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## **CONTRIBUTION OF AGRICULTURAL SOCIETIES TO STUD MATTER DEVELOPMENT IN CATTLE BREEDING ON UKRAINIAN LANDS AS PART OF THE RUSSIAN EMPIRE (THE BEGINNING OF THE 20th CENTURY)**

**Abstract.** *The purpose of the research* is to identify the most significant achievements and initiatives of agricultural societies of Ukraine under Russian rule in the direction of developing breeding in cattle breeding in 1907 – 1915 (although the chronology of the study partially goes beyond this framework). **The methods of the research** are based on the principles of objectivity, systematics, historicism; historical genetic, historical systemic, historical typological methods, as well as there have been applied the methods of scientific criticism of historical sources. **The scientific novelty** of the study consists in the comprehensive analysis of the agricultural societies contribution of the specified period to cattle breeding development. **Conclusions.** It has been determined that the issues on the improving livestock breeding in Ukrainian lands at the beginning of the 20<sup>th</sup> century were dealt with by the majority

of agricultural societies that had branch departments. Hence, the Imperial Agricultural Society of Southern Russia (Odesa) focused on the development of sheep and horse breeding. The Poltava Society of Agriculture and Agricultural Industry made a significant contribution to the development of sheep and pig breeding. Yelyzavethradske Agricultural Society developed measures to improve the care of cattle and established a horse breeding committee. However, as it turned out, the greatest contribution to the development of breeding in cattle breeding in the studied period was made by Kharkiv, Kyiv and Podilsk Agricultural Societies. The first of them is the initiative to introduce a cattle stud book, the development of which began in 1907. By the end of 1913 on the analogy with Kharkiv stud books were introduced in other regions of the empire. The merit of the Livestock Department of Kharkiv Agricultural Society was the organization of the first control unions for fattening cattle in Ukraine, which began to function in 1910 – 1911. In 1913, the so-called “Mixed Russian-Swiss Committee for the Purchase of Swiss Pedigree Cattle” was established at the Livestock Department of Kyiv Agricultural Society, access to which was open to all agricultural societies, zemstvos and individual farmers of the Russian Empire. The Committee's activities were aimed at eliminating intermediaries in the livestock trade. In 1915 the Podilsk Union of Cattle Breeders at Podilsk Agricultural Society included more than 100 purebred cattle factories in Podilsk, Kyiv, and Volyn hubernias. It is proven that these activities of agricultural societies contributed to the search of rational methods of animal husbandry, the acquisition of breeding material and the profitable sale of livestock products. The agricultural societies made an important contribution to the formation and development of breeding in Ukrainian cattle breeding at the beginning of the 20<sup>th</sup> century, in particular, in the development of animal breeding selection programs, effective methods and technologies for the reproduction of valuable breeding resources, practical recommendations for the application of scientific and technical achievements in production, etc.

**Key words:** livestock, cattle breeding, breeding business, agricultural societies, cattle breeding book, control unions for cattle fattening.

## ВНЕСОК СІЛЬСЬКОГОСПОДАРСЬКИХ ТОВАРИСТВ У РОЗВИТОК ПЛЕМІННОЇ СПРАВИ У СКОТАРСТВІ НА УКРАЇНСЬКИХ ЗЕМЛЯХ У СКЛАДІ РОСІЙСЬКОЇ ІМПЕРІЇ НА ПОЧАТКУ ХХ СТ.

**Анотація.** Метою статті є з'ясування найбільш вагомих здобутків та ініціатив сільськогосподарських товариств підросійської України у напрямі розвитку племінної справи у скотарстві протягом 1907 – 1915 років (хоча хронологія дослідження частково виходить за ці рамки). **Методи дослідження:** публікація базується на принципах об'єктивності, системності, історизму; використано історико-генетичний, історико-системний, історико-типологічний методи, а також методи наукової критики історичних джерел. **Наукова новизна дослідження** полягає у комплексній оцінці внеску сільськогосподарських товариств зазначеного періоду у розвиток скотарства. **Висновки.** Встановлено, що питаннями поліпшення тваринництва на українських землях на початку ХХ століття займалися більшість сільськогосподарських товариств, які мали у своєму складі галузеві відділи. Так, Імператорське товариство сільського господарства Південної Росії (м. Одеса) особливу увагу приділяло розвитку вівчарства і конярства. Полтавське товариство сільського господарства та сільськогосподарської промисловості відзначилося вагомим внеском у розвиток вівчарства і свинарства. Єлисаветградське товариство сільського господарства розробляло заходи із поліпшення догляду за ВРХ і заснувало комітет конярства. Проте, як з'ясовано, найбільший внесок у розвиток племінної справи у скотарстві у досліджуваній період здійснили саме Харківське, Київське й Подільське товариства сільського господарства. Першою з них належить ініціати́ва упровадження племінної книги великої рогатої худоби, розробка якої розпочалася ще у 1907 році. До кінця 1913 року за аналогією з харківською племінні книги були упроваджені і в інших регіонах імперії. Заслугою відділу тваринництва Харківського товариства сільського господарства була організація перших на теренах України контрольних союзів з відгодовів худоби, які розпочали функціонувати ще з 1910 – 1911 років. При відділі тваринництва Київського товариства сільського господарства у 1913 році створено так званий “Змішаний Русько-Швейцарський Комітет для закупівлі швейцарської племінної худоби”, доступ до якого було відкрито усім сільськогосподарським товариствам, земствам і окремим господарям Російської імперії.

Діяльність комітету спрямовувалася на усунення посередництва у торгівлі худобою. До складу Подільського союзу скотарів при Подільському товаристві сільськогосподарства на 1915 рік належало більше 100 заводів чистопорідної рогатої худоби у Подільській, Київській, Волинській губерніях. Доведено, що такі заходи сільськогосподарських товариств сприяли пошуку раціональних прийомів тваринництва, придбанню племінного матеріалу та вигідному збуту тваринницької продукції. Сільськогосподарські товариства здійснили важливий внесок у становлення і розвиток племінної справи у скотарстві України на початку XX століття, зокрема, щодо розроблення селекційних програм розведення тварин, ефективних методів і технологій відтворення цінних племінних ресурсів, практичних рекомендацій стосовано застосування науково-технічних досягнень у виробництві тощо.

**Ключові слова:** тваринництво, скотарство, племінна справа, сільськогосподарські товариства, племінна книга великої рогатої худоби, контрольні союзи з відгодівлі худоби.

**Problem Statement.** The agricultural societies of Ukraine became the founders of the domestic agricultural science and industry research, laid the foundations of vocational and technical and higher agricultural education, gave spur to the processes of improving agricultural machinery and breeding in animal husbandry in the 19th and at the beginning of 20th centuries. Large societies became centres for the development of scientific research in agronomy, with their initiatives, which had influence on the government decision-making and the development of state policy vectors for the agriculture development in general and its individual branches. It is natural that the foundation of modern animal husbandry, which includes cattle breeding (breeding and use of cattle), sheep breeding, horse breeding, goat breeding, pig breeding, rabbit breeding, as well as beekeeping and sericulture (silk farming), was laid by several generations of scholars and organizers of zootechnical business – the agricultural societies members, starting from the 19th century. Taking the above-mentioned into consideration, it is relevant and of utmost importance to carry out the study on the achievements and initiatives of the agricultural societies in Ukrainian territories at the beginning of the 20th century in the direction of breeding business development in livestock as breeding is gaining popularity.

**Review of Recent Research and Publications.** It has been determined that the historiography on the breeding issue in animal husbandry is extensive, in general and in its individual branches from the moment of its inception to the present day. However, there were covered only individual stages of the animal husbandry development and the evolution of scientific thought in breeding on the pages of most generalizing works, the emphasis is on the Ukrainian Soviet period, starting from the 20s – 30s of the 20th century, and later on, when the institutionalization of the organization in the form of the research centres (institutes, departments, branch higher educational institutions) received priority, and large teams of scholars worked on the development. The period of the emergence and formation of the scientific foundations of breeding in animal husbandry at the end of the 19th and beginning of the 20th centuries, was studied quite fragmentarily despite the fact that the agricultural societies played a key role, along with zemstvo. However, it was stated in the publications written by V. Verhunov (Verhunov, 2022), O. Holikova (Holikova, 2022), H. Linyevych and I. Vergunova (Linyevych, & Vergunova, 2023) that the agricultural research is qualified as a comprehensive study in specialized research institutions of not only agronomic, but also zootechnical phenomena. The articles published by I. Demuz, I. Vergunova (Demuz, & Vergunova, 2024) and O. Kapralyuk (2023) were devoted to examining the agricultural societies evolution, which became centers of the scientific research in agronomy and zootechnics on the ground, and later on played a generating role in the formation of new collective forms of work.

There were diverse scholars, who covered the above-mentioned. V. Verhunov (Verhunov, 2009), A. Kotsur (Kotsur, 2007), S. Ryzhuk (Ryzhuk, 2008), Yu. Ruban (Ruban, 2001) have all studied the evolutionary development of the animal husbandry and the history of domestic zootechnical science through the prism of the activities of industry research and educational institutions, renowned scientists and the functioning of scientific directions. There were prepared the thorough studies on the scientific support of the animal husbandry at the turn of the 19th – 20th centuries in the regional dimension: e.g., Poltava region (the monograph by M. Yakymenko and V. Nahaievych (Yakymenko, & Nahaievych, 2007)), Polissia (the study by M. Hladkyi (Hladkyi, 2007)). The studies carried out by I. Borodai (Borodai, 2012) and O. Demianovskiy (Demianovskiy, 2014) summarized the theoretical and methodological principles, organizational structure, and evolution of the domestic livestock breeding, including the period of the 19th – the first half of the 20th century. The studies of the above-mentioned scholars also highlighted the agricultural societies contribution to the livestock breeding development partially.

Biographical studies of Ukrainian scholars, who laid the foundation of the scientific foundations of breeding in animal husbandry at the end of the 19th and at the beginning of the 20th centuries are of great importance. Hence, the study carried out by V. Verhunov (Verhunov, 2007), I. Borodai (Borodai, 2009), O. Holikova (Holikova, 2021a; Holikova, 2021b) was devoted in order to evaluate the role that Professor Starion Martynovych Khodetskyi at the Imperial University St. Volodymyr in Kyiv, who was a member of Kyiv Society of Agriculture and Agricultural Industry, played in the breeding development in Ukraine. Yu. Ruban (Ruban, 1997) and A. Korolov (2008) described the scientific activities of Pavel Oleksandrovych Pakhomov, a scholar, who was involved in the activities of Moscow Agricultural Society, the livestock Department of Kharkiv Agricultural Society, the organization of the largest exhibitions of breeding livestock, the founder of the first support breeding stations and the first so-called stud book (breed registry) in the entire Russian Empire. The publication by S. Nyzhnyk and H. Solovei (Nyzhnyk, & Solovei, 2024) was devoted to the analysis on the Ukrainian-language periodical “Rillia” (1910 – 1914), in the columns of which there was published the study on the history of the agricultural societies and various branches of agriculture, including cattle breeding.

**The purpose of the research** is to identify the most significant achievements and initiatives of agricultural societies of Ukraine under Russian rule in the direction of developing breeding in cattle breeding in 1907 – 1915 (although the chronology of the study partially goes beyond this framework).

**Research Results.** The Russian Empire remained weak in terms of the industrial livestock breeding development at the beginning of the 20th century due to, as the experts noted (Borodai, 2012, p. 59), the lack of an organizational structure for breeding in the country, the presence of a significant number of the small peasant farms with a continuous process of differentiation, the plowing of large areas of natural lands and a low level of field fodder production, and unfavorable state policy in matters of export of livestock products. The number of livestock per capita was significantly lower compared to America and European countries (e.g., in 1910, one inhabitant of Russia (and the USA, respectively) had: cattle – 313 units (739 units), sheep and goats – 512 units (709 units), pigs – 94 units (742 units) (Evdokimov, 1913). At that time, there was no experimental station for the animal husbandry in the empire (while experiments on plant growing were carried out on the experimental and demonstration fields).

The columns of periodicals emphasized the importance of mass improvement of animal husbandry on regular basis by involving the public, which, for example, in Europe, uniting into the societies and unions, organized exhibitions, printed literature independently, initiated the opening of the agricultural secondary schools and even the research stations, while the assistance of the local and central governments consisted exclusively in the organization of higher agricultural educational institutions and the provision of the monetary subsidies for the animal husbandry development (Kuleshov, 1909, p. 514). The statistics record the following number of special societies in the Russian Empire dealing with livestock and dairy farming (excluding beekeeping and poultry farming) in 1911 and 1915 respectively: 45 and 203, including: cattle breeding and dairy farming – 9 and 14; horse breeding and equestrian sports – 4 and 130; goat breeding – 32 and 50; rabbit breeding – 0 and 9 (Morachevsky, 1916, p. 2). In 1915, the societies published 3 periodicals on livestock farming (Morachevsky, 1916, pp. 67, 68).

In general, the issues on the animal husbandry and cattle breeding development were taken care of by the all-imperial societies, which were founded in the 18th – mid-19th centuries, in particular, Moscow Society for the Improvement of Cattle Breeding, the Imperial Free Economic Society, Moscow Society of Agriculture, etc. – with branches in the Ukrainian provinces. It should be mentioned that the regional agricultural societies were also distinguished by significant achievements. Hence, the Imperial Society of Agriculture of Southern Russia, which extended its activities to Bessarabian, Ekaterinoslav, Tavia and Kherson hybernias (provinces), focused on the sheep and horse breeding development in animal husbandry issues. However, under the authorship of the members of the society O. Armfeld, P. Abaza, M. Brodsky, S. Dekonsky, I. Dessmet, N. Raik, etc. a number of studies on cattle were published, which revealed issues on the breed improvement, increase in meat productivity, etc. Poltava Society of Agriculture and Agricultural Industry at the end 19th and beginning of the 20th centuries made a significant contribution to the development of sheep and pig breeding. Elisavetgrad Society of Agriculture (Kherson Hubernia (Province)) also focused on the development of livestock breeding, as part of which since 1904 there was Commission to study livestock breeding, which developed a program for improving the care of cattle, and a Commission to organize Horse Breeding Committee. However, in our opinion, the most significant role in the breeding development in cattle breeding at the beginning of the 20th century was played by Kharkiv, Kyiv and Podilsk Societies of Agriculture, whose activities we will consider in this article.

The Livestock Department founded in 1880 at Kharkiv Society of Agriculture, was opened only in 1907, with 56 full members (Report on the Activities of the Livestock Department of Kharkov Society of Agriculture for 1909 – 1910, 1911, p. 1). The number of full members was 93 people (Otchet, 1915, p. 3) at the end of 1914. The Department was headed by the founder of the Ukrainian breeding P. O. Pakhomov until 1916 (P. M. Lempitskyi was the Deputy, and H. H. Ivanov was the secretary); the Department also included M. F. Ivanov, A. V. Shchepkin, V. K. Arkas, O. V. Hlushkov, A. O. Holubaiev, and other scholars.

It was P. O. Pakhomov, who conducted observations of aboriginal groups of cattle from the end of the 19th century, being the secretary of the cattle breeding Committee of Moscow Agricultural Society, and when he moved to Kharkiv at the beginning of the 20th century, P. Pakhomov began researching the local breeds of cattle, in particular the Ukrainian gray cattle. The scholar was the author of “bulletins”, which were published twice a year in 1910 – 1914, dedicated to the sale of breeding material with a detailed description of



breeding animals. He is the author of the study “The Issues on Organization and Carrying out of Events for the Livestock Farming Improvement” (1908), in which the term “support mating points” was given and the importance of their functioning in the Russian Empire was substantiated (Korolov, 2008).

The activities of the Livestock Department of Kharkiv Agricultural Society focused on three main areas: 1) the introduction of a cattle stud book; 2) the organization of control unions for cattle fattening among farmers; 3) the organization of exhibitions-fairs (auctions-exhibitions) of breeding cattle and pigs.

It is believed that the first cattle stud book, which became the prototype of modern state stud books, was founded in Ukraine in 1909. A Draft Instruction for Commissions for the Selection of Cattle for Entry into the Stud book was found. This draft was developed by P. M. Lempitskyi and considered at a meeting of the Livestock Department of Kharkiv Agricultural Society on March 15, 1907. The final version of the Instruction was finalized by P. O. Pakhomov together with P. M. Lempitskyi and approved at a meeting of the Department on December 14, 1907. The Instruction provided the methodological recommendations and guidelines for the work of the relevant commissions, criteria for determining pure breeds of cattle, the procedure for measuring animals for entry into the stud book, and presented forms of relevant documentation (certificates, herd journals, reporting information), etc. (Proekt instruktzii, 1907). Actually, the Statute of Kharkiv Cattle Stud book, the purpose of which was defined as “promoting the improvement of livestock breeding in the area of the Department’s activities by registering breeding animals of the most common breeds of cattle bred in this area and establishing their origin and factory advantages accurately” (Materials for the establishment, 1908, p. 3), was developed with the direct participation of P. O. Pakhomov.

In particular, Swiss, Simmental, Ukrainian Gray, and Red Colonist cattle were among the purebred and crossbred cattle listed in Kharkiv Stud book. Breed analysis was carried out collectively by a special commission consisting of 3 specialists: 2 representatives chosen by the Livestock Department of Kharkiv Society, and a local veterinarian. There were the following representatives of the Livestock Department of Kharkiv Agricultural Society in particular, P. O. Pakhomov, P. M. Lempitskyi, M. F. Ivanov, V. O. Boreisha, S. F. Kyvenko, and the others (Otchet, 1911, p. 3).

The Department of Agriculture financed the publishing of “Materials for the Establishment of Kharkiv Cattle Herd Book”.

During the period from the moment of its establishment (in 1909) to October 1, 1914, herds of 34 farms were entered into Kharkiv Herd Book: Kharkiv Hubernia – 10 herds, Kyiv Hubernia – 9 herds, Katerynoslav Hubernia – 8 herds, Poltava Hubernia – 5 herds, Kherson Hubernia – 2 herds, which amounted to a total of 947 heads of cattle (Otchet, 1915, p. 4).

The issue on introducing stud books was discussed among the specialists at the empire level: at meetings of agricultural inspectors and livestock breeders; at the All-Russian Congress on the Mass Improvement of Cattle in St. Petersburg on September 11–16, 1910. The Congress adopted a number of resolutions aimed at stimulating the introduction of the experience of stud books in various regions of the empire: giving awards at the agricultural exhibitions only for animals, which were listed in stud books; purchasing by the government and zemstvos of stud books listed in stud books; the need for the participation of nurseries that supplied the government, zemstvos and public organizations with stud material in stud books.

By the end of 1913, branches of Kharkiv Stud book were established at the permanent livestock commission of Poltava Society of Agriculture (the area of activity – Poltava

hubernia), at the Livestock Department of Kyiv Society of Agriculture (the area of activity – Kyiv, Berdychiv, Radomyshl, Skvyra, Chyhyrnsk, Cherkasy, Vasylkiv, Kaniv povity of Kyiv hubernia), at Uman-Lypovets Agricultural Society (the area of activity – Uman, Lypovets, Zvenyhorod, Tarashcha povity of Kyiv hubernia) (Report on the activities of the Livestock Department of Kharkiv Society of Agriculture for 1912 – 1913, 1914, p. 5). There was compiled an independent Orlovska Stud Book in 1912 based on the analogy with Kharkiv Stud Book.

The merit of the Livestock Department of Kharkiv Agricultural Society was the organization of the first control unions for cattle fattening in Ukraine. We could easily come across a thesis that due to the Livestock Department of Kyiv Agricultural Society the practice of organizing control unions was initiated in 1913 in the scientific literature. Their activities were often aimed at comparing the breeding characteristics of different breeds of cattle, studying the production value of the fertile animals, and the dependence of milk yield on the amount of feed consumed. However, in fact, the control cattle fattening emerged precisely in Kharkiv hubernia back in 1910 – 1911.

The primary task of the government policy regarding the industry development was recognized as changing priorities from almost unprofitable (or even unprofitable) livestock farming to profitable, improving feed conditions on the farms, transitioning to the rational livestock farming, giving livestock farming an experimental and demonstration nature. The issue on the progressive feeding, which was the amount of feed depending not only on the weight of the animal, but also on its productivity – was considered numerous times at meetings of the Livestock Department of Kharkiv Agricultural Society at that time. As a result, such norms revolutionized the feeding of dairy cattle in Western European countries at the end of the 19th century. In particular, one of the first control unions emerged in Denmark in 1895 (there were already 400 unions in the country by the beginning of the 20th century), in Sweden – 326, in Norway – about 140 (Uspenets, 1913, p. 746). The above-mentioned centres began to be introduced into the practice of the animal husbandry only at the beginning of the 20th century in the Russian Empire: they functioned in the Baltic States, as well as in Yaroslavl, Perm, and St. Petersburg hubernias. The control unions were considered to be one of the most efficient steps towards improving the peasant animal husbandry and the peasant welfare in general by the specialists, but it was pointed out that the owners distrusted them, even in the case of complete control over the unions by the zemstvos, trained instructors, or control assistants.

According to the articles in the periodicals, the organization of such a control union began as early as 1909 with the help of the Livestock Department of Kharkiv Agricultural Society, (From the life, 1909, p. 492; Report, 1909, p. 513). The event was financed by the Department of Agriculture, which issued the Department from July 1, 1909 to January 1, 1910 850 rubles in order to invite 2 control assistants. Hence, A. V. Potapov, the control assistant was sent to the Baltics, to Riga Agricultural Society in order to study the experience of control work (Otchet, 1911, p. 3). There were the following functions of the control assistants: to inspect the livestock farms of the owners, who expressed a fervent desire to become members of control union; to collect data on the farms cattle (age, milk yield, feeding, arrangement of livestock yards, etc.); to make up fattening plans and monitor their implementation.

There was carried out the control fattening of cattle in 8 private farms with 228 cows in Kharkiv province in 1910 – 1911, which resulted in a reduction in the cost of producing 1 bucket of milk by an average of 17 kop. (Ivanov, 1911, pp. 3, 4). By the end of 1913, the number of such farms had increased to 14 (376 cows), fattening was carried out under the supervision of 4 control assistants, 2 of whom were supported by the Department of

Agriculture, 2 by the hubernia zemstvo (Otchet, 1914b, p. 8; Ivanov, 1914, p. 3). By the end of 1914, the number of farms had decreased to 12 (with 342 cows) (Otchet, 1915, p. 7).

Kyiv Society of Agriculture established Livestock Department within its structure, which included K. G. Wulff, V. V. Goshtold-Bukraba, S. O. Bazarov, A. L. Vasiutkin, K. O. Hamaleia, V. I. Dushinskyi, and the others, only on July 1, 1912 (Otchet, 1914a, p. 58). L. O. Davydov was the Head of the Department. There was initiated a regional livestock meeting in March 2–4, 1913, which consisted of the representatives of the agricultural societies of the South-West Territory and Kharkiv Hubernia, zemstvos of Kyiv and Podilsk Hubernia, specialists of the Department of Agriculture, Professors of zootechnics, veterinarians, landowners-cattle breeders, which approved the main areas of activity of the Livestock Department, which consisted in: organizing the control unions, introducing the stud books and evaluating breeding material, organizing the courses for the control assistants, opening schools for the cattle breeders, exporting and importing the breeding livestock and livestock products.

Due to the mediation of a member of the Department and a specialist of the Department of Agriculture, M. M. Ge, there was concluded an agreement with the Union of Swiss Cattlemen on the purchase of breeding cattle (the first batch of 37 heads was purchased already in 1913) (Otchet, 1914a, p. 60). The so-called “Mixed Russian-Swiss Committee for the Purchase of Swiss Breeding Cattle” was established at the Livestock Department of Kyiv Society of Agriculture (Ge, 1913, p. 81; Otchet, 1914a, pp. 76, 77), access to which was open to all agricultural societies, zemstvos and individual farmers throughout the Russian Empire. The Committee’s activities were aimed at eliminating intermediaries in the livestock trade. The Committee’s Statute was approved on September 13, 1913. M. M. Ge published the book “The Materials for the Survey on the Swiss Cattle Breeding” in the same year, the purpose of which was to provide information on the organization of cattle breeding in Switzerland for the local farmers.

There were 8 control unions for fattening cattle with 2 thousand cows by the end of 1913 owing to help provided by the Livestock Department of the society (Otchet, 1914a, p. 59).

In 1914, the Department controlled 17 farms with 1,027 cows; in addition, 65 more applications were under consideration for membership in control unions. The above-mentioned situation was caused by the signing of an agreement by the Livestock Department of the Kyiv Agricultural Society with the Cattle Department of Podilsk Agricultural Society, according to which all control unions of these two provinces were subordinated to Kyiv. In 1914, there were organized 7 new control unions of all those who wanted, while the others, due to the lack of the sufficient personnel, remained outside the control. In addition, in 1914, the outbreak of World War I, most of the control unions, mainly in the Podilsk hubernia, ceased their activities (Otchet, 1916a, pp. 13, 14). The peak of the functioning of the control unions was observed in June of 1915, when 2,480 cows were under control; only 6 control unions with 1,320 cows managed to finish 1915 in full (Otchet, 1916a, p. 14).

The supporters of the unions emphasized that their functioning increased the general interest of cattle breeders in the animal husbandry in general (Otchet, 1914a, p. 66). The results of controlled feeding of dairy cattle in 1914 – 1915 showed a significant increase in milk yield by 16,6%, butter yield by 25,6%, and an increase in milk fat content from 3,5% to 3,8%. (Otchet, 1916a, pp. 14, 15).

However, according to scholars, the study of issues of livestock breeding improvement was not within the competence of control unions; and, despite their active creation in the early years in the Ukrainian hubernias, their experience did not become widespread



sufficiently, probably due to the lack of coordination of activities, as well as experienced control assistants (Demianovskyi, 2014, p. 142). Because of martial law, there was also the decline of control unions, as a result of which, the part of the research staff of the unions was mobilized, and there was panic among the population. In addition, when World War I broke out, the Livestock Department of Kyiv Agricultural Society was actively engaged in the evacuation and preservation of breeding cattle in the area of the South-Western Front.

The members of the Livestock Department of Kyiv Agricultural Society delivered reports and prepared brochures on livestock issues: V. P. Ustiantsev “Tasks of public activity towards improving livestock farming”, I. V. Trachtenberg “On insurance of livestock against death, loss of working capacity and forced slaughter during epizootic”, S. S. Ostapenko “Current situation of the meat industry and dairy industry in the South-Western region”. In particular, S. S. Ostapenko suggested taking a number of economic measures, which were aimed at the livestock farming development: through joint efforts of industry societies to conduct a statistical data on all livestock in the empire, to organize systematic research of the internal and external consumer meat and dairy markets, to subsidize the construction of the refrigerated warehouses for products from the state funds, to promote a reduction in the railway tariffs for the transportation of livestock products and the introduction of duty-free import of special equipment, etc. (Otchet, 1914a, p. 73).

In 1915, the Livestock Department of Kyiv Agricultural Society completed a thorough survey of 60 farms in hubernia (50 peasant farms and 10 privately owned farms) in order to determine the cost of producing 1 pood of live weight of cattle and pigs. The results showed that neither in the peasant farms nor in the farms did cattle breeding become an independent branch of the economy: very few dairy cattle were kept, and beef cattle breeding was completely absent (Otchet, 1916a, pp. 16, 17, 18).

One of the tasks of agricultural societies was to promote the sale of livestock products. In 1913, at the All-Russian Agricultural Congress in Kyiv it was emphasized that there was a drastic need to form the cooperative societies in order to organize the sale of live and slaughtered livestock to domestic and foreign markets. In particular, a joint work coordination of government, zemstvos, and city departments of consumer markets was to be aimed at reorganization of stock exchanges on the basis of publicity; arrangement of trading platforms and premises for livestock; opening of special social and cooperative bureaus for the sale of livestock lots at large markets; construction of refrigerators for public use at city markets; information about prices for livestock products; public organization of livestock insurance (Evdokimov, 1913). In particular, in 1912 there was founded an association in order to improve livestock farming in Katerynoslav hubernia, which set the goal of improving the local dairy industry by opening breeding nurseries, arranging exhibitions-auctions, organizing proper feeding of livestock, selling products through the organization of artel dairies, and keeping breeding books (Vasilev, 1912). There was issued the sum of 300 rubles, interest-free and 1,000 rubles with 3% per annum by zemstvo for the organization of a dairy artel (“partnership”) in Katerynoslav hubernia. According to data for 1915, Krasnopil and Rozumov dairy artels were established in Katerynoslav povit and Yeleniv and Chornohlaziv – in Pavlohrad povit (Salnikov, 1915, pp. 389, 390).

The Ministry approved the Charter of the Central Dairy “Association” under Kharkiv Agricultural Society, which provided help to the peasant cooperatives (agricultural societies, artels) and individual farmers in the sale of dairy products in December 1913. The activities of the “association” extended to 8 southern hubernias of the empire (Hronika, 1913).

The Podilsk Society of Agriculture and Agricultural Industry had the following Livestock Departments: horse breeding; cattle breeding; poultry farming; Podilsk Union of Cattle Breeders. The Society was engaged in researching the situation of the above-mentioned industries in hubernia, monitoring the work of breeding stations for cattle and horses (of which 16 were recorded within hubernia in 1909 (Report on the activities of the Podilsk Society of Agriculture and Agricultural Industry for 1909, 1910)), extracting breeding stock from Switzerland, regulating the purchase and sale of horses, inspecting stud farms, and contributing to the entry of horses and cattle into the stud books.

Since meat livestock was not practically developed in Podilsk hubernia, the society focused on the dairy farming following the example of Denmark. There was also the drastic need to introduce the institute of dairy instructors, which was promoted by founding dairy unions and artels. There were implemented diverse experiments on feeding dairy and meat cattle by the society in 1913 – 1914 in Khomyntsi estate of Proskuriv povit, Yampil, Bratslav, Vinnytsia povity (Otchet, 1914c, p. 67).

There was found data on the establishment by the society in 1914 of its own Podilsk stud book, in which cattle were recorded using a new system of scoring, adopted by the General Meeting of the Podilsk Union of Cattle Breeders on the basis of the Warsaw Union of Dutch Cattle Factories. In 1915 the union, headed by the well-known theorist and practical animal breeder M. M. Yasinsky, included more than 100 purebred cattle factories in Podilsk, Kyiv, and Volyn hubernias (Otchet, 1916b, p. 32).

At that time, several control unions for cattle fattening operated in the province. Experiments on cattle fattening were conducted at the Zalisiansky experimental field, which belonged to the agricultural department of Podilsk Agricultural Society.

**Conclusions.** It has been determined that the issues on the improving livestock breeding in Ukrainian lands at the beginning of the 20th century were dealt with by the majority of agricultural societies that had branch departments. Hence, the Imperial Agricultural Society of Southern Russia (Odesa) focused on the development of sheep and horse breeding. The Poltava Society of Agriculture and Agricultural Industry made a significant contribution to the development of sheep and pig breeding. Yelyzavethradske Agricultural Society developed measures to improve the care of cattle and established a horse breeding committee. However, as it turned out, the greatest contribution to the development of breeding in cattle breeding in the studied period was made by Kharkiv, Kyiv and Podilsk Agricultural Societies. The first of them is the initiative to introduce a cattle stud book, the development of which began in 1907. By the end of 1913 on the analogy with Kharkiv stud books were introduced in other regions of the empire. The merit of the Livestock Department of Kharkiv Agricultural Society was the organization of the first control unions for fattening cattle in Ukraine, which began to function in 1910 – 1911. In 1913, the so-called “Mixed Russian-Swiss Committee for the Purchase of Swiss Pedigree Cattle” was established at the Livestock Department of Kyiv Agricultural Society, access to which was open to all agricultural societies, zemstvos and individual farmers of the Russian Empire. The Committee's activities were aimed at eliminating intermediaries in the livestock trade. In 1915 the Podilsk Union of Cattle Breeders at Podilsk Agricultural Society included more than 100 purebred cattle factories in Podilsk, Kyiv, and Volyn hubernias. It is proven that these activities of agricultural societies contributed to the search of rational methods of animal husbandry, the acquisition of breeding material and the profitable sale of livestock products. The agricultural societies made an important contribution to the formation and development of breeding in Ukrainian cattle

breeding at the beginning of the 20th century, in particular, in the development of animal breeding selection programs, effective methods and technologies for the reproduction of valuable breeding resources, practical recommendations for the application of scientific and technical achievements in production, etc.

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