

**THE POTENTIAL
OF MODERN SCIENCE**
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The Potential of Modern Science
volume 3

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CONTENTS

INTRODUCTION.....	8
GEOGRAPHICAL SCIENCES	
Kurach T., Pidlisetska I.	
VISUALIZATION OF GEODATA.....	15
Conclusion.....	24
Bibliographical references.....	25
LEGAL SCIENCES	
Maliarova V., Savchuk T.	
PREVENTION OF CORRUPTION-RELATED OFFENCES: POSSIBILITIES AND REALITIES.....	26
Conclusion.....	33
Bibliographical references.....	33
Prokopishyna O., Sylenko N.	
LEGAL AND REGULATORY FRAMEWORK FOR ACCOUNTING OF INTELLECTUAL PROPERTY.....	35
Conclusion.....	48
Bibliographical references.....	49
Solodovnikova Kh.	
INTERNATIONAL STANDARDS IN the RIGHT TO LIFE AND UKRAINE: PROBLEMS AND PROSPECTS.....	50
Conclusion.....	57
Bibliographical references.....	58
PEDAGOGICAL SCIENCES	
Bielienka G., Kondratets I.	
THE FORMATION AND DEVELOPMENT OF A CHILD'S SKILLS TO BE FREE IN THE CONDITIONS OF KINDERGARTEN.....	61
Conclusion.....	68
Bibliographical references.....	69
Grigoryeva V., Omelchenko A.	
METHODOLOGICAL PRINCIPLES OF POLY-ARTISTIC EDUCATION OF A PERSON IN THE INTEGRATED EDUCATION SYSTEM.....	70
Conclusion.....	78
Bibliographical references.....	79

Marchuk V., Stadnik N.

VALUE ORIENTATIONS AND THEIR PRACTICAL IMPLEMENTATION IN VARIOUS SPHERES OF THE HUMAN LIFE	80
Conclusion.....	91
Bibliographical references.....	92

Polovina O., Harashchenko L.

ECO-EDUCATION OF CHILDREN OF PRE-SCHOOL AGE: HEALTH- SECURITY APPROACH.....	93
Conclusion.....	103
Bibliographical references.....	104

PHARMACEUTICAL SCIENCES

Konovalenko I., Polovko N.

MARKETING RESEARCH OF THE PHARMACEUTICAL MARKET OF MEDICINAL PRODUCTS FOR CORRECTION OF MENOPAUSE DISORDERS.....	106
Conclusion.....	116
Bibliographical references.....	117

PHILOLOGICAL SCIENCES

Chernyshova I.

NEGATIVE EVALUATION OF "ALIEN" SPACE IN THE ENGLISH BIBLE TEXT.....	119
Conclusion.....	127
Bibliographical references.....	127

Grinyak O.

IMPLICATIVE SPACE EXPLORATION ON THE TEXT LEVEL OF THE AMERICAN VERSE OF THE XX CENTURY.....	131
Conclusion.....	141
Bibliographical references.....	142

SOCIAL COMMUNICATION AND CULTUROLOGY

Storozhenko L., Petkun S.

THE SYSTEM OF DISTANCE LEARNING AS A FORM OF MODERN EDUCATIONAL COMMUNICATION IN HIGH SCHOOL: DIDACTIC PRINCIPLES, FEATURES OF USE, ADVANTAGES (a case study of training students majoring in «Information, librarianship and archiving»).....	144
Conclusion.....	154
Bibliographical references.....	155

TECHNICAL SCIENCES AND INFORMATION TECHNOLOGIES

Boichenko B., Molchanov L., Synehin Ye.

COMPREHENSIVE ANALYSIS OF TECHNOLOGICAL VARIANTS OF CRUDE STEEL PRODUCTION IN OXYGEN BLOWN

CONVERTERS.....	156
Conclusion.....	168
Bibliographical references.....	169

Gaidukevych S., Semenova N., Kolodiichuk L.

SOME ASPECTS OF ELECTROPHYSICAL METHODS OF PRE-SOWING STIMULATION OF TOMATO SEEDS.....

CONCLUSION.....	170
Conclusion.....	183
Bibliographical references.....	184

Koshova V., Kobernitska A.

COMPARATIVE CHARACTERISTICS OF TWO-ROW BREWING SUMMER AND WINTER BARLEY.....

CONCLUSION.....	186
Conclusion.....	194
Bibliographical references.....	194

Mykhalevskiy D.

STUDY OF CHANNEL AND PHYSICAL LEVELS' PARAMETERS OF 802.11ac STANDARD.....

CONCLUSION.....	196
Conclusion.....	209
Bibliographical references.....	210

Osadchuk A., Osadchuk V., Osadchuk I.

MICROELECTRONIC FREQUENCY TRANSDUCERS OF THE MAGNETIC FIELD BASED ON SEMICONDUCTOR STRUCTURES WITH NEGATIVE DIFFERENTIAL RESISTANCE.....

CONCLUSION.....	212
Conclusion.....	236
Bibliographical references.....	236

Sytar V., Burya A., Belyanovskaya E., Tomina A.-M.

CONSTRUCTIONAL MATERIALS BASED ON GRAPHITE-FILLED PHENYLONE

CONCLUSION.....	238
Conclusion.....	252
Bibliographical references.....	253

Uryvsky L., Moshynska A., Osypchuk S.

INTERNET OF THINGS SOLUTIONS USAGE PERSPECTIVES IN UKRAINE AND THEIR APPLICATIONS SPECIFICS.....

CONCLUSION.....	254
Conclusion.....	265
Bibliographical references.....	265

VETERINARY SCIENCE

Karpovskyi V., Postoi R., Danchuk O.

IMPACT OF INDIVIDUAL PECULIARITIES OF SWINE NERVOUS SYSTEM ON EFFECTIVENESS OF METALS NANOPARTICLES

USAGE.....	267
Conclusion.....	279
Bibliographical references.....	280

INTRODUCTION

The monograph includes 20 sections, each of which is devoted to a specific problem of national economy's sustainable development.

The first section "VISUALIZATION OF GEODATA". The article is devoted to theoretical and methodological principles of visualization of geodata. The essence and purpose of visualization of geodata are outlined. The main aspects of visualization are specified, namely practical orientation, degree of information processing, engaging or development of software algorithms and codes, the use of various types of variables, psychophysical perception of geo-images. The problems of visualization of geodata are highlighted as follows: dependency mapping; multidimensional data; the choice of the optimal type of a geo-image. By revealing the theoretical and methodological foundations of visualization, three components of the process are distinguished: scientific and methodological provisions, technical and artistic means and techniques. The basic principles of geodata visualization are described: conciseness, emphasis, multiplicity, balance, associations and stereotypes. The classification of visualization forms is suggested. Information about an object can be transmitted using graphic images, which are formed due to various forms of visualization. The set of geodata forms is grouped by deterministic functional dependencies, statistical distribution, iconic visualization, visualization of hierarchies and networks.

The second section "PREVENTION OF CORRUPTION-RELATED OFFENCES: POSSIBILITIES AND REALITIES". The study covers some of the pertinent general issues related to crime prevention, particular focus being placed on the relevance and the highly complex nature of preventing corruption-related offences. The notion of crime prevention is defined in its broad and narrow senses and subjected to analysis. Also, linkages between the concepts of corruption-related offences prevention and forensic *prophylaxis* of such illegal acts (the term *prophylaxis*, borrowed from the medical parlance, is quoted hereafter in italics) are identified. The findings of the study indicate that corruption offences prevention should be carried out at three levels, viz. general, special and individual. Furthermore, at the general level, anti-corruption activities are to be performed by the competent state bodies, institutions and public organizations, at the special level they fall within the competence of law enforcement agencies, while at the individual level they constitute a joint responsibility of the special anti-corruption bodies and law enforcement agencies. The study establishes that at the special and individual levels the prevention of the corruption-related offences involves a number of preventive activities performed by special bodies or agencies in the framework of their respective competences. Forensic prevention of corruption offences is hereby treated as a particular type of crime prevention effected at two levels, special and individual.

The third section “LEGAL AND REGULATORY FRAMEWORK FOR ACCOUNTING OF INTELLECTUAL PROPERTY”. The article reveals economic essence and discusses legal definitions of intellectual property. In order to reflect the results of intellectual activity in the accounting, the concept of "intellectual assets" is proposed, the article suggests to define intellectual assets as the results of intellectual work, that have documented value and use of which leads to economic benefits for a company. The article also grounds that due to the insignificant cost of replicating the results of intellectual activity, it is important to ensure legal restrictions on the possibility of their use by outsiders, regulated by the existence of an intellectual property rights institute that guarantees the protection of inventor's rights.

The fourth section “INTERNATIONAL STANDARDS IN THE RIGHT TO LIFE AND UKRAINE: PROBLEMS AND PROSPECTS”. The problematic issues of the right to life in the context of international standards are considered. The international standards governing the right to life are specified. The analysis of the current state of ratified international documents in Ukraine is conducted. It is revealed that the main problem for unification of international standards is the identification and development of an exhaustive list of attributes of a protected object, that is, "life", and thus the right to life. This right includes a wide range of other rights through which it is actually published in the scientific literature, in particular: the right to respect for private life, the right to respect for family life, etc.

The fifth section “THE FORMATION AND DEVELOPMENT OF A CHILD'S SKILLS TO BE FREE IN THE CONDITIONS OF KINDERGARTEN”. The article reveals the theoretical and methodological foundations of the formation and development in preschool children of the ability to be free in a regulated educational process of kindergarten. The authors present the materials of an empirical study conducted in preschool educational institutions of Ukraine. The experiment included preschool children, kindergarten teachers and parents of pupils. As a result of the pedagogical observation, questioning of adults, conversations with children, organization of the educational process in kindergarten based on the value approach, the main pedagogical conditions for the formation and development of the ability of children to be free in kindergarten are highlighted.

The sixth section “METHODOLOGICAL PRINCIPLES OF POLY-ARTISTIC EDUCATION OF A PERSON IN THE INTEGRATED EDUCATION SYSTEM”. The article outlines the methodological principles of the artistic education of an individual in the system of integrated artistic education. It is proved that the methodological basis of the integrative processes in education is the philosophical, psychological and cultural conditions and concepts. The determinants of artistic and pedagogical integration necessary for the construction of the integration theory in the field of artistic education and poly-artistic upbringing of the personality are revealed.

It is determined that the manifestation of the integration specificity in the field of artistic education is due to the action of psychophysiological mechanisms, and human-centeredness is the fundamental feature of didactic integration. The classification of different categories of integration in pedagogy and didactics is given. The influence of integrative processes on the consciousness and sensory-sensual sphere of a person is considered. It is determined that the psychological preconditions of integrated learning are the peculiarities of human thinking, which organically combines sensual, imaginative-figurative, rational-logical, and creative-intuitive aspects of cognition. The necessity for developing the content of integrated courses and their corresponding technological support is substantiated.

The seventh section “VALUE ORIENTATIONS AND THEIR PRACTICAL IMPLEMENTATION IN VARIOUS SPHERES OF THE HUMAN LIFE”. The purpose of the article is to highlight the fact that at the present stage of the person value orientations formation the system of value orientations is an important element of the value relation of a person to the surrounding reality. Value orientation, is a selective attitude of man to material and spiritual values, a system of attitudes such an attitude, beliefs, and preferences that affect the behavior of the individual. At the same time, this means the positive or negative significance of objects of the surrounding world for an individual, a class, a social group, society as a whole, which manifests itself through the sphere of life, interests, needs, and social relations.

The eighth section “ECO-EDUCATION OF CHILDREN OF PRE-SCHOOL AGE: HEALTH-SECURITY APPROACH”. The article substantiates the importance of forming the ecological and natural competence for the development of the child's personality; the mechanisms of ecological-natural environment use as a means of implementing a health-saving approach to the organization of educational process are disclosed. The modern approaches to the development of the ecological world outlook of the individual throughout life are analyzed. The essence of the individual attitude to his or her own health and health on the basis of the natural correspondence of human life positions with respect to himself and to the world is revealed. Mechanisms of world perception on the basis of formation of health and ecological consciousness of the person are grounded. The criteria and indicators of the formation of ecological and natural competence in children of the senior preschool age are determined. The peculiarities of emotional and value relation to nature are determined and the levels of ecological and natural competence of children of the senior preschool age are determined; methodical tools for ensuring a health-saving approach in the formation of ecological and natural competence of preschool children are determined.

The ninth section “MARKETING RESEARCH OF THE PHARMACEUTICAL MARKET OF MEDICINAL PRODUCTS FOR CORRECTION OF MENOPAUSE DISORDERS”. This review has highlighted the major health concerns faced by the post-menopausal woman. There are a variety of treatments available to protect women

from developing serious health problems. The main areas of treatment of climacteric disorders currently in the medical protocols of treatment are: hormonal therapy and non-hormonal therapy - supportive or even substitution therapy, when the GT is contraindicated due to the large number of side effects. Therefore, marketing analysis of drugs registered in Ukraine was researched. It was conducted that the creation of a drug for the treatment of menopause disorders of multidirectional action is relevant and promising.

The tenth section “NEGATIVE EVALUATION OF "ALIEN" SPACE IN THE ENGLISH BIBLE TEXT”. The research sets out to investigate spatial deixis in the English Bible text. Special attention is given to "alien" space manifested by the pronouns *that/those* and the adverb *there*. We focus on lexico-semantic, syntactic and communicative-pragmatic peculiarities of evaluative sentences with spatial deictic markers outlining the boundaries of "alien" space. The study enables us to make a conclusion that there exists a deictic-evaluative opposition *these/those* which can be interpreted as "one's own/alien". A person tends to evaluate everything that is included in his personal sphere (in "one's own" space) positively and negatively – everything that is outside it and correlates with "alien" space. In general, demonstrative pronouns can be regarded as spatial markers of negative evaluation.

The eleventh section “IMPLICATIVE SPACE EXPLORATION ON THE TEXT LEVEL OF THE AMERICAN VERSE OF THE XX CENTURY”. This article focuses on revealing linguistic and cognitive properties of the formation of the implicative space of American poetic texts of the XX century. The study provides an inferential analysis of indicators of the implicit senses. The role and place of the components of implicit senses are defined according to the quality and quantity of their indicators. Stylistically marked units of poetic texts are considered as indicators of implicates. It is proved that the dominant means in the formation of implicates on the textual level are analogical and contrastive types of mapping. The integrative model of the implicative space grounds on the mechanisms employed in the formation of its components on different levels of a poetic text. This model helps to define linguistic and cognitive aspects of construing the reality in the American modernist and postmodernist poetic texts.

The twelfth section “THE SYSTEM OF DISTANCE LEARNING AS A FORM OF MODERN EDUCATIONAL COMMUNICATION IN HIGH SCHOOL: DIDACTIC PRINCIPLES, FEATURES OF USE, ADVANTAGES (a case study of training students majoring in «Information, librarianship and archiving»)”. The article considers one of the forms of modern educational communication in higher education – the distance learning system. In particular, the didactic principles, features of the use of the virtual environment MOODLE were investigated. The use of the electronic resource MOODLE in the process of training students majoring in Information,

librarianship and archiving has been analyzed. The aspects that are priority for the MOODLE environment and distinguish it favorably from other distance education systems (motivational and value components, program objectives, information activity, communication, control and evaluation, technology) are highlighted. It is these aspects that are key to the formation of professional competencies among students majoring in Information, librarianship and archiving, since they form a clear picture of the future professional qualities of a specialist, information processes (collection, processing, transfer), use of information of different types, the role of information and communication technologies in general.

The thirteenth section “COMPREHENSIVE ANALYSIS OF TECHNOLOGICAL VARIANTS OF CRUDE STEEL PRODUCTION IN OXYGEN BLOWN CONVERTERS”. As the result of the research the influence of the technological parameters of BOF melting on the main technological indexes of the BOP process has been analysed. This made it possible to determine the most rational variant of BOP process for mass production of steel. The research was based on the methods of engineering calculations using mathematical and statistical models based on the mass and thermal balance. Calculations has been carried out by using of modern computer software. The method of calculating the mass and thermal balance of converter melting with upper oxygen blowing has been improved, which allows it to be used for converters of various capacity and for use of various charge materials. By carrying out a comprehensive analysis of technological indexes, an efficiency of variants of blowing end to achieve necessary carbon content has been proved.

The fourteenth section “SOME ASPECTS OF ELECTROPHYSICAL METHODS OF PRE-SOWING STIMULATION OF TOMATO SEEDS”. On the basis of experimental research, there was made a comparative analysis of new and improved existing electrophysical methods and means of pre-sowing seed treatment, as it is a scientific and practical issue, the solution of which will lead to an enhancement of the process of crop production manufacture, in particular, to enhancement of seed material's quality. In order to achieve this goal, there was conducted the determination of the most effective method of pre-sowing stimulation, which can be considered general, cheap, low-engineered and technologically simple, and, the most important, ecologically friendly. This made it possible to formulate conceptual provisions of the methodology for developing technology for agricultural manufacture's productivity increase by introducing a high-voltage electromagnetic field (HV EMF). There has been obtained the dependence of viability and germination power of tomato seeds upon technological modes of pre-sowing HV EMF irradiation's parameters, which has allowed suggesting new effective modes of pre-sowing treatment of vegetable seeds in the context of increasing productivity and stimulating effect over seed material. In addition, there were analyzed the occurring changes in the physical properties of water

under the influence of HV EMF, and developed the appropriate technical means for pre-sowing stimulation of vegetable seeds and treatment of water, which is further used for soil's irrigation.

The fifteenth section “COMPARATIVE CHARACTERISTICS OF TWO-ROW BREWING SUMMER AND WINTER BARLEY”. The main direction of agrarian policy is to provide the population with food products, the basis of which is the production of grain of agricultural crops. In Ukraine, the decisive role in solution of this problem belongs to the winter and summer crops that are the most productive and valuable in terms of biological properties. Winter and summer forms of wheat, barley and oats are marked by a number of positive feed and food properties. They are used in various fields of agriculture and processing industry, and due to the biochemical properties of grain also in the technical area. Historically, barley was used mainly for feed needs. However, it possesses the qualities necessary for the production of high-quality beer. The Ukrainian breeding was aimed at creating varieties of coarse grain, and only recently the brewing varieties of winter barley began to appear in the Ukrainian register. In this work, a comparative analysis of winter and summer varieties of brewing barley was conducted. It were investigated the organoleptic, physical and physico-chemical parameters of barley and established the compliance with the current legislation.

The sixteenth section “STUDY OF CHANNEL AND PHYSICAL LEVELS’ PARAMETERS OF 802.11ac STANDARD”. This study is a continuation of the study of wireless channels’ family of 802.11x standards based on 802.11ac standard. As contrasted with traditional approaches, first of all, here attention is focused on the processes occurring in the transmission medium under the influence of various destabilizing factors. This approach involves obtaining a large number of statistical experimental tests with the further development of mathematical models and methods for diagnosing and controlling of wireless networks. This makes it possible to receive the most reliable estimation of channel parameters and to take into account the maximum possible number of destabilizing factors. The study of 802.11ac standard’s wireless channel is performed for frequency channels of 20 MHz, 40 MHz and 80 MHz within the most common conditions: the presence of one and two radio circuits, line-of-sight connection and architectural obstacles, and interferences.

The seventeenth section “MICROELECTRONIC FREQUENCY TRANSDUCERS OF THE MAGNETIC FIELD BASED ON SEMICONDUCTOR STRUCTURES WITH NEGATIVE DIFFERENTIAL RESISTANCE”. The work presents the results of the investigation of the main characteristics of self-excited oscillators based on two transistor structures with negative resistance and their expediency for constructing the transducers of a magnetic field with a frequency output signal is shown. A study was made of the magnetoreactive effect of primary

magnetically sensitive elements, i.e. the dependence of the impedances of magnetoresistors, magnetodiodes, bipolar and field transistors on the effect of a magnetic field, which is the basis for the creation of magnetic field transducers with frequency output. Schemes of microelectronic frequency transducers of magnetic field in a wide frequency range from 10^3 to 10^7 Hz and sensitivity from 10^2 Hz/mT to 10^4 Hz/mT are proposed.

The eighteenth section “CONSTRUCTIONAL MATERIALS BASED ON GRAPHITE-FILLED PHENYLONE”. The present work is devoted to the development of graphite-filled structural materials for tribotechnical purposes. The aromatic polyamide phenylone is chosen as the polymeric base, which surpasses the majority of thermoplastic polymers by the complex of physico-mechanical properties. A detailed analysis of the main characteristics and features of the processes of obtaining products based on it is conducted. The influence of various grades of powdered graphite used as filler and its concentration on the tribotechnical properties of phenyl-based composite materials has been established. A study was conducted on the intensity of wear and friction coefficient in various lubricating media and in the dry mode. The anisotropy of the properties arising during processing into products as a result of the orientation of graphite particles parallel to the pressing plane was studied. The study of physico-mechanical and thermo-physical properties showed that the developed polymer composite materials can be applied in friction units operating at elevated temperatures and significant specific loads. The introduction of modified additives to their composition, which affects the interaction at the polymer-filler interface, has a significant impact on the properties of polymer systems.

The nineteenth section “INTERNET OF THINGS SOLUTIONS USAGE PERSPECTIVES IN UKRAINE AND THEIR APPLICATIONS SPECIFICS”. The IoT concept is discovered. Main IoT development directions and areas are described. IoT architecture is analyzed. The need of IoT in Ukraine is considered. The universal testbed IoT solution is designed and developed.

The twentieth section “IMPACT OF INDIVIDUAL PECULIARITIES OF SWINE NERVOUS SYSTEM ON EFFECTIVENESS OF METALS NANOPARTICLES USAGE”. In this work, conditioned reflex activity, vegetative homeostasis, antioxidant defense system in pigs were studied in order to investigate the effect from nanomineral feed additive under technological stress. Level of lipid peroxidation products in swine red blood cells significantly depends on type of higher nervous activity after exposure to stress factor. Our results have shown that aqueous nano solution containing magnesium, zinc, germanium and cerium citrates improves enzymatic antioxidant system in pigs under the technological stress conditions and these changes are dependent on animal's temperament. Also studied nano feed additive had a positive effect on growth rate of pigs at fattening.

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PREVENTION OF CORRUPTION-RELATED OFFENCES: POSSIBILITIES AND REALITIES

Introduction. Ukraine's intended European integration and the on-going reforms in the principal areas of public life irresistibly call for countering corruption in its various manifestations that of late have turned into an acute problem. The current realities indicate that corruption infects and affects every area of Ukrainian public concern. This situation directly threatens not only the stability, but the very existence of democratic institutions, hampers the successful development of the country, hinders reforming the economy and, unfortunately, discredits the public authorities. Despite government efforts to the contrary, notwithstanding the existence of well-developed anti-corruption legislation and newly created anti-corruption state agencies, the number of corrupt acts and abuses does not decrease. The most dangerous corruption forms and manifestations exhibit elements of criminally punishable acts and within a legal framework are defined as criminal, or termed corruption-related crimes.

These latter are listed in the present Ukrainian Penal Code (see the note to Article 45), yet obviously, the list of corruption-related acts and abuses is not comprehensive. As a rule, such criminal activities are committed not by separate, independent offenders, but by large-scale, ramified networks based on well-established links of corruption and using well-developed illicit techniques. These networks become entrenched in the economy and financial system, thus influencing public policies as a whole.

Apart from the offences listed in the Ukrainian Penal Code, these networks commit a number of other crimes. Characteristically, corruption offences tend to remain latent, for their perpetrators are steadily becoming more "professional" while the legislation remains imperfect. Moreover, individuals in possession of substantial amounts of money establish close contacts with senior government officials. Given the above-mentioned factors, some of these crimes may be included under economic offences, under offences against property, against official duties or public authorizations, against local government agencies, against citizens' associations, against justice, etc. Today, prevention of corruption-related offences is a priority, an essential condition for the establishment of a state based on the rule of law and, evidently, a major concern for this country.

The problems related to forensic *prophylaxis* of illegal acts were the objects of

thought and study for Yu. M. Antonian, B. N. Golovkin, V. V. Golina, A. N. Djuja, A. P. Zakaliuk, A. Ye. Zhalinsky, V. K. Zvirbul, S. M. Inshakov, Ya. Yu. Kondratiev and other scholars. Criminal investigators O. A. Boridko, A. F. Volobuiev, V. A. Zhuravel, V. P. Kolmakova, V. Ye. Kornoukhova, G. A. Matusovsky, V. M. Shevchuk, A.V. Shemiakin and others were engaged in the same studies. The above-listed experts have made a significant contribution to crime prevention-related research. However, since the criminal elements also “hone their skills”, spawning new methods and mechanisms intended to commit and cover up corruption crimes, legislative changes in the general domestic legal framework and an individual reform of anti-corruption legislation would elevate the problems of preventing corruption-related offences to a qualitatively new level. Therefore, the issue requires further research.

The conclusions of the research. To prevent and control corruption, the society and the State should act in concert along three main directions, aiming the joint efforts at 1) bridling corruption as a social phenomenon, 2) preventing corrupt practices, 3) providing criminal justice response to the already committed corruption-related offences [1, p. 17].

Preventive measures relating to the specific offences are part and parcel of the social prevention policies and activities carried out by the authorized agencies with a view to reducing overall crime rate [2, p. 192]. These policies and activities should be regarded as a single system of actions aimed at combating social pathologies and their principal causes, as well as at eliminating the factors that lie at the root of the criminal conduct. [3, p. 10]. Crime prevention can be defined as a systematic activity intended to stop the emergence and development of crime-promoting processes in the society, to de-link these processes from identity-building and separate the identity itself from the act of crime committed by an individual [4, p. 31].

Crime prevention is treated in academia along with the notions of “responses to crime”, “addressing criminality”, “crime-fighting”, “forensic *prophylaxis*”, etc.

The notion of crime prevention stands in both general and specific relation to the above-listed notions. We support the view that crime prevention is a range of activities targeting individuals or groups having criminal intent, planning to commit offences, or just admiring criminal lifestyle. The aforementioned activities should shine light on and establish the ugly truth about the criminal behaviour, thereby making such persons change their lives and not offend. In addressing criminality, forensic *prophylaxis*, prevention and suppression of crime serve as the principal building blocks [5, p. 194].

Law dictionaries define crime prevention as a system of economic, social, cultural, educational and coercive measures and actions taken by the governmental authorities and civil society organizations for the prevention of crime and elimination of its causes [6, p. 343]. Legislation and practical law enforcement—in particular, activities of the courts that apply criminal punishment as specific anti-crime measure—form part of this process.

The integrative framework of anti-crime activities comprises various measures

implemented at three different levels, viz. society-wide, special (expert criminology) and individual. At the society-wide level, crime prevention must be effected by the State, local authorities and administrations, as well as by various civil society organizations, that have no direct responsibilities related to the fight against crime. Forensic *prophylaxis* includes, among other aspects, development and implementation of various social and economic projects and programmes, that indirectly contribute to the application of special measures involving expert criminological interference.

At the special (expert criminology) level, crime prevention is effected by the government agencies whose professional duty is the protection of citizens' rights and crime-fighting. In the process, these specialist actors produce a significant impact on criminogenic factors, identify the causes and circumstances conducive to acts of crime and take measures to address them.

At the individual level, crime prevention is effected as a result of ad hoc activities that target individuals or groups having criminal intent and help eliminate the causes and conditions that result in the preparation of and attempts to commit offences [7, p. 84; 2, p. 192].

The society-wide patterns of crime prevention should be regarded as a complex of long-term economic, social, cultural and educational measures and actions intended to assist on the one hand social improvement and development, and elimination of the causes and conditions conducive to negative social phenomena in general and to criminal offences in particular on the other [8, p. 4] .

Aside from the question of political will that is essential to establish a reliable system intended to counteract and prevent corruption, Ukraine needs to provide an adequate legislative support for this system, create an effective system of governance, shape an efficient and well-coordinated anti-corruption regulatory framework [9, p. 150]. The principal anti-corruption measures permitting to implement and monitor anti-corruption strategies would be: 1) monitoring of the conduct and professional contacts of state officials or public servants; 2) periodic monitoring of their activities; 3) identification of the officials and citizens with whom a public servant has random or systematic contacts for the wrong reasons or financial gain; 4) conducting interviews with such public servants; also with their superiors or colleagues, to discuss a broadly or tightly defined sets of issues; 5) performing planned audits or evaluations of the public servant's performance, of its legality and validity; 6) analyze available operational data, statistics, etc.; 7) perform assessments and monitoring of management procedures; also of decision-making processes that most commonly turn into elementary driving forces behind corruption offences. The everyday behaviour of decision makers should not be left unattended either. [9, p. 154].

At the regulatory level, the legal anti-corruption framework is outlined in the Decree "On the Strategy for Sustainable Development "Ukraine – 2020". The purpose of reforms is to achieve the European standards of life and decent place in the world for Ukraine. A key element of the development strategy is the security vector that

provides, among other issues, for an anti-corruption reform primarily aimed at reducing the corruption level in Ukraine and the national budget and business losses resulting therefrom or entailed thereby. This would improve Ukraine's position in the international anti-corruption ranking. To achieve these objectives, the new anti-corruption strategy must be adequately implemented and modern anti-corruption mechanisms put into proper action. It means, inter alia, that the public servants will have to declare their financial standing and property status, that conflicts of interest will be prevented and resolved. Honesty, integrity and lifestyle of the public servants have to be duly monitored. Prevention of political corruption requires fundamental reforms of funding systems for political parties, along with the use of state-of-the-art technologies для обеспечения государством to enhance public access to information in the so-called “‘open data’ of the government” format [10].

The Law of Ukraine “On Prevention of Corruption” defines basic measures and mechanisms for prevention and suppression of corruption-related offences. Listed among these measures and mechanisms are the following restrictions and prohibitions: a) public servants shall not use their official authority for the improper advancement of their personal or financial interest; b) the receipt of gifts or benefits by public servants by virtue of their function shall be restricted; c) obtaining unlawful benefits or gifts shall be precluded; d) merging of several functions shall be limited; e) after separation from performance of public or local administrative functions, certain restrictions and constraints shall be imposed on former public servants; f) the right of close relatives to work together shall be limited; g) any conflicts of interest shall be prevented and resolved; h) the public servants will have to declare their financial standing and property status; i) government and local authorities shall not be eligible for obtaining benefits, services and assets; j) legal and regulatory acts shall be subject to anti-corruption reviews and assessments; k) thorough screening of public officials aspiring for sensitive positions, jobs with elevated risks of corrupt practices, etc. shall be performed [11].

These measures are not directly targeting crime, yet they produce a significant impact on criminality.

I. V. Odnolko suggests that the notion of crime prevention be approached and considered in broad and narrow senses. Thus, in a broad sense, crime prevention implies a historical pattern of systematic measures aimed at addressing the objective and subjective causes of crime by all civil society institutions' activities targeted at eliminating, reducing or neutralizing the factors that generate criminality and lead to criminal acts. In a more narrow, applied sense, crime prevention is an activity directed at identification and elimination of the causes and conditions conducive to criminality and criminal acts, as well as at influencing the individuals inclined to commit offences [2, p. 145].

This understanding of crime prevention concept seems quite reasonable, for indeed, primary prevention activities should be conducted at the state level. First and foremost, they should cover efficient and effective legislative regulation with respect

to all areas and spheres of social life; this should not only entail legally binding rights and obligations of citizens, but set out adequate mechanisms to that end and also guarantee their implementation. At this elevated, state level efforts should therefore be undertaken precisely to prevent crime.

Special (or special criminological) crime prevention is a set of various crime-addressing measures taken by government authorities, social organizations (NGOs), social groups and individual citizens to eliminate the reasons and conditions promoting the commission of illegal activities, as well as to keep crimes from actually happening [13, p. 55].

Among the entities legitimately authorized by the State to prevent and combat corruption, three groups can be identified: 1) agencies of general competence; 2) agencies with specific responsibility; 3) agencies with the authority to implement anti-corruption measures.

The first group of these entities comprises the agencies of general competence, not directly involved in the fight against corruption, yet authorized to vigorously counter corruption and the related offences. This group includes: a) the President of Ukraine who approves national programmes, concepts, etc. within the limits of his powers; b) the Verkhovna Rada (Parliament) of Ukraine, the only law-making body in the country; c) the Ukrainian Cabinet of Ministers, the highest body within the executive branch of Government; d) the Ukrainian Attorney-General, in accordance with his constitutional status.

The second group of the entities legitimately authorized to prevent and combat corruption comprises the agencies authorized by the Law of Ukraine "On Prevention of Corruption" to counter corruption and prevent corruption-related offences. These agencies detect, investigate and expose cases of corruption and accessory offences. They include: a) prosecuting authorities; b) units of the Ukrainian National Police; c) the National Anti-Corruption Office; d) the National Anti-Corruption Agency.

The third group of these entities is formed by the agencies officially authorized to counteract, prevent and combat corruption. In certain cases they have the right to firmly stop and suppress corruption-related offences; help restore violated rights and interests of the State, of individuals and legal entities; participate in providing an information and research basis for activities intended to prevent and counteract corruption. Among these agencies are the government and public authorities; local self-government bodies; enterprises, institutions or organizations (regardless of ownership) and their officials or employees; individual officials or employees of legal persons in public law, as well as entire structural subdivisions thereof; individual citizens or citizens' associations (with their consent) [14].

Prevention of corruption-related offences at the special level involves the widest range of activities intended to forestall or stop the commission of such crimes. These activities are carried out by the above-listed legitimately authorized entities within their respective areas of competence.

Another aspect of the crime prevention activities relates to the activity of law enforcement bodies that has a preventive effect and aims at: detection and prevention of intended offences; stopping the attempted crimes; identification of conditions or

causes that contribute to the commission of criminal acts; implementation of measures directed at the elimination of the aforementioned causes and conditions; prevention of similar criminal acts in the future; identification of individuals who risk committing offences (problem young people and minors, ex-convicts, etc.); taking appropriate preventive measures against the officials or employees known to be inclined to commit corruption offences.

Such activities are often termed “forensic *prophylaxis*”. G. A. Matusovsky defines forensic *prophylaxis* as a) activities carried out by legitimately authorized entities, b) research work based on general crime-related guidelines helping identify the causes and conditions conducive to committing offences, c) special criminological techniques intended to prevention and suppress offences [15, p. 33]. In his fundamental consolidated study, V. M. Shevchuk supports this point of view and comes to the conclusion that forensic *prophylaxis* of criminal acts should be seen in two different but complementary perspectives [16, pp. 176-177], [3, pp. 176-177].

Firstly, it should be regarded as a specific activity carried out by legitimately authorized entities using investigative methods, techniques and tactics intended to deal with certain offences and identify the conditions or causes conducive to committing criminal acts, as well as using special forensic techniques in order to prevent intended criminal activities or suppress those already conducted by particular individuals. According to the entity, the types of preventive measures fall into four categories: 1) investigative prevention activities (or *prophylaxis*) carried out by the investigator during investigation of an offence; 2) operative prevention (or *prophylaxis*) activities performed by the bodies of inquiry in the process of detecting and revealing crimes; 3) expert prevention (or *prophylaxis*) activities implemented in the course of forensic investigation; 4) judicial prevention (or *prophylaxis*) activities carried out during consideration of criminal cases in court [4, p. 209].

Secondly, forensic *prophylaxis* of crime can be treated as a branch of criminology focusing on: 1) studying the patterns of emergence, identification and examination of the criminogenic conditions specific for various forms of crime; 2) developing and updating forensic methods, techniques and tactics intended to identify, record and examine various criminogenic conditions, as well as provide protection against criminal offences; 3) developing and updating forensic methods and techniques intended to identify and eliminate causes and conditions conducive to criminality and criminal acts; 4) identifying objects of preventive forensic interest and research in each case of investigation; studying their estimated influence and impact; 5) identifying and studying typical crime prevention-related situations that emerge in the course of investigation and may contribute to the subsequent development of key crime prevention techniques; 6) identifying and projecting into the future various complexes of possible preventive measures, efficient and effective in any of the above-mentioned crime prevention-related situations; 7) research and development into the measures intended to curtail and forestall the particular types of crimes in the preparation,

commission or concealment [5, p. 35].

In view of this, we can say that as regards forensic prevention of corruption offences, the purpose of the law enforcement agencies should be primarily to identify the potentially dangerous categories of officials or employees, presumably prone to corruption offences, and carry out preventive work (discussions, official warnings, reprimands) with these groups of persons. It would also be necessary to identify the causes and conditions conducive to committing corruption offences and thereupon implement activities focused on the elimination of these causes and conditions (by proposing to fill legislative gaps, through the identification of negative aspects in the structure and activities of the state bodies, institutions and organizations. Potentially dangerous activities that could be used in corruption schemes (as well as potentially vulnerable economic spheres, etc.) should also be duly identified.

This preventive work constitutes a responsibility of the National Police crime prevention, operative and investigation units, of the Security Service, the State Investigations Bureau, anti-corruption agencies, etc. The nature of preventive measures is different in each of these instances and depends on the legal status of the above-listed entities.

Prevention of corruption offences at the special level by the law enforcement agencies is tightly linked to the third, individual level of prevention. At the individual level, it means preventing an offence or offences that could be committed by a given person. In other words, crime prevention at the individual level constitutes a segment of the activity under consideration and is effected at the stage preceding the emergence of criminal intent. Removing the danger of the potential offence is the principal purpose of crime prevention at the individual level [13, p. 56]. Analyzing specific crime prevention features in the fiscal domain, V. P. Khomenko indicates that in this case individual prevention is a specific form of both overall social and special measures taken against persons that evade taxes or commit other taxation offences.

Individual crime prevention measures include a) eliminating the adverse influence on a person's mentality that can turn the person into a social drop-out prone to deviant behaviour that poses a threat to the public; b) correction of his or her anti-social behaviour and, if necessary, of negative personality traits; c) taking urgent action to prevent offences about to be committed by the afore-said person [19, p. 197].

Individual prevention of corruption-related offences can include such steps as identifying by legitimately authorized entities of potentially harmful persons, i. e., individuals that hold sensitive positions or perform jobs with elevated risks of corrupt practices; such persons should be provided with the necessary counselling; taking preventive actions in respect of persons tried for a corruption-related offence with a view to preventing similar offences being committed again by the same individuals; counselling persons that committed minor corruption-related offences to make them give up their illegal practices in the future.

CONCLUSION

Prevention of corruption-related offences means systematic measures adopted and put in place by the State agencies having general or special decisive authority on matters concerning the prevention and suppression of corruption and corruption-related offences. Measures of corruption offences prevention should be carried out at three levels, viz. general, special and individual. At the general level, anti-corruption activities are to be performed by the competent state bodies, institutions and public organizations, at the special level they fall within the competence of law enforcement agencies, while at the individual level they constitute a joint responsibility of the special anti-corruption bodies and law enforcement agencies. At both special and individual levels, effective prevention of corruption-related crimes calls for a number of preventive activities carried out by specialized agencies within their areas of competence. Individual prevention of corruption-related offences aims at working with those persons who have already committed such offences and with those who by reason of their official positions or capacities are likely or could be inclined to committing similar breaches of the law.

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