

SUMMARIES OF THE ARTICLES IN ENGLISH

PHILOLOGY

P. 7. *Genina Ninel Ye.* Tomsk State University. **“DO NOT WAIT FOR BELKIN...”: UNFULFILLED “TROJCHATKA” BY A.S. PUSHKIN, N.V. GOGOL, V.F. ODOEVSKY.** The unfulfilled project of the literary miscellany “Trojchatka” can be considered as one of the most difficult and mysterious projects in the history of Pushkin’s epoch culture. In this miscellany, planned as a “section of a three-storeyed house with different scenes at each store”, the writers wanted to combine a story by Rudyj Panko about the “attic”, a story by Irinej Gomozejko about the “reception-room” and a story by Ivan Petrovich Belkin about the “basement”. Our research is dedicated to the creation history of this project, which can be considered as a unique phenomenon in Russian literature. This project had not been fulfilled as one miscellany (as it was planned) but we can say that “Trojchatka” existed not in one book, but as a special metatext combination. First, “Trojchatka” was formed by the cycles of stories, written at the beginning of 1830s – these cycles had a similar type of narration structure. The interaction of these three writers continued in 1830s: among their works we can find different types of the so-called “unorganised trojchatkas” – writers did not do them on purpose, but they had a lot of similar features: subject matters, poetic style, genres, communication models in texts. So we can conclude that a special semiotic model of “Trojchatka” was formed in the middle of 1830s and its main concept was the “Home” in different meanings: the “home” as the synonym of the “fate” – the fate of a person in reality; or the “home” of Russian literature in whole. The project of this miscellany can be compared with a number of similar cultural phenomena. First, it can be considered as an opposition to the “trade” triumvirate of Bulgarin – Grech – Senkovsky. On the one hand, the idea of such kind of miscellany was important to writers’ evolution, because they were constantly interacting. On the other hand, “Trojchatka” played a very important role in the literary process; this project is significant for the history of Pushkin’s interrelations with his contemporaries, the history of “Pushkin’s circle”; and for the evolution of literary miscellany types from 1820s till 1840s.

Key words: creative union; literary process; literary miscellany.

P. 10. *Govorukhina Yu.A.* Tomsk State University. **METHOD OF MODERN LITERARY CRITICISM.** Epistemological paradigm of the domestic theory of criticism is the paradigm of classical hermeneutics. Works by M. Heidegger, P. Riker, and H.G. Gadamer appeared in the 20th century. Hermeneutics becomes ontological. The concept of “interpretation” is filled with ontological sense, which implies self-interpretation. The new methodology helps to comprehend the problem of the method of literary-critical activity in a new way. Literary criticism is a difficult process of interpretation, which consists of two acts of understanding – primary (an instant enlightenment of the truth of life) and secondary, realised, expressed in the word. We understand the method of literary-critical activity as a general strategy, which organizes the process of interpretation and estimation of the literary phenomenon and refocuses it in the act of text creation, which depends on the communicative task and the task of understanding. Criticism uses the humanitarian method of knowledge, not the strictly scientific one. The author of the article describes the classification of the method of literary criticism and distinguishes analytical, pragmatist, analytical-pragmatist methods. The method of criticism is possible to be classified by the criterion “direction of interpretation”. The author also analyses literary criticism of the end of the 20th century (on the material of the periodicals “Novy Mir”, “Znamya”, “Nash Sovremennik”) from the point of view of its method. Gnoseological differences between the “liberal” and the “conservative” criticism are given.

Key words: literary criticism; interpretation; method of literary – critical activity; “thick” magazine; pragmatist.

P. 17. *Savinova Anna G.* Tomsk State University. **MUSICAL CODE IN N. GOGOL’S PROSE: A BELL AND A HAND BELL.** In contemporary philology the integrated approach is most constantly used. It means that the work of art is analysed as a linguistic, cultural and philosophic phenomenon. The bases of music, visual and plastic art play a significant role there, their activity and interaction in the text is also important. The immanent feature of Gogol’s writing style is elements of poetry in his prose. Rhythmical text arrangement, songs inclusion, numerous sound images which are meaningful both at semantic and plot levels are the ways of lyric enrichment. Music philosophy interpretation is necessary for our understanding of Gogol’s aesthetic aim, his method, genre and style. It is the sound motif of ringing that reveals and accompanies both animate and inanimate objects. This signal symbol identifies the conversions of alive into dead, the infinite space into the finite one, usual and alien lives areas of contact. The hand bell and the bell as symbols of everyday life and being represent this musical phenomenon. In the physical world ringing, clanking and clinking objects put others in order and set the unity. Birds’ warbling, clear and loud songs mark the vertical line between the earth and the sky; the hum voices of folk people dancing to musical instruments and jingling horseshoes limit their own space. Still, shifts and breaches of microcosm are accompanied by tinkling. Everyday routine is inspired with being: that is why frontier objects (windows, doors, locks) chink. The symbol of harness bell exposes its ontological status; this ringing demonstrates the endless area and passes on the strained pulse of the character and the world around him. The ordinary journey transforms into a spiritual way. The hand bell semantics is strongly attached to the space whereas the bell meaning is associated with the time. Gogol’s history concept is reproduced by bell ringing: all events echo through times and epochs. The bell symbolises the flight of the time, in its daily rhythm one can hear the whirl of the events of the being. The ringing supports the world’s stability and harmony. The bell and hand bell sounds become significant for sonorous psychological inner world. Characters’ behaviour depends on the constantly moving, shaking and rocking space. The ringing and tinkling change its ontological status for anthropological: dumbness or keenness indicates if a person pays attention to the world and other people, sharp sensitiveness helps to know oneself and make oneself known. Ringing, clanking and tinkling space designs the original Gogol’s art topos where the living soul is constantly being sought and the broad world’s echo is heard.

Key words: musical code; synesthesia; a bell; a hand bell.

P. 21. *Sedelnikova Olga V.* Tomsk Polytechnic University. **APOLLON MAIKOV’S TRAVELLER’S DIARY OF 1842–1843: PROBLEM PATTERN AND GENRE STRUCTURE.** Apollon Maikov’s traveller’s diary of 1842–1843 belongs to the period of the poet’s personal and creative formation, which was a period of particular eagerness for new impressions. The diary is a relatively small document comprising 42 sheets in folio. Although it reflects the events of the first months of Maikov’s trip only, it is notable for deep

insight and a variety of content matter. The informative content is reinforced by a particular fact, namely, the situation of travelling round Europe, which accounts for the abundance and variety of outward thought-provoking impressions, including contemplations on national, historical, socio-political, ethnographic, moral, ethical, reflexive-poetical and aesthetic issues. Formally, Maikov's traveller's diary breaks the genre tradition from the outset. The records lack regularity, some of their dates are missing and often do not reflect the current events the way classic traveller's diaries do. Along with the elements typical for the diary discourse (poetic nature etudes, historical and cultural sketches and description of morals), Maikov's diary incorporates such unusual forms as notes, essays exploring cultural issues, and pieces of translation of fiction and historical works, which does not impair the diary's integrity. The heterogeneity of the diary's content is conspicuous: one can easily notice that it consists of two different parts, the first one represented by notes on travelling from Kronstadt to Rome, including extensive notes made in Paris, the second one – by notes made in Rome. The fundamental difference of these parts is demonstrated through the choice of objects of description and, correspondingly, revealed through the author's position. In its content, the first part is close to the traditional form of a traveller's diary and reflects the way the young poet got acquainted with European cities, such as Copenhagen, Le Havre, Paris, Geneva, and some small towns. In the "Roman" part the notes acquire a substantially different character. This is explained by Maikov's peculiar attitude to Italy, his piety to the monuments of the ancient culture: the main goal of his trips was to visit them. Thus, Maikov's traveller's diary of 1842-1843 is a document, which provides reliable information about the period of the poet's formation within the socio-philosophical, ethical and aesthetic aspects that are of considerable importance not only for correct understanding of the poet's creative evolution, but also for the analysis of the cultural situation in Russia of the middle of the 19th century. It lays the foundation of understanding of the problems that were to determine the peculiarities of Maikov's world outlook and aesthetic views in the later periods of his life.

Key words: Diary; world outlook; aesthetics; problem pattern; genre structure.

P. 28. *Ustinova Natalia A.* Tomsk State University. **FOOD CODE AS FOOD TRADITION SYMBOLISING.** Food is an integral part of everyday life. This phenomenon reminds reality: the meal unites the material and the spiritual, nature and culture. The food tradition of ethnos is formed during centuries and as a result includes different elements and their names: 1) products and dishes; 2) kitchen utensils and tools; 3) ways of cooking; 4) rituals of a meal; 5) the functions of different components of tradition. At the language level food tradition forms a number of semantic fields. At the semiotic level it generates one of the culture codes. It is a food (gastronomic, culinary) code. It occurs when elements of food tradition, getting secondary meaning, become symbols. This code is conceptual because its elements can correspond with different material embodiment of the meaning – objective and verbal. The elements of both levels enter the kernel of the food code. The periphery is represented by elements, relevant for one of the levels. The functional load of elements is various. There is a disputable question about criteria of this load in this article. The prospect of the research is to research the relative density of food code elements.

Key words: traditional culture; dialect; food; code.

PHILOSOPHY, SOCIAL AND POLITICAL SCIENCES

P. 32. *Inishev Ilya N.* Higher School of Economics (Moscow). **EVENT AND METHOD: PHILOSOPHICAL HERMENEUTICS IN PHENOMENOLOGICAL MOVEMENT CONTEXT.** On the one hand, Gadamer's philosophical hermeneutics is admittedly the integrative part of the history of phenomenological movement. On the other hand, the hermeneutical subject area, as well as disciplinary self-awareness of hermeneutics, diverges considerably from that of the initial E. Husserl's phenomenological project. This fact serves as a motif for reconstruction of the intrinsic logic of the phenomenological movement. The aim of such reconstruction is to answer the following questions: What is the reason for including philosophical hermeneutics into phenomenological philosophy? What role does hermeneutics play in the history of the phenomenological movement? The interpretation of phenomenological subject area in terms of "primordial phenomenality" serves as a horizon for this reconstruction of the essential logic of phenomenological research. Such understanding of phenomenological philosophy focus has priority over conventional characteristics of phenomenological subject matter as a variety of phenomena accessible within special methodological attitude. It allows, first of all, to avoid fragmentation of the area of primordial, i.e. phenomenological phenomena and to minimize presuppositions. The totality of phenomenality blocks constructivism inherent to descriptive phenomenology and in consequence limits the application field of reflexive or methodological approaches. The process of disclosing or articulating primordial phenomenality can be described as phenomenologising. Eventually, phenomenology as an explicative method is regarded as the first part of the two-level process of phenomenologising. The second part of this process is the spontaneous self-disclosing of primordial phenomenality. The idea of two-level phenomenology (phenomenology as a method and as a spontaneous event) has been differently realised in Heidegger's and Gadamer's phenomenological-hermeneutical conceptions. From the very beginning Heidegger stands up for the performative, i.e. existential-practical understanding of phenomenological explication. According to him, phenomenology does not so much explicate phenomena but points at those areas and forms of experience where that explication occurs spontaneously. Still, Heidegger is oriented at the explication of "static" structures of these experiences (which he calls "existentialities"), which allows us to speak about rudimentary transcendentalism of his philosophical position. In his late works Heidegger emphasises the world-disclosing potency of "ontic" experiences. Gadamer develops this tendency considering various everyday experiences such as perception of art, participation in rituals, reading, and etc. to be areas of spontaneous phenomenologising.

Key words: phenomenology; hermeneutics; methodological and spontaneous phenomenologising.

P. 36. *Minchenko Tatiana P.* Tomsk State University. **EUROPEAN CONCEPT OF RELIGIOUS FREEDOM: IDEOLOGICAL SOURCES AND LEGISLATIVE FIXATION.** The purpose of the article is to research the concepts "religious freedom" and "freedom of conscience" in the European culture on the basis of the analysis of works of the thinkers who brought the most essential contribution to the development of idea of religious freedom. The basic stages of the dramatic way of setting this freedom in the European society and law are given. The features of the development of the idea of religious freedom according to socio-cultural conditions of concrete national traditions are underlined. In the article the history of the modern concept of the individual and collective right to religious freedom is described. It arose in the course of Reformation and for the first time received legal fixation in self-governing laws of Providence formulated by R. Williams. Ideas of English (J. Lock, J. Milton, E.K. Shaftesbury, J. Toland, E. Collins, D. Defoe, J. Priestley, J. Swift, E. Berk), Anglo-American (R. Williams, W. Penn), French (M. Montaigne, R. Descartes, D. Diderot, J. d'Alembert, F. Voltaire,

S. Monteskie, J.-J. Rousseau) and German (M. Luther, G. Lessing, I. Kant) thinkers are analysed. The most essential aspects of religious freedom proved by the European philosophers are marked: the idea of the right of religious freedom as natural and inalienable; the idea of toleration in the context of working out of notions on independence of reason and belief, on subjectivity of truth and necessity of internal acceptance of belief; the rejection of compulsion in the matters of belief and of persecutions for belief; the idea of necessity of the secular state in which creed and civil competency do not depend on each other. In the conclusion the legal embodiment of the idea of freedom of conscience in the legal acts of European countries (in constitutions in the first place), and in the international legislation, which allowed generating the modern standard of religious freedom, is shown. The basic threats on the way of its realisation and a system of effective measures of protection of religious freedom and freedom of conscience are listed.

Key words: religious freedom; religion and law; European freethinking.

P. 44. *Pirogov Sergey V.* Tomsk State University. **TOPOLOGY OF CITY LIFE.** This article is devoted to the problem of definition of the essence of a city. It is offered to look at a city from the point of view of the phenomenological paradigm. The city environment represents a qualitative unity of diverse loci of city communities' ability to live. Every city is a unique system of local social orders – topos. In the article the necessary analytical procedures of the topological analysis are specified, and a number of topos as structural elements of a city life are allocated.

Key words: loci abilities to live; topos city life.

P. 47. *Red'ko Olga V.* Kemerovo State University of Culture and Arts. **CONCEPTIONS AND AXIOLOGICAL APPROACHES TO RHETORIC.** Since rhetoric can be defined as a higher level communicative competence or the whole complex of meaningful speech generating rules (the speech being clear and convincing for others), these rules can be and were formulated within theoretic-philosophical conceptualisation of rhetoric. As far as rhetoric presupposes the achievement of some purposes, the rhetor's axiological attitude towards the eloquent devices he (she) uses is essential not only for achievement of this purpose but also for its content; using inadequate devices does not only prevent him (her) from achieving the aim but also substitutes it. So, to estimate both the rhetoric as a whole and the rhetoric of a person in a specific situation, it is necessary to estimate the axiological bases of rhetoric. As one can see, it is possible to create a classification of axiological approaches and conceptions of rhetoric employing philosophy-theoretical speculations. The chosen axiological approaches function at the same time as value motivated rhetoric strategies, some of them being more adapted to specific rhetoric situations, others having a broader scope of application. These rhetoric strategies are not always used consciously and adequately. As a result, the rhetor does not achieve his (her) aim and his (her) interlocutor appears to be disappointed. That is why it is interesting and important to make these strategies explicit. Thus, the analysis in the article revealed a number of rhetoric strategies remarkable for their value-targeted attitude, the correlations of logos, ethos and pathos and their subject. The subsequent research supposes to analyse their correlations with social reality and with some socio-cultural traditions as well.

Key words: rhetoric; axiological approach; rhetoric strategy.

P. 51. *Sergeyev Victor K.* Tomsk Polytechnic University. **HUMANIZATION OF SCIENCE: NEW PHILOSOPHICAL GROUNDS.** The article gives a brief analysis of the views of different philosophers on humanization of science. The author undertakes an attempt of a new substantiation of this concept. The new concept – post-humanization of science – is introduced in philosophical and scientific lexicons.

Key words: theory of post-humanism; post-humanization of science.

CULTUROLOGY

P. 55. *Denisov Nikolay G.* Moscow P.I. Tchaikovsky State Conservatory. **OLD-BELIEVERS' ECCLESIASTICAL SINGING.** The aim of this article is to describe the art of singing of the Russian old-believers. The author concludes that old-believers' ecclesiastical singing is historically connected with the culture of Old Russia.

Key words: ecclesiastical singing; Russian old-believers; culture of Old Russia.

P. 61. *Smokotin Vladimir M.* Tomsk State University. **NEW STAGE IN THE DEVELOPMENT OF MULTILINGUALISM PRINCIPLE IN EUROPE: MODELLING MULTILINGUAL AND MULTICULTURAL SOCIETY.** The article considers the activities of the EU political leadership and its educational communities in support of linguistic and cultural diversity and the construction of a multilingual and multicultural society in Europe. A qualitatively new stage of political and economic integration of the European Communities began with the 1992 signing of the Maastricht Treaty on the European Union establishing and undertaking purposeful measures on a planned change of language policy with the aim to support multilingualism and linguistic diversity, and to promote the overcoming of language and cultural barriers by rejecting the traditional monolingual policies of the European nation-states. The paper focuses on the main steps in achieving of the target of individual multilingualism in Europe, starting with the 1990s new conception in the field of education, teaching and learning, – the conception of life-long education. In the conditions of the scientific and technological revolution, formal education at the first stages of life of an individual is not sufficient for successful provision of innovative technological processes and making optimal decisions in the constantly changing world. Particularly this is the case with mastering foreign languages on a sufficient functional level required by a multilingual and multicultural society. In order to change the Europeans' traditional monolingual and monocultural mentality, the European Council, Commission and Parliament have effectively used campaigns organised in the format of "European Years" on certain topics and promoted science research with subsequent publishing and disseminating the results in the media. A decisive role in changing the public conscience in favour of multilingualism and linguistic diversity, as well as in providing broad support for legislative measures in the field of education with the aim to educate a new multilingual generation of European citizens capable of communicating in no less than two languages, not counting the mother tongue, was played by the European Year of Languages-2001. The European Year of Multicultural Dialogue-2008 demonstrated the importance of preserving the cultural heritage of Europe and the need for support for national cultures, particularly, the cultures and languages of the minorities. Next, the paper considers the role of the Lisbon Strategy on the basis of the decision of the European Council of 2000, which set an aim to turn the European economy into the most competitive and dynamic knowledge-based economy, in the introduction of the conception of multilingualism and linguistic and cultural diversity into life. The Lisbon strategy in the field of education was further developed in the de-

cisions of the Barcelona Council of 2002 on turning the European system of education into the worldwide standard of quality. Summing up, a conclusion can be made that the enlargement of the European Union and the growth of the number of official and working languages have brought about a more active language policy in support of multilingualism and multicultural diversity. An inalienable part of the new European education standard is a stable multilingualism on the basis of special programmes within the conception of life-long learning in the common world education area.

Key words: linguistic and cultural diversity; globalisation; multilingualism.

HISTORY

P. 67. *Kiselyov Alexandr G.* Ugra State University. **DANISH MERCHANTS IN SIBERIA AT THE END OF 19TH – BEGINNING OF 20TH CENTURY.** The Danes played a significant role in Siberian business circles of the 19th – 20th century. In their sphere it was possible to distinguish butter exporters, merchants of dairy farm produce and agricultural machinery, owners of plants not related to butter making, and clerks. A typical phenomenon was the promotion from an employee or a commission-agent to an independent businessman. The specific “Danish” features of business included: 1) a typical Danish business combination: buying butter – trading agricultural machinery; 2) the element of “pioneering”, treating Siberia as “America” – a foreign country promising quick enrichment. Cultural adaptation of the Danes in Siberia had a contradictory character. The sources demonstrated an example of S.H. Randrup. Having married a Russian woman, having studied the Russian language quite well, he still remained a Dane in socio-cultural sense. His business and near-business relations were concentrated in the circle of other “Siberian” Danes. He adapted well enough as possessing comfortable socio-cultural conditions for business development but not as “taking roots”.

Key words: Foreign enterprise; commerce; firm; agency; social-cultural adaptation.

P. 71. *Klyuchanskaya Svetlana A.* Tomsk State University. **MAIN TRENDS OF ASEAN COUNTRIES NUCLEAR ENERGY DEVELOPMENT AT THE END OF 20TH – BEGINNING OF 21ST CENTURY.** The article studies the Bangkok Treaty signed in 1995 and dedicated to the Southeast Asia Nuclear Weapon Free-Zone creation. Tendencies of member-states nuclear energy development are also analysed.

Key words: the Treaty of Bangkok; Southeast Asia atoms for peace.

P. 74. *Nikonova Tatiana A.* Tomsk State University. **INDIA’S NUCLEAR DISARMAMENT PROBABILITY ESTIMATION.** In the article the analysis of India’s nuclear disarmament probability is done. For this purpose some information about Indian nuclear potential is introduced (nuclear weapons and stockpiles of weapon-grade nuclear materials). Then India’s readiness to nuclear disarmament and conditions required for it are examined.

Key words: India; nuclear disarmament; arms control.

P. 78. *Rozhanovskaya Nina K.* Tomsk State University. **NUCLEAR POLICIES OF THE USA AND THE USSR IN 1945–1954.** The period from 1945 till 1954 is a key stage in the U.S. and Soviet nuclear policy formation process during the Cold War. Scientific aspects of the two superpowers’ atomic projects are relatively well studied. However, it is also necessary to link the issue of scientific breakthrough with those of foreign policy and military strategy in order to fill the gaps in the existing research. Similar nuclear-policy issues were at the heart of U.S. and Soviet decision-making process in 1945–1954, namely: the use of atomic weapons as a diplomatic instrument; the role of atomic weapons in new military strategies; presentation of one’s own and adversary’s nuclear achievements to the public; establishment of an atomic industry management system. It is often assumed that the influence of scientists upon policy-making was more significant in the USA than in the USSR. However, it remains an open question. Another question is when new military strategies were formed taking into account nuclear weapons existence. It seems that such strategic review did not take place in the Soviet Union until 1960s. Minimizing the significance of the new technology in official rhetoric, the Soviet leadership did its best to catch up with the USA in the race for atomic weapons, while the USA struggled to benefit from its atomic monopoly, which it considered a “wasting asset”. If the Rational Actor model is applied to the USA-USSR interaction, then differences in political regimes do not matter much. What matters is the set of actions and reactions within the limits provided by the international environment. If political regimes and internal state dynamics are also taken into account, then personal characteristics of major decision-makers ought to be given special attention to. The best way to link domestic and foreign policy processes is to rely upon Robert Putnam’s two-level game model, which underlines the need of decision-makers to take into account the domestic feedback when making a foreign-policy move. Though many American and Soviet researchers have already studied U.S.-Soviet interaction in 1945–1954, including its atomic component, there are still gaps to be filled. Those gaps are, for instance, due to the lack of open sources on Soviet foreign policy. It is necessary to study the problem from a different angle, trying to link together the issues of scientific development, foreign policy, and military strategy. This research would benefit from new opportunities, such as declassified documents of the Soviet atomic project and U.S. foreign policy archives published online. The need to study the period of 1945–1954 is justified by the fact that all major stereotypes and perceptions of adversary’s intentions were formed then, as well as decision-making mechanisms in the nuclear area. Besides, current U.S.-Russian strategic dialogue should be studied in the context, which includes the evolution of both states’ nuclear strategies since the earliest years of bipolar confrontation.

Key words: nuclear policy; atomic monopoly; cold war; USA; USSR.

P. 82. *Saynakova Vera S.* Tomsk State University. **COOPERATION BETWEEN FRG AND ISRAEL IN THE MILITARY SPHERE.** The article is devoted to the main prerequisites and obstacles for military cooperation, the specific features of its development in 1950s – early 1960s, the significance of military cooperation for both the states and its role in the process of normalisation of relations between the FRG and Israel.

Key words: normalization of relations between states; military cooperation; Hallstein Doctrine.

P. 87. *Tadysheva Natalia O.* S.S. Surazakov Scientific research Centre. **PECULIARITIES OF ORTHODOX TEXTS TRANSLATION INTO THE ALTAI LANGUAGE.** The author studies the features of translation of peasant literature into the Altai

language. The analysis of the material shows the difference in understanding of meanings of various terms. The article singles out the particular features of word meanings influenced by the time factor. The author also studies the specifics of translation of ethnographic notions that are new for the Altai mentality.

Key words: translation; term; orthodox; Altaic language; missionary.

LAW

P. 91. *Gavrilenko Artyom A.* Irkutsk State University. **ELEMENTS OF FACT IN PROOF AND THE ACCUSED PERSONALITY CHARACTERISTICS ANALYSIS.** The analysis of circumstances, characterising the personality of the accused as a part of the fact in proof of the criminal case cannot be conducted out of other elements as it is stipulated by their interconnection as a system in whole. The great degree of interconnection is defined with elements of the fact in proof appertaining to the subject and the subjective element in crime. Analysing specific elements of the objective element of crime helps to determine the guilty person's characteristics with relative certainty. It is reasonable to take into consideration personal characteristics while determining whether the guilty one has thoughtlessly supposed that crime would not been committed. In this connection the court should examine the knowledge and experience level of the offender. Studying the motive of the crime is closely connected with the personality of the offender and his/ her features, propensities, inclinations and interests. A considerable numbers of circumstances which mitigate or aggravate liability are stipulated by personality characteristics of the accused. The correlation with other elements of the fact in proof is also defined.

Key words: fact in proof; personality of the accused; circumstances characterising personality of the accused.

P. 95. *Komushkina Alevtina A.* Altai State University. **ON DEFINING THE LEGAL NATURE OF RESERVATION AND SERVITUDE ON LAND.** In the given article the author raises the problem of definition of the legal nature of agreements on reservation and servitude. Having come to a conclusion on insufficiency of certificates of public authorities for relations of reservation and servitude and necessities of the conclusion of bilateral agreements, the author focuses attention on the problem of their civil-law nature. In the article the concept of reservation of lands for the state and municipal needs in the aspect of its reflection in Article 70.1 of the Land Code of the Russian Federation is considered. At reservation there is a fact of transfer of the right. The author states a position to qualify these relations of reservation as civil law ones and to fix the corresponding norms in the Civil Code of the Russian Federation. The author offers to introduce a new concept "reservation of land areas" alongside with the existing "reservation of lands" legislatively. Also the author proves the possibility to apply the contract of free use (loan) to relations of reservation of land areas. Characterising private servitude, the author suggests fixing the norm of an obligatory signing of a servitude contract in the Civil Code. The given necessity is provided by the Law "On state registration of rights to real estate and transactions with it". It is caused by a severe need of the relations, which have developed in practice on use of land areas. In spite of the fact that servitude in Article 216 of the Civil Code of the Russian Federation is provided among the real rights, the agreement on establishing servitude possesses a number of signs, which characterise it as a transaction. The author considers that the norms of the Civil Code of the Russian Federation should have a statement on gratuitousness of the given contract, as the payment for use of the burdened land area is only indemnification, caused by such use. In case of absence of losses the proprietor of a site has no the right to demand such payment. The given conclusion, according to the author, also should find reflection in the Civil Code of the Russian Federation. The author comes to a conclusion that effective standards on reservation and servitude insufficiently regulate the considered relations that causes a severe need in legislative fixations of norms on corresponding agreements in the RF Civil Code.

Key words: reservation; servitude; the transaction.

P. 99. *Nazmetdinov Rustem R.* Tomsk State University. **SYSTEM OF THE US LABOUR AND EMPLOYMENT LAW.** In this article the author researches the history of the US labour and employment law formation, its system, structure, place and role in the legal system. The main areas of legal influence of rules of business (labour, employment law) on public relations are considered. Comparison of two legal systems (Anglo-Saxon and Romance-Germanic) is carried out. The author comes to a conclusion that the employment and labour laws are not separate branches of law, but sub-branches of business law. Employment law is the body of law that governs the employer- employee relations, including individual employment contracts, the application of tort and contract doctrines, and a large group of statutory regulations of such issues as the right to organise and negotiate collective bargaining agreements, protection from discrimination, wages and hours, health and safety. In its turn, labour law is an area of law that deals with the rights of employers, employees, and labour organisations. The main sources of the US business, labour and employment law are considered.

Key words: labour; employment law; USA; business law; system.

P. 101. *Saitova Oksana M.* Kazan State University. **ANTI-DUMPING PROVISIONS OF THE RF – EC PARTNERSHIP AND CO-OPERATION AGREEMENT.** The article deals with the anti-dumping provisions of the Russian Federation – European Council Partnership and Co-operation Agreement. It examines the history of the Russian economics market status question and the EC anti-dumping enforcement. Current problems are examined that are to be solved in the new Agreement.

Key words: contract; partnership; anti-dumping.

P. 104. *Yakimovich Yuriy K.* Tomsk State University. **THE ROLE OF THE CONSTITUTIONAL COURT IN FORMATION AND DEVELOPMENT OF MODERN CRIMINAL PROCEDURE LEGISLATION OF RUSSIA.** In adversary proceedings the court is obliged to provide with a fair and unhampered disposition of a case granting both parties equal opportunities to defend their positions. The court cannot take the execution of extra function of a party, which represents the prosecution, upon itself because it breaks the constitutional principle of adversary proceedings and it can lead to a situation when a party, which represents the defence, is in a worse position. Consequently, for the first time the Constitutional Court formulated the matter of the principle of adversary proceedings, ratifying its decrees and confirming its position on this issue. Starting from these theses of the Constitutional Court the principle of adversary proceedings was formulated in the Criminal Procedure Code of the Russian Federation (Article 15). Relying on the position of the Constitutional Court and regulations of the Criminal Procedure Code the author draws a conclusion that adversary proceedings as a principle of a criminal trial are only peculiar to trial and cannot be a principle of pre-trial. Besides, the Constitutional Court accepted some fundamental decrees to develop constitutional regulations about providing of qualified legal aid; legislators apprehended these decrees

when the Criminal Procedure Code of the Russian Federation was adopted. It is considered that the state, defining the function of legal proceedings, equality of the parties before the court and adversary proceedings, guarantees qualified legal aid (guaranteeing the right to defence) to an accused and a suspect, securing the right of appealing decisions made during pre-trial and decisions taken by the court of the first instance, etc. The author expressed his opinion that the Constitutional Court is one of the co-authors of the project of the Criminal Procedure Code of the Russian Federation.

Key words: constitutional court; criminal procedure legislation; judicial appeal; competitiveness; right to legal assistance.

ECONOMICS

P. 108. *Vasechko Dmitry Y.* "Sibkabel", Ltd. (Tomsk). **STRUCTURAL CHANGES IN ECONOMY UNDER THE INFLUENCE OF PACKAGING PRODUCTION DEVELOPMENT.** Structural reforms in Russia require efficient devices to regulate processing industry, including packaging production. Russian and foreign economic researches show four approaches to the development of packaging production. The first approach focuses on higher production quality and increased competitiveness. The key problem within the second approach is low quality of Russian packaging materials, which makes customers choose foreign production. The authors of the third approach focus on implementation of new financial and credit schemes into the production process. The fourth approach contains analysis of Russian pre-reform and foreign experience of the planned and programmed control of structural adjustment by the state. Thus, we come to the conclusion that approaches to the problem under discussion are specific for certain countries, while forms and methods of the control depend on the conditions in the country where they are used. Though these forms are determined by financial, economic and legal peculiarities of the national economic model, they have a common basis, which is the following. As the development of processing industry becomes more urgent, the countries of South-East Asia experience an increased need in state control of this process. In Russia these processes are reduced to political rent, while in foreign countries they develop efficient methods of fiscal, credit, external economic policy aimed at supporting national producers. The need in structural alterations of Russian packaging producers is triggered by quality competition on the part of western producers on the one hand and price competition on the part of southeast companies. The integration of Russian producers into the world market means equal competition with foreign producers not only in the external, but also in the domestic market. Thus, to accelerate adaptation of Russian producers to the world quality standards it is necessary to activate innovation mechanisms in packaging production. Thus, the use of packaging materials promotes efficient goods circulation, including production, transportation, storage and sales. Cost-beneficial packaging makes it possible to produce and sell the packed goods with the highest benefit. In other words, due to innovations in packaging producers can achieve the quality of production corresponding to customers' demand. So, what matters is not only the cost of packaging, but also its influence on product promotion in the market. The statistics of modern period of economic system development show the Russian packaging market to be one of the most dynamic in the world. Modern packaging production in Russia consists of four segments: metal, glass, polymers, and cardboard. According to independent experts in 2004–2005 the average of packaging production consumption fluctuated from 80 to 250 kg/year per person, or 18–23 bln. US dollars. PRADO MARKETING predicted 57–58 mln.tn (25–26 bln. US dollars) in 2006. In 2008 the consumption increased to 70 mln.tn (30 bln. US dollars). The market has been growing within the period of 2005–2009 mainly in value terms. This process will continue despite minor fluctuations in Russian macroeconomics. Thus, we come to a conclusion that the demand for packaging material in Russia is not satisfied. Development of packaging production has a great impact on the economic structure, beginning with industrial structures and goods circulation, promoting cutting-edge technologies, and finishing with the development of customers' preferences.

Key words: packaging production; state support; business innovations.

P. 112. *Isachenko Tatiana M.* Moscow State Institute of International. Relations. **PRACTICE OF APPLICATION OF SPECIAL PROTECTIVE, ANTIDUMPING AND COMPENSATORY MEASURES IN EU COMMERCIAL POLICY.** The main aim of this complex of measures is to counteract the unfair competition from imported goods (antidumping and countervailing measures) or the increase of the import that could cause serious injury to the national industry (safeguards). EC contingency trade remedies are applicable to all imports from third countries except for members of the European Economic Area (EEA). AD measures are the EC's most frequently used trade defence instrument. The procedure for countervailing investigations is similar to that for AD investigations, in particular with regard to the determination of injury, the definition of Community industry, the initiation of a proceeding, the provisional and definitive measures, and the termination of the proceedings.

Key words: antidumping; protecting; countervailing measures.

P. 119. *Kazakov Vladimir V., Yartseva Irina Yu.* Tomsk State University, Tomsk City Administration. **MAIN TRENDS OF MUNICIPALITY'S ANTIRECESSION TAX POLICY.** In the article the basic task of tax policy of the municipality "Tomsk City" in the conditions of the world financial crisis is set. Main trends and measures to solve this task are given. The first trend includes the features of tax revenues planning: single tax on imputed income, land tax, ground and municipal property tax, etc. The second trend is to reconsider the tax and non-tax bonuses to certain groups of tax-payers in order to increase the income part of the budget and to decrease the tax liabilities of businesses. The third trend presents the results of the analysis of the perfection measures on budget payment debts reductions and tax and non-tax budget incomes control reinforcement. The data on the income part of Tomsk budget administration for a 9-month period of 2009 on certain taxes is also given.

Key words: budget; income; tax income; non-tax income.

P. 126. *Monich Anastasia I.* Estimation Bureau "TOKKO", Ltd. **ASSESSMENT OF LICENCE AGREEMENT.** Organising a new engineering procedure, new materials production, new ideas and ways of thinking becomes more and more important with the development of civilisation. Nowadays income and activity of any enterprise depend foremost on intangible assets. That is why safe protection and appropriate intellectual rights assessment are a secure base of commercial relations. Large established corporations dealing with innovation development have a rather predictable product market. Their income flow is equal in time. That means there is a strong reason for them to use the method of income approach capitalisation. But what about smaller companies whose activity is only about innovative product development, while the creation of this product itself leads to a new type of market? It is particularly difficult to assess their produce using the income approach. This article studies assessment methods applied to one of these cases. We are going to assess a

licence agreement, which belongs to one of Tomsk enterprises and is meant for an Indian company. The company is small enough to predict its income flow, so we used money flow discounting income approach to assess its licenses. Within this method we used two options:

1. Royalty summation method
2. Method of measuring the loss of profit.

In case of the royalty summation method, the production according to the license is supposed to take place in the country of the licensee. Therefore, the license income flow is going to be different from the one in the country of the licensor. Royalty summation method considers the assessment of license cost as the sum of royalties. In case of method of measuring the loss of profit, a licensor presumably produces and sells the product at the licensee market according to the cost and prime cost established there. Therefore, the investment license price at this approach is the sum of profit losses, which could be avoided by a licensor if he didn't refuse his target market share in favour of the licensee and had the profit of enterprise according to the agreement. Being successfully applied these methods resulted appropriate investment value assessment of Tomsk company's licence agreement. At present we are carrying out the commercial side of the deals involving it and approbation of its cost at Indian market.

Key words: intellectual property assessment; license assessment.

P. 129. *Salenko Marina A.* Tomsk Polytechnic University. **INVESTMENT PROCESS IN A REGION AS OBJECT OF MANAGEMENT.** In the article the problem of investment process in a region from the point of view of its features as the object of management is considered. The research urgency is proved by the necessity of realisation system; purposeful and efficient control investments at a regional level, which is impossible without understanding the essence and the specificity of investment process as a basis of investment activity.

Key words: investment process; management; system approach.

P. 132. *Stroyeva Olesya A.* Oryol State Institute of Economy and Trade. **THEORETICAL-METHODOLOGICAL BASES OF MANAGEMENT OF REGIONAL ECONOMIC SYSTEMS AND INNOVATIVE ACTIVITY DEVELOPMENT.** During last years a concept becomes more urgent according to which the process of economic systems management provides clarity of the received information on the system's activity and utility of conclusions. Purposefulness of conclusions of the analysis facilitates working out of concrete recommendations at economic systems management process updating. Accordingly, the necessity of theoretical research and development of practical recommendations for economic systems management process perfection increases. Modern economic methods in the field of management of economic systems are of either national, or of intense microeconomic character. The problem is topical for economic policy construction on the free competition principles assumes the necessity of constant perfection of economic systems managerial process in the conditions of innovative activity development. In modern science and management practice there is a constant process of perfection, updating and search of new approaches, concepts, ideas in the field of management of economic systems while the insufficient level of scrutiny of theoretical and methodological questions of development of innovative activity in management leads to the fact that requirements of organisations are not completely satisfied, which reduces their work efficiency. In economic systems management process, innovative activity development is one of key factors as in its modern conditions its final results define economic power of enterprises, regions and the country in whole. Therefore the given problem is a leading one, and the orientation and rates of further social and economic transformations in Russia in many respects depend on its solving.

Key words: management; development; regional economic systems; innovative activity.

P. 137. *Ufimtseva Yevgenia V., Kudjakov Vitaliy A.* Tomsk State University of Architecture and Building. **PERFECTION OF MUNICIPAL FINANCES MANAGEMENT SYSTEM.** Local government based on the consideration of the population vital interests and active citizens' participation in the management process should become the basis of Russian statehood. The basic document of the recent reform is Federal Law № 131, accepted in October 2003 "On the principles of organization of local government in the Russian Federation". According to the Constitution of the Russian Federation it has established the general legal, territorial and economic principles of the local government organisation, defined the state guarantees of its realisation. But the main problem of local government's activity support – its financial base – is still unsolved. In the article the authors offer to change the present system of taxes splitting to the system, where each tax is rigidly attributed to the levels of the budgetary system, thus to aspire full autonomy of the authorities of different levels in establishing the size, structure and financing of certain kinds of expenses (according to the Constitution of the Russian Federation, Article 72). In our opinion, local budgets should be formed by the following taxes: the personal income tax, the tax to the maintenance of housing and objects of welfare sphere (the previously cancelled tax), the sales tax (the previously cancelled tax), the cumulative income tax, the real estate tax (combined land and property taxes). The suggested model of interbudgetary relations is reconstructed to self-support municipal formations. The attraction of finances of higher budgets is required only in case of tax potential insufficiency in subordinated territories for the objective reasons. It is impossible to provide the development of a territory and its economy without creating a stable and powerful tax base for the municipality. We offer to apply the Basic Score Card system in order to improve making administrative decisions both of strategic and operative character. The application of the mentioned recommendations will provide the equation of the financial resources generated with the help of taxes with the expenses, thus creating conditions for satisfaction of municipal formations needs, and, hence, to full realisation of their economic interests.

Key words: local self-management; the budget; financial independence.

PSYCHOLOGY AND PEDAGOGICS

P. 141. *Belova Natalia Yu.* Novosibirsk State University. **THE SUBJECT AND THE OBJECT OF PERCEPTION IN VARIOUS SYSTEMS OF ART INTERACTION.** The article is devoted to revealing the qualitative features of various communicative systems of art interaction. The novelty and the urgency of this topic are dictated by existence of various ideas about the process of art perception, art experts and objects, and also about the subjects of art interaction that have not yet been integrated into a uniform system. The problem of the given article was an attempt to see all the elements of art interaction (the art object, the subject of perception, the way of art interaction) in a uniform structured space. In the beginning of the article the concept of *the system of art interaction* as a formation spon-

taneous at a certain time interval, which develops during the interaction of the subject of perception and the art object, is considered. Further, using the basic concepts of the concept of metaindividuality of art (Dorfman), the general structural components of the subsystem of the subject of perception and the object of perception have been considered. In the body of the article, on the basis of an experimental research of perception of painting, three systems of art interaction are analysed: *classical, modernist, postmodernist*. The qualitative features of the subject of perception, the art object and the way of their interaction are considered depending on the system they belong to. These qualitative features are defined by the fact that each system assumes three various positions of the subject of perception (*the addressee, the analyst, the co-author*), three types of the art object (*the product, the aesthetic object, the interpretation*) and three vectors, fixing the attitude of the subject of perception to the object, expressed by its directed activity (*translation, structural analysis, deconstruction*). The basic criteria of the subject's and object's belonging to this or that system of interaction have been given. Each of the systems of interaction has been illustrated by concrete examples of statements of respondents. The general conclusion is made that it is possible to understand the three systems of interaction as various ways of knowledge and existence in information space of the same person.

Key words: object of perception; subject of perception; system of art interaction.

P. 145. *Fayzullayeva Yelena D.* Tomsk State University. **STUDYING CHILDREN'S "SENSE TASKS" SOLVING.** In this article the age specifics of solving "sense tasks" by children of 4 to 10d is observed as an indicator of sense consciousness formation. Sense consciousness here is a certain stage in the many-sided world of a person's formation. It is closely connected with the moment when a child finds sense of subjects, phenomena and situations. One of the main characteristics of the process of sense consciousness formation is the specific of "sense tasks" solving by the child. 289 children took part in this research; all of them attended educational establishments. A face-to-face discussion with a child was the main method of research. 4 pictures with the most common problem situations of children's life were shown to the child one by one. The situation in the picture was discussed. The solution of such a task is to put oneself in "somebody's shoes" and to project one's behaviour in such a situation. Therefore a child solves a kind of a "sense task". The answers given by children were very different. They were classified. The following aspects of solutions were found: the sense perception of a problematic situation (**perception** aspect); some actions which were suggested to find a way out of a problem situation (**behaviour** aspect); child's evaluation of a character's behaviour (**evaluation** aspect). According to each aspect of children's solving "sense tasks" some indicators were found, characterising different levels of sense consciousness development (harmonical, non-harmonical and transitional from non-harmonical to harmonical). The following age peculiarities of solving "sense tasks" show us that the world of a child becomes more and more complicated when one gets older (from paying attention to a part of the situation only as small children do, to paying attention to all the components of this situation as older children do; from non-constructive methods of solving problems as small children do, to more constructive methods of interaction as older children do; from stereotype evaluation, oriented to the social norm as small children do, to deeper and fuller evaluation as older children do). Nevertheless, the received data shows that there are more detailed (harmonical) and less detailed (non-harmonical) forms of sense consciousness in all age groups. So, we can say that besides age specific there also are individual peculiarities of a child's world formation. It is important to create conditions, which are promoting the process of harmonization of semantic consciousness.

Key words: theory of psychological systems; many-sided world of a man; sense consciousness; sense task.

P. 149. *Cherdantseva Anna V.* Transbaikalian State Humanitarian-Pedagogical University (Chita). **TRAVELLER'S PSYCHOLOGY. PERSONAL CHARACTERISTICS RESEARCH.** The psychological aspects of the traveller are reviewed in the context of the theory of psychological systems. We present survey data, as well as the results of the research of characteristics, such as rigidity and internality. The research shows that people with different degrees of involvement in the journey equally highly value the developing tourism resources, but they try to use them in normal life in different ways. The degree of travel involvement and the openness (secrecy) conditions of one's psychological system are interconnected. Rigidity (flexibility) is the most related to travel-making personal feature. Frequent trips appear to be connected with such personality characteristic as flexibility of the inner world of an individual, susceptibility to new things.

Key words: travel; mental space identity; rigidity-flexibility; internality-externality.

P. 153. *Yakovleva Yuliya V.* Chelyabinsk State University. **INDEPENDENCE AT STUDENT AGE (AXIOLOGICAL ASPECT).** The actuality of the considered problem is defined by the fact that the last decades of the 20th and the beginning of the 21st century are characterized by decreasing of the importance of social standards. The external behaviour determinant is transiting to the internal one. It forces an individual to search for decisions at the turning points of his (her) life, to show independence, which is defined as the complete quality of the subject representing a combination of emotional, motivational, cognitive and volitional spheres of the person, it defines high ability to transform reality and one's own vital functions. The level of development of the axiological sets causes this ability. On this basis, the axiological aspect of independence becomes topical because the values determine the features of a person's life. Independence is the quality that opposes personal helplessness. They can be presented as a continuum where various combinations of features in the emotional, motivational, cognitive and volitional spheres of a person are located as two extreme types: independence and personal helplessness, and an intermediate type: adaptability. The conducted research has shown that the examinees with the expressed independence, personal helplessness and adaptability have significant distinctions at the level of axiological sets. The independent one is characterised by a higher level of development in the value sets. There is coordination of the environment requirements with the personal values in case of the developed independence. The environment requirements in the form of subjective requirements to oneself as to a person take the form of a "due for oneself". The activity of the subject in this case acts as a means for achievement personal senses. Thus, we can suppose that independent students will be characterised by the predominance of semantic control over all other regulatory systems, it will show in more independence from the situation and social pressure, in good control over requirements and emotions. A lower level of development in the value sets is observed among adaptive young men and girls that can be expressed in their reactance and dependence on environment. The lowest level of development in the value sets is characteristic for students with personal helplessness. The absence of clear vital orientations can be expressed in depression, susceptibility to mental and somatic diseases.

Key words: independence; personal helplessness; valuable orientations.

BIOLOGY

P. 157. *Yevzhenko Konstantin S.* Omsk State Pedagogical University. **FLORA AND VEGETATION OF WATER OBJECTS OF THE TARA RIVER VALLEY.** The author gives short description of the explored territory's water objects at the beginning of the article. He cites the classification of lakes of the Tara River Valley on the basis of the factual and his own data. The author comes to a conclusion that the majority of the explored lakes are the old bed areas of the Tara River. Continuing the description of the explored territory's water objects the author gives hydro-chemical characteristics of their water using his own data. Concluding the description of the explored territory, the author gives details about the most common organic and inorganic sediment types in water objects. The main body of the article is devoted to the exploration results of the flora and cenosis composition of the vegetation cover of the Tara River Valley water objects. The author presents information about new locations of water macrophytes rare species and about new locations of species included in the Red Book of Omsk Region. The description of partial activity of macrophytes species in the explored territory's water objects was introduced. The result of the exploration was finding a new species of macroscopic alga for Omsk region – *Chara braunii*. According to the data of geobotanical descriptions the list of water macrophyte groupings types for the Tara River Valley water objects was made. The author emphasizes that the mentioned groupings types are habitual in the lakes of the Tara River Valley. The mentioned groupings in many cases occupy sizable water areas. The information about the most rare communities in the presence of *Hydrilla verticillata* was introduced. In the conclusion the author cites information about the rate of trophicity and saprobity of the explored water objects on the basis of the data on the species composition and the cenotic structure of their vegetation cover. The flora basis of the Tara River and the valley lakes is composed of mesotrophic and mesoeutrophic species. The common mesotrophic character of the flora points at medium biogenic elements content in the water ecosystems of the explored territory. The estimation of water organic pollution or saprobity demonstrated that fairly pure water predominated in the explored territory's water objects.

Key words: Tara River; flora of hydromacrophytes; aquatic vegetation.

P. 161. *Zharkova Lyubov P., Knyazeva Irekle R., Ivanov Vladimir V., Bolshakov Mikhail A., Kutenkov Oleg P., Rostov Vladislav V.* Tomsk State University; Institute of High-Current Electronics, SB RAS (Tomsk); Siberian State Medical University (Tomsk); Institute of Oncology, Tomsk Scientific Centre, SB RAS. **REPETITIVE PULSED X-RAY AND MICROWAVES EFFECT ON PEROXIDE LEVEL IN ISOLATED HEPATOCYTES.** The effects of the repetitive pulsed x-ray (8–25 pulse per second pulse repetition rate; 0,003–0,02 mGy/pulse dose) and microwaves (8–25 pps pulse repetition rate, 120–1520 W/cm² peak power flux density – PFD) on the peroxide level in isolated mouse hepatocytes using fluorescent probe (H₂DCF-DA) was investigated. The hepatic cells were isolated using the conventional procedure and following the humane treatment guidance. The source of the pulse periodic x-rays is based on the bremsstrahlung of a SINUS-150 accelerator (Russia; 4 ns pulse duration, 300 kV accelerating voltage, 2.5 kA electron current, spectrum of photon energy with maximum 100 kiloelectronvolt). The laboratory generator based on the MI-505 magnetron (Russia, 10 GHz, 100 ns pulse duration) served as a repetitive pulsed microwaves (RPM) source. One time exposure of the RPM or the repetitive pulsed x-ray on the isolated hepatocytes changes the fluorescence strength. It is the evidence of the effect of RPM and repetitive pulsed x-ray on the peroxide production in hepatocytes. The exposure to repetitive pulsed x-ray with the doses of 0,011, 0,02 mGy/pulse and RPM with the peak of PFD of 960, 1520 W/cm² and pulse repetition rates of 10–19 pps was the most effective. The condition of the antioxidant system of the irradiated hepatocytes was investigated simultaneously. For this purposes exogenous hydrogen peroxide was added to the irradiated hepatocyte suspension. Exposure of repetitive pulsed x-ray with the dose of 0,02 mGy/pulse and the pulse repetition rate of 13 pps and RPM with the peak of PFD of 960, 1520 W/cm², the pulse repetition rate of 10–19 pps reduced the antioxidant ability of the irradiated cells. The character and intensity of the effect depends on the pulse repetition frequency and the peak power density or dose. The character and intensity of effect can be defined by the rate of ROS generation and utilisation. The pro- and antioxidant elements in different ratio are sensitive to the conditions of exposure. It was shown that the repetitive pulsed microwaves change the peroxide level more in comparison with the pulse periodic x-ray. The increase of peroxide level in the hepatocytes initiated by RPM or repetitive pulsed x-ray leads to the oxidative modification of lipids and proteins that can be a cause of certain biological effects.

Key words: x-ray and microwave pulses; hepatocytes; peroxide.

P. 164. *Zvereva Galina K., Urman Svetlana A.* Novosibirsk State Pedagogical University. **SPATIAL ORGANISATION OF MESOPHYLL IN LEAVES OF SOME CONIFEROUS (PINACEAE).** Leaves of the coniferous have a variety of shapes of assimilating cells, but it is practically unknown what characteristics of their arrangement in the space of a leaf are, as our ideas of the structure of mesophyll of needles are mainly based on cross-section cuts. The problem of the present work was to give comparative anatomic characteristics of the spatial organisation of mesophyll of needles of *Picea obovata*, *Pinus sylvestris* and *Larix sibirica*, characterised by originality of cellular forms. The structure of mesophyll of coniferous leaves was studied on the example of two-year-old needles of *Picea obovata* Ledeb. and *Pinus sylvestris* L., *Larix sibirica* Ledeb. leaves of the current year shoots were analysed. The anatomic structure of mesophyll was investigated in the middle part of needles at transverse, longitudinal and radial cuts of leaves fixed in mixture Gammalunda. The configuration of cells was also examined in macerated squash preparation (Possingham, Saurer, 1969). The form of projections among mesophyll cells distinguished simple and complex cells, the latter, in their turn, were subdivided into cellular and lobar ones (Berezina, Korchagin, 1987; Ivanova, Pyankov, 2002; Zvereva, 2007, 2009). In mesophyll of *Picea obovata* needles, there are almost no cells of the complex form; simple cells on radial cuts have projections of the adjoining cylinders stretched from endoderm to epidermis. At cross-section cuts of *Pinus sylvestris* needles, the so-called folded cells of mesophyll are well exposed, they also have a rectangular shape at radial cuts, a narrower one, which incorporating with each other extend from endoderm to epidermis. According to the terminology we offer, it is possible to say that mesophyll of needles of *Pinus sylvestris* and *Picea obovata* consists of practically one type of cells – median, with *Pinus sylvestris* having the complex form of cells and *Picea obovata* having the simple one. The structural basis of *Larix sibirica* mesophyll is formed by three groups of assimilating cells of the complex form, which are located in mutually perpendicular directions of their largest surfaces. Median cells of various shapes – from spongy up to lacinate lobar and lacinate ones at cross-section cuts – represent the first group; they have an extended rod-like shape at radial sections. Cellular cells represent two other groups; by their sections they are located along the leaf, perpendicular to each other. Two structural groups of mesophyll are allocated in the investigated species of coniferous: median and mixed. The structure of mesophyll of *Pinus sylvestris* and *Picea obovata* needles refers to the first group, the structure of *Larix sibirica* to the second one.

Key words: *Pinaceae*; folded mesophyll; cellular cells; lobar cells; lacinate cells; structural organisation of mesophyll.

SCIENCES ABOUT EARTH

P. 169. *Akhmatov Stanislav V.* Tomsk State University. **SUBSTANTIVE PROVISIONS OF RECREATIONAL LIMNOLOGY.** Complex studying of a water body is one of necessary problems in developing recommendations for recreational use, for the favourable confluence of factors for one kind of activity can interfere with the development of another one, more favourable economically. The object of studying in recreational limnology is the complex operated system consisting of some interconnected components: people at rest, natural (water bodies and adjoining territories) complexes, an infrastructure, maintenance staff and the authority. The most important component is a natural complex as it defines the character of recreational activity. The main task of recreational limnology is to satisfy recreational needs of the society. "Recreational limnology" is a branch of recreational geography that studies a natural complex consisting of a water body and a territory surrounding it to be used with a view of rest, health improvement and people's physical and mental power restoration. All kinds of recreational activity at internal water bodies are listed, the method of defining the recreational potential of a water body is offered, and the factor of recreational suitability of a water body is introduced. The technique of research and descriptions (certification) of small water bodies, as well as the technique of defining the factor of recreational suitability of lakes, was applied for the last few years on the territory of the Altai Republic.

Key words: recreational limnology; water body; recreational suitability.

P. 172. *Belov Sergey A., Deryagin Vladimir V.* South Ural State University (Chelyabinsk), Chelyabinsk State Pedagogical University. **GEOECOLOGICAL FEATURES OF DIFFERENTIATION OF LAKESIDE LANDSCAPE-RECREATIONAL ZONES OF LAKE UVILDY.** Data on landscape differentiation of the reservoir of Lake Uvildy are presented. On the basis of field researches the spatial laws in distribution of recreational loading of the lakeside geosystems and the degrees of anthropogenic transformation of the territory are revealed. On the basis of the integrated analysis the zoning of the landscape-recreational zones of the federal nature monument is executed and their geoecological estimation is made.

Key words: geoecology; recreational loading; landscape-recreational zones; landscape ecology.

P. 177. *Kashiro Margarita A.* Tomsk State University. **WATER OBJECTS ECOLOGICAL CONDITION INFLUENCE ON URBAN TERRITORIES' RECREATIONAL POTENTIAL.** A city is a complicated system; natural, technogenic and social components of this system interact. Lakes of the urban territories and their basins are influenced by various factors created by human therefore it is an example of interaction of the natural and human component of the urbanized environment. City lakes exert considerable influence on the development of a city's territory: basins form the microclimate and the environment of the nearby areas, they affect building processes, and attract urban population wanting rest, etc. Intensive human activity changes the hydrological, hydro-chemical and hydro-biological processes in water ecosystems; it leads to chemical and thermal pollution of reservoirs and increases scales and rates of growth; it breaks the ecological equilibrium and self-regulation processes. Thus the aesthetic value of water objects is lost, and the recreational potential of an urban territory is reduced. Therefore studying lakes located within an urbanized territory is a very important problem of today. This problem is also significant for Tomsk. The provision of townspeople with places for rest is low and it is less than the standard prescribed by legislation. In this connection, the purpose of the conducted research is to study the ecological condition of the water complexes because it is one of the main restrictive factors in the recreational use of lakesides and water areas. Twelve lakes of natural and anthropogenic origin on the territory of Tomsk were chosen for research as they have greatest potential attractiveness for recreation due to their size and geographical position. In the process of the research of lakes' water characteristics the organoleptic, hydro-chemical and microbiological properties were studied. During the landscape analysis the territorial distribution and the specific structure of water vegetation were characterized, modern human impact on basins was studied. In the result of the research a conclusion was drawn about unfavourable ecological conditions of Tomsk lakes. However, landscape researches showed that lakeside territories possess considerable recreational potential and can be used for many kinds of rest. Provided that a complex of clearing actions is carried out (dumps on lakesides will be liquidated, lakesides will be equipped with modern amenities, the quality of water in the lakes will be improved to the sanitary standard) then Tomsk lakes can play a paramount role in the organization of short-term rest for the population. The maintenance of favourable ecological state of lakes will increase their attractiveness; it will also ensure stable existence and functioning of basins over a long period of time, which will improve human environment.

Key words: lakes; Tomsk; ecological condition; recreation.

P. 181. *Leshchinskiy Sergey V., Zenin Vasily N., Orlova Lyubov A., Burkanova Yelena M.* Tomsk State University, Institute of Archaeology and Ethnography, SB RAS (Novosibirsk); Institute of Geology and Mineralogy, SB RAS (Novosibirsk). **BEAST SOLONETZ OF CHULYM-YENISEI PLAIN – MINERAL OASES AND CENTRES OF MAMMOTH FAUNA AND PALAEO-LITHIC MAN'S ACTIVITY.** A new type of burial place of large mammals remains (primarily, mammoths) has been identified that is associated with their death at the beast solonetz sites. Those are ground surface sites where animals with water-electrolytic imbalance eat soil or drink mineralised water. The substantiation has been provided for the wide occurrence of the beast solonetz sites throughout the Chulym-Yenisei Plain during the Sartan Cryochron (~ 24,000 – 10,000 BC), when acid and acid-gley geochemical landscapes deficient in alkaline and alkaline-earth elements evolved considerably. The beast solonetz sites were the peculiar mineral (geochemical) oases in the migration ways of the mammoth fauna. The formation of favourable Ca-Mg-Na-geochemical landscapes at such sites resulted from the unique combination of the geological structure, relief and microclimate. The principal reason for the accumulation of megafauna (primarily, females, calves, ill animals) at the mineral oases is in the direct and circumstantial abiotic relations of mammals with the geochemical habitat, of which lithophagia is one of the manifestations. The Kiya beast solonetz grouping, Shestakovo-Kochegur (~ 25,800 – 17,800 BC), where lots of mammoths' bones bear evidences of destructive changes caused by mineral deficiency, is the typical locality of such kind. Mineral oases and adjacent sites were also the centres of the early man's activity. This is proved by a number of synchronous Palaeolithic settlements located on the favourable geochemical landscapes enriched with Ca, Mg, Na, Co, Cu and other elements. Two new available objects with faunal and cultural layers are described. They are Podaik and the Beryozovsk Quarry. The Podaik locality is confined to the Kiya beast solonetz grouping and characterized by the associated occurrence of mammoths' remains and Palaeolithic artefacts. The archaeological collection is indicative of the continuity of the primary splitting technique and methods of tools making in the Shestakovo industry, as proved by the C¹⁴-age (~ 17,300 years) of a mammoth's tusk. The locality "Beryozovsk Quarry" is situated in the Nazarovskaya depression and related to the geochemical oasis of the crust of weathering developed along the middle Jurassic deposits. Typical for this object are plenty of reindeer bones and the associated stone artefacts. The pre-

sumed radiocarbon age (~ 10,100 BC) of enclosing deposits approaches the Pleistocene-Holocene transition. The genesis of the locality is related with the specialized hunt of man for reindeer within the beast solonetz where butchering was subsequently made. The palaeoecological investigation is of great practical significance for understanding processes of changes in the abiotic medium of large mammals, including contemporary humans.

Key words: beast solonetz; mammoth fauna; Paleolithic Man.

P. 187. Preis Yuliya I., Sorokovenko Olga R., Bobrov Vladislav A. Institute of Monitoring of Climatic and Ecological Systems, SB RAS (Tomsk); Institute of Geology and Mineralogy, SB RAS (Novosibirsk). **ACTUAL PEAT ACCUMULATION IN BOG RIAMS IN SOUTH FOREST ZONE OF WESTERN SIBERIA AS A RESPONSE TO CLIMATIC CHANGES.** Net ecosystem productivity (NEP) was studied in 20 oligotrophic low-pine ericaceous dwarf shrub *Sphagnum fuscum* biocoenoses (riams) and their succession variants of 6 bogs located in the southern taiga and sub-taiga of Western Siberia. Peat samples were taken from 23 peat monoliths with a 1–3 cm step. Analysis of macrofossils plant remains, degree of peat decomposition (R), ash contents (A) and dry bulk density (P) have been made in each peat sample. Six peat cores have been ¹³⁷Cs-dated. Depths of maxima of the ¹³⁷Cs content and peat ash coincide. The age of the layer with ash content extremum, but without coal content, was dated to 1963 in other peat sections. NEP was estimated for the last 40–45 years. Significant variation of average rate of peat growth (V_{gr}), peat accumulation (V_{ac} peat) and carbon accumulation (V_{ac} C) has been revealed. It was determined that it is caused by the distinction in both initial water regimes and mechanisms of the response to water level recessions or its increase during last years. As their response to climatic changes, five groups of riams have been distinguished in view of the changes of vegetation, NEP and peat properties. Group I includes endodynamic riams with minimal response. Diagnostic characteristics (DA) of this group are: decrease of R and P towards bog surface, high parameters of NEP (V_{gr} – 6,0–11,0 mm yr⁻¹, V_{ac} peat– 199–223 g m⁻² yr⁻¹ and V_{ac} C – 87–99 g m⁻² yr⁻¹). Group II includes riams with positive response. DA are: constant P and decrease R towards bog surface; maximal parameters of NEP (6,5–9,0 mm yr⁻¹; 190–267 and 83–119 g m⁻² yr⁻¹), group III includes riams with double antidromic response, as a result of drying and the subsequent flooding. DA are the presence of hydrophilic plant species; lower parameters of NEP (6,0–8,3 mm yr⁻¹; 144–166 and 64–73 g m⁻² yr⁻¹). Group IV includes riams with strong negative response. DA are the domination of *Sphagnum fuscum* and *Lichens*; high parameters of P and R and their increase towards bog surface; low parameters of NEP (2,4–4,9 mm yr⁻¹; 78–140 and 33–60 g m⁻² yr⁻¹). Group V includes riams with maximal negative response. DA are the domination of *Pleurozium schreberi*; sharp, narrow extrema of A, R and P; minimal parameters of NEP (1,4–3,4 mm yr⁻¹, 72–144 and 27–58 g m⁻² yr⁻¹). Thus, riam responses to climatic changes have both positive and negative trends. The absence of synchronism and different degree of change of the functional condition of riams are caused, first of all, by the distinctions of their initial water regimes, determining the beginning, duration and response value to climatic changes. The data show that such bogs have fast response and may be used as indicators for reconstruction of climate even on interdecadal scale.

Key words: peat; accumulation; riam; Western Siberia; climate.