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## SUMMARY

### MEDICINE

**N. A. Zakorkina**

**Characteristics of the physical conditions of 17-year olds teenagers in countryside**

The problems of the physical condition of 17-year-olds teenagers living on the territory of Omsk region are considered. For measuring the level of physical condition including physical development there are used modern methods and approaches, which allows you to examine and review the indicators in the system of social and hygienic monitoring.

Keywords: teens, physical development, physical fitness, holistic approach.

**N. A. Zakorkina, I. A. Banyushevich**

**Conditionality of formation of obstetric complications in women in the Omsk region from 2001 to 2011**

In the article the comparative analysis of indicators of a state of health of pregnant women, women in labor in the Omsk region and Russian Federation from 2001 to 2011 is carried out. The growth of number of incidence in pregnant women due to low quality of obstetric care promotes also growth of pathological conditions in childbirth.

Keywords: incidence in pregnant women, incidence of women in labor, obstetric complications.

**G. V. Fedorova**

**Antiepidemic tactics in the activity of Omsk medical society**

The paper deals with the history of Omsk medical society founded in 1883 August 14<sup>th</sup> by grant authorization of P. N. Dumovo, Governor of Internal Affairs Ministry, Senator. In 2013 the Society celebrates 130 year anniversary since its establishment. The article depicts the antiepidemic line, one of the approaches in polyhedral activity of the Society.

Keywords: Omsk medical society, activity, antiepidemic policy.

**K. V. Vetkova, M. A. Borisenko, A. V. Chekina**

**Phagocytic activity of leukocytes in cases of chronic apical periodontitis**

The objective of this investigation is to prove efficiency of conservative treatment in cases of chronic forms of destructive periodontitis. The endodontic treatment is given to 154 patients (age 30 – 44 years old). We use not only clinical, X-ray and statistical methods, but also laboratory tests (FI, NBT-test) for the assessment of efficiency of the treatment. After the endodontic treatment the positive dynamics of the phagocytic index and NBT-test is noted.

Keywords: destructive forms of periodontitis, conservative treatment, phagocytic index, NBT-test.

**V. V. Pedder, N. V. Shefer, A. V. Pedder, I. V. Surgutskova, B. G. Polyakov, S. S. Shefer, M. V. Naboka**

**On the application of the integrated thermo- and photochromic-ultrasonic method in combination with ozone/NO-containing substances for treatment of cellulite**

Cellulite is one of the causes of low self-esteem for most women and it is leading among the reasons for referral to the clinic of aesthetic

medicine. To correct the appearance of cellulite there is used quite a large number of therapies which are not effective in the form alone. The article presents the results of comparative assessment of the effectiveness of the thermo - and photochromic-ultrasonic method in combination with ozone/NO-containing medicinal substances by the method of laser and vacuum massage.

Keywords: cellulite, ozone, nitric monoxide, low-frequency ultrasound, thermotherapy, photochromic radiation.

**E. A. Varnavskikh**

**Assessment of opinion of children about summer holiday in country camp**

Results of poll of children are presented in the article at the age of 10 – 13 years old, having rest in a country camp. Information on the relation of children to rest, nature of food and day agenda in camp is obtained. The assessment of emotional background, mood, health of children at the beginning and at the end of shift is carried out. The received results will improve quality of rest of children in camps.

Keywords: summer holiday, improvement, country camp.

**O. A. Denisova, M. A. Livzan**

**The quality of life of elderly patients with gastroesophageal reflux disease**

There is evaluated clinical efficacy of drug therapy GERD patients of different age groups from the perspective of quality of life (QOL). Assessment of QOL is based on data QOL questionnaires according to the questionnaire SF-36, and as indicators of visual analogue scale. It establishes that in the age groups of GERD patients, reduction of the main symptoms of the disease (heartburn and regurgitation) statistically significantly leads to the improvement of QOL. It shows the necessity of studying the parameters of quality of life, which, along with traditional methods of diagnostics, to determine the impact of the disease on the condition of the patient: his physical, mental and emotional wellbeing.

Keywords: analysis, quality of life, elderly patients, gastroesophageal reflux disease, indicators, research.

**E. A. Ryapolova, L. V. Alekseenko, S. B. Shochina, N. A. Kondrateva, V. T. Storozhuk**

**Aspects of control of quality of providing of medicare to patients of surgical profile are in separations of in-patient departments of Medical organizations of Omsk region**

In the article the separate aspects of control of quality of providing of medicare to patients of surgical profile are considered for the last three years in the separations of in-patient departments of Medical organizations of the Omsk area. Purposeful control of quality of providing of medicare to the surgical patients and exposure of most often meeting defects allows quickly to increase the level of quality and remove reasons of defects, and similarly reasonable and timely to point the doctors of surgeons at post diploma additional professional studies on the improvement of qualification. Removal of most defects and violation on collection of information and treatment do not require serious, direct material and temporal expenses, but is depending on professional preparedness of doctors in the questions of urgent and planned surgery, and also from managers by separations, directly participating in following sick and carrying out permanent control of quality of the first level.

Keywords: control of quality, medicare, surgical patients, in-patient department, medical organizations.

**M. W. Shvin**

**Some features in the modern market of medical products**

The article deals with the circulation of medical products in the modern pharmaceutical market and the activities of pharmaceutical companies. The article considers the object of the market and its subjects, the basic regulations and legislation. The features of a market, characteristic of monopolistic and competitive market are determined. The problem of identifying the type of the modern market of medicinal products is formulated.

Keywords: the market circulation of medicinal products, innovative and synonymic medicinal products, state regulation.

**T. M. Luboshenko, E. A. Varnavskikh**

**The analysis of incidence of population of Russian Federation and Siberian federal district separate nosological forms connected with secondary immunodeficiencies**

The studying of incidence by separate nosological forms, in pathogenesis which an important role played by secondary immunodeficiencies is carried out. The comparative assessment of the incidence general and established for the first time is given by some infectious and parasitic diseases, new growths, allergic rhinitis, bronchial asthma and system diseases of connecting fabric of the population of the Russian Federation and areas of Siberian federal district. For the first time for the Omsk region incidence of the population taking into account the main syndromes, characteristic for secondary immunodeficiencies is studied. It is established that some infectious and parasitic diseases, new growths and allergic diseases are actual for the Omsk region. The received results testify to need of development of address preventive actions for decrease in an incidence by the nosological forms actual for concrete regions of Siberian federal district and the Omsk region.

Keywords: incidence, secondary immunoscarce states, comparative assessment.

**A. A. Bort, V. I. Larkin**

**Vegetative reactivity with provocative tests (respiratory test and tilt table test) in the differential diagnosis of syncope**

The study of vegetative reactivity on the use respiratory test with breath holding and orthostatic stress in patients without vasovagal syncope sympathicotonia prevails. Most informative indicators reflecting these differences are changes in pulse pressure, minute blood volume and index of minute blood volume during respiratory test.

Keywords: vegetative reactivity, respiratory test, vegetative index, vasovagal syncope.

**N. V. Bagisheva, I. A. Grishechkina**

**The possibility of using statins in terms of treatment and prevention of atherosclerosis**

The work consists of a review of domestic and foreign literature, which describes the data on statin therapy in the aspect of the treatment and prevention of atherosclerosis, coronary heart disease, acute cerebral blood circulation in actual practice, in accordance with Russian and international recommendations. The main conclusion is in recognition of the effectiveness and safety of statin therapy.

Keywords: cardiovascular diseases, secondary prevention, risk factors, statin, therapy.

**A. O. Girsh, E. Yu. Khorova, D. M. Vyushkov**

**The influence of early enteral nutrition on complications and clinical outcomes of patients with malignant tumors of the larynx after operative treatment**

The aim of the study is to evaluate the influence of the early post surgery enteral nutrition in cancer patients with malignant tumors of the larynx complications and clinical outcomes. There is revealed that the use the treatment in patients with malignant tumors of the larynx early enteral nutrition will reduce the number of postoperative complications and reduction of bed-days.

Keywords: enteral nutrition, oncology.

**I. A. Grishechkina, S. N. Casiy, S. S. Konurkin**

**Investigation of the prevalence of gastroesophageal reflux disease among medical students**

A study of the prevalence of gastroesophageal reflux disease (GERD) using a questionnaire GERD-Q is done. There are surveyed 150 students of 3 – 5 year of study medical student (average age 20,97±1,5 years). The disease is found in 16,8 % of cases. Among the risk factors statistically significantly more frequent in the group of patients with GERD are

marked: addicted to fatty foods, a habit to go to bed immediately after eating and male gender.

Keywords: gastroesophageal reflux disease, epidemiology, GERD-Q.

**O. I. Lebedev, S. P. Zapariy, E. L. Opanasenko**

**Regularities of the formation of the contingent of persons disabled as a result of glaucoma in the Omsk region**

In the article there are analyzed indicators of primary disability due to glaucoma. It shows the structure of the newly recognized disabled as a result of glaucoma by year, depending on age and place of residence. There is identified the reasons for defining the degree of disability.

Keywords: glaucoma, primary disability, structure, level.

**S. A. Sokolov, M. S. Korzhuk, V. M. Gershevich**

**The original method of total pleurectomy in radical operational grant at primary spontaneous pneumothorax**

Spontaneous pneumothorax is an important issue interventional pulmonology practice / thoracic surgery, may occur in patients without major apparent as pulmonary disease (primary spontaneous pneumothorax) as in patients suffering from specific known lung disease (secondary spontaneous pneumothorax). The problem is discussed for a long time, however, a number of factors relating to the treatment of singularities, and now it is the subject of serious discussion in the literature. It occupies a special place the question of choosing the optimal method of anti-aids. Studies in recent years show that the majority of domestic and foreign authors show exactly parietal pleurectomy as the most reliable way to achieve pleural symphysis.

Keywords: spontaneous pneumothorax, treatment of pneumothorax, videothoracoscopy, pleurodesis, pleurectomy.

**E. S. Tkachenko, O. P. Goleva**

**Children's disability because of cerebral palsy in the Omsk region**

Cerebral palsy is often the cause of severe neurological disability that involves violation of social adaptation and reducing the quality of life of patients. The level of primary disability of cerebral palsy is gradually increasing. According to the forecast it is expected to reduce this figure.

Keywords: the disablement, children's cerebral paralysis.

**S. I. Filippov, S. I. Barkhatov, E. N. Degovtsov, K. A. Nizovoy**  
**Using argon plasma coagulation with imposition primary suture as new way of the treatment of skin carbuncle**

There is resented a method of complex treatment of patients with skin carbuncles using necrectomy with argon plasma coagulation and primary suture on wound. Our studies have shown that the method allowed faster remove inflammation, lead to normal clinical and laboratory parameters, reduce the time of treatment and lead to more cosmetic results compared with conventional treatments carbuncle skin.

Keywords: carbuncles skin, excision carbuncle, argon-plasma coagulation, bacterial film, overlay sutures.

**G. V. Fedorova, T. F. Shreyder**

**Parents assessment for medical care organization and quality in Omsk medical rehabilitation centre**

The paper represents parents questionnaire data based on the results of medical care for under one year old children with motor sphere violation received in BIHOR CRMR. Sociological analysis of parents survey results have long-term tasks on improvement of medical rehabilitation for under one year children praised the organization and proved good quality of medical care in Omsk Medical Rehabilitation Centre. The identified problems have long-term tasks on improvement of medical rehabilitation for under one year old children in Omsk Region.

Keywords: survey, medical rehabilitation, child population, the quality and availability of medical care.

**AGRICULTURAL SCIENCE**

**Yu. I. Yermokhin, D. N. Molkoedov**

**The magnitude of wilting as indicator of productivity and evaluation of potato varieties**

This work is dedicated to the diagnosis and optimization nutrition of plants of potato varieties Scarlet dawn, Alena, Rozara, Sotochka, Khozyayushka. To assess varieties, diagnostics and optimization of nutrition, there is used physiological method wilting (Anwelkmethode). Criteria and parameters, obtained using physiological method, may be the basis for evaluation of varieties and balanced mineral nutrition of plants. This method unlike chemical methods, with the help of which it

would to ask about the ability to satisfy the needs of plants, physiological method gives the possibility to receive a response from the plant itself, about the needs of plants in nutrients and their ability to assimilate these substances in specific conditions of production. Balanced nutrition is achieved by applying mineral fertilizers in the estimated doses.

Keywords: physiological method wilting (PMW), potatoes, yield, mineral fertilizers, the value of wilting.

**N. A. Popolzhukhina, P. V. Popolzhukhin, N. P. Kozlenko,  
N. G. Mazepa**  
**Adaptive variety of spring wheat Voloshinka**

The characteristics of new varieties of spring wheat Voloshinka are obtained on the basis allotcitoplasmatic crosses. The sort adopted by state strain testing in the Russian Federation and the Republic of Kazakhstan, is characterized by high productivity, high ecological plasticity, resistance to loose smut, drought resistance.

Keywords: spring wheat, adaptive variety allotcitoplasmatic hybrid, yield, grain quality, resistance to biotic and abiotic factors.

**A. F. Stepanov, S. N. Aleksandrova**  
**Galega orientalis productivity depending on term and cutting height of herbage**

The article examines influence of term and cutting height on productivity of the Galega orientalis. The optimal duration and height of the exclusion of plants at the second mowing grass are by the author fixed.

Keywords: galega orientalis, term and height of cutting, herbage, productivity.

**A. V. Krasovskaya, T. M. Veremey, A. F. Stepanov**  
**The influence of weather conditions on growth, development and yield broad beans in grain in subtaiga area of Western Siberia**

We study the effect of weather conditions on the growth and development of broad beans, on the formation of grain yield and accumulation of protein in it. We define the optimum sowing broad beans in grain, providing grain maturity of broad beans, high yield and collecting protein per hectare in subtaiga area of Western Siberia.

Keywords: broad beans, grain yield, protein content, the period, the period of sowing.

**E. V. Nekrasova, N. A. Rendov, M. S. Gavrilova, A. V. Gladkikh**  
**Seeding rate of oats and barley of hull-less varieties at different times of sowing and levels of chemicalization in Omsk region**

The tendency of decrease in the share of weeds is marked in crops of oats and barley with the rise in the seeding rate of crops from 3.5 to 5.5 million per hectare at all dates of sowing (second, third decade of May and first decade of June) and backgrounds (without chemicalization, with herbicide treatment and integrated use of fertilizers and herbicides) studied in experience. Growth in crop yields for all variants was observed with increasing seeding rate up to 4.5 million per hectare, its further increase is not always lead to an increase in productivity. Therefore, the optimum seeding rate for sowing of oats and barley of hull-less varieties in southern forest-steppe of Omsk region is 4.5 million germinating seeds per hectare.

Keywords: hull-less barley, hull-less oats, seeding rate, sowing date, herbicide, productivity.

**V. V. Chibis**  
**The effectiveness of the means of intensification and predecessors in the cultivation of spring wheat in the southern forest-steppe of the Omsk region**

In the article research of the influence of means of intensification and predecessors on productivity of spring wheat in field crop rotations is stated. Research is spent in long stationary experience in crop rotations of seven rotation which have passed more. The received materials can be used by working out of schemes of field crop rotations for forest-steppe of the Omsk region.

Keywords: Crop rotations, experiences, soil, weeds, contamination, crops, spring wheat, quality, crop.

**A. D. Auzhanova, P. V. Popolzhukhina**  
**Formation of productivity genotypes of spring wheat under the influence biologics associative nitrogen-fixing bacteria in southern forest agro-ecological conditions of Western Siberia**

The effect of inoculation biologic associative nitrogen-fixing bacteria on productivity of spring wheat is considered. Studies have found both positive and negative effects of inoculation on yield and yield structure

elements. We select the most responsive handling sorts. Excess yield is due to the highest values of most elements of yield structure.

Keywords: associative nitrogen fixation, inoculation, biopesticide

**E. V. Bezuglova, N. G., Kazydub**  
**The use of biologically preparations for Vicia faba seed protection against diseases and pests in Southern forest-steppe of Western Siberia**

The effects of the use of biological agents for increasing resistance to diseases and pests of beans in culture conditions of the southern forest-steppe of Western Siberia are considered.

Keywords: bean, phytophagan insects, pests, biologically preparations.

**Yu. V. Tylaev, V. L. Ershov**  
**Accumulation and assimilation of winter precipitation in the steppe in no-till**

The results of experiments using a stationary no-till and its impact on the uptake and accumulation of winter precipitation in the steppe zone are obtained.

Keywords: minimal tillage, no-till, chemical fallow field, moisture of soil.

**A. G. Chernykh, E. N. Yurchenko, I. P. Ivanova,**  
**Growth and development of red steppe breed heifers**

The resulting research data show that red steppe breed heifers contained in the herd SEC «Bolshevik» Omsk region have sufficiently high levels of growth and development. Live weight at the time of the first insemination (20,6 months) on average 392,5 kg, which corresponds to the recommended standards (70–75% of the body weight of an adult animal breed). Therefore, by feeding and housing conditions which are more favorable for growing heifers, which will contribute to further formation of their high productivity.

Keywords: growth, development, live weight, average daily gain, relative gain, the first insemination, Red Steppe breed.

**A. N. Shakhvaeva**  
**The impact of Holsteins in exterior features of crossbred cows red steppe breed**

This paper presents the results of the use of bulls for producers of red steppe breed to increase the genetic potential of animals to improve the material and technical base, allowing the industry to transfer to intensive development, the essence is to maximize the production of products at the lowest possible labor and material costs.

Keywords: manufacturers, exterior, industry, cattle, climatic conditions.

**Yu. I. Yermokhin, V. V. Krivonogova, N. N. Tishchenko**  
**Determination of fertilizer doses under yarrow (Achillea millefolium L.) based on the results of field experiments and agrochemical cartograms**

The effect of zinc fertilizers on crop formation, yarrow (Achillea millefolium L.), which allowed to offer calculated doses of fertilizers for yarrow in the main application.

Keywords: Achillea millefolium L., micronutrient fertilizers, crop yields, fertilizer dose.

**I. A. Bobrenko, N. V. Goman, V. I. Popova**  
**Effectiveness of seed treatment with microelements (Cu, Mn, Zn) in winter wheat in the forest-steppe of Western Siberia**

In field experiments on meadow-chernozem soils there is found that plants of winter wheat respond positively to the dusting of seeds salts, microelements. It is introduced improvement of quality indicators of winter wheat, the influence of fertilizers on the size and structure of the crop.

Keywords: winter wheat, soil chemistry, yield, quality, you nose, zinc, copper, manganese, micronutrient.

## VETERINARY SCIENCE

**S. F. Meleshkov, I. N. Myagkov, A. S. Guz, K. S. Perepelov,  
E. V. Ismagilov**  
**Functional assessment of an urinary bladder in male rabbits**

30 cystometrograms of male rabbits have been analyzed. There are revealed correlational features between changes in pressure and level of fulling up in bladder as well as tonometrical indexes are defined.



These data are of clinical interest as far as diagnosing and therapeutic control concerned.

Keywords: male rabbit, urinary bladder, volume, pressure.

**G. N. Sidorov, E. M. Poleshchuk, D. G. Sidorova**  
**Specific structure hosts rabies pathogen and environmental synergies especially rabies epizootic process in the Omsk region in 1962–2013**

There are studied species composition and proportion of rabies 16 species in the Omsk region in 1962–2013 gg. There is analyzed the long-term population dynamics of foxes and rodents determines epizootic trouble. It held graphical and statistical analysis of the factors of morbidity animals. It explained the difficulty of forecasting rabies epizootic associated with synergistic features of the flow of epizootic process.

Keywords: Omsk region, rabies, hosts pathogen Synergetics.

**L. V. Fomenko, M. V. Pervenetskaya**  
**Specific features of formation of the pulmonary vein in the hen, duck and goose.**

The article examines the sources of venous outflow lung ducks and goose, morphometric studies conducted intraorgan veins of the lungs.

Keywords: birds, lungs, bronchial venules, venules interparabronchialnye.

**G. A. Honin, L. V. Fomenko**  
**Appearance of features of intraorganic structure of the arterial inflow of pectoral arch in some avian species**

Intraorganic branching of the arterial vessels in brachial muscles in hens, geese and domestic ducks is described. Morphological determinations dependent on muscular structure are stated.

Keywords: the arterial vessels, the muscles, the belt shoulder, the bird.

**O. R. Skubko, V. I. Samchuk, A. A. Darbinyan, O. N. Shushakova**  
**Pathomorphological signs and ways of curing of vaginal prolapse during the hyperplasia of vagina's mucosa in dogs**

In this article, there is the method of detecting of pathological characteristics of vaginal prolapse during the hyperplasia of vagina's mucosa at dogs, and also conservative and operating methods of treatment with justification of using of pathogenetic blockades of vagina's nerves.

Keywords: paracervical blockade, vaginal prolapse, a hyperplasia of mucosa, a dog, conservative and operating treatment.

**D. S. Borkivets**  
**Morphometric characteristics of renal chickens cross «Siberian-2» in the postnatal development**

Kidney problems morphology of birds and mammals have long attracted the attention of researchers. However, the information in the available literature on the morphological features of kidney cross Siberian-2 chickens in postnatal ontogenesis few and contradictory. Given the urgency of this problem, we conducted a study whose results are reflected in this article.

Establishment of regularities of change of the main measurements of kidneys in age dynamics and taking into account sexual distinction of a bird, allows to claim that to 90-day age of a kidney of cockerels and chickens change the form, they are extended, but become already, as on width indicators, and a grasp.

Keywords: renal morphometry, cross «Siberian-2», age dynamics.

**L. V. Krasnikova**  
**Sources vascularization of hepar and gastrointestinal tract of hens cross «Sibiryak-2»**

The study of the arterial vascularization of the features of the hepar in hens cross «Sibiryak-2».

Keywords: vascularization, arteries, hepar, cross «Sibiryak-2».

**D. B. Avdeev**  
**Intratrunk architectonics of right and left vagus nerve in the area of average third of neck in poultry from the order of gallinaceous**

In scientific work some features of micromorphology of vagus nerve in the field of an average third of a neck in chicken of cross-country «Hayseks white» are explained.

Keywords: chicken, vagus, histological studies, aviculture.

## ECOLOGY

**S. I. Artyuhova, I. F. Tetusheva**  
**The research of awareness of Omsk population on the role of functional products in the human diet**

It is established, that the diet of modern human, as a factor of interaction with the environment, should be organized using products enriched in physiologically functional ingredients. The article presents the results of a survey on the awareness of the Omsk population on the role of functional products in the diet, their significance for the preservation of human health and risk reduction of the most common ailments.

Keywords: «diseases of civilization», the value of organic functional products for human health.

**O. P. Bazhenova, I. Yu. Igoshkina**  
**Assessing environmental status of the reservoir natural park «Bird's harbour» (Omsk) on indicators of development of a phytoplankton**

For the first time the assessment of water quality and ecological status of a reservoir of natural park Bird's harbor (Omsk) has been carried out using indicators of phytoplankton's development. A steady downward trend indices of phytoplankton abundance to a level that encourages self-cleaning of the pond has been detected. It is a noted high stability of the quality of water, corresponding to class 3 «satisfactory purity». There is high stability of the water quality, corresponding to class 3 «satisfactory purity».

Keywords: environmental status, water quality, phytoplankton, natural park Bird's harbour, Omsk.

**A. I. Grigorev, T. V. Karnaukhova**  
**The effect of drought on the annual growth of Scots pine under Kazakh Upland**

The article discusses the features of the dynamics of the indices of Scots pine radial growth calculated with a period averaging 11 years in the climatic conditions of the steppe zone in the northern part of the Kazakh hills. A high level of indication of drought indices largest annual ring widths of Scots pine.

Keywords: tree-ring width, index annual radial growth, drought, display, cycling.

**A. I. Grigoriev, Sh. F. Sharipov**  
**Ecological bases of fire propagation in pine forests Kazakh upland**

The article discusses the features of dynamics of the number of cases of forest fires in Eastern Kazakh upland.

Keywords: forest fires, forest biogeocoenoses, cycling, fire hazardous period, rainfall.

**G. N. Sidorov, S. S. Nurmagonbetova, A. V. Vakhrushev, D. G. Sidorova, A. V. Putin, I. V. Deriglazov**  
**Field Mouse (Apodemus agrarius) in Omsk Irtysh region in 1974–2013: features of the living area and population dynamics**

The analysis of the number of field mice in relation to the number of small rodents is done in the Omsk region from 1974 to 2013. There are examined data catching 42,300 animals including the 7500 field mice. Over the past 40 years, long-term average number of all 23 species of rodents Omsk Irtysh region was  $10,0 \pm 0,6$ , and field mouse  $1,8 \pm 0,2$  individuals per 100 trap-nights. Specific gravity field mouse in the population of rodents was 17.9%. Population dynamics of small rodents and field mouse over the past 40 years is correlated  $r = 0,52$ ,  $p < 0,001$ ,  $n = 40$ .

Keywords: Omsk region, field mouse population density, population dynamics.

**E. V. Donets**  
**The specific influence of precipitation mode on annual growth of ordinary pine under conditions of southwest part of Krapivinsky oil field**

In the article there are considered features of influence of atmospheric precipitation on dynamics of annual growth of an ordinary pine in the sub-zone of southern taiga of the Omsk region on the territory of an oil field.

Keywords: sub growth, annual growth, dynamics of growth, synchronism, mode of atmospheric precipitation, oil field.

**E. V. Donets, L. V. Dolzhankina**  
**Effect of oil pollution of soil germination of coniferous tree species**

The article examines the impact of oil pollution of soil on germination of seeds of coniferous tree species in terms of the growing experience.

Keywords: seeds, conifer species of woody plants, germination, seedlings, oil pollution of soil.

**B. Yu. Kassal**

#### **Conservation status of mammals in Omsk region**

There is represented composition of mammals by the species in the region and its conservation status in the 200-year retrospective of loss identified as rare and extinct species in trophic guilds suggested changing the list in the Red Data Book species of the Omsk region.

Keywords: mammals, conservation status, trophic guild, Red Book, Omsk region.

**E. N. Ozyakova, N. A. Popolzhukhina**

#### **The impact of agro-ecological conditions and genotype varieties on the formation and functioning of symbiotic system soya**

Dynamics of formation of symbiotic system and accumulation of nitrogen in green mass of plants in various stages of development in IDF is considered. It shows the impact of agro-ecological conditions and genotype varieties in these processes, as well as experimentally proved their interdependence.

Keywords: symbiotic apparatus, soy, clubnicolesavage, nitrogen green mass.

**S. B. Chachina, E. V. Golovanova**

#### **Dynamics of population indices of different species of compost worms in terms of oil pollution**

Characteristics of *Eisenia fetida*, *E. andrei* and *Dendrobaena veneta* at two levels of soil contamination of oil (20 g/kg and 40 g/kg) in a laboratory experiment are studied. All species has showed good survival and productivity and can be recommended for remediation of oil-contaminated soils.

Keywords: earthworms, soil contamination of oil, vermiculture.

**S. B. Chachina, A. A. Zverev, E. V. Golovanova**

#### **Dynamics of population indices of compost worms in making gasoline in soil under laboratory conditions**

The article discusses the change in survival and reproductive potential muckworm (*Eisenia fetida*), californian worm (*E. andrei*) and *dendrobena Veneta* (*Dendrobaena veneta*) in pollution substrate gasoline. It is found that 0.1% and 0.2% d-th level of soil contamination with gasoline is not fatal to earthworms. There is a growing population from cocoon to adult worms.

Keywords: earthworms, soil pollution with oil products.

**S. B. Chachina, Yu. A. Makarov, E. V. Golovanova**

#### **The influence of diesel fuel on the population figures worms: *Eisenia fetida*, *E. andrei* and *Dendrobena veneta***

Characteristics of *Eisenia fetida*, *E. andrei* and *Dendrobaena veneta* at two levels of soil contamination of diesel fuel (20 g/kg and 40 g/kg) in a laboratory experiment are studied. *E. andrei* has showed good survival and productivity and can be recommended for remediation of diesel-contaminated soils.

Keywords: earthworms, soil pollution of oil products

**K. V. Ivanova**

#### **Introduction of *Eisenia fetida* on the background of biological contamination and wheat field soil agrochemical characteristics changes**

According to the results of the carried out experiments there are revealed positive changes in the structure and the composition of the soil of unstable agrocenosis as a consequence of vital functions of *Eisenia fetida*. The differences in characters of soil before and after the research work, quantitative and qualitative changes in the population of *E. f.* in the dynamics of the carried out experiments are shown. These representatives of *Lumbricus* are regarded as effective living organisms to carry out measures within the scope of biological soil improvement.

Keywords: biological reclamation, biological contamination of soil, agrocenosis, *Eisenia fetida*, *lyumbritsidy*, chemical and physical composition of the soil.

**I. Yu. Igoshkina**

#### **Species composition and structure of phytoplankton of reservoir in natural park Bird's Harbor (Omsk)**

The species composition and features of taxonomic structure of a phytoplankton of the reservoir of natural park Bird's harbor (Omsk) have

considered. There is observed bacillariophyta-chlorophyta character of phytoplankton with considerable participation of Euglenophyta. There are identified dominant and new to Omsk Priirtyshje species algae and cyanobacteria.

Keywords: phytoplankton, species composition, taxonomic structure, natural park Bird's Harbor, Omsk.

**I. V. Krainov, B. Yu. Kassal**

#### **Zoogeographical characteristic representatives of tribe Bumblebees (Hymenoptera: Apidae, Bombini) in Western Siberia**

In Western Siberia and adjacent territories there is identified 49 species inhabiting 17 subgenera 2 genera bumblebees forming complexes zoogeographical 6 and 13 groups. The number of species are dominated by representatives of transpalearctic complex and temperatny species inhabiting mainly steppe with the spread of the forest and steppe zones.

Keywords: Western Siberia, climatic zones, species of bumblebees, distribution.

## **EARTH SCIENCE**

**I. V. Karnatsevich, V. S. Akimova**

#### **Criterion of stability of oscillatory process in climatology**

The facts from area of mathematical statistics and probability theory from which analysis follows are mentioned that forecasts of forthcoming warming of a global climate scientifically are not proved.

Keywords: temperature of air, sample, trends, criteria, variation factors.

**I. V. Karnatsevich, V. S. Akimova**

#### **Calculations of elementary flash floods according to standard meteorological observations**

In the article results of mass calculations of a local elementary runoff in the daily intervals according to meteorological data for thousand consecutive daily intervals are presented. For computer calculations are used: the electronic DB meteo.ru, the software package representing DBMS and calculations by finite difference method of elements of current water balances in accordance with the system of the equations of V. S. Mezentsev (Omsk, West Siberia)

Keywords: current water balances, elementary basin, hydrographers of a local runoff.

**I. V. Karnatsevich, V. S. Akimova**

#### **The coldest and warmest winters in Omsk and its frequency estimations**

In the article results of the statistical forecast of the sums of negative average monthly temperatures of air based on the analysis of a 123-year vector of continuous urgent supervision in Omsk are resulted.

Keywords: air temperature, century forecasts, Omsk.

**S. Yu. Stolbova**

#### **Probability-statistical method of calculation of admissions on geodetic and installation works for building multi-storey industrial buildings of series 1.020**

Calculations of admissions by probability-statistical method on geodetic and civil purpose and erection works for maintenance of planned and vertical position of designs at the stage of erection of multi-storey five wing industrial buildings of a series 1.020 are resulted. Admissions are calculated on these works taking into account responsibility of the building, industrial base of building industry, geodetic maintenance and technology of building. It is noticed that the given sizes of norms of accuracy in the best way correspond to real conditions of building, when the used value of unit of the admission of symmetry of installation of the columns defined under the formula for its calculation with introduction of factor  $a=1,6$  instead of  $a=0,6$  (according to GOST 21779-82. Technological admissions).

Keywords: probability-statistical method, calculation of admissions, geodetic installation works, planned and vertical position, designs of buildings.

**R. A. Katkov, V. I. Kisluhin**

#### **Features of geological structure and oil content of the middle Devonian Martinsky zone of oil accumulation of Orenburg region**

The article presents the peculiarities of geological structure and oil content of the middle Devonian Martinsky zone of oil accumulation of Orenburg region. It discusses commercial value of the object that is associated with middle Devonian oil and gas complex, within which are placed the oil deposits.

Keywords: geological structure, oil content, horizon, tectonics, deposit.



**ДИНАМИКА СИСТЕМ,  
МЕХАНИЗМОВ И МАШИН**

МИНИСТЕРСТВО ОБРАЗОВАНИЯ И НАУКИ РФ  
ПРАВИТЕЛЬСТВО ОМСКОЙ ОБЛАСТИ  
ОМСКИЙ ГОСУДАРСТВЕННЫЙ ТЕХНИЧЕСКИЙ УНИВЕРСИТЕТ  
ОМСКИЙ НАУЧНЫЙ ЦЕНТР СО РАН  
ОМСКИЙ НАУЧНО-ОБРАЗОВАТЕЛЬНЫЙ КОМПЛЕКС  
ИНСТИТУТ ПРОБЛЕМ ПЕРЕРАБОТКИ УГЛЕВОДОРОДОВ СО РАН  
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