basic qualification requirements for specialists of different levels, it is recommended to install the following durations:

1. The executive staff – search and implementation of solutions appropriate for the formation and functioning of technological systems for monitoring and maintaining the efficiency of the enterprise in a safe condition – 24 hours (Table 1);

2. Mid-level professionals (ITR) – the use of methods of organization of the process to ensure its safety and efficacy – 36 hours (Table 2);

3. Worker – the use of safe practices and compliance with technological procedures in operations to ensure adequate behavior in normal and abnormal situations – 24 hours (Table 3).

Training programs to improve the skills of specialists in the field of health and safety

Table 1

The program for executives

Category of students	Labor Code of the Republic of Kazakhstan "from 15.07.2007 year	On civil protection. RK Law ot11. 04.2014g. № 188.	Law "On compulsory insurance of civil liability of an employer for causing harm to life and health"	Model provision training and checking safety.	The order of investigation and registration of accidents and other injuries to health workers, work-related	Rules of certification of industrial facilities on labor conditions	Organization and management of work for health and safety in the enterprise International standard OHSAS 18001: 1999 and ISO 9001: 2000 and the implementing rules "Quality Management Systems" at work sites	Training and auditing health and safety	Fundamental International Labour Organization Convention ratified by the Republic of Kazakhstan (№ 81, 148, 155)	Civil, administrative, criminal codes of the Republic of Kazakhstan on issues of security and safety at work	Test	Total hours
											1	2
1	2	3	4	5	6	7	8	9	10	1	2	
Leaders	4	2	2	2	2	2	5	2	3		4	

Table 2

Program for engineering and technical personnel

Category students	Labor Code of the Republic of Kazakhstan from 15.05.2007y. Law "On civil protection" from 11.04.2014y. Occupational injuries. Causal factors and mitigation measures Rules of certification of industrial facilities on labor conditions The order of investigation and registration of accidents and other injuries to health workers, work-related Ergonomics and physiology of labor International standard OHSAS 18001: 1999 and ISO 9001: 2000 and the implementing rules "Quality Management Systems" at work sites Preparing and conducting audits, health and safety Fire Safety Companies Operating Rules hoists, electrical equipment and appliances, vessels under pressure, and others. Organization and management of work for health and safety in the enterprise Rules for the development and approval of instructions on safety and health organizations (Prov. MT SPP RK № 278-p of 02.12.04y.) Instruction and work permit in the occupational health and safety Industrial ecology and occupational medicine Fundamental Conventions of the International Labour Organization, ratified by the Republic of Kazakhstan (№ 81, 148, 155) Civil, administrative, criminal codes of the Republic of Kazakhstan on issues of security and safety at work Criteria for high-risk production in various sectors of the economy, creating a threat to life and health	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
Engineering and technical		4	2	2	2	2	2	4	6	2	2	2	2	2	2	2		36	

Table 3

Program for working specialties

Category students	The technical operation and technical safety rules when operating equipment Guidelines and standards for businesses of workers (in the field) Fire safety enterprises First medical care, in different occupational injuries and drowning Industrial hygiene and occupational health foundations Maximum permissible sanitary norms and levels (MPC, RC) concept of systems standards безопасности труда (ССБТ) Working clothes, shoes and other personal protective equipment Technological documents (passports, industrial projects, technological maps)	1	2	3	4	5	6	7	8	9	10	11
On working specialties		2	4	2	4	2	2	4	4	4		24

Working curricula training of workers should take into account the specifics of the company, which employs a work of the profession and provide for verification of knowledge on safe methods of work in the amount of instructions, related to their employment duties.

It is advisable to refresher training for managers GRO introduction of new forms of education, computer technology, the intensification of the educational process. At the same time must be used active forms of employment: discussion seminars, business games, training and protection of final works on specific and relevant to the business issues. In the future, it is desirable introduction of individual training programs and distance learning.

The quality of teaching in educational institutions provided by the presence of highly qualified personnel. This requires refresher training for managers as lecturers to attract leading scientists from universities and research institutes with a degree of not less than PhD and leading industry experts.

Assessment of the quality of education. Assessment of the quality of education is desirable to perform testing. Traditional test is a formal method of assessing the level of preparedness of attestation.

Subjects may be issued sheets of paper with printed tests. Testing can be used as a means of current, topical and final control.

During the final control testing is desirable to use as the primary stage of certification, and the final decision taken after an additional interview with the attestation, which allows determining the level of qualification of the expert.

In the present effective control test, this objectively reflects the knowledge test.

Study of the evolution of forms of employment of executives and specialists in various sectors of the economy of Kazakhstan shows that health and safety is an objective necessity that stems from the very nature of man, his biological structure, general and social character of modern production.

Health and safety, as an organic component of industrial and other human activities, reaches its general goal – the creation of favorable and safe working conditions, going two ways – constant improvement and development of both production and the people themselves.

Type of labor determines what methods and means should be used to effectively achieve the general objectives of the production activities. Means of labor are thus real element of labor protection economics, development and improvement of which occur on the upward trajectory. Therefore, the nature of the impact on the results of production safety, comfort and safety are its intense reserves.

Mechanization, automation (robotics) and computerization of production processes accompanied by a further decline in physical effort of man with the steady growth of the role and importance of his intellectual effort. In this context, the problem of control, regulation and control of technological

processes in manufacturing are privileges and value all the time increases, and employment rights is becoming increasingly creative and innovative.

Conclusion. After analyzing the training and professional development of existing training centers developed recommendations on the need for specialist training courses for the three main categories of employees: management, engineering and technical personnel, and working specialty.

The optimal training programs for the three categories of employees for the purpose of uniformity in conducting training and retraining of specialists in the field of health and safety at the specialized courses.

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PEDAGOGICAL CONCEPT FOR THE MUSICIAN-PERFORMERS LEARNING IN THE ENVIRONMENT OF INFORMATION-EDUCATIONAL MOBILITY

¹Vorfolomeyeva O., ²Wirth J.

¹West Kazakhstan State University named after M. Utemisov, e-mail: o.vorfolomeeva@yandex.kz;
²Nizza University, e-mail: wirthjonas@vitaltuning.fr

We are investigated the complex of pedagogical approach through systematic analysis of the dynamic components of the informational and educational environment for the musician performer learning. In a study to identify the problems of systematization the structure and content of environment of information-educational mobility for musician-performer

in the modern music pedagogy of Euro-Asian Economic Union of the XXI century. In accordance with the characteristics of music pedagogy for the performing specialties, developed pedagogical objectives, functions of didactics, shape and properties of information (electronic and physical) resources, as well as training and methodological support disciplines. We are studied pedagogical objectives, didactic functions of information resources for the musician-performers. Development of these issues is the basis of a systematic approach to pedagogical concept of musician-performer learning in the environment of information-educational mobility.

Technological discoveries radically change the structure and needs of global markets. We live in a completely different technological reality than before. Digital and nanotechnology, robotics, regenerative medicine, and many other achievements of science become everyday reality, transforming not only the environment, but also the man himself. We need to be active participants in these processes [1].

The concept of modernization of Russian education highlights the significance to train of competitive specialists able to work effectively of the level in this area of international standards, prepared to continue professional increase, sustainable social and professional mobility. Evolving societies need a modern educated, competent, highly moral, advanced people who can make their own responsible decisions concerning the situation, misgiving the possible consequences, the ability to cooperate, characterized by dynamism, constructive, in the strong sense of responsibility placing the fate of the country [2]. This statement applies to the problems of modern pedagogy of Kazakhstan and EAEC on the whole (in general).

The resume of the current concept of “mobile informational and educational environment” in terms to reinstruct musician-performers, then – EIEM (abbrev.), you must identify the contents of the conceptual category as a synthesis of mobility (flexibility, agility); information as pivotal resource pedagogy of the new generation; educational environment as a “zone of interaction between educational systems and their components” [3].

Particularly important in this aspect are the pedagogical goals, projected in EIEM:

1. To evolve a specific professional knowledge bank to train the performing musicians;
2. To develop appropriate competencies, capabilities and support capacities for independent study and professional activities on the performing musician;
3. Preparation and consolidation of skills to work with information in vocational oriented educational environment of performing musician;
4. To make use of search skills, application and development of methods of cognitive, performing and creative activity musician-performers in EIEM that will maintain high professional mobility in the future;

5. Securing through EIEM socially significant qualities, including not only a personal creativity but also the ability to integrated collective work.

Disclosure pedagogical purposes EIEM is possible only if the application functions didactics, namely:

- The formation of the musicians skills are responsible for performing activity by modeling work to improve the musical-theoretical experience through EIEM;

- Simulation of research activities in the field of music education and arts;

- Developing and strengthening the skills of independent search for information in the high-tech specialized resources EIEM through computer technology, high-tech data bases and their use in various types of training and professional activities of the performing musician;

- Collaborative training organizing and research activities, in the team of teachers and students(subject-object aspect);

- A dynamic information support, practice-oriented exchange of ideas, planning of individual learning paths in EIEM;

- Formation of practical skills and communicative culture in partnership working in EIEM conditions;

- Providing advisory support beyond the time and geographical position of EIEM subjects;

- Formation of the entire spectrum of competencies to train. The performing musicians are at the center of this effort not in a strict technical way, but as human beings.

The didactic properties of information resources in the aspect to train musicians in EIEM enunciated in the following terms:

- mobile information resources appear as a complex system of storage, processing and exchange of any kind of specialized information in EIEM for a musician;

- mobile information resources as a way of allocating access to the EIEM;

- mobile Information source solutions enable to teach and professionally-designed tasks, such as lectures and professional high-tech applications;

- mobile Information resources as the possibility to organize the professional communication without borders, out of time, with the help of the whole complex of EIEM.

Forms of information (electronic and physical) resources to train musicians in EIEM.

Well-organized system of electronic and physical information resources to train musician-performer in EIEM, will provide direct access the teachers and the students to the original informative sources, as well as the development of training complexes and disciplines (sillabus). This approach will reduce the time searching for basic, supplementary and reference materials for training courses. Visual, auditory, text, graphic objects, developed in the course of academic disciplines, the use of some

specialized (justified expediency) computer programs, will help free up time for lectures and practical exercises, by providing students for a more profound analysis of the issues and approaches.

1. Library information resources as a tool of management (domestic and international) in the field of science, art, music and education;

2. Discovery and systematization of material in the utilization of databases as precluding comprehensive educational information portals, educational institutions (High Education strategy, organizational structure, personnel, organization of scientific, educational research, information library resources, feedback, contacts, and other).

3. Legislative requirements, sample documents and regulatory frameworks in the field of special (higher) music education;

4. Database links specialized services of online multimedia resources and platforms in the theory and practice of musical art and education;

5. Domestic and foreign directory enquiry services of operating network infrastructures in the field of science, education (schools of different levels in the profile, the state and public scientific communities, forums, etc.

6. Domestic and foreign directory enquiry services of operating network infrastructures in the field of culture and arts (schools of different levels, theaters, philharmonic society, concert halls, competitive organizations at various levels, institutions of culture, education, community, forums, etc.);

7. International directory business, producing musical instruments, parts, additional equipment and conducting their maintenance;

8. Information catalogues related to organizations providing security of employment and professional involvement after graduation, throughout life;

9. Production industry for information processing systems in the field of computer and music technology;

10. Directory enquiry services for publishing musical, methodical, educational, scientific literary, publishing houses, periodicals, reviews, etc.;

11. Apply technical means of access to the EIEM (means of computer and mobile communications, Internet access).

The centerpiece of the educational process from the standpoint of traditional music pedagogy and pedagogy of the XXI century, devoted to furthering the methodological support disciplines EIEM for the performing musicians, it can be represented by the following components:

1. State standard features contains a complex of compulsory education rules and their characteristics, aimed at obtaining in professional competences;

2. A set of special, profiling and elective (alternative, optional), with the possibility of additional related specializations;

3. Practice units that make up the intersubjective field – a group of related disciplines (interdisci-

plinary), aimed at the involvement of professional competencies;

4. Independent discipline, self-paced learning which challenges the whole person;

5. Individual career trajectories (curricula, programs) to train musicians in practical courses of special disciplines. Informative electronic information units can be expressed in the ratio of the following parts:

6. Themes, sections and paragraphs for lectures, seminars and individual work;

7. Chapters to check and fix independent and practical exercises (exercises, problems, music dictation, music for listening);

8. Presentation, graphics, illustrations, photos, audio and video materials; materials for examination and control of the crediting (the bank issues and topics, tests, quizzes, performing programs);

9. Reference and hypertext literature of study for (basic and supplementary);

10. Themes essays, term papers, research work, creative projects; politico – grading;

11. Terminologies glossary;

12. Music computer directory enquiry services;

13. Links for information, multimedia, internet and local (within the university) resources, educational portals;

All information in the core disciplines of EIEM can contain as well as of electronic and physical form complies with the requirements of traditional and modern open music pedagogy of XXI century.

Information technology components are including the media literacy of the teachers (teacher information literacy). In possession of adequate auxiliary means of external influence on the students “flow” of learning arrangements, advice and support for the learning process, learning cooperation and learning networks. To share information and communication space, to tackle complex situations, discourse [4, p. 27].

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Short Reports

INDEPENDENT WORK OF STUDENTS UNDER THE GUIDANCE OF A TEACHER AS A FORM OF INNOVATIVE EDUCATION

Britko V.V., Kultanov B.Z., Yessilbayeva B.T., Kinayatov M.A., Kaliyeva G.T., Ibraibekov Z.G., Seiilkhanova A.A.

Karaganda State Medical University, Karaganda, e-mail: kultanov@kgmu.kz, Bayan_turdalievna@mail.ru

At present the priority of the state policy in the Republic of Kazakhstan is the preparing of competitive and competent professionals in accordance with the best international practices for the ensuring of the nation health. Realization of tasks promotes the teaching of students using the credit system, which provides independent work of students under the guidance of a teacher.

The system of modern higher education understanding of the challenges students to prepare is to prepare a competitive personality, demand on the labor market, to develop the students' need for self-development and continuing education.

Most of the students think that the only possible form of supply of knowledge is to read the teacher lectures, conducting seminars and workshops, where the teacher presents knowledge in the final and they understand the form, answers to questions. At the seminars and workshops they still play served as a finished product material actually repeating them for the teacher. However, experience has shown that such a reproduction of knowledge without actually developing the creative potential of the research students. Students absent own, personal attitude to these knowledge, there is no possibility to offer their vision and explanation of the problem, in particular those areas of science where there is no ready answer, and we do not know that to date, studied, published, what are the prospects for the development of this direction in science. After all, today's students need to solve the problems of the future of science practice.

Therefore, the search for new forms, methods and innovative technologies in the system of continuous education for an independent state became a priority aimed ultimately to prepare the best specialist. This involves the search for effective methods of mastering the students' knowledge, the development of creative abilities of students, when the opinion of each of them is taken into account, they hear them lead the discussion, and actively participate in the discussion of problems of both sides of the educational process.

With proper organization of the educational process, clearly defined goals and objectives of education, creativity of the teacher in choos-

ing the form of teaching methods with the use of modern educational technologies – is possible to achieve the best results in the preparation of future professionals in the walls of the modern university.

The introduction of credit system of education in the universities of Kazakhstan is impossible without modern global trends in education, without study and generalization of foreign credit systems.

One of the forms of modern studies on the basis of the credit system of education is the independent work of students under the guidance of a teacher (SUGT) [1, 2]. In the Karaganda State Medical University, at the Department of Molecular Biology and Medical Genetics, realized this form of education for students majoring in "total medicine".

The essence of this work is a joint activity of the student and the teacher when the teacher manages the cognitive activity of students.

SUGT one type of extracurricular work. Amount of educational material on the SUGT is given taking into account the time spent on the study of the topic and logically associated with other types of training.

One form of SUGT held at the Department, is that the students, according to the schedule classes, in the previous lesson, the teacher get a job. The task is to find scientific articles on the subject classes, published in scientific journals over the last 2–3 years, in the library or Internet resources. The student then analyzes the content of scientific publications on the subject classes.

SUGT task may include writing annotations to the published article, or as a more sophisticated level tasks-performed in subgroups, writing reviews for scientific publication. After the assignment, the students individually written conclusions on this lesson on sheets of analysis, the shape of which is specifically designed for the Department for SUGT.

Experience has shown that the most effective management of cognitive activity of students is carried out by direct contact of the student and the teacher when the teacher guides and corrects the individual work of students performing feedback to the student when the SUGT.

Understanding the importance of the role of independent work of students under the guidance of a teacher, means that one of the leading medical universities of Kazakhstan has carried out a major overhaul of the educational process, directed from the stream to the individualized, which is constructed so as to creatively develop and build capacity for personal self-development, creative application of acquired knowledge and skills, so

that our graduates can easily adapt to the profession today.

Thus, the SUGT under the credit system of education is part of an innovative approach to education and shows its effectiveness as a form of modern, progressive education.

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Short Reports

**EDUCATION SPIRITUAL AND MORAL
CULTURE OF THE POPULATION (FOR
EXAMPLE ACCOMPLISHMENT OF
TERRITORY NABEREZHNYE CHELNY)**

Iskhakova N.R., Safiullina N.Z., Iskhakova L.M.

*Federal State Educational Institution of Higher
Professional Education "Naberezhnye Chelny Institute
of Socio-educational technologies and resources",
Naberezhnye Chelny, e-mail: ngpi@tatngpi.ru*

Improvement of city is included one of the most urgent problems of modern urban planning now. It solves the problem of creating a favorable living environment to ensure a comfortable environment for all activities of the population. Improvement of cities included in the national project of the Republic of Tatarstan. Tasks for improvement of the city Naberezhnye Chelny reduced to create favorable conditions for the life of the urban population. In the implementation of this direction external landscaping, functional and spatial structure, objective equipment of open areas and landscape design are becoming increasingly important [1].

The main reason for the problems of land improvement stems from the fact that the policy of national regional cities was limited mainly to the increase and change in the sources of the costs of municipal services without major institutional reforms, taking into account the changing role of cities in national and regional economies. Urban economic policy can now determine how the package of measures carried out in the interests of the local population by local authorities within a certain concept. In the Year of parks and squares (those declared in 2015 by the Government of the Republic of Tatarstan) focuses on recreational areas and landscaping the surrounding territory. The Republic of Tatarstan allocates their accomplishment billion rubles. Naberezhnye Chelny of this amount will receive 136 million rubles [6]. Local area should give owners a sense of freedom, security and comfort. Urban local area forms a single composition, which should dominate harmony and agreement. This should be considered revising in the selection of improvement home territory [3].

Analysis of the adjoining areas in the complex with houses, to which it is adjacent, as a liaison between groups requires a thorough study, as well as further consideration of options to improve the situation. Complexity of the process does not concede many research projects related to the study of ecology in the neighborhood and the various urban development projects. Often, when considering the data and making decisions on the management and implementation of any internal yard work are just a formality.

The study by the authors in 2015 in the city of Naberezhnye Chelny found that look at the issues

involved ambiguous. Among men and women there are different opinions and therefore should be separated by sex surveys in the project landscaping.

So 41% of women are satisfied with the state of the territory near their homes, many also believe that it is necessary to make small changes. Men are more dissatisfied with the court, the figure was 37%, even 25% of respondents claimed that state courts does not suit them and the territory need to make adjustments. The same number expressed their indifference to the local area. 75% of respondents do not spend time in their yards, because appearance of the area does not attract their attention. [2]

The creation of conditions to ensure the distribution of space for the convenience of any age is one of the most urgent problems of the modern national project. In this regard, practice became popular in the city Naberezhnye Chelny in the implementation of parks and boulevards of free internet cafe, which corresponds to the current way of life most of the young people and even adults [2]. Model attracting people to Spending more time in public places introduced in the project accomplishment of territory. Proper use of high technology favors the problems of employment and mobility of children – teenagers.

There is a certain area under the playground equipment in many yards. However, they sometimes take some undefined area in the courts, and their condition causes negative emotions and looking at some slides, swings and other equipment there is a question about the safety of their children. More than half of respondents (56%) believe that the playground safe in their yards. 17% reported the unsuitability of the equipment at the sites, the same number of respondents said that in their backyards is not a playground. Evidence suggests that the municipal authorities of cities that are responsible that their backyards are not playgrounds for the appearance of areas still dealing with the issue of the physical development of children, as well as interested in their security. But this does not solve the issue with the rational use of space and proper installation site. It would be much better division of territories under a certain age group [2]. The same principle should be used throughout the local area. Placed at the entrances of shops attract different age groups. 42% of respondents are satisfied with the number of benches and benches in the courts, as well as their views. In many yards benches with metal frame and wooden floors are put. They do not spoil the appearance of the court and shall not seek to dismantle the bullies. However, 34% of respondents are not satisfied with the appearance of the benches. Thus, despite the general situation acceptable in the areas adjacent to homes, residents of the city of Naberezhnye Chelny would like to make suggestions to improve the situation in the national

project Accomplishment of territory: 53% of respondents want to see in their backyards separate sports field for soccer, basketball and other outdoor games. 67% of respondents noted that the themed playground is of interest for the development of children's fantasy and fairy tale image improves the perception of the territory. Just ask to pay attention to landscaping, as it is often overgrown with grass area, there are no beds. 17% say there is no organized parking in the yard. 100% of men said that they need parking for cars, 17% of women against the separate place for parking cars, 62% of respondents among the female population still consider it necessary to do so. [2]

However, the information provided gives only a superficial assessment of the situation, they missed the personal relationships of different groups of the population to the present situation, as well as opinions on future developments that will affect the national project of improvement of modern cities. Thus, we conducted a case study is a step towards better relations in society, greater understanding between the authorities and the population of the city, raising the ratings of influence and trust in the local authorities. Diagnosis of existing problems, timely proposal to resolve conflicts – the basis of social harmony and the common rhythm of life in the city.

The government should pay attention to even minor problem in the Accomplishment of territory and encourage citizens to contribute their decision. One means of citizens' participation in the project is the improvement of adjacent territories contest. To summarize this work, we would like to note the following:

In 2015, Naberezhnye Chelny won the national contest "The most comfortable item of Tatarstan in the category of cities with a population of over 100 thousand people", carried out by the Ministry of Construction Architecture and Housing and Communal Services of the Republic of Tatarstan. As well as the interaction of various social institutions of the city will help in the formation of spiritual and moral culture of the younger generation [4, 5].

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ACCUMULATION OF RADIONUCLIDES IN NATURAL OBJECTS IN CENTRAL PART OF MURMANSK REGION

Kizeyev A.N.

Polar-alps botanical garden-institute of Kolskiy scientific center of Russian academy of science, Apatity, e-mail: aleksei.kizeev@mail.ru

The work presents results of research, carried out in central part of Murmansk region, area of Kolskaya nuclear power station. Distribution of natural and anthropogenic radionuclides in soil profile and their accumulation in plants has been studied.

Enterprises of mining and metallurgic industry, base of Northern fleet, objects of storing radioactive wastes and processed nuclear fuel are located in Murmansk region, Kolskaya NPS is also placed in it, and it can be considered as an object of potential radioactive hazard for people and natural environment [2]. Kolskaya NPS is the first nuclear power station in Russia, constructed outside Polar circle. It is located at the bank of lake Imandra, 11km away from its satellite town Polarniye Zori and 170 km away from the regional center – the city of Murmansk [1]. The nuclear power station was erected in 1973–1784 and now has 4 power blocks with reactors of WWER in exploitation, power of each one equals 440MVt [6].

Many years of experience in ecological researches, carried out in the region of Kolskaya NPS, testify for a lack of any significant changes in radioactive background in the region of its location [3]. However, until modern days no detailed study of radionuclide accumulation in vegetative surfaces have been carried out.

Objects and methods. Objects of the research are: soil (illuvial-chalybeate and illuvial-humus-chalybeate podzols, small-podzol and tiny soils, and also sandy soils on boulder rocks) and components of vegetation – blackberries (*Vaccinium myrtillus* L.), birch trees (*Betula pendula* Roth. X *Betula pubescens* Ehrh.), and reindeer lichen (*Cladonia stellaris* (Opiz) Pouzar & Wezda).

Selection of samples has been carried out during 2009–2014 at 10 stationary sample areas that represent pleurocarpous moss lichenous blackberry pineries. Areas were located within the area of observation, at distance of 10–15 km from Kolskaya NPS.

Radiometrical filming of the territory was carried out via searching radiometer SRP-68-01 and dosimeter-radiometer DRPB-01. Samples of soil and vegetation were selected in accordance with general requirements of sample selection [7].

Evaluation of exposition dose power (EDP, mcZv/h), total specific α - β - γ -activity in probes was carried out via radiometrical method. Concentration of natural (^{226}Ra , ^{232}Th and ^{40}K , Bq/kg) and anthropogenic (^{137}Cs , Bq/kg) radionuclides was carried out via gamma-spectrometric method [4].

Results and discussion. As a result of the research, we have established that natural radioactive background at territories, located in the area of KNPS observation, was within 0.10 mcZv/h , whilst outside the area of observation this index did not exceed 0.09 mcZv/h . EDR at the surface of wet and aerial-dry mass of vegetative samples equaled 0.15 mcZv/h . These indexes do not exceed EDR, suitable for population of open space (0.2 mcZv/h) and correspond to low levels of ionizing emission (range of small doses for live objects is located within 0.2 – 0.5 Zv) [5].

Specific α - β - γ -activity of soil and vegetative objects varied in dependence on location of sampling areas, it was defined by different accumulation of radionuclides. The studied objects contained natural ^{226}Ra , ^{232}Th и ^{40}K radionuclides and anthropogenic – ^{137}Cs .

Distribution of natural and anthropogenic radionuclides according to soil profile is displayed. An increased concentration of the following radionuclides has been registered in composition of primary minerals of soil-forming grounds: ^{226}Ra (9 – 13 Bq/kg), ^{232}Th (8 – 10 Bq/kg) and ^{40}K (420 – 430 Bq/kg). Increasing concentration of ^{137}Cs was, quite oppositely, observed in organogenous soil horizons (40 – 50 Bq/kg).

Heterogenetic accumulation of radionuclides took place in plants. An increased concentration of ^{137}Cs was registered in leaves of blackberry (83 Bq/kg) and reindeer lichen (62 Bq/kg). Its penetration into reindeer lichen can be defined by sedimentation from atmosphere, and into leaves of blackberry – by root consumption from organogenous horizons of soil. In smaller quantities this radionuclide has been found in leaves of birch (14 Bq/kg), and it can be related to insignificant root consumption, as area of tree root consumption is located quite deep in soil, and concentration of ^{137}Cs in this area is small. Biological accessibility of ^{137}Cs for plants degrades in line (m^2/kg): leaves of blackberry (0.16) – reindeer lichen (0.12) – shoots of blackberry (0.10) – leaves of birch (0.03). Concentration of ^{137}Cs in plants have not exceeded maximum permissible level for this radionuclide in products of forestry ($1.6 \times 10^{-8} \text{ kBq/kg}$)

and maximum permissible concentration of its content in medical plants (up to 200 Bq/kg) [5].

An increased content of ^{40}K was registered in leaves of birch (140 Bq/kg), it can be related to a physiological need for it of a plant. Biological accessibility of this radionuclides for plants degrades in line (m^2/kg): leaves of birch (0.007) – reindeer lichen (0.002).

Maximum content of ^{226}Ra was registered in shoots (16 Bq/kg), and ^{232}Th – in leaves (8 Bq/kg) of blackberry. Minimum content of ^{226}Ra was registered in leaves of blackberry, and ^{232}Th – in leaves of birch. Contents of ^{226}Ra and ^{232}Th in reindeer lichen was insignificant (1 Bq/kg). A possible reason of accumulation of these radionuclides is heterogeneity of physiological need for them among plants. Biological accessibility of ^{226}Ra for plants degrades inline (m^2/kg): shoots of blackberry (0.04) – leaves of birch (0.03).

Conclusion. A new information on radionuclide accumulation (^{226}Ra , ^{232}Th , ^{40}K , ^{137}Cs) in soil and vegetative cover in central part of Murmansk region has been received. Potential sources of these radionuclides for natural objects have been revealed. Maximum values of radioactive characteristics have not exceeded the limits of natural background and utmost permissible values for human. Biological radionuclide accessibility lines for different parts of plants have been demonstrated.

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