Міністерство освіти та науки України
Миколаївський національний аграрний університет
Факультет культури й виховання
Кафедра іноземних мов

Матеріали студентської конференції Миколаївського національного аграрного університету

м. Миколаїв, 26 березня 2015 р.

Миколаїв
2015

УДК 811
ББК 81.2
М-34

Матеріали студентської конференції Миколаївського
М-34 національного аграрного університету, 26 березня 2015 р.,
м. Миколаїв. – Миколаїв : МНАУ, 2015. – 115 с.

У матеріалах студентської конференції МНАУ, секція іноземних мов, розглянуто різноманітні актуальні питання, пов'язані з професійною діяльністю майбутніх фахівців, проаналізовано досвід інших країн.

УДК 811
ББК 81.2

Зміст

1

1

1

1

УДК: 811.111

IS THE SCIENCE OF THE FUTURE

Бабіна О.В. – студентка групи БТ 2/1

Науковий керівник – Ганніченко Т.А., к.пед.наук, доцент кафедри іноземних мов МНАУ

Biotechnology! Biotechnology! Biotechnology!!! Seems like this word has become a buzz word, nowadays. You will hear this word from classrooms to cafeterias. It can be commonly seen in newspapers, magazines, journals, and all sorts of media outlets, which include print media to electronic media. People are organizing huge meetings, conferences, and workshops on biotechnology, where participants come from different arenas like science, industry, administration, social work, and so on. As time goes by and the way our life is heading it seems as if biotechnology has become an essential component of our life. The day is not far, when we cannot fathom our life without biotechnology. If, we have to say it in simple words, it can be said that "We wake up with biotechnology and we go to bed with biotechnology". It is also possible that in future our birth and death can also be determined by biotechnology [4].

Biotechnology is responsible for hundreds of medical diagnostic tests that keep the blood supply safe from the AIDS virus and detect other conditions early enough to be successfully treated.

Biotechnology is helping to keep all members of the family healthy, including the family pet. New veterinary biopharmaceuticals provide better disease treatment, including anti-inflammatory drugs to treat arthritis or musculoskeletal pain in animals. Other biotech products eliminate pets' internal parasites; antibiotics are used to treat bacterial infections and sedatives are used to calm animals during the administration of anesthesia.

Before genetically modified termites and trees can be allowed to help solve our economic and environmental problems, great arguments will rage over the possible damage they may do. Many of the people who call themselves green are passionately opposed to green technology. But in the end, if the technology is developed carefully and deployed with sensitivity to human feelings, it is likely

to be accepted by most of the people who will be affected by it, just as the equally unnatural and unfamiliar green technologies of milking cows and plowing soils and fermenting grapes were accepted by our ancestors long ago [5].

What has this dream of a resurgent green technology to do with the problem of rural poverty? In the past, green technology has always been rural, based in farms and villages rather than in cities. In the future it will pervade cities as well as countryside, factories as well as forests. It will not be entirely rural. But it will still have a large rural component. After all, the cloning of Dolly occurred in a rural animal-breeding station in Scotland, not in an urban laboratory in Silicon Valley. Green technology will use land and sunlight as its primary sources of raw materials and energy. Land and sunlight cannot be concentrated in cities but are spread more or less evenly over the planet. When industries and technologies are based on land and sunlight, they will bring employment and wealth to rural populations [6].

In 1953, JD Watson and FHC Crick for the first time cleared the mysteries around the DNA as a genetic material, by giving a structural model of DNA, popularly known as, ‘Double Helix Model of DNA’. This model was able to explain various phenomena related to DNA replication, and its role in inheritance. Later, Jacob and Monad had given the concept of Operon in 1961, while Kohler and Milestein in 1975, came up with the concept of cytoplasmic hybridization and produced the first ever monoclonal antibodies, which has revolutionized the diagnostics [2].

"In a cell's nucleus, there are many complicated mechanisms that prevent replication and transcription from colliding," said Temiakov, an associate professor in RowanSOM's Department of Cell Biology. "In mitochondria, we found those are mutually exclusive processes, but we believe that we have identified the key player that effectively switches on or off transcription or replication."

Mitochondria are organelles located outside the nucleus of nearly every cell in humans. While most of the cell's DNA is inside the nucleus, mitochondria maintain their own DNA and contribute a

small number of genes that are essential for cellular respiration and energy generation [4].

The future, after all, is our future, and so we are likely to make choices and to judge the consequences of our choices in ways that look out for our own best interests, and therefore that seek the best sort of future. As Virginia Postrel notes, in laying out her own engaging version of this view, “by shaping our individual lives, choosing among and arranging the things we do control, we form a larger pattern that is under no one’s control, yet is complex and orderly.” [1].

Tomorrow, biotechnology will bring you better health and treatments for disease using agriculture the ultimate sustainable manufacturing process. Right now, scientists are developing plants that produce medicines. Think of them as “green drug factories” that will produce all kinds of medical products you and your family may need.

Today, researchers are working with plants such as rice and tobacco to produce proteins for life-saving biotech drugs. One day, rice may be used to make enzymes that can treat iron deficiency, which affects 67 percent of the worldÃ-s population, and anemia. Researchers are also experimenting with tobacco plants as drug factories; the possibilities include “growing” a preventative treatment for ovarian cancer in tobacco leaves [3].

Література:

1. Article The Future of Humanity

2. Articles from Journal of Pharmacy & Bioallied Sciences are provided here courtesy of Medknow Publications)

3. Biotechnology Industry Organization

4. K. Agaronyan, Y.I.Morozov, M.Anikin, D.Temiakov**.** Replication-transcription switch in human mitochondria**.**

5. ‘Our Biotech Future’: An Exchange September 27, 2007

6. ‘Our Biotech Future’ October 11, 2007

УДК: 811.111

IS THE SCIENCE OF THE FUTURE

Сельское хозяйство Украины: актуальные проблемы и перспективы)

Беляк О. В., Хомчич Я. І. – студенти групи А1/3

Науковий керівник – Ігнатенко Ж. В., викладач кафедри іноземних мов МНАУ

Actual problems

Among the main problems that have touched the Ukrainian agriculture, experts point to 5. Thus, the first - is the technological base is very old and works from the Soviet era. Native engineering industry calculates about one hundred and fifty disparate enterprises, it is not upgraded, equipped with technically worn out equipment as well as technologically backward: depreciation of equipment reaches 70-80 %, and its average age is 30-35 years. The second reason is the process of "aging". The younger generation is increasingly migrates to the big cities, where there are all conditions for study and work, interesting holiday. That's why part of qualified engineering, design and skilled workers is considered lost. Another problem is that a significant portion of farm products do not sell well due to the passivity of consumer cooperatives, extremely slow formation of a farm service cooperatives and credit unions "in the countryside". Also, the situation is not improved with the terms of the used agricultural land. Most of chernozems is already exhausted and loses its performance due to improper handling of the earth. Soils are not supported with fertilizers and other useful elements. A number of humus decreases each passing year. Finally, due to the high level of corruption and bribery, the unstable political and economic situation in the country, lack of development of the financial system of the state and the difficulties in working with local partners, the flow of foreign investment in the agriculture is almost absent.

Causes

One of the reasons was separating department of development in agricultural production from the social development of rural areas. Thus, agricultural enterprises, which earlier develop social

infrastructure on their designated rural areas, now mainly transferred them to the municipal property and give the poor economic situation, can no longer finance the social sphere of the village.

Local governments, which are responsible for the content of social institutions in the respective rural areas due to lack of sufficient funds in local budgets are also unable to provide even simple reproduction of the social infrastructure of the village.

Among the main reasons the researchers note also such: the unpredictability of administrative regulation of pricing and export restrictions, inefficient mechanisms to support agricultural production by the state, which protect the domestic market from imports of low-quality products and system standardization, and sanitary and phytosanitary measures.

Solution: does it exist?

Naturally, the current state of regional development needs to improve all components of the economic mechanism. It is important to develop innovative technologies.

Innovation in agriculture are considered biofuel technology, based on the processing of raw materials. The raw material can be used as agricultural wastes. Due to biomass, which is now the most important source of alternative energy, Ukraine, according to the experts, may be 30-40 % reduction in natural gas consumption.

The priority strategies for social and economic development in Ukraine should be to improve the food security of the state, based on increasing food production, improving their quality and balance of nutrients.

All of the above problems should push our authorities to deliberate and scientifically serious actions in agriculture. Among them is necessary to point a stable government support of agricultural producers, attracting foreign investments, the issuance of short-term and long-term loans.

Output

Agricultural branch is bursting at the seams like an old worn suit. A little more time and we will only eat food from other countries because no one will grow anything, even a little bit of it, and we may

lose one of the strategic components of our independence - food security and become a colony of the West.

УДК 378.147:811

PRODUKTIONSMITTELBESTEUERUNG IN DER LANDWIRTSCHAFT

(Оподаткування засобів виробництва в сільському господарстві)

Бугель В. - студент групи Б 2/2

Науковий керівник – Пономаренко Н. Г., ст. викладач кафедри іноземних мов МНАУ

Die Untersuchung der Besteuerung bestimmter Produktionsmittel (Düngemittel, Pestizide, Mineralölprodukte, Gas und Strom) in ausgewählten EU-Mitgliedstaaten war Ziel eines Gutachtens, das im Auftrag der Bundesanstalt für Landwirtschaft und Ernährung (BLE) vom Öffentlichen Sektor des ifo Instituts kürzlich fertig gestellt wurde.

Ein Überblick über die Steuerbelastung des Produktionsmitteleinsatzes in ausgewählten.

EU-Ländern ist deshalb von Interesse, da sich der Wettbewerb im Agrarsektor durch die gemeinsame europäische Währung bereits verschärft hat und die Erweiterung der EU durch den Zugang stark agrarisch orientierter Länder zu weiteren Problemen führen wird.

In der Untersuchung werden folgende Steuern analysiert:

- Steuern und Abgaben auf Düngemittel und Pflanzenschutzmittel;
- Kraftfahrzeugbesteuerung;
- Mineralölbesteuerung;
- Elektrizitäts- und Gasbesteuerung.

Die betrachteten Länder sind Dänemark, Frankreich, Großbritannien, Italien, Niederlande, Österreich und Schweden.

Es ist ersichtlich, dass nur Dänemark und Schweden eine Steuer auf Düngemittel erheben. Die Landwirtschaft in Dänemark unterliegt

einem Quotensystem und die in Schweden der normalen nationalen Düngemittelsteuer. Außerdem wird in diesen Ländern wie auch in Frankreich eine Pestizidsteuer erhoben. Das einzige Land, das Antibiotika und wachstumsfördernde Mittel besteuert, ist Dänemark.

Bezüglich der Kraftfahrzeugsteuer ist zu erkennen, dass in allen untersuchten Ländern bis auf Dänemark für alle landwirtschaftlichen Betriebe Steuerfreiheit besteht.

Größere Unterschiede ergeben sich in der Besteuerung von Mineralöl. Eine derartige Steuer gibt es in allen untersuchten Ländern, wobei die Landwirtschaft auf nationaler Ebene sehr unterschiedlich behandelt wird. Ein etwas komplizierteres System existiert in Dänemark und Schweden, dort gibt es neben einer Energiesteuer eine CO2-Steuer sowie eine Schwefelsteuer auf Mineralöle. Die dänische Landwirtschaft muss aber lediglich die CO2-Steuer entrichten.

Die landwirtschaftlichen Betriebe in Deutschland sind von Steuererhöhungen auf Dieselkraftstoff ausgenommen. Für landwirtschaftliche Fahrzeuge gilt hier ein gleichbleibender »Agrardieselsteuersatz«. Ein ermäßigter Steuersatz auf Mineralöl wird für landwirtschaftliche Betriebe in Frankreich, Großbritannien und Italien angewendet. Lediglich die Landwirtschaft in Österreich erhält im Rahmen der Mineralölbesteuerung keine Ermäßigung.

Hinsichtlich der Besteuerung von Heizöl sind folgende Charakteristika hervorzuheben: Die Heizölsteuer in Dänemark unterliegt der Energiesteuer sowie einer Kohlendioxid- und Schwefeldioxid-Steuerkomponente. Dabei zahlen die landwirtschaftlichen Betriebe den normalen Steuersatz. Die landwirtschaftlichen Betriebe in Deutschland und Schweden erhalten eine Ermäßigung auf den regulären Heizölsteuersatz. Betriebe in Schweden zahlen pauschal nur ein Viertel des CO2-Steuersatzes, wenn das Heizöl zu Heizzwecken verwendet wird. In Frankreich, Großbritannien, Italien, den Niederlanden und Österreich wird Heizöl mit dem jeweils nationalen, regulären, d.h. bei Verwendung zu Heizzwecken heranzuziehenden Steuersatz belegt.

Die Elektrizitätsbesteuerung weist folgende Merkmale in den untersuchten Ländern auf: In Dänemark wird eine Energiesteuer,

sowie eine Kohlendioxid- und Schwefelsteuer auf Elektrizität erhoben. Die Landwirtschaft muss die normale Steuer entrichten, wie auch in Frankreich, Großbritannien und Italien. In Österreich können die landwirtschaftlichen Betriebe eine Abgabenvergütung geltend machen. Das Stromsteuergesetz in Deutschland sieht einen reduzierten Steuersatz für landwirtschaftliche Betriebe ab einer jährlichen Mindeststeuerbelastung vor. In Schweden können die Landwirte ab einem gewissen Mindestverbrauch an Elektrizität eine Steuerrückforderung anmelden und diese einfordern.

Schließlich ist der Gasbesteuerung ebenfalls eine wichtige Rolle zuzuschreiben. So werden die landwirtschaftlichen Betriebe in Deutschland und Großbritannien mit dem jeweils nationalen regulären Steuersatz auf Gas belastet. In Deutschland aber besteht die Möglichkeit der Steuervergütung für Unternehmen der Land- und Forstwirtschaft, wenn das Gas zum mittelbaren oder unmittelbaren Verheizen verwendet wurde. In Dänemark wird die Energiesteuer auf Gas zu 100%, die CO2-Steuer zu 10% zurückerstattet, falls das Gas für landwirtschaftliche Zwecke verwendet wurde. Ähnliche Regelungen gelten auch in Schweden. Die Landwirtschaft in Frankreich unterliegt der Normalbesteuerung, Da diese aber erst ab einem Verbrauch von über 5 Mill. kWh/Jahr greift, kann davon ausgegangen werden, dass die normalen landwirtschaftlichen

Betriebe mit einem niedrigeren Verbrauch keine Steuer entrichten müssen. In Italien müssen die landwirtschaftlichen Betriebe den normalen Steuersatz zahlen, lediglich fьr Methangas gilt eine ermäßigte Besteuerung. Die Landwirtschaft in den Niederlanden und in Österreich unterliegt generell der regulären Besteuerung.

Література:

1. Brockmeier, M., J.H. Ko und P.M. Schmitz (1993), »The sectoral and economywide effects of a partial or total chemical ban on German agriculture«, in: J. Michalek und C.H. Hanf (Hrsg.), The Economic Consequences of a Drastic Reduction in Pesticide Use in the EU, Wissenschaftsverlag Vauk, Kiel.

2.Carpentier, A. und F. Salanий (1999), »Engrais et pesticides: Effects incitatifs des instruments economiques, Note prйparйe pour

les Entretiens de Sйgur«, INRA, Paris, 29. Juni. Danish Ministry of Taxation (1998), Energy Taxes – The Danish Model, Kopenhagen, http://www.skm.dk/finish.pdf.

3.ECOTEC Research & Consulting (2001), Study on the economic and environmental implications of the use of environmental taxes and charges in the EU and its member states, April 2001.

УДК 338.43(477):339.54

INNOVATIVE AGRICULTURAL PROBLEMS OF MODERN UKRAINE

(Проблеми сільськогосподарських інновацій сучасної України)

Вілянська А.В. – студентка групи М 1/1

Науковий керівник – Саламатіна О.О., к.філол.наук, доцент кафедри іноземних мов МНАУ

This paper analyzes the current situation in Ukrainian agriculture, the main trends of development that affect its dynamics. The article defines the main objectives of agrarian policy in the long term.

In the agrarian sector of economy development of innovative activity is constrained by imperfect legislation and lack of state incentives for innovation, limited internal and external sources of finance for innovation and the impossibility of their rapid mobilization, low level of investment attractiveness of the industry. The problem of innovation has always attracted the attention of domestic and foreign scholars. Detailed studies of various aspects of innovation development and innovation efficiency are carried out in the works of such scholars: foreign – S. Valdaytsev, L. Vodachek, A. Vodachkova, P. Elliott, D. Kovalev, Y. Morozov, S. Rumyantsev, B. Santo, A. Strickland, B. Twiss, A.Thompson, E.Utkin, R.Fatkhutdinov, J. Yakovets; domestic - A. Amosha, Y. Bajan, L. Bezchasny, V. Boyko, A.Buzni, S.Volodin,

V.Geyets V. Zakharchenko, O. Krisalny, I. Lukin, S. Okropilny, P. Sabluk, L.Fedulova, M. Chumachenko and others [3, p. 15].

Ukraine in terms of technique and technology in agriculture lies behind the advanced countries in 40 years. Only two per cent of its agricultural land is treated by conservation agriculture. Specific electricity consumption in Ukraine is several times higher than in the US and Western Europe. In Ukraine, agriculture employs 13% of the total working population, which is 2–4 times more than in the West. There is a number of problems to overcome the backwardness of Ukrainian agriculture, among the main ones are: high fuel prices, which make it impossible to highly profitable agricultural production; high interest rates on loans (15–16%) due to the high risk of non-repayment of borrowings creditors; high custom duties on agricultural machinery and unprotected domestic market from the dumping of food supplies by foreign manufacturers; social problems of rural residents: housing need in rural areas, improvement of social conditions for farmers. Masters of large corporations are not interested in the prosperity of the village [2, p. 306].

The study of material and technical base of agricultural enterprises shows that 2/3 of the houses are worn by 50–70%, and mechanization – by 70–95%. Therefore, the first issue of further development of agricultural production is its technical and technological re-equipment. Finally, due to the high level of corruption and bribery, the unstable political and economic situation in the country, lack of development of the financial system of the state and the difficulties in working with local partners, the flow of foreign investment in agriculture is almost absent [4].

Innovation activities are carried out through the progressive scientific and technical achievements and are crucial to overcome the crisis, stabilization and growth. Objectively determined process of converting scientific knowledge into physical reality, periodic updates innovation has its own laws and is an independent scientific direction. The basis for innovative development creates economic actors, to innovate in order to reap the benefits. However, its effectiveness depends on the state of internal and external economic environment, the availability of the necessary conditions for the

implementation and management of innovative products and services. Innovative software development of agriculture is the creation of an appropriate innovation infrastructure, attracting new and improved competitive technologies, products or services, as well as organizational and technical solutions of industrial, administrative, commercial or otherwise substantially improve the structure and quality of production and the social sphere of activities aimed at the use and commercialization of research and development, which together provide increasing the competitiveness of the industry [1, p. 118].

Agriculture is one of the priority sectors of the economy. It contributes to the development of material well-being of the population, the strengthening of economic and food security of the state, the growth of export potential. There is a need for a detailed analysis of the current state and prospects of agriculture in Ukraine. Stable households need not only direct subsidies as needed consistent pricing and affordable, long-term loans to develop and modernize production. It may be added that the dairy farms in addition to credit and government support are necessary also to real owners. Otherwise, livestock – and potentially lucrative industry highly profitable – will long remain unprofitable, and will continue to face the budgets of all levels with an outstretched hand. New Farm is a modern production and training complex, which will train and support those wishing to create own family farm. On the basis of the farm will operate a classroom to teach farmers efficient production of quality milk and other advanced management methods [4].

Technical support of agricultural production is characterized not only by the number of technical means, but also by their reliability, performance, compliance with environmental and safety requirements of machinery at work. For all of these parameters Ukraine is situated below countries with developed agriculture. Domestic power tools and agricultural machinery for quality lies behind the world for 2–3 generations. Performance parameters are lower 20–40% [3, p. 14].

The younger generation is increasingly migrating to the big cities, where there are all conditions for study and work. At the same

time, the market of meat and meat products is extremely promising and socially significant. Meat consumption per capita in Ukraine is 53 kg, while in developed countries it is 80–100 kg. In this case, the consumption of meat will continue to grow with the growth of incomes. The dynamics of recent years testifies to this. Therefore it is necessary to react to market signals and to orient business on the prospects for the sector [2, p. 303].

The first event in the project implementation plan identified measures to increase the availability of credit resources for the accelerated development of animal husbandry. The interest rate on loans obtained for up to 8 years for the construction and modernization of livestock complexes will be two-thirds of subsidized from the state budget. On such a long time it will be done for the first time. The second event is also aimed at the renewal of fixed assets in livestock. Its main task is to increase the genetic potential of animals bred in Ukraine breeds and improving their conditions of detention. The solution of this problem is provided to carry out through the purchase of breeding cattle and modern technological equipment for the well-established system of state leasing. The third event to ensure the accelerated development of livestock and improve its competitiveness is the decision of the Government to abolish import duties on technological equipment for animal husbandry, which has no domestic counterparts [1, p. 117].

So to improve the situation with the formation and reproduction of the material-technical base of the agricultural sector, raising it to a competitive level and systematic regulation of price parity should: implement in Ukraine the practice of every 4-5 years thematic census of fixed assets within the Ukrainian Census of Agriculture in order to determine the reliability of the parameters and the condition of the property of the agricultural sector; implement set of measures at national and regional levels in order to enhance investment and innovation processes technical and technological re-equipment of agricultural production; reform depreciation system with respect to its investment direction by separating economic and fiscal functions; improve and expand the system of leasing of agricultural machinery and equipment.

Література:

1. Actual problems of modern Ukraine : social, economic and legal aspects / Materials of Interuniversity scientific conference of teachers and students : Donetsk National Technical University, 2008. – P. 116–119.

2. Kurmaev P. Current state and prospects of development of animal husbandry in Ukraine [collective monograph] / Ed. B. Besedina, A. Muzichenko. – K : INAH, 2010. – P. 305–308.

3. Statistical Handbook of Ukraine – K. : State Statistics Committee of Ukraine, 2009. – 686 p.

4. http://www.be5.biz/ekonomika1/r2012/2626.html

УДК 338.43:330.322(477)

AGRICULTURAL ECONOMICS AS A SPECIFIC BRANCH

(Економіка сільського господарства як специфічна галузь)

Вілянська О.В. – студентка групи Т 1/4

Науковий керівник – Саламатіна О.О., к.філол.наук, доцент кафедри іноземних мов МНАУ

Agricultural economics originally applied the principles of economics to the production of crops and livestock – a discipline known as agronomics. Agronomics was a branch of economics that specifically dealt with land usage. It focused on maximizing the crop yield while maintaining a good soil ecosystem.

Throughout the 20th century the discipline expanded and the current scope of the discipline is much broader. Agricultural economics today includes a variety of applied areas, having considerable overlap with conventional economics [1, p. 244].

Economics is the study of resource allocation under scarcity. Agronomics, or the application of economic methods to optimizing the decisions made by agricultural producers, grew to prominence around the turn of the 20th century. The field of agricultural

economics can be traced out to works on land economics. Henry Charles Taylor was the greatest contributor with the establishment of the Department of Agricultural Economics at Wisconsin in 1909.

Another contributor, Theodore Schultz was among the first to examine development economics as a problem related directly to agriculture. Schultz was also instrumental in establishing econometrics as a tool for use in analyzing agricultural economics empirically; he noted in his landmark 1956 article that agricultural supply analysis is rooted in "shifting sand", implying that it was and is simply not being done correctly [1, p. 245].

One scholar summarizes the development of agricultural economics as follows:

"Agricultural economics arose in the late 19th century, combined the theory of the firm with marketing and organization theory, and developed throughout the 20th century largely as an empirical branch of general economics. The discipline was closely linked to empirical applications of mathematical statistics and made early and significant contributions to econometric methods. In the 1960s and afterwards, as agricultural sectors in the OECD countries contracted, agricultural economists were drawn to the development problems of poor countries, to the trade and macroeconomic policy implications of agriculture in rich countries, and to a variety of production, consumption, and environmental and resource problems" [2, p. 73].

Agricultural economists have made many well-known contributions to the economics field with such models as the cobweb model, hedonic regressionpricing models, new technology and diffusion models (Zvi Griliches), multifactor productivity and efficiency theory and measurement, and the random coefficients regression. The farm sector is frequently cited as a prime example of the perfect competition economic paradigm [3, p. 92].

Since the 1970s, agricultural economics has primarily focused on seven main topics, according to a scholar in the field: agricultural environment and resources; risk and uncertainty; consumption and food supply chains; prices and incomes; market structures; trade and development; and technical change and human capital.

In Asia, agricultural economics was offered first by the University of the Philippines Department of Agricultural Economics in 1919.

Today, the field of agricultural economics has transformed into a more integrative discipline which covers farm management and production economics, rural finance and institutions, agricultural marketing and prices, agricultural policy and development, food and nutrition economics, and environmental and natural resource economics [2, p. 68].

In terms of technical change, there have been increasingly rapid developments and innovations in the equipment designed for agricultural research. This equipment includes instruments for plant physiology research, and monitoring soil conditions and atmospheres.

Література:

1. Baev A. I. Investing in agriculture / A. I.Baev // Collected Works Lugansk National Agrarian University. – Lugansk : LNAU, 2006. – № 62 (85). – P. 243–246.

2. Berry G. U. Ways to increase the investment potential in the agricultural sector / G. U. Berry // Collected Works UDAU. – Uman : UDAU 2007. – Vol. 64. (Part 2). – P. 67–73.

3. Kolotuha S. M. Lending to agricultural enterprises as an effective source of investment / S. M. Kolotuha, I. P. Boreyko // Economy AIC. – 2009. – № 1. – P. 89–96.

УДК: 811.111

THE ECONOMICS OF SHALE OIL

(Економіка сланцевої нафти)

Власенко О.М. – студентка групи ЗЕД 2/2

Науковий керівник – Матвєєва К.С., доцент кафедри іноземних мов МНАУ

The benefits of shale oil are bigger than many Americans realise. Policy has yet to catch up.

Dennis Lithgow is an oil man, but sees himself as a manufacturer. His factory is a vast expanse of brushland in west Texas. His assembly line is hundreds of brightly painted oil pumps spaced out like a city grid, interspersed with identical clusters of tanks for storages and separation. Through the windscreen of his truck he points out two massive drilling rigs on the horizon and a third about to be erected. Less than 90 days after they punch through the earth, oil will start to flow.

What if they're dry? "We don't drill dry holes here." says Mr Lithgow, an executive for Pioneer Natural Resources, a Texan oil firm. In the conventional oil business, the riskiest thing is finding the stuff. The "tight oil" business, by contrast, is about deposits people have known about for decades but previously could not extract economically.

Pioneer's ranch sits at the centre of the Permian Basin, a prehistoric sea that, along with Eagle Ford in south Texas and North Dakota's Bakken, are the biggest sources of tight oil, a broad category for the dense rocks, such a shale, that usually sit beneath the reservoirs that contain conventional oil. Since 2008 tight-oil production in America has soared from 600000 to 3-5m barrels per day. Thanks to tight oil and natural as from shale, fossil fuels are contributing even more to economic growth: 0.3 points last year alone, according to J.P. Morgan, and 0.1 to 0.2 a year to the end of 2020, according to the Peterson Institute, a think-tank. Upscale furniture stores and luxury-car dealerships have sprung up in Midland since the boom began. Mr Lithgow has truck drivers who earn $80000 a year. Local oil-service firms have been known to hire fast-food workers on the spot. In all, he unconventional-energy boom will create up to 1.7m new jobs by 2020, predicts McKinsey, a consultancy.

And that is only part of the story. Another benefit of tight oil is that it is much more responsive to work prices. Some economists think this could turn America into a swing producer, helping to moderate the booms and busts of the global market.

Pioneer is rapidly boosting production. But Scott Sheffield, the company's boss, worries that in a few years he will run out of

customers; America has prohibited the export of crude oil since the 1970s. At $100 a barrel, the price of West Texas Intermediate (the most popular benchmark for American oil) is comfortably above the break-even cost of tight oil. But the prospect of a glut has futures pricing it at $20 less in 2018. “There will be a lot less oil-drilling when you take$20 out of everybody’s margin,” says Mr Sheffield.

Besides directly creating new jobs and income, the fossil-fuels boom could help growth by reducing America’s vulnerability to oil-price swings, in two ways. First, as production rises and imports shrink, more of the cash that leaves consumers’ pockets when the oil price rises will return to American rather than foreign producers. David Woo of Bank of America/Merrill Lynch notes that America’s petroleum deficit has narrowed to 1.7% of GDP while Europe’s has widened to nearly 4%, which seems to have made both the dollar and the economy less sensitive to oil prices.

The second channel lies in the economics of shale. Oil flows relatively easily through the porous rocks that make up a conventional reservoir, so a conventional well can tap a large area. As a result, the volume of oil pumped each day declines slowly, on average at 6% per year. By contrast, oil flows much more sluggishly through impermeable tight rock. A well will tap a much smaller area and production declines quite rapidly, typically by 30% a year for the first few years(see chart 2 on previous page). Maintaining a field’s production levels means constant drilling. The International Energy Agency reckons maintaining production at 1m barrels per day in the Bakken requires 2,500 new wells a year; a large conventional field in southern Iraq needs just 60.

This all means that when oil prices rise, producers can quickly drill more holes and ramp up supply. When prices fall, they simply stop drilling, and production soon declines. In early 2009, after prices collapsed with the global financial crisis, Pioneer shut down all its drilling in the Permian Basin. Within six months, output in the affected areas dropped by13%.

Bob McNally of Rapidan Group, an industry consultant, predicts that America could be “force-marched” back to the stabilising role it played in the 1960s, this time responding to the

market's invisible hand rather than government diktat. Will that work in practice? It may already have done so. Since 2008, the Peterson Institute notes, turmoil in Sudan, sanctions on Iran and declining North Sea output have taken a lot of oil off the market. Without America, which accounted for half of the growth in global output over that period, Persian Gulf producers might not have been able to make up for the loss. Prices could have risen sharply, hurting consumers everywhere. Yet they did not.

Oil firms try not to over-react to short term price fluctuations, of course. Capital, equipment and labour all cost money, so they try to ramp up production only in response to what they think will be long term shifts in the oil price.

The ban on crude-oil exports hurts producers and makes it harder for America to become a swing supplier. Light, sweet (ie, low-sulphur) West Texas Intermediate already trades at a discount of $8 to Brent, its global peer. That is due mostly to transport and storage bottlenecks in America, but increasingly the export ban makes a difference. In recent decades American refiners have reconfigured themselves to handle the heavier, sour oil imported from Mexico, Venezuela and Canada's tar sands, leaving them with less capacity for refining tight oil, which is light and sweet.

The oil price at which shale producers break even ranges from $60 in the Bakken to $80 in Eagle Ford, reckons Michael Cohen of Barclays, a bank. If exports yielded an extra $1 to $1.30 a barrel, he estimates that might raise total output by as much as 200,000 barrels per year.

If the ban were lifted, crude-oil exports could start more or less straight away. The necessary pipes and tankers are mostly there already. But the political debate is only in its infancy. By law the president can allow exports he considers in the national interest. Barack Obama has yet to express a view on the ban. Legislators from non-oil producing states are wary. "For me the litmus test is how middle-class families will be affected," says Ron Wyden, the Democratic chairman of the Senate energy and natural resources committee.

The main beneficiaries of the ban are the refiners. They buy light, sweet American crude for less than the global price, turn it into petrol and then sell that at the global price. Exports of refined petroleum products are not banned, and have, unsurprisingly, soared.

Defenders of the ban (including, naturally, some refiners) claim that if America exported more oil, Saudi Arabia would reduce its own output. Prices to American consumers would not fall, they say, and might even rise. Historical evidence says otherwise, however. When Congress allowed Alaska to export crude oil in 1995, its west-coast customers did not pay any more for petrol, diesel or jet fuel.

Oil producers would obviously benefit from lifting the ban. So might other Americans, in less obvious ways. A global oil market that fully included America would be more stable, more diversified and less dependent on OPEC or Russia. The geopolitical dividends could be hefty. As Pioneer's Mr Sheffield notes, "It's hard to believe we're asking the Japanese to stop taking Iranian crude, but we won't ship them any crude ourselves."

Література:

1. The Economist// The economics of shale oil.-2014-c. 29-30.
2. The shale oil revolution [Electronic Resource]:URL: http://fortune.com/2015/01/09/oil-prices-shale-fracking/

УДК 378.147:811

DIE WICHTIGSTEN WIRTSCHAFTSBEREICHE DEUTSCHLANDS

(Економічний потенціал Німеччини)

Гайпель П. - студент групи ЗЕД 1/2

Науковий керівник – Пономаренко Н. Г., ст. викладач кафедри іноземних мов МНАУ

Die Wirtschaft ist in Deutschland sehr stark entwickelt. Das bedeutendste Produktionszentrum ist das Ruhrgebiet. Hier befinden sich die wichtigsten Eisenhüttenwerke des Landes. Hochentwickelt sind auch der Maschienenbau, der Fahrzeug-und Waggonbau. Mehr als die Hälfte der Elektroenergie wird in diesem Gebiet erzeugt.

Deutschland ist größte Exporteur von Gütern. Die zahlreichen Kanäle, die Bundesrepublik durchziehen, haben eine große Bedeutung für die deutsche Wirtschaft. Fast 25 % aller Güter werden auf dein Wasserwege transportiert. Bedeutende Industriezweige sind: die metallverarbeitende Industrie, der Maschinenbau, die Uhrenindustrie und andere feinmechanische Industriezweige. Vor großer Bedeutung für die Ökonomie der BRD ist der Fremdenverkehr. Ungefähr 8 Millionen Touristen aus verschiedenen Ländern besuchen jährlich dieses Land.

Für ausländische Investoren ist der Standort Deutschland traditionell nicht nur wegen des technologischen Know-hows attraktiv, sondern auch wegen der zentralen geografischen Lage, der sehr gut ausgebauten Infrastruktur, der Rechtssicherheit und der qualifizierten Arbeitskräfte. Zu den bedeutenden Branchen in Deutschland gehört der Automobilbau: VW, Audi, BMW, DaimlerChrysler, Porsche und Opel. Der rasante technische Fortschritt lasst insbesondere die Informations- und Kommunikationstechnologie rasch an Bedeutung gewinnen. Sie entwickelt sich zu einer treibenden Kraft im Dienstleistungssektor. Rund 2,5 Prozent seines Bruttoinlandsproduktes gibt Deutschland daher zurzeit für Forschung und Entwicklung (F&E) aus. Deutschland ist eine Soziale Marktwirtschaft, das heißt: Der Staat garantiert freies wirtschaftliches Handeln. Die wichtigsten Handelspartner sind Frankreich, Rußland, die USA und Grobritannien.

Wie in allen westlichen Industrienationen vollzieht sich seit etlichen Jahren auch in der deutschen Industrie ein Strukturwandel. Die Bedeutung der Industrie schwindet und der Dienstleistungssektor tritt zunehmend an ihre Stelle. Gleichwohl ist die Industrie nach wie vor die wichtigste Säule der deutschen Wirtschaft und hat im

Vergleich zu anderen Industriestaaten wie Großbritannien oder den USA eine breite Basis acht Millionen Menschen arbeiten in Industriebetrieben. Die wichtigsten Industriezweige sind der Straßenfahrzeugbau (227 Milliarden Euro Umsatz, 777000 Beschäftigte), die Elektrotechnikbranche (152 Milliarden Euro Umsatz, 799000 Beschäftigte), der Maschinenbau (142 Milliarden Euro Umsatz, 868000 Beschäftigte) und die chemische Industrie (113 Milliarden Euro Umsatz, 429000 Beschäftigte). Einige traditionelle Industriebranchen (Stahl, Textil) sind in den vergangenen Jahren durch Verlagerung der Absatzmarkte und den Druck aus Niedriglohnländern zum Teil stark geschrumpft, oder wie etwa in der Pharmaindustrie durch Übernahmen und Fusionen in den Besitz ausländischer Unternehmen gelangt.

Das Fundament für die internationale Wettbewerbsfähigkeit der deutschen Wirtschaft bilden aber nicht nur die Großunternehmen wie etwa Siemens, sondern Zehntausende kleiner und mittelständischer Unternehmen (bis 500 Beschäftigte) des verarbeitenden Gewerbes, insbesondere des Maschinenbaus, der Zulieferindustrie, aber auch der neuen und wachsenden Zukunftsbereiche der Nano- und Biotechnologie, die sich häufig in Clustern organisieren (siehe Info-Flache Seite 99). Der Mittelstand beschäftigt mit über 20 Millionen Menschen mit Abstand die meisten Arbeitnehmer. Im Maschinenbau, einer Paradedisziplin, haben die meisten Unternehmen sogar weniger als 200 Mitarbeiter obwohl sie Produktionsausrüstungen von weltweit herausragender Qualität für die Industrie herstellen. In diesem Marktsegment ist Deutschland mit einem Welthandelsanteil von 19,3 Prozent Weltmarktführer.

Zu den bedeutenden Branchen in Deutschland gehört der Automobilbau. Jeder siebte Arbeitnehmer arbeitet hier; zum Export tragt die Branche mit 40 Prozent bei. Mit den sechs Herstellern VW, Audi, BMW, Daimler Chrysler, Porsche und Opel (General Motors) ist Deutschland neben Japan und den USA der größte Autoproduzent der Welt. Rund sechs Millionen Automobile laufen jährlich in Deutschland vom Band; im Ausland produzieren deutsche Marken noch einmal 4,8 Millionen Fahrzeuge.

Insbesondere die technischen Innovationen der Fahrzeuge made in Germany werden von den Kunden geschätzt. Mit 142 Milliarden Euro Umsatz im Jahre 2004 ist DaimlerChrysler weltweit der drittgrößte Autobauer und die Nummer eins in der Premiumklasse. Der Sitz und die wichtigsten Werke von DaimlerChrysler sind in Stuttgart, wo auch Porsche zu Hause ist. Erfolgreich operiert auch Volkswagen, der mit einem Umsatz von 89 Milliarden Euro und einem Weltmarktanteil von 11,5 Prozent (2004) größte Autobauer Europas mit Stammwerk in Wolfsburg. Zur Spitzengruppe der deutschen Automobilbauer gehört außerdem BMW in München mit einem Umsatz von 44 Milliarden Euro.

Література:

1. Deutschland. Forum für Politik, Kultur und Wirtschaft. Nr.6 /, Dezember/Januar.

2. Heuer M., Illar D. u.a. Planen, gründen, wachsen. Mit dem professionellen Businessplan zum Erfolg. Zürlich: MkKinsly&Company, Inc. 2001. – 219 S.

3. Bartnik D. Das müssen Sie über Management wissen. Betriebswirtschaftliches Know-how für junge Führungskräfte. Frankfurt / New York: Campus Verlag. 2001, 200 S.

УДК 811.112

DIE INTENSIVE TIERHALTUNG IN DEUTSCHLAND

(Інтенсивне тваринництво в німеччині)

Долгов Р.А. – студент групи Т1/2 факультету ТВППТСБ

Науковий керівник – Марковська А.В., к.філол.наук, доцент кафедри іноземних мов МНАУ

Intensivtierhaltung oder **Massentierhaltung** bezeichnet die technisierte Viehhaltung meist nur einer einzigen Tierart in ländlichen Großbetrieben mit nicht ausreichenden verfügbaren landwirtschaftlichen Nutzflächen, um die benötigten Futtermittel selbst zu erzeugen. Das primäre Ziel ist dabei die größtmögliche

Erhöhung des erwirtschafteten Ertrages. Die Bezeichnung der Haltungsform als Massentierhaltung wird vom Deutschen Bauernverband jedoch als „politische Kampfparole“ eingestuft und abgelehnt.

Die intensive Tierhaltung unterscheidet sich von der extensiven Tierhaltung durch geringere Flächennutzung und stärkere Nutzung anderer Produktionsfaktoren. Systeme der Intensivtierhaltung sind insbesondere in Industrieländern verbreitet, verzeichnen jedoch hohe Wachstumsraten in einigen Entwicklungsländern. Mit der Intensivierung geht häufig eine Vergrößerung der durchschnittlichen Betriebsgröße einher. Herausforderungen für intensive Systeme bestehen insbesondere im Bereich der Tiergesundheit, Abfallentsorgung sowie Wasser- und Energieverbrauch. Tierschutzfragen sind zudem Gegenstand von Diskussionen.

Im Zuge der Industrialisierung im 19. und 20. Jahrhundert hat sich die Gesellschaft und Wirtschaft Europas grundlegend verändert. Auch in der Landwirtschaft gab es einen enormen Produktivitätsanstieg und deutlich weniger Erwerbstätige. Optimierungen in der Rinder- und Schweinezucht führten zu einer beträchtlichen Verbesserung der Versorgung der Bevölkerung mit Fleisch und Tierprodukten. Nach dem Zweiten Weltkrieg setzte die Hauptphase der industriellen Landwirtschaft in Europa ein, die in den USA schon in der ersten Hälfte des 20. Jahrhunderts zu spüren war. Auf der einen Seite handelt es sich dabei um einen tiefgreifenden Strukturwandel durch konsequente Nutzung des agrartechnischen Fortschritts. Andererseits ist der Prozess mit einer Vielzahl von Folgeproblemen behaftet, der mit Begriffen wie Agrarfabrik, Agribusiness oder Agrarindustrie assoziiert wird.

Intensive Systeme sind für viele klimatische Verhältnisse geeignet. Sie sind besonders in den OECD-Staaten, aber auch mit steigender Tendenz in Asien verbreitet. In Getreideimportregionen wie den Niederlanden oder Norddeutschland befinden sich intensive Tierhaltungsbetriebe meist in der Nähe von Seehäfen. In Getreideexportländern wie den USA wird die intensive Viehhaltung häufig in den Getreideanbauregionen betrieben (z. B. Schweine in Iowa, Rinder in Texas). In Entwicklungsländern mit schlecht

entwickelter Infrastruktur befinden sich die Betriebe in der Nähe urbaner Zentren, da tierische Produkte hohen Anforderungen beim Transport unterliegen (Kühlung). Intensive Haltungssysteme finden sich auch in den GUS-Staaten (Milchvieh) und Nordafrika (Schafe).

Generell führen hohe Besatzdichten und große Tiergruppen beispielsweise bei Schweinen zu Lungenentzündung und stärkerer Infektion mit Chlamydien. Intensive Tierhaltung führt zu Selektion von Parasiten und Pathogenen, die schneller wachsen, früher infizieren und schließlich virulenter sind. In der Vergangenheit haben sich so bereits einige virulente Grippestämme gebildet. Epidemiologen empfehlen den Einsatz von Impfstoffen bei Tierhaltern in der Geflügel- und Schweineproduktion.

Moderne Haltungssysteme mit ganzjähriger Bestallung in spezialisierten Gebäuden und vollständige Versorgung mit Futtermitteln ohne Nahrungssuche werden für die Entwicklung komplexer, multifaktorieller Erkrankungen mitverantwortlich gemacht. Dazu zählen Lungenentzündungen nach dem Tiertransport (shipping fever), Mastitis beim Rind, Rhinitis atrophicans und enzootische Pneumonie bei Schweinen sowie infektiöse Bronchitis bei Geflügel. Dazu zählt auch die chronisch obstruktive Lungenerkrankung bei Pferden, Zehenhautentzündung des Rindes bei Milchkühen und die Moderhinke bei Schafen. Ursachen sind neben den Erregern die Haltungsfaktoren wie schlechte Belüftung, staubiges Heu, verpilzte Einstreu, Überbelegung, niedrige Raumtemperaturen, hohe Luftfeuchte und Transportbelastung. Inspektionen durch Veterinärmediziner der Tierkörper in Schlachtbetrieben belegen, dass 30-50 % der Schlachtschweine Atemwegsveränderungen aufweisen, die auf akute oder länger zurückliegende Erkrankung hindeuten. Lediglich 30% der Tierkörper sind beanstandungslos. Es besteht noch Forschungsbedarf für belastungsarme und tierartgerechte Haltungssysteme, die ökonomisch betrieben werden können.

Література:

1. Електронний ресурс. – http:// www.deutsches-gefluegel.de/

2. Електронний ресурс. − – http://www.bund.net/Fleischatlas
3. Електронний ресурс. – http:// www.tierseminar.de/

УДК 338.43:330.322(477)

MODERN TRENDS OF INTEGRATION PROCESSES IN AGRICULTURE

(Сучасні тенденції інтеграційних процесів у сільському господарстві)

Киндилевич В.Д. – студентка групи А 1/2
Науковий керівник – Саламатіна О.О., к.філол.наук, доцент кафедри іноземних мов МНАУ

The problems of economic growth and overcoming of structural economic crisis in Ukraine require the development and implementation of advanced conceptual, theoretical and applied regulatory approaches aimed at achieving sustainable development of the real economy. The global financial crisis is reflected in Ukraine's economy, especially in the agricultural sector. Due to reduction in purchasing power and retail prices decreased demand for food. The monopolization of processing, servicing and trading enterprises and organizations increased cost of the final product, which causes a reduction in the efficiency of the entire agricultural sector. Extremely cause serious problems AIC objective need for transformation of the economy, transforming it into an innovative way of development. The basis of transformational changes is the way of scientific study and practical application of new agro-industrial units, which increase the horizontal-vertical integration that combines agricultural production with processing, sales, supply of inputs. Agricultural organizations enter into a unifying movement to reduce the risk caused by the imperfection of market and dependence of agriculture on weather conditions, agricultural markets, dictate processing organizations need to improve competitiveness. Processing and servicing organization, in turn, seek to provide themselves with stable

income thanks to the robust resource base, better use of raw materials, improving the quality of its products, its cheaper and conquering markets. As shows practice of developed countries and the most successful form of economic system and most effective form of economic growth in modern terms is the theory and practice of cluster mechanism.

The main theoretical, methodological and practical aspects of the organization of cluster type highlighted in the works of R. Coase [2], R.V. Nekrasov [4], M. Porter [5], A.E. Romanov [6], A.S. Huhryn [8], J.A. Schumpeter [9] and other foreign scientists. The possibility and feasibility of establishing a cluster of Ukraine's economy explore domestic economists M.P. Voynarenko [1], M.F. Kropyvko [3], S. Sokolenko [7] and others. They defined the basic conditions that promote the establishment and successful development of cluster structures in the leading sectors of the Ukrainian economy. At the same time there is a need for in-depth study of methodological approaches to the formation of cluster systems in agriculture.

The cluster approach is one of the most advanced control technology of agro-industrial complex in the region. Vertically integrated structure of cluster is able to provide: • equivalence of economic relations between structural units forming agricultural enterprises; • strengthening economic interest units to improve the efficiency of agro-industrial production [6, p. 43]. As the world wide practice for the establishment and effective functioning of agro formation must meet the following basic principles: voluntary choice of partners and their economic activities to optimize the integrated agro-industrial units; integration from below, combining the initiative most business entities without pressure from management structures; state influence on the integration process only by creating economic conditions that ensure its effectiveness, or based on participation of governments as equal partners associations; organizational integrity integrated structures with a single strategy, tactics, goals and development objectives; allocation of the main level and priority of improving integrated units; equal economic conditions for all participants as integrated units when they are created, and the

operation; combining not only organizational and economic structures, but under certain conditions, their capital; collective property management, increasing interest in joint activities and responsibilities of each partner engages in a process of agro-industrial integration commercial capital, providing inflow of investments in agriculture [8, p. 33].

On the basis of the most well-known foreign and domestic publications on topics of cluster and cluster experience in some countries it is possible to identify the main methodological features of formation of agricultural clusters. 1) The definition of Porter cluster – a geographically concentrated group of interconnected companies, specialized suppliers and related organizations operating in a particular area and complementary to each other, but competing [5, p. 113] together. Based on this definition generalizes the agro-food cluster is a voluntary association of organizations within the subregional food based on horizontal cooperation and vertical integration to redistribution of value added and integrated use of social and economic potential. The structure of the agro-food cluster may include representatives of all structural elements in AIC region, representatives of governments and NGOs, science and education, infrastructure links, raw areas of manufacturing, including associations of agricultural producers. 2) Agricultural enterprises, including agricultural producers, which are the basis of the production of basic nutrition, operating within a common chain. Agro-industrial clusters as the ultimate industry subsectors operate in the same reproduction process of the production of raw materials (grain, potatoes, vegetables, fruits, milk, beef, pork, poultry, etc.) 3) The agribusiness cluster remains legal, organizational and financial independence. The independence of the members of the cluster is found in their voluntary participation in joint activities to improve the effectiveness of each participant and their stability within the current economic structure. This is fundamentally different from the integrated cluster structures formed by combining capital – holdings, cartels, financial and industrial groups. 4) A characteristic feature is active agro-industrial cluster development cooperation processes. Effective development of cooperation and integration processes

encourages a cluster of small forms of entrepreneurship as one of the numerous groups of entities in the modern world. The effectiveness of cluster structure is provided by the interaction of small forms of business with large collective farms that securing investments in agricultural development, production and sales of regular income stability. The most important cooperative tasks solved agro-industrial clusters include: free access to the latest advanced technologies; avoiding risks through joint activities of members of the cluster; joint access to foreign markets; organization of scientific research and experimental development (R & D); sharing of knowledge, technologies, production processes and infrastructure networks; mentoring by concentrating communication specialists; reducing transaction costs in different areas by increasing trust between members of the cluster system [4, p.110].

During the clustering of farms and private farms, improving relationships between management and large agricultural and processing enterprises amplifies the level of development of different types of interests, and income, employed in agricultural clusters. The formation and operation of agricultural clusters creates favorable conditions for the development of innovative regional food systems. Clusters enable regional authorities to implement the strategy of socio-economic development in ensuring competitive advantage of regional economy, innovation and specialization territorial economic system. Formation of clusters is based on the use of innovative technologies, generating a division of labor. Clustering helps to transform agriculture in high-tech, industrialized, energy efficient, self-sufficient, diversified industry. This results in a significant reduction in energy intensity of gross agricultural output and GDP as a whole and a significant increase in exports.

Література:

1. Войнаренко М.П. Кластерные модели обьединения предприятий в Украине / М.П. Войнаренко. // Экономическое возрождение России. – 2007. – № 2. – С. 75–86.

2. Коуз Р. Фирма, рынок и право / Р. Коуз ; пер. с англ. Б. Пинскера. – М. : Бело ЛТД, 1993. – 192 с.

3. Кропивко М.Ф. Концептуальний підхід до кластерної організації та управління розвитком агропромислового виробництва / М.Ф. Кропивко // Економіка АПК. – 2010. – № 11. – С. 3–13.

4. Некрасов Р.В. Использование механизмов государственного партнерства при формировании кластеров в АПК региона // Р.В. Некрасов. Региональная экономика. – 2010. – № 3. – С. 107–117.

5. Портер М. Конкуренция / М. Портер ; пер. с англ. – М. : Изд. Дом «Вильямс». – 2000. – 485 с.

6. Романов А.В. Формирование агропромышленных кластеров в России / Романов А., Арашуков В. // АПК: экономика и управление, 2008. – № 3. – С. 41–45.

7. Соколенко С.І. Стратегія конкурентоспроможності економіки України на основі інтеграційних систем – кластерів / С.І. Соколенко / Севастополь : ТОВ «Рібест», 2006. – 37 с.

8. Хухрин А.С. Агропромышленные кластеры: российская модель / А.С. Хухрин, А.А. Примак, Е.А. Петухова // Экономика сельскохозяйственных и перерабатывающих предприятий. – 2008. – № 7. – С. 30–34.

9. Шумпетер Й.А. Капитализм, социализм и демократия / Й.А. Шумпетер ; [пер. с англ. под ред. В.С. Автономова]. – М. : Экономика,1995. – 540 с.

УДК 811.111

PERENNIAL GRASSES IN CROP ROTATION POLESIE

(Багаторічні трави в сівозмінах полісся)

Кисельов А. – студент групи А 2/3 факультету агротехнологій МНАУ

Науковий керівник – Марковська А.В., к.філол.наук, доцент кафедри іноземних мов МНАУ

Perennial grasses grow well on gray forest, sod-podzolic sandy soils and suhlynkovyh, especially when they liming and sufficient quantities of organic and mineral fertilizers for the previous culture.

Legume-grass travosumishky at one year of use Polesie little or no advantage over pure crops of legumes.

Even in Polesie, where summer precipitation in most years is sufficient yield of perennial grasses of the first slope is usually larger.

In field crop rotations grasses should be used throughout the year. The expansion of the area in the rotation due to other crops not accompanied by improved economic indicators of land use.

Two-, three-year use of perennial grasses in appropriate soil- and fodder crop rotations using multi-legume-grass the mixed, and where possible - and irrigation.

In terms of Polesie most common clover in pure sowing and sumishtsi from grasses and alfalfa. Pidsivaty grasses should be covered under barley, oats, annual grasses and winter rye grain and green mass.

At sufficiently fertilized soils connected advisable to sow alfalfa, which provides high yields in the second and third years of use, while productivity clover mixtures with timothy sharply declining for the second year.

Forest.

Perennial legumes (clover, sainfoin, alfalfa) and legume-grass mixtures in areas of sufficient and unstable wetting provide high yields and are important not only in strengthening food base, But also help to increase the content of organic matter in the soil, improving the physical properties, increase permeability and nitrogen nutrition of these crops in the rotation.

In areas zvolozhenishyh grasses give a high yield of both the first and second slope, so the field crop rotations they should use one of two slopes and the eastern areas - on one slope.

In one year using perennial legume-grass and legumes travosumishky pure rotation in the same affect crop productivity, crop grass mixtures but slightly larger and more stable, and unfavorable conditions for crops of less liquefy and overgrown with

weeds. Therefore, field crop rotations in areas of sufficient moisture travosumishky have some advantage over pure legume crops.

Studies have shown that perennial grasses under cover of barley and other spring crops more favorable conditions than in winter wheat, spring for less shade pidsiyani grass, so they develop better and provide better performance.

In areas of low moisture in field crop rotation grasses also need pidsivaty under spring crops and especially in barley after corn. This crop of somewhat larger than the sowing in barley after sugar beets.

Clover sufficient moisture in the subzone gives high yields and steel first and second slopes at sowing under its annual grasses, spring barley, winter wheat. Seeding rate cover crop, it should be reduced by 20%. Clover is in field crop rotations should be used each year to two slopes and in the eastern parts of the subzones - one slope.

For alfalfa in the subzone sufficient moisture better cover crops are annual grasses and corn for green fodder, worse - spring crops and particularly bad - winter cereals.

Perennial grasses economically advantageous to use differentiated depending on the specialization of the economy: specialization in pork production clover should be used each year to two slopes, and on farms, which arespecializing in the production of milk - alfalfa for 2-3 years. Clover, alfalfa and grasses do not reduce performance when they return to their previous 3-4 years of cultivation, sainfoin - 2-3 years.

To avoid convergence of perennial grasses and forage in soil-crop rotations, should rotate them for biological characteristics: one rotation sow beans, the next - grasses.

In subzone of unstable humidity perennial legumes should pidsivaty primarily in barley after corn. This crop of slightly higher than the sowing in barley after sugar beets.

Steppe.

In the northern and north-western parts of the steppe grasses very dry soil, especially in the second half of the growing season. However, once the water supply to the spring on plowed fields on

annual field crops and perennial grasses restored and are almost identical, except - in very dry years.

In the central steppe plants with less supply of water during the growing season grasses do not give high yields annually and agronomical value of their crop rotations less than in the north-western and northern parts of the zone. In the southeastern part of the dry summer and a smaller supply of water plants during the growing season and unfavorable conditions overwintering crops of grasses and very unstable vary by year.

Experience shows that in the central and southeastern year with dry spring grasses do not provide nearly full of stairs, poorly rooted due to rapid drying topsoil, and with the onset of summer drought very fall. Liquefied herbage gives low yields, that is not profitable. These crops have to plow, significantly penalized crop rotation in rotation. Good stairs perennial grasses can be obtained, usually cold and prolonged spring when frequent rains fall. In the following years, they better ukorinyuyutsya and when drought occurs less fall.

Thus, in the central and southern grasses two-, three-year usage only be placed in feed or soil-crop rotations. For longer use in these rotations best practice clamps off. In field crop rotations to grow grasses advisable to not more than one year at a slope as precursors of winter wheat. The two-year use of alfalfa permissible only in the north-western regions.

Література:

1. Електронний ресурс. – http://edis.ifas.ufl.edu/ag258.
2. Електронний ресурс. – http://edis.ifas.ufl.edu/ag256
3. Електронний ресурс. – http://edis.ifas.ufl.edu/ag255

УДК 616.98:578.828

PROBLEMS OF AIDS AND HIV IN THE MODERN SOCIETY

(Проблеми СНІДу та ВІЛ у сучасному суспільстві)

Коломейцева О.Д. – студентка групи БТ 1/1
Науковий керівник – Саламатіна О. О., к.філол.наук, доцент кафедри іноземних мов МНАУ

I want to tell you about the problem of our time, a worldwide problem that can encounter each – HIV (human immunodeficiency virus) and AIDS (Acquired immune deficiency syndrome).

In 1985, scientists discovered the human immunodeficiency virus (HIV). HIV is a virus that is transmitted from person to person through the exchange of body fluids such as blood, semen, breast milk and vaginal secretions. Sexual contact is the most common way to spread HIV, but it can also be transmitted by sharing needles when injecting drugs, or during childbirth and breastfeeding. As HIV reproduces, it damages the body's immune system and the body becomes susceptible to illness and infection. There is no known cure for HIV infection nowadays [1, p. 67].

Acquired immune deficiency syndrome, or AIDS, is a condition that describes an advanced state of HIV infection. With AIDS, the virus has progressed, causing significant loss of white blood cells or any of the cancers or infections that result from immune system damage.

Once inside the body the virus attacks specialized immune system cells known as CD4 cells. The virus attaches to these cells and infects them by injecting HIV nucleic acids (DNA and RNA) into the cell. New HIV virus then infects other CD4 cells as the cycle repeats itself [2, p. 18].

Is HIV and AIDS the same thing? HIV is the virus which damages the body's immune system. While AIDS defining infections means a person is diagnosed with AIDS. A person can be infected for

years without having AIDS. Having HIV infection does not mean you have AIDS. Simply put, HIV and AIDS are not the same thing, but they are related to one another [4, p. 78].

Before HIV infection became widespread in the human population, AIDS defining infections were rare, and almost exclusively in individuals with immune suppression, such as chemotherapy and certain types of cancers. AIDS was first recognized in the early 1980s in healthy homosexual men. Adding to the oddity, these men had no recognized cause for immune suppression. An infectious cause of AIDS was suggested by geographic clustering of cases, links among cases by sexual contact, mother-to-infant transmission, and transmission by blood transfusion. Later, isolation of HIV from patients with AIDS strongly suggested that this virus was the cause of AIDS.

Medications can successfully treat many of the symptoms of early symptomatic HIV infection. Antiretroviral therapy slows the growth of the HIV virus in the body. It works very well in reducing the number of HIV particles in the bloodstream. Although people have suppressed levels of HIV, they can still spread the virus to others through sex or sharing needles. Antiretroviral therapy is not a cure for HIV, but the treatment slows disease progression and may strengthen the immune system [3, p. 10].

The life expectancy of HIV-infected patients may eventually change for two reasons: constantly developing new medicines and treatments, and HIV, in turn, produces drug resistance. In the absence of antiretroviral therapy, the patient's death occurs within one year after the diagnosis of AIDS. It is believed that HIV-infected receiving treatment can live for decades without developing AIDS. However, the cost of treatment can range from 385 to 619 thousand US dollars. Features of HIV infection depend on many factors, including: the number of CD4 lymphocytes and the number of copies of viral RNA at the start of treatment, the patient's age, level of affordable health care, commitment to patient care and the emergence of resistant strains of the virus [1, p. 18].

On November 24, 2004 the United Nations warned that the world was facing a "unique development challenge" with

acceleration in the spread of AIDS. New data revealed there are nearly 40 million HIV sufferers worldwide. Of these 3 million will die of AIDS this year, a record toll in the 23-year history of the killer virus. The report says Sub-Saharan Africa remains by far the worst-affected region in the world. In South Africa 5.3 million people are infected, with "no sign yet of a decline in the epidemic." India has the second largest number of HIV sufferers in the world (5.1 million), while East Asia has seen a 56 percent increase in HIV cases, mainly attributable to an explosive rise in China. Women now constitute over half of all new cases contracting HIV/AIDS due to poor sexual education, the sex trade, unprotected sexual intercourse, and a greater natural susceptibility to contract the virus than men [2, p. 118].

However, if you are diagnosed with HIV, your physical health is not the only issue you have to deal with. Along with the physical illness are mental health conditions that may come up. Mental health refers to the overall well-being of a person, including a person's mood, emotions, and behavior.

HIV/AIDS can have a major impact on many parts of human life. People with HIV and those close to them are subject to many things that may affect their mental health.

Many people are surprised when they learn that they have been diagnosed with HIV. Some people feel overwhelmed by the changes that they will need to make in their lives. It is normal to have strong reactions when you find out you are HIV positive, including feelings such as fear, anger, and a sense of being overwhelmed. Often people feel helpless, sad, and anxious about the illness [2, p. 89].

Although the society doesn't forget people affected with this devastating disease. The red ribbon, a ribbon colored red, is the symbol of solidarity of people living with HIV/AIDS.

The Red Ribbon Project was created by the New York artists in 1991. The artists wished to create a visual symbol to demonstrate compassion for people living with AIDS and their caregivers. The color red was chosen for it as the connection to blood and the idea of passion – not only anger, but love, like a valentine. First worn publicly by Jeremy Irons at the 1991 Tony Awards, the ribbon soon became renowned as an international symbol of AIDS awareness,

becoming a politically correct fashion accessory on the lapels of celebrities. The Red Ribbon continues to be a powerful force in the fight to increase public awareness of HIV/AIDS and in the lobbying efforts to increase funding for AIDS services and research [5, p. 76].

People should never forget that HIV/AIDS is more than a physical ailment; it affects the whole person, emotional and physical. Often our treatments focus on the physical only but the emotional needs addressed as well.

Література:

1. Bushman F.D. HIV : From biology to prevention and treatment / F.D. Bushman, G.J. Nabel, R. Swanstrom. – Cold Spring Harbor, New York, USA : Cold Spring Harbor Laboratory Press, 2012. – 205 p.

2. Pancino G. Models of protection against HIV/SIV : Avoiding AIDS in humans and monkeys / G. Pancino, G. Silvestri, K. Fowke. – UK-USA-Canada : Academic Press, 2012. – 346 p.

3. Prasad V.R. HIV protocols / V.R. Prasad, G.V. Kalpana G.V. – Humana Press, 2009. – 115 p.

4. Sax P.E. HIV essentials / P.E. Sax, C.J. Cohen, D.R. Kuritzkes. – Jones and Bartlett Learning, 2012. – 345 p.

5. Weeks B.B. AIDS: The biological basis / B.B. Weeks, I.E. Alcamo. – USA – Canada – UK : Jones and Bartlett Publishers, 2010. – 112 p.

УДК 621.3:93/99:811.111

FROM HISTORY OF ELECTRICITY

(З історії електрики)

Костандой А.І. — студентка групи Ен 5м

Науковий керівник – Артюхова О.В. к.пед.наук, доцент кафедри іноземних мов МНАУ

Let us now turn our attention to the early facts, that is to say, let us see how it all started.

History shows us that at least 2,500 years ago, or so, the Greeks were already familiar with strange force (as it seemed to them) which is known today as electricity. Generally speaking, three phenomena made up all of man's knowledge of electrical effects. The first phenomenon under consideration was the familiar lightning flash — a dangerous power, as it seemed to him, which could both kill people and burn or destroy their houses. The second manifestation of electricity he was more or less familiar with was the following: he sometimes found in the earth a strange yellow stone which looked like glass. On being rubbed, that strange yellow stone, that is to say amber, obtained the ability of attracting light objects of a small size. The third phenomenon was connected with the so-called electric fish which possessed the property of giving more or less strong electric shocks. It was known that in some parts of the world such shocks could be obtained by a person coming into contact with the electric fish.

Nobody knew that the above phenomena were due to electricity. People could neither understand their observations nor find any practical applications for them.

As a matter of fact, all of man's knowledge in the field of electricity has been obtained during the last 370 years, or so. Needless to say, it took a long time before scientists learned how to make use of electricity. In effect, most of the electrically operated devices, such as the electric lamp, the refrigerator, the tram, the lift, the radio, and so on, are less than one hundred years old. In spite of their having been employed for such a short period of time, they play a most important part in man's everyday life all over the world. In fact, we cannot do without them at present.

So far, we have not named the scientists who contributed to the scientific research on electricity as centuries passed. However, famous named are connected with its history and among them we find that of Phales, the Greek philosopher. As early as about 600 b.c. he discovered that when amber was rubbed, it attracted and held minute light objects. However, he could not know that amber was

charged with electricity owing to the process of rubbing. Then Gilbert, the English physicist, began the first systematic scientific research on electrical phenomena. He discovered that various other substances possessed the property similar to that of amber or, in other words, they generated electricity when they were rubbed. He gave the name “electricity” to the phenomenon he was studying. He got this word from the Greek “electrum” meaning amber.

Many learned men of Europe began to use the new word “electricity” in their conversation as they were engaged in research of their own. Scientists of Russia, France and Italy made their contributions as well as the Englishmen and the Germans.

There are two types of electricity, namely, electricity at rest or in a static condition and electricity in motion, that is, the electricity current. Both of them are made up of electric charges, static charges being at rest, while electric current flows and does work. Thus, they different in their ability to serve mankind as well as in their behavior.

Let us first turn our attention to static electricity. For a long time it was the only electrical phenomenon to be observed by man. As previously mentioned at least 2,500 years ago, or so, the Greek knew how to get electricity by rubbing substances. However, the electricity to be obtained by rubbing objects cannot be used to light lamps, to boil water, to run electric trains, and so on. It is usually very high in voltage and difficult to control; besides it discharges in no time.

As early as 1753, Franklin made an important contribution to the science of electricity. He was the first to prove that unlike charges are produced due to rubbing dissimilar objects. To show that the charges are unlike and opposite, he decided to call the charges on the rubber — negative and that on the glass — positive.

In this connection one might remember the Russian academician Petrov. He was the first to carry on experiments and observation on the electrification of metals by rubbing them one against another. As a result he was the first scientist in the world who solved that problem.

Who does not know that the first man to get the electric current was Volta after whom the unit of electric pressure, the volt, was

named? Volta was born in Como, Italy, February 18, 1745. For some years he was a teacher of physics in his home town. Later on he became professor of natural sciences at the University of Pavia. After his famous discovery he travelled in many countries, among them France, Germany and England. He was invited to Paris to lecture on the newly discovered chemical source of continuous current. In 1819 he returned to Como where he spend the rest of his life. Volta died at the age of 82.

His discovery developed out of Galvani's experiments with the frog. Galvani observed that the legs of a dead frog jumped as a result of an electric charge. He tried his experiment several times and every time he obtained the same result. He thought that electricity was generated within the leg itself.

Volta began to carry on similar experiments and soon found that the electric source was not within the frog's leg but was the result of the contact of both dissimilar metals used during his observations. However, to carry on such experiments was not an easy things to do. He spend the next few years trying to invent a source of a steady, continuous current. To increase the effect obtained with one pair of metals, Volta increased the number of these pairs. Thus the voltaic pile consisted of a copper layer and a layer of zinc placed one above another with a layer of flannel moistened in salt water between them. A wire was connected to the first disc of copper and to the last disc of zinc. The year 1800 is a date to be remembered: for the first time in the world's history a steady, continuous current was generated.

Ever since Volta first produced a source of steady continuous current, men of Science have been forming theories on this *subject.* For some tfrne they could see no real difference between the newly-discovered phenomenon and the former understanding of static charges.

Then the famous French scientist Ampere (after whom the unit of current was named) determined the difference between the current and the static charges. In addition to it. Ampere gave the current direction he supposed (it to flow) from the positive pole of the source round the circuit and back again to the negative pole.

We consider Ampere to be right in his first statemen but he was certainly wrong in the second, as to the direction of current. The student is certain remember that the flow of current is in a direction opposite to what he thought.

Let us turn our attention now to the electric current itself. The current which flows along wires consist of moving electrons. What can we say about the electron? We know the electron to be a minute particle having an electric charge. We also know that charge is negative. As these minute charge travel along a wire, that wire is said to carry an electric current.

Література:

1. Англійська мова : навч. посіб. / [С. Г. Заскалєта, О. В. Артюхова, К. В. Тішечкіна та ін.]. – Миколаїв : МДАУ, 2012. - 325 с.

2. Mark Abbotson. Cambridge English for Engineering / M. Abbotson. – Cambridge : University Press, 2008. – 112 p.

3. Dibner B. Alessandro Volta and the etectric battery. N. Y. 1964 –186 с.

УДК 811.111

METHODS OF IRRIGATION IN GREAT BRITAIN

(Методи орошення у великобританії)

Кришан О. В. – студентка групи А 2/3

Науковий керівник – Марковська А.В. к.філол.наук, доцент кафедри іноземних мов МНАУ

− Irrigation is the artificial application of water to the land or soil.

− It is used to assist in the growing of agricultural crops, maintenance of landscapes, and revegetation of disturbed soils in dry areas and during periods of inadequate rainfall.

− Irrigation is the process of supplying water to dry land. It is one of the oldest and most important agricultural techniques, allowing farmers to grow crops on land that would normally be unproductive.

− Irrigation systems are also used for dust suppression, disposal of sewage, and in mining. Irrigation is often studied together with drainage, which is the natural or artificial removal of surface and sub-surface water from a given area.

− In surface (furrow, flood, or level basin) irrigation systems, water moves across the surface of agricultural lands, in order to wet it and infiltrate into the soil.

− Surface irrigation can be subdivided into furrow, borderstrip or basin irrigation. It is often called flood irrigation when the irrigation results in flooding or near flooding of the cultivated land.

− Historically, this has been the most common method of irrigating agricultural land and still is in most parts of the world.

− Drip irrigation is the most efficient method of irrigating.

− Drip irrigation can reduce disease problems associated with high levels of moisture on some plants.

− Drip irrigation (sometimes called trickle irrigation) works by applying water slowly, directly to the soil.

− The high efficiency of drip irrigation results from two primary factors:

1) the water soaks into the soil before it can evaporate or run off.

2) the water is only applied where it is needed, (at the plant's roots) rather than sprayed everywhere.

− Drip irrigation is used by farms, commercial greenhouses, and residential gardeners.

− UK Irrigation Association (UKIA) is the only independent organisation representing irrigation in the UK.

− Using water wisely for irrigation.

− Irrigated agriculture is important in the UK's rural economy.

− More than 1,000 agri-businesses, large and small, depend on irrigation to supply high quality fresh fruit and vegetables to the

nation's supermarkets - arguably one of the most sophisticated markets in the world.

− Irrigation is also important in the urban environment - keeping sports turf in peak condition for play and providing high quality amenity and leisure facilities.

− Drains often need some protection—vegetation or some structure, to carry the water without erosion.

Література:

1.Електронний ресурс. – http://www.scribd.com/doc/51632169/METHODS-OF-IRRIGATION

2. Електронний ресурс. – http://en.wikipedia.org/wiki/Irrigation

3. Електронний ресурс. – http://www.fao.org/docrep/ s8684e/s8684e08.htm

4. Електронний ресурс. – http://naldc.nal.usda.gov/ download/IND43894571/PDF

УДК 378.147:811

GEMEINSAME AGRARPOLITIK DER EU

(Аграрна політика Європейського Союзу)

Кушнір А. – студентка групи ЗЕД 2/2

Науковий керівник – Пономаренко Н. Г., ст. викладач кафедри іноземних мов МНАУ

Die Gemeinsame Agrarpolitik (GAP) ist ein Politikbereich der Europäischen Union. Sie beruht auf gemeinsamen Marktordnungen und der Entwicklung des ländlichen Raums.

Der Anteil der Agrarausgaben am EU-Budget ist rückläufig, er macht derzeit etwa 42 Prozent aus (circa 59,5 Milliarden Euro, Stand: 2010).

Als Ausgleich dafür, dass die meisten Agrarpreise seit 1995 in die Nähe des Weltmarktpreises gesunken sind, erhalten europäische Landwirte Direktzahlungen, die unabhängig von der produzierten Menge gewährt werden.

Zuständig für die Rechtsetzung im Bereich der GAP ist der Rat für Landwirtschaft und Fischerei, dessen Sitzungen vom Sonderausschuss Landwirtschaft vorbereitet werden. Verordnungen und Richtlinien werden überwiegend von der EU-Kommission ausgearbeitet. Verantwortlich ist hierbei der Kommissar für Landwirtschaft und ländliche Entwicklung und die ihm zugeordnete Generaldirektion Landwirtschaft und ländliche Entwicklung. Bis zum Vertrag von Lissabon (1. Dezember 2009) musste das Europäische Parlament vor Entscheidungen lediglich angehört werden. Nun entscheidet es auch in der Agrarpolitik mit, wobei die Fronten weniger zwischen Parteien sondern mehr zwischen „nationalen Interessen“ liegen. Für das Thema zuständig im Europäischen Parlament ist der Ausschuss für Landwirtschaft und ländliche Entwicklung.

Die Ziele der Gemeinsamen Agrarpolitik wurden im Artikel 33 des (konsolidierten) Gründungsvertrages der Europäischen Gemeinschaft[3] festgelegt:

1.die Produktivität der Landwirtschaft durch Förderung des technischen Fortschritts, Rationalisierung der landwirtschaftlichen Erzeugung und den bestmöglichen Einsatz der Produktionsfaktoren, insbesondere der Arbeitskräfte, zu steigern;

2.der landwirtschaftlichen Bevölkerung, insbesondere durch Erhöhung des Pro-Kopf-Einkommens der in der Landwirtschaft tätigen Personen, eine angemessene Lebenshaltung zu gewährleisten;

3.die Märkte zu stabilisieren;

4.die Versorgung sicherzustellen;

5.für die Belieferung der Verbraucher zu angemessenen Preisen Sorge zu tragen.

Im Artikel 34 wird entsprechend die Schaffung einer gemeinsamen Organisation der Agrarmärkte (GMO) festgelegt, die je nach Erzeugnis eine der folgenden Organisationsformen aufweist:

1.gemeinsame Wettbewerbsregeln;
2.bindende Koordinierung der verschiedenen einzelstaatlichen Marktordnungen;
3.eine europäische Marktordnung.

1962 wurde für den gemeinsamen Agrarmarkt und damit der gemeinsamen Organisation der Agrarmärkte drei Grundsätze festgelegt:

1.Einheit des Marktes: dies meint den freien Verkehr landwirtschaftlicher Erzeugnisse im Bereich der Mitgliedstaaten; für die Organisation des Binnenmarktes sollten überall in der EU die gleichen Instrumente und Mechanismen angewandt werden;
2.Gemeinschaftspräferenz: dies bedeutet, dass die Agrarprodukte der EU bei der Vermarktung Vorrang und einen Preisvorteil gegenüber importierten Produkten haben; dies bedeutet auch den Schutz des Binnenmarktes vor Niedrigpreisprodukten aus Drittländern und vor größeren Schwankungen des Weltmarktes;
3.finanzielle Solidarität: Alle Ausgaben im Rahmen der GAP werden vom Gemeinschaftshaushalt getragen.

Die Gemeinsame Agrarpolitik erkennt die bäuerliche Struktur der Landwirtschaft und die strukturellen und natürlichen Unterschiede zwischen den Regionen an und strebt eine allmähliche Anpassung der Verhältnisse an.

Ab 2014 wird ein neues langfristiges EU-Budget in Kraft treten, das auch eine reformierte GAP enthalten wird. Wesentliche Themen in den anstehenden Verhandlungen sind:

1.die verstärkte Förderung von Gemeingütern, wie Biodiversität und sauberes Wasser, durch die Landwirtschaftssubventionen,

2.die Ausweitung der sogenannten Co-Finanzierung, bei der sich die Mitgliedsstaaten an den Kosten der Subventionen beteiligen,

3.die Umverteilung der Subventionen zwischen den Mitgliedsstaaten und zwischen den Landwirten und

4.die Reduktion des Agrarhaushaltes.

Im November 2009 gaben führende Agrarökonomen aus ganz Europa eine Erklärung ab, in der sie eine klare Fokussierung auf europäische Gemeingüter - insbesondere für den Klimaschutz, die Biodiversität und das Wassermanagement - forderten („A Common Agricultural Policy for European Public Goods“).

Von April bis Juni 2010 organisierte die Europäische Kommission eine öffentliche Debatte zur Zukunft der GAP. Bürger und Zivilgesellschaft wurden darin eingeladen, ihre Ideen zur Reform der GAP einzubringen. Mit mehr als 5500 Beiträgen wurde diese Debatte die bislang erfolgreichste dieser Art. Die Ergebnisse der Debatte wurden im Juli 2010 in Brüssel auf der Konferenz „Die GAP nach 2013“ vorgestellt.

Auf diese öffentliche Debatte folgte am 18. November die Veröffentlichung der Mitteilung „Die GAP bis 2020: Nahrungsmittel, natürliche Ressourcen und ländliche Gebiete – die zukünftigen Herausforderungen“. Mit dieser Mitteilung startet die Europäische Kommission die institutionelle Debatte über die Zukunft der europäischen Agrarpolitik.

Ziel der Mitteilung ist es, zum einen die zukünftigen Herausforderungen und Grundsatzfragen für die Landwirtschaft und den ländlichen Raum darzustellen und zum anderen politische Optionen zur Bewältigung der Herausforderungen zu entwerfen. Die Mitteilung nennt drei Hauptziele für die GAP der Zukunft: zum ersten die Bereitstellung von ausreichenden Nahrungsmitteln vor dem Hintergrund des steigenden weltweiten Bedarfs, der Wirtschaftskrise und wesentlich stärkerer Marktschwankungen (ökonomische

Zielsetzung), zum zweiten einen stärkeren Einbezug von Umwelt- und Klimaschutzmaßnahmen in die Agrarpolitik (ökologische Zielsetzung) und zum dritten den Erhalt der Landwirtschaft in allen Regionen der EU sowie der Vielfalt der ländlichen Gebiete (territoriale Zielsetzung).

Des Weiteren werden in der Mitteilung drei Reformoptionen zur Erreichung der Ziele dargestellt. Die Option 1 steht für schrittweise Anpassungen der Politik an die neuen Herausforderungen unter Fortbestand der Direktzahlungen an Landwirte. Option 2 steht ebenfalls für einen Fortbestand der Direktzahlungen. In diesem Fall soll allerdings ein stärkerer Fokus auf Umwelt- und Klimaschutzmaßnahmen gelegt werden. Außerdem wird eine gerechtere Verteilung der Direktzahlungen und eine effizientere und effektivere Abwicklung der Politik angedacht. In Option 3 sollen sowohl Direktzahlungen als auch Marktmaßnahmen gänzlich abgeschafft werden. In dieser Option soll sich die GAP ausschließlich auf Ziele des Umwelt- und Klimaschutzes in der Landwirtschaft konzentrieren. Diese dritte Option wird vom Wissenschaftlichen Beirat für Agrarpolitk beim BMELV empfohlen.

Im institutionellen Kontext der Diskussion um die GAP post 2013 sind weitere drei Elemente zu beachten. Zum ersten legt der 2009 ratifizierte Vertrag von Lissabon einen neuen institutionellen Rahmen fest. In diesem wird das sogenannte Mitentscheidungsverfahren nun auch auf die Agrarpolitik angewandt wird. Dadurch wird es dem Europäischen Parlament ermöglicht, stärker auf die Entscheidungen im Bereich der Agrarpolitik Einfluss zu nehmen. Zum zweiten ist das siebenjährige Rahmenbudget der Europäischen Union nur bis 2013 festgelegt. Die diskutierten Reformvorschläge beziehen sich auf den Zeitraum nach 2013, für den ein neues Rahmenbudget 2014 bis 2020 erst festgelegt werden muss. Deshalb sind die spezifischen Reformvorschläge stark von den allgemeinen Budgetverhandlungen für den Zeitraum nach 2013 abhängig. Erst wenn festgelegt ist, wie viel Budget die GAP von 2013 bis 2020 zur Verfügung haben wird, können Details der diskutierten Reformvorschläge eingeschätzt werden. Das dritte

Element ist die Strategie „Europa 2020“ der Europäischen Union. Die zukünftige GAP muss sich an den Zielen und Maßnahmen dieser übergeordneten Strategie orientieren.

Als nächste Schritte werden in einer institutionellen Debatte und Folgenabschätzung der Kommission die in der Mitteilung „Die GAP bis 2020“ dargelegten Reformoptionen analysiert. Das Ergebnis dieser Analyse wird der Kommission bei der Vorbereitung der für Mitte 2011 vorgesehenen Rechtsvorschläge helfen.

Література:

1. Ulrich Kluge: *Ökowende - Agrarpolitik zwischen Reform und Rinderwahnsinn*. Siedler Verlag, Berlin 2001

2. Günter Rohrmoser: *Landwirtschaft in der Ökologie- und Kulturkrise* mit *Krisenbericht Agrarpolitik* von Hermann Priebe. Gesellschaft für Kulturwissenschaft, Bietigheim/Baden 1996

3. Winfried von Urff: *Agrarmarkt und Struktur des ländlichen Raumes in der Europäischen Union* in: Europa-Handbuch Band I Die Europäische Union-Politisches System und Politikbereiche, 3. Auflage 2004

УДК 601.4:577.21:811.111

MOLECULAR DIAGNOSIS OF GENETIC DISEASES

(Молекулярна діагностика генетичних захворювань)

Левіт Н. В. – студентка групи БТ 1/1

Науковий керівник – Саламатіна О.О., к.філол.наук, доцент кафедри іноземних мов МНАУ

Tests at the DNA level are definitive for determining the existence of specific genetic mutations. Previously, genetic testing relied almost exclusively on biochemical assays that scored either the presence or absence of a gene product. A DNA-based test does not, however, require expression for detection of the mutant gene, thereby making it theoretically possible to develop screening assays for all

single-gene diseases. Research in this area conducted Paul Berg (basic research in biochemistry and nuclear acids), Walter Gilbert and Frederick Sanger (genetic engineering and molecular genetics), Nobel Prize winners for 1980 in the field of chemistry [1, p. 14].

The ability to diagnose the occurrence of specific inherited diseases in humans at the genetic level makes it possible for individuals to discover whether they or their offspring are at risk. DNA analysis can be used for the identification of carriers of hereditary disorders, for prenatal diagnosis of serious genetic conditions, and for early diagnosis before the onset of symptoms [2, p. 224].

Often, screening for genetic diseases can be rather complex. This reflects the fact that instead of a disease being the consequence of a single alteration to the wild-type DNA, as is the case with sickle-cell anemia (see below), many diseases are caused by anyone of a large number of genetic alterations to the normal DNA for that gene. For example, cystic fibrosis, one of the most common lethal autosomal recessive disorders in Europeans and their descendants, with an incidence of approximately 1 in every 2,500 live births and a carrier frequency of approximately 1 in 25, is caused by mutations to the cystic fibrosis transmembrane conductance regulator (CFTR) gene. There are currently more than 500 known mutations to the CFTR gene that can result in the development of cystic fibrosis. Screening individuals who may be at risk for cystic fibrosis for 500 different mutations is a daunting task. Fortunately, some of the mutations that cause cystic fibrosis are much more common than others. In fact, in the United Kingdom, the four most common mutations of the CFTR gene account for approximately 81% of all of the mutations that give rise to cystic fibrosis. Individual tests are required for each mutation. In this case, discrete tests for these mutations can be administered. However, it is more difficult to detect the rare mutations. Diagnostic tests that screen for a large number of mutations of a single gene in one assay are being developed [3, p. 229].

Sickle-cell anemia is a genetic disease that is the result of a single nucleotide change in the codon for the sixth amino acid of the P chain of the hemoglobin molecule. In individuals homozygous for the defect (S/S), the shape of the red blood cells is irregular (sickle shaped) because the conformation of the hemoglobin molecule is distorted by a single amino acid change from glutamic acid to valine. The biological ramifications of this genetic alteration are severe anemia and progressive damage to the heart, lungs, brain, joints, and major organ systems. The anemia is caused by the inability of the mutated hemoglobin to carry sufficient oxygen. The life expectancy for S/S homozygotes is quite short. Heterozygous individuals (A/S) (genetic carriers) have normal-shaped red blood cells and no symptoms unless subjected to extreme conditions, such as high altitude or extremes of temperature that lower the oxygen supply. If both parents are heterozygous, there is a 25% chance that a child of theirs will have sickle-cell anemia, i.e., will be an S/S homozygote. The sickle-cell anemia gene occurs with a high frequency among black Africans and their descendants and in Hispanic populations. Carrier screening for the sickle-cell anemia gene is routinely conducted in the United States so that those individuals who are at risk for transmitting this gene to their offspring can be identified. One of the test systems is described below [2, p. 228].

The single nucleotide change in the β-globin gene that causes sickle-cell anemia by chance abolishes a Cvnl restriction endonuclease site. This restriction enzyme recognizes the sequence CCTNAGG and cleaves the DNA between the C and the T. (The letter N indicates that any one of the four nucleotides can occupy this position.) In the normal gene the DNA sequence is CCTGAGG, whereas in the sickle-cell anemia gene the sequence is CCTGTGG. This difference forms the basis for a DNA diagnostic assay [4, p. 120].

After two oligonucleotide primer sequences that flank the Cvnl site are added, a small amount of sample DNA can be amplified by PCR. The amplified DNA is digested with Cvnl, and the cleavage products are separated by gel electrophoresis and visualized by ethidium bromide staining of the DNA in the gel. If the Cvnl site is

present, a specific set of DNA fragments is observed. A different profile of DNA fragments occurs if the Cvnl site is absent. By this procedure, the genetic makeup of a tested person can be determined quickly, directly, and easily. Moreover, because of the fortuitous loss of the Cvnl site, this assay functions without the need for a target-probe hybridization reaction [1, p. 14].

To be effective, a diagnostic test must be (1) specific for the target molecule; (2) sensitive enough to detect minute levels of the target; and (3) technically simple, with unequivocal results that can be obtained readily. There are two categories of molecular diagnostic techniques. One category relies on the specificity of an antibody for a particular antigen. The other uses nucleic acid hybridization or PCR to detect a specific nucleic acid sequence. Undoubtedly, many novel DNA-based systems will be created for the diagnosis of most, if not all, of the common genetic, infectious, and malignant diseases.

Література:

1. Baner J. More keys to padlock probes: mechanisms for high-throughput nucleic acid analysis / J. Baner, M. Nilsson, A. Isaksson, M. Mendel-Hartvig. // Curr. Opin. Biotechnol. – 2001. – № 12. – P. 11–15.

2. Caskey C. T. Disease diagnosis by recombinant DNA methods / C. T. Caskey // Science. –1987. – № 236. – P. 223–229.

3. Kostrikis L.G. Spectral genotyping of human alleles / L.G. Kostrikis, S. Tyagi, M. M. Mhlanga, D. D. Ho, F. R. Kramer // Science. – 1998. – № 279. – P. 229.

4. Weiss J. B. DNA probes and PCR for diagnosis of parasitic infections / J. B. Weiss // Clin. Microbiol. Rev. – 1995. – № 8. – P. – 113–130.

УДК 535.512:811.111

HISTORY OF THERMOMETERS

(Історія термометрів)

Мєдвєдєв О. В. – студент групи Ен5/1м

Науковий керівник – Артюхова О.В. к.пед.наук, доцент кафедри іноземних мов МНАУ

Placing a kettle full of cold water on the fire is quite an ordinary thing. This time we shall do it to carry out a simple experiment. Placing a finger into the kettle from time to time, we find that the water is gradually becoming hotter and hotter, until it boils at last. In scientific language we describe this phenomenon by saying that the temperature of the water is rising.

However, we need some more exact means of measuring the difference of temperature than our finger. In effect, the finger can give us neither exact information, nor numerical data.

As a matter of fact, the very first step in the development of heat engineering made it necessary to find a device for indicating temperature and for measuring its changes. As is well known, the thermometer is the very instrument that serves this purpose.

As early as 1602, Galileo invented an air thermometer. It consisted of a glass bulb containing air and connected to a glass tube, the latter being immersed into a coloured liquid. Galileo's air thermometer was sensitive not only to temperature changes but also to changes of atmospheric pressure.

The type of thermometer familiar to everyone at present was first put into general use as early as 1654. Making the first measuring instruments was not an easy thing at all. Needless to say, the most difficult problem of all was that of marking the degrees on the thermometer, in other words, of graduating the scale. It was decided, at last, to take two fixed points and to divide the interval between them into small equal parts or degrees. And then, in 1701, Isaak Newton, the famous English scientist, whose name is known all over the world, constructed a scale in which the freezing point of

water was taken as zero and the temperature of the human j body as 12°.

Some time later the German physicist Fahrenheit proved that the temperature of boiling water was always the same at the same atmospheric pressure. It might therefore be used as a second fixed point instead of the temperature of the human body. As for the liquid used, it was mercury which has been mostly employed since that time.

On the Fahrenheit scale the boiling point of water is taken as 212° and the freezing point as 32°, the interval being divided into 180 equal parts. The scale under consideration is indicated by writing the letter F after the temperature, as for example, 212°F. This scale is mainly used in English-speaking countries.

So far we have not mentioned the Centigrade scale. On the Centigrade scale the freezing point of water is marked 0°C and the boiling point is marked 100°C, the letter C indicating this scale. This temperature scale is employed in the Soviet Union as well as in most other countries of the world.

Speaking of thermometers, one must make reference to the pyrometer. We know of its being used for measuring temperatures that are too high for mercury thermometers. We also know of its finding wide application in industry.

Various authors have credited the invention of the thermometer to Cornelis Drebbel, Robert Fludd, Galileo Galilei or Santorio Santorio. The thermometer was not a single invention, however, but a development.

Philo of Byzantium and Hero of Alexandria knew of the principle that certain substances, notably air, expand and contract and described a demonstration in which a closed tube partially filled with air had its end in a container of water. The expansion and contraction of the air caused the position of the water/air interface to move along the tube.

Such a mechanism was later used to show the hotness and coldness of the air with a tube in which the water level is controlled by the expansion and contraction of the gas. These devices were

developed by several European scientists in the 16th and 17th centuries, notably Galileo Galilei.[2] As a result, devices were shown to produce this effect reliably, and the term *thermoscope* was adopted because it reflected the changes in sensible heat (the concept of temperature was yet to arise). The difference between a thermoscope and a thermometer is that the latter has a scale. Though Galileo is often said to be the inventor of the thermometer, what he produced were thermoscopes.

The first clear diagram of a thermoscope was published in 1617 by Giuseppe Biancani: the first showing a scale and thus constituting a thermometer was by Robert Fludd in 1638. This was a vertical tube, closed by a bulb of air at the top, with the lower end opening into a vessel of water. The water level in the tube is controlled by the expansion and contraction of the air, so it is what we would now call an air thermometer.

The first person to put a scale on a thermoscope is variously said to be Francesco Sagredo or Santorio Santorio in about 1611 to 1613.

The word thermometer (in its French form) first appeared in 1624 in *La Récréation Mathématique* by J. Leurechon, who describes one with a scale of 8 degrees. The word comes from the Greek words θερμός, *thermos*, meaning "hot" and μὲτρον, *metron*, meaning "measure".

The above instruments suffered from the disadvantage that they were also barometers, i.e. sensitive to air pressure. In about 1654 Ferdinando II de' Medici, Grand Duke of Tuscany, made sealed tubes part-filled with alcohol, with a bulb and stem; the first modern-style thermometer, dependent on the expansion of a liquid, and independent of air pressure. Many other scientists experimented with various liquids and designs of thermometer.

However, each inventor and each thermometer was unique—there was no standard scale. In 1665 Christiaan Huygens suggested using the melting and boiling points of water as standards, and in 1694 Carlo Renaldini proposed using them as fixed points on a

universal scale. In 1701 Isaac Newton proposed a scale of 12 degrees between the melting point of ice and body temperature. Finally in 1724 Daniel Gabriel Fahrenheit produced a temperature scale which now (slightly adjusted) bears his name. He could do this because he manufactured thermometers, using mercury (which has a high coefficient of expansion) for the first time and the quality of his production could provide a finer scale and greater reproducibility, leading to its general adoption. In 1742 Anders Celsius proposed a scale with zero at the boiling point and 100 degrees at the freezing point of water, though the scale which now bears his name has them the other way around.

In 1866 Sir Thomas Clifford Allbutt invented a clinical thermometer that produced a body temperature reading in five minutes as opposed to twenty. In 1999 Dr. Francesco Pompei of the Exergen Corporation introduced the world's first temporal artery thermometer, a non-invasive temperature sensor which scans the forehead in about two seconds and provides a medically accurate body temperature.

Література

1. Електронний ресурс. – http://kamts1.kpi.ua/files/ebook/iee/01.course/01.term/13.lessonpdf
2. Електронний ресурс. – http://en.wikipedia.org/wiki/Thermometer

УДК 811:111

THE HISTORY OF THE BANKING SYSTEM

Новікова В.В. – студентка групи Ф2/1
Науковий керівник – Ганніченко Т.А. к.пед.наук, доцен кафедри іноземних мов МНАУ

«Finance is the fulcrum, which, according to Archimedes, allows you to turn the whole world»
Cardinal Richelieu

In the current study the banking system is one of topical issues of the economy. Very many modern businessmen dedicated themselves to the subject of study and analysis of the functioning of banks and create the best conditions for their successful work. Legislative authorities pay much attention to the development of new concepts for banks countries.

Without doubt, there are many historians would be known where and when was beginning the first banks? It is known that in the ancient states practiced surgery for receiving contributions. A special development of the first banks - "home business" got in Neo-Babylonian Empire (VII-IX centuries). Among the diverse functions they performed were purely banking:

1. receiving and issuing deposits, loans
2. the accounting bills, payment receipts
3. cashless payments among the depositors
4. financing domestic and foreign trade.

Separately, there is a need to exchange money. In medieval Europe, there was no uniform system of coins were traded coins of different countries, cities, and even individuals. All coins have a different weight, shape and size. Therefore needed specialists with expertise in coins and able to exchange. These specialists are located with their exchange tables in places brisk trade. Therefore, the word "bank" derives from the italian «banco», meaning the table at which sat me. Similar operations were carried out much earlier in ancient Greece, Rome and the East. People involved in intact operations and exchange of money, understand that collected wealth used unproductively, lie motionless. If at least part of the funds available to give temporary use, you can benefit greatly. So any loan (credit) transactions based recumbent transfer of money for a period of mandatory return with the payment of interest. The key to the projecting houses, ships, precious things, cattle and slaves.

So, the banking system – is a set of operating in the country banks, credit institutions and individual economic organizations that operate by the same rules of monetary policy.

The role of the banking system in the economy is determined by its functional characteristics. Although the Ukrainian banking system and built functionally independent of any sector of the economy, its relationship with other sectors of the economy are indisputable and sometimes even decisive. Thus, the banking system is the main source of funds urgently needed for the functioning of various economic subsystems. She is involved in the distribution and redistribution of wealth through the tools of the credit system. In addition, the banking system now takes over most of the cash flow, translating it into the sphere of non-cash payments.

During the subsequent development of the Ukrainian banking system must not only could not be greater use of foreign experience, but do not forget the historical features of the country. At present, Ukrainian banks have shifted to international standards of accounting and reporting, but the work in this direction has not ended. Application of modern accounting standards and folding sheets, as well as the regular publication of the balance sheet, profit and loss statement will contribute to greater transparency of the banking system and gradually increase customer confidence in banks. Therefore, we can conclude that the reform of the Ukrainian banking system today produced tangible results for the national economy and the restructuring of society. At the same time coordinated cooperation of all sectors of the economy can be achieved only if economic growth. Then the banks will be able to effectively perform its tasks, which stood in front of them at the stage of transformation.

The system of commercial banks directly covers all areas of the market economy - production, distribution, exchange and consumption. There is virtually no organization or enterprise that would not have been a client of a credit institution. That credit is a factor that largely provides the continuous expansion of recreation in the economy. Through a bank loan solved the contradiction between the size of the funds released by the lender, and the size of the needs of the borrower. Under these conditions, the development of the economy and monetary trade relations are increasingly transformed into monetary essentially acquired loan character. Based on this awesome role of credit and commercial banks, providing it as the

main carriers of credit relations for the effective functioning of the economy as a whole. To summarize all the work under one can say that the domestic banking system is going through hard times. The reason for this is the increased competition between banks, unstable socio - economic status, imperfect and constantly changing legal framework, and risky credit policies of many banks in the pursuit of higher profits. In connection with this state of the primary sector lending proposals for further development and improvement of the Ukrainian banking system is the diversification of destinations investment of resources of banks and the expansion of services to customers, the transformation of commissions from client transactions in one of the main sources of income of commercial banks.

Література:

1. http://www.banki.ru/wikibank/istoriya_bankovskogo_dela/
2. http://www.litlib.net/bk/31121/read/38
3. http://mirknig.mobi/banking_all/banking/

УДК: 811.111

INVESTMENT BANKS IN EUROPE AND AMERICA

(Інвестиційні банки в Європі та Америці)

Охріменко К.С. – студентка групи ЗЕД 2/1

Науковий керівник – Матвєєва К.С., к.пед.наук, доцент кафедри іноземних мов МНАУ

As a working rule, the shorter a statement the more it says. A commitment made by the European Central Bank (ECB) in September 2012 runs to fewer than 500 words, but it was enough to send the bond vigilantes packing. The ECB promised to make unlimited purchases of the sovereign debt of governments on the ropes. These “Outright Monetary Transactions” (OMT), whose dreary name disguises their punch, proved so potent a deterrent that they never had to be deployed. Even though the place to decide

whether a European body is abiding by European law is in Luxembourg at the European Court of Justice (ECJ), the court in Karlsruhe insists on its right to examine whether the acts of a European institution are infringing the German constitution.

Instead the court found that the central bank had overstepped its mandate and that OMT was a backdoor to "monetary financing" of governments, outlawed under European treaties. But the markets heaved a collective sigh of relief as they noted that in an unprecedented move the court had referred crucial points in the case to the ECJ. Since the European court is thought of as a champion of European integration, OMT should be safe in its hands.

But referring points in the case to the ECJ does not mean deferring to it. The view that the constitutional court has thrown in the towel is incorrect, says Bruno de Witte, a professor of European Union law at Maastricht University; rather the German judges have given their interpretation and are asking the ECJ for its views. They will take these into account when passing their final judgment, based as before on whether OMT infringes Germany's basic law.

The court says that the policy should, where possible, avoid interfering with price formation (which may refer to setting targets for bond yields). These demands could probably be met without defanging OMT. The third stipulation—that purchases should not be unlimited—might castrate it. Yet even on this point there may be room for compromise by recognising that OMT does have effective limits since it would only target bonds between one and three years from maturity.

At this level of judicial jousting, realpolitik rather than the strict letter of the law prevails. Though it might be tempting for the ECJ to slap down the constitutional court, Germany underpins the euro and the single currency is central to the integrationist project. A face-saving fudge seems the most likely outcome; the ECJ after all sits in the city that gave its name to a paragon of the genre, the Luxembourg compromise on EU members' voting rights.

In fact the ECB boss added a crucial and usually omitted rider to his pithy pledge: "within our mandate". That qualification is now being spelt out by the judges. When they have resolved the matter to

their satisfaction it seems unlikely that OMT will be quite so mighty a weapon as it appeared to be when it was first unveiled.

On one side of the Atlantic a handful of banks still find it possible to earn a decent living by trading stocks, bonds and other financial instruments. On the other, tightening capital standards and unbalanced business models are making it almost impossible for investment banks to make a buck doing much the same. The latest chapter in the tale of woe of European banks was written this week by Barclays, a British bank. Its £5.2 billion ($8.6 billion) pre-tax profit for 2013 was marred by an appalling fourth quarter in almost every department: the three months yielded a mere £191m profit. Antony Jenkins, its reforming chief executive, was lambasted for topping up the investment bankers' bonus pool even as earnings fell. Weak profitability is not just a problem for Barclays. Its arch-rival, Deutsche Bank, posted a loss of€1.2 billion ($1.6 billion) for the fourth quarter. The travails of both reflect a sudden downturn in the trading of bonds, currencies and commodities (FICC in the jargon), on which they are unhealthily dependent. After a brilliant start to the year in 2013, that market faltered: Deutsche's FICC revenue dropped by 64% from the first to the last quarter and Barclays' by 47%. Leading American banks such as JPMorgan Chase, Bank of America, Citigroup and Goldman Sachs experienced a dip too. But their profits were buoyed by better equity markets, in which they have a bigger presence than Barclays and Deutsche.

Now they see cutting costs as a route to restoring their returns. Deutsche has fired nearly 3,000 employees since 2011, including 1,500 investment bankers. But these cuts may not offset an inexorable rise in the costs of complying with new regulations and meeting higher capital requirements. Yet as tougher standards bite, each will need more capital or fewer assets. Neither option is a recipe for improving their return on equity. Barclays hopes returns will beat the cost of equity, estimated at around 11.5%, by 2016. That looks unlikely without big changes.

That may partly be due to the persistence of the go-go culture that predominated before the financial crisis. It is also because many

senior bankers expect markets to rebound, leaving behind those firms that cut too deeply. Such optimism seems increasingly misplaced.

Література:

1. Huw Jones (29 August 2013). “Shadow’banks face 2015 deadline to comply with first global rules”.
Reuters. Retrieved 29 August 2013.
2. Gross, Bill Beware our shadow banking system, CNN, cnn.com, 2007-11-28.

УДК: 811.111

E-COMMERCE IN CHINA

(Електронна комерція Китаю)

Підгаєцька Ю.М. – студентка групи ЗЕД 2/1
Науковий керівник – Матвєєва К.С., к.пед.н, доцент кафедри іноземних мов МНАУ

China has become world’s largest e-commerce market. Nowadays, the e-commerce sites are booming in the Asian giant and increasingly more shoppers are willing to purchase products via online.

Chinese government has announced it will allow foreign-owned e-commerce companies to develop their business in the Shanghai Free Trade Zone as part of a pilot program. However the foreign companies will face hard competition against local e-commerce giants such as JD.com and Alibaba.

During the beginning of the China domestic e-commerce boom in the mid-2000s, Alibaba received a $1billion investment from Yahoo YHOO +2.01%! in exchange for 40% of the company. I don’t know anyone that had a bigger war chest at that time. Included in this relationship was consumer marketing know-how and IP valued in the millions. Yahoo is a pioneer in site banner & other online adversing techniques which makes up a sizable bulk of Alibabas profits. In China, the number two search revenue company behind well-known

Baidu is Alibaba driven by consumer searches on Taobao. This is not a coincidence. (Yahoo is often called "lucky" today for owning a big chunk of Alibaba but would Alibaba be where it is today without that $Billion bet by Yahoo's then CEO Jerry Yang?)

Alipay escrow based payment platform cracked the nut of consumer trust & adoption for Chinese consumers many of which did not have credit cards and other modern forms of payment. This was a critical move.

Taobao B2C had a head start in learning how to onboard & manage merchants through its experiences running B2B site Alibaba.

Aggressive and smart marketing growing onto the fastest growing channels (mobile) and utilizing the latest trends in mass selling such as flash sales promotions. Even transforming an obscure student created holiday into an online holiday that became the largest ecommerce sales day in the world based on single day transitions. November/11 or 11/11 known now as Singles Day in China generated over $5.75B in single day sales during 2013 on just Alibaba owned platforms alone (Taobao & TMall). In fact, 11/11 "single's day" is so popular now in China that many offline retailers also hold sales in their shops during this period. A major case of online influencing popular culture and the offline retail world.

Aggressive smartphone penetration efforts and marketing which is growing strongest where commerce is growing fastest overall- outside of major tier 1 cities in China. The highest mobile payment penetration rates in China are often found in "far off" locations such as Lhassa Tibet as the demand for goods is even higher than the ability of the limited offline retailers to deliver. It's a winning combination that works in favor of mobile smart ecommerce players.

JD it is a rare corporate boss who vows to make no profit for years. But that is precisely the strategy embraced by Richard Liu, the chief executive of JD. A year and a half ago, he declared that his Chinese e-commerce firm would earn no gross profits on electronic goods, which make up most of its sales, for three years. He was even reported to have threatened to sack any salesman making a margin.

Yet Mr. Liu secured more than $2 billion in early funding from such celebrated investors as Prince Waleed Bin Talal of Saudi Arabia and Sequoia Capital, an American venture-capital outfit. He now wants foreigners to plough another $1.5 billion or so into JD (previously known as 360 buy) at its forthcoming initial public offering in New York. This seems cheeky, given that the firm has been bleeding red ink. In 2012 its net losses topped 1.7 billion yuan ($283m), up from a loss of nearly 1.3 billion yuan a year earlier. In the first three quarters of last year, it did make 60m yuan of profit—but much of it from interest income. It has cash and equivalents on hand of only $1.4 billion, whereas its accounts payable exceed $1.7 billion. Given Mr. Liu's plans for further expansion, its finances are unlikely to improve soon.

Would any investor want to buy into this promise of prosperity without palpable profits? Maybe. JD's growth story is impressive. Like Amazon, the American online giant to which it is often compared (since it offers its own range of goods as well as offering a shop front for third-party sellers), JD is pursuing an "asset-heavy" business model that puts scale and market share above short-term profits. On some measures, it is working: JD is the second biggest competitor in the world's biggest e-commerce market, lagging only Alibaba.

The value of transactions handled by JD exceeded 86 billion yuan during the first three quarters of last year, up from 33 billion yuan in all of 2011. The first three quarters of last year also saw the number of active accounts rise to 35.8m, from 12.5m in 2011. JD now has 82 warehouses across China, and over18,000 delivery staff.

Two big questions hang over the firm's future. One is whether the asset-heavy approach will pay off. Logistics infrastructure in much of China remains quite primitive. That means JD has to invest far more, proportionately, to guarantee reliable and timely deliveries in China than did Amazon, which benefited from America's relatively good infrastructure.

JD also faces two formidable local rivals with strong finances. One is Tencent, an innovative firm that makes most of its money selling virtual goods to videogamers. Its early efforts at e-commerce

were a bust but now this is a firm to watch. The reason is WeChat, its wildly popular messaging app. Tencent is cleverly using this free service as a Trojan horse, exploiting its presence on people's smartphones to nudge them to shop via its various online platforms.

The other rival is, of course, Alibaba. The firm, which controls perhaps 80% of all e-commerce in China, is expanding into ancillary areas to fortify its position. It has invested in social-messaging outfits, launched online wealth-management services and bought into a popular taxi-hailing app. This week it launched a bid to win control of AutoNavi, China's biggest equivalent to Google Maps.

JD's rush to float, despite its meagre profits, is no accident. Alibaba is planning its own IPO soon, and it could be huge: the private sale of a stake in it this week values the firm at around $130 billion. It is hard enough trying to be the Amazon of China without also having to live in the shadow of Goliath.

The incomes of Chinese SMEs B2B e-commerce reached 23.45 billion yuan in 2014, an increase of 32%. With the continued growth of e-commerce and SME investments in the development of their services and marketing, this market is far from dying out and still promises a stable growth in the next years.

As conclusion, the Shanghai Free Trade Zone is a big chance to overseas companies to enter in the Chinese market and take advantage of it. However they have to find their place on the market by seeking where the Chinese giants are weak.

Nonetheless, in order to catch the attention of Chinese online consumers, those companies have to focus their efforts in develop efficient digital marketing strategies. Otherwise, it will be very difficult have success on the Chinese market.

Література:

1. http://techcrunch.com/2015/02/04/china-1trillion-ecommerce/

2. http://ecommercechinaagency.com/china-embraces-foreign-e-commerce/

3. Serge Hoffmann, Bruno Lannes and Jessica Dai, Can China earn its place as the world's largest e-commerce market?

4. http://ecommercechinaagency.com/chinese-sme-b2b-e-commerce-market-remains-steady/
5. Nah Seok Ling, China's Emerging New Economy: The Internet and E-Commerce Paperback – January, 2001
6. Lisa Conklin, Chinese E-Commerce Paperback – 26 Nov 2008

УДК 744.4:811.111

DRAWINGS, DESIGN DEVELOPMENT AND DESIGN SOLUTIONS

(Креслення, проектування і дизайнерські рішення)

Підгородецька Є. О. – студентка групи Ен 5м
Науковий керівник – Артюхова О.В. к.пед.наук, доцент кафедри іноземних мов МНАУ

In engineering, most design information is shown on drawings. Today, drawings are generally not drawn by hand. They are produced on computer, using CAD (computer-aided design) systems. A key factor on a drawing is the scale - that is, the size of items on the drawing in relation to their real size. When all the items on a drawing are shown relative to their real size, the drawing is drawn to scale, and can be called a scale drawing. An example of a scale is 1:10 (one to ten). At 1:10, an object with a length of 100 mm in real life would measure 10 mm on the drawing.

Most engineering designs consist of a set of drawings (a number of related drawings): General arrangement (GA) drawings show whole devices or structures, using a small scale.

This means objects on the drawing are small, relative to their real size (for example, a 1:100 drawing of an entire building).

Detail drawings show parts in detail, using a large scale, such as 1:5 or 1:2. Small parts are sometimes shown in a detail as actual size (1:1), or can be enlarged to bigger than actual size (for example, 2:1).

For electrical circuits, and pipe and duct networks, it is helpful to show designs in a simplified form. In this case, schematic drawings (often referred to as schematics) are used.

An everyday example is the map of a train network.

When a design team consists of engineers and consultants from different organizations, the design development process needs to be carefully co-ordinated.

Before the first draft (version) of a drawing is sent to members of the team, a decision is made about who needs a copy. Sometimes, a drawing will only be issued to certain specialists in the team. Sometimes, it will be circulated to all the team members.

After team members have received a drawing, they can comment on it, and may ask for the design to be changed. Following these comments, the drawing will be revised - that is, drawn again with the requested changes made to it. Every drawing is numbered, and each time a, drawing is amended (revised), the letter next to the drawing number is changed. Therefore drawing 110A, after a revision, becomes 11 OB. When revision B is issued, it becomes the current drawing, and A is superseded. With each new revision, written notes are added to the drawing. These describe the amendments that have, been made.

When engineers revise drawings during the early stages of the design process, they may have to go back to the drawing board (start again), and redesign concepts completely. For later revisions, the design should only need to be refined slightly.

After a preliminary drawing has been finally approved (accepted), a senior engineer can sign off (authorize) the drawing as a working drawing - that is, one that the production or construction team can work to.

However, this does not always mean the drawing will be final. Often, working drawings go through more revisions to resolve problems during production.

The web page below is from a manufacturing company's intranet.

Company design procedure — the design brief

A design brief for the proposed product should be drawn up by the project engineer. This should consist of a detailed list of technical objectives which the design team must work to, in order to produce a design solution.

Key elements of the brief are:

1) function - the product's intended use (what it is designed to do), including performance targets (strength, power, durability, etc.)

2) constraints - limits on the design (for example, it must not exceed a maximum size or weight limit)comparative targets - how well the product should perform, compared with existing models (competing products already on the market, or the current model that the new product will replace)

3) design features - specific things the new design must have (for example, rechargeable batteries, or a lid with a lock)

4) budget - the cost limits that must not be exceeded, in order to make the design cost-effective.

Design information is shown on drawings, and written in specifications - documents which describe the materials, sizes and technical requirements of components. In order to specify this detailed information, an engineer must evaluate - that is, identify and calculate - the loads (forces) that key components will have to carry. To do this, the engineer needs to determine (identify) the different loads, then quantify them - that is, calculate them in number form. Usually, each load is quantified based on a worst-case scenario - in other words, the engineer will allow for the maximum load, such as an aircraft making a very hard landing, or a bridge being hit by extremely high winds.

After maximum loads have been quantified, an engineer will apply a factor of safety. This is an extra margin to make the component strong enough to carry loads that are higher than the worst-case scenario. For example, a factor of 1.5 increases the load a component can carry by 50%. After this has been factored in, the engineer will then size the components - that is, calculate their required size.

Engineers are sometimes criticized because they overdesign things (add excessive factors of safety), which increases costs. However, according to Murphy's Law, 'Anything that can go wrong, will.' This suggests that belt and braces - an expression often used in engineering, based on the safest method of holding up trousers - is a sensible approach.

The web page shows the key dimensions of the Airbus A380 in metres, and the explanations below it describe how they are measured. In the explanations, the word plane means an imaginary surface (not an aeroplane). On drawings, planes are shown as lines that indicate where dimensions are measured from and to, and are positioned to strike (touch) the faces (edges or surfaces) of components. Often, they are either horizontal planes or vertical planes. If a surface is described as being level, this means it is both horizontal and flat (smooth). However, a surface which is flat is not necessarily horizontal. A flat surface may be vertical, or inclined (sloping at an angle to the horizontal or vertical plane). Faces that are vertical, such as those of the walls of buildings, are described by engineers as being plumb. Structures that are slightly inclined from vertical are said to be out of plumb.

Література:

1. Cambridge Preparation for the TOEFL Test. Fourth Edition. – Cambridge : University Press, 2011. – 367 p.

2. Rebecca Chapman. English for Emails. Express Series / R. Chapman. – Oxford: University Press, 2011. – 139 p.

3. Mark Abbotson. Cambridge English for Engineering / M. Abbotson. – Cambridge : University Press, 2008. – 112 p.

УДК 378.147:811

DIE AGRARPOLITIK IN DEUTSCHLAND

(Аграрна політика в Німеччині)

Полієнко О. – студентка групи ЗЕД 3/1

Науковий керівник – Пономаренко Н.Г., ст. викладач кафедри іноземних мов МНАУ

Die **Agrarpolitik in Deutschland** bestimmt die Rahmenbedingungen der Landwirtschaft in Deutschland. Sie ist Teil der Gemeinsamen Agrarpolitik der Europäischen Union. Entscheidende Politikbereiche werden von der EU gestaltet und nur mehr auf bundesdeutscher Ebene umgesetzt.

- **Markt- und Preispolitik**: Diese wird fast ausschließlich auf EU-Ebene gestaltet. Auf nationaler Ebene erfolgt die Umsetzung. Der Bund hat hierbei die Funktion, Rahmenregelungen zur Ausführung zu setzen. Die praktische Umsetzung erfolgt auf der Ebene der Bundesländer.

- **Agrarstrukturpolitik**: Auch dieser Bereich wird vor allem von der EU gestaltet. Die nationale Umsetzung erfolgt auf Bundesebene im Wesentlichen im Rahmen der Gemeinschaftsaufgabe „ Verbesserung der Agrarstruktur und des Küstenschutzes“ (GAK). Hierdurch findet auch eine Kofinanzierung der EU-Fördermaßnahmen durch Bundesgelder statt. Auf Ebene der Bundesländer werden die EU-Verordnungen und die GAK in praktische Maßnahmen umgesetzt und z.T. wiederum kofinanziert.

- **Agrarsozialpolitik**: Dieser Politikbereich wird auf Bundesebene gestaltet.

Die Ziele der deutschen Agrarpolitik wurden 1955 im **Landwirtschaftsgesetz** festgelegt. Da das Gesetz bis heute gültig ist, gelten diese Ziele noch heute.

Danach gilt es,

- die Landwirtschaft mit den Mitteln der allgemeinen Wirtschafts- und Agrarpolitik - insbesondere der Handels-, Steuer-, Kredit- und Preispolitik - die Teilnahme an der fortschreitenden Entwicklung der deutschen Volkswirtschaft zu sichern,
- der Bevölkerung die bestmögliche Versorgung mit Ernährungsgütern zu sichern,
- die Landwirtschaft in den Stand zu versetzen, die für sie bestehenden naturbedingten und wirtschaftlichen Nachteile gegenüber anderen Wirtschaftsbereichen auszugleichen,
- die Produktivität der Landwirtschaft zu steigern und
- die soziale Lage der in der Landwirtschaft tätigen Menschen an die vergleichbarer Berufsgruppen anzugleichen.
- die Länder mussten sich wieder selbst versorgen können

Im jährlich erscheinenden Agrarbericht legt die Bundesregierung ihre kurz- und mittelfristigen agrarpolitischen Ziele dar.

Nach der Wiedervereinigung wurde mit dem Landwirtschaftsanpassungsgesetz vom 29. Juni 1990 die Rechtsgrundlage für die volle Wiederherstellung und Gewährleistung des Privateigentums an land- und forstwirtschaftlichen Grundstücken, für die Chancengleichheit im Wettbewerb für alle Eigentums- und Wirtschaftsformen der Land- und Forstwirtschaft und damit für die Entwicklung einer vielfältig strukturierten Landwirtschaft in der ehemaligen DDR geschaffen. Nach der Eingliederung der neuen Bundesländer in die Bundesrepublik Deutschland mussten die Nachfolgeunternehmen der alten LPGen durch Pachtverträge mit zahlreichen Flächeneigentümern ihre Bewirtschaftungsflächen sichern. t bzw. es wurden Rangrücktritte der Kapitalgeber veranlasst.

In der Folge vollzog sich in den neuen Bundesländern ein starker **Strukturwandel**. Die Zahl und der Flächenanteil der Einzelunternehmen und Personengesellschaften nahm zunächst kräftig zu (sind gegenwärtig mit etwa 20.000 Höfen aber wieder rückläufig), während der Flächenanteil der juristischen Personen zurückging. Entsprechend massiv sank in der Landwirtschaft auch die Zahl der Arbeitskräfte, besonders der Lohnarbeitskräfte. Der Strukturwandel schreitet aber im gesamten Bundesgebiet voran: So hat sich die Zahl der Betriebe von 1991 (etwa 541.000 Betriebe) bis 2006 (353.300 Betriebe) um 1/3 verringert, die Zahl der Erwerbstätigen in der Landwirtschaft nahm von 1,53 Mio. auf unter 900.000 ab.

Weiterhin stellt der bäuerliche Familienbetrieb (aus der Historie bedingt) das agrarpolitische Leitbild in Deutschland dar. Doch der zunehmende Preisdruck auf die Agrarerzeugnisse – ausgelöst durch die zunehmende **Weltmarktorientierung** und die Reduzierung des **Agrarprotektionismus** – lässt die Frage aufkommen, ob dieses Leitbild überlebensfähig ist.

Література:

1. Hartenstein/ Priebe/ Köpke (Hrsg.): Braucht Europa seine Bauern noch?, Baden-Baden 1997
2. Die Landwirtschaft/Märkte und Vermarkten, BLV Verlagsgesellschaft mbH, München, 2003

УДК: 811.111

MANAGER`S STYLE

(Стиль менеджера)

Проскурня А.І. – студентка гр. Е 2/2
Науковий керівник – Тішечкіна К.В., к.філол.наук, доцент кафедри іноземних мов МНАУ

There are lots of prestigious intellectual professions. For example, lawyers, financial experts, businessmen, accountants.

People should have appropriate style in clothes at work. Most of them have a uniform or special style. As we know, first we judge "how nice", then we judge "how wise"' that's why our look makes a real sense.

Manager is a leader, this is a person who directs and monitorings the work of a group of individuals. This person should be polite, patient, attentive, calm and smart. Even if you are a good manager, appearance plays an important role because manager should be representative. More than half of employees said they were influenced by what their managers and colleagues wore to work, while 61 per cent said dressing like their colleagues created a better and more productive work atmosphere. Every company has its dress code but there are some rules for everyone. The suit must be close to official and manager should have a good taste and a good feeling of style. Any part of your outfit - from shoes to tie or barrettes in her hair - should be in harmony with the others and kept in perfect form. So here's the dress code. Always a suit (or at worst, a smart jacket and trousers), white shirt tie, black (or possibly brown shoes, as long as they are not with a grey or black suit). Two clean handkerchiefs, one neatly ironed in the left or right trouser pocket, the other in the right hand pocket of jacket for unplanned accidents, emotional staff or other unforeseen. Now for women's clothing. Today fashion is so varied that women can find beautiful and official clothes at the same time. Women often prefer simple shapes and forms, blouses with jackets and trousers or skirts. Dress is a good variant too.

In the classical business style preference is given to elegant mechanical watches with arrows. In the men's business style only wedding ring is allowed. Chain should not peek out from under the shirt collar. Cufflinks should be small, without stones and have simple shape. Business style clothing for women allows the usage of jewelries that would blend in with the style of clothes. Jewellery should be expensive, simple in form and not cumbersome.

Axiom: nails and hair should be neat and perfumes should not be penetrating. Shoes should be cleaned. Before going to work is worth spending half a minute and look at yourself in the mirror. Also remember, regular craving for disguises is not the best feature of the

employee. Therefore it is necessary to adhere to a particular style of clothing.

Manager should be an example for his employees in his or her behavior and style of dressing. It is very necessary. Mark Twain said it best: “Clothes make the man. Naked people have little or no influence in society.”

Література:

1. Sinek S. Start with Why: How Great Leaders Inspire Everyone to Take Action / S. Sinek. — London : Portfolio Trade, — 2011. — 256 p.
2. Johnson A. Three Black Skirts: All You Need to Survive/ A. Johnson. : Workman Publishing Company, — 2000. — 240 p.

УДК: 811.111

EDUCATION ABROAD

(Освіта за кордоном)

Семенчук Ю.М. – студентка групи Е 2/1
Науковий керівник – Тішечкіна К.В., к.філол.наук, доцент кафедри іноземних мов МНАУ

Recently, more Ukrainian students study abroad, although compared with the total number of students in Ukraine not so much. Most Ukrainian students coming to study in other countries at their own expense. There is this expensive, depending on the country - from a few thousand to tens of thousands of dollars, and the average Ukrainian family can not afford to send their child to study abroad. But still account Ukrainian students abroad is in thousands [1].

Most students go to Ukraine from Russia, USA, Canada, Poland, Hungary, UK. Select a country depends on material wealth, the place of residence in Ukraine, from long-term plans.

According to the Embassy of Ukraine in Washington in the United States is trained about a thousand students from Ukraine. Most of the students studying for their own money. Free within international education programs in America learns very few students [2]. These are people who have passed a rigorous selection process and have exceptional abilities. The most famous educational programs spend Fulbright Foundation and the American Councils. Latest funded by the Bureau of Educational and Cultural Affairs US Department of State. Every year in this program in the US sent about 120 Ukrainian students by the State Department [3].

Students who pass a competition for training on the program, after completion of the course are required to return home - a prerequisite. Students are enrolled on a private basis, often settle abroad permanently.

American universities are actively involve students from abroad, including Ukraine [4, 5].

American education is very different from the Ukrainian in a better way, and this is an important reason to study it in the US.

Visible presence of Ukrainian students in the UK. Most commonly they are in London, but there are in other cities. In Ukraine, as taught 10 years ago, and now teach, not looking at the processes occurring in the world.

In addition, English education is valued around the world, which so far, unfortunately, is not the Ukrainian.

But all depends on the material side. If you will find a good job with a normal level by Western standards of wages, with the prospect of career, then you can live in Ukraine. But if not - you have to stay.

As part of the Ukraine-German cooperation on a student line operates in Kyiv office of the German Academic Exchange Service. It has existed since 1927, and came to Ukraine in 1998. Using its services can students beginning the second year graduate students, teachers, professors. Service pays an annual residence in Germany (there is free education), travel back and forth. Each year through this service in Germany get about 200 Ukrainian.

It is safe to say one thing: while the Ukrainian education does not come at the global level, while young graduates will be difficult to apply their knowledge in practice, will experience some

Література:

1. Students Should Study Abroad. BBC News. 2010-06-18.
2. Trends in U.S. Study Abroad. NAFSA: Association of International Educators. Retrieved 18 December 2010.
3. Diana Jean (2007-08-13). In Study Abroad, Gifts and Money for Universities. The New York Times. Retrieved 25 December 2010.
4. Diana Jean (2007-08-16). Study Abroad is New Focus of Inquiry into Perks. The New York Times. Retrieved 25 December 2010.
5. Code of Ethics for Study Abroad Is Offered to Colleges and Providers. The Chronicle of Higher Education. Retrieved 26 December 2010.

УДК 811.111

DARK MATTER

(Темна матерія)

Тихонов В. О. – студент групи М 1/2
Науковий керівник – Марковська А.В., к.філол.наук, доцент кафедри іноземних мов МНАУ

For the first 150 million years after the Big Bang, there were no galaxies or stars or planets. The universe was featureless.

As time passed, the first stars formed. Stars collected into galaxies. Galaxies began to cluster together. Those clusters are made up of the galaxies and all the material between the galaxies. Clumps of matter in smashed into each other, and the planets in our solar system began to form around the sun. Something must hold our solar system, galaxies and clusters of galaxies together. And gravity is that "glue."

Many theories say the dark matter particles would be light enough to be produced at the LHC. If they were created at the LHC, they would escape through the detectors unnoticed. However, they would carry away energy and momentum, so physicists could infer their existence from the amount of energy and momentum “missing” after a collision. Dark matter candidates arise frequently in theories that suggest physics beyond the Standard Model, such as supersymmetry and extra dimensions. One theory suggests the existence of a “Hidden Valley”, a parallel world made of dark matter having very little in common with matter we know. If one of these theories proved to be true, it could help scientists gain a better understanding of the composition of our universe and, in particular, how galaxies hold together.

The Swiss astronomer Fritz Zwicky first used the term "dark matter" in the 1930s. He studied the so-called Coma galaxy cluster and, specifically, how fast it revolves. Clusters are like merry-go-rounds: Their speed of revolution depends on the weight and position of the objects in the clusters, like the weight of the objects and their positions on a merry-go-round. The speed he measured implied the cluster had much more mass than the observable light suggested.

In the 1970s, U.S. astronomer Vera Rubin and her colleagues confirmed this result by studying galaxy rotation. They also discovered single galaxies, not just clusters, have more mass than their observable light suggested. The work of Rubin and her team helped to firmly establish the notion of dark matter.

By fitting a theoretical model of the composition of the Universe to the combined set of cosmological observations, scientists have come up with the composition that we described above, ~68% dark energy, ~27% dark matter, ~5% normal matter. So what is dark matter?

In some clusters, the space between galaxies is filled with gas so hot, scientists cannot see it using visible light telescopes. The gas only can be seen as X-rays or gamma rays. Scientists look at that gas and measure how much there is between galaxies in clusters. By doing this, they discovered that there must be five times more

material in the clusters than we can detect. The invisible matter that we can't detect is called "dark matter."

In many ways, scientists know more about what dark matter is not, though they do have a few ideas about what it could be.

Dark matter possibly could be brown dwarfs, "failed" stars that never ignited because they lacked the mass needed to start burning. Dark matter could be white dwarfs, the remnants of cores of dead small- to medium-size stars. Or dark matter could be neutron stars or black holes, the remnants of large stars after they explode.

Alternative theory:

Mass in extra dimensions:

In some multidimensional theories, the force of gravity is the unique force able to have an effect across all the various extra dimensions,[14] which would explain the relative weakness of the force of gravity compared to the other known forces of nature that would not be able to cross into extra dimensions: electromagnetism, strong interaction, and weak interaction.

In that case, dark matter would be a perfect candidate for matter that would exist in other dimensions and that could only interact with the matter on our dimensions through gravity. That dark matter located on different dimensions could potentially aggregate in the same way as the matter in our visible universe does, forming exotic galaxies.

However, problems exist with each of these suggestions. Scientists have strong evidence there aren't enough brown dwarfs or white dwarfs to account for all the dark matter. Black holes and neutron stars, too, are rare.

Dark matter may not be made up of the matter we are familiar with at all. The matter that makes up dark matter could different. It may be filled with particles predicted by theory but that scientists have yet to observe.

Because scientists can't see dark matter directly, they have found other ways to investigate it. We can use indirect ways to study things, like looking at a shadow and making an educated guess about what's casting the shadow. One way scientists indirectly study dark matter is by using gravitational lensing.

Light going through a gravitational lens is similar to light going through an optical lens: It gets bent. When light from distant stars passes through a galaxy or cluster, the gravity of the matter present in the galaxy or cluster causes the light to bend. As a result, the light looks like it is coming from somewhere else rather than from its actual origin. The amount of bending helps scientists learn about the dark matter present. Many NASA scientists use the Hubble Space Telescope to observe gravitational lensing.

In addition to these indirect ways, scientists at NASA think they have a direct way to detect dark matter using the Fermi Gamma-Ray Space Telescope. This telescope looks at gamma rays, the highest energy form of light. When two dark matter particles crash into each other, they might release a gamma ray. The Fermi Telescope could theoretically detect these collisions, which would appear as a burst of a gamma ray in the sky. Because Fermi has not been in space very long, scientists do not yet have enough data to form conclusions.

That's what makes dark matter exciting: It's still one of the great mysteries of science.

Література:

1. Електронний ресурс. – http://science.nasa.gov/astrophysics/focus-areas/what-is-dark-energy

2. Електронний ресурс. – http://en.wikipedia.org/wiki/Dark_matter

3. Електронний ресурс. – http://chandra.harvard.edu/xray_astro/ dark_matter/index.html

4. Електронний ресурс. – http://home.web.cern.ch/about/physics/dark-matter

5. Електронний ресурс. – http://www.space.com/20930-dark-matter.html

УДК 811.111

GLOBALIZATION AND PROBLEMS OF ECONOMIC INTEGRATION

(Глобалізація та проблеми економічної інтеграції)

Тупчій Д. Ю. – студентка групи А 1/1
Науковий керівник – Марковська А.В., к.філол.наук, доцент кафедри іноземних мов МНАУ

The Problems of this World Today

So what are these most significant problems of the World? I find it useful to group these very major issues into four broad categories. We'll list them here in outline and then elaborate upon them more fully.

The first category relate to the Environmental and Ecological problems of the World. Which includes issues relating to ecological destruction, resource depletion and atmospheric change, i.e. Global warming. I also included in this category the problem of over population which exacerbates these environmental issues though this might equally well be considered as a Social and Political problem.

The second category relates to the Problems in the Social, Economic and Political Spheres of human activity. Including problems relating to the 'Coming One World Order', that is the issues relating to the ongoing integration of all humanity into a single cohesive whole. We live in a World partly characterized, unfortunately, by corruption, oppression, exploitation, conspiracy and injustice. And a world riddled with division, conflict, terrorism and mutual distrust.

The Environmental and Ecological problems of the times. A Planet in Peril

It is generally acknowledged that in the World today there are potentially calamitous problems relating to environmental destruction, resource depletion, global warming and over population. The natural resources of this planet, its forests, fisheries and crop lands are already being used at such a rate that is unsustainable. We are already using the planets renewable resources faster than what the planet can replenish.

Water Scarcity

A problem that is related to Global Warming concerns the availability of water resources to the worlds people. It has been estimated by the United Nations that due to population growth, pollution and global warming the average persons water supply will be cut by a third over the next 20 years.

Peak Oil, Peak Gas and Peak Uranium

A serious problem looming over the horizon is that of fuel shortages due to the peaking in production and subsequent decline in output of three of the Worlds most important energy sources, that is Oil, Gas and Uranium Ore.

The Social, Economic and Political Problems of the World, And the Coming One World Order

Without a doubt, like no time before in recorded history, the world is becoming one place. This phenomenon is variously labelled the Global Village, the process of Globalization or the Coming One World Order. IWe'll explore some specific problems which exist in this category.

Global Terrorism

We are faced with the problem of Global Terrorism which has been called the shadow of the process of Globalization. As the world

is becoming one place, so it is that the effects of terrorism have global effects.

Globalization and Problems of Economic Integration

A major facet of globalization is the massive increases in international trade that we have witnessed in recent years. One of the direct results of globalization and the international market is the flow of labour around the world as people migrate to find work. This mass migration of people is made up of those people going to countries where their skills are most in demand and those people who are escaping poverty and countries with high unemployment.

Література:

1. CEA, Economic Report of the President 2000. − 203 p.
2. Krugman. Growing World Trade. − P.5
3. Feenstra. Integration of Trade. − P. 37.

УДК 006.72:811.111

DIMENSIONAL ACCURACY

(Розмірна точність)

Фігун А. К. – студент групи Ен-5м
Науковий керівник – Артюхова О.В., к.пед.наук, доцент кафедри іноземних мов МНАУ

It is impossible to produce components with dimensions that are absolutely precise, with sizes exactly the same as those specified in a design. This is because all production processes are imprecise to a certain extent. Therefore, the sizes of several components produced from the same design will vary (differ). Although the variation may only be a few hundredths of a millimetre, sizes will not be 100% accurate (exact) compared with the design.

Because engineers know that accuracy cannot be perfect, in designs they often specify tolerances - that is, acceptable variations in

precision. Instead of giving one precise size, a tolerance specifies a range of acceptable sizes - an allowed amount of variation. This is often given as a deviation (difference) from a precise size.

The drawing below shows a shaft with a specified diameter of 88 mm, plus or minus (+) 0.05 mm. This means the diameter may deviate 0.05 mm either side of this size. Therefore, diameters of 87.95 mm and 88.05 mm, which are slightly inaccurate, are still permissible (allowed), as they are within tolerance. However, diameters of 87.94mm or 88.06mm are not permissible - they are outside tolerance.

When the permissible deviation in size is very small, we say it is a tight tolerance (or a close tolerance). A large permissible deviation is a loose tolerance. For example:

Machining a metal component to a tolerance of ±0.1 mm is relatively easy to do, so this tolerance is loose. But a tolerance of just ±0.01 mm is a tight tolerance in metalworking.

In a concrete structure, ±10mm is a loose tolerance. But ±lmm is tight, because it is difficult to place wet concrete accurately.

When one component goes through another, such as a shaft or a bolt going through a hole, the two must fit together - their sizes and shapes must match. The key question is, how tightly (or loosely) should they fit together? There are two main types of fit:

A clearance fit allows a component to slide or turn freely, by leaving clearance (a gap) between itself and the sides of the hole. This distance must be quite precise. If there is insufficient clearance - if the gap is too small - the component will fit too tightly. As a result, the component will bind - it will not be able to slide or turn freely. In other words, there will not be enough play. However, if there is too much clearance, there will be too much play and the component will be able to move too much.

An interference fit is a very tight fit which does not allow a component to move freely inside a hole. This type of fit can be achieved by forcing the component into the hole. Alternatively, the

metal around the hole can be heated so that it expands (increases in size due to heat). After sufficient expansion, the component is placed in the hole. The metal then cools and contracts (decreases in size due to cooling). The contraction results in a tight fit. An example of an interference fit is a train wheel fitted on an axle.

An engineer is giving a training course to a group of technical sales staff who work for a tyre manufacturer. During the talk, she mentions a number of dimensions relating to circles.

‘Obviously, the outside edge of a tyre forms a circle, as you can see in this simple diagram. The outer circle in the diagram is the outside of the tyre, and the inner circle - the circle with the smaller diameter - represents both the inside of the tyre and the outside of the wheel. And, clearly, the inner circle is right in the middle of the outer circle - it’s exactly in the centre. So because it’s central, that means the inside and outside of the tyre form concentric circles. And as the tyre is circular, simple geometry tells us that measurements of the radius, taken from the centre of the circle to different points on its edge- points on the circumference - are equal. All the radii are the same. In other words, the tyre has a constant radius.’

‘But when a tyre is fitted to a vehicle, it’s compressed against the road surface. That means its geometry changes. So while the wheel the inner circle - obviously remains round, the circumference of the tyre - the outer circle - changes shape. It deforms. Before deformation, this part of the tyre forms an arc of the circle, between points A and B. So, as you can see in this diagram, it’s not a straight line - it’s a curved line. But after deformation, it’s no longer a curve.

The tyre becomes deformed between points A and B. It becomes a chord of the same circle, forming a straight line between A and B. However, the length of a chord and the length of an arc, between the same two points on a circle, are different. So the design of the tyre has to allow for this change in shape - from a rounded edge to a straight edge.’

Specific terms are used to describe the circular dimensions of pipes. The width of the inside of a pipe is called the inside diameter (ID). It can also be called the bore. The outside width is called the outside diameter (OD). When pipes are laid horizontally, the top of the outside of the pipe is called the crown, and the bottom of the inside of the pipe is called the invert.

Література:

1. Mark Abbotson. Cambridge English for Engineering / M. Abbotson. – Cambridge : University Press, 2008. – 112 p.
2. Prodromou Luke. Grammar and Vocabulary for the First Certificate / L. Prodromou. – Essex : Longman, 2000. – 243 p.
3. Harris Michael. Opportunities: in 5 volumes Pre – Intermediate / M. Harris, D. Mover, A. Sikorzynka. – Essex : Longman, 2002. - 172 p.
4. Артюхова О. В. Англійська мова: методичні рекомендації для оформлення ділової документації для студентів – магістрів денної форми навчання. / О. В. Артюхова. – Миколаїв, 2011. – 68 с.

УДК: 811.111

MODERN EDUCATION TECHNOLOGIES AS THE BASIS OF PROJECTION OF CLASSES IN HIGH SCHOOL

ЧабаненкоО.О.– студентка групи Б 1 /1
Науковий керівник – Ганніченко Т.А., к.пед.наук, доцент кафедри іноземних мов МНАУ

The current state of social development, one of the features of which is multiple increasing of data flows, is forcing us to formulate fundamentally new priorities in training of high school specialists, including medical. Modern society is characterized by the following features (Morse NV, 2008):

- The amount of knowledge that generates in the global community is doubling every two-three years;

- The amount of information that is sent via satellites within two weeks is enough to fill 19 million volumes
- In industrialized countries, pupils after graduating from secondary school know more information than their grandparents gain during lifetime.
- During the next three decades will be as much changes as they were for the last three hundred decades.

The information society during training of competitive specialists requires from education not only new skills and knowledge, but also restructuring of strategic activity aimed at taking to consideration these features.

That's why one of the most important tasks of the state level and education in general is informatization of society and training of specialists, possessing modern information and communication technologies.

The use of modern information technologies in the educational process of institute of higher education requires changes in methods of teaching all disciplines

It is connected with the fact that the teacher ceases to be the only source of knowledge for the student.

Nowadays a lot of information can be found on the Internet. Focusing on the formation of reproductive skills such as memorization and reproduction, replaces by the development of skills of comparison, synthesis, analysis and evaluation of the links, planning, group interaction using ICT.

In such circumstances, changes should affect methods of holding classes and independent work organization. ICT enhance the role of methods of active learning and distance learning.

According to the requirements of the Bologna process the proportion of independent work of students in training programs in all disciplines increases.

ICT and distant technologies of learning allow providing students with electronic educational resources for self-study, tasks for

independent performance, realize an individual approach to each student and others.

The use of distant technologies in circumstances of credit-modular system enables (BatsurovskaI.V.,2011):
a) students - to choose a convenient time for study and mastering of subjects, perform module control distantly and independently, to analyze their training activities.

b) teachers - systematically manage the academic work of students, to control and analyze their activities per each module of educational discipline. All mentioned above encourages students qualitatively master the content of higher education.

Nowadays the most widely spread distant technologies of the learning process support in higher school are (Tolochko V.M., 2009):

- Case-technologies;
- Television-satellite technology;
- Network ICT (information and communication technologies).

In higher medical education television-satellite and network ICT are used the most often.

Among the latter the most common are specialized information systems, called learning management system (LMS) or, sometimes, software-pedagogical systems.

At present there is quite a wide range of developed learning management systems that distribute both commercially (WebCT, Blackboard, Microsoft Learning Gateway, etc.) and for free (ATutor, OLAT, Sakai, MOODLE).

For providing students, doctors (pharmacists) interns and medical students with the electronic training materials, organization and management of independent work, automated testing, the model of integration of full time studying with networked information and communication technologies of studying based on LMS «MOODLE» is used in BSMU.

MOODLE (Modular Object-Oriented Dynamic Learning Environment) - the system of the management of studying or virtual training environment.

This is a free (distributes under the GNU GPL) web application that allows to create sites for online studying.

The given system implements the philosophy of "pedagogy of social constructivism" and is focused primarily on the organization of interaction between teacher and students, is suitable for organization of traditional distance learning courses and support of full-time study.

MOODLE is translated into dozens of languages, including Ukrainian language. The system is used in 50 thousand institutions in more than 200 countries worldwide.

Література:

1. United Press International (February 4, 1971). "Computers Employed as Teaching Aids".*Reading Eagle*.

2. Suggs, Ernie (September 7, 1999). "Georgia Tech Harnesses Technology for Learning".*The Tuscaloosa News*.

3. Brooks, Laura (April–May 2008). "Old School Meet School Library 2.0". *Library Media Connection* **26** (7): 14–16.

УДК: 811.111

MANUFACTURING IN INDONESIA

(Виробництво в Індонезії)

Черевчук Е.В. – студент групи ЗЕД 2/1

Науковий керівник – Матвєєва К.С., к.пед.наук, доцент кафедри іноземних мов МНАУ

They do not look much, but they are largely responsible for saving Indonesia’s aviation industry. The ribs that fit into a section of the wings on the Airbus A380, the world’s largest passenger aircraft,

are made in a corner of the sprawling factory of PT Dirgantara Indonesia (PTDI), in the Javanese city of Bandung. Along with another part, they are flown to a second factory, in Britain, where they are incorporated into the A380's wings, which are then sent to France to be attached to the planes.

PTDI won the contract for the wing parts in 2002, and the timing could not have been better. The company, along with much of the rest of Indonesian industry, was still flat on its back following the Asian financial crisis of 1997-98. PTDI's revival since then offers hope that the country's manufacturing sector can become competitive, despite high costs, rigid labour laws and poor infrastructure. But there are also worries that the firm might take on the sort of over-ambitious projects that brought it, and the country, low in the first place.

Founded in 1976 as a state-owned company, in its first 20 years PTDI was a flagship for Indonesia's ambitions to become one of Asia's rapidly developing "tiger" economies. Its main job was to produce prestige-enhancing aircraft, not to make money. By the time the IMF helped to bail out the country in 1997, PTDI had become a chronic financial drain. It was forced to cancel its main project, a turboprop passenger plane called the N-250 (pictured), a pet project of President Suharto and his technology minister, B.J. Habibie, who later took over the presidency on Suharto's downfall. Most of the firm's16,500 workers lost their jobs. Two mouldering prototype N-250s still sit in silent reproach on the asphalt outside the Bandung plant.

When the contract to make Airbus parts came along, offering PTDI a lifeline, out went grandiose ideas about buildingentire aircraft from scratch, regardless of the cost. Instead it would be more modest, focusing on what would be "commercially successful", in the words of Sonny Saleh Ibrahim, an engineer who spans both eras of the company's history.

That has meant building up a niche business making parts for foreign planes. It contributes both to civilian ones, like the A380, and to military ones, like Airbus's C295 transporter and its Cougar helicopter. (PTDI does still assemble a few aircraft for the Indonesian

armed forces.) The company's order book has grown slowly but steadily, and this year PTDI hopes to generate sales of4.4 trillion rupiah ($365m).

PTDI is now more business-minded, but it still owes some of its recent success to official intervention. Having cleared PTD I'sdebts in 2007, two years ago the government invested another 1.4 trillion rupiah to retool and restructure it. Although PTDI insists that this was a "one-off", the money was part of a strategy to reorientate the economy. The mineral-rich country has done extremely well over the past decade exporting coal and metal ores to China and India. But officials such as the finance minister, Chatib Basri, argue that the resources boom is over, and that Indonesia now has to "shift into innovation and technology" to keep the economy growing at its current lick of 6% a year. Thus, besides introducing curbs on exports of unprocessed metal ores, the government has been giving tax incentives to companies to invest in research and training.

So PTDI once again finds itself in the forefront of an industrial strategy, its role this time being to lead Indonesia up the value chain of manufacturing rather than to produce subsidised white elephants. Thus far, things look good: the company will shortly begin assembling whole planes on a commercial basis, with all production of the C295 being shifted to Bandung from an Airbus factory in Spain. Last month PTDI won a $60.7m order from the Philippine air force to supply two smaller military transporters based on Airbus's C212. With these contracts Indonesia will again join India, Japan and China in the exclusive club of Asian plane makers.

However, another recent development hints at a revival of past hubris. Last September PTDI signed a deal with a private firm, RAI, which will design an updated version of the old N-250, to be called the R80 and to be assembled by PTDI. RAI is part-owned by the Habibie family and run by the ex-president's son, Ilham, who is an aeronautical engineer.

Advances in cabin design mean that turboprops are no longer the noisy, bonerattling aircraft they once were. Moreover, for short flights they can be more fuel efficient than jets. Mr Ibrahim of PTDI argues that the R80 is "crucial" to the company's vision of becoming

“the most advanced turboprop manufacturer for small and medium-sized aircraft in the world”. It is a worthy ambition, but one shared by many others, not least in China. Before Indonesia slips back into the habit of splashing out subsidies to promote prestigious industries, it should note that next door in Australia, years of official efforts to keep the car making industry alive have failed, as the next article explains.

Also Indonesia is among the top 20 furniture exporters worldwide with an established reputation particularly within the field of outdoor furniture from teak, bamboo and rattan as well as carved furnishings. With abundant natural resources including numerous varieties of timber, the country has attracted global attention as a furniture manufacturing base for international brands. However, the country’s population of over 250 million people and rising consumer purchasing power is now being perceived as its greatest attraction and pull for furniture makers. Local furniture manufacturers have flourished over the past decade and are on course to further reap the benefits of Indonesia’s growing prominence as a furniture producer following the implementation of a legal verification system for timber sourcing.

The footwear industry plays an increasingly important role in Indonesia's manufacturing sector. Producing shoes for many global brands, footwear manufacturers are a vital job creator and an important foreign exchange earner for the country. Competitive labour costs have long convinced global brands to source footwear from Indonesia and have drawn in investment from China, Korea and other countries, but this advantage is in jeopardy today amid steep increases in minimum wages, with rival producer countries such as Vietnam just around the corner, ready to sell on the same ASEAN market. While the depreciation of the rupiah boosted Indonesia's competitiveness in 2013, a supportive exchange rate cannot be counted on in the long run.

Changing lifestyles in Indonesia are expected to generate particularly strong demand growth for athletic footwear, giving manufacturers in this segment an appealing alternative to exports. Providing that costs are kept under control, the country has all it takes

to secure or even improve its position as one of the leading footwear exporters, much to the benefit of local companies and global investors.

Indonesian consumers keenly spend their rising personal earnings on electronics and home appliances, striving for the personal comfort and entertainment that characterize a middle-class lifestyle in many parts of the world. The driving force behind this consumer trend, aside from the general increase in living standards, is urbanisation and the booming residential property market in Indonesia's emerging economy. Setting up shop in Southeast Asia's largest economy offers global manufacturers of consumer electronics the chance to tap rising demand in Indonesia and the wider region.The peaceful political transition following parliamentary and presidential elections in 2014 underscored Indonesia's reputation for political stability, while the lower exchange rate of the Rupiah enhances domestic competitiveness. At a time when rising wages make labour in China increasingly costly, Indonesia has a window of opportunity to establish itself as the regional production hub for the manufacture of electronics and home appliances – for both domestic and global brands. To use it, the country needs to implement structural reforms and tackle issues of infrastructure and education.

Література:

1. Global business quide Indonesia [ElectronicResource]:URL :http://www.gbgindonesia.com/

2. The Economist//Manufacturing in Indonesia.-2014-с. 57-58.

УДК: 811.111

EXISTING METHODS OF WATER PURIFICATION AND THEIR ANALYSIS

(Існуючи методи очистки води та їх аналіз)

Череповська А.С. – студентка групи Ен1/1

Науковий керівник – Ігнатенко Ж.В., викладач кафедри іноземних мов МНАУ

1.Introduction

Water is the most widespread inorganic compound on our planet. Water is the basis of all life processes. Water is in the entire biosphere, in the air and in the soil, and in all living organisms. The organisms contain 80-90% water in their biomass. Loss of 10 - 20% water by living organisms leads to their death. In its nature the water never free from impurities. It dissolved gases and various salts and solid particles. In 1 liter of fresh water may contain salt up to 1 gram. Most of the water is concentrated in the seas and oceans. Fresh water is only 2% on the Earth. Most of the fresh water (85%) is concentrated in the ice of the polar regions and glaciers. Resumption of fresh water occurs as a result of the water cycle. The current population of the Earth is increasing demands for purified water, besides, it is necessary to take into consideration the deficit of fresh water resources and the possibility of saving and reuse it. With the development of science new methods appeared to reduce the toxicity and contamination of wastewater, salinity of fresh water.

2.Existing methods of water purification

First of all, I noted that in the technology of processing the water is not too many methods .They are filtration, adsorption, membrane and electrochemical methods.

a. Filtration - water separation process (in this case) by passing it through a porous septum. As the porous membrane can be used woven and nonwoven materials, metal, cermet foams, granular materials (sand, coal, shungite , vermiculite, ion exchange resins, zeolites, and so on.). Because almost all construction water purifiers contain filter elements, the method of filtration gave the name to all devices.

People who use the filters need to ask yourself: "Can it filter well" delay "about four million different compounds containe harmful impurities in the" modern "water?" Filter is designed for a specific category of impurities and rather they (impurities) has"large" size. It is not able to produce water treatment on the ionic level, as in the case of the electrochemical method (analysis of which we will deal below.) Moreover, the filter requires replacement fromtime to time.

b. Sorption (from sorbeo (Lat.) - absorbed) - the process of extracting of dissolved impurities from the water (in this case), mainly organic nature. Since the ion exchanges processes it also relates to sorption (only accompanied by the release of grafted thereto ion replaces absorbed one), the sorption allows to remove from the water almost all of the impurities. However, in reality sorption processes associated with selective sorbent (affinity to or other substance) is removed from the water impurities. Typically, for cleaning water is used solid granular or fibrous materials (adsorbents). Scientist were calculated resource of portative sorption devices and, unfortunately, it did not exceed the day.

c. Membrane technology is not widely used in household water purifiers. Firstly, because for the membrane modules high pressure is required(8 - 10 atm). Secondly, mainly giperfiltrational membrane are effective, so produced water becomes close to deeply devoid of salts. Thirdly, during membrane treated is discharged into the sewers 50 percent or more of inputted water and considering water deficit it is too wasteful. First, the filter-sorption device can accumulate absorbed impurities into sorbent. Important factor is the operational reliability of the cleaning unit. Secondly, the membrane modules and the ion exchange sorbents impoverish the salt composition of the treated water (ion exchangers in water replaces important for organism calcium, magnesium, trace elements on a number of sodium ions and membrane modules capable of producing fully demineralized water). Third, there is (as if from nowhere), the problem of waste disposal sorption nozzles and membrane modules. And this is another "trickle" of environmental pollution. Typically, for cleaning water (in the field) used different substances, opacifiers,

acidulants alkaloids, and among them are important coagulants. This is coagulation, in which the result of is the water freed from suspended matter, salts, number of microorganisms and other impurities. It remains to remove from the water coagulant flakes.

d. Electrochemical coagulation. Coagulation electrochemical coagulation has several advantages. In the process of being or passing of water between the electrodes occurs electrolysis, whereby it is dissolved and the metal of anode goes into the interelectrode space in the form of ions. It is often used as anode aluminum alloys. The aluminum ions (as in the conventional coagulation) are connecting with the hydroxyl ions forms the aluminum hydroxide. This process is a multi-step, so the resulting aluminum hydroxide has a number of properties that can be termed as high chemical activity. According to several studies, hydroxide obtained by electrolysis, possesses activity to six times higher than normal activity of hydroxide. This means that in the process of flocculation coagulant produced by electrolysis, water treatment removing suspended impurities, salts, color, micro-organisms is much more active and denser. It should be added that, in contrast to the conventional coagulation in water are added dissociated molecules of the coagulant - sulfate - and they will not come to the consumer. Note that this process is called electrolysis coagulation.

In addition, cations in the interelectrode area attaching to their hydroxyl ions, which is accompanied by precipitation of hydroxides of these ions. This is an electrochemical coagulation. Hydroxides cations becoming sort of "centers" avalanche of coagulation. Furthermore, the presence of charges on the hydroxides in an electric field contributes to the formation of chain aggregates augmentative impurities. Thus, coagulation process initiated by the electric field, in contrast to conventional coagulation, it is a combination of several processes, enhancing each other. Electroflotation widely used in the process of clarification and purification of suspensions of various wines. Researchers believe it is superior to conventional flotation due to more complete coverage the treated volume. This due to the fact that during electrolysis on the cathode are formed not only visible to the eye, hydrogen bubbles (smaller than conventional flotation) and

submicron size at the beginning of dissolving in water, and in the subsequent coalescing with removable suspensions and with each other. Moreover, in contrast to conventional flotation electro-flotation performed efficiently regardless of the composition of the treated water.

3.Indings

Extensive research conducted at the Military Medical Academy. Kirov in the period from 1968 to 1985, have shown high efficiency of electrochemical methods to remove water from almost any contamination, radionuclides, microorganisms. At the same time proved the absolute safety of the technology and the harmlessness of treated water to the body of warm-blooded animals, and eventually humans. In 1980, the USSR Ministry of Health has been given permission to use the method of electrochemical treatment for drinking water. In 1991, they developed an apparatus suitable for purification of tap water in a domestic environment, entitled "Aqualon". Research carried out by independent and government research laboratories and institutions, have shown high efficiency not only post-treatment of tap water, but water containing salts of heavy metals and some organic impurities that are harmful to health.

Based on the above analysis, I believe the most affordable way to clean water is a filter. In my opinion, the most effective methods are electrochemical methods that combine affordability, efficiency and greater productivity.

Література:

1. Timofeeva S.S .The current state of technology for recovering and recycling metals wastewater from electroplating industries // Chemistry and technology of water, 1990. - V. 12, № 3

2. Koganovsky A.M., Klimenko N.A., Levchenko T.M. et al. Purification and use of wastewater in industrial water supply. M .: Chemistry, 1983

3. Kulsky L.A. Fundamentals of chemistry and technology of water. Kiev: Science, Dumka, 1991.-561

УДК: 811.111

CARMAKING IN AUSTRALIA

(Виробництво автомобілів в Австралії)

Шведова Н.П. – студентка групи ЗЕД 2/1
Науковий керівник – Матвєєва К.С., к.пед.наук, доцент кафедри іноземних мов МНАУ

The automotive industry began in the 1890s with hundreds of manufacturers that pioneered the horseless carriage. For many decades, the United States led the world in total automobile production. In 1929 before the Great Depression, the world had 32,028,500 automobiles in use, and the U.S. automobile industry produced over 90% of them. At that time the U.S. had one car per 4.87 persons. After World War II, the U.S. produced about 75 percent of world's auto production. In 1980, the U.S. was overtaken by Japan and became world's leader again in 1994. In 2006, Japan narrowly passed the U.S. in production and held this rank until 2009, when China took the top spot with 13.8 million units. With 19.3 million units manufactured in 2012, China almost doubled the U.S. production, with 10.3 million units, while Japan was in third place with 9.9 million units. From 1970 (140 models) over 1998 (260 models) to 2012 (684 models), the number of automobile models in the U.S. has grown exponentially.

Around the world, there were about 806 million cars and light trucks on the road in 2007, consuming over 980 billion litres (980,000,000 m3) of gasoline and diesel fuel yearly. The automobile is a primary mode of transportation for many developed economies. The Detroit branch of Boston Consulting Group predicts that, by 2015, one-third of world demand will be in the four BRIC markets (Brazil, Russia, India and China). Meanwhile, in the developed countries, the automotive industry has slowed down. It is also expected that this trend will continue, especially as the younger generations of people (in highly urbanized countries) no longer want to own a car anymore, and prefer other modes of transport. Other potentially powerful

automotive markets are Iran and Indonesia. Emerging auto markets already buy more cars than established markets. According to a J.D. Power study, emerging markets accounted for 51 percent of the global light-vehicle sales in 2010. The study, performed in 2010 expected this trend to accelerate. However, more recent reports (2012) confirmed the opposite; namely that the automotive industry was slowing down even in BRIC countries

Australia is one of only a few countries with the capabilities to design cars from scratch and manufacture in significant volumes [1]. As of February 2014 Australian-designed cars are made by local producers Holden, a subsidiary of General Motors, and Ford Australia, while Toyota Australia manufactures local variants of its international models, particularly the Camry.

Australian constructors were very active at the very beginning of both car and aircraft development and in some areas, ahead of their overseas counterparts. Due to the isolation of Australia, it was more practical for Australia to make their own cars [4].

The first true cars made in Australia were steam cars. The first of these steam cars, the Phaeton, was made in 1896 by Herbert Thomson and Edward Holmes of Armadale, Melbourne. It was exhibited in 1900 using the first pneumatic types made in Australia by Dunlop. The 5 horsepower single cylinder steam carriage which is now in the Institute of Applied Sciences, Melbourne, was reliable and durable enough to take Thomson and a friend 493 miles from Bathurst to Melbourne at an average speed of 8.7 mp/h [4].

In 1901, Harley Tarrant produced the first Tarrant automobile, which was the first petrol-driven car built entirely in Australia in a small workshop in Melbourne. Before that, Tarrant had been using the shop to build engines. Tarrant was joined in this endeavour by bicycle maker, Howard Lewis. The car was powered by a rear-mounted 6 hp Benz engine. This car was followed by many improved designs, including the first fully enclosed car body made in Australia. Later models included locally produced components including: engines, gearboxes and rear axles [4] The sole surviving Tarrant is on display at the RACV City Club, on the chancery level.

In 1903, the Australian Motoring Association was formed in New South Wales, South Australia and Victoria to protect the interests of motorists. In 1924, this was followed by the Australian Automobile Association.

When Australia's first locally made car, a Holden FX, rolled off the production line in 1948 it was greeted with an excitement that befitted a symbol of a youthful nation taking its place among advanced economies. Such was the enthusiasm for an indigenous car that around 18,000 punters paid deposits to buy one without even seeing it.

Australia is best known for the design and production of 'large' sized passenger vehicles. This category has suffered a steady and sustained downturn in Australian markets [2], which has essentially resulted in the closure or forthcoming closure of all large-scale motor vehicle plants in the country.

Toyota's announcement on February 10th that it would join Ford and Holden in pulling out of carmaking in Australia, closing its assembly line in 2017, was greeted with commensurate dismay. Yet beneath the obligatory political blame-mongering was an acceptance that everything has turned against carmaking in Australia.

The departure of the last big carmaker is as inevitable as an argument at a barbecue over the merits of a Ford versus a Holden. Mitsubishi closed its plant in Adelaide six years ago. The latest exodus began last May, when Ford said it would go in 2016. Holden, part of General Motors, said just before Christmas that it would quit in 2017.

The industry has been in decline for years. A decade ago Australia produced 400,000 cars a year; in 2013 it churned out just over 200,000. Although Australians bought a record 1.14m cars in 2013, the market is small in global terms, and fragmented, with the three most popular models each clocking up just 40,000 sales. Sadly, none of these was assembled at home.

Australia makes the wrong sort of motors. As in most rich countries, drivers increasingly want smaller fuel-efficient vehicles and fashionable SUVs. Of the six models made in the country only two, the Holden Cruze and the Ford Territory, fall into these

categories. For cheap mass-market vehicles, on which profit margins are slender, high-volume, low-cost production is vital. But Australian factories are small: the biggest, Toyota's, makes just 100,000 cars a year. As a rule, plants making mass-market vehicles need to turn out at least 200,000 a year to have a hope of making them cheaply enough.

Australian plants lack economies of scale but not employees with bulging wage packets. Only German car workers earn more. The lack of scale works its way down to local component-makers. These are also small by global standards, so parts are pricey. The result, according to both Ford and Holden, is that manufacturing costs are four times those in Asia and even twice European levels. That is a death sentence in a global market with plenty of spare capacity, even before considering the added burden of Australia's strong currency, buoyed by commodity exports. This hits locally made cars' competitiveness both at home compared with imported ones and abroad, where two-fifths of production ends up.

Decades of generous state handouts have "forestalled but not prevented" the car industry's problems, concluded a recent report by the government's Productivity Commission. Since it came to power last September, the conservative administration led by Tony Abbott has declined to prop up struggling firms. It refused Holden's plea for more subsidies in December. Last month it rejected an A$25m ($22.5m) bail-out for SPC Ardmona, a fruit-canning business that Australians regard with a sentimentality matched only by that for Holden. Mr Abbott says the role of creating jobs belongs to business, not government.

One commentator lamented that Australia will join Saudi Arabia as the only G 20 countries without a car industry. But carmaking is a small and unprofitable part of a shrinking manufacturing sector, employing relatively few, in an economy dominated by services and resources. The main damage caused by the carmakers' departure is to Australians' self-esteem.

Література:

1. "Australia's ailing car industry in desperate need of a saviour". Fairfax Media (drive.com.au) 2013p. Retrieved 2014-02-10.

2. "Automotive industry". Encyclopaedia Britannica. Retrieved 25 March 2014.

3. "Technology in Australia 1788–1988". Australian Science and Technology Heritage Centre. 2000p. 478. Retrieved 2012-07-31.

4. "Technology in Australia 1788–1988". Australian Science and Technology Heritage Centre. 2000p. 479. Retrieved 2012-07-31.

УДК: 811.111

CAUSES OF THE ECONOMICAL CRISIS AND MEASURES FOR ITS PREVENTION
(Причины экономического кризиса и меры его предотвращения)

Шевченко О. О. – студент групи А2/4

Науковий керівник – Ігнатенко Ж. В., викладач кафедри іноземних мов МНАУ

The current financial crisis has become an earthquake to the world's economic system. Have started in the Ukraine, it has rapidly overcome the boundaries of the States, bringing unemployment and financial recession along. One can hardly say whether it will last long or is going to slump. The following remains obvious, if we don't want its recurrence in future, we should investigate its root causes now.

The world economic system endures times of prosperity as well as followed by inevitable declines. The circulating scheme is characterized by the rise of manufacturing and it is following recession, thus permitting to keep to the world financial and economic balance order. No one in the world was ready to take the burdens of the economic crisis on the shoulders and to resist its unpredictable consequences. In spite of the fact, almost everybody

understood how important it is to examine the reasons of it.

In my opinion there are several important factors to discuss, which obviously have affected the present economic situation. First of all it is the spendthrift lending or, in other term, the so-called housing price bubble. Every family buying a house can take a loan from the bank, which should be given back. In order to return money to the bank, the family first of all should take the house it can afford. Otherwise it will not be able to pay the money back. In the recent years the prices on real estate have been so high and raising so quickly like a bubble. It has resulted in the fact that people started taking loans, which they can't pay off. Many banks' borrowers got unable to make their mortgage payments. As a result, the mortgage market was undermined.

This was just the beginning. One of the consequences was the fall of prices on real estate. The institutions and businesses depending on real estate prices or making money on real estate underwent the risk and suffered losses. To such companies belong Freddie Mac and Fannie Mae. It was the blow to the financial system in general, which led to the problems in other pecuniary stocks. This process, started with the bank system and led to the banking liquidity crisis, affected all financial and economic sectors of business all over the world.

Another reason of the present economic crisis is the unrestricted emission of American dollars. The emission of the most wide-spread world currency was strictly controlled by the government of the USA. Each dollar had gold equivalent in the gold reserve of the States. Purchasing capacity of it corresponded to the quantities of products manufactured. That's not how things stack any more up today. As a result while the USA was loosing its positions on the world market, the dollar was weakening in the world.

To sum it up one can say that the root cause of the current economic crisis lie in the ineffective policies of the economic and financial sectors of the leading and developing countries in the world. One should take into account the root causes to oust its re-occurrence in future.

How to Avoid the Next Financial Crisis

The recent Libor and money-laundering scandals, along with

the trading losses at JPMorgan Chase (JPM), have brought further unwanted headlines for the banking industry. These scandals, coming after a financial crisis that was caused by inappropriate behavior by bankers, is leading politicians and regulators to increasingly ask: "Why do we see a disproportionate amount of inappropriate behavior emanating from the banking industry?"

As we search for a plausible explanation, it may be worthwhile to consider what the academic research in the field of social psychology tells us. After 50 years of research, there is one thing that we know for sure: What determines how we behave is not so much our education, attitudes, or personal values, but the underlying environment (or situation) in which we find ourselves. Much more than we'd like to believe, the environment influences our every move and determines how we behave. The implication of this finding is profound: If you want to change how people behave, don't tell them. Instead, change the underlying environment that produced their "bad" behavior in the first place.

This may sound simple enough, but the truth is that we always underestimate the influence of the environment and focus instead on the instant gratification that comes with punishing the responsible individuals. Certainly we need to punish all guilty parties, but the evidence from social psychology will tell us that this won't change "bad" behavior from other individuals operating in the same environment and won't therefore prevent the next scandal.

The question before policymakers is how to avoid such breakdowns in the future. As far as I can see, the only way to address such issues is to recognize that euphoria-driven bubbles are an inherent consequence of human nature over which we have little or no control. Successful financial policy, in my experience, ironically spawns the emergence of bubbles. There was never anything resembling financial euphoria, or the bubbles it creates, in the old Soviet Union, nor is there in today's North Korea. At the Federal Reserve during my tenure, we often joked that our greatest fear was that policy might be too successful. Achieving an underlying stable rate of growth and low inflation appears to have been a necessary and sufficient condition for the emergence of a bubble. We would

conclude with mock seriousness that optimum monetary policy for bubble prevention was to create destabilizing inflation.

Can bubbles be prevented from rising once markets are in the grip of euphoria? At the Fed, we tried to defuse the nascent dot-com bubble of 1994. We failed. We raised the federal funds rate by 300 basis points and stopped a budding financial boom, as we called bubbles back then — stopped it dead. For the first time, we believed we had achieved a "soft landing": a tightening of monetary policy that defuses a bubble but that is not strong enough to precipitate a recession. Or so we thought. For as we were patting ourselves on the back, the markets apparently assumed that, because the 300 basis point rise did not break the back of the economy, the economy must be far stronger than investors contemplated. The equilibrium level of the Dow Jones Industrial Average had apparently been significantly elevated, and the market took off shortly after we stopped tightening. The presumption that monetary policy can incrementally defuse a bubble is true only when an econometric model is constructed with such a mandate. It became clear in the latter part of the 1990s that the very act of defusing a bubble could alter its subsequent trajectory.

Література:

1. IMF External Relations Department

2. CFA Institute Conference Proceedings Quarterly September 2010

3. Abigail Warren '15 is a writer intern for the Cornell Chronicle.

УДК: 811.111

AGRICULTURE IN UKRAINE

Шеденко І. В. – студентка групи А1/4

Науковий керівник – Ганніченко Т.А., к.пед.наук, доцент кафедри іноземних мов МНАУ

Ukraine is blessed with rich farming and forestry resources. According to the Statistical Year Book of Ukraine (1996), about 71 percent of the country's surface (41 million hectares) was used for agricultural activities.About 80 percent of the agricultural area is

arable land, two-thirds of it the agriculturally rich "black soil" .The primary food harvest products are barley, maize, potatoes, rice, soybeans, sugar beets, and wheat. The primary meat products are beef and veal, lamb, pork, chicken, horse, and rabbit. In terms of value, the largest agricultural exports in 1998 were refined sugar, raw sugar, beef and veal, sunflower seed, and fish. The total value of agricultural exports in 1998 estimated $1.898 billion. The total value of agricultural imports in 1998 was $999 million. The largest single crop produced in 1999 was potatoes at 15.4 million metric tons. The number-two crop was sugar beets at 13.89 million metric tons, followed by wheat at 13.47 million metric tons. The main livestock product was beef and veal with 786,000 metric tons, followed by swine with 668,000 tons, and chicken with 194,500 tons.In recent years, agricultural production has declined drastically because of a decrease in the number of tractors and combine harvesters in working order and to the lack of fertilizers and pesticides. According to official data, between 1991 and 1997, the number of tractors in use decreased from 497,300 to 361,000. (In order to operate efficiently, it is estimated that the country would need 515,000 tractors in use.) Similar shortfalls exist for harvesting combines. Between 1990 and 1997, the consumption of pesticides and fertilizers per hectare declined about 78 percent. From 1995 to 1999, crop production declined by an average of almost 10 percent per year, while livestock production declined by an average of 9 percent per year. These shortfalls in agricultural inputs reflect declining investment in agriculture, and feed directly into declining production.Under communism, agricultural lands were held by the government and worked by the people, who owned no land. Privatization planned to shift most such land into the hands of individuals and farming collectives (jointly held farming cooperatives). By August 1995, the transfer of lands into private hands had begun. Over 8 million hectares of land had been privatized, with plots averaging 5 hectares. By 1996, most of the agricultural land in Ukraine was in collective and private hands, although 40 percent was still owned by the government. Household plots and private farms accounted for about 15 percent of the Ukrainian territory and they filled an important role

in the delivery of products to the marketplace.In general, the agricultural sector is experiencing serious internal difficulties, due to the transitional nature of the economy. A new policy and direction for Ukraine's agricultural sector is necessary. Agriculture poses the greatest challenge to the survival of Ukraine's political leaders, because almost half of the Ukraine's population live in rural areas.Although typically known as the industrial base of the Soviet Union agriculture is a large part of Ukraine's economy. In 2008 the sector accounted for 8.29% of the country's GDP and by 2012 has grown to 10.43% of the GDP. Agriculture accounted for $13.98 billion value added to the economy of Ukraine in 2012, however despite being a top 10 world producer of several crops such as wheat and corn Ukraine still only ranks 24 out of 112 nations measured in terms of overall agricultural production. Ukraine is the world's largest producer of sunflower oil, a major global producer of grain and sugar, and future global player on meat and dairy markets. It is also one of the largest producers of nuts. Ukraine also produces more natural honey than any other European country and is one of the world's largest honey producers, an estimated 1.5% of its population is involved in honey production, therefore Ukraine has the highest honey per capita production rate in the world. Because Ukraine possesses 30% of the world's richest black soil, its agricultural industry has a huge potential. However, farmland remains the only major asset in Ukraine that is not privatized. The agricultural industry in Ukraine is already highly profitable, with 40-60% profits, but according to analysts its outputs could still rise up to fourfold.Ukraine is the world's 6th largest, 5th if not including the EU as a separate state, producer of corn in the world and the 3rd largest corn exporter in the world. In 2012 Ukraine signed a contract with China, the world's largest importer of corn, to supply China with 3 million tonnes of corn annually at market price, the deal also included a $3 billion line of credit extension from China to Ukraine. In 2014 Ukraine total grain crop was estimated to be record 64 million metric tons, however as several regions are claiming their independence due to the War in Donbass and the Crimea Crisis the actual available crop yield was closer to 60.5

million metric tons. By October Ukrainian grain exports reached 11 million metric tons. Due to the decline of the metallurgy industry, Ukraine's top export in prior years, as a result of the War in Donbass agricultural products accounted for the nation's largest exported set of goods.

УДК: 811.111

AN INDISPENSABLE SOURCE OF ENERGY: THE SUN, AIR AND WATER

(Незамінне джерело енергії: сонця, повітря та води)

Юрченко В. М. – студентка групи Ен 1/1

Науковий керівник – Ігнатенко Ж.В., викладач кафедри іноземних мов МНАУ

The energy of the sun

The leading environmentally clean source of energy is the sun. A small part of solar energy is currently used only due to the fact that the existing solar cells have a relatively low efficiency and very expensive. For the industry, which requires large amounts of energy, you can use km wasteland and desert, completely filled with powerful solar power plants. Much solar energy goes to heating of the earth's atmosphere, oceans and land masses. The economy often uses solar energy - solar plant (different types of solar greenhouses, water heaters, dryers).

Energy wind

The wind energy has several significant drawbacks that makes it difficult for energy use, but have not touched it the main advantages of ecological purity. The mill is capable of operating with high efficiency. The wind is very unpredictable - often changes direction, suddenly quiets down even in the most windy areas of the globe, and sometimes reaches such force that breaks the windmills. Wind turbines are not harmless: they affect the flight of birds and insects, roar, reflect radio waves rotating blades. Currently, the plant is able to operate with very little wind. The blade pitch is automatically adjusted so as always to provide the maximum it is possible to use wind energy.

To compensate for the variability of wind, we can build a huge wind farm. Windmills are built in the huge open area, because they cannot be placed too closely or they will block each other. Such “farm” are so far in the United States, in France, in England, but they occupy a lot of space; in Denmark wind farm placed in shallow coastal waters of the North sea, where it doesn't hurt anyone, and the wind is much stronger there than on the land.

Wave energy

Engineering has already developed and experimentally tested a highly efficient wave power plant which is able to work effectively even in low anxiety or even with complete calm. At the bottom of a sea or a lake is set a vertical pipe in the underwater part of the window; getting into it, a deep wave (and it is almost constant phenomenon) compresses the air in the mine, and it turns a turbine generator. Thus, the wave power plant works continuously in almost any weather, and current submarine cable is passed to the shore.

The first in the world North-Eastern University in Boston was drafted ocean power under the guidance of the Director of the laboratory energy of water and wind. It was built in Florina Strait, where the Gulf Stream is. The water consumption of 25 million cubic meters per second, which is 20 times total. Experts estimate that the funds invested in the project will pay for itself within five years.

Elastic coating the surface of the blade reduces friction on the water and eliminates the accumulation of algae and shellfish. The turbine efficiency Gorlova three times higher than conventional turbines.

Conclusion

Energy is the driving force of any production. The fact is that there is a large number of relatively cheap energy, largely contributed to the industrialization and development of the society. Currently, however, with the huge population and production, and energy consumption is becoming potentially dangerous. Along with the local environmental consequences, involving air and water pollution, soil erosion, there is a danger of global climate change as a result of the greenhouse effect.

УДК 535.686:811.111

ATMOSPHERIC ELECTRICITY

(Атмосферна електрика)

Яковчук Ю. С. – студентка групи Ен5/1м
Науковий керівник – Артюхова О.В., к.пед.наук, доцент кафедри іноземних мов МНАУ

Electricity plays such an important part in modern life that in order to get it, men have been *burning* millions of coal. Coal is burned *instead* of its being mainly used as a source of valuable chemical *substances* which it contains. Therefore, finding new sources of electric energy is a most important problem that scientists and *engineers* try to solve. *In this connection* one might ask: "Is it possible *to develop* methods of harnessing lightning?" In other words, could atmospheric electricity be transformed into useful energy? Indeed, hundreds of millions of volts are required for a lightning spark about one and a half kilometre long. However, this does not represent very much energy *because* of intervals between single thunderstorms. As for the power spent in producing lightning flashes *all over the world*, it is only about 1/10,000 of the power got by mankind from the sun, both in the form of light and that of heat. Thus, the source in question may interest only the scientists of the future.

It has already been *mentioned* that atmospheric electricity is the earliest manifestation of electricity known to man. However, nobody understood that phenomenon and its properties until Benjamin Franklin made his kite experiment. On studying the Leyden jar (for long years the only known condenser), Franklin began thinking that lightning was a strong spark of electricity. He began experimenting in order to draw electricity from the clouds to the earth. The story about his famous kite is known all over the world.

On a stormy day Franklin and his son went into the country taking with them some necessary things such as: a kite with a long string, a key and so on. The key was *connected* to the lower end of the string. "If lightning is the same as electricity," Franklin thought, "then some of its sparks must come down the kite string to the key." Soon the kite was flying high among the clouds where lightning flashed. However, the kite having been raised, some time passed before there was any proof of its being *electrified*. Then the rain fell and wetted the string. The wet string conducted the electricity from the clouds down the string to the key. Franklin and his son both saw electric sparks which grew bigger and stronger. Thus, it was proved that lightning is a discharge of electricity like that got from the batteries of Leyden jars.

Trying to develop a method of *protecting* buildings during thunderstorms, Franklin continued studying that problem and invented the lightning conductor. He wrote necessary instructions for the installation of his invention, the principle of his lightning conductor being in use until plow. Thus, protecting buildings from strokes of lightning was the first *discovery* in the field of electricity employed for the good of mankind.

Ever since Volta first produced a source of continuous current, men of science have been forming theories on this subject. For some time they could see no real difference between the newly-discovered phenomenon and the former understanding of static charges. Then the famous French scientist Ampere (after whom the unit of current was named) determined the difference between the current and the static charges. In addition to it, Ampere gave the current direction: he supposed the current to flow from the positive pole of the source round the circuit and back again to the negative pole.

We consider Ampere to be right in his first statement but he was certainly wrong in the second, as to the direction of the current. The student is certain to remember that the flow of current is in a direction opposite to what he thought.

Let us turn our attention now to the electric current itself. The current which flows along wires consists of moving electrons. What can we say about the electron? We know the electron to be a minute particle having an electric charge. We also know that that charge is negative. As these minute charges travel along a wire, that wire is said to carry an electric current.

In addition to travelling through solid, however, the electric current can flow through liquids as well and even through gases. In both cases it produces some most important effects to meet industrial requirements.

Some liquids, such as melted metals for example, conduct current without any changes to themselves. Others, called electrolytes, are found to change greatly when the current passes through them.

When the electrons flow in one direction only, the current is known to be d.c, that is, direct current. The simplest source of power for the direct current is a buttery, for a buttery pushes the electrons in the same direction all the time (i.e., from the negatively charged terminal to the positively charged terminal).

The letters a.c. stand for alternating current. The current under consideration flows first in one direction and then in the opposite one. The a.c. used for power and lighting purposes is assumed to go through 50 cycles in one second. One of the great advantages of a.c. is the ease with which power at low voltage can be changed into an almost similar amount of power at high voltage and vice versa. Hence, on the one hand alternating voltage is increased when it is necessary for long-distance transmission and, on the other hand, one can decrease it to meet industrial requirements as well as to operate various devices at home.

Although there are numerous cases when d.c. is required, at least 90 per cent of electrical energy to be generated at present is a.c. In fact, it finds wide application for lighting, heating, industrial, and some other purposes.

One cannot help mentioning here that Yablochkov, Russian scientist and inventor, was the first to apply a.c. in practice.

Література:

1. Електронний ресурс. – http://kamts1.kpi.ua/files/ebook/iee/01.course/01.term/10.lesson.pdf/

2. Електронний ресурс. – http://share.auditory.ru/pub/TEXT%20111.doc/

3. Електронний ресурс. – http://lingualeo.com/ru/jungle/electric-current-311487#/page/1

Наукове видання

Матеріали студентської конференції Миколаївського національного аграрного університету

м. Миколаїв,
26 березня 2015 р.

Технічний редактор: К.В. Тішечкіна

Формат 60х84/16. Ум. друк. арк. 12,5
Тираж 100 пр. Зам. №__

Надруковано у видавничому відділі
Миколаївського державного аграрного університету
54020, м. Миколаїв, вул. Паризької комуни, 9

Свідоцтво суб'єкта видавничої справи ДК № 4490 від
20.02.2013 р.