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**PROFESSOR O.O. BRAUNER (1857–1941) - FOUNDER OF THE
THEORETICAL FOUNDATIONS OF ANIMAL SCIENCE, ORGANIZER OF
EXPERIMENTAL WORK IN LIVESTOCK OF UKRAINE**

The purpose of the research is to highlight the life and scientific path of Doctor of Biological Sciences, Professor O.O. Brauner, his contribution to the organization of research and breeding case in animal husbandry in Ukraine, the spread of higher zootechnical education. The research methodology has based on the use of methods of historical & scientific analysis, systematization, as well as the biographical method. The source base of the research covers a wide range of published and unpublished papers; its basis is archival materials and scientific works by O.O. Brauner. The scientific novelty of the publication is in the substantiation of the scientist's contribution to the formation of zoological zootechnics in the system of branch scientific knowledge. The author first studied the influence of scientific ideas of the Russian scientific school of zoologists-evolutionists, founded by Professor K.F. Roulier, on the formation of scientific priorities of Professor O.O. Brauner. The priority of the scientist in systematization of conditions of breed creation process and classification of cattle, formulation of a hypothesis of domestication of animals near the ancient centers of origin of a civilization has proved. Scientific works by O.O. Brauner contributed to the further development of the doctrine of the origin and acclimatization of farm animals, the preservation and rational use of the gene pool of breeds. The contribution of the researcher to the formation of the All-Union Scientific Research Institute of Hybridization and Acclimatization of Animals, the development

of the main provisions of the state breeding books of cattle has highlighted, his role in promoting the achievements of domestic zootechnics has shown.

Key words: *zoological zootechnics, animal husbandry, research work, zootechnical education, breeding case, acclimatization, origin of animals, O.O. Brauner.*

ПРОФЕСОР О.О. БРАУНЕР (1857–1941) – ФУНДАТОР ТЕОРЕТИЧНИХ ОСНОВ ЗООТЕХНІЇ, ОРГАНІЗАТОР ДОСЛІДНОЇ СПРАВИ У ТВАРИННИЦТВІ УКРАЇНИ

Мета дослідження – висвітлення життєвого і творчого шляху доктора біологічних наук, професора О.О. Браунера, його внеску в організацію дослідної та племінної справи в тваринництві України, поширення вищої зоотехнічної освіти. Методологія дослідження ґрунтується на використанні методів історико-наукового аналізу, систематизації, а також біографічного методу. Джерельна база дослідження охоплює широке коло опублікованих і неопублікованих джерел, її основу складають архівні матеріали та наукові праці О.О. Браунера. Наукова новизна публікації полягає в обґрунтуванні внеску вченого у становлення зоологічної зоотехнії у системі галузевого наукового знання. Вперше вивчено вплив наукових ідей російської наукової школи зоологів-еволюціоністів, заснованої професором К.Ф. Рульє, на формування наукових пріоритетів професора О.О. Браунера. Доведено пріоритет ученого у систематизації умов породотворного процесу та класифікації великої рогатої худоби, формулюванні гіпотези одомашнювання тварин поблизу древніх центрів зародження цивілізації. Наукові праці О.О. Браунера сприяли подальшому розвитку вчення про походження і акліматизацію сільськогосподарських тварин, збереженню та раціональному використанню генофонду порід. Висвітлено внесок дослідника у становлення Всесоюзного НДІ гібридизації та акліматизації тварин, розроблення основних положень державних племінних книг великої рогатої худоби, показано його роль у популяризації здобутків вітчизняної зоотехнії.

Ключові слова: *зоологічна зоотехнія, тваринництво, дослідна справа, зоотехнічна освіта, племінна справа, акліматизація, походження тварин, О.О. Браунер.*

ПРОФЕССОР А.А. БРАУНЕР (1857–1941) – ОСНОВАТЕЛЬ ТЕОРЕТИЧЕСКИХ ОСНОВ ЗООТЕХНИИ, ОРГАНИЗАТОР ОПЫТНОГО ДЕЛА В ЖИВОТНОВОДСТВЕ УКРАИНЫ

Цель исследования – освещение жизненного и творческого пути доктора биологических наук, профессора А.А. Браунера, его вклада в организацию исследовательского и племенного дела в животноводстве Украины, распространение высшего зоотехнического образования. Методология исследования основана на использовании методов историко-научного анализа, систематизации, а также биографического метода. Источниковая база исследования охватывает широкий круг опубликованных и неопубликованных работ, ее основу составляют архивные материалы и научные труды А.А. Браунера. Научная новизна публикации заключается в обосновании вклада ученого в становление зоологической зоотехнии в системе отраслевого научного знания. Впервые изучено влияние научных идей российской научной школы зоологов-эволюционистов, основанной профессором К.Ф. Рулье, на формирование научных приоритетов профессора А.А. Браунера. Доказано приоритет ученого в систематизации условий породообразующего процесса и классификации крупного рогатого скота, формулировке гипотезы одомашнивания животных вблизи древних центров зарождения цивилизации. Научные труды А.А. Браунера способствовали дальнейшему развитию учения о происхождении и акклиматизации сельскохозяйственных животных, сохранению и рациональному использованию генофонда пород. Освещен вклад исследователя в становление Всесоюзного НИИ гибридизации и акклиматизации животных, разработку основных положений государственных племенных книг крупного рогатого скота, показана его роль в популяризации достижений отечественной зоотехнии.

Ключевые слова: зоологическая зоотехния, животноводство, исследовательское дело, зоотехническое образование, племенное дело, акклиматизация, происхождение животных, А.А. Браунер.

Zootechnical science is a theoretical system of scientific knowledge, characterized by a cumulative nature. At each historical stage, it synthesizes past achievements in a concentrated form. Succession of generations, which is based on the foundation of theoretical knowledge accumulated by previous generations, ensures its progressive development. The achievements of scientists in the field of animal husbandry testify the real scientific and cultural potential of the Ukrainian community, are a powerful theoretical and methodological basis for developing a further strategy for the progress of animal husbandry in Ukraine.

Doctor of Biological Sciences, Professor O.O. Brauner made a significant contribution to the formation and development of research in animal husbandry in Ukraine in the first half of the 20th century, the spread of higher zootechnical science. Browner. The scientist made a classification of the conditions of the breed

creation process and formulated the foundations of zoological zootechnics. He proposed the classification of cattle, which is a fundamental generalization of the historical relationship of systematic and geographical species and breeds. For the first time in the history of animal science, he substantiated the importance of cultural and economic factors in the evolution of farm animals, which in today's conditions is a unique material for study.

Personal and intellectual biography of Professor O.O. Brauner have reconstructed in the scientific works by V. Boreyko [1], A.N. Kryshtofovich [14], B.M. Mazurovich [15], I.I. Puzanov and others [18]. The scientist's contribution to the organization of the research work in animal husbandry of Ukraine, in particular to the formation of the zootechnical experimental and breeding station in Askania-Nova has covered by V.M. Riabko [19], as well as in our previous works [2]. However, so far the Professor O.O. Brauner's creative initiatives on the formation of a new scientific direction in the system of animal science – zoological zootechnics, which contributed to the further development of the doctrine farm animal origin and acclimatization, preservation and rational use of biodiversity.

The purpose of the study is to reveal the main milestones in the life and scientific path of Doctor of Biological Sciences, Professor O.O. Brauner, his contribution to the organization of research work in animal husbandry and the spread of higher zootechnical education, the formation of zoological zootechnics in the system of branch scientific knowledge.

The research has based on the use of general scientific principles of systematization, complexity, multifactoriality and comprehensiveness, which provide a comprehensive coverage of the selected problem. General scientific, interdisciplinary and special historical methods, as well as methods of source and archival analysis has used. Preference has given to the biographical method as the main means of reconstruction of the intellectual biography of the scientist. The source base of the study covers a wide range of published and unpublished papers; its basis is archival materials and scientific works by O.O. Brauner.



Oleksandr O. Brauner was born on January 13, 1857 in Simferopol in a noble family. In 1876 he graduated from the Odessa Gymnasium, in 1881 – the Department of Natural Sciences of the Physics & Mathematics Faculty of one of the twelve Imperial Universities of the Russian Empire, namely Novorossiysk University (now Odessa National University named after I.I. Mechnikov) – founded in Odessa on May 1, 1865 on the basis of Richelieu Lyceum [18].

He worked in 1888–1893 as a member of the board of the Land Bank in Warsaw, at the same time in 1882–1888 as an extra, and in 1888–1890 as the head of a department in the Kherson Provincial Zemstvo Authority. He was well versed in the methods of ornithological observations, wrote two articles on birds in the Kherson and Tavriya provinces. He also prepared "Notes on Fishing on the Dniester River and the Dniester Estuary" (published in the "Notes of the Novorossiysk Society of Naturalists"), "On Harmful and Useful Animals of the Kherson Province" (in the "Notes of the Imperial Society of Agriculture of Southern Russia"). Scientists have compiled "Tables of harm and benefit brought by birds and mammals of the steppe zone of Russia." He also wrote short stories about nature, which were published in the Kherson collection "Steppe" (1886) and in the newspaper "South" (1898) [14, 15].

In 1901, he moved to Odessa, in 1901–1919, he was the head of the department of the Peasant Land Bank in Odessa. At this time he took an active part in the work of the Novorossiysk Society of Nature Researchers, the Imperial Society of Agriculture of Southern Russia, the Crimean & Caucasus Mountain Club, the Odessa Society for Proper Hunting, and the Ornithological Committee of the Russian Society for Animal and Plant Acclimatization.

It should be noted that a well-known zoologist, paleontologist, Ordinary Professor of Moscow University K.F. Roulier, who in 1856 organized the Committee for Acclimatization of Animals and Plants in Moscow, transformed in 1864 into the Imperial Russian Society of Acclimatization of animals and plants, made a significant contribution to its formation. O.O. Brauner considers himself a follower of the traditions of the Russian Scientific School of Evolutionary Zoologists, founded by Professor K.F. Roulier.

The scientist introduced a comparative-historical method of the organic world studying, researched the influence of external conditions on animals, the laws of their geographical distribution. He became the founder of the so-called ecological direction in zoogeography. O.O. Brauner develops the ideas on the influence of external conditions on breed creation, the historical connection of systematic and geographical species and breeds, develops the foundations of animal zoning. O.O. Brauner – one of the first zoologists in tsarist Russia, who began seriously study the protection of domestic fauna. Thus, in 1899 two of his works were published: "On the protection of birds useful for agriculture", "On the protection of mammals and birds useful for agriculture", in which he protects feathered predators [7, 8].

At this time, O.O. Brauner establishes close relationship with the founder of Askania-Nova, Baron F.E. Falz-Fein, together with the famous botanist I.K. Pachoskyi was the first to study the nature of the protected steppe. Taking care of the preservation of the gene pool of the aboriginal fauna of the steppe, he recommended Falz-Fein to start work on crossing domestic horses, obtained by introductory crossing with a tarpan, with Przewalski's horse. O.O. Browner came up with the idea of instituting a zootechnical station in Askania-Nova. It should be noted that the first narrow-branch research stations in the Ukrainian lands, namely the Zootechnical Research station of the Department of Veterinary Service of the Ministry of Internal Affairs of Russia, as well as the sheep research department of the Petrovsky Agricultural Academy, were opened in Askania-Nova in 1910 and 1916. However, both stations functioned only until 1917, as its funding was stopped [2].

In 1915, the scientist took an active part in the work of the officially approved Commission (since 1935 Council) for the Study of the Natural Productive Forces of the Russian Empire. In 1917–1918 he was the chairman of the Committee of Agricultural Courses in Odessa, on the basis of which, with O.O. Brauner assistance the Odessa Agricultural Institute was established in 1918, the zoo museum of Odessa University was renovated. In 1919, on the initiative of the scientist at the Odessa Agricultural Institute, a department for the training of agronomists-animal breeders was organized. In 1920, the Odessa University awarded the degree of Doctor of Zoology to O.O. Brauner [18].

O.O. Brauner takes care of the state of the reserve in Askania-Nova, writes reports to the All-Ukrainian and Russian Academy of Sciences, the Committee for the Protection of Natural Monuments, the Society for Acclimatization and the People's Commissariat of Ukraine with requests to financially support Askania-Nova. Thanks to his request, an authoritative commission came to the reserve, provided him with timely assistance, and preserved a unique gene pool.

It was during this period that O.O. Brauner wrote his major works on zoological zootechnics: "Materials for the knowledge of domestic animals of Russia" (in 2 vols; Odessa, 1916 and 1919), "Animal husbandry: History of animal husbandry in steppe of Ukraine, the history of domestication, species and breeds, survey of animal husbandry" (Odessa, 1922), "Agricultural Zoology" (Odessa, 1923), "Breeds of Farm Animals" (1923) [5, 6, 11, 12]. In his research, using the methods of osteology and osteometry, he studied the origin of animals, the processes of acclimatization. He managed to clearly classify the conditions of the breed creation process. For the first time in the history of zootechnics he put forward and substantiated the importance of cultural and economic factors. Classification of cattle, proposed by O.O. Brauner, is a fundamental generalization of the historical connection of systematic, geographical species and breeds. His theoretical developments in the historical evolution of breeds still remain a very valuable material in the study of farm animals.

Thanks to the creative initiatives of Professor O.O. Brauner in 1925 in Askania-Nova a zootechnical research and breeding station was created. On his recommendation, the well-known scientist, future academician M.F. Ivanov was appointed Director of the station. On the basis of the zootechnical research station, fundamental research on breeding, selection and grading of farm animals was conducted. A wide program for studying the biology of reproduction and acclimatization of wild animals, their hybridization with livestock has been developed. Academicians M.M. Zavadovskiy, B.M. Zavadovskiy, O.S. Serebrovsky, Professor B.M. Bogolyubskiy, and others took part in those researches [2].

In 1925 in Askania-Nova work on improvement of local breeds of sheep which was carried out by M.F. Ivanov, L.K. Greben, P.P. Belekhov, M.V. Misyutkina, V.M. Syutkin, etc. A Department of Sheep Breeding was established, headed by F.M. Dobrogorskiy. In our opinion, the key to success, above all, was the presence of a large variety of breeds. The All-Union Conference on Research in Sheep Breeding in 1929 noted that the work of the station got All-Union significance, so it was entrusted with the function of a coordinating center in sheep breeding. Breeding work focused mainly on breeding Rambouillet and Precos, Karakul and Tsigai sheep. They developed the issues of qualitative improvement of sheep breeding on the basis hybridization of coarse-wool sheep with English meat breeds, creation of new breeds with semi-fine wool for the conditions of steppe districts of the USSR.

They attached no less importance to the improvement of the breed composition of pigs, which, together with M.F. Ivanov, was carried out by L.K. Greben and Ya. Ya. Erglis. In 1926 they started creation the first domestic breed of pigs – Steppe White. To increase the milk productivity of the Gray Ukrainian breed of cattle, the efficiency of the introduction of introductory crossing with the Shorthorn breed was substantiated. Improvements on beef productivity and precocity were achieved through introductory crossbreeding with Romanoles, as well as the creation of appropriate conditions of livestock feeding, caring and keeping. Simultaneously with the qualitative improvement of this breed, work began on the experimental restoration of the tour [16, p. 2–3].

Professor O.O. Brauner held the post of Deputy Director for Scientific Work of the zootechnical experimental and breeding station. He paid special attention to Gray Ukrainian and Red Steppe cattle. Scientist developed the main provisions of the State Pedigree Book. In 1928 he co-authored the first 2 volumes of the Red Steppe Breed State Pedigree Book. O.O. Brauner made efforts to popularize the achievements of domestic animal science, in particular, the researcher has priority in writing of the Ukrainian shepherd history.

Oleksandr O. Brauner took the most active part in the formation of the young hunting organization of the republic, was one of the organizers of the All-Ukrainian Union of Hunters and Fishermen (AUH&F), whose first congress took place on July 10, 1921. He was one of the first in Ukraine to teach hunting courses in the Odessa Provincial Department of AUH&F. Scientist was a regular author of the republican hunting magazines "Southern Hunting", "Ukrainian Hunter and Fisherman", "Nature and Hunting in Ukraine" [9, 10]. In this regard, his "Agricultural Zoology", the first textbook in Ukraine for agricultural universities, which broadly reflects the history of nature protection and its current state, has great scientific value.

O. O. Brauner could be considered one of the pioneers of the protected work in Moldova and Ukraine. As early as 1917, he took an active part in a joint meeting of the Novorossiysk and Bessarabian societies of naturalists, the Crimean & Caucasus Mountain Club, and the South Russian Entomological Society for the Protection of Natural Monuments, at which a list of promising natural sites was compiled. Scientist supplemented it and published it in 1923. In his scientific works, O.O. Brauner defended the principles of inviolability of protected areas, raised the issue of creating a single body that manages reserves, pointed to the need to find new, promising areas to be protected. For the first time, the researcher performed zoning, distribution of animals in the boundaries from Poland to Donbass, from Slobozhanshchina to the Black Sea [3, 4].

Since 1926, O.O. Brauner headed the Odessa Regional Inspectorate for Nature Protection. He actively undertook the task entrusted to him, achieved the creation of

new reserves on the lower Dnieper, many natural monuments, personally organized a systematic inspection of its protection.

In the spring of 1929, preparations for the election of full members of the All-Ukrainian Academy of Sciences began in Kharkiv. O.O. Brauner was running for agricultural sciences. However, according to documents from the former archives of the Central Committee of the Communist Party of Ukraine, the election was in fact a well-played spectacle. Unfortunately, the candidacy of O.O. Brauner was blacklisted [18].

It is worth noting, O.O. Brauner was the first in the country to raise the issue of environmental education in universities. He encourages the introduction of a course in the study of fauna, especially local, zoogeography and nature protection in universities, institutes of public education and higher agricultural educational institutions. However, these plans did not come true.

An excerpt from the order № 12/1 on the Odessa Institute of Vocational Education on December 24, 1930, evidences "For the deliberate reduction of the scientific and theoretical level of students in the teaching of animal husbandry at the Faculty of Biology, for the vulgar-idealist methodology and finally for an attempt to tarnish the Party's enormous work in overcoming the difficulties of animal husbandry, by stating to students that official information does not correspond to reality and Soviet workers are not able to solve the problem of livestock", Professor O.O. Brauner descended to counter-revolutionary work and wrecking in the field of training new personnel. In this connection, on December 1, 1930, he was dismissed from the position of Professor of cattle breeding at the institute [17, p. 18]. Fortunately, O.O. Brauner, like many others, did not fall into the hands of the GPU under the NKVD.

The scientist was transferred to the All-Union Institute of Hybridization and Acclimatization of Animals in Askania-Nova, established in 1932 on the basis of zootechnical, phyto-technical and meteorological research stations. In 1933-1935 he worked as a consultant to the institute, in 1936-1938 – head of the zoo, bred bison. The institute became the main base in the USSR for large-scale experiments on

hybridization and acclimatization of animals. Valuable and rare animal collections were concentrated here, including Przewalski's horses and their hybrids with cultivated breeds, zebras, zebras, 8 species of antelopes, mouflon, ibex, llama, fallow deer, bison-bison, zebu, banteng, buffalo, camel, deer, fox, jackal, raccoon dog, 3 species of ostriches, etc. [2].

Researches of the institute have made progress in improving the productive traits of pigs, sheep, cattle and poultry in the region. In 1934 in Askania-Nova the first domestic breed of pigs, the Ukrainian Steppe White, created by M.F. Ivanov with the participation of N.V. Beckett, L.K. Greben, O.K. Greben, N.A. Moroshkin, B.T. Pogrebny, was tested. In 1938, L.K. Greben began work on creation Ukrainian Steppe Spotted pig breed, more adapted to the hot climate of the south and precocious. In 1935, the first domestic breed of sheep, Askanian Fine-Wooled, bred by M.F. Ivanov on the basis of crossing local Merinos with American Rambouillet sheep and simultaneously improving feeding and keeping, thorough selection of animals, individual and linear selection, inbreeding, was tested [16, p. 8–9].

Scientists of the institute improved the breeding and productive qualities of the Red Steppe Breed of cattle on the basis of intrabreed selection and crossbreeding. At the initiative of M.F. Ivanov and Yu.F. Lyskun, it was used as a maternal basis in crossing with dairy Shorthorns. Since 1932, they have hybridized Red Steppe Breed and Gray Ukrainian cattle with Arabian and Indian zebu, banteng, bison, and since 1933 – with gayal. O.Yu. Mokeiev and P.M. Buyna worked on the creation of a new intrabreed type of cattle resistant to blood-borne parasitic diseases on the basis of hybridization of Red Steppe Breed with Indian zebu. Most of the obtained hybrids were transferred for further study to the Azerbaijan SSR.

In the field of poultry, scientific work was directed in the following directions: acclimatization and breeding of rare wild birds; hybridization of wild birds with poultry; interbreeding of poultry. The work on the hybridization of birds was carried out by A.D. Yemelienenko, crossing the musk duck with domestic (Peking, Khaki-kembel, Indian runners). Interbreeding of Peking ducks and Khakis, both breeds with Indian runners, as well as Leghorn chickens with Langshans, Faveroles with

Golosheyks, and others was carried out. As early as 1936, one of the Leghorn-Langshan lines was put into production [2].

At this time, O.O. Brauner enriched the theory and practice of zootechnics with the hypothesis of domestication of animals near the ancient centers of the origin of civilization, which was continued in the M.I. Vavylov' scientific papers.

In 1935, the scientist was also elected a member of the Committee on Reserves at the Higher Central Executive Committee. In 1939–1941 he worked part-time as a Professor at the Department of Zoology of Odessa University. In 1939 he received the degree of Doctor of Biological Sciences.

O.O. Brauner died on May 5, 1941 and was buried in Odessa [18].

Thus, Professor O.O. Brauner made a significant contribution to the forming of research work in animal husbandry as the initiator of organization, Deputy Director on scientific activity of the Zootechnical Research and Breeding Station in Askania-Nova, as a scientific consultant created on its basis All-Union Scientific Research Institute of Animal Hybridization and Acclimatization. The influence of K.F. Roulier on the formation of scientific interests of the scientist was proved. Using the methods of osteology and osteometry, O.O. Brauner made a classification of the conditions of the breed creation process and formulated the basics of zoological zootechnics. The classification of cattle proposed by scientists is a fundamental generalization of the historical connection between systematic and geographical species and breeds.

He enriched the theory and practice of zootechnics with the hypothesis of domestication of animals near the ancient centers of the origin of civilization. For the first time in the history of zootechnics, O.O. Brauner substantiated the importance of cultural and economic factors in the evolution of farm animals, which even today is a very valuable material for study. He contributed to the formation of breeding work in the Ukrainian SSR as a developer of the basic provisions of state pedigree books, animal zoning. Professor O.O. Brauner contributed to the spread of higher zootechnical education as the initiator of the Odessa Agricultural Institute and one of the first in the country departments for the training of agronomists and breeders. The

researcher was a well-known popularizer of the achievements of domestic zootechnics.

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