

**ИСТОРИЯ
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**Is Science Enough?: The Limits of Scientific Agriculture
in Nineteenth-Century Russia within a Global Market***S. Smith-Peter**City University of New York, USA*

The article argues that the spread of scientific information is not always enough to ensure the success of the production of any particular country in a global market. In particular, there were significant barriers to the introduction of improved livestock raising in nineteenth century Russia. Although agricultural societies, which were voluntary associations of Russian nobles, carried out substantive work to disseminate scientific livestock raising in Russia, global success on the wool market was transient. Understanding the interplay between domestic and global markets is key to a deeper understanding of the challenges of Russian agriculture.

Keywords: science; agriculture; livestock; sheep; voluntary associations; civil society; globalization; history of Russia; Russian agriculture

**Достаточно ли науки? Ограниченность возможностей
научных методов ведения сельского хозяйства России
на глобальном рынке XIX века***С. Смит-Питер**Городской университет Нью-Йорка (США)*

В статье выдвинуто предположение, что распространение научной информации не всегда является достаточным для успешной производительности любой конкретной страны на глобальном рынке. В частности, в XIX веке в России существовали значительные барьеры для применения технологий разведения улучшенных пород домашнего скота. Хотя сельскохозяйственные общества — добровольные объединения российского дворянства — вели существенную работу по распространению научных методов разведения домашнего скота в России, успех на глобальном рынке шерсти

был кратковременным. Изучение взаимовлияния отечественного и глобального рынков является ключевым для более глубокого понимания вызовов, стоящих перед российским сельским хозяйством.

Ключевые слова: наука; сельское хозяйство; домашний скот; овцы; добровольные объединения; гражданское общество; глобализация; история России; российское сельское хозяйство

In the first half of the nineteenth century, the Russian Empire saw the development of a substantial number of agricultural voluntary societies, which sought to introduce market agriculture into Russia by spreading scientific knowledge. These societies brought together nobles who wanted to improve their estates and Russian agriculture as a whole. Two of the most important during this time were the Moscow Agricultural Society (established 1820) and the Southern Russian Agricultural Society, founded in 1828 in Odessa.

The societies hoped that by promulgating new scientifically proven forms of agriculture, Russian producers would improve their practices and their profits. And yet, the societies themselves found that applying science did not guarantee a profit. After a look at the institutional history of two important agricultural societies in Russia, this article looks at the obstacles facing Russian improved livestock breeding, particularly of merino sheep, within both the national economy and a global market where scientific knowledge was widespread. At first, it seemed that a lack of scientific knowledge was the main obstacle, and that once it was remedied, profits would be assured. Later, others argued that serfdom must end for that to happen; however, international competition did not cease with the end of serfdom in Russia. The institutional focus of the societies, which created model farms, schools, and other means of disseminating scientific agriculture, was ultimately not sufficient to ensure the success of this branch of agriculture in the world market.

Russian agricultural societies have attracted attention for some time, but in rather disparate fields. Many scholars have focused on the institutional history of the agricultural societies (Kurenyshev / Куреньшев, 2012; Leckey, 2011; Trusova, Bliumfel'd / Трусова, Блюмфельд, 1959). Other place the importance of the societies within Russian agricultural history (Elina / Елина, 2011; Frolova / Фролова, 2010; Kozlov / Козлов, 2002) and their role in environmental history (Moon, 2013) and in civil society (Bradley, 2009; Smith-Peter, 2018). This work builds on my earlier work in arguing that we need to combine an institutional history of the societies with economic history (Smith-Peter, 2016). This provides us

with a sense of the promise and the limits of collective voluntary action in shaping the national and international economy.

After an overview of traditional peasant agricultural practices, which did not focus on the production of livestock but of grain, the article turns to a discussion of how those who wanted to introduce market agriculture sought to change those practices. Then it provides a discussion of the two main agricultural societies and their attempts to create a flourishing economy around improved breeds of livestock — attempts that ran into difficulty due to global economic trends and domestic problems.

THE TRADITIONAL AGRICULTURAL YEAR AND THE RISE OF MARKET AGRICULTURE

In the Russian heartland, the three-field system dominated in peasant agriculture. The focus was on the production of grain, not of the needs of livestock. A particular field was first left fallow, often for a year, allowing the soil to regain some of its fertility. Livestock were allowed to graze on this field. In central Russia, there was a lack of grazing space for livestock in the three-field system. Although one field was left fallow, it was not enough land to prevent overgrazing and compaction of soil, making plowing difficult once it was used again. Many rationalizers called for the use of fodder grass for livestock, which would also insure a reliable supply of fertilizer. However, peasants resisted these changes, partly because without the addition of new land, fodder grass would not solve the overgrazing problem for a typical village.

The fallow field would next be sown with a winter grain, which was most often rye but could be winter wheat. Winter grains were usually sown in August, lay dormant through the winter, then sprouted in the early spring. This enabled greater use of the growing period, which was especially important for northern regions. Around April of the next year the field would be planted with a spring grain. Oats were the most common, although millet, barley, and spring wheat were also sown. The spring grain would be harvested in the summer, which was the busiest time of the agricultural cycle (Matossian, 1968: 9).

The three-field system allowed the use of one-half to three-fourths of the tilled land each year. This was more productive than earlier slash-and-burn techniques, which were still used in the nineteenth-century Russian North, or the shifting cultivation system, mainly used in the steppe provinces, which set aside tilled land to rest for ten years or more before reusing it (Kerans, 2001: 227–228).

However, agronomists called for scientific crop rotations that, by using the correct cycle of crops, would discard the need for a fallow period.

Strip farming was generally characteristic of Russian peasant agriculture. Peasants would periodically redistribute strips of land within each field in order to ensure the survival of every household. These strips were distributed among the fields, sometimes at a distance from each other. Strip farming was not as productive as enclosed fields, which made it the target of criticism from agronomists. However, David Moon has argued that these strips took advantage of microclimates in the fields and distributed risk among the villagers. Thus, if animals ate a section of the field (which was a particular problem if the fallow field was used for grazing), the scattered strips meant that no one family was wiped out. The strip system was a response to risk aversion, like a “diversified portfolio of shares” is to a modern investor, Moon argues (Moon, 1999: 133).

Livestock in this system were limited to the fallow field and to accommodation in a shed near the peasant hut (sometimes the peasant hut itself). While livestock were a vital part of the traditional peasant system, they were not its focus and most breeds of livestock were tough and hardy, rather than highly productive in terms of wool or other items. The rise of market agriculture aimed to change that.

Market agriculture was characterized by an increase in production by means of more intensive use of existing plots or by expanding the amount of land under the plow in order to sell the surplus. To be profitable, market agriculture before the railroad required the development of cities and non-agricultural employment, along with nearby fertile land. The pioneers of market agriculture were England and Holland in the late sixteenth and early seventeenth centuries, when urbanization, population growth, and a limited amount of land encouraged producing for the market (Lehning, 2001). Crucial to this increased productivity was the introduction of fodder crops such as clover and new root vegetables such as the turnip and the rutabaga, capable of feeding more livestock and more people. The fallow land was planted with fodder crops for livestock, which in turn provided a greater amount of fertilizer so that the land could be more intensively used without exhausting it (Dovring, 1965: 636).

Although traditional scholarship contrasted a dynamic Britain with a stagnant continent, newer scholarship has shown significant regional diversity within nations. For example, in France there were regions — namely, Normandy, near Paris, and areas in the southeast — where more intensive and extensive

methods were used from the sixteenth century. By the late eighteenth century, market agriculture was on the rise in these areas, characterized by increases in fodder, livestock, and grain for export (Hoffman, 1996). However, only between 1850 and 1870 did Western and Central Europe's agricultural production show a really significant increase overall (Lehning, 2001).

During the eighteenth century, much of Europe experienced rising prices along with rising population and urbanization. At the same time, the Enlightenment encouraged the development of various theories of scientific agriculture along with the spread of agricultural schools teaching the English and Dutch methods. Governments in central and Eastern Europe, including the Holy Roman Empire, the Hapsburg Empire, the Russian Empire and Poland encouraged the application of these new methods (ibid).

The earlier prestige of English agriculture was augmented by the influence of the Scottish Enlightenment. In particular, the works of Adam Smith offered a guide to transition from what we would now call feudalism to a commercial society marked by free markets, free labor, and civil society. Smith's thinking on free labor and the necessity of ending systems of unfree labor was based on a moral rejection of slavery, as we see in his 1759 work, *The Theory of Moral Sentiments*. Here he described Africans as noble savages and stated that “[f]ortune never exerted more cruelly her empire over mankind, than when she subjected those nations of heroes [i.e. Africans] to the refuse of the jails of Europe, to wretches who possess the virtues neither of the countries which they come from, nor of those which they go to, and whose levity, brutality, and baseness, so justly expose them to the contempt of the vanquished” (Smith, 2002: 242). This moral rejection of slavery, although universal now, was part of a major shift from a general acceptance of slavery as a necessary evil of great antiquity to increasing demands for abolition. In *The Wealth of Nations*, Smith rejected slavery as economically inefficient and unprofitable:

“The experience of all ages and nations, I believe, demonstrates that the work done by slaves, though it appears to cost only their maintenance, is in the end, the dearest of any. A person who can acquire no property, can have no other interest but to eat as much and to labor as little as possible. Whatever work he does beyond what is sufficient to purchase his own maintenance, can be squeezed out of him by violence only, and not by any interest of his own” (Smith, 1811: 275).

This argument was extremely influential in the abolitionist movement of Great Britain (Drescher, 2002), as well as in Russia, as I argue elsewhere (Smith-Peter, 2018). Adam Smith's work is not monolithic and various countries have

appropriated different parts of his thinking at different times (Adam Smith across nations ... , 2000). In addition, succeeding generations rediscovered and re-interpreted Smith. Esther Kingston-Mann has argued that the early nineteenth century reception of Smith by important Russian thinkers, such as H.F. von Storch, distorted his thinking by using it as a defense of property rights and an apology for serfdom (Kingston-Mann, 1999: 62–64; see also: Drescher, 2002: 59–62). Others have argued that property rights and an acceptance of inequality were fundamental to liberalism in the West as well as in Russia (Stanziani, 2014). By the 1840s, a new generation of thinkers, influenced by both Smith and German Romanticism, began to argue that efficient and productive agriculture required free labor. German Romanticism prompted a more positive evaluation of the peasant even as German agronomy emphasized the absolute necessity of free labor.

In particular, the work of German agronomist Albrecht Daniel Thaer was a foundational influence in the Russian reception of market agriculture. The most important follower of Thaer in Russia was Mikhail Grigor'evich Pavlov, professor at Moscow University, member of the Moscow Agricultural Society (MAS), and director of its agricultural school and model farm. After study at the Voronezh seminary, Pavlov went to Moscow University, where he graduated from the mathematical and medical departments in 1815. After completing his doctorate in 1818 in medicine at Moscow, he was sent abroad to study natural sciences and agronomy and worked directly with Thaer. Upon his return in 1820, Pavlov was made a professor of physics, mineralogy and agriculture at Moscow University (Trusova, Bliumfel'd / Трусова, Блюмфельд, 1959: 289–290). Pavlov was the first Russian follower of Friederich Schelling, a German idealist philosopher who attempted to understand nature as an organic whole. Pavlov also acted as a mentor to younger thinkers such as A.I. Herzen, N.V. Stankevich and V.F. Odoevskii among others.

As a follower of Schelling's *Naturphilosophie*, Pavlov argued that all of nature was one harmonious whole “containing within it the creativity, movement, and struggle of opposites” (Walicki, 1979: 76). Nature, rather than a reflection of some idea, was real in and of itself, and was the possessor of an inner spirit present throughout its many forms. This emphasis on the whole influenced Pavlov's analysis of agricultural systems, which he felt should be a harmonious interplay of humanity and nature. In a popular public lecture series published in 1821, Pavlov compared three different agricultural systems and argued that the crop rotation system was best (Trusova, Bliumfel'd / Трусова, Блюмфельд, 1959: 291–292). In

his position as head of the MAS's agricultural school and model farm, he influenced several generations of students and others.

Another follower of Thaer was S.A. Maslov, who became secretary of the MAS in 1820. His translation of Thaer's *Foundations of Rational Agriculture* was published by the MAS in 1830, and became the handbook of enterprising landlords (Kozlov / Козлов, 1996: 235). As A.V. Chaianov notes, the publishing history of this book shows "what reverence Moscow agronomists showed towards Thaer's work," for the original translation, done by V.A. Levshin, was rejected by the MAS as "incorrectly translating the best of Thaer's works and giving Russian landlords a false idea of the very science [of agriculture]" (Chaianov / Чаянов, 1920: 28; hereinafter the translation from Russian is mine. — S. S.-P.). The publisher then destroyed the first two volumes of the Levshin edition already in print and began to publish Maslov's translation, which ran to five volumes.

The MAS was an important center for abolitionist thought. Chaianov called it "a citadel of progressive Russian agronomists" (Nokhrina / Нохрина, 1995: 22). In 1820, a group of nobles, including several members of the MAS, asked Alexander I for permission to establish a society dedicated to the goal of giving complete freedom to the peasants. The two main initiators of the society — Count M.S. Vorontsov and Prince A.S. Menshikov — were later members of the MAS (Maslov / Маслов, 1850: 264, 272). (Vorontsov was an honorary member; Menshikov was a regular member.) The signers included V.N. Karazin, a founding member of the MAS. The project soon unraveled due to the hostility of high-placed courtiers and to the behavior of Karazin himself, who hinted in memos to Alexander I of a strange mentality like that obtaining in France before the revolution. Karazin suggested that the government establish a society under the control of Minister of Internal Affairs Kochubei to direct the improvement of peasant life and undertake "an imperceptible surveillance over all other — so called *free, open, and secret* — societies" (Semevskii / Семейский, 1888: 457). The reference was to the Free Economic Society. For his pains, Karazin was thrown into prison, while the other signers were not punished.

While walking in Tsarskoe Selo, Alexander I told historian N.M. Karamzin that "you had said that the idea of freeing the peasants had no response or sympathy in Russia, but I just received a request contrary to your opinion signed by many famous people, including your relative [the poet] Prince Viazemskii" (ibid: 456). Karamzin pressured Viazemskii to withdraw his name, a scenario reproduced with several other signers whose families pressured them to retract their names.

This episode suggests that there was a serious interest in freeing the serfs; however, it ran afoul of powerful interests, giving an indication of the difficulty of dealing with the subject. It should be noted that Alexander I was not unalterably opposed to the project; when first approached, he was pleased and saw no problem with it. Only after he encountered heavy opposition from highly placed nobles did he cool toward it.

However, it would be incorrect to argue that the majority of MAS members were confirmed believers in free labor. In fact, many of them argued for technical changes such as switching from *obrok* (quitrent) to *barshchina* (labor services) in order to make the maximum profit on their estates. This attitude was particularly evident in the generation of the founders, many of whose travels to Europe during or after the Napoleonic Wars had made them aware of the possibilities of market agriculture, but not of the need to treat peasants as human beings. A particularly good example of a pro-serfdom attitude can be found in Nikolai Nikolaevich Murav'ev, a founding member of the MAS. In response to Thaeer's Smithian defense of free labor, Murav'ev wrote that "the work of hired people in Russia will be the most unfounded and destructive undertaking... in Russia there is no other means of conducting field work aside from settled peasants" (Murav'ev ... / Муравьев ... , 1897: 192–193). Murav'ev's attitude is of special interest because he belonged to the often pro-serfdom founding generation of the MAS, yet his sons and many of the students from the quartermaster's school he directed became Decembrists.

The younger generation was on the whole more open to questions of improving the peasants' life. By the 1840s, the succeeding generation, raised on Romanticism, began to have a more positive view of the peasant. The younger generation firmly believed that the peasant would still require the assistance of the landlord in improving agriculture even after the former was free. Thus, the rise of free labor ideas was partly an expression of generational conflict, which led to stormy debates within the MAS and its provincial branches during the 1850s.

THE MOSCOW AGRICULTURAL SOCIETY AND TENSIONS BETWEEN REFORM AND SERFDOM

The Moscow Agricultural Society sought to introduce new agricultural techniques into Russian agriculture. At first, it was assumed that such changes would not affect the larger serf system. In time, certain tensions began to emerge among the members of the society regarding the degree to which their serfs ought

to be educated and whether it should be a fully European and scientific education or a more practical one. This was part of a larger question about how the new market agriculture would affect serfdom. Science could also conflict with serfdom in practice.

Residents of Moscow liked to contrast its Russianness with the alien European nature of St. Petersburg. However, Moscow was also open to Europe, just to a somewhat different version. Foreign influences in Moscow tended to be more from the English and German traditions, and less from the French. Alexander Martin writes that Moscow was “the most dynamic center of Russia’s modern culture: it had the oldest (and, prior to Alexander I, the only) university in Russia, the largest botanical garden, the most extensive private libraries, and some of the most significant publishing companies” (Martin, 1997: 58). Moscow was the home of the old noble families whose fame was due to their ancient titles, not state service, as well as to a new group of scholars drawn from Russia and abroad. From the late eighteenth century, Moscow was the home of a cluster of voluntary associations.

Most important to these associations was the presence of Moscow University, founded in 1755. Legal voluntary associations were allowed to form under the protection of the university. Among the first associations in Russia were two affiliated with Moscow University: the Free Russian Assembly (est. 1771) and the Friendly Scholarly Society (est. 1782) (Komarova, 2000: 3). Alexander I’s reform of the university system in 1804 led to the creation of several new universities and a general enlivenment of university life, including in Moscow. In 1804, Moscow University rector Kh.A. Chebotarev founded the Society of Russian History and Antiquities affiliated with Moscow University. The society appealed to the public for donations of historical works and its library soon held 20,000 volumes, thus suggesting that the Moscow public was responsive to these concerns (Flynn, 1988: 32). In 1805, the Moscow Society of Investigators of Nature was founded under the auspices of Moscow University. It focused on the study of nature and Russia’s natural resources and had many provincial members who sent in descriptions of the natural features of their region (Stepanskii / Степанский, 1987: 24–25). Moscow’s associational life was not limited to the university; in 1810, a group of conservative nobles led by A.S. Shishkov and G.R. Derzhavin established the Symposium of the Lovers of the Russian Word. The Symposium propagated Shishkov’s ideas of the need for Slavonic rather than French influences

in Russian literature (Martin, 1997: 113–117). Moscow was thus the center of a self-consciously Russian scholarly life.

Before the creation of the Moscow Agricultural Society, some of its members had attempted to create a similar group. In 1803, D.M. Poltoratskii and other large landowners tried to establish a Society for Agricultural and Mechanical Arts, but failed to attract enough members from the nobility and it closed in 1805. In 1811, V.N. Karazin founded the Filotechnical Society in Kharkhov, also called the Scientific Agricultural Society for the Improvement of South Russian Agriculture (Sreznevskii / Срезневский, 1897: 495). In 1818, Free Economic Society member Baron Rozen argued that economic voluntary associations should be founded in every province (Kozlov / Козлов, 1996: 232). The head of the Free Economic Society N.S. Mordvinov made a similar proposal on the need for provincial (and even district) societies in 1836 (Arkhiv grafov Mordvinovykh / Архив графов Мордвиновых, 1903: 576). In 1818, the founding members of the MAS elected the society's first council. The founding of the MAS was part of the larger societal response to the Napoleonic Wars and the sense of Russian patriotism that followed. The official historian of the MAS, Stepan Maslov, described the founders of the society as a "high circle of enlightened Russian nobles who had sacrificed much for the fatherland" (Maslov / Маслов, 1850: 3).

The origin of the MAS lay in discussions in 1818 at the homes of Prince S.I. Gagarin and Prince D.V. Golitsyn, "amid the ruins of a reviving Moscow" where several patriotic nobles asked "how to improve our agriculture; how to add to it the mental forces of knowledge and science; how to disseminate a belief in their usefulness and necessity from the heart of Russia to the furthest limits of the largest government in the world?" (ibid: 2). This belief in science was in line with the larger redefinition of agriculture as a complex activity that required scientific grounding. This can also be seen in the opening announcement of the MAS agricultural school, published in 1822: "The goal of the agricultural school is that agriculture be taught as a science and that the peasants and house serfs studying in it will be prepared to become thinking agriculturalists (*mysliashchimi khlebopashtsami*)" (Trusova, Bliumfel'd / Трусова, Блюмфельд, 1959: 307).

Overall, the first generation felt that science would solve Russia's agricultural problems without the need for major social change. They believed that with increased information, solutions would be obvious to and implemented by all. The MAS systematically reached out to provincial landlords in the hope of increasing the society's knowledge of local conditions. This was part of an already

established tradition in Russia of sending questionnaires to various parts of the empire, which had been used by the Academy of Sciences as early as the 1750s. In the case of the MAS, the society conferred ex officio membership on all general-governors and provincial marshals of the nobility in the hopes of receiving descriptions of the agriculture in various provinces.

The members of the MAS tended to be large landowners. One count of the 770 members that joined between 1818 and 1860 found that 621 of them had more than 100 souls, which was considered the minimum needed to allow a fully Westernized existence, while 211 owned more than 500 souls, putting them among the wealthiest nobles (Kozlov / Козлов, 2002: 403). The first president of the MAS, D.V. Golitsyn, was a major landowner and the governor-general of Moscow. In a letter to Golitsyn, the Kaluga marshal of the nobility and senator, Prince N.G. Viazemskii, wrote that the nobility had the unique ability and thus the duty to spread rational agriculture. "In the composition of our government," Viazemskii wrote, "landlord-nobles are the main comrades-in-arms in the improvement of agriculture. This enlightened estate is more able than others to do any new and useful undertaking... By means of landowners, we may with time... act for the improvement of agriculture even among simple peasants in all regions of Russia" (Kozlov / Козлов, 2002: 345).

This sense of exclusivity and duty echoes Marc Raeff's work on the eighteenth century nobility, in which a segment began to transfer their service from the state to society, partly under the influence of Freemasonry (Raeff, 1966). However, the members of the MAS were not forerunners of the intelligentsia but rather of a group of public-minded nobles who wanted to serve both state and society. This was expressed by founding member D.M. Poltoratskii. Poltoratskii, who had studied in Germany, and, after state service, purchased an estate in Kaluga Province, where he was one of the first to use crop rotation, fodder grass cultivation, and improved tools. He established an agricultural school for his peasants and invited his neighbors to send their peasants there (Blum, 1961: 410). In 1818, he spoke at the first meeting of the society, stating "This newly-formed society is composed of authentic lovers of agriculture for the improvement of different branches of agriculture; this society will become like many others, already established in various countries of Europe and America, if it does not differ from them in its basic qualities; namely, a strongly foreordained striving toward one goal. With all its power it will work for the common good, not allowing in itself the slightest sign of ambition or desire to satisfy self-love... This noble exploit will

inevitably bring the government the most beneficial results, for *all rewards of work are for the common weal*” (Maslov / Маслов, 1850: 9). This sense of striving toward constant improvement is visible in an 1821 article on the history of the MAS written by MAS director and president of the Moscow Society of Investigators of Nature, J.G. Fischer von Waldheim, who wrote that “Clearly, nature ceaselessly beautifies itself and becomes better. Happy are those that are able to improve themselves along with her!” (Kozlov / Козлов, 2002: 345).

Alexander I soon approved the statute founding the Moscow Agricultural Society (Gorbunov / Горбунов, 1871: 4). The MAS had four divisions: theoretical, practical, mechanical, and pedagogical. Sixty-five professors from Moscow and other universities were members of the first, theoretical, division. They translated foreign works and produced their own original work for publication in the MAS’s journals. The second division — the practical — consisted of rationalizing landlords with practical experience and some owners of large factories. Engineers and mechanics made up the third division, which propagandized the spread of mechanization in agriculture. Finally, the teachers at the MAS’s Agricultural School and members of its model farm were part of the pedagogical division (Kozlov / Козлов, 1996: 233–234).

The society focused on the creation of its own journal and the establishment of a model farm. The MAS was able to build upon several decades of agricultural periodicals, from the *Trudy* of the Free Economic Society established in 1765 to A.T. Bolotov’s *The Rural Resident*, published 1778–1779, and his *Economic Magazine*, published as a supplement to N.I. Novikov’s *Moscow News* between 1780 and 1789 (Nokhrina / Нохрина, 1988: 169). Bolotov was one of the founding members of the MAS. These journals published a mix of practical and theoretical material and provided a forum for enterprising landlords. Edited by secretary Maslov, the MAS’s *Agricultural Journal* was published between 1821 and 1840 under that name. The journal’s sections consisted of original articles on agriculture, experiments and observations, translations of foreign works, and correspondence. Much of the original work called for the introduction of crop rotation into Russia; indeed, the first volume had an article on the success of a four-field system with fodder grass and potatoes.

Many of the articles emphasized the status of agriculture as a science; in particular, several travel accounts described the state of scientific agriculture abroad, including Thaer’s work in Germany (Maslov / Маслов, 1850: 31–32). The section on experiments often carried works on improved agricultural tools,

including mechanized threshers and plows (ibid: 33). Finally, the publication of correspondence did the most to create an empire-wide public of enterprising landlords. By writing to provincial marshals of the nobility, the society identified potential members throughout Russia, who sent in descriptions of the agriculture of their regions (ibid). This activity was crucial for the later formation of provincial societies, as landlords could identify like-minded nobles throughout a large region rather than being limited to personal contacts. The journal agitated for the introduction of market agriculture, dealing extensively with the introduction of sugar beets and merino sheep, two of the most profitable cash crops. This is visible in the publication of the *Notes of the Sugar Beet Committee*, published as a supplement between 1834 and 1840, and the *Journal of Sheep Breeders* (1833–1840) (Tikhonov / ТИХОНОВ, 1961: 96; Nokhrina / НОХРИНА, 1988: 170).

There was a debate between the founder members of the MAS about the correct methods of teaching agriculture. A group of practical landlords, headed by Poltoratskii, argued for teaching by doing. In contrast, more theoretically oriented members emphasized the importance of science and theory and the need to master such disciplines as chemistry and biology. At one of the MAS's first meetings in 1818, Poltoratskii called for the creation of a model farm where "peasants will study the practical side of agriculture. The simple people are not convinced by any instructions aside from the very work itself. Reproducing knowledge of agriculture leads to many systems [of cultivation]; these will only confuse them, and the land will be cultivated in the same ignorant manner as before" (Maslov / МАСЛОВ, 1850: 9–10). For Poltoratskii, who had created an agricultural school for his own peasants, the aim was not to create an educated peasant class with knowledge equivalent to their masters, but rather to inculcate certain useful skills among the peasantry. Academic presentation of various agricultural systems — such as the three-field, four-field, or other forms of crop rotation — would provide more information than peasants could use, according to Poltoratskii.

N.N. Murav'ev, director of the Quartermasters' School, took an opposing view. "The English, and all European peoples except for Russia, have realized that the application of natural science and chemistry to agriculture is necessary for its development." Murav'ev went on to argue that the society needed to "found a *school*, which would prepare people able to work as clerks in the villages with sufficient knowledge to direct the introduction of those discoveries in agriculture that the society will make" (Maslov / МАСЛОВ, 1850: 11).

Partly the disagreement stemmed from varying views of the role of the landlord. Poltoratskii emphasized the residential nature of the landlord and thus the need for peasants to listen and apply what their landlord told them to do. In contrast, Murav'ev focused on the needs of non-residential landlords. "The nobles-landlords are in service," he wrote, "and their estates are run by illiterate bailiffs and elders whose knowledge of agriculture is no higher than the peasants" (ibid). New stewards and clerks on estates with non-residential nobles would have to be capable of taking initiative and responding to problems as they arose.

A compromise was reached in which the society created both a model farm and an agricultural school. The society's experience with the model farm shows the problems of introducing rational agriculture into Russia. For the model farm, the society rented 240 desiatines of land in a swampy area near Moscow. The plan was to show that with rational agriculture, even marginal land could become profitable (Trusova, Bliumfel'd / Трусова, Блюмфельд, 1959: 311). However, the farm soon became a major financial drain on the society. Between 1822 and 1825, the society spent 86,496 rubles on the farm; at the same time, only 36 desiatines of land were actually arable and so the possibility for profitable agriculture was quite limited (ibid: 318; Maslov / Маслов, 1850: 66). During these years, the farm was run by the Englishman Alexander Rodger. Hoping to improve the farm and limit their losses, in 1825 the society turned the management of the farm over to M.G. Pavlov, who was to organize the farm mainly as he saw fit and would receive any income produced by the farm. The society earmarked a total of 20,000 rubles over five years to help Pavlov with the farm. Hired labor and serfs sent by landlords to learn new methods provided the labor.

Even with Pavlov's direction, the farm did not become profitable. In his report on the farm covering the years from 1829 to 1831, Pavlov stated that the price of grain was too low and the cost of labor too high to bring any profit. Pavlov was able to quadruple the amount of hay gathered from the wet meadows, and yet when the meadows were used for grazing, the livestock packed down the clay soil, decreasing the fertility of the fields. In general, Pavlov concluded, raising livestock and growing vegetables were more profitable than grain for Moscow landlords, but in the poor soil conditions of the farm, nothing was very profitable (Trusova, Bliumfel'd / Трусова, Блюмфельд, 1959: 321).

Making a virtue of a necessity, Pavlov emphasized the scientific importance of the farm rather than its money making potential. One of the important functions of the farm was to test new machines and tools. Beginning in 1825, it hosted annual

public competitions between new types of plows, threshers, and other sorts of agricultural implements. Inventors sent in their products from various parts of the empire, and the results were published in the newspapers (ibid: 316).

While the farm taught practical skills, the agricultural school provided a high quality general education. While there had been several short-lived agricultural schools in Russia before, the MAS Agricultural School was the first long-lived institution of its kind. By 1861, nearly 700 students had graduated from the school (Kozlov / Козлов, 1996: 235). At its opening on August 15, 1822, the school stated its goal as “preparing peasant and house serfs to become thinking farmers” (Trusova, Bliumfel’d / Трусова, Блюмфельд, 1959: 307). This potentially subversive plan was backed up by a challenging five-year scientific curriculum. All students were already literate when they began the program. There was a remedial school for those who were not. The first year covered grammar, mathematics, and drawing; the second, religion, accounting, geography, statistics, and geometry. The third year deal with mechanics, architecture, and drafting, the fourth with chemistry, botany, and technology, while the fifth and final year provided a capstone course on scientific agriculture and large animal medicine (ibid: 307; Maslov / Маслов, 1850, 2nd collation: 39). Fifteen of the first students came from the Moscow Foundling Home and various military establishments while 32 other students were seignorial serfs. Annual tuition cost 400 rubles, a substantial sum in those days (Trusova, Bliumfel’d / Трусова, Блюмфельд, 1959: 308; Maslov / Маслов, 1850, 2nd collation: 40). Not surprisingly, most of the serfs were sent by wealthy nobles, many of whom were MAS members. From 1824, the school began to have public examinations; in 1826, the public was allowed to ask any questions they wished to the students being examined. According to school records, the results were met with “general approbation” (Trusova, Bliumfel’d / Трусова, Блюмфельд, 1959: 309). The first class graduated in 1827. As is known in the case of serf artists, actors, and so on, education could serve to make a serf all too aware of his low social status. Highly educated serf stewards found it difficult to marry uneducated serf women and also could be drawn into conflict with their masters.

In 1833, Pavlov proposed new rules for the school that decisively shifted the focus from a university level education to vocational training. In place of the five-year course, he introduced two courses, each two years long. The first course, which covered grammar, geography, drafting, surveying, and accounting, among others, was designed to produce clerks at the end of two years. Of every ten students, only one would go on to the next course, which covered more advanced

surveying and drafting, along with chemistry, physics, mechanics, the Russian language and writing. Graduates of the second course were to be surveyors, rural architects, and stewards (Maslov / Маслов, 1850, 2nd collation: 62–63). Both courses included religion and singing, in comparison to only one year of teaching religion before. Before 1833, students in the first three years were not allowed to work at the experimental farm, as Pavlov believed that theory should provide a foundation and change old habits. Only students from the last two years were to work at the farm in the summer. In contrast, the new, more vocationally oriented plan, emphasized that all students would work on the farm. Finally, the school was made more responsive to the landlords who were sending their serfs. The earlier rules had forbidden the landlords from removing the students until the five-year term was up. In addition, they had to continue to pay tuition. The new rules permitted the landlords to remove the students when they wished (ibid: 60–65).

At first, the society believed that the school could be self-supporting from tuition. Over time, it became increasingly clear that this was unrealistic. By 1831, the costs of the school and farm were swallowing up most of the MAS's money from dues and the government. In that year, every member was asked to pay a one-time sum of 150 rubles, and honorary members were to pay 200 rubles (ibid: 59). This did not solve the money problems. In 1835, MAS President Golitsyn asked Kankrin if the government would subsidize the school and make its teachers, along with the MAS secretary, head clerk and assistant clerks into civil servants with pensions (ibid: 65–68).

In 1832, the Ministry of Finances and Nicholas I approved the statute for a new branch of the MAS, the Main Society for the Dissemination of Improved Sheep Breeding with its Provincial Branches, commonly called the Society for Sheep Breeding. Minister of Finances Kankrin expressed pleasure with the goal of spreading better breeds, as, he wrote, it was “very necessary for our emerging factories” (ibid: 84). The society particularly focused on merino sheep, which provided thin, fine yet warm wool. It was affiliated with the MAS and yet had its own statute. The society had a wide target audience. According to the statute, the members of the society would be nobles who raised sheep, famous woolen factory owners, and wholesale wool traders. The last two were unusual, since the MAS mainly consisted of nobles. The statute went on to say that stewards dealing with sheep, directors of woolen factories, and wool salesmen could join if they could be elected by a majority of members. This policy applied to all potential members, save those who were already members of the MAS. The Society for Sheep

Breeding's secretary, treasurer, and director were to be elected from the society's members.

The Society for Sheep Breeding followed the MAS's one man, one vote policy in which majority ruled and the president's vote could be cast as a tiebreaker but otherwise would not have any extra weight (ibid: 86–91). Minister Kankrin rejected MAS President Golitsyn's proposal to have the director and secretary of the sheep society be civil servants, for, he said, "they will be elected from among the members of the society, that is, from all estates without exception" (ibid: 84). In other words, the government was unwilling to subsidize the Sheep Society's unusually inclusive policy. Kankrin stated that the posts under discussion could be paid from the annual grant of 10,000 rubles Nicholas I had assigned to the Sheep Society.

The Society for Sheep Breeding also introduced the rules for the formation of provincial agricultural societies. The provincial agricultural societies did not have to deal only with agriculture, but rather they were to deal with "various useful subjects having to do with agriculture and production (*fabrika*) in general" (ibid: 99). The use of the word *fabrika*, which was also the word for factory, suggests that both agricultural processing and industrial production fell under the society's potential jurisdiction. The Southern Russian Agricultural Society was already established, but other provincial societies were created under these rules.

In addition to the Moscow Society, other major agricultural societies were long lasting and important fixtures in Russia. In 1857, the MAS had more active members than the Free Economic Society (432 versus 430), even though it spent 18,733 rubles versus the Free Economic Society's 47,991 rubles. The Southern Russian Agricultural Society, was the most active and well known of the provincial agricultural societies, with 144 active members, 56 corresponding members and 38 honorary ones. Other important societies included the Kazan Economic Society (established in 1839, with 73 active members and 132 members total), the Iaroslavl' Agricultural Society (est. 1842, 81 members total), Lebedian' Agricultural Society (est. 1847, 121 members), the Agricultural Society of Southwest Russia in Penza (est. 1848, 127 members), the Kaluga Agricultural Society (est. 1849, 124 members), the Iur'ev Agricultural Society (est. 1854, 155 members) and the Caucasus Agricultural Society (est. 1850, 158 members) (Platonov / Платонов, 1838: 40–41, 54; Struve / Струве, 1913: 71; Tikhonov / Тихонов, 1961: 94). Many of the societies had publishing programs; the Southern Russian Agricultural

Society published its journal regularly from 1830 to 1917, with the last volume coming out in 1922 (ibid: 99–105; Smith-Peter, 2018: 152–153).

These officially recognized agricultural societies formed only a small part of the more widespread unofficial voluntary associations found in the provinces during the 1840s and 1850s. While 29 agricultural societies were officially founded between the creation of the Moscow Agricultural Society and 1861 (Blum, 1961: 405), a mailing list for the Kazan Economic Society, begun in 1840 and added onto through the 1850s, gives the most complete known picture of such associations at this time. Not all societies went through the process to become officially recognized and this list includes more informal associations. These included the Tver' Society for Agricultural Industry (*Tverskoe obshchestvo sel'skoi promyshlennosti*), as well as the Tver' provincial land office (*zemskaiia uprava*), one of only two land offices on the list (National Archive of the Republic of Tatarstan / Natsional'nyi arkhiv Respubliki Tatarstan (NA RT), f. 422, op. 1, d. 7, l. 2). The other was the Viatka land office. The list given here identifies the province in which the towns are now, rather than where they were then. Other agricultural societies (*Obshchestvo sel'skogo khoziaistva* or *sel'skokhoziaistvennoe obshchestvo*) listed were those of: Riazan', Smolensk, Poltava, Simbirsk, Pskov, Kiev, Saratov, Riga, Minsk, Kobeliaki (Poltava province), Mogilev, Kharkov, Borovichi (Novgorod province), Kineshma (Kostroma province), Shchigri (Kursk province), Lukoianov (Nizhnii Novgorod province), Taganrog (Ekaterinoslav province), Mtsensk (Orel province), and Kashira (Tula province) (NA RT, f. 422, op. 1, d. 7, l. 1-3ob.) The societies are given in the order found in the document, which to some degree likely reflects their date of founding, as the Kazan society added on more societies over time until the mid-1850s, when the list was no longer updated. Divisions of the Moscow Agricultural Society were found in Kursk, Krasnoiarsk, and Tomsk. Societies of landlords (*Sobranie* or *Obshchestvo sel'skikh khoziaev*) were located in St. Petersburg, Luga (St. Petersburg province), Vitebsk, Tula, Borisoglebsk (Tambov province), Zmiev (Kharkov province), Lokhvitsa and Romny (both Poltava province). Other societies found on the list, in addition to well-known ones in the capitals and a few government organs such as provincial statistical committees, included the Kuban Economic Society (in Ekaterinodar), the Vasil'sursk Society of Agriculture and Agricultural Industry (at a farm near the selo of Bykovka in Nizhnii Novgorod province), the Perm' Economic Society, and the Astrakhan Gardening Society (NA RT, f. 422, op. 1, d. 7, l. 1-3ob.) As is

evident, these voluntary associations were widespread in the provinces and deserve to be better studied.

The new rules governing the creation of agricultural societies were strikingly liberal, allowing any group of five or more people willing to create such a society the right to write a statement to that effect and send it to the Society for Sheep Breeding and to the governor. If the governor found no reason to prevent the formation of the society, he would give his permission to open one (Maslov / Маслов, 1850: 98). This was unusually decentralized, since typically societies had to be approved all the way up to Nicholas I. In addition, the statute said that “Governors and marshals of the nobility are to be members of the society; however, they are not to give orders as the Director of the society” (ibid). This is quite significant because most quasi-public associations, such as the Prison Aid Society, had the governor appointed as the head (Gernet / Гернет, 1960: 139–145).

The provincial societies were given substantial autonomy within the MAS. “The Main Society will not enter into the internal organization or the creation of provincial societies except in an advisory manner,” the statute laid out (Maslov / Маслов, 1850: 99). In addition, once the governor and the Main Society approved the society, the provincial society could establish “detailed rules of the internal composition of their activities and their correspondence.” After a majority of members approved the rules in an election, the rules would be “accepted as a permanent guide” (ibid: 100). Neither Kankrin nor the Committee of Ministers raised any objections to any part of the statute aside from the potential election of non-nobles.

In the middle of the 1830s, Nicholas I discussed with Count P.D. Kiselev various ways to improve the condition of peasants. Nicholas I was concerned that serfdom was, as he said in 1842, “clearly and obviously bad for everyone,” yet, at the same time he felt “to attack it at this point would be even more destructive” (Lincoln, 1978: 187). Between 1826 and 1847, Nicholas convened at least ten secret committees to discuss the peasant question. By 1835, however, he felt that committees alone would not provide an answer (ibid: 188, 191). Fearing a revolt of both the nobles and the peasants, Nicholas trod carefully.

As is well known, Nicholas backed the creation in 1837 of the Ministry of State Domains (MGI), headed by Kiselev. The ministry conducted a major administrative reform of state peasant life. What is much less known is that in 1836, MAS personnel became government employees (Maslov / Маслов, 1850: 67). This was in response to vice-president S.I. Gagarin’s request that the MAS

secretary, the director of the Society for Sheep Breeding, their assistants, and the senior and junior clerks become civil servants (Maslov / Маслов, 1850, 2nd collation: 73–75). These positions were administrative, not executive. The president, vice-president and Council seats all remained independent of the government. These more powerful positions were filled by wealthy nobles who did not require government compensation for these posts.

Thus, the government created almost a shadow ministry via the MAS to deal with landlord serfs, even as the MGI dealt with state peasants. The government provided a deeper pool of cash to the MAS than could have otherwise been possible. This allowed the reorganization of the farm and school, as will be discussed below. However, this did not mean that the society lost all initiative. As Maslov wrote, “the government stated its willingness to protect the Agricultural Societies, as the closest intermediaries between the landlords and the agriculturalists entrusted to their guardianship. Thus, this is the future direction of all Agricultural Societies acting separately” (Maslov / Маслов, 1850: 129). At the same time, Maslov added, the societies should all be willing to work together with the government for the common good.

In other words, Nicholas’ well-known desire to avoid interfering with landlords’ control of their serfs put a limit to the incorporation of the MAS into the bureaucratic system. This is also visible in Minister of State Domains Pavel Kiselev’s 1838 letter to Golitsyn informing him of the new order. Kiselev noted that the establishment of the ministry included the right “to direct societies, serving for the dissemination of agricultural information” (Maslov / Маслов, 1850, 2nd collation: 77). The society was by no means taken over by the MGI. Kiselev asked only for annual published reports from the MAS, information on successful agricultural experiments, and “proposals the Society has for the future dissemination of useful innovations” (ibid: 78). The result was more a coordination of work than a control of it.

In 1836, Nicholas I allocated 210,000 rubles to MAS’s farm and Agricultural School. The money provoked serious debates about the future of both institutions. In the same year, Maslov proposed that part of the money be used to move from the problematic model farm to the estate of Count Razumovskii in the village of Petrovskoe close to Moscow. The estate would allow for the farm and the agricultural school to be located together, considerably simplifying the integration of the two. In addition, the MAS affiliated Society of Sheep Breeding and the Gardening Society would be able to have space for a school and model flock of

sheep while the latter society would have an extensive garden with an orangerie on the estate.

Maslov attacked the present farm for using hired labor, which, he said, did not provide “a model for the agriculture actually existing in Russia” (Maslov / Маслов, 1850: 103). The farm’s extensive use of hired labor had been part of the earlier, more liberal, orientation of the society, which gave way to a more conservative outlook under Nicholas I. Pavlov, who was still the head of the farm and school, rejected the new location because it was too close to Moscow. He was particularly upset that the peasants were on quitrent (*obrok*), which, he wrote, led the peasants “to lose touch with their authentic way of life, work as traders, and become half-townspeople; also, their morals are very far from reliable” (ibid: 105). Pavlov insisted that the farm and school should be more than 25 versts from Moscow in order to avoid these problems. When the society decided for Petrovskoe, Pavlov reluctantly agreed as long as he retained control over both the farm and school. It seems that tensions between Pavlov and the society continued, for he was fired in 1838 (ibid: 109).

The Moscow Society was able to establish several important institutions, such as a model farm and a school, as part of their attempt to change agriculture, but they soon found that changing technical aspects of agriculture brought into question more fundamental aspects of the social order such as serfdom. The state subsidized the work of the society as part of a moment in the 1830s I have called elsewhere the era of small reforms (Smith-Peter, 2018: 60–134). Encouraging new branches of market agriculture was part of this impulse, which led to the formation of a considerable number of agricultural societies. But market agriculture had to deal with the market, which was not always hospitable, as we will see.

THE SOUTHERN RUSSIAN AGRICULTURAL SOCIETY (ODESSA)

Odessa is located on the Black Sea and long served as an entrepot for the trade and people of many nations. When Catherine the Great chose the site for the town in 1794, she was taken with its deep harbor and beautiful setting. The United States consul to Odessa, Timothy Smith, described the view from the sea as follows: “It stands upon a bluff or ridge of soft stone, of a yellow color, which rises almost abruptly about one hundred fifty feet from the shore, leaving a margin below available for storehouses, dock yards and heavy trade” (Herlihy, 1986: 9). Conversations in German, Greek, Yiddish, Bulgarian, Serbian, Armenian, Polish,

Albanian, and Turkish could be heard on streets, intermingling with Russian and Ukrainian speech.

Odessa's history as an important urban center begins not with Catherine the Great, but with Armand-Emmanuel de Vignerot du Plessis, Duc de Richelieu, a French émigré Alexander I appointed as city chief in 1803. He oversaw a major building project, including the famous Odessa steps. De Richelieu was able to implement his vision of a symmetrical, neo-classical city with broad, tree-lined boulevards, impressive municipal buildings, and many gardens (ibid: 35–37). Odessa was known for its toleration and acceptance of difference; this left an especially deep imprint in the memory of many Jews, such as those later immortalized in Isaac Babel's "Tales of Odessa."

The second general-governor, Mikhail Semyonovich Vorontsov, was a graduate of Cambridge University and a dedicated Anglophile. He was a great believer in developing the economic potential of the region by building roads, improving the harbor, requesting a railroad link, and scouting for natural resources. During his term as governor between 1823 and 1845, he encouraged the development of many voluntary associations. As Patricia Herlihy states, "No doubt Vorontsov applied to Odessa some of the examples of benevolent societies he had come to know in England" (ibid: 121). These included many charitable associations, and, most relevant to this discussion, the Southern Russian Agricultural Society. The market orientation of the agricultural societies would have been especially congenial to Vorontsov, who had an entrepreneurial bent.

The close link between governors and civil society in this case should not be a cause for concern. In the eighteenth century, this was true for Iaroslavl' and Tobol'sk, which were the sites of provincial journals under the aegis of their governors. In nearly all cases where print culture developed in the eighteenth and early nineteenth century provinces, there was a cultured and active governor serving as a central force (Smith-Peter, 2015: 7–29).

The only exception was Kazan, because Kazan University was founded there in 1804. The university was large enough and commanded sufficient institutional resources to take over what was the role of the governor in less-favored regions. Those provincial towns without universities (that is to say, nearly all of them) required an active and sympathetic governor to pull together the resources of his own office, other government organs, and educated society to create a favorable environment for associational life and publications. During Vorontsov's time,

Odessa became an important center for publishing, including of periodicals (Herlihy, 1986: 121).

In 1817, during a series of highly profitable years, the government stated that Odessa would become a free port. This meant that Russian goods could be sold in Odessa without taxes or tariffs, and foreign goods could be brought in tax-free. In 1819, after the government had built a wall around Odessa to discourage smuggling, the city was declared a free port (*ibid*: 98). Odessa's own products were legally foreign goods in Russia past the city limits. Thus, the free port status opened the foreign market while it partly closed the domestic market to Odessa-made goods. However, this was mainly a problem for factory owners operating within Odessa. For the large landlords in the south of Ukraine, the situation was far more favorable. Smuggling foreign goods out of Odessa was extremely widespread, driving down their cost (*ibid*: 112–113). Factories on estates outside of Odessa producing cash crops such as tobacco, silk and sugar from sugar beets would benefit from having a nearby outlet to the world market as well as access to the Russian market.

Odessa was closely linked to the European market, which in the early nineteenth century was developing into a worldwide market, particularly in grain. In 1815 and 1816, Odessa's export of grain from its fertile Ukrainian hinterland was so large and profitable that the Austrian representative at St. Petersburg became concerned that Russia's income from exports might give it an edge over other countries (*ibid*: 97). However, periodical harvest failures, the rise of grain speculators, and weak European demand later depressed grain prices (*ibid*: 97–98).

By 1828, many of the large landowners who were members of the Southern Russian Agricultural Society (henceforth called the Odessa Society) would have felt the need to diversify beyond grain production or go bankrupt. In addition, the Ottoman Empire could cut off trade to Odessa by closing the Straits, dealing a devastating blow to the basis of the city's trade. War between Russia and the Ottomans led to the closing of the Straits in 1828 and 1829 (*ibid*: 99). As a result, by 1828, when the Odessa Society was founded, landlords would have desperately needed to develop new cash crops that could be sold in Russia as well as abroad. That was indeed the focus of the new society.

Most landlords in southern Ukraine (known at the time as New Russia) were relatively small proprietors, in contrast to the huge serf-owning estates in central Ukraine (*ibid*: 78). These small proprietors had to compete for hired labor with "rich Cossacks, state peasants, foreign colonists, and personally free renters of

landlords' property" (Borovoi, Kotsievskii / Боровой, Коциевский, 1978: 165). This complex social structure meant that the landowners were not the dominant force in the countryside, unlike in European Russia.

Thus, while the MAS, especially in its early days, spoke approvingly of hired labor and its productivity without widely implementing it, the Odessa Society had to deal with the reality of hired labor, which was not always to their taste. In 1827, Vorontsov proposed that peasants in south Ukraine presently on landlord estates should be tied to the land and perform such labor duties as agreed by the landlord or move to state land. Since there was little available state land, most would have to stay. The landlords would not be required to give any land to the peasants. Nicholas I approved the proposal, which became law in 1829 (Kotsievskii / Коциевский, 1962: 243). As Herlihy writes, "the booming demand of the foreign market initially at least had this paradoxical effect: the reemphasis, in one of the most commercially oriented agricultural regions of the Russian Empire, on that obligation most characteristic of traditional serfdom and the manorial system — labor services" (Herlihy, 1986: 81) However, this was a stopgap measure to give the nobles an edge in the labor market, for they continued to hire seasonal labor. Indeed, some, such as MAS member and Slavophile A.I. Koshelev, argued that serfs on an estate decreased its value by lowering its productivity (ibid: 81–82).

The main focus of the Odessa Society was on the introduction of profitable sheep, particularly merinos, into the area. As the New Russia region around Odessa was a steppe, grazing was a profitable use of the environment. Before the introduction of merinos, the woolen industry was one of the most backward in Russia. Since Peter the Great established the woolen industry, it depended largely on possessional (serf) labor and mainly produced wool for the armed forces. The quality of the wool was low, the factories were dirty and used antiquated technology, and the government provided an assured market, which meant there was little reason to improve (Tugan-Baranovsky, 1970: 58–61).

Culturally, sheep raising also suffered from low prestige. Traditionally, serfs were often forced to care for the landlord's livestock, including sheep, as a punishment. A 1770 instruction from P.I. Rychkov sounded what would become a common complaint for the need to improve care of livestock. "For the care... of horned livestock and poultry it has long been usual for us... to use the worst and least intelligent people, sometimes in the place of a fine" (Kozlov / Козлов, 2002: 322). Rychkov called instead for the use of "the very best and most reliable people" (ibid). Matters had not appreciably improved by 1833, when Count S.S. Uvarov

exclaimed, “There is nothing more pitiful than a Russian livestock yard! A few, skinny livestock... insufficient feed, nasty swill, a combination of all possible illnesses and ailments, extraordinary sloppiness, manure to the knees...” (ibid: 107). Native Russian sheep and other livestock breeds were marked by endurance and the ability to survive these harsh conditions. The stable itself had negative connotations in Russian, as “in the stables” was a euphemism for a whipping.

There were also structural problems, such as the limited space for grazing available in the three-field system, as noted above. Compounding the problem was the shrinking amount of pastureland. In the Black Earth Region to the south of Moscow and the traditional agricultural center of Russia, the amount of grazing land decreased by 68.1 percent between the late eighteenth century and the 1850s (Koval’chenko / Ковальченко, 1960: 196).

One of the main obstacles to improvement of sheep raising was the need for active oversight by the landlord or an educated steward. Iaroslavl’ landlord D.V. Gavrilov successfully introduced the Romanov breed of sheep and found it to be profitable (Kozlov / Козлов, 2002: 107). However, most landlords were absentee and intensive oversight was alien to most of them. In discussions about the profitability of free labor, Iaroslavl’ landlords, including Gavrilov, argued that it could be profitable, but only in conditions marked by small estates, superior livestock, and intensive oversight — all of which were not common in Russia (ibid: 311). Mennonite sheep farmer Jacob Epp noted that a sheep herder illegally sold a sheep. If this occurred in the intense mutual oversight in a Mennonite settlement, it must have been even more widespread in the case of absentee landlords and large flocks (Epp, 1991: 168–169).

Sheep raising for the market was widespread in the steppe region of southern Russia, the Don River region and the lower Volga (Rozhkova / Рожкова, 1959: 11). One of the places that seemed to be most suited to sheep was New Russia, or the southern part of Ukraine, which was mainly steppe. In this area, there was an average of 661.5 acres of pasture per 100 people in the 1850s — six times more than in the Black Earth region (Koval’chenko / Ковальченко, 1960: 191).

In the steppe region, the government was active in encouraging the spread of merinos, whose wool could be used for finer, thinner fabrics than the thick worsted used for soldiers’ uniforms made from Russian breeds. In 1804, the government gave away treasury land in south Russia to foreigners and landlords who were willing to introduce merinos (Rozhkova / Рожкова, 1959: 16–17; Blum, 1961: 341). Foreigners and other marginal groups were central to the development of

merinos in Russia. Mary Holderness, in an account of a trip through New Russia, noted large flocks kept by French, Swiss, English and Tatar owners (Holderness, 1823: 81–82). In New Russia and later in the South Caucasus, religious dissidents were active sheep breeders able to provide the intense oversight necessary to produce decent wool for the world market (Breyfogle, 2005: 113–118). While other sheep breeds declined 4.1 percent over the course of the 1840s and 1850s due to lack of land and poor treatment, the number of merinos increased by 12.4 percent (Koval'chenko / Ковальченко, 1960: 187). In 1812, there were up to 150,000 merinos, while by 1853 there were roughly nine million (Rozhkova / Рожкова, 1959: 17). Both government incentives and the work of the MAS helped to encourage the spread of merinos.

One main focus of the Odessa Society was on the introduction of profitable sheep, particularly merinos, into the area. The society published a handbook on sheep raising as well as many articles in its journal, which from 1830 to 1837 was published both in Russian and in French, and after 1841 German was added, showing the cosmopolitan nature of New Russia (Tikhonov / ТИХОНОВ, 1961: 100–101). The society did much to strengthen the social network of sheep breeders, sponsoring exhibitions and congresses, as well as a special committee to study the quality of Russian wool (ibid: 111). During the 1840s, the price of thick wool rose while thinner wools, mainly from merinos, dropped. As a result, there was an increasing interest in the improvement of native breeds (ibid).

During the 1840s, the merino industry in New Russia underwent a major downturn as foreign buyers increasingly refused to pay high prices for Russian wool. The reasons were many: the rise of the Australian sheep industry to world standing by the 1840s, the poor treatment of Russian sheep, even of profitable merinos, and the mixing of Russian breeds and merinos in one flock, compounded by poor washing and sorting of the wool. One contemporary described the washing of wool “where wool good and bad — fleeces of tups, ewes and dead beasts — is mixed together and washed in hot water...” (Tegoborski, 1856: 7). Although there were landlords with model farms using the newest methods, by one count, they composed only five percent of the total number of producers (ibid).

British traveler Laurence Oliphant, in his account of an 1852 trip to the south of Russia, noted that “some years ago large quantities of merinos were introduced upon the steppes, and at first it was hoped that they would thrive, despite the inclemency of the climate. Perhaps had they been properly cared for, they would have succeeded; but Russian energy and perseverance have proved insufficient in

obviating the effects of the severe snow-storms of winter and the droughts of summer... In 1849 a vast mortality prevailed; and through utter want of management on the part of the proprietors, and careless indolence on the part of the shepherds, thousands of these valuable animals were sacrificed” (Oliphant, 1998: 148). Oliphant also noted the problem of mixed flocks, stating, “the whole object being to increase the quantity of sheep, not the quality of the wool; and thus it goes on deteriorating in proportion as the flock multiples. To add to which, the wool, being badly cleaned, and worse packed, does not realize much more than half the price of German wool in the London market, while it is being altogether superseded by that from Australia” (ibid).

The response of the Odessa Society to the crisis consisted of calling for more use of native sheep and for government assistance in improving the quality of the wool. In answer to an 1843 Ministry of State Domains request for proposal to ameliorate the crisis, the Odessa Society stated that in New Russia, more attention should be paid to “the improvement of indigenous breeds of livestock, which have superior qualities for steppe agriculture” (Borovskii / Боровский, 1878: 152). For steppe conditions, they argued, sheep should be strong, small, fast, and tough — in short, more like native breeds than merinos. This suggests that sheep breeders were reluctant to provide the level of care merinos required. The society also asked the government to import high quality animals for stud service and to establish a government sorting system to assure the consistent quality of Russian wool (ibid: 153, 170). The Ministry put off enacting these recommendations until a new crisis in the early 1860s led to a fall in the price of Russian wool on the world market for many of the same reasons as two decades before. From 1850 to 1900, “the pasture acreage in the south fell sharply, as farmers began to specialize in wheat and barley” (Gatrell, 1986: 134). Between 1880 and 1900, the number of sheep in New Russia fell by a third (ibid). Mennonite Jacob Epp, along with his coreligionist and Jewish neighbors, sold his flock in 1871 (Epp, 1991: 42).

The successes of Russian wool in the global market were transient. Unable to compete with Australian wool or to fundamentally change the care of sheep on the steppe, New Russian producers shifted away from sheep raising in the late nineteenth century. Raising sheep was difficult to mechanize. The end of serfdom did not solve these problems, nor did the combined assistance of the government and the agricultural societies. Despite the combined efforts of the state and two major agricultural societies, the conditions of production in the Russian Empire,

combined with unfavorable global market factors, meant that improved sheep breeding in Russia was ultimately unsuccessful.

The Moscow Agricultural Society and the Southern Russian Agricultural Society did much to spread scientific agriculture. They created institutions such as model farms and schools, published journals and encouraged the creation of provincial agricultural societies. At first, it was hoped that simply spreading this knowledge would be sufficient for agriculture to become profitable. Later, enlightened nobles hoped that ending serfdom would lead to the same end. And yet, despite the availability of the information and the end of serfdom, in the end Russian wool production could not compete on the world market. Science was not enough to win for Russia a lasting place in the global wool market.

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