ABSTRACTS

UDC 621.3(09)

The usage of electric machines by the industrial enterprises of Slobozhanschina at the end of the XIX century. / I. A. Annenkov // Bulletin of NTU "KhPI". Series: "The history of science and technology". – Kharkiv : NTU "KhPI", 2014. – №59 (1101). – P.3–10– Bibliogr.: 10. – ISSN 2079-0074.

The use of electric machines as an individual drive of means of production made it possible to apply new forms of production processes organization in industry. This, in turn, led to a significant increase in industry efficiency. This factor has given an impulse to expand the full-scale electrification: first, the industry, and then - the whole society. Thus, at the end of the XIX century the process of industrialization has moved from phase of industry mechanization to phase of society mechanization. This process was ambiguous in the Russian Empire and had certain regional differences. This paper considers a separate moment in the history of industrialization of Slobozhanshchina associated with the spread of electric cars there at the very beginning of industrializational processes. Here defined the saturation density of electrical machines on the regional enterprises, assessed compliance with the available pace of electrification of the local industry to the pace of regional industrialization. Established the reasons which led to the peculiarities of the process of electrification of means of production in Slobodska Ukraine industry in the late XIX century.

Keywords: electric machines, industrialization, electrification, industry, Slobozhanschyna, energetics.

УДК 621.9.002(477)(09)

Manufacture of machinery equipment at the Kharkov Locomotive Plant of the Russian society and mechanical (end of XIX - early XX century.) / N. G. Annenkova // Bulletin of NTU "KhPI". Series: "The history of science and technology". – Kharkiv : NTU "KhPI", 2014. – №59 (1101). – P.10–18– Bibliogr.: 19. – ISSN 2079-0074.

This article investigates the process of organizing the production of machine tools in the Kharkov locomotive plant (aka KhPZ) from its base till the nationalization of the Soviet government in 1919. It's revealed that there was a huge shortage of machine tools in the country at the time of the introduction of machine-tool direction in KhPZ. The shortage was caused by the rapid deployment of industrialization processes. Thus, the production of machine tools was becoming very profitable economically. These circumstances were the force that inspired the founders of the Russian locomotive and mechanical society to the organization of production machines at its factory in Kharkiv. With the advent of the industrial crisis and the fall in demand for machine tools, the majority of KhPZ owners lost their economic interest in the production of system tools. It was an occasion to curtail this activity at the plant. However, some results gave the analysis (in the national context) of how was going the introduction of machine tools on KhPZ and dynamics of production machines development in the factory. The results allowed to classify the corresponding stage of history of the machine tool industry in Ukraine as a transition period from the sporadic to systematic machine-tool construction. Production of machines at KhPZ was performing in a way not inherent to sporadic machine-tool construction. The way was a full-scale duplication of the original designs of others to sudden one-time orders having different nomenclature. Machines manufacturing was carried out here on a systematic identification of specific orders for the product range. And besides, this product range was provided by design documentation developed by own. On this basis, the author classified the nature of machine-tool construction organization as systematic.

Keywords: machining equipment, Kharkov Locomotive Plant, industry, factory, machine, Kharkiv region

UDC [929:378.2]:001.89"71":631:001(477)(Sapegin)

Study the biography of academician A.A. Sapegin as part of the history and development of agricultural science in Ukraine / N.V. Apostol // Bulletin of NTU "KhPI". Series:. – Kharkiv : NTU "KhPI", 2014. – № 59 (1101) – P.19–27. – Bibliogr.: 25. – ISSN 2079-0074.

The article presents the results of studying the state of historical and scientific study of life and activity of the outstanding scientist in the field of genetics and plant breeding with a worldwide reputation – Andrew Afanasevich Sapegin.

One of important information generators about the first years him scientific activity there are magazines of «Записки императорського общества сельскаго хозяйства Южной России», «Вісник сільськогосподарської науки та дослідної справи», «Селекція і насінництво», producing of scientific works of the All-union plant-breeding-genetic institute, scientific articles prepared to the 90year and 100year from the birthday of Andrew Afanasevich Sapegin and placed in scientific magazines «Цитология и генетика», «Український ботанічний журнал» and others like that.

The study of the state of research of life and activity of A.A. Sapegin showed that this problem did not have been left out of eyeshot both in soviet times and in modern. But integral scientific working of this question it was not carried out, that is why it requires further deep, summarizing of historical and scientific study.

Keywords: A.A. Sapegin, historiography of scientists, plant genetics, plant breeding, wheat varieties.

UDC 634.8:001(091/092)(477)

The prof. P.Ya. Golodriga's (1920–1986) scientific heritage in the context of the development of selection and physiology of viticulture / N. G. Bernar // Bulletin of NTU "KhPI". Series: "The history of science and technology". – Kharkiv : NTU "KhPI", 2014. – №59 (1101). – P.27–32 – Bibliogr.: 14. – ISSN 2079-0074.

The well-known Ukrainian scientists-selectioner and the talented organizer of viticulture science, Prof. Pavel Golodriga's activity is elucidated. His fundamental elaborations are the part of treasury of biological science and theoretical base for further development of breeding science in general. He contributed a lot in the development of hypothetic model of ideal variety, improved and worked out the new methods of selection process, allowed to shorten the period of obtaining of new variety for many times. P. Golodriga worked out the unique diagnosis express-methods of genotypical specific features of plants, used the vine as the model culture. He also worked out the method of making of complex artificial infection level for shorten the selection process on immunity. It is marked that he was the first who used the culture *in vitro* as a method of vine selection and established the genetically depended features of vine plants.

P. Golodriga is the author of 43 vine varieties, combined resistant to biotical and abiotical factors of environment with valuable economic qualities, which do not require the chemical controlling pests and diseases. He gave 40 years of his life to National Institute of viticulture and wine-making «Magarach» and showed himself not only as keen researcher and creative experimenter, but also as talented leader and efficient organizer of scientific collective.

Keywords: Pavel Holodriga, science, history, physiology, genetics and selection of vine; National Institute of viticulture and wine-making «Magarach».

UDC: 028:94(477.54) «18/19»

The deconstruction of the moral aspects of the reading moral in the discourse of science and education at the period of modern in late XIX – early XX centuries (C.-V. Langlois and P. Otlet). / S. K. Bondarenko // Bulletin of NTU "KhPI". Series: "The history of science and technology". – Kharkiv : NTU "KhPI", 2014. – №59 (1101). – P.32–41 – Bibliogr.: 18. – ISSN 2079-0074.

Trying to find the essence of positivism episteme, it is necessary to analyze its symbolism and metaphors, which refers to the practice of reading and organizing of knowledge. Note that the positivist interpretation of reading occurred synchronously with M. Dewey Decimal Classification, the system of O. Cont and «positive science» in general. The concept of «economy» and «intellectual practice» can be opened, based on kratology paradigm. From such point of view rising a problem of library science, as

optics of control over the content of the reader and the book, panopticon, physiology, classification, description, with the accumulation of knowledge and books, and management. Electronic format of recording, describing and monitoring in library science, which appeared on the background of the slogans of democratization, not really multiplies the freedom of intellectual activity, but only declares the principles and the ideal of «perfection» as well as at the time it was declared by positivists. Designing the reader and reading, at the level of language and level of systematization, in Modern period, and during the beginning of the XXI century, remains generally common. So, the idea of reading management and hygiene of reading in the works of intellectuals of the late XIX – early XX century and its impact on the presentation of the new reader and the practice of its producing in the context of contemporary studios on the History of the Culture of reading, including, for example, the history of V. Korolenko library and other libraries of Kharkov is explored. First of all, discusses the works of S. Langlois and P. Otlet in their historical and historiographical context. Analysis of metaphors shows that the idea of reading in the discourse of modernity formed under the influence of positivist views. In general, it is also inherent biologism. At the forefront there are metaphors of domination and subordination, order, optics, impact, acceleration and progress. The notion of reading is formed as an analog representation of the production. Moral aspect of the content of reading is pushed into the background. The main indicator of quality becomes «effective». Thus, the efficiency of itself has no specific definition. Perhaps this definition hides the desire to preserve their intellectual mediating position in the «text-reader» relationship. Inheritance by librarianship the main practices of positivist canons is the general problem of its crisis. To overcome this crisis, it is necessary to reconstruct the paradigm of librarianship based on transdisciplinarity.

Keywords: history of reading, reading culture, reading management.

UDC 631.4:001(477)"18/19"

Regulation of soil science research in the Ukrainian lands (the end of the XIX century – beginning of XX century) / V.E. Valchik // Bulletin of NTU "KhPI". Series: "The history of science and technology". – Kharkiv : NTU "KhPI", 2014. – №59 (1101). – P.41–46 – Bibliogr.: 9. – ISSN 2079-0074.

One of the important stages of forming of the state system of adjusting of scientific directions of ground-agrochemical researches was studied on Ukrainian earth, namely an end of XIX of century is beginning of XX of century In history of development of geography and cartography of soils of Ukraine these years were marked organization of the first inspections of the ground cover in Ukraine on scientific basis, and also by the origin of home agrochemical service. Scientific co-ordination of the ground inspections came true within the limits of state politics of that time power with active voice of the special societies - private creative associations of scientifically-educational elite. In addition, it is a period of active organization in Ukraine of experience fields not only on private basis but also on the state personal interest, on that the newest agrotechnical receptions of till of soil were developed and shots were tempered for realization of professional researches in agriculture.

Keywords: agropedology, agricultural chemistry, agriculture, science history, experienced fields.

UDC 93/94(477):631.17:661.15.001:929 Dushechkin

The history of the institutionalization of agrochemical science in Ukraine in the context of creative heritage of the Academician of Academy of Sciences USSR A. Dushechkin (to 140-anniversary of his birth). / V. A. Vergunov // Bulletin of NTU "KhPI". Series: "The history of science and technology". – Kharkiv : NTU "KhPI", 2014. – №59 (1101). – P.46 – 52 – Bibliogr.: 11. – ISSN 2079-0074.

The life and creative work of Academician of Academy of Sciences USSR A. Dushechkin in the development of agricultural experimental deed as a field of knowledge and organization are considered. His generating influence on the establishment and development of agro-chemical and physiological studies in Ukraine, especially for the needs of sugar production is revealed. It was established that the creative heritage of A. Dushechkin has about 200 scientific and popular works on agricultural chemistry, plant physiology, general farming, livestock, plant protection, soil science, microbiology,

agriculture, methodology, history of agronomy etc. His main works solved the problems of the dynamics of mobile forms of nitrogen in soil and its dependence on external conditions, particularly of organic fertilizers, forms and dynamics of phosphorus in soil and ways to improve the efficiency of phosphate fertilizers and justify rational methods of fertilization combination of different methods and timing of their introduction and determine the most effective use of Ukrainian local fertilizers. No less significant is his contribution to the organizational basis of coordination of agricultural research deed in general and for the needs of agrochemical science in particular. For the first time the A. Dushechkins' achievements in agrochemical institutionalization of science in Ukraine are described. The research of the Dushechkin' contribution to the establishment and development of agricultural research case in the Ukrainian lands during the 1903-1956 was made by historical and scientific analysis with new archival documents.

Keywords: agricultural chemistry, plant physiology, agricultural research deed, All-Russian Society of Sugar Manufacturers, Agricultural Scientific Committee of Ukraine at the People's Commissariat of USSR, Institute of Agricultural Chemistry, Central Agrochemical Laboratory.

UDC 636.4:612.3:68.01.09

The activity of scientific research institutions of Ukraine with the development of physiology of animals' digestion in the 20-th century / V. M. Voloshchuk, K. Yev. Yudina // Bulletin of NTU "KhPI". Series: "The history of science and technology". – Kharkiv : NTU "KhPI", 2014. – №59 (1101). – P.52–64– Bibliogr.: 14. – ISSN 2079-0074.

Historical period preceding the start of a network of national research structures with digestive physiology of animals has been associated with an exacerbation of social contradictions in Ukraine: the economic crisis of 1900-1903, the Russian-Japanese War of 1904-1905. It was accompanied by increasing taxes, rising prices on the ground that it exceeded the actual cost, and acute land shortage, lack of jobs.

Important historical events in the lives of scientists and specialists of livestock profile was the creation in 1929 based on a zootechnical department of the Kyiv regional agricultural research station (KRARS) independent research institution - Kyiv zootechnical research station (KZRS), which is subordinated to the Commissariat of USSR. It was the reorganization on the base of Poltava zootechnical research station of Ukrainian Institute of Experimental breeding into the All-Union Scientific Research Institute of Pig Breeding. The opening of the Institute of animal biology of NAAS (Lviv), which was established as the Ukrainian Research Institute of Physiology and Biochemistry of agricultural animals in November 1960 (Resolution №1799 of Council of Ministers of USSR) on base of the Department of Biochemistry of agricultural animals of Scientific Research Institute of Agriculture and Livestock in western regions of the USSR.

In the 20' years of twentieth century it was started creating a network of research institutes. The main institutions which involved with the problem of pig breeding and in particular the pig digestive physiology were Pig Breeding Institute and agricultural production of NAAS (Poltava) and the Institute of animal biology of NAAS (Lviv). Scientists of the Institute in Poltava worked on regarding the physiology of digestion in pigs and based on the results of these experiments have established detailed rules of feeding different gender and age groups of pigs and developed recipes for mixed feed-stuffs and premixes for them.

Key words: activities, research institutions, Ukraine, physiology, digestion, animals.

UDC 53(091)

Aesthetical aspect of modern physics paradigm / S.D. Gapochenko, A.A. Mamalui // Bulletin of NTU "KhPI". Series: "The history of science and technology". – Kharkiv : NTU "KhPI", 2014. – №59 (1101). – P.64–71– Bibliogr.: 21. – ISSN 2079-0074.

Perspective concept of doing the higher technical education more humanitarian is including in its content the various connections between natural-science and humanities. The aesthetic maintenance of disciplines, exposed in a historical context, can come forward as one of base integrating elements. In this connection, the study of the role of aesthetic principles: beauty, harmony and symmetry in developing the natural sciences and, in particular, physics, as a fundamental discipline, having the

protracted history, is actual. The aim of present work is the study of essence of harmony and symmetry principles in physics of XX century and their roles in verification of a physical theory. It is shown, that works of A.Einstein on the General Theory of Relativity and E. Noether discovery of the profound connection between symmetries of a physical system and conservation laws resulted in claim of key role of the principle of symmetry in opening the physical laws. In modern physics of elementary particles the symmetry is considered as a factor, determining the existence of different groups and families of elementary particles. Symmetry of physical laws is a leading idea in development the Grand Unification (Theory of Everything) that must unite four known physical interactions. Thus, aesthetical principles: the harmony, as single picture of the world, and the symmetry, as mathematical method of understanding the harmony, determine the development of modern physics. A key role in the development of a physical theory belongs to principle of symmetry, as invariance of physical laws of physics concerning of certain mathematical transformations.

Key words: modern physics, aesthetical principle, beauty, harmony, symmetry, physical theory, Theory of Everything, history, doing the higher technical education more humanitarian

UDC 62(09)

Istoriografiya issledovaniy razvitiya L'vovskogo politekhnicheskogo instituta (1960-80-ye gody). / A. V. Helesh // Bulletin of NTU "KhPI". Series: "The history of science and technology". – Kharkiv : NTU "KhPI", 2014. – №59 (1101). – P.71–82– Bibliogr.: 27. – ISSN 2079-0074.

The article deals with some of the literature to be historiographic analysis of scientific and journalistic publications relating to the history of Lviv Polytechnic Institute during the 1960-80's. To provide complexity of cross-disciplinary research all our literature divided into three groups. All literature systematized according to standard classification. This method of analysis and synthesis of literary materials obtained faktazh became the basis for selecting areas of historical study, each of the stages, which reflects the need for disclosure of scientific and naukovedcheskih aspects determine the theoretical and practical direction of the research. Analysis of the research activities in the study period described in the literature by various authors, made it possible to trace the processes of scientific research in the LPI from the time when scientific research carried out by scientists lone deployment to the period of research activity in the creative team, including in industrial laboratories and scientific schools were formed and started to work effectively since the 1950s and studied for years.

Keywords: Lviv Polytechnic Institute, historiography, literature.

УДК 66.0:504

Alexander P. Lidov how Fundator Ecological trends in chemical technology / V. V. Golova // Bulletin of NTU "KhPI". Series: "The history of science and technology". – Kharkiv : NTU "KhPI", 2014. – №59 (1101). – P.83–89– Bibliogr.: 7. – ISSN 2079-0074.

In the article it is considered one of the main directions of professor of Kharkov Technological Institute Alexander Pavlovich Lidov scientific activities at the end of XIX – at the beginning of XX century. It is analyzed the cutting-edge researches by A.P. Lidov as the founder of the environmental trends in chemical engineering. In his more than 30-years scientific activity A.P. Lidov combined work in the areas of organic chemistry: paint, calico-printing, oil and gas business, dry distillation of wood, leather, glue factory and stearic production and so on. The scientist is a pioneer in research of the hazard wastewater. In particular, he perfected and approved in the Russian Empire Khlopin`s way of paints division into toxicity categories for the humans. So, Alexandr Pavlovich Lidov laid the foundations of ecological direction of chemical technology in the Kharkov practical technological institute.

Keywords: chemical technology, environmental direction, bleaching, dyeing, wastewater emissions, saving resources.

UDC 50 (091)

Institute of Biology of South seas named by A.A. Kovalevsky National Academy of Sciences of Ukraine: Brief Historical Essay (1963-1990) / G.L. Zvonkova // Bulletin of NTU "KhPI". Series: "The history of science and technology". – Kharkiv : NTU "KhPI", 2014. – №59 (1101). – P.89 – 96 – Bibliogr.: 13. – ISSN 2079-0074.

This article is about history of science center of Ukraine national academy. The main task of this Institute was to explore problems of Oceans. The scientists of institute answered some important questions in: Nuclear biology, Chemistry, Environmental protection of water resources. Researches took place in Mexico, Caribbean sea, tropical Atlantic ocean. Also, there was a testing of new kinds of equipment and defenses of new submarines.

After Chernobyl, the Institute took part in investigating consequences of nuclear catastrophe. They investigated: Black and Mediterranean sea; Dynai, Dniper and other rivers on nuclear danger. But exploring cleanliness of Black and Azov seas were left unattended, which had very bad consequences. There were no cooperation of Institute with local government which led to spoil of many rivers and lakes of Ukraine.

Keywords: science, sea, expeditionary observations, ocean, sea radiobiology, radioecology, biological productivity, marine organisms, ecosystems, microorganisms, water exchange

UDC 625.09

The development of diesel traction in the USSR (20 - 30 years of the XX - th century). / Yu. V. Kosovets // Bulletin of NTU "KhPI". Series: "The history of science and technology". – Kharkiv : NTU "KhPI", 2014. – №59 (1101). – P.96–102– Bibliogr.: 5. – ISSN 2079-0074.

The article deals with the development of diesel traction in the USSR during the 20-30 years of the XX - th century. The article states that the projects of locomotives' types, which were subject to experimentation, had been developed by Soviet engineers. The work involved design offices of the USSR locomotive-building plants, the technical bureau of diesel commission under the People's Commissariat of the means of communication (PCMC), as well as a number of special interest groups. Diesel commission under the People's Commissariat of the means of communication (PCMC), held a central place in all work on the creation of locomotives and their experimental testing. The article highlights the contribution of the professor Ya. M. Hakkelia into the locomotive development, the engineers of locomotive-building plants: "Chervonyi putilovets" in Leningrad, of the Kolomenskyi plant which in 1932 already created a project of a serial locomotive with individual traction motors and passed to its mass construction; as well as the Moscow factory "Dynamo" and Kharkiv electromechanical plant. In the 20-30 years of the twentieth century extensive researchers in the field of creating original locomotives with special thermal cycles, new transmissions, power plants, allowing the use of various sorts of liquid, solid and gaseous fuels were held in the Soviet Union. Later, however a leading role in train operation began to play locomotives with electric transmission and engines, working on liquid fuel.

Key words: diesel locomotive, locomotive traction, science, engineering, scientific research work

UDC 631.1:57(092)

Illia Mykhailovych Poliakov: thorny path of the scientist / V. M. Ogerelyeva // Bulletin of NTU "KhPI". Series: "The history of science and technology". – Kharkiv : NTU "KhPI", 2014. – №59 (1101). – P.102–109– Bibliogr.: 14. – ISSN 2079-0074.

In the work the foundation and activity of Institute of Genetics and Selection of Academy of Sciences of Ukrainian Soviet Socialistic Republic, Ukrainian scientific-research institute of plant growing, genetics and selection nd. a V. Ya. Yuriev in city Kharkiv is interpreted. The course of life and creative development of a famous home scientist who is famous worldwide in the field of biology and agriculture Illia Mykhailovych Poliakov is analyzed. A key historical role of the eighth headmaster of the scientific establishment is proved. Important achievements of the Ukrainian NDIRCaG, initiated in 60-ies of the XX century, are showed.

The aim of the article is to show historic significance of the establishment, where the famous scientist made his scientific way. His creative development he devoted to the home science. A typical

characteristic of his scientific activity is a deep versatile erudition, which brought a deserved authority to him in the wide ranges of figures of biological and agricultural sciences, and also in the ranges of philosophers and scientific historians. First-rate biologist-evolutionist, deep thinker-theorist, state and public figure, prominent geneticist and selectionist, skilled organizer. He was the first in the world who proposed to use radioactive isotopes in the exploration on plant fertilizing and elaborated the procedure of such exploration.

In his works two main directions are clearly watched: theoretical explorations on problems of general biology, history of biology and Darwinism; experimental explorations in the field of biology and physiology of pollination – plant fertilizing and genetics.

Keywords: Plant Production Institute nd. a V. Ya. Juriev, crop fertilizing, selection, history, biology, genetics, agricultural science, Kharkiv

UDC: 371.3:33

The history of business education in Ukraine (the second half of XIX - early XX century .: historiography of the problem)/ Yu. O. Oleynik // Bulletin of NTU "KhPI". Series: "The history of science and technology". – Kharkiv : NTU "KhPI", 2014. – №59 (1101). – P.109–117– Bibliogr.: 10. – ISSN 2079-0074.

The scientific foundation of the domestic economic education was laid in the second half of XIX – the beginning of XX century. The article analyzed the experience of studying the process of formation of economic education, presents an analysis of the pre-revolutionary, Soviet and post-Soviet literature on the subject in question and adjacent to her scientific problems. The basis of the periodization and classification of sources and literature on the topic under study used two main criteria: first, the main stages of the socio-political and socio-economic development of our country, first in the Russian Empire, the USSR, and later, after the proclamation of its independence. Secondly, the level and state of development of national historical, educational and economic science.

New concepts, ideas, theories more easily understood in their dialectical understanding of the unity of the same experiences that tested in the practice of Ukrainian education in past times. Based on the analysis it can be done all the advantages and disadvantages of modern educational activities and to evaluate the effectiveness of its use.

Analyzed the sources and literature, which highlights different aspects of the history of commercial education, suggests that the current level and extent of research known under development in the Soviet historiography. However, when a large positive value we used in scientific papers are considered only some individual stages of the process of becoming a commercial education. Despite placed in the national historiography questions about the factors that contributed to the creation of special schools, analysis of teaching forms, methods, scientific and educational work on the preparation of commerce and finance and economics, has not yet been implemented. This area of scientific research on the background of the current state of national historiography gained considerable prospects. Further in-depth study of this problem in the context of the study setting business education in different types of local schools at second part of XIX - the beginning of XX century remains actual.

Keywords: economic education, source, historiography, historical science, education, research.

General designer for agricultural machinery (for 100-th birthday anuversary I. A. Koval) // I. V. Parsadanov, A. G. Kosulin, N. I. Litvintseva, N. V. Pysarskaya // Bulletin of NTU "KhPI". Series: "The history of science and technology". – Kharkiv : NTU "KhPI", 2014. – №59 (1101). – P.117–124– Bibliogr.: 10. – ISSN 2079-0074.

Dedicated to Designer -in- Chief and the Head of Design Bureau of mean power engines, Hero of Socialist Labor, Doctor of Science Ivan Andriyovich Koval. The main steps and direction of design and research activities, the results achieved in developing and maintaining the high technical level of SMD diesel engines for agricultural machinery are presented.

It is shown that I.A. Koval in his activities hold the principles of finding and implementing radically new engineering solutions namely the creation of compact boosted diesel engines, engines for the various types of farming machines, the implementation of turbochargers and air intercoolers. This allowed the group led by him to create a high-performance diesel engines. SMD engines designed under

the direction of I.A. Koval were installed on all combine harvesters and on 60% of tractors which were produced in the USSR.

Keyword: Ivan Andriyovich Koval, engine, diesel, design bureau.

UDC 63(091):636.27

Theoretical, methodological, scientificl and organizational aspects of creation simentalskoy cattle breed (historical aspect) / S.M. Ryzhuk // Bulletin of NTU "KhPI". Series: "The history of science and technology". – Kharkiv : NTU "KhPI", 2014. – №59 (1101). – P.124–129 – Bibliogr.: 6. – ISSN 2079-0074.

Simentalska breed — one of the most the oldest breed in the world. Her Descendants were left to the Switzerland in the middle of V century of our era. Name of breed takes place from river Simme, in this valley created best group of this breed. In the development of breed marking some stages. On the first stage (V–XVI c.) took place spreading in Switzerland left there burgundami from Skandinavii gothskogo cattle, his gradually improvement and forming Simentalskoy breed (type of cattle, tender — primitive). In the second stage (XVII–XVIII c.) took place trading by the cattle inside of country and outside. It is set order of estimate of cattle, whom showed in the exhibition (his type left primitive). During third stage (XIX c.) was adopted first law about improving of stock–raising (1809 year): took place constitution value on exhibitions (in 1857 year in Bern, 1856 and 1878 years in Paris), adopted herdbook of alpine spoted breed (1879 year) and Switzerland stock–raising union of bernskoy spoted breed (1891 year). Simmentals became biggest, got rough constitution. Fourth stage (first one third XX c.) marked by introduction by account of original of animals, selection them by height (1910 year — height of cows in withers 147 sm; 1925 year — 150 sm), by introduction tagging of cattle by ears labels (1923). In the fifth stage (middle XX century) executed transformation type of animal (advantages became give lowers animals, standard of height of cows in withers was 137–147 sm, bulls — 147–157 sm). In the sixth stage (second half XX century) executed wide verification of cows about milk production, entered new standart of breed (height cows in withers 136–142, bulls — 140–148 sm).

Key words: cattle, tribal work, cymmental'skaya breed

UDC 629.12(092)(04)+623.820

Battleship «Orel» – the beginning of the engineer's carreer of a famous shipbuilder V.P. Kostenko / E.V. Sandurskaya // Bulletin of NTU "KhPI". Series: "The history of science and technology". – Kharkiv : NTU "KhPI", 2014. – №59 (1101). – P.130–136– Bibliogr.: 14. – ISSN 2079-0074.

ThisarticletellsaboutmainaspectsofworkofamarineengineerVolodymyrPolievktovychKostenkoon the battleship «Orel», which became the beginning of a successful engineer's career for the young scientist. Also, the author analyses main achievements of the marine engineer in the area of decreasing vessel's drought and increasing her operability,characterizes the role of V.P. Kostenko in making «Orel» to stay afloat after being severely damagedduring Tsushima battlewhich was crushing for the Russian Empire.

Keywords:marineengineer, battleship «Orel», Tsushima battle, list, operability of the vessel.

UDC: 378.1(477.54) «18»/«19»

The experience of organization of educational process and its staff providing in the Kharkiv technological institute at the end of XIX – at the beginning of XX cent. / V.M. Skyar// Bulletin of NTU "KhPI". Series: "The history of science and technology". – Kharkiv : NTU "KhPI", 2014. – №59 (1101). – P.136–144– Bibliogr.: 14. – ISSN 2079-0074.

In the article on the basis of processing of the Statutes of 1885 and 1906 the experience of organization of educational process and its staff providing in the Kharkiv technological institute at the end of XIX – at the beginning of XX centuries is generalized. The reasons of delay of technological institute opening in Kharkiv are determined. The features of forming of material and technical base of institute are illustrated. Directions of forming of faculty are defined. The attention is accented on the differences in requirements to contenders for a post of professors in natural and technical sciences. It is indicated on social status of professors and adjunct-professors and their academic load. The functions of

the Educational and Economic committees are found out. The distributing of educational disciplines on courses and departments is illustrated. The social status of students is determined. It is accented the attention on the importance of the special course «History of the National technical university «Kharkiv polytechnic institute» introduction to the educational process. It is shown that in the Kharkiv technological institute at the end of XIX – at the beginning of XX centuries the foundations of methodological and scientific activity of faculty of modern NTU «KHPI» are laid.

Keywords: Kharkiv technological institute, Statute of KhTI, organization of educational process, Educational committee, professors, students, distributing of educational disciplines on courses, history of NTU «KhPI».

UDC 001.89:378:614.84

Formation and development of scientific society of cadets and students at the National University Civil Defense of Ukraine in the late 20th – early 21st centuries / D. V. Taraduda // Bulletin of NTU "KhPI". Series: "The history of science and technology". – Kharkiv : NTU "KhPI", 2014. – №59 (1101). – P.144–153– Bibliogr.: 24. – ISSN 2079-0074.

Research work of cadets and students in NUCDU as a factor in shaping the future of humanitarian and technical elite, has always been one of the priority activities. It is an integral part of education at the university and conducted to the integration of scientific, educational and production of components and provided by the organic unity of the content of education programs and research activities. Research work of cadets and students is a prerequisite for training highly qualified specialists able to creatively apply their practice in science achievement and excellence.

The purpose of this article is to explain the process of the formation of scientific societies cadets and students in NUCDU and its role in the development of scientific and technical potential of the higher school fire type.

To achieve this goal it is necessary to solve the following research objectives - play objective historical picture of the Scientific Society of cadets and students NUCDU and analyze the progress of the process.

As a result of the retrospective highlights the organizational progress of scientific societies cadets and students in NUCDU. These statistics suggest that the scientific society of cadets and university students has steadily grown, as is also evidenced by the growth of the total number of published scientific works SSC and C members.

Keywords: fire safety, the research work, scientific society National University Civil Defense of Ukraine.

UDC 697.94

Preparing of engineering and technical personnel at the Kharkov factory "Conditioning" / **Ushenko P. A.** // Bulletin of NTU "KhPI". Series: "The history of science and technology". – Kharkiv : NTU "KhPI", 2014. – №59 (1101). – P.154–165– Bibliogr.: 25. – ISSN 2079-0074.

Based on archival documents, the character of employees preparation at the Kharkov plant "conditioner" is discovered in this article. Since the beginning of air conditioners industrial production in Kharkiv (from 1957) on Kharkov factory "Conditioner" was developed the preparation of their own personnel. Young branch of engineering felt the urgent need for qualified engineers and technical workers. The sequence of number of measures, offered by enterprise management, for solution issues of production, her quality, as well as their results are traced. It is established that training at the workplace, which included theoretical and practical sessions was one of the first methods of advanced training. The business trips abroad and the cooperation of Soviet engineers with foreign professionals in air conditioners industry were essential in this direction. Moreover, a number of corresponding departments and faculties of engineers and technical workers training were organized directly at the plant territory. The contribution of medium training institutions of engineers in air conditioning industry and specialists of related professions is analyzed.

Keywords: engineering and technical personnel, advanced training, personnel training, Kharkov factory "Conditioner", secondary engineering and technical education.

UDC 006.4:7.05

Indexes of quality are in a design, practical decision ofquestion / E. Khramova-Baranova // Bulletin of NTU "KhPI". Series: "The history of science and technology". – Kharkiv : NTU "KhPI", 2014. – №59 (1101). – P.162–167– Bibliogr.: 14. – ISSN 2079-0074.

In the article on the basis of analysis of documentary materials and their generalization, the problems of level of quality in a design and their practical decision are reflected due to introduction of nomenclature of indexes of quality in a design. Introduction of normative base of the design-ergonometric providing of economic complex of Ukraine is rotined. The economic function of design-ergonometric standardization enables it is correct to estimate and choose a that or other commodity, optimize a capital investment, instrumental in introduction in industry of new technique, technologies, materials, measuring methods, to influence on the processes of improvement of management of operations and providing of necessary level of quality of products. It is rotined in the article, what considerable work must do the analysis of upgrading and competitiveness of domestic products which needs the active use of principles and methods of design and ergonomics on all stages it life cycle: from determination of initial requirements to the wares and their operating descriptions to the terms of consumption and utilization. Different wares have a different set of properties depending on necessities, what of them satisfy, and it is expedient to estimate their quality on indexes, to major for users. A design and ergonomics, giving a main value a «human factor», operate descriptions, adequate consumer properties of wares, that to properties of products, which satisfy the necessities of users in the process of its use on purpose. Therefore development of standards, which allow to carry out the choice of optimum nomenclature of ergonomics indexes in the process of planning, exploitation and evaluation of quality of wares, gives possibility to execute these works at high professional level.

Keywords: design, design-ergonometric providing, quality, standard.

UDC 631.6:001(091/092)(477)

Background of becoming Panfyly experimental station and organizational and scientific activity of M.N. Shevchenko in the institution in 1930-ies. / K. P. Cherednik // Bulletin of NTU "KhPI". Series: "The history of science and technology". – Kharkiv : NTU "KhPI", 2014. – №59 (1101). – P.167–173– Bibliogr.: 11. – ISSN 2079-0074.

Background of becoming Panfyly Experimental Station is observed. Scientists' works on this subject that initiated and made a significant basis for the deployment of full scientific activity are analyzed. Based on the conclusions of scientific expeditions, the study of climatic, economic and other relevant factors the importance of agricultural uses of wetlands has been brought to authorities. Establishment of the institution has become an important government decisions. Historically decisive role of the third of its director – M.N. Shevchenko is proved. Significant achievements of the institution under the leadership of the scientist, started in 1930 and became a classic for agriculture in the fertile peaty soils, are shown.

Despite the periods of financial difficulty, technical expenses, technological and methodological problems in agricultural uses of marshy soils, M.N. Shevchenko (on the achievements of predecessors and thanks to his own organizational skills and profound professional knowledge) could overcome major obstacles and organize activities of the institution as a scientific cell, its achievements have become classics for farming in the fertile wetlands. These results have been widely implemented in scientific practice, and copper micronutrient fertilizers are mandatory component of plants power supply of on this type of Ukrainian soils. Subsequently, the study was expanded by other trace elements: zinc, boron, molybdenum. M.N. Shevchenko substantiated norms and doses of these microelements, found their interactions with mineral fertilizers, physiological importance as catalysts that accelerate biochemical and physiological processes.

Keywords: Panfyly Experimental Station, Mykola Nychyporovych Shevchenko, agricultural use of wetlands, history, agricultural science.

UDC: 629. 7. 03 (091) (477. 64) «1950 / 1965»

The construction and production of aircraft engines in Zaporizhzhya region in 1950-1965 / O. A. Chumachenko // Bulletin of NTU "KhPI". Series: "The history of science and technology". – Kharkiv : NTU "KhPI", 2014. – №59 (1101). – P.173–180– Bibliogr.: 14. – ISSN 2079-0074.

The bases of Ukrainian aircraft industry were laid yet in Soviet times. In its structure different enterprises, able to make all the necessary elements of the industrial production process, appeared. Special attention is focused on the formation of aircraft engine building, which covers the way of aircraft engines from the point of their construction to mass production and modernization. One of the leading role in this direction was played by Zaporizhzhya motor enterprise. The research of its development in 1950-1965 is actual, demonstrating the experience of rapid renovation in difficult historical conditions.

The aim of the research deals with the retrospective of the history of aircraft engine building development in Zaporizhzhya region in 1950-1965 in the conditions of postwar renovation and the beginning of scientific and technical progress.

The period under consideration is reasonable to be divided into three stages of aircraft engine formation and development in Zaporizhzhya motor works № 478. The first stage covered the 1950 and consisted of three areas of activities. The next stage was in 1955-1960 – it was the time of creating the second generation of GTE, which is characterized by abrupt growth of new products. New aircraft engines, set on civil machinery, appeared. It increased passenger traffic.

In the result of the description of established stages of Zaporizhzhya aircraft engine building development, the analysis of the system of scientific and technical implementation and engine production on the whole was taken. It showed, that joint efforts of Zaporizhzhya motor works “Motorobudivnyk” and ZMCD under the direction of O.H. Ivchenko up to 1960 were able to improve the general tendencies of the development of engine building in Ukrainian aircraft industry. The results of the research confirm the dependence of traffic abrupt increase because of putting into operation different generations of gas-turbine engines. Great contribution to their construction and production was made by Zaporizhzhya aircraft engine building enterprises. On the basis of O.H. Ivchenko group’s construction potential, such world-known aircraft engines as AI-20, AI-24, their numerous modifications and turbine starters TC-12F and AI-8 were made by Zaporizhzhya motor works during 1950-1965.

Key words: aircraft industry, aircraft engine building, gas-turbine engines, aircraft, construction department, Zaporizhzhya motor works.