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Dear colleagues and readers of the journal,



Yet another issue of 'Historia provinciae – the journal of regional history' is devoted to the problems of Environmental History, the analysis of its achievements and prospects for further development.

Ecology is one of the most popular topics of the modern globalizing world. It often seems to us that the ecological problems entered upon our agenda recently, and literally yesterday transformed into one of the burning issues of modern times. Indeed, the thorough understanding of ecological problems connected with the topic of interaction of the human being with the nature started in the 20th century; however, the problems themselves, of the human being 'being inscribed' into the environment, became apparent not at all recently. It might be that the historians, a little bit later than the representatives of other as of socio-humanistic knowledge, became engaged in such problematics; however, Environmental History is quite a well-established subdiscipline of History in several countries, which the Professor of Peking University, Bao Maohong is reflecting upon. The turnaround to the nature and to the animals, which is being observed in the historical science, might lead to the appearance of historical works of a new type and provide the transfer from the interdisciplinarity of the research to their transdisciplinarity. The article, written by the Professor of Cherepovets State University, O.Y. Solodyankina, is devoted to such plots.

A broad picture of changing the consciousness of the human being regarding the problems of water, cleanness, impurities and contamination is depicted in the material of the Hungarian researcher Katalin Yuhas. The quality of the water in Moscow in the imperial period, the attitude of the city people towards this problem and the practical aspects of water consumption – these are the main topics of the article by the Moscow archivist and historian A.N. Davydov.

The British scientist David Moon considers the complex and objectionable process related to the transfer of the ideas of Russian soil scientists (first, V.V. Dokuchayev) in Western Europe and the USA in the last quarter of the 19th – early 20th century.

As usual, the issue contains the chronicle of events in the scientific life devoted to the scientific conference held on the issues of Environmental History in Russia, which took place in Cherepovets State University in October 2017.

We hope that the material of the dedicated issue of ‘Historia provinciae – the journal of regional history will contribute to further understanding of the problems of Environmental History and promote its institutionalization.

*Editor-in-Chief of the journal
O.Y. Solodyankina*

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UDC 93

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Environmental History and World History

Abstract. This paper deals with three major aspects of world environmental historiography. Firstly, based on a bird's-eye view of the world environmental historiography, the 'received wisdoms' were deconstructed. Secondly, observing from three schools of world history incorporated with the new thinking of the environmental history, four main contributions of environmental history to the world historiography were figured out. Thirdly, this paper predicts that the future of environmental history depends on the balance of five pairs of relations that regulate the nature and the path of the environmental history.

Keywords: Environmental History, world history, received wisdom, new thinking, balance of relations

Introduction

Environmental history deals with the interaction of the man and the rest of the nature over time. To understand this definition better, there are two aspects that should be emphasized. First, the man mentioned here is not only the biological creature that exists in the singular, but also a social and a collective one. In the traditional history writing, man's sociality was emphasized, meanwhile the biological attributes were ignored. In the deeper studies of ecology, man's biological attributes were emphasized; however, the sociality that differentiates the man from the ordinary organisms was ignored. As a matter of fact, the human being is integral part of the nature; however, the man is a unique creature who specializes in the sociality. Furthermore, the emphasis of man's sociality could not go beyond man's biological attributes. Second, why is the term 'rest of the nature' reinforced? Because it is underpinned by two theories, namely holism and organism. In holism, the man and the nature are regarded, that is different from dualism and reductionism in which the man is regarded

as the opposite of the nature. Furthermore, the quality of the nature is not determined by the average quality of its different parts, but by the least, just as the volume of a bucket is determined by the shortest edge. In any organism, the nature is regarded as the integral whole, in which different parts have their own intrinsic values together with its instrumental value. Additionally, the nature has its limitation. It means that the nature would not be able to supply resources unlimitedly and has a limited capacity to absorb pollutants. Namely, if the pollutants exceed the self-purification capacity, the nature will be contaminated and furthermore, the contaminated nature will threaten the survival of the human beings. Thus, environmental history does not simply focus on the human being only, on ecology or nature, its focus is on the interaction of the human being and the rest of the nature.

To speak more specifically, environmental history consists of four aspects. First, the changing process of environment. Here, it is not the natural transformation that resulted from the natural power, but the environmental change would result from the human activity. The former kind of environmental transformation was usually called the history of environment, whilst the latter type of environmental change was usually called environmental history. Second, there is the material or economic environmental history. It focuses on the interaction of the economic activity and the physical environment, especially the change of productivity and the mode of production. Third, there is the political environmental history. It focuses on the environmental consequences of political power and the political consequence of environmental changes. Fourth, there is cultural or intellectual environmental history. It focuses on how the human being perceives the environment and how this perception influences their adaptation and utilization of the environment. Although the emphases of these four aspects are different, they share some commonalities, such as the interaction between the human being and the rest of the nature, including the role of the human in the environment and vice versa, organic connection of different elements and aspects in nature, etc.

Since the turn of the century, environmental historians have been researching the history of environmental history on a large scale. In 2001, the journal *Pacific History Review* issued a special column on “environmental history, retrospect and prospect.”¹ In 2003, Prof. John McNeill’s masterly paper ‘Observations on the Nature and Culture of Environmental History’ was published in a special issue of the journal *History and Theory*.² In 2004, the journal *Environment and History* published its tenth anni-

¹ White R. Afterword Environmental History: Watching a Historical Field Mature; Donald J. Hughes, Global Dimensions of Environmental History; Norwood V. Disturbed Landscape / Disturbing Processes: Environmental History for the Twenty-First Century; Miller Ch. An Open Field; Hays S. Toward Integration in Environmental History. *Pacific Historical Review*, 2001, 70:1.

² John R. McNeill Observations on the nature and culture of environmental history, *History and Theory: Studies in the Philosophy of History*, vol. 42, no.4, December 2003.

versary issue on the timeline of environmental history.³ In 2005, the journal *Environmental History* published a special column on “What’s next for environmental history?”⁴ Meanwhile, four scholars published three books on the timeline of environmental history in different languages, including J. Donald Hughes’s *What is environmental history*,⁵ Frank Uekötter’s *Umweltgeschichte im 19. und 20. Jahrhundert*,⁶ and Verena Winiwarter and Martin Knoll’s *Umweltgeschichte: Eine Einführung*.⁷ All these works began by summarizing the origins, development, and nature of environmental history, and outlining some fields ripe for exploration in the future. These works will undoubtedly be very helpful for the maturing of environmental history as a subdiscipline of history or as an interdisciplinary arena for academic research. Although the authors listed above did not provide a generalized view of the development of environmental history across the globe, they certainly opened the way for further research in environmental historiography.

Based on their research, this paper will go beyond and deal with three aspects of world environmental historiography further.

Main Body

I Deconstruction of ‘received wisdoms’ in world environmental historiography

Observing from world environmental historiography, one can single out the three ‘received wisdoms’ to be deconstructed.

First, in the science, the rise of environmental history was generally recognized as the result of the interaction of anti-mainstream cultural movement and creative impulses in history. In fact, this is a received wisdom, or indeed an overgeneralization of the American environmental history experience. The rise of African environmental history mainly resulted from the exploration of African agency and initiative in the nationalist history. In Russia and the former Soviet Union, environmental history has not developed as rapidly as one might expect, given that its environmentalism has expanded greatly in scope, and its environmental problems have become more and more serious. Although environmentalism has appeared to be a backlash since Ro-

³ Carruthers J. Africa: Histories, ecologies and societies; Coates P. Emerging from the Wilderness (or, from Redwoods to Bananas): Recent environmental history in the United States and the rest of the Americas; Libby R. and Griffith T. Environmental history in Australasia; Maohong Bao Environmental history in China, Winiwarter V. (etc.) Environmental history in Europe from 1994 to 2004: Enthusiasm and Consolidation; Simmons I.G. The world scale, *Environment and History*, 2004, 10:4.

⁴ What’s next for environmental history?, *Environmental History*, 2005, 10:1.

⁵ Donald Hughes J. *What is environmental history?* Polity Press, 2006.

⁶ Uekötter F. *Umweltgeschichte im 19. und 20. Jahrhundert*, Muenchen: R. Oldenbourg Verlag, 2007.

⁷ Winiwarter V., Knoll M. *Umweltgeschichte: Eine Einführung*, Wien: Boehlau Verlag, 2007.

nald Reagan took in office, the development of American environmental history did not parallel the environmentalism's decay. In France, where the historical tradition was very strong and active, the rise of environmental history occurred later and developed more slowly. In the Arabian world, where there is a unique historical writing system, environmental history has not taken root yet. These cases illustrate that the rise of environmental history in different regions and countries has resulted from a mixture of different variables. The changing permutations and combination of these variables has exemplified the different dynamic mechanisms and characteristics of environmental histories in different regions and countries.

Second, the rise of environmental histories in the rest of the world resulted from direct imports from the USA, as some American environmental historians asserted many years ago. This is the second 'received wisdom'. While American environmental history started earlier indeed and advanced much more quickly than in the rest of the world, this does not testify to the idea that environmental history movements in other countries were merely overseas branches and tendrils of the American one. Even within the industrialized countries, there are differences; for example, the main themes of environmental history movements in Western Europe and Japan are different from the ones in the American environmental history, reflecting the different structures of physical environments and human-made environmental problems. Even when the same theme, such as nature conservation and national parks, is studied, its foci are different from the African environmental history perspective compared with the American one. American environmental historians emphasize environmental preservation that excluded human utilization, whereas African environmental historians urged conservationism to focus on the human rights of existence and development.⁸ We might say that environmental history was founded on a strong sense of the local, and the world environmental history was a big 'garden' in which the environmental histories of different regions and countries coexisted and competed peacefully.

Third, in world environmental historiography, the American paradigm of environmental history diffused unilaterally all over the world. This is the third 'received wisdom'. Although the main themes and research conditions were different in various regions and countries, the environmental history of different regions and countries was in frequent dialogue with one another and influenced each other in a reciprocal manner. In the international community that deals with environmental history, the American environmental history was undoubtedly endowed with an export surplus. Meanwhile, although the environmental history in India or Africa was, without doubt, importing more than it exported, the historians in these countries contributed distinct approaches and perspectives to the deepening and expanding American environmen-

⁸ Anderson D.M. & Grove R. (eds.) *Conservation in Africa: People, Policies and Practice*, Cambridge University Press, 1987.

tal history⁹ and provided indispensable help for the internationalization of American environmental history and the construction of world environmental history in the USA. Although this exchange was not balanced, it broke up the myths of ignorance and disparagement of the southern local knowledge, and further paved the way to end Americentric and eurocentrism in the environmental history writing. In other words, the contributions of environmental historians from the Global South will be helpful for moving forward in constructing the world environmental history with characteristics of “Every form of beauty has its uniqueness, precious is to appreciate other forms of beauty with openness. If beauty represents itself with diversity and integrity, the world will be blessed with harmony and unity”.

II Environmental history and world history

Although the level of development and the main themes of environmental history in various regions and countries are divergent and/or diverse, all environmental historians assume that the nature can create history or be an actor center-stage in the history. Traditional thinking, e.g. that the environment was too passive to create the history, or that the environment was a mere background against which the history developed, or that the natural phenomena were at most catalysts for the historical development, is not just one-sided (and the typical expression of anthropocentrism in history), but also exhibits lack of conformity with the latest findings of brain science and ecology. The environment is not only an agent in the historical processes; however, it creates history through the interaction with the whole humanity. As a result, environmental history cannot be researched solely using historical methodologies; it needs to be researched by using the transdisciplinary or interdisciplinary methods which incorporate the methods of history, natural science, engineering science and social science. This kind of environmental history will finally balance and unite the social and natural laws and will further shift the historiographical paradigm from the isolated and progressive human history towards the integral, complex and authentic global history.

In a narrow sense, environmental history will provide the part that traditional history lacks. In a broad sense, environmental history will contribute a new way of thinking to the history writing that will result in a paradigm shift in the historiography. With regards to the former, there are quite a few books and essays, and it is so much easier for the scholars to do so. Speaking about the latter, it would be difficult to do it in this way. However, there are some books in which environmental histo-

⁹ Sutter P. Reflections: What can U.S. Environmental Historians learn from Non-U.S. Environmental Historiography?, *Environment and History*, vol. 8, no. 1, 2003. Jacoby K. *Crimes against Nature: Squatters, Poachers, Thieves, and the Hidden History of American Conservation*, University of California Press, 2001. Ramachandra Guha, *Environmentalism: A Global History*, New York: Longman, 2000.

rians had already explored these approaches. I categorized them into three schools. The first would be the new world history. The second is the new world-system history. The third is the ‘big history’.

Regarding the new world history, two scholars and their masterful books will be introduced. In their best-known book “*Something new under the sun: An Environmental History of the Twentieth-Century World*”, John McNeill argues that the human impact on the environment in the 20th century is utterly unprecedented in the human history, but the conventional historiography of the 20th century has missed it. His most important contribution to the world history writing is that different spheres, instead of nation-states or periods, was used to frame his world history, such as the lithosphere, the pedosphere, the atmosphere, the hydrosphere and the biosphere.¹⁰ This approach is unique, it showed us the unique world history. The other scholar is Felipe Fernandez-Armesto. In the textbook ‘*The World: A Brief History*’, Armesto argues that the history interweaves two stories, the environment-centered story that is about humans distancing themselves from the rest of the nature and searching for a relationship that strikes a balance between the constructive and the destructive exploitation, and the culture-centered story that is of how human cultures have become mutually influential and yet mutually differentiating.¹¹ That means environmental history underpinned the human history. However, he announced that he was not an environmental determinist who regarded the environment as a deterministic factor in the human history, meanwhile the human initiative or agency was ignored.

Regarding the new world-system history, two scholars and their works will be shown. In the world-system history, there are two different ways of thinking. The one is Immanuel Wallerstein’s 500-year-old world system. Based on this world system history, Jason W. Moore argues that capitalism-in-nature – rather than capitalism *and* nature – is key to understanding the world system and our predicament in the century ahead. Furthermore, capitalism was regarded as a way of organizing nature, including the human nature. World capitalism was regarded as a ‘world-ecology’ of wealth, power, and nature. The greatest strength of capitalism’s – and the source of its problems – is its capacity to create ‘cheap natures’: labor, food, energy and raw materials.¹² The other is Andre Gunder Frank’s 5000 years of world systems.¹³ Based on

¹⁰ McNeill J.R. *Something new under the sun: An Environmental History of the Twentieth-Century World*, W.W. Norton & Company, 2000.

¹¹ Fernandez-Armesto F. *The World: A Brief History*, Pearson Prentice Hall, 1988.

¹² Jason W. Moore, *Capitalism in the Web of Life: Ecology and the Accumulation of Capital*, Verso, 2015.

¹³ Andre G. Frank & B. Gills eds., *The World System, 500 Years or 5000?* Routledge, 1993.

this world system history, Sing Chew published his trilogy on the world ecological history, in which he sponsored that the world systems should be greening deeply.¹⁴

Regarding the ‘Big History’, two scholars and their works will be mentioned here: David Christian and his book ‘*Maps of Time; Big History: Between Nothing and Everything*’ and Fred Spier and his book ‘*The Structure of Big History: From the Big Bang until Today.*’¹⁵ Big history examined the history from the Big Bang until the present using a multidisciplinary approach; it frames the human history in terms of cosmic, geological and biological history. In Big History, it is provided that if the Universe began its existence 13 years ago, then our own species, Homo Sapiens, would last only for 53 minutes; the agricultural societies would have existed for five minutes; whereas the modern industrial societies would have existed just for six seconds. Through going further backtrack, one should know that the history of the universe should be understood if you want to understand the history of humanity. From the point of view of this ground-breaking research, we will rethink anthropocentrism and destroy human’s arrogance and psychological consciousness. The most important thing is that we will find the commonality in complexity of the human history and the history of the universe.

Although this glorious book on the world history dealing with the approach of environmental history has not been published yet, this thinking had already showed some advantages, as being observed from these three schools mentioned above. First, environmental history helps overcome entrenched anthropocentrism in the conventional history writing. Without environmental history, the world history would be, without any doubt, incomplete. Due to dealing with interaction of the human and the rest of the nature, the environmental history broadens the subject of history horizontally and shortens the human history vertically in comparison with the history of the universe.

Second, the environmental history helps correct the defects of the progressive view of history that allies with eurocentrism and orientalism to some extent. To the contrary of this progressive view of history combined with teleology, the environmental history recognizes the intrinsic value of its integral parts. Based on this value, various civilizations do not only exist reasonably, however should be also evaluated by their sustainability (adaptation to its environment), instead of their advancement

¹⁴ Sing C. Chew *World Ecological Degradation: Accumulation, Urbanization, and Deforestation 3000 B.C.-A.D. 2000*, Altamira Press, 2001; *The Recurring Dark Ages: Ecological Stress, Climate Changes, and System Transformation*, Altamira Press, 2007; *Ecological Futures: What History can teach Us?* Altamira Press, 2008.

¹⁵ Christian D. *Maps of Time: An Introduction to Big History*, University of California Press, 2004. Spier F. *The Structure of Big History: From the Big Bang until Today*, Amsterdam University Press, 1996.

(opposition to backwardness). Furthermore, the future of the world will be sustainable, rather than when the advanced replaces the backward.

Third, the environmental history helps break through the bottleneck of the world history writing based on the nation-state approach. Since Leopold von Ranke, the national history has been the dominant paradigm and the world history has, in fact, been the mosaic of history of some strong nation-states. Based on holism and organism, the environmental history could mainstream the interaction of human and the rest of the nature at different levels (niche, Eco regionalism, global environmentalism, etc.), just like John McNeill's world environmental history.

Fourth, the environmental history helps integrate the laws of social development and environmental change. In the conventional world history, the law of social development is separated from the law of nature. In environmental history, the law of social development can only be subordinated to the law of nature. Their common point is that both go through the process of increase in complexity and enlargement of scale. Its dynamism is that human's ability of collecting and spreading information increases, based on the law of thermodynamics of energy flow.

III The future of environmental history

The future of environmental history depends on the balance of five pairs of relations, as follows: firstly, the balance of environmental history as a subdiscipline of history and as a multidisciplinary arena for research must be achieved in determining the properties of the environmental history. Environmental history has the status of a subdiscipline of history in the USA, Africa and India, where environmental history seemed to be more readily accepted by history and was able to develop in the traditional framework of this discipline;¹⁶ however, it has the status of a multidisciplinary 'arena' in Australia, Japan and Latin America, where environmental history seems to be a common pool without any accepted definition and a unified organization, to which every discipline could be integrated if it so needs.¹⁷ As a matter of fact, both of these two frameworks are helpful for the development of the environmental history. To reach sustainable development in the future, the best way is to learn from the advantages or other ways of thinking. Environmental history as a subdiscipline of history should be more tolerant and open, which could be achieved through attracting more scholars from other disciplines; Environmental history as a multidisciplinary 'arena' should be more coherent; it could become as such through identifying the existed framework of discipline in a certain way.

¹⁶ Dovers St., Edgecombe R. and Guest B. (Athens eds.) *South Africa's Environmental History: Cases and Comparisons*, Ohio University Press, 2003.

¹⁷ Dovers St. (ed.) *Australian Environmental History: Essays and Cases*, Melbourne: Oxford University Press, 1994.

Secondly, the research in the environmental history should balance the macro- and the micro themes. With further specialization of the environmental history, the themes selected by the environmental historians are often of the micro type but represented on the spatial and temporal scale. It seems that more micro themes mean more profound results. Undoubtedly, this will improve the diversification of the themes and the methods found in the environmental history. However, it will inevitably result in ignoring the general trends of the environmental history, and in the phenomenon of not being able “to see the forest, but for the trees.” In fact, the first-generation environmental historians aimed to challenge the traditional historiography, which excluded the environment, when they explored the environmental history. Now, it will be more important to grasp the bigger trends of the environmental history. Namely, the environmental history should start from the bases of the macro research that some pioneers, such as Alfred Crosby, set up in the 1970s.¹⁸ Additionally, macro and *long durée* research topics do not necessarily collide with the thematic work and case studies. Furthermore, macro research could appear in the form of thematic studies; and the thematic studies should have room for growth within the macro perspective.

Thirdly, the research in the environmental history should balance pessimism and optimism in its basic motion. When the environmental history originated, it was with the strong characteristics of ‘advocating history’, parallel with the pessimistic narrative notions of ‘decay’ and ‘degradation’.¹⁹ Without doubt, these narratives would raise worries and concerns about serious environmental problems; however, they will also result in the emphasis on the hopelessness of environmental history and the human inability to adopt the lessons on environmental governance as taught by the environmental history. With the development of environmental history, the historians in this field need to focus on both environmental disasters created by human agency and environmental protection and improvements made by the humans through cultural adaptation to created environments. This will correct the one-sided thinking in the relationship between the humans and the nature and help boost optimism and build confidence. Thus, the balance of these two notions will not only become one of the symbols of maturing for the environmental history but also offer the basic security for it to attract the readership and march forward towards a greater success in the future.

Fourthly, the environmental history emphasizes its pure academic foundation, meanwhile its application should be strengthened. After the environmental history became more popular, the historians in this field worked very hard to make it more

¹⁸ Crosby Alfred W. *The Columbian Exchange: Biological and Cultural Consequences of 1492*. Greenwood Publishing Co., 1972; *Ecological Imperialism: The Biological Expansion of Europe, 900-1900*. Cambridge University Press, 1986.

¹⁹ Beinart W. and McGregor J. (eds.) *Social History & African Environment*. Ohio University Press, 2003.

specialized and standardized, with the main aim of exploring the historical truth. Although this promoted the academic nature of the environmental history, it resulted in its becoming separated from the reality and distanced from its readers. As a matter of fact, the environmental historians were concerned about the social function of their research; however, they hoped their academic achievements would trickle down automatically and inspire some people who are interested to take the matter further. During this period that could be considered as the period of an intellectual ‘bombing raid’, this kind of expectation means that there is eventually no one left to read the texts. The environmental history should recover its traditions and pay more attention to the social and environmental hotspots from now on. The environmental history should continue maintaining its academic credentials; meanwhile, it should also pinpoint specific lessons to be learnt and help the policymakers and the environmentalists find practical solutions and guidelines for solving the environmental problems. It goes without saying that reinforcing the main areas of its application should not result in the weakening of its academic base.

Fifthly, the environmental history should satisfy the dual demands of history and environmental science, evenly. On the one hand, the environmental history is eager to become mainstream in history, or to reconstruct the history with its new thinking; on the other hand, it absorbs the evidence and the method from non-historical sciences, such as environmental science. In the process of making the environmental history mainstream, apart from the emphasis on the topics that the traditional history did not focus on, it is necessary for the environmental history to explain the main themes in the traditional history from its own perspective, such as the Enlightenment, the French Revolution, the New Deal, The Two World Wars, decolonization, transformation in East Asia, etc. By borrowing the concepts and results from the environmental science, the environmental history should be concerned about the hotspots in the said science and provide its own evidence and methods, on topics such as hurricanes, a sea level rise, global warming, etc.²⁰ This comprehensive research will cross the artificial divide between the natural science, social science, engineering science and the humanities and will promote the development of the environmental history, equally in every discipline, within the broad framework of science.

Conclusion

The brief review of the world environmental historiography shows that the rise of environmental history in different countries resulted from various factors and their specific interactions. The American experience in the field should not be overgenera-

²⁰ McNeill John R. Future research needs in environmental history: regions, eras, and themes, in Kimberley Coulter, Christof Mauch (eds.) *The future of environmental history: needs and opportunities*, Munich: Rachel Carson Center for Environment and Society, 2011, pp. 14–15.

lized. As a matter of fact, the environmental history in its broad sense expands the scope of historical agency or initiatives that will result in a paradigm shift in the world historiography. Without doubt, the prospective future of the environmental history could be envisaged, provided the five pairs of relations that regulate the nature and the path of environmental history are to be balanced.

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Animal history: New research opportunities

Annotation. The article contains analysis of the modern trends in historiography, in which there has been observed another methodological ‘change of course’ described as ‘animal turn’. The traditional anthropocentrism of historical research, in the author's opinion, is replaced by the study of relationships between man and animals in line with economic, social and cultural history, military history, intellectual history, the history of science, the history of medicine and other fields of historical knowledge. The new research on the history of human-animal relationships focuses on how these interspecific relationships (animal-human relations) are built, what they are, bearing in mind the effects that such relations might have.

Keywords: human-animal relationships, foreign historiography, future development of historical science, turn to animals, ‘animal turn’

Introduction

The traditional definition of history implies that this science is related to the past social reality, and that the main subject of history is *res gestae*¹ – the actions of people, i.e. social actions. The modern time got us used to such an interpretation of historical science, although the pre-Renaissance paradigm of history included in the subject of history, apart from the actual social reality, both the Divine reality and the natural one². The world of the post-Renaissance man has become anthropocentric, and then individualistic. The growing practical (more often – economic) successes of the mankind and the progress in the natural sciences made increasingly popular the

¹ *Res gestae* – the Latin term, meaning ‘things done’, is sometimes translated as ‘history’ (in the sense of totality of the facts from the past)

² About the change in the subject of history, see details in Savelieva I.M., Poletaev A.V. Knowledge of the Past: Theory and History: In 2 Vol. V.1: Designing the Past. St Peterburg, 2003 (In Russian).

representations of the human being as the pinnacle of the world, the crown of creation and contributed to the domination of human-centered designs in the natural sciences. This narrowing of the subject of history to exclusively human history was combined with the simultaneous widening of the research field, affecting one after another all the new aspects of human existence – from political history to economic, social, psychohistory, cultural history, the history of mentalities, the history of everyday life, etc. However, at the center of all these ‘new histories’³ was still a man. Does this anthropocentrism of history correspond to the realities of the 21st century? What opportunities open to the historical science in overcoming this subject ‘framework’ of anthropocentrism? The article will be answering these questions.

Main body

In the realities of the modern world, the processes that are almost unmanageable (or hardly manageable at all) to the humans, especially the influence and decisions of a single individual, are becoming more and more noticeable. Such processes include climate change, environmental disasters (of different scale, from local to global), introduction of biotechnologies, spread of new media (social networks), the effects of globalization, etc. The Humanities are trying to respond to these challenges of our time. Such answers can be attributed to the ideas about the ‘end of history’ developed after Fukuyama's⁴ sensational article, and all sorts of methodological ‘turns’: linguistic, anthropological, visual, ‘turning to material’, etc. Each of these ‘turns’ is associated with some degree of implementing the idea of interdisciplinarity or, more precisely, trans-disciplinarity, when the application of approaches in different sciences should have (and in many cases, does have) a synergistic effect.

By implementing the message of interdisciplinarity, historians ‘implanted’ the methods of socio-humanitarian sciences – sociology, anthropology, linguistics, etc. into their research practices. One by one, such ‘junctions’, transitional spaces within the general group of scientific disciplines, called humanities, are filled. Each of methodological ‘turns’ led to serious breakthroughs in the field of accumulation of scientific knowledge; scientific publications of a fundamentally higher level appeared, and the new problems of research were outlined. Naturally, each of such ‘breakthroughs’ required new knowledge from historians, with new approaches, mastering a new language of historiography. The frequency of ‘turns’ suggests that historians have learned to respond to these challenges.

³In the historical science of the 20th century, many new areas of research practice received the mandatory ‘appendage’ in the titles represented by the word ‘new’: new social history, new intellectual history, new cultural history, etc.

⁴ Fukuyama F. *Konets istorii?* [End of history?]. *Voprosy filosofii* [Issues of Philosophy], 1990, no. 3, pp. 134–1489 (in Russian). In English see: Fukuyama, Francis (1989). ‘The End of History?’ *The National Interest* (16): pp. 3–18.

However, the potential for expanding the subject field of history is much less effective. Is it binding upon history to limit its interests to the ‘man-man’ interaction field?

The social sciences have identified three main areas of human interaction with the outside world: these are the man-machine, man-nature and man-human interactions. The latter area of interaction is undoubtedly the subject of history research, but what is the relationship of history with the two other trends? The history of technology deals with the interactions between ‘man-technology’ and ‘man-material objects’, and it is noteworthy that for most representatives of the historical-scientific community, this subdiscipline rather refers to a wider field of ‘technology’ rather than ‘history’. In historical science, the broadest cluster of history of human-nature interaction was integrated; overcoming certain resistance of historians-traditionalists, the ecological history took its shape. However, the emphasis in environmental history is either on the ‘fit in’ of a person in the natural environment, or on the sad consequences of human intervention in the environment, i.e. environmental disasters. The living things of the natural world, living creatures, turn out to be exclusively objects (and, as a rule, auxiliary ones) in the scientific studies. But is this limited role of animals appropriate in the context of human history? Is it time to revise the subject field of history, abandoning anthropocentrism⁵ and adding the history of animals to it, of course, without substituting it for zoology and paleozoology?

The foreign historiography unequivocally positively responded to this challenge of our time, intensively expanding the research topic within the general trend of ‘Human-Animal Studies’. American universities offer a wide range of subjects dedicated to various aspects of history of human-animal relationships⁶. In the English-language historiography, the number of research projects devoted to these or the aspects of human-animal interaction is also increasing in avalanche, and the designation for this trend of historical studies, the ‘animal turn’ which is ‘turn to animals’, has been provided.

One cannot say that animals are a completely new plot in the world history. Undoubtedly, in the historical studies, animals were also present before: in the form of the process of domestication of animals, or war horses and elephants participating in the battles, or favorite animals of certain outstanding figures, or, more often, in the form of livestock. The innovation is in the change of research approaches and in shifting the perspective of the problem. Let us characterize these innovations in relation to the main sub-disciplines of history.

⁵ On the critical attitude towards anthropocentrism, see Boddice Rob (ed.) *Anthropocentrism: Humans, Animals, Environments*. Leiden; Boston: Brill, 2011.

⁶ For a list of universities where such courses are taught, the names of lecturers and brief annotations of the courses, please visit www.animalsandsociety.org/human-animal-studies/courses/hascourses-in-history

In the framework of **economic history**, the history of taming and domestication of animals, the history of the use of animals in human economic activities are studied. Here the emphasis is on studying how animals turned into goods, what was used – in food, for making clothes, to produce other objects; how animals were used, which animals were used mainly in the cities, and which ones – in the rural areas, how the attitude towards animals changed as the period of joint ‘living’ with them increased⁷. Perhaps, this is the segment of the history of animals that has been studied most fully, although using poststructuralist theories⁸ or within the framework of the ‘turn to the material’, the research breakthroughs are also possible here, such as for the study of the reverse process – the taming of the human being by the animals⁹. In addition, another aspect of economic activity relates to the formation of the market of goods and services for domestic animals, the animal care industry: animal care products, special food for animals, animal medicine, advertising, the dynamics of market formation in different countries¹⁰, financial value of animals, etc. Exceptionally interesting conclusions can be drawn based on studying the history of the market for exotic animals, where for a long time the interests of naturalists, collectors and simply amateurs intertwined. Exotic animals often became gifts from one ruler to another, forcing them to create special facilities for these animals (for example, the elephant in St Petersburg during the reign of Anna Ioannovna), to think about their care and maintenance – which, under the conditions of poor development of scientific knowledge, was a difficult, and sometimes insoluble economic and scientific problem. The history of zoological gardens and zoos can be considered in the context of history related to economic activity, as part of the infrastructure that attracts tourists. Animal tourism has gained popularity for some time now, and the study of this phenomenon (like a safari) in historical dynamics also becomes the task of history¹¹.

Similarly, in **intellectual history**, another subject niche is found, associated with animals: this would be the study of the category ‘animal’ in historical dynamics, the history of reasoning about animals as something opposing or, conversely, connected with the man. Defining its relationship / antithesis to the animal, the person reflected on their own nature, the society, the state (which were often presented as giant living

⁷ See for example: Rowley-Conwy Peter; Serjeantson D.; Halstead Paul (eds.). *Economic zooarchaeology: studies in hunting, herding and early agriculture*. Oxford; Havertown, 2017.

⁸ See for example: Taylor N., Hamilton L. *Animals at Work: Identity, Politics and Culture in Work with Animals*. Leiden, 2013.

⁹ See for example: Grier K.C. *Pets in America: A History*. Chapel Hill, 2006; Hobgood-Oster Laura. *A Dog's History of the World: Canines and the Domestication of Humans*. Waco, 2014.

¹⁰ For example, in the US and the UK, the industry for dog care products and services has existed since the 19th century, whereas the market for cat supplies and cat sitting services took shape much later.

¹¹ See for example: Knight J. *Herding Monkeys to Paradise: How Macaque Troops are Managed for Tourism in Japan*. Leiden, 2011.

organisms), politics, religion and similar existentially important topics¹². Here one can find stories related to comprehension of animal rights¹³, representation of man as an animal among other animals¹⁴ and so on. Within the framework of this subdiscipline – the intellectual history – the main studies of the history of animals are undoubtedly still ahead.

The history of science opens the widest scope for studies related to animals. Here, at the intersection with intellectual history, there are works devoted to the subjects related to the development of animal sciences, study of animal behavior in parallel with formation of social theories¹⁵. It is interesting to trace which theories related to the man, their behavior, grew out of the study of animal behavior, what place in the conceptual world of social sciences would be taken by the concept of ‘animal origin’, ‘natural instincts’, etc. At the same time, scientific hypotheses could be transferred from one object to another – from animals to humans (most often), but a reverse order was also possible – from a person to an animal. Thus, in the 19th century, the approach, according to which the inborn cretinism of a person was obvious ‘at first sight’, was widely spread; another thing was that in the city bustle, it was possible ‘at first sight’ to distinguish the ‘owner’s’ dog from a stray one¹⁶.

From the point of view of **cultural history**, animals are important actors in human history (for example, eagles, whose flight on the eve of a battle or adoption of a fateful decision was perceived as a sign from above – the sign of a future victory or a defeat). The symbolism of animals is incredibly diverse; different peoples put different symbolic meanings in the images of the same animals, and identical meanings were transmitted in different cultures by the images of various animals. Heraldic symbols were images of both real and mythical animals: lions, eagles, unicorns, uroboros, etc. In the meantime, animals are victims in the human culture (animal sacrifices have been characteristic of many human societies and religions). The cultural representations of animals – in texts, language and works of art – provide almost inexhaustible basis for scientific research. Correlating oneself with this or that animal, religious beliefs regarding ‘sacredness’ of certain animals, cultural traditions of inter-

¹² For example: Manning Au. and Serpell J. (eds.) *Animals and human society: changing perspectives*. London; New York, 1994; Swart S. and van Sittert L. (eds.) *Canis Africanis: A dog history of South Africa*. Leiden, 2008.

¹³ Kemmerer L. *In Search of Consistency: Ethics, Animals, and the Minimize Harm Maxim*. Leiden; Boston, 2006; Munro Lyle. *Confronting Cruelty-Moral: Orthodoxy and the Challenge of the Animal Rights Movement*. Leiden; Boston, 2005.

¹⁴ Simmons L., Armstrong P. (eds.) *Knowing Animals*. Leiden; Boston, 2007

¹⁵ Harraway Donna J. *The Companion Species Manifesto: Dogs, People, and Significant Otherness*. Chicago, 2003.

¹⁶ Pearson Ch. *The Late Nineteenth-Century Separation of Stray and Pet Dogs*. Available at: <https://pethistories.wordpress.com/2017/09/14/the-late-nineteenth-century-separation-of-stray-and-pet-dogs/>. Date of access 01.02.2018.

preting male / female through the rational / irrational, human / animal, canine / feline¹⁷, etc. – these would be the possible plots for the study of the new cultural history. In the framework of this sub-discipline of history, there are certain achievements¹⁸, but the ‘visual turn’ accompanying its close attention to the surviving images¹⁹ opens new research opportunities in this segment as well.

In the framework of **military history**, animals are also being studied. Researchers are trying to cover several topics related to the participation of animals in human wars, as well as their preparation for future military activities. This examines not only the training process, but also the new opportunities for military tactics and even strategies that were suggested in case of using animals (horses for a long time, elephants in the wars of antiquity, dolphins, seals and even bees were used quite recently, and so on)²⁰. Animals could act as a source of disease to hit the enemy, served as a means of communication (pigeons, dogs), caught rats and mice that could damage the facilities of the military infrastructure (cats), were used as rescuers and as ‘bone polishers’ (dogs). The animals went into space long before people did, which was also part of the military program²¹. At the intersection with the cultural history, memorial and reward practices are explored – how to bury and honor animals heroically fallen in the battles, when these practices appeared and how their content changed over time²².

¹⁷ Such dichotomies are characteristic, for example, of the British cultural tradition.

¹⁸ Ackerman-Lieberman Phillip Isaac and Zalashik Rakefet (eds.) *A Jew's best friend?: the image of the dog throughout Jewish history*. Brighton; Portland, 2013; Alves Abel A. *The Animals of Spain: An Introduction to Imperial Perceptions and Human Interaction with Other Animals, 1492–1826*. Boston, 2011; Choyke Alice M. and Jaritz Gerhard (eds.) *Animaltown: beasts in medieval urban space*. Oxford, 2017; Costlow Jane T. and Loxton Howard. *99 Lives: Cats in History, Legend and Literature*. San Francisco, 1998; Nelson A. *Other animals: beyond the human in Russian culture and history*. Pittsburgh, 2010; Nelson A. A Hearth for a Dog: The Paradoxes of Soviet Pet Keeping, Ed. Siegelbaum L. in *Borders of Socialism: Private Spheres of Soviet Russia*. Basingstoke, 2006, pp. 124–126; Taylor Nik, Signal Tania. *Theorizing animals: re-thinking humanimal relations*. Leiden; Boston, 2011.

¹⁹ See, for example, the work on the images of the Tasmanian ‘tiger’: Freeman Carol. *Paper Tiger: A Visual History of the Thylacine*. Leiden; Boston, 2010; or a selection of images of cats in the world culture: www.thegreatcat.org

²⁰ Hediger Ryan (ed.) *Animals and War: Studies of Europe and North America*. Boston, 2013.

²¹ Burgess C. and Dubbs C. *Animals in Space: From Research Rockets to the Space Shuttle*. Chichester, 2007; McNeill J.R. and Unger C.R. (eds.) *Environmental Histories of the Cold War*. New York, 2010; Nelson A. The legacy of Laika: celebrity, sacrifice and the Soviet space dogs. Brantz Dorothee (ed.) *Beastly Natures: Animals, Humans, and the Study of History*. Charlottesville, 2010, pp. 204–224; Turkina O. *Soviet Space Dogs*. London, 2014

²² In 1943, the British established the medal of Maria Dickin (Dickin Medal) which is the highest military award for animals; from 1943 to 1949 the medal was awarded 54 times – to thirty-two pigeons, eighteen dogs, three horses and the ship's cat Simon; thus, were awarded the animals who had shown bravery or devotion in the service for people during World War II. The award was reinstated in 2000, and in December 2007 a reburial with full military honors was arranged as dedicated to the animals in the pet cemetery in Ilford-based PDSA (People's Dispensary for Sick Animals – the UK's leading vet charity).

The **history of medicine**, and to be more precisely, the new history of medicine also becomes a breakthrough point in the study of animals in the context of human history. Several aspects can be pointed out in this respect: animals as an object of laboratory trials and experiments, a kind of a simulator instead of a doctor / surgeon; animals as a source of diseases, a link in the chain in the spread of diseases; animals as a raw material in the production of medicines and preparations; communication with animals as part of a therapy; psychological features of interaction with animals²³. Each of the possible aspects of the study presupposes a broader research problem, considering the space-time continuum. It is in this sphere (due to the specifics of the problems) that the greatest degree of amalgamation of the approaches and methods of various sciences can be expected, as an example, in the study of dog competence to understand human communication signals, as well as their ability to initiate contacts with the man²⁴.

Animals also appear in studies on **gender history, history of racial, national and other marginal communities**, contributing to a more comprehensive study of the topic²⁵. Animals have also been marginalized in many cases, whilst comparing the marginalities of humans and animals has a certain research potential.

The **history of emotions** is a growing trend in the last decade; emotions began to be regarded as a category of historical analysis. Studying animals in this respect also opens new possibilities: how animals were represented, what emotional influence they exerted; changing ideas about the expression of emotions in man and animals, the emotional value of communicating with the animal world²⁶. Very popular was the projection of the emotional world of people onto the animal world, and from here one

²³ Nikol'skaia A.V. *Vzaimodeistvie cheloveka s domashnimi zivotnymi: teoriia, metodologiia, praktika* [Human interaction with domestic animals: theory, methodology, practice]. Moscow: Pero, 2012; Melson Gail F. Psychology and the Study of Human-Animal Relationships. *Society & Animals*, 2002, vol. 10, Issue 4, pp. 347–352. DOI: 10.1163/156853002320936791; McCardle Peggy [et al]. *Animals in our lives: human-animal interaction in family, community, and therapeutic settings*. Baltimore, 2011.

²⁴ Marshall-Pescini S. & Kaminski J. The social dog: history and evolution. Kaminski J. & Marshall-Pescini S. (eds.) *The social dog: cognition and behavior*. San Diego, 2014, pp. 3–34; Pettersson H., Kaminski J., Herrmann E. & Tomasello M. Understanding of human communicative motives in domestic dogs. *Applied Animal Behaviour Science*, 2011, vol. 133, no. 3–4, pp. 235–245; Horowitz Alexandra and Hecht July. Looking at dogs: moving from anthropocentrism to canid Umwelt. Horowitz Alexandra (ed.) *Domestic Dog Cognition and Behavior: The Scientific Study of Canis Familiaris*. Berlin, 2014, pp. 201–219.

²⁵ Haraway Donna J. *Primate Visions: Gender, Race, and Nature in the World of Modern Science*. New York and London, 1989.

²⁶ Pręgowski Michał Piotr (ed.) *Companion Animals in Everyday Life: Situating Human-Animal Engagement within Cultures*. New York, 2016.

could see the range of possible research topics in the historical context, which is incredibly wide²⁷.

We are used to believe in the aphorism about the ‘right person in the right place’; however modern historians argue using large factual material that it is equally important that animals are at the right time as well (in the case of rescue dogs or animal-emotional friends), and this history of human relationships, in particular with dogs, accounted, according to various estimates, for 14 000-15 000 years. Within the framework of such a view of the history, it is necessary to mention the contribution of domestic animals to the history of the mankind²⁸. As a minimal illustration of such influence on the animals, one can cite the story of rescuing the drowning Napoleon (during his return from Elba Island) by a Newfoundland dog and the inspiring role of dogs and cats in the works of their masters – Richard Wagner, Sigmund Freud, Alexander Bell and others.

Summary

The animal world has become the focus of attention of the scientists that specialize in the field of economic, social and cultural history, military history, intellectual history, history of science, history of medicine and other areas of historical knowledge, as the history of domestic animals and the dynamics of people's attitude towards them adds a lot to our understanding of the human life itself. The new research on the history of human-animal relations focuses on how these interspecies relations (‘animals-humans’ relations) are built as such, what they represent, bearing in mind the effects of such relations²⁹. These works are essentially integrative; they use different approaches, a mix of themes and hypotheses³⁰.

²⁷ See, for example: Solodiankina O.Iu. *Reprezentatsii vlasti, ‘ochelovechivanie’ i voprosy bezopasnosti: sobaki v povsednevnoi zhizni rossiiskoi imperatorskoj sem’i* [Representations of power, ‘humanization’ and security issues: dogs in the everyday life of the Russian imperial family] in *Istoriia povsednevnosti* [The history of everyday life], 2017, no. 2(4), pp. 9–22.

²⁸ Coren St. *The Pawprints of History: Dogs and the Course of Human Events*. New York; London, 2003; Derr M. *A Dog's History of America: How Our Best Friend Explored, Conquered, and Settled a Continent*. New York, 2013; Stall Sam. *100 Dogs Who Changed Civilization: History's Most Influential Canines*. Philadelphia, 2007; Stall S. *100 Cats Who Changed Civilization: History's Most Influential Felines*. Philadelphia; San Francisco, 2007; Vocelle L.A. *Revered and Reviled: A Complete History of the Domestic Cat*. Great Cat Publications, 2016; Kalda S. *Of Cats and Men: Profiles of History's Great Cat-Loving Artists, Writers, Thinkers, and Statesmen*. New York, 2017.

²⁹ Birke L., Hockenhull Jo (eds.) *Crossing boundaries: investigating human-animal relationships*. Leiden; Boston, 2012; Derr M. *How the dog became the dog: from wolves to our best friends*. New York, 2013.

³⁰ Hediger R., McFarland Sarah E. (eds.) *Animals and agency: an interdisciplinary exploration*. Boston, 2009; Kalof L. (ed.) *The Oxford handbook of animal studies*. New York, 2017; Tyler T., Rossini M. (eds.) *Animal Encounters*. Leiden, 2009.

And although the animals occupied a huge niche in the history and, in particular, where a significant layer of literature³¹ is devoted to the contribution of dogs to the evolution of the human being, the suggestions to rewrite the human history through the eyes of animals are still considered marginal.

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³¹ See, for example: Cockram Sarah and Wells Andrew (eds.) *Interspecies Interactions: Animals and Humans between the Middle Ages and Modernity*. Abingdon; New York, 2018; Cummins Bryan D. *Our debt to the dog: how the domestic dog helped shape human societies*. Durham, 2013; Fagan Brian M. *The intimate bond: how animals shaped human history*. New York, 2016.

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UDC 93

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Pollution for cleanliness? Lessons from an ethnographic research on the rural use of water for hygienic purposes

Abstract. Several evidences from ethnographic research have shown how strongly water consumption and hygienic practices are influenced by hydrogeological conditions and the availability of water resources. On the contrary, dust, dirt, rubbish are the things we are trying to get rid of during the cleaning process. The traditional rural way of life was closely connected with nature and it worked as an almost complete recycling system. The water coming from natural resources was used for cleaning the body, clothes, dishes and the house as little as possible. Only the simplest substances like ash (KOH), soda (Na₂CO₃) or home-made soap from animal fat (NaOH) were used as detergents, which did not do any harm when it was recycled into nature together with minimal household waste. The careful attitude to water had a well-developed order, as a result of which people lived in harmony with their natural environment for centuries. However, this harmony was broken and turned into the opposite direction with the arrival of urbanisation and consumerism: so that we can match the latest hygienic standards (ideals) artificially generated by the market, we use more and more water and chemicals to reach the desired cleanliness, so we become cleaner and cleaner, however more and more pollutants are returning to the environment.

Keywords: hygiene, Hungarian history, traditional peasant culture, water usage, waste recycling

May God grant that I treat everything with *orderly due love* (my italics – *K.Ju.*), tearing off the earth and turning it to heaven; so that I could use the blessings of the world so much as if I did not use them. Do it so that by an inner feeling I can distinguish those that I need, from those that are harmful to me, that the transitory takes me for a short time and *only to the extent necessary*, and that only eternal realities attract my enduring interest.

Bernard of Clairvaux

Introduction

Ethnography studies traditional culture, foremost peasant culture of villages and rural settlements. Its main method is field research, detailed description of material and spiritual culture, customs, behavioural norms, as well as analysis of written documents and information from historical sources¹. Two branches of our science studying material and spiritual culture, are engaged in relations between man and water. Scientists have established that from the point of view of the survival of the human race, the strategic question at all times – both for understanding the past and for predicting the future – was water, and culture helps us understand it in all its complexity². Human civilization since its inception has formed a multi-level system of relations with the surrounding world, especially with those phenomena that are necessary for its life. Water as a basic condition of life, as the main means of maintaining purity, plays an important role not only in everyday practice, but also in symbolic purificatory and healing rituals or magic.

In the folklore of the peoples of the world, water, due to its physical and chemical properties, has similar meanings and functions. One part directly follows from everyday practices of using water, from fishing to eating, from washing to a transport artery. Water is often used in purifying rituals and rituals associated with fertility, which is reflected in myths, cosmogonic legends, the beliefs of many peoples. The motif of "living water", the phenomenon of water as a carrier of life, covering historical epochs and cultures, belongs to the basic layer of the common civilization heritage.

Hungary is known all over the world for its mineral waters and medicinal springs. One of the first synthetic works on this subject is George Wernher's treatise "On the Wondrous Waters of Hungary"³, published in 1549 in Basel, which for half a century has survived six editions and spread throughout Europe. Baron Sigismund von Herberstein (1486–1566), who is called in historiography the "first career diplomat" of

1 On the concept of ethnography / ethnology, its history and individual directions, see: Tokarev S.A. Tokarev S.A. *Istoriya russkoj ehtnografii (Ddooktiabr'skij period)* [The history of Russian ethnography (pre-October period)]. Moscow, 1966; *Idem*. *Istoki ehtnograficheskoj nauki* [Origins of ethnographic science]. Moscow, 1978. On the Hungarian material, see: *Kósa L. A Magyar néprajz tudománytörténete*. Budapest, 2001. On the tasks facing modern science, see: Campbell E., Lassiter L.E. *Doing ethnography today: Theories, methods, exercises*. West Sussex, 2015.

2 In 2008, as part of the celebration of the Day of Hungarian Science at a conference in the Hungarian Academy of Sciences, several speakers considered this range of problems. See: *A víz kultúrája / Szerk. E. Bartha, R. Keményfi, V. Lajos*. Debrecen, 2010 (*Studia folkloristica et ethnographica*. 55).

3 The electronic version is available, for example, on the website of the Austrian National Library. See: Wernher G. *De admirandis Hungariae aquis hypomnematium sine dato et loco*. 20 p. Available at: http://digital.onb.ac.at/OnbViewer/viewer.faces?doc=ABO_%2BZ103578602 (retrieved 15.10.2017).

Central Europe, in the famous “Notes on Muscovy”⁴ referred to Werner’s book. Together with other archival documents and published works, this treatise remains the most important source of historical hydrology and historical ecology, contains unique information on the methods of water use at that time. The environmental history in Hungary was isolated in the form of an auxiliary scientific discipline in the 1980s (separated from historical geography)⁵. Ágnes Várkonyi played a decisive role in it, she not only actively studied historical and ecological subjects, but also compiled a collection of articles, which became the first textbook on this discipline⁶.

In my article, I will focus only on one narrow segment of water-related phenomena and images: the results of an ethnographic study of the water usage for hygienic purposes in Hungary.

Main body

Sources of replenishment of water in the Carpathian basin.

Many ethnographic studies are devoted to the impact of the hydrogeological situation, access to water for lifestyle and survival strategies, as well as how a person utilized took advantage of natural water resources without changing them. These are, above all, the works of Bertalan Andrásfalvy, Balázs Borsos and Gergely Krisztián Horváth⁷. Subject ethnography has studied and documented ways to extract, transport and use water⁸ since its inception. The hydrological situation in the Carpathian Basin, referring to the Danube catchment area, differed in the possibilities of drainage before being contaminated. Sources of replenishment of water in the Carpathian Basin:

⁴ Gerbershtein S. Zapiski o Moskovii. [Zapiski o Moskovii]; Pod red. A.L. Khoroshkevich. Moscow, 2008. Vol. 1. (Pamyatniki istoricheskoy mysli [Monuments of historical thought]).

⁵ See also: A táj változásai a Honfoglalás óta a Kárpát-medencében: a Gödöllőn 1996. június 24–26. -án megtartott tudományos konferencia kiadványa; Szerk. Gy. Füleky. Gödöllő, 1997.

⁶ TáJ és történelem – Tanulmányok a történelmi ökológia világából; Szerk. A. R. Várkonyi. Budapest, Osiris, 2000.

⁷ See: Antropogén ökológiai változások a Kárpát-medencében; Szerk. B. Andrásfalvy, G. Vargyas. Budapest, 2009; Borsos B. Rivers, Marshes and Farmlands. Research Perspectives on the Ecological History of Hungary through Examples of Bodrogek (NE-Hungary). *Hungarian Studies*, 2009, vol. 23, no. 2, pp. 195–210; in Bulgarian translation see: Borshosh B. Reki, blata i zemedelski zemi. Izslodovatelski perspektivi za ekologichnata istoriya na Ungariya chrez primeri ot Bodrogek’oz, Severoiztochna Ungariya. *B’lgarski folklore*, 2011, T. 37, no. 1, s. 110–127; Víz és társadalom Magyarországon a középkortól a XX. század végéig; Szerk. G. K. Horváth. Budapest, 2014.

⁸ The summarizing, charted result of this large-scale study was the compilation of the “Hungarian Ethnographic Atlas”. See: Füzes E. Kutak tájítípusai. *Magyar Néprajzi Atlasz IV*; Szerk. J. Barabás. Budapest, 1989, pp. 276–281. On the dependence of water use on the hydrological situation see: Juhász K., Szabó Z.G. A hidrogeológiai viszonyok és a vízhasználat összefüggései, különös tekintettel a Balaton-felvidék településeire. *Tiszta sorok. Tanulmányok a tisztaságról és a tisztálkodásról*; Szerk. K. Juhász. Budapest, 2009, pp. 48–65.

- Surface sources:
 - rivers, streams,
 - lakes.
- Sources replenished from the soil:
 - karst springs,
 - groundwater and confined aquifer.
- Subterranean sources:
 - Groundwater,
 - confined aquifer
 - karst water.
- Precipitation:
 - rainwater,
 - thawed snow, ice.

Surface water until the late 1960's, and in some places to this day, served as an important source of water for the local population. There is a lot of information that in the first half of the twentieth century a significant part of the water for household needs and even drinking was taken from surface sources – rivers, streams, lakes.

In places where karst springs, ground waters and confined aquifer emerged, a so-called “*csorgó*” was built, that is a well in the form of a covered construction with a water-lifting mechanism to facilitate the extraction of water. Of the three types of underground sources – ground water, confined aquifer and karst waters – the groundwater was of decisive importance in the Carpathian basin. Because of the shallow occurrence, they were extracted from so-called excavated wells (Figure 1), which are considered to be the oldest type. Their construction did not require any outstanding strength, or special knowledge, but the water in them was too stiff and / or dirty.



Figure 1. Father and son collect water in a jug at the well to sell it to the inhabitants of remote villages. The village of Harghita Băi (in Hungarian Hargitafürdő) in Romania. Unknown photographer from the 1940s.

For the installation of the so-called drilling wells, it was necessary to drill the first layer of the earth; moreover, that's also true for artesian wells, in which water comes to the surface under pressure. Construction of a drilling well required high costs, so such structures are found in the courtyards of wealthy owners or in the center of the settlement – for the needs of all residents. In different parts of Hungary, wells differ in the way they take water and the shape of a well house (building above the well itself). This issue was further specified in the *Hungarian Ethnographic Atlas*.

Human intervention (river regulation, depletion of continental waters, drainage of marshes, mining of minerals) changed the height of the groundwater table significantly (primarily in the two regions of Alföld and the mining regions): it fell by several meters, which also affected the well's depths.

In addition to the above listed sources of water, rainwater was used actively, such as thawed snow in the winter, especially for personal hygiene. Rainwater and thawed snow are softer (they foam the soap easily), having better cleansing properties and not irritating the skin, so they are clean and easy to get.

Until the 1970s the listed ways of water extraction determined water usage for personal hygiene throughout Hungary, although large cities were exceptional. These circumstances served simultaneously as “technical” brakes in changing the practice of maintaining cleanness and hygiene. Only in the early 1960s infrastructure of the Hungarian province began to approach the level, which allowed a thorough change in the practice of cleaning, washing and doing laundry. Therefore, back in the 1970s and 80s one could observe more archaic forms of maintaining cleanliness and hygiene in the villages.

Starting from the turn of the nineteenth and twentieth centuries and up to now, the customs of maintaining cleanliness and hygiene can be divided into five models. All of them are, in one way or another, connected with the process of “embourgeoisement”, (in Hungarian “*paraszti polgárosodás*”)⁹, which Marxist historiography considered in the categories of transition from feudalism to capitalism, and today the most accurate term will probably be “a [capitalist] modernization of the village”. It is a

⁹ Historian Peter Hanák distinguished “extensive” and “intensive” management (see: P. Hanák *Magyarország társadalma a századforduló idején. Magyarország története 1890–1918*; Szerk. P. Hanák. Budapest, 1988, pp. 403–516), while the ethnographer László Kósa in the process of modernizing the peasantry emphasizes the transition stage (see: Kósa L. *Paraszti polgárosulás és a népi kultúra táji megoszlása Magyarországon (1880–1920)*. Debrecen, 1990). The process of the formation of bourgeois society in Hungary was forcibly interrupted in 1948 with the Communists coming to power. Because of the penetration of the Western consumption culture, Hungary became the “most cheerful barrack” in the Eastern bloc (see: Juhász K. *Запах тела и аромат чистоты в культуре обитателей «самого веселого барака»: Венгрия, 1960–1989 годы. [Body-Odour-Cleanliness within the “Happiest Barracks”, Hungary 1960–1989]. Теория Моды [Theory of Fashion], Nr. 26, (Зима) 2012–13. 339–363, 457. Available at: <http://www.nlobooks.ru/node/2978> (2013)*

process of socio-economic, cultural, ideology, and everyday lifestyle changes that began in the mid-nineteenth century, during which the feudal peasantry turned into agricultural workers of the period of capitalism. As a result, peasant culture underwent fundamental changes, some of its elements were completely lost. Five models, corresponding to the five stages of development, represent periods, the boundaries between which are blurred, and the changes occurred both geographically and vertically, i.e. in separate social groups and even families: elements belonging to different models co-existed in different periods of time and in the same household, in accordance with the laws of “parallel asynchrony”¹⁰ (see Table).

Table

Stages of modernization of the village and changing in hygienic practices

<p>Stages of modernization of the village according to P. Hanák and L. Kósa</p> <p><u>P. Hanák</u></p> <ul style="list-style-type: none"> ▪ Modernization of the village as an external factor ▪ Modernization of the village as an internal need of the individual <p><u>L. Kósa</u></p> <ul style="list-style-type: none"> ▪ Archaic state ▪ Beginning of village modernization (transitional period) ▪ A peasant as an agricultural worker (he ceases to be a peasant) 	<p>Models of hygiene practices¹¹:</p> <ul style="list-style-type: none"> ▪ Archaic peasant ▪ Peasants adopt elements of urban life ▪ Village of the modernization period <hr/> <p>Since the late 1970s:</p> <ul style="list-style-type: none"> ▪ “Consumer socialism” ▪ Consumerism (the differences between town and country disappear)
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It would be more correct to consider each model in the form of such a theoretical construction that at one or another epoch, characterizes the practices of maintaining the cleanliness and hygiene of the largest number of rural inhabitants in its main features.

The main means of cleanliness and hygiene:

1. Water (the way it is produced, the volume and quality of consumption).

¹⁰ The concept of “parallel asynchrony” was introduced by Hermann Bausinger (see: Bausinger H. “Párhuzamos különidejűségek”. A néprajztól az empirikus kultúratudományig. *Ethnographia* 100, 1989, pp. 24–37). In the context of cleanliness, V. Lajos already talks about “complex asynchrony”, when more than two traditional models are merged in one household. See: Lajos V. Testek – tisztaság – modernitás. Kulturális és társadalmi összefüggések Moldvában a «báje» kapcsán. *Tisztasorok. Tanulmányok a tisztaságról és a tisztálkodásról*; Szerk. K. Juhász. Budapest, 2009, pp. 159–171.

¹¹ Juhász K. *Meg is mosakodjál! Higiénia a 20. századi falun. Have Wash! – Hygiene in the 20th Century Village* Szentendre, 2006.

2. Place and equipment for maintaining cleanliness (washbasin, bathroom, dishes).
3. Detergents for different parts of the body.
4. Types of towels and related garments (bath robe).
5. Means for body care, cosmetics for different parts of the body.

Further in the article I will show the most characteristic features of the five models, paying special attention to the use of detergents – water and so on (in accordance with the above five points). The framework of the article does not allow us to consider the tradition of maintaining cleanliness in detail¹², so I will focus on the most important for each model. Generalizing tables will help to trace the changes in the basic concepts that describe the cleanliness, hygiene means and customs from the 19th century to the present day.

1. Archaic peasant hygiene practices (until the 1910s).

The most ancient peasant practices of maintaining cleanliness are rooted in the depths of centuries. Although, according to sources, ancient Hungarians during the period of “finding their homeland” (settling in the Carpathian Basin in the 9th century) were able to install “steam cabins”¹³, and in the Middle Ages the landlords sometimes allowed their dependent peasants to use bathing facilities located in the estate; in the Hungarian peasant tradition there is nothing like a Russian bathhouse or a Finnish sauna.

Depending on the natural conditions, the population everywhere extracted water for drinking and household needs from surface sources or shallow wells dug by hand tools. In the second half of the 19th century, the quality of water improved due to wells of deep drilling and new water-lifting devices, later – artesian wells, but all this did not affect the volume and methods of water consumption. The means of water transfer formed a lot of local forms and names¹⁴. The common thing about them is that at one time one person could transfer water in the volume of daily demand, less often – two people. The water was carried in ceramic jugs, water bottles, wooden buckets, held in hands or hung in pairs on the crossbeam (Figure 2). Water was stored in the same vessels in which it was carried. If a lot of water was required, and its source was far away, barrels and tubs were filled with water, covered with boards, so

¹² The first two models of maintaining cleanliness and hygiene are discussed in detail in the book (see: Juhász K. *Meg is mosakodjál...*), a review of all five models is given in the article (see: Juhász K. *Body – Identity – Society: Concepts of the Socially Accepted Body in the 20th Century Hungarian Rural Areas. Acta Ethnographica*, 2016, vol. 61, no. 2, pp. 283–312).

¹³ G. Csiffáry writes that the ancient Hungarians washed themselves in tents in a manner like a Finnish sauna: first they sweated in steam, emanating from stones, poured over with boiling water, rubbing and patting themselves on the body, then splashing in icy water. See: Csiffáry G. *Régi Magyar fürdővilág*. Budapest, 2004, pp. 41–61.

¹⁴ Füzes E. *Kutak táji típusai. Magyar Néprajzi Atlasz IV*; Szerk. J. Barabás. Budapest, 1989, pp. 276–281.

that the water would not splash, loaded onto carts and so delivered to the destination. Rain water was collected in containers (wooden and concrete barrels and tubs), placed under the downspouts. When there was no rain, they were regularly dried, so that the water did not spoil in them. In houses covered with reeds or straw, rainwater was not collected: because there were no downspouts. They collected it in meadow ditches, where it remained clean for a long time. The water was needed for washing the head, shaving, bathing a child, and if it was not lacking, then for doing laundry. In winter, snow taken in a clean place was thawed and used just like rainwater. The water extracted from a well was stored in portable vessels, two or three buckets, jars, placed on a water bench in the kitchen (Figure 3). Usually the vessels were covered to prevent infection or insects from entering the water, and it was scooped up with a mug, from which, if necessary, people drank. As a rule, there was a little more water in the house than the daily demand, because the water only went once a day. The daily rate, depending on local customs, was about 10–30 litres.



Figure 2. Carrying pole. Photo T. Urban, 1977.
Online Photoarchive Fortepan, No 15983



Figure 3. The outskirts of Tard village (Northern Hungary) with a well-crane.
Unknown photographer from the 1930s

If you compare the modern standards, the hygienic needs of the villagers were minimal: protection against parasites (lice, scabies) and the absence of dirt on visible parts of the body. Smells were not given much importance, the smell of a barn or stables, sweat and, in general, any fragrance emanating from the body was considered natural. The features of the dwelling (kitchen stoked “black”, clay floors), clothes made from rough homespun linen, did not allow and did not require frequent and thorough cleaning and washing, the ways and regularity of which have changed over the centuries. Hygienic procedures in the house did not have any specific place. If the weather allowed, they preferred to wash outdoors: on the porch, at the well, in a secluded corner of the courtyard.

In the winter, people crowded in smoky, stuffy houses, did not wash at all, except for the symbolic morning wash¹⁵. With the onset of spring, on the first warm days they hurried to the rivers and lakes to wash off the dirt accumulated during the winter. As one of the informants said: “Our underwear has turned black with dirt”. At the latest in the last week of the Lent, Easter Holy week, they washed from head to toe, cleaned up in the house and yard, tidied up¹⁶. For washing and shaving, only household soap was used. The head was not washed at all or very rarely (once or twice a year) by potash, instead of it, the hair was heavily greased to protect it from lice¹⁷. When washing, they were treated with a minimum amount of water (Figure 4), for the sake of economy they wiped themselves with a damp rag or poured out of the mug. Water, remaining on the body, naturally evaporated; there was almost no dirty water left after washing. Adults washed rarely and did this, as a rule, for medical purposes. Repeated use of water after washing was not uncommon: it was first used to do the laundry, then dirty water was used for irrigation or added to livestock feed. For washing the face and body unsalted pork fat, milk and butter were used, but these personal hygiene products at best were resorted to by girls for marriage.

¹⁵ They said: “If you do not wash yourself in the morning, you go around in the face of the devil”. There was a custom to pray during morning cleansing.

¹⁶ On the morning of Good Friday, the day when Jesus died, it was customary throughout the country to wash “in silent water”, i.e. in complete silence people walked to the nearest pond, stream, river and there they washed their faces, less often – they bathed, even less often – they bathed animals to be healthy all year round. See: Tátrai Zs. Aranyos víz szótlán víz. *Tanulmányok a tisztaságról és a tisztálkodásról*; Szerk. K. Juhász. Budapest, 2009, pp. 271–293.

¹⁷ For example, district doctor Maximilian Hölbling wrote in 1845: “And they [the women], and some men lubricate the hair abundantly with fat, and those who are not used to this can vomit, especially in the summer, when the droplets of fat drip down cheeks. The peasants consider this beautiful and boast that the Hungarian is not as dirty as the German”.



Figure 4. Washing (Transcarpathia). Photo: Z. Szabo, 2002

Archaic peasant hygienic practices

Clean – this is one who has no dirt on his body, no lice and mites. Smell does not matter.

Hygiene products:

1. Use of natural water sources, excavated wells, economical water consumption.
2. There is no specific place, wooden vessels are used.
3. Homemade soap, rags, potash, sand, wood ash.
4. General homespun towels, rags for wiping feet, old sheets.
5. Fat, milk, butter, honey / magic.

Characteristic features of body hygiene: Use of improvised means, proximity to nature, ecological compatibility. Magic and ritual features, the important role of women.

To sum it up: archaic peasant methods of hygiene and water use depend on the natural environment and local climate, are in harmony with seasonal weather changes, in a word, close to nature. The volume of water consumed is minimal, hygiene products decompose in the soil, i.e. keeping the body clean does not affect the local ecology: water after washing or shaving does not damage the environment. The

concept of “garbage” is alien to the traditional peasant mentality: they do not throw anything away; all things are recycled¹⁸.

II. Hygienic practices at the dawn of village modernization (early twentieth century – the 1960s).

The dissemination in the peasant environment of hygienic practices, characteristic of the urban population, has become part of the process of capitalist modernization. It originates at the turn of the nineteenth and twentieth centuries and is gradually gaining more and more wide circles of the rural population, which partly imitates the townspeople, but is increasingly changing itself, under the influence of school education, hygiene promotion and improvement of the quality of health care. Generations brought up between the two world wars and until the 1960s adhered to these rules until death (Figure 5).



Figure 5. School washbasin (Alföld). Photo: Francisci, 1952 Courtesy of the Hungarian Ethnographic Museum (Budapest)

¹⁸ Veronica Murányi wrote a brilliant study on garbage collection, in which, on the basis of the material of the Romanian village of Ghimeș inhabited by Hungarians (in Hungarian called Gyimes), compared, on the one hand, traditional peasant, on the other – modern mentality and behavior. See: Murányi V. *A ház szennye, szemete. Hulladékkezelés Gyimesközéplokön az ezredforduló után. Tiszta sorok. Tanulmányok a tisztaságról és a tisztálkodásról*; Szerk. K. Juhász. Budapest, 2009, pp. 188–203.



Figure 6. Typical wash-corner in the kitchen. Photo: B. Molnár.
Curtesy of the Hungarian Ethnographic Museum (Budapest)

In this system, a person is clean if dirt isn't seen. Thanks to health and preventive measures in schools they begin to monitor at least the cleanliness of children's nails, neck, ears. The smell of the body still does not excite anyone, on the contrary, the peasant environment condemned the fragrance of perfume, the use of cosmetics was not welcomed. Kitchens are stoked in "white", a typical corner for washing appears, it is equipped with tools that were produced in large quantities by industry, or manufactured in an amateur way according to their samples (Figure 6).

Daily hygiene procedures consisted of morning washing, washing hands before meals and after dirty work, in the evening – pouring above the waist and washing the feet. Thorough washing, which happened only once a week (on a Saturday or Sunday), required serious preparation, like carry and heat water, which for hygiene needs was required more and more. This became possible, on the one hand, due to the increase in the number of drilling wells and artesian wells for general use, on the other hand – changes in washing technique and its regularity. Old reservoirs for transporting water (buckets, water bottles) in a number of places (primarily in Alföld) are replaced by enameled or aluminum cans, the lid of which could serve as a drinking bowl (Figure 7). These cans with handles could not only be carried in hands, but also carried on a bicycle (in a special basket, fixed on the trunk on both sides), which greatly facilitated water supply. Meanwhile, the water reserves, as in the previous model, were made exclusively for one day, which still required a saving mode. So, the whole family took turns washing in the same water (first children, then the father, then the mother of the family), then they did laundry in it and finally used it for technical purposes (rinsing, rubbing).



Figure 7. Fountain Anna in Szeged, 1936. Photo: Ebner.
 Online photo archive “Fortepan”, No 83806

Until the late 1950s of the twentieth century, they preferred to wash themselves with home-made soap, toilet soap (“Caola” or “Elida”) sold in stores was mostly bought by girls for marriage and young women (and those did it only on holidays). Since the 60s of the twentieth century, people engaged in manual labor and their family members washed themselves with the soap of “Baba” or “Kék-Vörös” soap makes. It was this soap that was most popular in those years. Until the late 1950s in the summer they washed their heads every two to three weeks, in the winter – even less often, sometimes every few months. At the turn of the 1950-1960s young people started using shampoos. Cleaning the teeth has not yet turned into a daily habit: it was done from time to time, in several places for the whole family there was one toothbrush, some brushed their teeth, pouring soda, salt or tooth powder on the index finger.

Hygienic practices in the rural environment at the dawn of modernization

Clean is someone on whom dirt is not seen, who has clean, trimmed nails, who doesn’t reek.

Hygiene products:

1. Use of natural water sources, excavated and drilled wells, careful use of water.

2. Wash basin, toilet bowl (also for representative purposes).
3. Homemade soap, on special occasions – shop soap and shaving soap.
4. A common towel, separate towels for children, top and bottom of the body, a towel for the baby.
5. Face cream, baby cream, talc, cologne.

Characteristic features of body hygiene: partly self-made, close to nature, eco-friendly means. Under the influence of sanitary and hygienic education, which taught that cleanliness is a moral duty, magical and ritual traits recede into the background. The role of women is still high, but the responsibility of the individual is already emphasized.

Consequently, it can be said that due to the spread of hygienic norms and practices, the consumption of water in the village, which entered the modernization path, increased slightly, because of water saving and the use of environmentally friendly hygienic means, this practically did not increase the “ecological footprint” (the extent of human exposure to habitat). At the same time, the use of toilet soap and industrial shampoo or the habit of brushing your teeth already indicate a gradual transition to a new model.

III. Hygienic practices in the village during the period when a peasant converted into an agricultural worker (1960–1980).

Despite the appearance of bathrooms in Hungarian villages in the process of modernization in the second half of the 1960s, the lack of infrastructure did not lead to a radical change in hygiene practices, but rather created a transitional situation. It is known, that in the period between the two world wars, representatives of the village intelligentsia (doctors, teachers), small entrepreneurs and wealthy landowners arranged in their homes bathrooms according to the urban pattern: the water was supplied by a manually operated water tower and entered the ceiling storage tank¹⁹. In the 1950s and 1960s this was the solution for those who, despite the lack of public water supply, wanted to bring water to their homes. However, the majority still carried water from a personal well or a water intake column. The success of the communal water supply to the dwellings relates to the construction of so-called “mini-hyrotechnical constructions” which, with the help of a “hydroglobus” (located at the height of a ball-shaped tank), supplied a dense network outdoor water pumps with clean water (Figure 8).

¹⁹ Juhász K. A tisztálkodás és szépségápolás átalakulása falun az 1960–1970-es években. *Múltunk*, 2008, 53. 3, pp. 109–121.



Figure 8. Typical outdoor water pump 1960s.

Although in the socio-political and economic sphere, after the communists came to power in 1948, radical changes took place, sanitary and hygienic educational propaganda operated with old (bourgeois) concepts, known even under the previous regimes. The difference was observed in the fact that the former authorities considered cleanliness and health a duty of the citizen, communist propaganda called it part of communist morality and struggle with capitalism.

The shared use of towels is gradually becoming a thing of the past, in the villages new types of hygiene products and body care products are started to be used: various kinds of soap, perfumes, hair and skin care, shaving, and baby care²⁰. Both in fashion and in hygiene practices, small villages were involved in the process with a delay of several years. Products that appeared in the trading network of large cities were known little and used little in villages, except for the social elite, including younger generations. For daily water treatment and body care in the country, Hungarian goods (soap of “Baba”, “Caola”, “Kék-Vörös”, creams “Baba”, “Caola”²¹) were used, but young women already got the products of the Hungarian cosmetic industry (face cream, powder, lipstick, nail polish, “Camea” hair spray). Under the influence of ac-

²⁰ The urban population acquired these means of care during the period between the two world wars, the villagers started using them only in the 60s of the 20th century, replacing the usual home-made means with them.

²¹ The peasant worldview condemned everything that was considered “excessive” luxury, an exception was made only for cheap baby powders and creams, starting from the 1930s of XX century. Since the cream “Baba” was very fat, the whole family used it: smeared face, hands, body, used as a shave cream and so on. That is why in the 1960s it was given out to workers in “dirty” industries along with soap. Cream “Caola”, produced by the Baeder factory, enjoyed universal love, comparable to the modern popularity of the cream “Nivea” in a round jar. It was used only by women, and in the countryside, it got spread only in the 1960s.

tive propaganda of a healthy lifestyle, more and more villagers daily brush their teeth, with their own toothbrushes and using Hungarian toothpastes “Ovenáll”, “Amodent”²². This new transitional model of hygiene and body care was accompanied by an increase in water consumption.

Hygienic practices in the village during the peasant transformation in an agricultural worker

Clean is someone with not only visible but also invisible dirt, who doesn’t reek, a light fragrance of perfume or cologne can talk about grooming.

Hygiene products:

1. The use of natural water sources, excavated and drilled wells, a denser network of water pumps connected to “hydroglobes” (water storage), sometimes – domestic water supply, careful water consumption, sewerage has not yet been carried out, instead of it – cesspools.

2. Wash basin, toilet bowl, first bathrooms (often for representative purposes) (Figure 9).



Figure 9. Village bathroom in the 1960s.

3. Shop soap, shampoo, baby bath, shaving soap, shaving cream.

4. Individual towels, at least – on the basis of sex and age, hand towels.

5. Creams for face, hands, baby cream, personal hygiene products of Hungarian production.

²² Toothpaste “Ovenáll” was produced in the interwar period, while “Amodent” is a product of the socialist industry.

The characteristic features of body hygiene: home-made care products are becoming a rarity, the products of socialist industry are used everywhere, the pollution of the environment is slightly increasing. Work on “socialist” enlightenment and education among peasants and workers in order to “enhance culture”, showers in workplaces and baths with thermal water make a revolution in the hygienic practices of the village. Propaganda emphasizes personal responsibility, but the role of women in maintaining cleanness is still high.

In the 1960s in rural areas, collective farms, state farms and other enterprises production showers were installed; as a result of exploratory drilling for oil, the number of thermal baths increased, which were actively used for washing at weekends²³. There was no longer any need to save water, and gradually a different attitude towards water use spreads among the villagers.

The older and growing under socialism younger generation had very differently attitude towards the volume of water consumed, which served as an occasion for endless conflicts. Older people condemned “wastefulness”, while young people considered the old people’s water procedures to be outdated, not hygienic. From the point of view of protecting the environment, the truth was on the side of the elderly, since they, following the practices that had been adopted in childhood, still did not leave a litre of dirty water behind the youth not only did not control their water consumption, but also polluted the water with washing and washing-up liquids. Streams of dirty water immediately merged into the soil and surrounding reservoirs, because the sewer system at that time was not brought anywhere. In addition to hygiene procedures, the consumption of water increased due to washing clothes and washing dishes. The dishes used to be washed in a small amount of boiling water and, without rinsing, wiped with a towel, but now it was first washed in water with the addition of detergent, then rinsed in running water. Doing laundry radically changed with the spread of detergents and washing machines. Since doing laundry became easier, it (as well as changing clothes) became more frequent. Synthetic detergents, which replaced the decomposed soil soap and alkali in the soil, together with the increased amounts of dirty water led to greater pollution of the environment.

IV. “Consumer socialism” (from the late 1970s to the 1990s)²⁴

In Hungary, the introduction of a “new economic mechanism” in 1968 led to a gradual reorientation of the economy to market needs. Here the epoch begins, the main features of which were revealed in the 1970s; Hungarian historians and sociolo-

²³ Juhász K. Termál- és ökoturizmus-koncepciók Gyomaendrődön. A társadalomtudományi kutatás lehetőségei egy város versenyképességének javításában. *Ethno-Lore: a Magyar Tudományos Akadémia Néprajzi Kutatóintézetének Évkönyve*, 2014, 31, pp. 261–310.

²⁴ Valuch T. A hosszú háztól a kockaházig: a lakásviszonyok változásai a magyar falvakban a hatvanas években. «*Hatvanas évek*» Magyarországon. *Tanulmányok*; Szerk. J.M. Rainer. Budapest, 2004, pp. 386–407.

Since the late 70s of the 20th century, the number of households equipped with running water increased sharply in rural areas, and new houses and apartments were planned exclusively with bathrooms. In those settlements where there was no public water supply, the water was brought into the house from its own well through a submersible pump. Because of the lack of sewage, dirty water drained into cesspools dug in the courtyard, which from time to time were cleaned by sewage machines²⁵.

Hygienic practices of the village under “consumer socialism”

Clean is the one who daily bathes (regardless of actual skin contamination), who has a well-groomed appearance, who smells good (uses shampoo or deodorant).

Hygiene products:

1. Tap cold and hot water, in some places also drainage
2. All houses have a bathroom
3. Means for care and household chemicals primarily of Hungarian production, but there is already import. Along with toilet soap, foam for baths is used, cosmetics for men are distributed
4. Each has his own (terry) towel for daily bath or shower.
5. Along with the Hungarian goods import goods appear. The arsenal of cosmetics expands, it is planned to differentiate care products and decorative cosmetics by age, sex, skin type.

Characteristic features of body hygiene: consumerism is gaining popularity, foreign manufacturers come to the market, Hungarian advertising is developing rapidly. The difference between a village and a city decreases. Hygienic care of the body has become self-evident, it is not considered a moral duty, personal care depends on the individual's fashion and financial capabilities.

Those who lived in village houses with a garden, washed not only in the bathroom, but also in the old-fashioned way. The shower and toilet were installed in the “summer kitchen”²⁶ or at the exit from the house to the backyard and were used for quick rinsing during gardening, harvesting, summer kitchen work. If there was an automatic washing machine in the bathroom (Figure 11), the old one – with the squeegee rollers – and the centrifuge went to the summer kitchen, and were used to do laundry in the courtyard in the summer.

²⁵ They were trucks equipped with a thick pipe and a pump, which pumped out sewage from a cesspool or a toilet located in the courtyard.

²⁶ In the Hungarian villages, the so-called summer kitchen is widespread, which appeared at the turn of the 19th–20th centuries. It was located at the back wall of the house or in a small building opposite the entrance to the house. The idea was to free the house of dirt and disorder accompanying work in the kitchen.



Figure 11. Rustic bathroom in the 1980s. Photo of the author

All this was a forced measure, because a limited amount of cesspools required saving in water consumption. It was then that the rural population first encountered the problem of disposing of sewage. Often, after overflowing the cesspool, the dirty water after washing and washing dishes was poured into a street ditch or the nearest natural pond, but then this did not entail serious consequences. Others for the sake of economy used dirty water from the washing machine or after taking the bath again: washed floors or poured into the toilet bowl. It was not considered shameful to wash in the water, in which the child or a member of the family had already bathed. All these practices can still be observed today in remote corners of the country and among older people born before the Second World War.

In general, I can say that during the period of consumer socialism, water use and pollution of the environment significantly grew. In addition, there was still no talk about environmental awareness, nor about a careful attitude to resources. In a socialist society, people are used to the fact that they do not have the ability to make their own decisions, and therefore they are not responsible for protecting the environment. The most cheerful barrack (as Hungary was called in the socialist camp), swept by the fever of consumerism, did not think about it.

V. Consumerism (from the 1990s to the present day).

After abandoning socialism and changing the political system in 1989, rural society experienced a process of stratification based on the size of property (not only

the possession of fertile land) and income. In the 90s of XX century and even more at the beginning of this century, the unhindered spread of the global consumption culture came to the smallest village. Differences in the social position and way of life now flowed not between town and country, but manifested in property relations. The concept of cleanliness, grooming has become truly complex these days. A man in complete confusion has to make a choice in the conditions of an ever-growing supply of funds to care for various parts of the body. In the bathrooms, as colleague ethnographer Kata Jávör's informant remarked wittily, a "revolution of bottles" occurred²⁷. In the past, with the help of household soap alone, they washed their bodies, washed their clothes, washed their heads, shaved, but now special means are used for face, hands, hair, intimate hygiene, bathing or showering. Only for washing the head (almost every day), three or four cosmetic tools are used (shampoo, selected according to the type and colour of the hair, balm, nourishing mask, foam, gel, lacquer, etc.). To replace the universal cream "Baba", which used to be suitable for the whole family, now different means for face and body are used to care for infants and problematic skin of adolescents, for women of different ages and men with different types of skin. To look good, now it is not enough to be clean: this concept includes also epilation, make-up, deodorant, perfume, and many people try to approach the ideal of beauty by experimenting on their own body (tattoos, injections of Botox, plastic surgery).

The process of civilization, as Norbert Elias understood it²⁸, reached the stage at which a person aspires to destroy any "product" of his biological activity, to erase it from the face of the earth at the moment of its appearance²⁹. A modern rustic bathroom, which does not concede anything to the urban one, fully corresponds to this principle. The bathroom used to be a service room for washing face and body, now it has turned into a sanctuary for caring for your own body and at the same time a place where a "legitimate body"³⁰ is created, ready for presentation to others. This is also indicated by the separation of the toilet from the laundry space (special laundry room). Strictly individual use of towels, own soap, shower gel, shampoo, toothpaste, for wealthier citizens – several bathrooms, washbasins, toilets within a single home indicate the strengthening of a person's own self. As a result, an individual is completely protected from contact with guests or family members through a common sink, toilet bowl and so on.

²⁷ Jávör K. A higiéniai gyakorlat változása az ideák, köztük a saját testhez való viszony tükrében. Zombó (1977–2007). *Tiszta sorok. Tanulmányok a tisztaságról és a tisztálkodásról*; Szerk. K. Juhász. Budapest, 2009, pp. 141–158.

²⁸ Elias N. *O processe ivilizacii: Sociogeneticheskie i ogeneticheskie ssledovaniya* [On the process of civilization: Sociogenetic and psychogenetic studies]. Moscow; St Petersburg: Direkt-Media, 2001.

²⁹ Kapitány Á., Kapitány G. Néhány gondolat a tisztaság szimbolikájáról. *Tiszta sorok. Tanulmányok a tisztaságról és a tisztálkodásról*; Szerk. K. Juhász. Budapest, 2009, pp. 17–47.

³⁰ Bourdieu P. *A társadalmi egyenlőtlenségek újratermelődése*. Budapest, 1978, p. 154.

In Hungary of the twenty-first century with the development of consumerism, depending on buyers' purchasing power, a wide range of goods and services for body care, from elite lines to cheap discount products is offered. Recently, the fashion for "naturalness" (also in different price categories) has spread. In fact, this could contribute to improving the environmental situation, but while eco-friendly detergents and perfumes constitute an insignificant share of consumption, the material in which they are packed, causes damage that is not inferior to what is done by packages of "ordinary" products.

Hygienic practices of the village in the era of consumerism

Clean is someone who is groomed from head to toe (here also includes hair removal, manicure, pedicure, hairstyle, perfume, women – make-up).

Hygiene products:

1. Tap water, sewage.
2. Bathroom (there can a few be in the house, a shower, a bidet, design matters).
3. Wide arsenal of means for washing body and face: for every age, sex and different parts of the body (toilet soap, liquid soap, bathroom foam, alternative care products).
4. Each family member has their own towel, hand towel, bathrobe.
5. Cosmetics for every age, sex and different parts of the body.

The characteristic features of body hygiene: the use of bathroom, running water and sanitation have become self-evident. All new (artificially warmed up) requirements for body care. The difference between town and country is lost. A medical component (cosmetic clinics, pharmacy cosmetics), as well as a return to natural materials (biological and chemical-free products) is becoming a new one. The pollution of the environment, which occurs in the process of caring for the body, reaches an unprecedented scale.

The concept of cleanliness and cult of a well-groomed body, promoted by consumerism, inflict damage on the environment in previously unseen scales and even harm human health (skin allergies, etc.). Everyday washing of the body and head leads to a high-water intake. The modern wasteful system of municipal water supply and sanitation increases tenfold the scale of pollution. Most of the drinking water flowing from the tap is not spent on cooking and drinking, but on washing, doing laundry and draining the water in the toilet. In addition, after consuming *all* the dirty water along with the feces is poured into the sewer pipe, from there it enters the treatment facilities and only then returns to the natural environment (Figure 12).

A person of a culture of consumption – even if guided by good intentions – has no idea of the difficulties and cost of water supply, waste processing and wastewater treatment. A modern consumer, leaving mountains of garbage and streams of dirty water every day, finds out from the bill every two months how much water he consumed and how much it cost him.



Figure 12. Ditch on the outskirts of the Romanian village with the Hungarian population of Ghimeş (in Hungarian – Gyimes), 2002. Photo by V. Murányi

Conclusion

Summarizing the changes considered in the article, it is necessary to state the following. In the traditional peasant way of life, the elaborated order of economical use of water for hygienic purposes was developed thoroughly, as a result of which man lived in harmony with the environment for centuries. Bourgeois modernization and the wide spread of consumerism have put an end to harmony: in order to match the market dictated by the ever-new and artificially imposed hygienic standards (ideals), mankind, in pursuit of a well-groomed body, uses more and more water and chemicals, non-compostable packaging materials. In the end, we are getting cleaner, while the environment is getting dirtier.

What conclusions can we draw from a brief ethnographic sketch presented to the attention of the reader? What suggestions can we formulate?

Of course, we are not talking about returning to the archaic peasant way of life. But if you analyze the basic principles, several good thoughts may come to mind:

1. *We will be conscious and not indifferent!* In a close to nature peasant lifestyle, a person knew from his own experience how hard it was to extract the water for daily hygiene procedures, and therefore spent it carefully, to maintain personal hygiene. In the peasant picture of the world there was no room for rubbish, all wastes were used to the last drop for the second time, which meant 100% recycling. If at any time of the day and night the water flows from the tap, and the sewage is instantly washed into the sewage system, we do not directly feel, as it used to be “the hard way”, neither water extraction nor pollution, because we learn about the negative impact on the environment not from the first hands, in the most general terms.

The solution lies on the surface: people need to constantly be reminded that they pollute the environment, of the so-called ecological footprint and how much of their money goes to their own cleanliness and comfort. There is a technical opportunity to

equip the apartments with appliances that would show how much one bath, one shower, one wash, etc. cost.

Multiple changes in hygiene practices over the past hundred years show that a change in the prevailing worldview is possible, but will require a whole system of activities and serious civic engagement. Sooner or later these efforts will bear fruit.

Recent research indicates the same: even in the smallest villages, more and more people are saying that they are trying to conserve water and use environmentally friendly detergents. Today, you can buy everywhere – and this product is in increasing demand – the usual laundry soap, soda (sodium carbonate) and soap nuts.

It is clear that the producers and sellers who are chasing profit are not easily convinced of the harm and uselessness of their new miracle means, but it is striking that the words “bio-“, “organic”, “natural” are in fashion, even if in most cases there is no question of protecting the environment.

2. *Fundamental rebuilding of the water supply and sewerage system.* The above considerations and other similar proposals, while the present sanitary-hygienic system exists, will not solve the problem. In this context, the concept of water management and wastewater treatment proposed by the Belgian scientist of Hungarian origin Josef Országh, published by him in 1992³¹, is interesting. The idea of the proposed system is that both water supply and water treatment should be organized so that the cycle of water and the incoming in its composition of nitrogen, carbon and phosphorus, as far as possible, was not interrupted³². Those who wish can get acquainted with this fully self-sufficient, non-waste water supply method developed for a family or

³¹ Országh J. Approche systémique du problème de traitement des eaux usées domestiques. *Tribune de l'eau (CEBEDEAU)*, 1992, no. 6, vol. 45, pp. 89–94.

³² This can be achieved by guaranteeing the following conditions. Available at: <https://www.eautarcie.org/hu/02c.html>, retrieved 15.10.2017: Grey (soap) and black (contaminated with faeces) water should be collected separately and processed so that useful resources are extracted from grey and black water. These waters become unclean and present a danger to the environment only after they are mixed. Water containing human or animal excrement must be cleaned, it is strictly forbidden to pour it into the ground in a natural body of water or allow infiltrating the soil. This water must be processed together with materials rich in nitrogen or phosphorus, cellulose-containing materials of natural origin. The primary goal of processing black water is not to fight the danger posed by faeces, but to restore humic soil reserves and revitalize the living world. At this level, the water content of elements such as nitrogen (N), phosphorus (P) or potassium (K) is less important than the place they occupy in molecular systems of humic substances.

Grey (soap) water is a resource that can and should be used for watering agricultural land or filling underground waterways. It is necessary to avoid dirty water (even after cleaning) in natural water bodies. To treat grey water, you should use natural light and the cleaning potential of the soil. In the sphere of water supply it is necessary to put the quality of water in dependence on the destination. For the integrated operation of all water resources, their use (including rainwater) must be subject to uniform legal regulation. Admittedly, except for drinking and cooking, for all other economic purposes, water that is safe in chemical composition can be used, even if it does not meet drinking water standards.

apartment building on the Internet, there are also a technical description and references to implementation experience in seven European languages³³.

Responsibility is in the hands of those who make decisions, control is in the hands of society, and then a change in the outlook will become inevitable, and our cleanliness does not lead to more and more pollution of the planet. Let's hope that by joint efforts we will overcome inertia and achieve positive changes. At stake is our life.

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³³ Available at: <https://www.eautarcie.org/index.html> (retrieved 15.10.2017).

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Water supply and quality of drinking water in Moscow in the 19th – early 20th centuries

Abstract. The article is devoted to the development of centralized water supply in Moscow from the opening of the gravity-flowing Ekaterininsky (Mytishchinsky) water pipeline with spring water in 1804 to commissioning of Moskvoretsky water pipeline in 1903–12, which supplied the city dwellers with purified water from the Moskva River. Along with the centralized water supply, attention is also paid to the traditional forms of decentralized water supply with the delivery of water by water carters and the consumption of unfiltered water from open reservoirs and dug wells by the city dwellers. Attention is paid to the quality of drinking water, which was considered during the construction and reconstruction of Moscow water pipelines, formation of long-term plans for the development of water supply, protection of water supply sources from pollution in the context of sanitary measures to protect the population from epidemic diseases.

Keywords: water supply, water pipeline, water carter, spring water, ground water, quality of drinking water, water hardness, water filtration, Moscow, water and sanitary inspection

Introduction

Studies on the retrospective analysis of the establishment and development of water supply systems in cities, the role of water supply in sanitation and improving the quality of life of city dwellers, changes in lifestyle and traditional approach to water use as a result of introduction of centralized water pipelines have become a popular trend among the historians of different countries in recent years, in Europe and the US in the first place, including within the framework of the studies of urban environmental history. These scientific works, which uniquely connect the humanities scholars and the sphere that previously belonged exclusively to the interests of ‘techies’ and hygienists, allow us to consider water supply on an interdisciplinary basis as

a vital factor in the development and transformation of cities and urban communities. It will suffice to mention several scientific publications of the last decade on this subject, to convince ourselves of the relevance of the subject of research and of unfailing interest to it from the historians studying the problem of water supply in the context of relationship between the society and nature¹.

In Russia, attempts to study the history of urban water supply have been undertaken repeatedly². Now, this topic has acquired a second wind in the work of a new generation of researchers analyzing the history of water supply in the cities of Russia from a new angle³.

Researchers have been involved in the studies of Moscow water supply for a long time, but their work was generally of a narrowly focused nature and concerned the issues of construction and development of water pipelines as the most technologically complex and advantageous elements of water supply system from the point of view of public attention⁴, or specific aspects of water supply, such as search for prospec-

¹ Angelakis F.N., Mays L.W., Koutsyiannis D., Mamassis N. *Evolution of Water Supply Through the Millennia*. Leningrad: IWA Publishing, 2012; Broich J. Engineering the Empire: British Water Supply Systems and Colonial societies, 1850–1900. *Journal of British Studies*, 2007, vol. 46, Issue 2, pp. 346–365; Broich J. *London: Water and the Making of the Modern City*. Pittsburg, 2013; Petris S. Juuti, Tapio S. Katko, Heikkis Vuorinen. *Environmental history of water: global views on community water supply and Sanitation*. Leningrad: IWA Publishing, 2007; Tallo E., Ostos J. Water consumption in Barcelona and its regional environmental imprint: a long-term history (1717–2008). *Regional Environmental history change*, 2012, vol. 12, issues 2, pp. 347–361; Tomory L. London's water supply before 1800 and the Roots of the Networked City. *Technology and Culture*, 2015, vol. 56, no. 3, pp. 704–737; Tomory L. *The History of the London water Industry, 1580–1820*. Baltimore: Johns Hopkins University Press, 2017; Smith C. *City Water, City Life: Water and the Infrastructure of Ideas in Urbanizing Philadelphia, Boston, and Chicago*. Chicago: University of Chicago Press. 2013; Soll D. City, region, and in between: New York City's water supply and the insights of regional history. *Journal of urban History*, 2012, vol. 38 (2), pp. 294–318; Soll D. *Empire of Water: An Environmental and Political History of the New York City Water Supply*. Cornell University Press, 2013.

² Del'vig A.I. Historical review of art to conduct water: water pipelines in Russia. *Bulletin of industry*, 1859, vol. 2, no. 4, April, part III, pp. 1–54; Fal'kovskii N.I. *History of water supply in Russia*. Moscow-Leningrad, 1947 and others

³ See, for example: Agafonova A.B. Traditional society and problems of water supply in provincial cities during the modernization of the last third of the 19th – early 20th centuries (on the materials of Vologda and Novgorod). *Traditional Society: An Unknown Past: Materials of the 10th International Scientific and Practical Conference, March 21–22, 2014*. Chelyabinsk, 2014, pp. 194–197; Il'in A.Iu. The origin and development of water supply systems of Russian provincial centers in the 18th – 20th centuries (on the materials of Penza, Ryazan and Tambov). *Socio-economic phenomena and processes*, 2016, vol. 11, no. 10, pp. 28–34; Kos V.V. Water supply of a provincial city at the turn of the centuries (on the example of Tomsk province at the end of the 19th – early 20th centuries). *Bulletin of the Kemerovo State University*, 2013, no. 2, pp. 50–55 and others

⁴ Del'vig A.I. *Moscow water pipelines in 1859*. Moscow, 1860; *Water supply of Moscow in 1779–1902. Mytishchinsky and other auxiliary water pipelines*. Moscow, 1902. Nesteruk F.Ia. *Water construction in Moscow*. Moscow, 1950; Rerberg I.F. *Moscow water pipeline. A historical*

tive sources, water supply and hygiene of drinking water⁵. Some of these works were written by specialists in the sphere of water supply, as a rule, to the jubilee dates and carried the imprint of departmental publications⁶.

Without setting the goal of providing a detailed description of the history of Moscow water pipelines and water carters, the article focuses on the problems of the quality of drinking water in the context of formation of the centralized water supply in the pre-Soviet period, starting since the commissioning of the Ekaterininsky (Mytishchinsky) water pipeline in 1804 and finishing with the commissioning of Moskvoretsky water pipeline in 1903–12. In the era when the local sources of water supply were subjected to powerful anthropogenic impact because of industrial revolution, industrialization, urbanization and population growth, the quality of water had become the subject of focused attention. From this point of view, it is very important to study the history of water supply in Russia's largest megalopolis on an interdisciplinary basis, considering the ways it had been formed under the influence of assessing the quality of the drinking water and the sanitary status of water supply sources, and how this in its turn changed the daily life and customary use of water by the city dwellers.

Main body

Until 1804, Moscow water supply was based on the use of water resources from open natural sources: rivers, streams, ponds, as well as from the wells – spring wells and artificially dug wells with ground water. Housing estates that were remote from the water sources were served by water carters, which already in the 17th century became an indispensable attribute of the daily life of the citizens⁷. In the medieval Moscow there were examples of construction of small local gravity and pressure water pipelines. It is known, for example, that in 1631–33, the first pressure water pipeline in Russia was built in Moscow by master Christopher Galloway, and it existed until the 18th century. The pipeline, with the help of a water-lifting machine, supplied water to the reservoir in the Kremlin, from where it was distributed through a system of lead pipes. Pressure water piping was built in the royal palace in Kolomenskoye as

sketch of the construction and development of water supply in Moscow and a description of a new water pipeline. Moscow, 1892 and others.

⁵ Vasil'evskaia O.V. *History of water supply of Moscow in hygienic treatment: Doc. dis.*, Moscow, 1952; Ozerova N.A. To the history of water supply of Moscow: 'The search for new sources' in 1913–1930. *Issues of the history of science and technology*, 2010, no. 1, pp. 75–94.

⁶ See, for example: Khramenkov S.V., Volkov V.Z., Gorban' O.M., Kalashnikova E.G., Fomushkin V.P. *From the Source to Moscow.* Moscow, 1999; Khramenkov S.V., Sigin A.P., Sadova N.I., Blagova O.E. *200 years of Moscow water supply.* Moscow, 2006.

⁷ Fal'kovskii N.I. *History of Water Supply in Russia.* Moscow-Leningrad, 1947, p. 83.

well. The practice of construction of open water drains also began to be actively spread in the same era⁸.

The facilitators of medieval water pipelines solved narrow utilitarian tasks and did not set themselves as a goal the mass water supply to the urban population. The most famous authority in the matters of water supply, Baron A.I. Delvig, noted that until the 18th century, there were no water pipelines built in Russia because of the cheap labor of serfs, lack of sufficient financial resources and required knowledge of hydraulics as well as due to climatic pattern⁹. A major specialist in the history of Russian water supply, N.I. Fal'kovskii, believed that Russian people had been familiar with water pipelines from the old times, "however favorable local conditions made it possible to dispense with simpler methods of water supply"¹⁰.

In medieval Moscow, the favorable conditions were represented by the presence of abundant water resources suitable for drinking and cooking without any threat to health. As an example, the water from the Presnensky Ponds was considered the best until the 17th century and went exclusively for the table of Tsar Alexei Mikhailovich (Alexis of Russia)¹¹, whilst in the following centuries these ponds became some of the most polluted.

During the 17th–18th centuries, the quality of water in the local water reservoirs and wells had changed for the worse because of the growing pollution of the urban environment with household waste and sewage. The ground water became 'unhealthy' under the influence of a powerful anthropogenic load on the upper and lower layers of the soil, which intensified as the population grew. The absence of a city-wide waste management system, the leakage of sewage into the soil through the cracks, as well as through the ways made by rats and other animals near the cesspits and cesspools, contributed to contamination of aquifers and water damage in the wells. As the contemporary wrote, "in Moscow, a well with good water is a perfect rarity, a precious treasure; whoever has it, he / she boasts of it like of a rich mine streaming silver and gold"¹². Although in the 18th century, people were already able to improve the water by desilting and filtering it, as well as by subjecting it to boiling¹³,

⁸ Ibid, pp. 84–89.

⁹ Del'vig A.I. Historical review of art to conduct water: Water pipelines in Russia. *Bulletin of industry*, 1859, vol. 2, no. 4, April, part III, p. 1.

¹⁰ Fal'kovskii N.I. *History of Water Supply in Russia*. Moscow; Leningrad, 1947, p. 40.

¹¹ *Water supply of Moscow in 1779-1902. Mytishchinsky and Other Auxiliary Water Pipelines*. Moscow, 1902, p. 1.

¹² Ibid, pp. 225–226.

¹³ Verzhbdlovskii M.V. *Essays on the History of Water Hygiene in Russia and the USSR (1700s–1960s): Synopsis of the thesis for the degree of a doctor of medical sciences*. Leningrad, 1966, pp. 7–8.

nevertheless, during the spring floods, “a significant increase in mortality, which occurred solely from the absence of any satisfactory water”¹⁴, was recorded in the city.

It is worth noting that the assessment of water quality was determined at that time by an organoleptic method using the five sense organs in human being. They checked water on the surface. Attention was paid to its transparency, color, smell and taste¹⁵. From the middle of the 18th century, they began to add the results of chemical studies to the organoleptic indicators, on the presence of samples of inorganic substances in the water, which were then recognized as disease carriers¹⁶.

Under the conditions of pollution of the dug wells, the resources of clean water from spring wells were no longer sufficient for all those who were traditionally accustomed to the use of river, pond and ground water. The most abundant Andreevskie springs (30 thousand buckets per day) and Trekhgornye springs (18 thousand buckets per day)¹⁷, could give the city 576 cubic meters of water in aggregate, calculated as a 12-liter bucket used throughout Russia. The springs in Devichye Pole (a well called Babylon), Presnenskie, near the Andronievsky Monastery, on the Vvedensky Mountains, behind the Rogozhskaya Gate and a few others gave much less water.

Private water carters delivered water from the spring wells in barrels for a decent fee, which only wealthy citizens could afford. In particular, a small wealthy family living in the Kremlin area spent at the turn of the 18th–19th centuries on delivered water up to 60 rubles per year, i.e. 50 kopecks for a barrel, which was enough for three days¹⁸. The poorest urban strata could not afford such an expensive drink, and, according to a contemporary, “...took it for all the needs from the Moskva and Yauza rivers, from stagnant ponds and some wells, and used water either hard and unpleasant, or not fresh and turbid, or rotten and unhealthy...”¹⁹.

Consequently, by the end of the 18th century, the population of Moscow already experienced a serious shortage of clean drinking water, which could be compensated only by the implementation of the water pipeline project aimed at uncontaminated sources of water supply. Such a project, approved by Empress of Russia, Catherine the Great, was developed and began to be implemented in 1779 by a talented hydraulic engineer, Lieutenant-General F.W. Bauer. Considering that a lot of works had

¹⁴ *Water supply of Moscow in 1779–1902. Mytishchinsky and Other Auxiliary Water Pipelines.* Moscow, 1902, p. 2.

¹⁵ See: Fal'kovskii N.I. *History of Water Supply in Russia.* Moscow; Leningrad, 1947, p. 15.

¹⁶ Verzhbdlovskii M.V. *Essays on the History of Water Hygiene in Russia and the USSR (1700s–1960s): Synopsis of the thesis for the degree of a doctor of medical sciences.* Leningrad, 1966, pp. 7–8.

¹⁷ *Water supply of Moscow in 1779–1902. Mytishchinsky and Other Auxiliary Water Pipelines.* Moscow, 1902, pp. 2–3.

¹⁸ Mytishchinsky water conduit in *Vestnik Evropy*, 1804, no. 23, p. 226.

¹⁹ *Ibid.*, p. 226–227.

been devoted to the construction of that water pipeline²⁰, we shall remind that the project assumed the use of water for water pipeline from the springs located near the village of Bolshie Mytishchi, 15 versts away from Moscow. The choice of the location for the construction of the water wells was due to a higher location of this place in relation to the city, which made it possible to guide the water through an artificial water conduit by gravity, without boosting it with pumps. An important factor in the choice of the springs was also the unsurpassed quality of the local Mytishchi water – tasty, healthy and having a constant low temperature²¹. A.I. Delvig noted that even tea in this water came out better than in the spring water from the Trekhgorny well²².

After the death of F.W. Bauer, the construction with the support of the Emperors Paul I of Russia and Alexander I of Russia was continued by the engineer J.C. Gerhard. On 28th October 1804, water from the Mytishchi springs was sent to the city via a brick water conduit, which was laid with the use of several artificial embankments, aqueducts and other engineering structures. On its way, the water had to be taken by the population, and water carters from the fountains and wells built with specific purpose. Initially, it was planned to supply 330,000 thousand buckets of spring water per day to Moscow, which, with the city population estimated at 250,000 people, meant approximately 15 liters of clean water per inhabitant²³. Together with the reserves of local water used for household needs, this amount should have been enough for the citizens not yet spoiled by the drainage.

It is important that the construction of the Ekaterininsky (Mytishchinsky) water pipeline was dictated, first, not by the shortage of water in the city, but by the poor quality of local water resources. This was asserted by Baron A.I. Delvig half a century after opening of the water pipeline, when he wrote that in Moscow “...there was a shortage not in quantity, but in quality of water...”²⁴.

Muscovites reacted to the opening of the first water pipeline with optimism and somewhat exalted enthusiasm. As one of the anonymous authors wrote in the journal *Vestnik Evropy*, “...the water conduit opened, and now Moscow is rich in water, clean and perfect, fresh and healthy, transparent and flowing: its need is satisfied, the only, but very important need, and the first capital city of Russia does not envy now either Rome, irrigated by the majestic Tiber, nor London, ascending on the shores of the

²⁰ See, for example: Del'vig A.I. Historical review of art to conduct water: Water pipelines in Russia. *Bulletin of industry*, 1859, vol. 2, no. 4, April, part III, pp. 1–54; Fal'kovskii N.I. *History of Water Supply in Russia*. Moscow; Leningrad, 1947: Publishing House of the Ministry of Communal Services of the RSFSR, 1947 and others.

²¹ *Water Supply of Moscow in 1779–1902. Mytishchinsky and Other Auxiliary Water Pipelines*. Moscow, 1902, p. 3.

²² Del'vig A.I. Historical review of art to conduct water: Water pipelines in Russia, *Bulletin of industry*, 1859, Vol. 2, no. 4, April, part III, pp. 8–9.

²³ *Ibid*, p. 2.

²⁴ *Ibid*.

high-water Thames, nor St Petersburg, drinking the Neva water and towering at the most glorious and beautiful river in Europe”²⁵. The river water used in the water pipelines of Western Europe could not compete in quality with the water of the Mytishchinsky water pipeline.

At the same time, Mytishchinsky water pipeline had some design flaws, which led to both loss of water and deterioration of its quality on the way to the city. The wooden beds at the base of the water conduit became rotten, and its brickwork, under the influence of rains, spring floods and frosts, began to sag leading to cracks and collapses, through which water drained away. The quality of water deteriorated as the area of Sokolnichya grove passed, where it was diluted with the local ground water, which penetrated through the cracks and gaps in the plaster of the water conduit buried at this point in the ground to maintain the angle of inclination. From the Samoteka (‘place of gravity-flowing water’) to the Pipe (which is the contemporary Trubnaya square), the quality of water reduced even more because of penetration of sewage into the water conduit²⁶. In the first decades when the water pipeline existed, it was even forbidden to connect private houses to it “...for the reasons that the water pipeline was built for the community, and not for certain people, and that to remove water from it causes its clogging and decay by weakening the flow”²⁷. The documents show that considerable financial resources were spent annually for repairing the water conduit and its cleaning from dirt and other contaminants²⁸. In 1823, the water conduit completely collapsed and became covered with sand and soil for 3.2 km near Alekseevskoye village near the Sokolnichya grove²⁹.

In 1826-35, the Governor of the Third District of the Railways, military engineer N.I. Janisch, arranged the improvement of the water pipeline. In particular, Alekseevskaya pumping station was constructed, which supplied good quality water to the reservoir of the Sukharevskaya Tower by means of steam engines, passing the Sokolnichya grove, and from there it flowed by gravity into the city distribution fountains along the cast-iron water conduit. The pumped water initially amounted to 180 thousand buckets per day (2160 cubic meters), but gradually ran low, decreasing by July 1854 to mere 35 thousand buckets (420 cubic meters)³⁰.

²⁵ Mytishchinsky water conduit. *Vestnik Evropy*, 1804, no. 23, p. 227.

²⁶ For more details, see: Maksimov. A note on the new transformation of the Moscow water pipeline according to the highest approved project of engineer-major-general Janisch. *Journal of Communications*, 1840, vol. 3, Book 2, pp. 155–159.

²⁷ Central State Archives of Moscow (CSA of Moscow), F. 47, Op. 2, D. 72, L. 21 ob.

²⁸ See, for example: CSA of Moscow. F. 48. Op.1. D. 24 The case of clearing the sediments and clogging of part of the old brick water pipeline from the Sokolnichya Grove to the tract in Moscow city called as the pipe.

²⁹ Fal'kovskii N.I. *History of Water Supply in Russia*. Moscow-Leningrad, 1947, p. 168.

³⁰ CSA of Moscow, F. 179, Op. 60, D. 1, L. 14.

In connection with the poor supply of Mytishchi water, the ban on the connection of households to the water pipeline was still effective, and water could only be taken from the distribution fountains and wells. Even N.I. Janisch, despite all his merits in the water supply field, could not connect a water pipe to his house³¹. Exceptions were made only for some owners of bathhouses, considering the public significance of these establishments for the health of the population, and only from those volumes of water that were dumped into the drains as excessive, i.e. not taken from the fountains and wells.

By the middle of the 19th century, the limited supplies of Mytishchi water forced the attention of the authorities to the Moskva River as a potential source of water resources. In May 1850, under the leadership of the director of the water pipeline, General-Colonel P.S. Maksimov, two water intakes were built on the river around the Babyegorodskaya Dam and at the old mouth of Obvodny Canal near the Krasnokholmsky Bridge. The first water intake supplied 33 thousand buckets of water per day to the fountains arranged in the central part of the city, and the second supplied 100 thousand buckets per day to five fountains of Zamoskvorechye. The technologies of river water filtration in the middle of the 19th century were not developed yet, so the river intakes pumped water of deliberately low quality into the pipes. During the spring flood, the water intakes did not work, as turbid water became unfitted and even dangerous for the consumption. Thus, in the spring of 1860, the intakes did not work for 45 days³². A.I. Delvig repeatedly asked the Moscow governor-general to liquidate the floats for washing clothes near the Krasnokholmsky bridge upon the pretext that "...the water in the wells of Zamoskvoretsky water supply, while washing on the floats, is impure and has a bad smell. Even patches of dirty laundry reach them..."³³. The low quality of drinking water in combination with technical problems caused the gradual closure of these water intakes after the modernization of the Mytishchinsky water pipeline, carried out under the guidance of A.I. Delvig in 1853–1858.

A.I. Delvig increased the supply of quality Mytishchi water to the city to 505 thousand buckets per day³⁴ (six thousand cubic meters), having achieved such an effect by lowering the level of ground water in the catchment basins and the installation of two cast-iron conduits from Alekseevskaya pumping station. The delivery of water by water carters became easier; private households finally received permission to connect to the water pipeline since 1858. However, the water pipeline served only part of the city on the left side of the Moskva River.

³¹ Del'vig A.I. *Moscow Water Pipelines in 1859*. Moscow, 1860, p. 19.

³² Del'vig A.I. Moscow water pipelines in 1860. *Bulletin of industry*, 1861, T. XIII, no. 7, p. 8.

³³ CSA of Moscow, F. 16, Op. 14, D. 65, L. 57 ob.

³⁴ Del'vig A.I. Historical review of art to conduct water: Water pipelines in Russia. *Bulletin of industry*, 1859, vol. 2, no. 4, April, Part III, p. 40.

Whilst noting the gratitude of the poorest layers of the population for the free delivery of clean water to the fountains, A.I. Delvig at the same time expressed an indifferent attitude to the new water pipeline of the urban estate, hinting at the critical mood of the middle urban layers against any, even constructive, initiatives of the authorities³⁵.

It should be noted that in assessing the quality of water by the middle of the 19th century, an opinion prevails regarding the necessity of studying not only organoleptic indicators and inorganic compounds detected with chemical methods, but also organic impurities. At the time the water, which did not contain many organic impurities, was thought of as water of sound quality³⁶.

The growth of water consumption forced the authorities to build and operate in the 1860s–1880s several auxiliary water pipelines to provide certain parts of the city with local spring water. It was Khodynsky (130 thousand buckets), Andreevsky (35 up to 50 thousand buckets) and Sokolnichesky (60 thousand buckets) water pipelines that fed from the same springs. Due to their low capacity, they could not improve the situation with the supply of drinking water drastically³⁷. The Sokolnichesky water pipeline, which was part of the old Ekaterininsky water pipeline, also supplied water of low quality, which could be pumped free of charge to private ponds. In 1856, the Commission charging homeowners with fee for using pipeline water even concluded that “due to the sewage in the Sokolnichiy water pipeline, from the Kalanchevsky field to the Neglinnaya river, the homeowners cannot be charged with a special fee for the benefit of the city...”³⁸. In 1882, to service the eastern part of the city, the Preobrazhensky water pipeline was built with water from the so-called ‘holy’ Preobrazhensky well.

In the second half of the 19th century, the experts paid close attention to artesian water. In the period of 1867–71, the mining engineer V.A. Babin tried to drill a deep artesian bore hole in the Yauzsky Boulevard in the hope of receiving up to 500 thousand buckets of water of decent quality every day³⁹. However, in 1871, the work was interrupted by breakage of the bore bit of the drilling machine in the bore hole. Having entered a polemic with opponents of his project, with a member of the City Du-

³⁵ Del'vig A.I. *Moscow Water Pipelines in 1859*. Moscow, 1860, p. 36.

³⁶ Verzhbdlovskii M.V. *Essays on the History of Water Hygiene in Russia and the USSR (1700s–1960s): Synopsis of the thesis for the degree of a doctor of medical sciences*. Leningrad, 1966, p. 8.

³⁷ *Water Supply of Moscow in 1779–1902. Mytishchinsky and Other Auxiliary Water Pipelines*. Moscow, 1902, pp. 20–25.

³⁸ CSA of Moscow, F. 2249, Op. 1, D. 161, L. 66.

³⁹ *Water supply of Moscow in 1779–1902. Mytishchinsky and Other Auxiliary Water Pipelines*. Moscow, 1902, pp.16–20.

ma, botanist A.N. Petunnikov⁴⁰, who considered the water from this bore hole suitable only for watering streets⁴¹, V.A. Babin got permission to continue the work and deliver water through the artesian water pipeline to the city slaughter house. However, the hardness of this natural resource reached 22.5^o⁴², and subsequently the artesian water pipeline was closed. From 1878 to 1883, the authorities allowed the construction of another 25 small private water pipelines in the city⁴³, which supplied their owners with water of low quality from the wells and open reservoirs.

The impetus for further development of water supply was given by the energetic activity of the city government, under the control of which the water pipelines were transferred to from the Ministry of Transportation⁴⁴ in 1870. The presence of two owners at different water supply facilities in the city did not have the best effect on its efficiency and development prospects. The Ministry of Transportation now had only the highest technical supervision of the installations providing water supply, which was subsequently carried out through the Commission for the supervision of the construction of a new water supply and sanitation system in Moscow⁴⁵.

In the 1870s, the urban water supply was subjected to a serious test. The peasants of the village of Bolshie Mytischki gave up a plot of their communal land for ten years to tenants who mined a stone for building a motorway. In view of the threat to destroy the aquifer, the mayor appealed to the governor to ban digging the holes not only at the spring wells, but also throughout the water catchment valley, reasonably if when mining stone from the pits “not only the quality of water in the springs may change, but depletion of water in all the springs may occur”⁴⁶. The work at the wells was suspended, but without finding documentary confirmation of Moscow’s rights to this plot of land, the city government was forced to buy it from the local peasants⁴⁷, to provide protection to the unique source of water supply.

Under the conditions of the limited number of households connected to the water pipeline, the city’s water business flourished. According to the report on the Moscow

⁴⁰ For more details, see: Babin V.A. *Comments on the Resolution of Water Supply Issues in Moscow: Artesian Water from the Moscow Borehole*. St Petersburg, 1882.

⁴¹ Petunnikov A.N. Composition and property of the Moscow waters. *Izvestia of the Moscow City Duma*. Moscow, 1879, Issue 3, p. 22.

⁴² Vasil'evskaia O.V. *History of Water Supply of Moscow in Hygienic Treatment: Synopsis of the thesis for the degree of a doctor of medical sciences*, Moscow, 1952, p. 15.

⁴³ Ozerova N.A. Water supply. Water supply of Moscow in *Moscow. Science and Culture in the Mirror of Centuries. All the Secrets of the Capital; book acquisitions O.A. Zinovieva*. Moscow, AST, 2014, pp. 97–99.

⁴⁴ For more details about the transfer, see: CSA of Moscow. F. 179, Op. 60, D. 1.

⁴⁵ See: Rerberg I. *A brief Essay on the Activities of the Commission for the Supervision of the construction of a New Water Pipeline and Drainage System in Moscow for 25 years (1889–1914)*. Moscow, 1914.

⁴⁶ CSA of Moscow, F. 179, Op. 60, D. 1, L. 322 ob.

⁴⁷ See, in particular: CSA of Moscow, F. 179, Op. 51, D. 850.

water pipelines in 1879, about 800 individual horse water carters, about 300 private horse water carters and 414 separate hand-held carters were operating in the city. During the day, each of these carters approached the water distribution points six times on average. In addition, at the same points, 75,700 buckets of water were taken daily by water carriers and individual citizens with manual houseware⁴⁸. Water carters and water carriers remained very important figures in water supply for a long time, which the press repeatedly wrote about, and their morals were painted by famous writers and journalists, including A.P. Chekhov and V.A. Gilyarovskiy. Their sketches in the best way characterize the portrait of a water carrier as a self-satisfied, arrogant and a shameless man, who did not fear anyone and understood the dependence of the city dwellers upon his water supplies. Water carriers became the topic of creative work for several Russian artists, for example, V.G. Perov⁴⁹.

It should be noted that by the end of the 1870s, most of the water consumed by the city still fell not on the water from the pipelines, but rather on the river and wells. According to the estimates of A.N. Petunnikov, out of 16,103 households, only 175 used water from a water pipeline, consuming an average of 601 buckets of water per day for the households. The remaining households, which accounted for an average of 33 buckets of water from the pipeline, compensated for the shortage of water from polluted rivers and wells⁵⁰. Studies conducted by A.N. Petunnikov allowed to conclude that the river water “is polluted in the city to an extent that raises fear for the impunity of its use”. The water from wells and ground water consumed by city dwellers in huge numbers, were recognized harmful⁵¹. The realization that a significant part of the population was still in the system of traditional water consumption and used very low-quality water, put the issue of the need to cover the whole of Moscow with centralized water supply.

At the turn of the 19th–20th centuries, the population continued to use the water from the wells, despite numerous pieces of evidence of its inadequacy and health risks. Thus, the doctor S.S. Orlov, having studied water samples from 204 city wells, came to a general conclusion about the pollution of water from wells “to an enormous extent”⁵². For comparison, S.S. Orlov studied the quality of water in ten wells in

⁴⁸ Sytenko I. *Moscow Water supply. Report on the Moscow water pipelines for the period they were managed by the city from 1872 to 1879 with a description of all structures and with the drawings enclosed*. Moscow, 1879, p. 124.

⁴⁹ Pupyrev E.I., Balova O.A. Mytishchinsky water pipeline. How its story was reflected in Russian painting of the 19th century. *Moscow Journal*, 2012, no. 9(261), pp. 70–79.

⁵⁰ Petunnikov A.N. Composition and property of the Moscow waters. *Izvestia of the Moscow City Duma*. Moscow, 1879, Issue 3, p. 15.

⁵¹ *Ibid*, p. 23.

⁵² Orlov S.S. *Ground water of Moscow and its Cemeteries: A Comparative Assessment of Ground Water in the Drainage and Non-Drainage Areas. Thesis for the degree of a Doctor of medical sciences*. Moscow, City Printing House, 1905, p. 162.

Moscow cemeteries and came to a paradoxical conclusion that the water in the cemetery wells was cleaner than in the city wells⁵³. The hygienists were particularly concerned about the fact that polluted water from the shallow wells could become a source of epidemic diseases such as typhoid fever and cholera⁵⁴.

It is worth mentioning that by the end of the 19th century, Russian hygienists, such as F.F. Erismann, A.P. Dobroslavin and I.P. Skvortsov, had done a lot to study the role of water in the spread of diseases, providing evidence of harm from polluted water. At that point, when assessing the quality of water, they determined not only the presence of organic substances and products of their decay in it, but also that of microorganisms⁵⁵.

In 1890–93, the Mytishchinsky water pipeline was radically rebuilt to increase the flow of water to the growing city. Initially, it was planned to expand the water catchment area between the villages of Leonov and Bogorodsky in the basin of the Yauza River, but there was a danger that the increased pumping could draw water into the catchment wells, which was polluted with household and industrial effluents from the Yauza River⁵⁶. The prediction for a possible decrease in water quality played an important role in the project to expand the water catchment areas being rejected. Instead, alongside the old lines, a second line of new wells for water catchment, of a larger diameter, was constructed. The supply of water to the city has grown gradually to 3.5 million buckets per day.

The increase in pumping volumes of Mytishchi water gave an unexpected effect, which was expressed in the increase in its hardness. In 1908, a special commission was created that included chemists, doctors, geologists and engineers to investigate the causes of hardness. This phenomenon was originally associated with the penetration of water into the catchment wells from the Jurassic clay layers, and they proposed to solve the problem by raising the level of ground water in the catchment area. Later they came to the opinion that the reason was draining of peat-bogs around the Yauza River⁵⁷. Although pumping of spring water was stabilized at the level of two

⁵³ Ibid, pp. 154–155.

⁵⁴ Sysin A. Essays on sanitation of Moscow. Protection of water, soil and air. *Izvestia of the Moscow City Duma. General department*, 1915, August, p. 25.

⁵⁵ Verzhbdlovskii M.V. *Essays on the History of Water Hygiene in Russia and the USSR (1700s–1960s): Synopsis of the thesis for the degree of a doctor of medical sciences*. Leningrad, 1966, p. 14.

⁵⁶ Rerberg I. *A brief Essay on the Activities of the Commission for the Supervision of the Construction of a New Water Pipeline and Drainage System in Moscow for 25 years (1889–1914)*. Moscow, 1914.

⁵⁷ Modern economy of Moscow. Moscow, 1913, pp. 354–355; Ozerov S.A. Mytishchi water and the reasons for strengthening its hardness. Chemical part. *Works of the Commission organized by Moscow city public administration to investigate the reasons for strengthening the hardness of Mytishchi water. Division II. Special articles about works of the Commission. Issue III*. Moscow, 1915.

million buckets per day since 1903, its hardness continued to increase. At the same time, the increase in the salts of iron and manganese in the Mytishchi water was recorded, which formed a black coating on the pipe walls. Water was often made turbid in pipes, which caused complaints from the citizens. The water pipelines had to be flushed with reverse current of water with increased speed, which gave good results. A pilot plant for deironing water was tested at the Mytishchinskaya station in 1915⁵⁸.

Since the mid-1890s, the shortage of water was felt again due to population growth, increase in house branches, commissioning in 1898 of the first stage of drainage, and the refusal of the Muscovites “to use several sources of water of dubious quality from ponds, rivers and wells”⁵⁹. A cardinal solution to the problem could only be the use of the resources in the Moskva River, the acceptability of which for the water supply was confirmed in 1886–87 by the studies of the sanitary doctor M.B. Kotsyn, who proposed to pre-purify the river water with sand filters⁶⁰.

A large-scale project of the Moskvoretsky water supply was implemented by the city in 1900–12. It envisaged drawing of water in Rublev, upstream the Moskva River, with its further filtration on the so-called slow English filters filled with sand. It was important not to allow the outbreaks of epidemic diseases in Moscow that occurred in 1907–09 in Kiev and St Petersburg, where the intakes of urban water pipelines were located downstream of the drainage⁶¹. After bringing the water quality to the sanitary standards, it was to be pumped to the Vorobyovy Gory reservoirs and then distributed over the city water supply network across part of the city that was not covered by the Mytishchi water. Subsequently, the water from the Moskva River began to be mixed in the network together with the Mytishchi water.

However, the English sand filters were poorly adapted to the work under the conditions of the Russian climate, so the chief engineer of the water pipelines N.P. Zimin defended the advantage of more compact, economical and high-speed American mechanical filters based on the use of coagulant – aluminum sulphate, also known as alum feather⁶². The hygienists reacted to the idea of N.P. Zimin very cautiously. Thus, in 1899–1902, a special commission under the guidance of the professor of

⁵⁸ Khramenkov S.V., Sigin A.P., Sadova N.I., Blagova O.E. *200 years of Moscow Water Supply*. Moscow, 2006, p. 47.

⁵⁹ CSA of Moscow, F. 179, Op. 53, D. 114, L. 2.

⁶⁰ See: Kotsin M.B. *The experience of systematic observations of the fluctuation of the chemical and bacteriological composition of the Moskva River water for 1887–1888: MUDr Dis.* Moscow, 1889.

⁶¹ Davydov A.N. State policy of Russia on protecting the environment from pollution in the context of solving demographic problems in the late 19th – early 20th centuries. *Historical Ecology and Historical Demography. Collection of scientific articles; ed. Yu.A. Polyakov*. Moscow, 2003, p. 269.

⁶² See, for example: Zimin, N.P. *New Directions in the Purification of Large Quantities of Water for Urban Water Supply*. Moscow, 1902, as well as numerous statements by N.P. Zimin at the Russian water congresses.

Moscow Imperial University S.F. Bubnov, tested the effectiveness of three types of American mechanical filters when filtering the river water at the experimental filter station. The commission unanimously supported the conclusions of S.F. Bubnov on the unreliability of the American filters and their uselessness “...for large-scale water purification in application to urban water supply”⁶³, even though it consisted of adherents of the American filters – engineers N.P. Zimin and K.P. Karelskikh. In 1902-06, the work of the commission under a new name was continued to compare the English and the American filters⁶⁴. At a later stage, its experiments served as a starting point to arrange the Commission for monitoring the work of filters in Rublev, and since 1913 – the Commission to monitor drinking water and sources of Moscow municipal water supply, which continuously observed the sanitary condition of the water in the Moskva River⁶⁵. Such control was extremely important under the conditions of acute consumer and industrial pollution not only in all the significant reservoirs of Moscow, but in the Moscow region, overall⁶⁶. For this purpose, a dedicated laboratory was arranged at Rublyovskaya Station.

It should be noted that during the flood of 1904, the English filters showed their inefficiency, and the specialists resorted to water purification according to the American system. Since 1906, the coagulant had been continuously used at Rublyovskaya Station with the careful sanitary control of the water purified by this method⁶⁷.

For many years, the city public administration, caring about the state of the water around Rublyovskaya Station, repeatedly raised the issue of a legislative ban on the construction of industrial establishments 25 versts up the Moskva River from the water intakes, however did not receive support from the higher administration in this matter⁶⁸. As a result, in June 1910, the City Duma recognized that “it was necessary to establish permanent and strict sanitary supervision over the Moskva River basin

⁶³ Bubnov S.F. *American Mechanical Filters. Sanitary assessment of their work on the results obtained at the filter station in Moscow*. Moscow, 1904, pp. 128–130.

⁶⁴ Ignatov N.K. English sand filters set at Rublevsky water-lifting station for cleaning Moskvo-retskaya water. 1902–1905. *Review of the activities of the ‘Commission for studies of the work of filters and water for the New Moscow water pipeline’*. Moscow, 1908.

⁶⁵ For more details, see: Report of the Commission for monitoring of drinking water and sources of Moscow water supply for 1913. Moscow, 1915.

⁶⁶ For more details on the pollution of water reservoirs, see: Davydov A.N. The struggle over the environmental consequences of entrepreneurial activity in Moscow industrial region at the beginning of the 20th century in *Bulletin of the Peoples’ Friendship University of Russia. Ser.: Russian history*, 2006, no. 1(5), pp. 116–125.

⁶⁷ Ozerova N.A. Water supply. Water supply of Moscow in *Moscow. Science and culture in the mirror of centuries. All the secrets of the capital / book acquisitions O.A. Zinovieva*. Moscow, AST, 2014, pp. 103–104.

⁶⁸ Davydov A.N. State policy of Russia on protecting the environment from pollution in the context of solving demographic problems in the late 19th – early 20th centuries. *Historical Ecology and Historical Demography. Collection of scientific articles; ed. Yu.A. Polyakov*. Moscow, 2003, p. 273.

above the Rublevsky water-lifting station”⁶⁹. However, the upper reach of the Moskva River was beyond competence of the city public administration; thus, in 1915, a temporary agreement was concluded with the Moscow provincial zemstvo “on joint sanitary supervision around the water basin feeding the Rublevskaya water-lifting station”, which was to be effective since the 1st July 1915 until the 1st January 1918⁷⁰. The sanitary doctors of the zemstvo and the city, joining their forces, conducted joint water and sanitary supervision of the Moskva River basin and its confluents.

In the same years, the city public administration also tried to establish a sanitary procedure regulating the work of water carters. In particular, in 1909, the City Duma amended its mandatory resolution “On the procedure for public use of water delivered by urban water structures and on protecting these structures from damage” by adding a paragraph that prohibited the water carters from watering horses from the same buckets that were intended for supplying water to the citizens⁷¹.

Thanks to the Moskvoretsky water supply system, by 1910 the water supply network expanded to 453 versts, and the number of households attached to it increased to 37.8 %⁷². The water pipeline was becoming the most important factor in everyday life of the Muscovites, so any malfunctions in the water networks and the appearance of turbid water caused a violent reaction from both the inhabitants and the authorities. On the 15th July 1913, the Moscow Governor N.L. Murav'ev called on the city public administration to take all measures to ensure the effective supply of the population with water of sound quality, outraged by the fact that in his house “...there was repeatedly dirty water, dark red and black in its colour, completely unfitted for consumption”⁷³.

Under the influence of centralized water supply, the daily life of the city and the traditional practice of water consumption were transformed. In Moscow, they began to practice sanitary watering of the streets and the greenery, which was unthinkable under the conditions of the previous water shortage. The Moscow drainage system also developed successfully in the presence of sufficient volumes of water, which broke down the centuries-old tradition of citizens to treat water assiduously. One can agree with the conclusion that the new methods of water supply improved the comfort of living and freed the time of citizens for other occupations⁷⁴. At the same time, the new stereotypes of behavior also influenced the urbanization of the city.

⁶⁹ CSA of Moscow, F. 179, Op. 21, D. 2812, L. 21.

⁷⁰ CSA of Moscow, F. 179, Op. 21, D. 3420, L. 16.

⁷¹ CSA of Moscow, F. 179, Op. 21, D. 2706, L. 6.

⁷² *Water supply and ways to remove sewage in cities of Russia*. Edition of the Office of the chief medical inspector of the Ministry of Internal Affairs. St Petersburg, 1912, pp. 80–81.

⁷³ CSA of Moscow, F. 60, Op. 9, D. 66, L. 1.

⁷⁴ Kos V.V. Water supply of a provincial city at the turn of the centuries (on the example of Tomsk province at the end of the 19th – early 20th centuries). *Bulletin of the Kemerovo State University*, 2013, vol. 1, no. 2, p. 54.

Since 1914, the program to study Moscow's promising sources of water supply had begun, which covered the basins of the Volga and the Oka rivers, as well as several lakes. Along with technical issues, the issue of water quality and its ability to become effectively clean was studied. For such testing, experimental filter stations were built on the Volga River in Savelovo and on the Oka River in Kolomna⁷⁵, which during World War I conducted a series of experimental cleaning of the water in the local rivers⁷⁶. These results were used in further development of Moscow water supply in the 1930s.

As a promising source of water supply, the artesian waters were also considered. Thus, upon the instructions of the city public administration, the geologist A.P. Ivanov investigated this issue and concluded that there were considerable reserves of the underground water in Moscow region⁷⁷. At the same time, Moscow's sanitary doctors pointed to the danger of pollution of the artesian aquifer through the deep wells drilled at the turn of the 19th and 20th centuries to lower the level of the ground water during the construction of such large facilities as the Hotel Metropol in Teatralnaya Square, the Polytechnic Museum in Lubyanka Square and several others⁷⁸. Through these wells, not only the polluted ground water was drained into the depths, but also the liquid wastes and sewage could be illegally discharged.

During World War I, the city was supplied with water without interruption, despite the influx of refugees and the wounded. However, in 1916, the water facilities began to experience difficulties in obtaining aluminum sulfate for water treatment during the forthcoming spring flood in 1917. Specialized chemical enterprises of Russia were engaged in defense orders and could not provide the needs of Moscow water supply to the required standard. The city government had to take advantage of the offer of the British firm *Peter Spence & Sons* from Manchester, which agreed to supply 1000 tons of alum feather suitable for its quality and price.

The first 250 tons of the English coagulant were transported by steamships to Scandinavia and from there via Finland were delivered by railway in the spring of 1917 to Kuntsevo, where the cargo was transported to Rublev by cart transport. However, the rest of the alum feather had to be abandoned due to the rise in the cost of transportation and cargo insurance under the conditions of the German submarine warfare that was launched against the Allies. In addition, by the spring of 1917, the

⁷⁵ *Moscow, the 20th century. Historical ecology: Archival documents. Issue 1. 1901–1991, compiled by A.N. Davydov.* Moscow, 2000, pp. 95–99, 101–104.

⁷⁶ *Works of the Commission on the search for new sources of water supply of Moscow in Moscow Municipal Economy. Water Supply Management.* Moscow, 1927. Issue 5. Purification of the Oka and the Volga waters at experimental filter stations, Ed. Lazarev V.A.

⁷⁷ For more details, see: Ivanov A.P. *Artesian Waters in Moscow.* Moscow, 1916.

⁷⁸ Khertsov I.R. Sanitary assessment and protection of artesian water in Moscow from pollution in *Artesian Waters of Moscow: Supplying the Population and Industrial Enterprises.* Comp. B.M. Dan'shin, S.L. Korovai, I.R. Khertsov, V.G. Khimenkov. Ed. N.I. Gushchina. Moscow, 1928, p. 75.

shipment of alum feather was resumed by the traditional suppliers, and additional production was entered at the chemical plant of the City and Zemsky Soyuz⁷⁹.

The revolutionary upheavals of 1917 led to the disruptions of forage, horses and water barrels in the markets. The water carters began to abandon Moscow, aggravating the problem with drinking water in the areas not covered by the water supply network. The Muscovites demanded from the city authorities, from the Commissar of the Provisional Government in Moscow N.M. Kishkin, to connect a supply train intended for watering the streets, to deliver water to the population and not to "...leave the citizens to suffer without water..."⁸⁰. The water supply crisis forced the city public administration to accelerate in the summer and autumn of 1917 the construction of another water conduit from Rublev to Vorobyovy Gory and the branches from the city water pipeline to the city outskirts that needed water most badly. Until the autumn of 1917, the Commission to monitor drinking water and Moscow's water supply sources in Rublev carefully supervised proper functioning of the filtering devices and the quality of the drinking water.

The October events of 1917 and the subsequent civil confrontation did not stop, but only slowed down the development of Moscow water supply. In 1920, the activity of the Commission to monitor drinking water and Moscow's water supply sources was resumed, and urgent repair and restoration works were carried out at the water supply facilities. After the installation of filters in Rublev, the volume of water purification increased significantly. As soon as the country stabilized its socio-political situation, the city authorities and the government returned in the early 1920s to the solution of the long-overdue problems to create security sanitary zones with the sources of Moscow water supply, and a while later to the expansion of water supply system based on confirmed sources in the Volga River basin. At the same time, the problem of quality of drinking water was constantly in the focus of attention for the city authorities, specialists in the water supply and drainage sector, as well as the state sanitation inspection of the city of Moscow.

Conclusion

To sum up, it can be concluded that the water supply system of Moscow, having worked its way through the 19th – early 20th, from the gravity water pipeline of the Catherine epoch towards a unified centralized system that included the modernized Mytishchinsky water pipeline with the spring water and the Moskvoretsky water pipeline with purified water from the Moskva River, by the early 20th century satisfied the first priority requirements of the population in clean drinking water. At the

⁷⁹ For more details, see: CSA of Moscow, F. 60, Op. 9, D. 344; F.179, Op. 8, D. 3324.

⁸⁰ *Moscow, the 20th century. Historical ecology: Archival documents. Issue 2. 1917–1945, compiled by A.N. Davydov.* Moscow: Publishing House of Moscow Main Archive, 2003, pp. 23–24.

same time, it can be stated that during the whole period, the lack of water from the water pipeline was compensated by the city dwellers consuming local spring water, and even to a greater extent – the water of poor quality from dug-wells and open reservoirs. The role of the wells and open water reservoirs in the water supply had steadily declined due to the widespread pollution of river, pond and ground waters.

In case of acute insufficiency of the water supply network, the water carriers and water carters played an important role in water supply, delivering water from the distribution fountains and wells to the households. The number of the household connections to the water supply network was minimal, and it began to grow noticeably only when the Moskvoretsky water pipeline started to operate, which had a serious impact on the transformation of the everyday life and the traditional practice of water use by the Muscovites.

The issues of water quality became a priority during the new construction and reconstruction of water pipelines. The control over the quality of drinking water had become tougher as the hygiene science developed, and because of increased attention on part of the city administration and the city government towards the issues of public health and in the face of severe water pollution and the threat of epidemic diseases spreading.

The search for new sources of water supply, conducted in 1914–17, paved the way for the expansion of Moscow water supply in the Soviet years, and proposals to ban the construction of the enterprises upstream the Moskva River served as a starting point for the creation of sanitary protection zones of Moscow water pipelines, that had started to operate since the 1920s.

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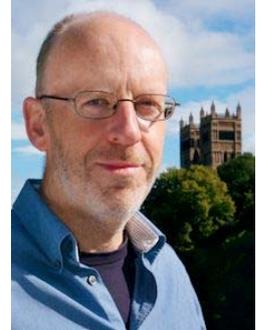
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**The international dissemination of Russian genetic soil science (pochvovedenie),
1870s – 1914**

Abstract. This article considers the international dissemination of the Russian innovation of genetic soil science, devised by a team of scientists led by V. V. Dokuchaev in the 1870s and 1880s, over the decades down to 1914. Russian soil science was disseminated by articles in foreign languages, exhibits at world fairs, papers read by Russian scientists at international conferences, visits by Russian soil scientists abroad and correspondence with foreign scientists. Acceptance came sooner in Europe, but took longer in the United States where, in spite of attempts to disseminate the innovation, it encountered institutional resistance.

Key words: soil Science, History of Science, Russia, Europe, United States, Dissemination

Introduction

In the 1870s and 1880s Russian soil scientists led by V.V. Dokuchaev devised new ways of understanding and analyzing soils. They called their new science “genetic soil science”. At the heart of the new science was the idea that soils were a separate part of the natural world and merited study in their own right. Soil science was definitely not, in the view of the genetic soil scientists, a part of geology or simply a branch of agronomy. They understood that soils formed as a result of the interaction between different “soil forming factors”: the mineral parent material; organic matter (vegetation and animal life); the climate (especially precipitation and temperature); the topography of the region; over time. These factors and the process of soil formation could be analyzed by studying cross sections, or “profiles”, of soil to see the different layers, or “horizons”, that developed over time, from the parent rock at the bottom to the fully formed soil at the top. Their research showed that different types of

soil formed in different conditions. Understanding soils in the context of the conditions in which they had formed was essential to managing soils and laying the basis for sustainable use of this valuable natural resource.¹

The Russian innovation became the basis for modern soil science around the world. Some scientists in other countries, for example E.W. Hilgard in the United States, had been working along similar lines and developed similar ideas, but none came up with a full theory to explain the origins of different types of soils as a basis for their classification.² By the middle of the twentieth century, as Jan Arend has argued, Russian soil science had become “classical”. Arend has emphasized the importance of a book by Dokuchaev’s student K.D. Glinka published in German in 1914 in the transfer to Russian soil science to the west. There is no doubt that Glinka’s book was a breakthrough as it was the first full length monograph on Russian soil science to appear in a western European language.³ An important role in the internationalization of Russian soil science was played by international conferences and congresses of soil scientists. They began with small meetings in Budapest in Hungary in 1909 and Stockholm in Sweden in 1910. The conferences resumed after the First World War. In 1927 and 1930, the first two International Congresses of Soil Science were held in the United States and the Soviet Union.⁴ The process of assimilation of Russian soil science by scientists in other countries began at the end of the nineteenth century, and proceeded gradually, faster in some than others.

The aim of this article is to survey the efforts of Russian soil scientists to disseminate their new science around the world before Glinka’s book and the international conferences facilitated the assimilation of the Russian innovation more widely. This article builds on the work of Russian scientist I.P. Vtorov⁵ by identifying further early works on Russian soil science in western European languages and by using materials from American archives and publications on the reception of Russian soil science in

¹ See Dokuchaev V.V. *Russkii chernozem*. St Petersburg, 1883; Krupenikov I.A. *Istoriia pochvovedeniia: ot vremeni ego zarozhdeniia do nashikh dnei*. Moscow, 1981); Dobrovol’skii G.V. *Lektsii po istorii pochvovedeniia*. Moscow, 2010.

² See Moon D. and Landa E.R. The Centenary of the Journal *Soil Science*: Reflections on the Discipline in the United States and Russia Around a Hundred Years ago. *Soil Science*, 2017, vol. 182, no. 6/7. (forthcoming).

³ Arend J. *Russlands Bodenkunde in der Welt. Eine ost-westliche Transfergeschichte 1880-1945*. Göttingen, 2017, p. 314. Arend J. *Russian Science in Translation: How pochvovedenie was brought to the West, c. 1875–1945*. *Kritika: Explorations in Russian and Eurasian History*, 2017. (forthcoming); Glinka K. *Die Typen der Bodenbildung: Ihre Klassifikation und Geographische Verbreitung*. Berlin, 1914.

⁴ Anon. History of the Organization of the International Society of Soil Science. *Soil Science*, 1928, vol. 25, no.1, pp. 3–4; Krupenikov, 1981, pp. 224–228.

⁵ Vtorov I. P. *Pervoe vospriiatie idei V.V. Dokuchaeva mezhdunarodnym nauchnym soobshchestvom*. Unpublished paper presented to Mezhdunarodnyi nauchnyi seminar “Nauchnoe nasledie V.V. Dokuchaeva: traditsii i razvitie idei”. Moscow, 30–31 May 2016.

the United States. Russian soil scientists sought to promote their work in several ways to bring it to the attention of their counterparts in other countries who did not read Russian. They prepared exhibits for the World's Fairs of the period in various countries, including France and the United States. Russian soil scientists presented papers at international conferences and met foreign scientists while on visits abroad. These activities contributed to the publication of a small but growing number of works on Russian soil science in western European languages.⁶ It will be shown that by 1914 soil scientists in Europe and North America already had opportunities to find out about the theories and methodologies of Russian soil scientists. While the ideas found a more receptive audience among some of their European counterparts, they encountered resistance among many soil scientists working for the U.S. government Bureau of Soils which was engaged in mapping the soils of the United States using a different methodology.

Main body

The first translation into a western European language of work by a Russian genetic soil scientist was a set of articles by Dokuchaev published in French by the Free Economic Society in St Petersburg in 1879.⁷ It was rarely cited at the time. The Free Economic Society was still advertising copies for sale, for 40 copecks, in 1894.⁸ The pages were still uncut in copy I consulted in the National Library of Russia in St Petersburg in 2012. The catalogue of world libraries ("Worldcat") lists only one copy: a photocopy in the library of the University of Illinois acquired in 1994. The U.S. Department of Agriculture's National Agricultural Library in Beltsville, Maryland, does have a copy, which it acquired in 1904.⁹ Even more obscure seems to have been a three-page summary in German of Dokuchaev's 1883 monograph by Eduard Brückner published in 1886 in a German journal.¹⁰ It seems also to have been little cited.

⁶ See Ototskii P.V. Iz sudeb russkogo pochvovedeniia. *Pochvovedenie*, 1909, no. 3. Prilozhenie, p. 14; Boulaine J.V. V. Dokouchaev et les débuts de la pédologie. *Revue d'histoire des sciences*, 1983, vol. 36, nos 3–4, pp. 285–306; Vtorov I. P. Soil as a museum exhibit in Russia. *13th International ERBE Symposium: Cultural Heritage in Geosciences, Mining and Metallurgy, Libraries – Archives – Museums: Proceedings*, ed. Daniel Harvan. Banská Štiavnica: Slovak Mining Museum Banská Štiavnica, 2016, pp. 238–240.

⁷ Dokuchaev V.V. *Tchérnnozème (terre noire) de la Russie d'Europe: Comptes-rendus de W. Dokoutchaew*. St Pétersbourg: Société Impériale Libre Économique, 1879.

⁸ Anon. Reklama. *Trudy vol'nogo ekonomicheskogo obshchestva*, 1894, no. 5, p. 222.

⁹ NAL Special Collections, call number Special Collections 56.33 D68T; email to author from Amy Morgan, Special Collections Librarian, April 6, 2017.

¹⁰ Brückner, E. Die russische Schwarzerde. *Der Naturforscher: Wochenblatt zur Verbreitung der Fortschritte in den Naturwissenschaften*, 1886, Dec. 25, no. 52, pp. 513–515.

The “Exposition Universelle” in Paris in 1889 provided a better opportunity to bring the Russian soil science to international attention. Dokuchaev and his former student V.I. Vernadskii organised a soil exhibit.¹¹ They displayed samples of the main types of soil in Russia, including chernozem, with descriptions of their profiles, explanations of their regional distribution, Dokuchaev’s theory of soil formation, and his system of classification. Also on display were soil maps of Russia, diagrams, and tables of data. The texts were in French as well as Russian. In addition, there was a collection of publications by Dokuchaev and his students. They included Dokuchaev’s 1883 monograph in Russian, but also the articles published in French in 1879, and a guide to the exhibit in French.¹² Dokuchaev, who visited Paris during the fair, was concerned for the success of his exhibit. He was pleased to hear that he had been awarded a Gold Medal (or rather, as Vernadskii explained, the right to purchase a medal). Vernadskii and another of the Russian organisers wrote to Dokuchaev that there was some interest among French scientists.¹³ The French geologist Emmanuel de Margerie wrote effusively to Dokuchaev about the exhibit.¹⁴ Another French geologist, Stanislas Meunier, mentioned his work in a review of recent scientific literature in a French periodical.¹⁵ On the other hand, a lengthy French report on the fair, published in translation in a Russian periodical, referred only in passing to the soil display in a brief reference to the small Russian exhibit, but expressed far more interest in the vodka on show.¹⁶

Dokuchaev was ill-served by the administration of the Russian section at the Paris fair of 1889. They gave him little assistance and placed the soil exhibit in a poor location where it attracted little attention.¹⁷ Russian participation in the fair was unofficial and its modest agricultural display was greatly overshadowed by a far larger American exhibit organised much more effectively by the U.S. Department of Agriculture.¹⁸ Dokuchaev, who had paid for his exhibit himself, was frustrated by the lack of attention.¹⁹ The publications exhibited in Paris did, however, prompt a Belgian scientist to

¹¹ Dokuchaev V.V. *Sochineniia*. Vol. 8: *Raboty i vystupleniya. Perepiska*. Moscow; Leningrad, 1961, pp. 359–362.

¹² *Sankt-Peterburgskii filial Arkhiva Rossiiskoi Akademii Nauk (PFA RAN)*. Fond 184, Dokuchaev V.V. Op. 1. D. 112. *Kratkii nauchnyi obzor pochvennoi kollektzii vystavlennoi v Parizhe v 1889 g. prof. V.V. Dokuchaevym i ego uchenikami*.

¹³ Dokuchaev, *Sochineniia*, vol. 8, pp. 369–371, 514–516.

¹⁴ PFA RAN, F. 184, Op. 2, D. 66, Marzheri, E (E. Margerie), *Pis'mo k V.V. Dokuchaevu*, 1889, VII, 10. Paris.

¹⁵ Meunier, S. *Le Trimestre scientifique. La Nouvelle Revue*, 1889, vol. 61, pp. 121–139.

¹⁶ Dedlov V.L. *Parizh i ego vystavka. Pis'ma chetvertoe i pyatoe*. *Knizhki nedeli*, 1889, September, p. 153.

¹⁷ Efron A.A. *Torzhestvuyushchaya Frantsiya*. St Peterburg, 1890, pp. 147–148.

¹⁸ Bogdanov S.M. *Zemledelie na Parizhskoi vseмирnoi vystavke 1889 goda. Sel'skoe khoziaistvo i lesovodstvo*, 1889, vol. 162, pp. 45, 66–67, 75–78.

¹⁹ Efron *Torzhestvuyushchaya Frantsiya*, pp. 147–148.

read a paper in French summarizing Dokuchaev's work to a Belgian scientific society on April 15, 1890. The paper was published in the society's bulletin, thus providing another summary of the Russian work in a western European language.²⁰

In the United States, Dokuchaev's former student, A.N. Krasnov, presented a paper on "The 'Black Earth' of the steppes of southern Russia" to the 5th International Geological Congress in Washington, DC, on August 25, 1891. Krasnov summarized the studies of the black earth by Dokuchaev and his colleagues. He explained their focus on the wider environmental conditions in which the soil had formed.²¹ Krasnov wrote to Dokuchaev a few days after the Congress that his paper had aroused great interest among the American scientists.²² One of the scientists, Hilgard, wrote that he was "greatly interested in Professor Krasnof's paper, as I have studied the American 'black-prairie soils' ... and, on the whole, I agree entirely with him in his conclusions as to the conditions under which such soils may be formed." Hilgard indicated that he gave more emphasis to the underlying geology, but agreed that the "other concurrent conditions" (i.e. Dokuchaev's soil-forming factors) were also necessary.²³

The Russian government devoted significant resources to promoting Russian agriculture, industry, mining, transportation, and culture at the World's Columbian Exposition held in Chicago in 1893.²⁴ The government published a five-volume work entitled *The Industries of Russia*, including a volume on "Agriculture and Forestry".²⁵ The second chapter, on soil, was written by P.A. Kostychev. He wrote that "European Russia" was divided into two halves, the "region of the Chernoziom or 'black earth'" in the south-east and the "non-Chernoziom lands" in the north and north-west, and that this "difference in soils ... corresponds almost exactly" to the division between steppe and woodland. His account emphasized the underlying geology, the chemical composition, and physical properties, i.e. texture, of soils ahead of climate. This reflected a disagreement between Kostychev and Dokuchaev on the relative importance of climate in soil formation.²⁶ Russian genetic soil science was displayed more effec-

²⁰ Dokoutchaieff V.V. Notes sur l'étude scientifique du sol en Russie au point de vue de l'agronomie et de la cartographie agricole. *Bulletin de la Société belge de géologie, de paléontologie et d'hydrologie*, 1890, vol. 4, pp. 113–116.

²¹ Krassnof A.N. The 'Black earth' of the steppes of Southern Russia. *Bulletin of the Geological Society of America*, 1892, vol. 3, pp. 68–81 (quotations from p. 73).

²² Dokuchaev *Sochineniia*, vol. 8, p. 499.

²³ Hilgard's comments were reported in Krassnof. The 'Black earth', p. 80.

²⁴ Sokolov S.M. Rossiia na vsemirnoi vystavke v Chikago v 1893 g. *Amerikanskii ezhegodnik*, 1984, pp. 152–164.

²⁵ Crawford J. (ed.) *The Industries of Russia*, vol. 3, Agriculture and Forestry. St Peterburg, 1893.

²⁶ Crawford. *The Industries of Russia*, vol. 3, Agriculture and Forestry, pp. 18–41; *Rossiiskii Gosudarstvennyi istoricheskii arkhiv*. (RGIA), F. 399, Op. 1, D. 238, L. 26; Kostychev P.A. Po voprosu o proiskhozhdenii chernozema. *Sel'skoe khoziaistvo i lesovodstvo*, 1884, vol. 147, pp. 259–282.

tively in the soil exhibit, which was prepared by Dokuchaev and Sibirtsev. It included a collection of soil “monoliths” revealing the profiles and different horizons in soils from around the Russian Empire. They were accompanied by maps, charts, diagrams, and publications.²⁷ Two publications on Russian soil science in English were prepared specially for the exhibit.²⁸

The soil exhibit at the Chicago fair did little to facilitate the dissemination of the Russian scientific innovation in the United States. There was little attention to it in American press coverage of the fair. The *Chicago Tribune*, for example, described the Russian exhibit as “one of features of the fair”, and praised the furs, lacquer boxes, and “embroideries, weapons, articles of dress and household ornamentation”. It noted that the agricultural exhibit was “one of the most important and best arranged”, but did not mention the soils.²⁹ An illustrated *Book of the Fair*, published in 1894, described the Russian agricultural exhibit, but not the soils.³⁰

Even the Russian official report on its section at the Chicago fair missed out the Russian soil exhibit.³¹ American soil scientists seem not to have taken great interest in the Russian soil exhibit at Chicago. American historians of soil science have argued that the Russian soil exhibit in Chicago had little impact on the science in the United States.³² There was an exception. Charles F. Vanderford’s study of “The Soils of Tennessee” (1897) contained illustrations of men collecting soil profiles and analyzing them in line with the approach of the Russian genetic soil scientists.³³ It seems

²⁷ Anon. World’s Columbian Exposition 1893 Chicago: Catalogue of the Russian Section. St Peterburg, 1893, p. 103. I tried to find out if the soil monoliths still existed, but was disappointed to learn that they were returned to St Petersburg from Chicago and stored in a basement, where they were destroyed by a flood when the River Neva broke its banks. Email to the author from Dr Ivan Vtorov, June 16, 2016.

²⁸ Dokoutschaieff W.W. and Sibirtzeff N.M. *Short scientific review of prof. Dokoutschaieff’s and his pupil’s collection of soils, exposed in Chicago in the year 1893*. St Peterburg, 1893; Dokuchaev V.V. *The Russian steppes. Study of the soil in Russia, its past and present*. St Peterburg, 1893. (The variant spellings of Dokuchaev’s names are taken directly from the originals.)

²⁹ Anon. Czar Land Treasure: Russia’s Display One of Features of the Fair. *Chicago Tribune*, 1893, July 24.

³⁰ Bancroft H.H. *The Book of the Fair: An Historical and Descriptive Presentation of the World’s Science, Art and Industry, As Viewed through the Columbian Exposition at Chicago in 1893*. New York, 1894, pp. 209, 341, 372–373, 383.

³¹ Glukhovskii P.I. *Otchet general'nogo kommissara Russkogo otdela Vsemirnoi kolumbovoi vystavki v Chikago*. St Peterburg, 1895.

³² Selcer P. *Patterns of Science: Developing Knowledge for a World Community at Unesco: Ph.D. Dissertation*. University of Pennsylvania, 2011, p. 364; Simonson R.W. Early Teaching in USA of Dokuchaiev Factors of Soil Formation. *Soil Science Society of America Journal*, 1997, vol. 61, p. 12.

³³ Vanderford C. F. The Soils of Tennessee. *Tennessee Agricultural Experiment Station Bulletin*, 1897, vol. 10, no. 3, pp. ii-iii, 33, 34, 41, 49, and passim.

that Vanderford got the ideas from the Russian soil exhibit at Chicago.³⁴ But, Vanderford's work received little attention in the United States.³⁵

A further opportunity to promote Russian soil science on an international stage came at the Paris world's fair in 1900. Russia was officially represented and a enlarged soil exhibit was part of a much bigger and better organized Russian presence than in 1889. Ototskii was entrusted by the Ministry of Agriculture with preparing an exhibit to familiarize foreigners with the principles of the innovative Russian genetic soil science. The exhibit, as at previous world's fairs, included soil samples, diagrams, tables, maps, this time including a map of soil zones around the northern hemisphere, and publications.³⁶ Specially prepared for the exhibit were substantial guides to the display and to Dokuchaev's theories in French to facilitate a larger, international readership.³⁷ The exhibit and the Russian soil science it presented were well received by French scientists, including Margerie, who published articles about it in French scientific periodicals.³⁸

Over the following years, Russian soil science became better known in Europe and received a receptive audience among some European soil scientists. Soil scientists in several European countries were seeking to develop common systems for conceptualizing, classifying, and mapping soils. They began to hold conferences to build an international discipline of soil science. This created a further opportunity for Russian soil scientists to disseminate their work to an international audience. The first conference of what was termed "agrogeology" was held in Budapest in the Austro-Hungarian Empire in April 1909. Six countries were represented, including Germany and the Russian Empire.³⁹ Glinka presented a paper on soil zones and soil types in European and Asiatic Russia, which was illustrated by a collection of soil samples and a map to show their geographical distribution. He reported back to his Russian colleagues that their works were cited with approval by several delegates. The conference was followed by excursions, one of which enabled participants to see cherno-

³⁴ Gardner D.R. *The National Cooperative Soil Survey of the United States*. Washington D.C., 1998, p. 18.

³⁵ Kellogg C.E. Soil and Society. *Soils and Men. Yearbook of Agriculture*, 1938, p. 883.

³⁶ Anon. Khronika. *Pochvovedenie*, 1909, no. 1, pp. 68–69; Anon. Khronika. *Pochvovedenie*. 1900, no. 2, pp. 154–155; RGIA, F. 91, Op. 2, 1899, D. 205.

³⁷ Dokuchaev V.V. Collection pedologique du professeur B. Dokoutshcaeff. Zones verticales des sols. Zones agricoles. Sols du Caucase St Peterburg, 1900; Ototzky P. *Guide scientifique sommaire de la section pédologique russe à l'Exposition Universelle de Paris*. St Peterburg: Ministère de l'Agriculture et des Domaines, 1900.

³⁸ Margerie E. de and Raveneau L. La cartographie a l'Exposition universelle de 1900. *Annales de géographie*, 1900, vol. 9, pp. 402–407; Carmena d'Almeida P. La carte des sols de la Russie, publiée par le Département de l'agriculture. *Annales de géographie*, 1904, vol. 13, pp. 270–275.

³⁹ Michéli E. and Fuchs M. Bridging the Centuries: 1909–2009. Centennial meetings on the 100th anniversary of the 1st International Conference of Agrogeology. *Agrokémia és Talajtan*, 2010, vol. 59, no. 1, pp. 195–202.

zems and other soils on the Hungarian plain.⁴⁰ A second agrogeological conference was held in Stockholm, Sweden, in 1910. The conference, which was attended by Glinka, laid the groundwork for further cooperation towards creating common methodologies and systems for classifying and mapping soils. A third “agrogeological” conference planned for St Petersburg in 1914 was not held because of the outbreak of the First World War.⁴¹ The contacts Glinka made at the conferences, in particular with German scientist Hermann Stremme, were important in the further dissemination of Russian soil science as Glinka and Stremme agreed to collaborate on the book Glinka wrote in German.⁴²

The dissemination and acceptance of Russian soil science in the United States was slower than in Europe, in spite of the increasing availability of information about it which was accessible to American scientists. Russian soil science received a little more publicity in the United States at and very end of the century. In 1899–1900 the journal *Experiment Station Record* published two short notices about work on Russian soil science, including the first issue of the journal *Pochvovedenie*.⁴³ The following year, it published a translation of abridged versions of two articles by Sibirtsev under the title “Russian soil investigations”. The articles explained Dokuchaev’s pioneering work, the zonal system of soil classification, the theory of soil formation, and presented detailed analyses, including the chemical and mechanical composition, of different types of soils, together with an explanation of the different soil “horizons” (this word was used in the translation). Sibirtsev’s article cited Hilgard’s work and indicated some similarities between it and the Russian work.⁴⁴ The editorial notes at the start of the issue containing Sibirtsev’s article summarized the nature of the Russian soil science, how it differed from other work on soils, and pointed to its applicability to the western part of the United States (which included the Great Plains):

[Dokouchayev] has founded a new school of soil investigation, the fundamental idea of which is the conception of the soil as an independent natural body. With the collaboration of Sibirtzev, this idea has been utilized in the elaboration of a so-called genetic or natural classification of soils, which, in the study of soil formations, re-

⁴⁰ Glinka K.D. *Pervaia agrogeologicheskaiia konferentsiia v Budapeshte*. *Pochvovedenie*, 1909, no. 2, pp. 125–140.

⁴¹ Anon. *History of the Organization of the International Society of Soil Science*; Iarilov A.A. Po povodu vtorogo mezhdunarodnogo agrogeologicheskogo s’ezda v Stockgol’me. *Pochvovedenie*, 1910, no. 4, pp. 367–383.

⁴² Arend. *Russian Science in Translation*.

⁴³ Ototskii P.V. Science of Soils. *Experiment Station Record*, 1899–1900, vol. 11, pp. 434; Sovietov A. and Adamov N. Contributions to the Study of Russian Soils. *Experiment Station Record 1899–1900*, vol. 11, p. 623.

⁴⁴ Anon. *Russian Soil Investigations Experiment Station Record*. 1900–1901, vol. 12, pp. 704–712, 807–818. See also Sibirtzew V.N. (sic) Étude des sols de la Russie. Avec une carte et deux planches. *Congrès géologique Internationale compte rendu de la VII session*, vol. 2. St Petersburg, 1899, pp.74–125.

quires a differentiation between parent rock species and the cultivated horizon. His classification differs fundamentally from the petrographic [i.e. geological] and physico-chemical classifications commonly followed by investigators who have dealt with soils which have been profoundly modified under culture, rather than with those in a largely virgin condition, as in Russia and in the western United States.⁴⁵

The items in *Experiment Station Record* were translated from Russian by Peter Fireman, who taught chemistry at George Washington University in Washington, DC, from 1893 until 1901. Fireman was born into a Jewish family in Lipovets, in today's Ukraine, then part of the Russian Empire. He was educated at universities in Odessa, and then in Germany and Switzerland, before moving to the United States in 1882.⁴⁶ Jewish émigrés such as Fireman were among the few people in the United States at this time who had both the language skills and scientific training necessary to disseminate the findings of Russian scientists.

Fireman's translation of Sibirtsev's essays was only the second article (after Krasnov's) on Russian soil science published in English in an American scientific periodical. Simonson, writing in the 1980s, noted: "Looking at the translation now, I think it was good. Yet it made little or no impression on American soil scientists."⁴⁷ This was harsh. It was cited by George Coffey, a scientist at the U.S. Bureau of Soils, who cited it, together with Sibirtsev's paper in French to the Geological Congress held in St. Petersburg in 1897, in his doctoral dissertation, which the Bureau published as "A Study of the Soils of the United States" in 1912.⁴⁸ Coffey, whose academic background was in geology and chemistry, started working at the Bureau in 1900. While working at the Bureau he realised the need for a better system for classifying soils than the existing American system that was based largely on soil texture and geological origins. This prompted him to study for higher degrees at George Washington University.⁴⁹ In his dissertation Coffey noted that "Dokouchayev" had "founded a new school of soil investigation". He presented Sibirtsev's zonal system of classification, and explained "the Russians make their primary classification upon the origin of the soil – not so much the geological as the climatic and organic origin."

⁴⁵ Anon. Editorial Notes. *Experiment Station Record*. 1900–1901, vol. 12, p. 701.

⁴⁶ Anon. Fireman P. *In National Cyclopaedia of American Biography*, vol. 52. New York, 1970, pp. 270–2.

⁴⁷ Simonson R.W. *Historical highlights of soil survey and soil classification with emphasis on the United States, 1899–1970*. Wageningen, 1989, p. 47.

⁴⁸ Coffey G.N. A Study of the Soils of the United States. *U.S. Department of Agriculture, Bureau of Soils*, Bulletin no. 85. Washington, DC, 1912, pp. 32–33; Coffey G.N. The Development of Soil Survey Work in the United States with a Brief Reference to Foreign Countries. *Proceedings of the American Society of Agronomists*, 1911, vol. 3, pp. 127–129.

⁴⁹ Brevik E.C. George Nelson Coffey, Early American Pedologist. *Soil Science Society of America Journal*, 1999, vol. 63, no. 6, pp. 1485–1493; Helms D. Early Leaders of the Soil Survey. Helms D. (ed al eds.) *Profiles in the History of the U.S. Soil Survey*. Ames, IO, 2002, pp. 35–39.

Coffey contrasted the sophisticated and multi-faceted Russian system for classifying soils with those of France, Germany, and Japan, which were based on geology. He also contrasted the Russian system with that of the U.S. Bureau of Soils, which he described as “largely physical”, i.e. it was based on soil texture and the underlying geology. Coffey also cited with approval the work of Hilgard, which had a broader concept of soils, and also listed Vanderford’s work in his bibliography.⁵⁰

Coffey drew on the Russian work in the body of his dissertation, for example, in defining soil as “an independent natural body... differing essentially from the rock which underlies it”. He emphasized the character of the parent material as well as “soil forming agencies”. Among the latter, he included the parent rock, moisture, temperature, climate, and hinted at the importance of topography and “age”, i.e. time. But, in contrast to the Russians, he did not include vegetation as a “soil forming agency”. Also in contrast to the Russian soil scientists, Coffey did not analyze horizons or layers in soil profiles, but did refer occasionally to differences between “soil” and “subsoil”.⁵¹ Coffey devised a classification system which he acknowledged was “preliminary” and needed far more information to finalize it.⁵² His hopes of replacing the existing system of soil classification employed the U.S. Bureau of Soils with a new one based on Russian soil science did not come to pass. Such was the opposition to change by the chief of the Bureau, Milton Whitney, that Coffey resigned in 1911 to take up a post in Ohio.⁵³

There were two American scientists, who were specialists in other fields, who were more receptive to the Russian soil science. They were Niels Hansen and Mark Carleton. Both were specialists on agricultural crops and both visited the Russian Empire as plant explorers looking for new crops to grow in the United States. Hansen visited the Russian soil exhibit at the fair in Chicago and met the Russian soil scientist V. R. Vil’iams\Williams (his father, Robert, was American), who was a member of the Russian delegation. Four decades later, while visiting the Soviet Union, Hansen recalled meeting Williams in Chicago and wrote: “The science work in soils [in the Soviet Union] is considered superior to that anywhere in the world.”⁵⁴ Carleton was interested in the similarities between the soils and climate of the Great Plains and steppes, which prompted him to visit the steppes to collect varieties of grain to grow

⁵⁰ Coffey, 1912 cited Hilgard on, e.g., pp. 6, 14, 30, 31, 39. Vanderford’s work is listed on p. 113.

⁵¹ Coffey, 1912, pp. 7, 8, 13–23, 31, 35–37, 40–44 and passim. The map is at the end of the volume.

⁵² Coffey, 1912, pp. 27–29, 34; Gardner, 1998, pp. 49–50.

⁵³ Helms, 2002, pp. 39–40.

⁵⁴ South Dakota State University Archives and Special Collections. *Hilton M. Briggs Library*, Brookings, South Dakota, UA 53.4, N. E. Hansen papers, Series 2. Helen Hansen Loen Collection. Box 3. Folder 93. Niels Hansen to his father, June 8, 1893 [trans from Danish]; Box 4, Folder 174, p. 244.

in the United States. Before he travelled to Russia, Carleton ordered samples of “wheat soils” to be sent to him from Russia to Kansas in 1895. He sent them on to the Bureau of Soils in Washington, DC, for analysis.⁵⁵ Carleton was interested not just in the soils from the steppes, but in the theories of Russian soil scientists. In 1914 he wrote about the attention “Russian investigators” gave to the vegetation and “factors such as temperature and moisture” in “black soil formation”. He noted that the Russian work, on what he termed “geo-botany”, by Dokuchaev, Kostychev, Krasnov, and others “has already reached several hundred volumes” and that: “It would be of great benefit to American students to have at least abstracts of these publications put into English.”⁵⁶

The positive response to Russian soil science by Hansen and Carleton, who were specialists in another branch of agricultural sciences, suggests that it may have been the innovative nature of the Russian work, which contradicted prevailing orthodoxies among American soil scientists, that inhibited its reception among soil scientists, and Whitney in particular, in the United States. This can be demonstrated by the attitude of Hilgard, who had been so interested in Krasnov’s paper in 1891, to the work of his Russian counterparts. Hilgard’s work was also at variance with the prevailing ideas among American soil scientists, and in some regards it resembled the Russian work. Hilgard did not visit Russia and could not read Russian, but was sufficiently interested to make an effort to find out more about Russian soil science. He corresponded with several Russian scientists from the 1870s. The interest was mutual. Russian scientists made contact with Hilgard. His first Russian correspondent was the geographer and climatologist A.I. Voeikov, who visited North America in the 1870s. They wrote, in English, about mutual interests in studying the soils of Russia and North America, and exchanged publications.⁵⁷ A recurring theme in Hilgard’s letters to Russian scientists was his desire to increase his knowledge of Russian soil science, but regret that he could not read Russian. Voeikov suggested Hilgard wrote to Dokuchaev:

As to Prof. Dokutschaef, Voeikov wrote to Hilgard on January 6/18 1892, his address is Novaja Alexandria, gouv. Ljublin,... You may write the address in German and the letter in French. German is less familiar to him, but can certainly find people to translate your communication. Perhaps you would best do so: write a short letter in French and ... questions in German, and send also copies of your works, especially

⁵⁵ *National Archives and Records Administration*, College Park, MD (NARA CP). Record Group 54. Finding Aid A1. Entry 58 Division of Vegetable Pathology and Physiology: Correspondence of M.A. Carleton, 1891–1900, Folder: M.A. Carleton – 1895. Carleton to B.T. Galloway, November 1, 1895, Carleton to Galloway, November 9, 1895.

⁵⁶ Carleton M.A. *The small grains*. New York, 1916, pp. 235–237.

⁵⁷ Bancroft Library, University of California, Berkeley. The Hilgard family papers. BANC MSS C-B 972 (Hilgard Papers). *Hilgard E. W.: Incoming Letters, Box 23*. File: Voeikov, Aleksandr Ivanovich.

what is published in French or German. I am sure he will be very glad to communicate with you.⁵⁸

Sadly for historians of soil science, it seems the two pioneers – one Russian, one American – did not correspond with each other.⁵⁹ Voeikov encouraged Hilgard to visit Russia when he was in Europe in 1892, advising him that he would not suffer from the Russian climate if he brought the right clothing. If he came, Voeikov offered to help him with translations of Russian studies. He also explained that, since many Russian specialists spoke German (Hilgard's mother tongue), he would be able to speak with them. Voeikov was disappointed when Hilgard did not visit, remarking: "You are spoiled by the climate of California".⁶⁰ This did not prevent Hilgard from reading about Dokuchaev's work in western European languages. On May 24, 1894, he wrote to Vilbouchevitch, who was then about to visit St Petersburg: "I am glad to know that you will be at the headquarters of the soil work of Russia ... I have been looking over lately all I have on Dokutshaieff's work, and find it as closely parallel to my own as I could wish," but pointed out that he disagreed on some points concerning the analysis of organic matter.⁶¹

Voeikov continued to encourage Hilgard to learn more about Russian soil science. In the summer of 1902 he wrote: "It is much to be regretted that you are unable, in California, to use Russian books, for as to the study of soils we are further advanced than any country in Europe. You should study Russian on the Pacific coast..."⁶² Hilgard continued in his desire to learn more about the Russian work. In January 1908, he wrote to P.V. Ototskii, the editor of *Pochvovedenie*. He noted that he had persuaded his university library to subscribe to the journal, but that it had dropped it ("without my knowledge"), presumably because "so few here understand the Russian language". He wrote that he was trying to get the subscription renewed, and asked Ototskii if:

both for the proper appreciation of the excellent work being done in Russia in this line, ... , it should be worth your while, ... to have ... abstracts [of articles] made, say in French or German, so as to enable us to correspond with the authors...

⁵⁸ Hilgard Papers *Hilgard E.W.: Incoming Letters*, Box 23. File: Voeikov, Aleksandr Ivanovich, Jan [?] 6/18, 1892, Voeikov to Hilgard.

⁵⁹ There is no correspondence between them in Hilgard's Papers: *Hilgard E.W.: Incoming Letters*, Box 8 (Coo-E Misc, incl D Misc); *Hilgard E.W.: Outgoing Letters*, Box 1, 1848–1883, Box 2, 1884–1904. *There is none in Dokuchaev's papers*, PFA RAN, F. 184, Dokuchaev V.V., nor in his published correspondence. Dokuchaev, *Sochineniia*, vol. 8.

⁶⁰ Hilgard Papers. *Hilgard E.W.: Incoming Letters*, Box 23. File: Voeikov, Aleksandr Ivanovich, Dec 18/30 1892, Voeikov to Hilgard; October 22/November 3 [1893?], Voeikov to Hilgard.

⁶¹ Hilgard Papers. *Hilgard E.W.: Outgoing Letters, Letterpress copy books*, vol. 20, Feb. 1894–Oct. 1896, pp. 57–58, May 24, 1894, Hilgard to Vilbouchevitch.

⁶² Hilgard Papers. *Hilgard E.W.: Incoming Letters*, Box 23, File: Voeikov, Aleksandr Ivanovich, June 22/July 5, 1902, Voeikov to Hilgard.

Hilgard intended to read the abstracts and then arrange full translations of articles he was interested in by a Russian acquaintance.⁶³ He repeated the request to another Russian soil scientist, N.M. Tulaikov. Ototskii's initial response was that it was a question of resources and that he, as editor, was already overburdened.⁶⁴ Nevertheless, Hilgard's suggestion was taken up. In May 1911, in a letter to Ototskii, Hilgard expressed his "gratification at the adoption of the policy of giving summary translations of the Russian texts in your journal". He added that it would increase appreciation of "the fine work that is being done in Russia..." Hilgard's letter implied a contrast between the quality of the Russian work and

the frequent publications of the Bureau of Soils at Washington... [which] usually contain so much ill digested matter and unwarranted conclusions – owing to the wholly one-sided point of view of the Chief, Professor Whitney, that it would take a great deal of time and space to controvert them all.⁶⁵

Hilgard sometimes cited Russian studies (in translation) in his publications,⁶⁶ and was pleased to learn that his work was known and appreciated in Russia. In March 1908, for example, he wrote to his sisters that he had been sent positive reviews of his book on soils in Russia by Voeikov and Tulaikov.⁶⁷

Tulaikov spent a year in the United States in 1908-9, much of it in Berkeley, California, to study American work on soils. He was especially interested in Hilgard's work. At the start of his visit, Tulaikov noted with some dismay that his American counterparts did not know about Russian work, although some were interested.⁶⁸ Like Krasnov's visit a decade and half earlier, Tulaikov's presence provided an opportunity for American scientists to learn more about the Russian soil science. While some, like Hilgard, were interested, his visit also revealed the divisions among American soil scientists over methodology and concepts of soils that would hinder attempts to change it. While he was in Berkeley, Tulaikov wrote an article on "The Genetic Classification of Soils" in English, which was published in a British journal, and attracted little attention in the United States.⁶⁹ He visited the Bureau of Soils in Washington,

⁶³ Hilgard Papers. *Hilgard E.W.: Outgoing Letters, Letterpress copy books*, vol. 26, June 1907–July 1910, pp. 124–125, January 27, 1908, *Hilgard to Dr. P. Ototzky*, St Petersburg, Russia.

⁶⁴ Hilgard Papers. *Hilgard E.W.: Outgoing Letters, Letterpress copy books*, vol. 26, June 1907–July 1910, pp. 120–123, January 28, 1908, *Hilgard to Toulaiokoff; Tulaikov N.M. Pochvennyye issledovaniia v Soedinennykh Shtatakh. Pochvovedenie*, 1908, no. 4, pp. 321–322.

⁶⁵ Hilgard Papers. *Hilgard E.W.: Outgoing Letters*, Box 3, May 11, 1911, *Hilgard to Professor P. Ototzky [Ototskii]*.

⁶⁶ Hilgard E.W. *Soils: their formation, properties, composition, and relations to climate and plant growth in the humid and arid regions*. New York and London, 1906, pp. 130, 265.

⁶⁷ Hilgard Papers. *Hilgard E.W.: Outgoing Letters*, Box 3 1905–1915, March 12, 1908, *Hilgard to Therese*; March 27, 1908, *Hilgard to Rosa*.

⁶⁸ Tulaikov, 1908, pp. 321–322.

⁶⁹ Tulaïkoff N.M. *The Genetic Classification of Soils. The Journal of Agricultural Science*, 1908, no. 3, pp. 80–85; *Simonson*, 1989, p. 48.

DC, and met Milton Whitney, who acquainted him with the work of the U.S. soil survey. However, he was critical of the American methods, recognizing them as inferior to those devised by Russian soil scientists.⁷⁰

Conclusion

Thus by 1914, when Glinka's book on Russian soil science was published in German, there was already quite a lot of information about the Russian innovation available in western European languages. Russian soil scientists had endeavoured to publicise their new science through publications in foreign languages, had prepared exhibits and pamphlets for international exhibitions, presented papers at international conferences, and corresponded with their counterparts in different countries. Their work found a more receptive audience among some European scientists, to the extent that Glinka collaborated with a German scientist, Stremme, in preparing his book. The acceptance of Russian soil science was slower in the United States. This was in spite of the availability of information in English, Russian exhibits at American fairs, visits by Russian soil scientists who gave papers at American conferences, and correspondence between Russian and some American scientists. Resistance to the new ideas on soils from Russia was stronger in the United States. This was a result of opposition from the chief of the U.S. Bureau of Soils, Whitney, who saw the Russian science as a threat to his position and work, which was based on an older physical and geological conception of soils. Later, recognition of the value of Russian soil science for studying American soils, by some American scientists, in particular by the head of the U.S. Soil Survey Curtis Marbut, and the death of Whitney in 1927 finally allowed the wider acceptance of Russian soil science in the United States.⁷¹

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⁷⁰ Tulaikov, 1908, pp. 293–322; Tulaikov N.M. *Ocherki po sel'skomu khoziaistvu v Soedinennykh Shtatakh*. Moscow, 1912, pp. 118–22; Tulaikov N.M. Pochvennoe Biuro pri Departamente Zemledeliia Soedinennykh Shtatov. *Pochvovedenie*, 1909, no. 1, pp. 17–33.

⁷¹ Brevik E.C., Fenton T.E., Homburg J.A. Historical highlights in American soil science — Prehistory to the 1970s. *Catena*, 2016, vol. 146, pp. 111–127.

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'Environmental History of Russia: The local measurements and perspectives
of integral studies'*

On 5–7th October 2017, the All-Russian scientific conference with international participation 'Environmental History of Russia: The local measurements and perspectives of integral studies' took place at Cherepovets State University. Among the hosts of the conference were Cherepovets State University and its Interdisciplinary Center 'Sociopolis-35', Kazan Federal University, Surgut State Pedagogical University and Russian Society for Intellectual History (Cherepovets Local Department). The project of the conference was supported by the Russian Foundation for Basic Research (RFBR) (grant of the Department of Humanities and Social Sciences No. 17-01-14041).

The conference received applications from Russian scientists representing 15 cities of the Russian Federation (Moscow, St Petersburg, Surgut, Ekaterinburg, Irkutsk, Ivanovo, Kaluga, Novokuznetsk, Samara, Simferopol, Tambov etc.) as well as applications from foreign researchers (the United Kingdom, China, Ukraine and Germany). The scientific novelty of the conference lies in the attempt to discuss the specifics of environmental history (literally: 'ecological history') with the participation of representatives of both socio-humanitarian knowledge and natural sciences. Five doctors of historical sciences, one doctor of philosophical sciences, one doctor of psychological sciences, fourteen candidates of historical sciences, three candidates of biological sciences and one candidate of sociological and philological sciences participated in the conference.

The organizing committee of the conference, outlining its program, proceeded from the idea that currently, in the face of aggravation of environmental problems, the focus of researchers' attention shifted towards studying the environmental aspects of the society in preceding historical epochs. The identification of environmental history as an independent trend of historical sciences in the USA and Europe in the 1970s played an important role in this process.

Several regional schools and individual researchers represent environmental history in Russia; however, in most cases, they only work in narrow and very specific fields. Over the past few decades, environmental historians have been studying the main problems of interaction between nature and society in specific regions of the Russian Empire and the USSR and formed their own research methods or tested those already available in modern historical science. At the same time, due to the localization of scientific schools working in this direction in Northwest Russia, the Ur-

als, the Volga region and Siberia, there are many gaps and ‘blank pages’ in the Russian environmental history. The existing conditions only brought up to date the topic of the conference, which discussed the specifics and summarized the results of the regional studies, and outlined the way forward for the environmental history in Russia.

The scientists from leading scientific and educational centers of Russia, specializing in the study of environmental history, the history of human-nature relations and the phenomenon of industrial cities presented their reports at the conference. Among these universities were the Higher School of Economics (HSE), the Russian State University for the Humanities, Surgut State Pedagogical University, The S.I. Vavilov Institute for the History of Science and Technology of the Russian Academy of Sciences (IHST), Kazan Federal University, Ivanovo State University, Pushkin Leningrad State University, Derzhavin Tambov State University, Siberian State Industrial University, Lomonosov Moscow State University and others.

The conference included the following sections: ‘Humans and environment: The history of scientific knowledge’; ‘The environment and management practices used by the population of the Russian Empire and the USSR’; ‘Environmental protection in the Russian Federation’; ‘Environmental history of the urban environment and industrial development of the Russian Empire, the USSR and the Russian Federation’ and ‘The natural environment in Russian culture and education’.

At the plenary session of the conference, Y. A. Laius, Candidate of Historical Sciences and Leading Researcher at the Laboratory for Environmental and Technological History of the Higher School of Economics (HSE, St Petersburg Local Department), presented a conceptional report on the history of natural resources being part of the environmental history. Based on the results of the previous years, Y. A. Laius demonstrated the research potential in this area of environmental history, provoking numerous questions and a lively discussion. Due to the great importance of the ideas expressed by Y.A. Laius, the hosts of the conference suggested that she should not limit herself to the format of these talk abstracts, but rather prepare a detailed article for the dedicated issue of the online journal ‘Historia provinciae – the journal of regional history’. Bao Maohong, Professor of Peking University (China) also devoted his report to the research potential of environmental history in the context of world history. The report was presented in absenta. The special ‘track’ of the conference related to the scientific knowledge of the environment was initiated by the report (The report was presented in absenta) submitted by David Moon, Professor at University of York (the United Kingdom), as an introduction to the topic. He analyzed the transfer of ideas of Russian scientists supervised by V.V. Dokuchaev in the field of soil science, who already internationally presented his innovative concept of genetic pedology in the 1870s and 1880s. Various articles in foreign languages, exhibits presented at different world exhibitions, reports of Russian soil scientists at in-

ternational conferences, international visits of Russian scientists working in the field of pedology and the description of their work matching that of foreign scientists served as ‘channels’ for such knowledge transfer. David Moon concluded that Europe recognized the ideas of Russian soil scientists earlier than the United States, where, despite attempts to spread innovations, scientists faced obstacles from various local institutions.

Benjamin Beuerle, an employee of the German Historical Institute in Moscow, presented preliminary results of his research on the reaction of the media and public organizations of the Far East towards climate change. A certain ‘time window’ already allows us to see the problem in dynamics; however, the implementation is at the preliminary stage only, so this prevented the author from preparing a proper scientific publication.

V.I. Durnovtsev, Doctor of Historical Sciences and Head of the Department of Source Studies of the Moscow State Institute for History and Archives of the Russian State University for the Humanities, presented an overview of educational programs on environmental history in the United States, Western Europe and Russia. These include various master's programs on the history of environmental protection in several foreign universities and in Russia, tailor-made development programs as well as training and further training of scientific and management personnel. V.I. Durnovtsev noted that the attention of the world public and the authorities to the problems of environmental protection and rational use of natural resources led to the search for historical reasons of the current environmental crisis. The public and political interests matched the trends in the development of natural and social / humanitarian sciences, clearly aiming at their mutual enrichment, foremost in terms of research methods. V.I. Durnovtsev also pointed out that environmental history has contributed to the development of interdisciplinary approaches in the scientific research. Scientists who start to be engaged in environmental history mostly come from other areas of science; whereas experts in environmental history also need to have knowledge in the fields of biology, geology, geophysics, botany, geography, anthropology and the history of science. One of the objectives of such an educational practice is to overcome the traditional divides between the natural and human sciences.

E.I. Gololobov, Doctor of Historical Sciences, Professor of the Department of Social Disciplines and Humanities, and pro-Rector for Research of Surgut State Pedagogical University, also being head of the Surgut school of environmental history, summarized the results and determined the prospects for further research in the field of environmental history in the north of Siberia. Thus, E. I. Gololobov believes that various issues in the history of nature management in Siberia were considered about the 19th and early 20th century or to the second half of the 20th century. Geographically, these studies are mostly devoted to regions with grain economy and industry. The northern territories of Siberia remained in this respect least-studied. The expansion of

time and geographical scope of regional studies on the environmental history of Siberia, according to Gololobov, is an important task towards institutionalization of this trend in the national historical science.

O.Y. Solodyankina, Doctor of Historical Sciences and Professor at the Department of History and Philosophy of Cherepovets State University, made a speech on ‘Discourse ‘man-animals’ in the context of studying history in the Russian Empire: Results and perspectives’. She suggested the research topics where the chain of human relations also include animals, on an equal footing, if this could ‘trigger off’ new researches in the context of everyday-life history.

Later, the conference participants began working in the format of meetings within conference sections. As part of the section ‘Humans and environment: The history of scientific knowledge’, the speeches of representatives working in the field of natural sciences attracted immense interest. Among these was N.B. Afanasyeva, Candidate of Biological Sciences and Head of the Department of Biology at Cherepovets State University, who spoke about the history of botanical studies of the Belozersk-Kirillov ridges. A. A. Fedotova, Candidate of Biological Sciences and Leading Research Associate of The S.I. Vavilov Institute for the History of Science and Technology of the Russian Academy of Sciences (IHST), and A.V. Kupriyanova, Candidate of Biological Sciences and Associate Professor at the Higher School of Economics (HSE), presented their report on ‘Insecticides and extermination of locusts in the North Caucasus in the first half of the 1910s’. The participants of the conference could witness the differences in the approaches of the representatives of social and humanitarian knowledge, although each approach allows achieving certain results, and the greatest interest lies in the possible synthesis of both approaches. The conference participants discussed the denotations and connotations of the terms ‘historical environment’ (literal translation from Russian: ‘historical ecology’) and ‘environmental history’ (literal translation from Russian: ‘ecological history’) and concluded that the second alternative is more appropriate for the historical studies. The discussion also arose when N.Y. Poddubnaya, Candidate of Biological Sciences and Associate Professor of the Department of Biology at Cherepovets State University, doubted the correctness of the term ‘ecological history’ chosen for the scientific focus area of the conference, as abroad, in this case the expression ‘environmental history’ would be used.

Within the framework of the conference, presentations of scientific centers, programs, websites and publications on environmental and historical research were considered. Among the presenters were Y.A. Laius (the Laboratory for Environmental and Technological History of the Higher School of Economics (HSE)), E.I. Gololobov (Surgut State Pedagogical University), O.Y. Solodyankina (online journal ‘Historia provinciae – the journal of regional history’), the Interdisciplinary Center of Cherepovets State University ‘Sociopolis-35’), A.V. Vinogradov (scientific website

‘Environmental History’ (www.environmentalhistory.ru), N.S. Tsintsadze (Derzhavin Tambov State University), V.I. Durnovtsev (Russian State University for the Humanities), M.Y. Timofeev (online newspaper ‘Labyrinth: The Journal of Social and Humanitarian Studies’).

As part of the section ‘The environment and management practices used by the population of the Russian Empire and the USSR’, N.V. Alekseeva, Candidate of Historical Sciences and Associate Professor of the Department of History and Philosophy at Cherepovets State University, spoke about ecological consciousness of a person in the pre-industrial society. She noted their integration with nature and the inseparable connection of their physical labor with the spiritual folk culture. A.V. Vsevolodov, Senior Research Fellow at Cherepovets Museum Association and Senior Lecturer at the Department of Public Relations, Journalism and Advertising of Cherepovets State University, spoke of another aspect of labor. He argued that working the land and the natural environment as the context of this work would be, remained one of the natural foundations of life for the northern rural clergy in the second half of the 19th century. The perception of natural environment and an economic system common for the clergy, had distinct differences that deserved further study. N. S. Tsintsadze, Candidate of Historical Sciences and Associate Professor of the Department of Theory and History of the State and Law at Derzhavin Tambov State University, talked about her study based on personal sources. She outlined the specifics of perception with regards to the social and human problems of a Soviet pre-war village in European Russia by creative and scientific intellectuals. She revealed certain eco-stories from memoirs, diaries and letters of intellectuals and added color to the study of the authorities / public perception of the social-nature aspects of the development of a pre-war village in European Russia by using valuable memoirs of the contemporaries. For N.S. Tsintsadze, it was obvious that those processes were complex, multidimensional, multivariate, not straightforward and ambiguously perceived by their contemporaries. Considering the above, it appears obvious that the task of modern researchers is to find and closely examine all those nuances.

Another live discussion of the reports arose in the section ‘Environmental protection in the Russian Federation (the second half of the 19th and early 20th century)’. Within the framework of this section, the Novokuznetsk researcher A.V. Shmygleva, Candidate of Historical Sciences, Head of the Department of Social Disciplines and Humanities of Siberian State Industrial University, analyzed the authorities / public relationship in the matter of environmental protection. She reported that the people's ecological movement of the 1970s and 1980s played an important role in the adoption and further amendments of environmental law and legislation, and in the establishment of environmental management authorities for the use of nature resources. It was due to the public pressure that in 1989 it was decided to establish the USSR State Committee for Nature Protection and to adopt the new law on environmental

protection. In article 14 of the said law, the state guaranteed to environmental and other public associations fulfilling the environmental functions, as well as for the Russian citizens, the opportunity to implement the rights granted to them in the matter of environmental protection in accordance with the legislation of the Russian Federation and constituent territories of the Russian Federation. Another Siberian researcher, Y.S. Mikheeva, Candidate of Historical Sciences and Deputy Dean for Educational Work of the Department of Social Disciplines and Humanities of Surgut State Pedagogical University, analyzed the role of regional environmental protection committees in implementing the main directives of the state environmental policy in the north of Western Siberia in the 1980s and 1990s. According to Mikheeva, it is worth paying attention to the conditions for the implementation of those activities. The formation of such committees as a single body for environmental protection faced certain organizational difficulties, lack of legal mechanisms to influence perpetrators of law, as well as the crisis in the economy that made it rather difficult to impose any fines and fees for the use of natural resources. The differences among the regions in terms of natural resources also played an important role. This led to the intensive industrial development of hydrocarbon deposits since the mid-20th century and, as a result, to a massive negative impact on the environment. Then, the state gave its priority to the implementation of economic interests, whilst the environmental consequences of industrial activities did not receive enough attention. Nevertheless, the committees were very active, and by the mid-1990s, based on the results of their activities, they developed a scientific document to work out further improvement of the legal mechanism of state's environmental policy, considering the peculiarities of the region. The external doctoral candidate of Lomonosov Moscow State University O. D. Blatova reconstructed the history of environmental referendums in Russia in 1993–2009. This rich historical material allowed Blatova to name the opposition of state and local governments observed in almost every case as the main reason for failures of environmental referendums. Often, formulating referendum issues in the first place, the initiators of the referendums found no help in neither strict compliance with the relevant legislation nor appealing to the judiciary.

Another section, 'Environmental history of the urban environment and industrial development of the Russian Empire, the USSR and the Russian Federation', featured speeches of researchers studying both the capital regions of Russia and the circumstances in the provinces. St Petersburg researcher G.Y. Afanasyev analyzed the subject-matter of ecology in the materials devoted to the environment in the periodicals of the second half of the 19th and early 20th centuries. This led him to several conclusions. Preparation and implementation by the authorities of the large-scale projects of urban improvement and the need for the national legislative base with regards to preventing the adverse effects of industry (such as the laws 'On the sanitary protection of water, soil, and air' of 1913 and 'On the sanitary protection of air from smoke pol-

lution' of 1914) significantly increased the relevance of health and environmental problems in the capital press. Among these projects were the construction of sewer lines in Moscow in 1893–98, the construction of sewer lines and reconstruction of water distribution in St Petersburg in 1911–17. This also brought these problems into the circle of other social and political issues for both the urban society and the authorities. Discussion of the initiatives of the authorities in the press meant the urgent need to update the existing legal and regulatory basis and the creation of special permanent authorities to conduct the monitoring of the situation on site. On the other hand, this also meant lack of readiness for a constructive dialogue between the parties involved, expressed in the absence of a unified position of the authorities and the public both within their own structures and among each other, as well as lack of expressed public opinion from the expert-scientific community on the greatly deteriorated problem. Moscow researcher A.N. Davydov, Candidate of Historical Sciences, Head of the Department to work with researchers at Central State Archive of the city of Moscow, analyzed the ecological situation in Moscow in the second half of the 19th and early 20th century, as well as measures of urban management for its improvement. He noted that, until the mid-19th century, the pollution of the environment in Moscow and the suburbs, except for the areas along the banks of the Yauza River, was not yet that critical for Moscow citizens. The situation with the ecological situation in Moscow escalated during the second half of the 19th and early 20th century because of the increased anthropogenic pressure on the urban environment due to industrial revolution, industrialization and urbanization. The increase of biological pollution was directly associated with an intense increase in population of the city and the peculiarity of industrial pollution resulted mostly from the development of textile and related industries. Because of these, the problem of water pollution by both domestic and industrial wastewater became the most acute issue for Moscow.

The speech of A.B. Agafonova, Senior Lecturer at the Department of Sociology and Social Technologies of Cherepovets State University, focused on the possibility of applying the actor-network theory for the environmental history research. According to Agafonova, the actor-network theory allows reconstructing the process of improving the sanitary conditions of the urban environment from the point of view of gradual involvement in this process of the authorities, social groups, institutions and citizens, as well as involvement of new technologies, theories and legal provisions. Therefore, within the framework of this theory, the formation of sanitary conditions in the urban environment of the Russian province looked like a complex process that in one way or another involved citizens, medicals, police and industrialists along with the city public administration. The non-social agents of transformation of the urban environment was also very important. This included legislative and administrative acts, intestinal infections that turned into epidemics, scientific and everyday

public perceptions of the impact of environmental conditions on public health, water supply, waste management and disposal technologies, transport networks, road infrastructure, the demographic factor, economic conditions and political events of the early 20th century. According to Agafonova, the interaction of all these factors is exactly what formed the sanitary environment of a Russian city.

Continuing the topic of the urban environmental history, A.V. Vinogradov, Candidate of Economic Sciences and Senior Lecturer of the Elabuga Institute of Kazan Federal University, talked about fighting the industrial pollution in late Imperial Russia in 1850–1917. The researcher proved that conflicts between different social groups that arose because of sanitary pollution did not have any ready solutions and took place alongside serious gaps in the law that were only filled with new legal regulations after Russian Revolution of 1917.

The section ‘Environmental history of the urban environment and industrial development of the Russian Empire, the USSR and the Russian Federation’ also covered the subject of urban ecology. K. D. Pokrovskaya, a student of the Higher School of Economics, analyzed the system of separate waste collection in the cities and working settlements of the USSR in 1948–56. R.S. Kolokolchikova, Doctor of Historical Sciences and Professor at the Department of History and Philosophy of Cherepovets State University, described the materials of the Russian State Archive of Contemporary History (RGANI) on the ecological history of Russia in the 1960s and 1970s. The materials provided great research opportunities for the reconstruction of environmental history of Russia in the period of late socialism. G.A. Kovaleva, Candidate of Sociological Sciences and Associate Professor at the Department of Sociology and Social Technologies of Cherepovets State University, described the recreational areas of Cherepovets as an element of the infrastructure of an industrial city. M.Y. Timofeev, Doctor of Philosophy, Professor at the Department of Philosophy of Ivanovo State University, and Editor-in-Chief of the online newspaper ‘Labyrinth: The Journal of Social and Humanitarian Studies’ described the ecological factor of ‘branding’ for the industrial cities.

The conference ended with the section ‘The natural environment in Russian culture and education’.

The guests of the conference, who arrived from other universities, enjoyed the excursions to the museum of the metallurgy industry and to the museum ‘The Green Planet’ by PhosAgro, as well as a great sightseeing tour of Cherepovets.

Whilst summing up the results of the event, it was noted that the conference provoked live and fruitful discussions followed the speeches. Many students, undergraduates and graduates from the Faculties of History, Psychology and Biology of Cherepovets State University attended different sections of the conference. The event served as a perfect place for the exchange of ideas and experience in carrying out environmental and historical research at the local level, as a platform for discussing the

problems of integrated research in this area and of institutionalizing the environmental history in Russia. Participants of the conference outlined ways of further cooperation and developed a strategy for the formation of a scientific community of specialists dealing with environmental history. As a result, the achievements of regional studies were summarized, and new areas of research will be developed, making it possible to fully represent the historical experience of environmental management and solution of environmental problems in Russia. This representation, in turn, will contribute to the improvement of policies in the field of environmental management at both regional and national levels.

Followed the discussions, the Proceedings of the Conference are also being prepared for publication¹.

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REVIEWS

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Review on the book: Lupanova E.M. *Istoriia zakreposhcheniia prirodnogo resursa. Lesnoe khoziaistvo v Rossii 1696–1802 gg.* [The History of ‘Enslavement’ of a Natural Resource. Forestry in Russia in 1696–1802]; Series: Territory of History. St Petersburg: EUSP Press in St. Petersburg, 2017. 352 p.

One of the topical issues of modern historiography in Environmental History is the history of forest management. Abroad, the history of forestry is a rather developed area of historical research: The Forest History Society has been operating in the USA since 1946; in the German cultural history, the forest has been positioned as one of the symbols of the spiritual unity of the nation, and at the contemporary stage, J. Radkau, H. Küster, etc., work in this direction. In addition, European and American researchers are working at questions of destruction of colonial forests, the impact of reducing the forest areas on the change of landscapes, climate, environmental management practices and so forth. In the domestic historical science, the history of forestry was covered during the Soviet period in the works of M.A. Tsvetkov, I.G. Beilin and S.V. Kirikov. In modern historiography, the interest in the history of forest management and forest conservation is reviving; however, works that cover the development of forestry in Russia are quite scarce and, as a rule, concern the history of the Soviet period. In this context, the monograph of Evgeniia Mikhailovna Lupanova, the senior researcher of the Department of the history of Kunstkamera and 18th century Russian science (M.V. Lomonosov museum), Museum of Anthropology and Ethnography (RAS), is very significant, as it touches upon a wide range of problems relating to political, ecological, technological, socio-economic and cultural history of the 18th century.

The author studies the process of establishment and evolvement of forestry as an important part of the modernization process of the 18th century. The work consists of five chapters that reveal the technological features of forest management (Chapter 1), the process of establishing a state monopoly on forests (Chapter 2), the creation of rights for private owners (Chapter 3), the changes in forestry in 1762–97 (Chapter 4), the specifics of forest management by the Admiralty Board (Chapter 5). E.M. Lupanova’s research is devoted to the study of the European part of Russia, since, as the author notes, there was practically no control over the forests in the Urals and Siberia during the covered period (pp. 62–63). The chronological framework of the research

covers the period when the forest management was primarily related to the jurisdiction of the Admiralty Board, and the government regarded forests as a resource for shipbuilding, considering its value to the state's economy (p. 61). E.M. Lupanova distinguishes four periods of forestry development within the designated chronological framework: the first period was associated with the introduction of the state monopoly on forests (1696–1726); the second – with the abolition of the said monopoly and its consequences (the period of palace coups); the third period was marked by the tendency to transfer the rights to own forest lands to private owners (in the reign of Catherine the Great); the fourth period was marked by the attempts to return to the previous monopolistic principles and the growth of state influence in the sphere of forest resources management (1798–1802) (p. 62).

The author adheres to the theory of ecological modernization, noting that the integration model of human-nature interaction, which suggests their harmonious coexistence with each other, was replaced by a transformation model in the studied period. The idea of a need for a transformative, orderly and rationalizing human activity was inherent for the above-mentioned transformation model (p. 13). In this regard, E.M. Lupanova interprets strengthening of control, introduction of monopolies and the process of general 'enslavement' as such transfer, as well as the desire to strengthen the traditional principles of autocracy (pp. 18–19). In her work, the researcher proceeds from the idea of 'total enslavement': the formation in the 18th century of the attitude to the forest as a property that could generate income and the preservation of which must have been taken care of (p. 31). The author's concept, based on the theory of ecological modernization and the idea of 'total enslavement', is implemented through a consistent analysis of the development of the legal background, law enforcement, operation and forest management practices at each of the four stages of forestry development.

The undeniable merit of the work is its extensive source base, which includes legislative acts, royal notes, bills, scientific and popular scientific works on forestry, pleas, petitions, complaints, court cases, documents of the Admiralty Board, documents relating to the work of the Senate and Legislative Commission, landowners' orders to the clerks of estates, instructions from the plant managers, documents from the chancellery of Admiral G.G. Kushelev, travel notes, diaries and letters.

The first chapter 'Forestry Technologies' introduces the reader to the causes and nature of the deficit of forest resources, with the specific nature of forestry supervision, and discloses the entire technological process of harvesting and primary processing of wood. In this chapter, the author reveals the prerequisites for 'enslaving' forest resources, referring to the analysis of the reasons that contributed to tightening control over forestry. In the first paragraph of this chapter, E.M. Lupanova notes that the problem of high-quality timber had sharply escalated at the time when the first Russian ships were built and remained as such for many decades (p. 65). In

this regard, the oak forests of the Volga region were recognized as the main strategic resource of the state, which constituted its main military potential in the first quarter of the 18th century (p. 66). The policy of Peter the Great with regards to the forest resources was aimed at achieving the practical goal of timber harvesting for shipbuilding, which resulted in toughening control over the use of wood for domestic purposes (p. 67). The second paragraph ‘Development of production and trade’ is devoted to the analysis of usage of forest resources in traditional industries: extraction of tar and salt production, which required the large expenditure for wood.

In the third paragraph, the author outlines the main characteristics of forest deficit. She notes that the problem with lack of forests in the 18th century was due to the lack of high-quality materials near the shipyards, enterprises or floatable rivers, which caused public concern about the exhaustibility of this resource. J. Radkau gives the same explanation of the concern for the depletion of forest resources in the States of Germany in the 19th century, which testifies to the similar perception of the problem related to the destruction of forests by European and Russian societies. In this context, E.M. Lupanova’s conclusion states that all four aspects of the forest deficit that are represented in modern foreign historiography were relevant for the 18th century-Russia. First, the deficit was felt by the population, especially in the North of the country; secondly, it was felt because of the ban on logging, which was part of the authoritarian policy of the state. Thirdly, the wood deficit was felt in the cities, which under the new conditions were forced to pay for it; fourthly, caring for the forest was a point of intersection between the interests of the state and the large expenditure of wood society, a means of management and a way to show concern for the country and its wealth (pp. 71–72).

The fourth paragraph tells about the people engaged in forestry: here the author gives a description of the formal duties of the officials engaged in supervision of forestry, timber stockpiling, scientific studies of forests, as well as of the actual situation regarding staffing of forest supervision. Moreover, E.M. Lupanova notes that the emergence of professional groups and persons responsible for the local forest health was one of the aspects of modernization. Characterizing the technological features of harvesting, processing and transportation of wood in the next four paragraphs, the author of the book concludes that in the 17th–18th centuries they did not change, the transition from cutting timber to sawing-up went very slowly, which required the government intervention (p. 111). In the long run, the development of technologies stimulated the volume growth in logging, which led to its deficit. In addition, Evgeniia Mikhailovna outlined the following adverse effects of logging upon the environment: clogging of small rivers and disappearance of fish in them, due to the molten alloy (p. 101); decay of harvested wood that was left outdoors, due to a shortage of sheds for storage (p. 103); inefficient use of timber and its loss in harvesting. Analyzing the consequences of technology transfer, in particular, borrowing the European

experience of cleaning of dead fallen wood, the author noted that they led to significant thinning of the forests, overall weakening and insecurity of trees standing apart from each other (p. 107). In general, in the first chapter, E.M. Lupanova explains the reasons why the forest gradually became a valuable resource under the control of the state through the study of uses and operational practices for the forest resources, the nature of their deficit and the problems of forestry supervision.

The second chapter of the monograph ‘The Formation of the State Monopoly on Forests’ reveals the essence of the process relating to the establishment of a special order of forest management, which was characterized by the state monopoly on forests and subordination of the procedures of using natural resources to the needs of the fleet and major state projects. Describing the French and the German experience of forest management, E.M. Lupanova concluded that in Russia, in the first quarter of the 18th century, both the administrative resource which the French forestry practices were based on and the scientific approach characteristic of the forestry in Germany were equally used for the preservation of forests (p. 127). The role of the administrative resource is disclosed by the author in two paragraphs on the legislation on forest management and the development of the forest management system. A study of law enforcement practice conducted by Evgeniia Mikhailovna showed that with the development of technology and the ‘enslavement’ of the natural resource, the forest lost its sacred significance, and the consumer sentiments and ideas of human conquest by nature came to the fore (p. 136). In addition, the legislation was declarative: the landlord forests were left without legal protection in the face of limited powers of the government to control the felling and the arbitrariness of the peasant communities (pp. 140–141). In addition to the legislative basis for dealing with the forest resources, another tool of total accounting and control, according to the author, was mapping and description of forests with their registration in cadastres (p. 147). Analyzing the consequences of the state’s policy on forests, E.M. Lupanova pointed out that there was a double monopoly in industry: a state monopoly on the forest and a monopoly on the production of salt, tar, resin, potash and so on (p. 147). Also, in this chapter, Evgeniia Mikhailovna essentially complements her conclusions from the first chapter on the awareness of the deficit of the forest resources by the population of the empire. She notes that the process of deforestation was most significant for peasants, who first witnessed changing landscapes and faced restrictions in the household consumption of wood (p. 148). Among the townspeople, the first deficit of the forest was felt by the Petersburgers, forced to buy wood for their own needs, as nearby forests were cut down during the construction of the city. In this chapter, the author turned to the development of social and scientific thought on the question of forest management in the Russian Empire, presenting the views of V.N. Tatishchev, F.S. Saltykov and I.T. Pososhkov on the rational use of forests. E.M. Lupanova, through the analysis of the legal system and law enforcement practices aimed at pro-

tecting the state forests from destruction, showed how positive it was for the state to put forestry under control. Restrictions on the use of forest resources imposed on citizens, state-owned factories and the legal insecurity of the landed forests lead the reader to a conclusion about the state's priority in the timber mining in the first quarter of the 18th century. At the same time, in the author's opinion, the tightening of control was accompanied by the modernization of the forestry in general: understanding of the value of the forest as a resource capable of yielding income and ensuring the strategic interests of the country had changed, the usage of forest resources had increased, the development of special legislation had begun, new technologies began to be introduced, and forestry was subjected to precise accounting and bureaucratization.

The third chapter 'The Formation of the Rights of Private Owners' tells about the contradictions of the state policy in the field of forest use. In this chapter, the author reveals the contradictions that the state encountered in the process of 'enslaving' the forest. The desire to put the forest resources under the tight control negatively affected the economic development of the state, which, in turn, led to the weakening of control and recognition of the rights of the citizens to acquire the 'forest wealth'. However, the relaxation of serfdom in the forest industries and attempts to grant the landlords with the right to own forests privately, according to E.M. Lupanova, did not solve the issue of who should have performed the paternalistic function – being responsible for the conditions of the forests and being interested in the rationalization of forestry (p. 219). In this chapter, the author appeals to the analysis of changes in the legislative base, noting that despite several decrees issued in 1726–27, 1736 and 1753, the right of the landowners to dispose of their forests as a matter of fact remained unchanged at the legislative level. At the same time, nevertheless, these decrees allowed the noblemen who owned the forests, to start working out their own measures to protect them (p. 217). Of special interest is the conclusion of E.M. Lupanova that the state, being the main consumer of forest resources, blamed their subjects of their devastation, prompting the latter to discuss the barbarous attitude to the nature on part of certain social or professional groups (pp. 191–192). Also, the author draws attention to the violations in the work of forest officials locally, calling these a more complex problem than the deficit of timber (p. 200). In the third chapter, Evgeniia Mikhailovna again turns to the problem of deficit of wood materials and fuel in the capitals and focused on the study of forests and experiments on forest management. In conclusion, the author summarizes that the abolition of the state monopoly and creation of the rights of private owners were delayed by the absolutist government, who were not ready to give up their supreme rights for the land, and the society where the notion of private ownership of the land had not been formed yet (p. 219). Consequently, the state monopoly on the forest formally abolished by Catherine the Great continued to exist in practice.

In the fourth chapter ‘Forestry in 1762–1797’, the author shows the development of the legislative base and the contradictions of law enforcement practices in the field of forest management and informs the reader of the coverage of the problems in forestry in printed publications. A distinctive feature of the period of 1762–97, according to E.M. Lupanova, was the increase in tendencies of private ownership for the forest with regular violation of private property rights and lack of effective ways to protect such rights. Evgeniia Mikhailovna underlines that the legislation in that period was developing in the direction of transferring responsibilities of forest supervision from the officials specializing in forest protection to other civil servants as well as toughening penalties for oversight of the state of forests. The observed increase in deforestation, according to the author, was associated with the development of trade and industry (pp. 235–236), as well as land-surveying and the division of property rights (p. 261). The latter was influenced by the increased profitability of shipbuilding using the state forests, as well as taxation of private individuals who sold timber (p. 223). In addition, the author again turned to the problem of the deficit of forest resources in St Petersburg, stressing the importance of this problem for the townspeople as consumers of the forest. The author drew attention to the growing public interest in the issue with the high prices of wood in the capital, presenting different points of view on this problem, as well as the governmental policy to solve the said problem. Forest mapping, as identified by E.M. Lupanova, seemed significant. The author noted that having understood the profitability and value of the forest, the state began to study it by sending special commissions to various provinces. At the same time, the data collected by these commissions was often seized by the government, and in the future, the access to this information was very limited. In the following decades, this desire of the authorities to monopolize the scientific knowledge of forests adversely affected the state of forestry in Russia.

Evgeniia Mikhailovna, agreeing with J. Radkau, notes that in its structure, the peasant economy could not lead to the ruin and destruction of forests, but, on the contrary, the peasants themselves were more interested in preserving these resources rather than anyone else (p. 265). Also, the researcher points out the emergence of ecological consciousness in the society by the end of the 18th century, which was orientated not only at solving the utilitarian problems but also meeting the aesthetic needs of the citizens (p. 270). The author reveals the last statement in the analysis of printed publications regarding the issues of forest management raised in these publications, as well as in the study of forestry in landlord estates. In this chapter, E.M. Lupanova shows that, despite the growing public interest in the problems of forestry development, who wished to be involved in regulating certain aspects of forest management, the state restricted access to the information revealing the condition of Russian forests.

The fifth chapter ‘Regulation of Forest Use by the Admiralty Department in 1798–1802’ covers the contradictions caused by the attempt to return the state monopoly to the forests during the process of creation of private ownership for the land. The author analyzes the development of legislation, which in those years was aimed at strengthening the prohibitive measures in the sphere of forest management, as well as law enforcement practices. In this chapter, E.M. Lupanova emphasizes that the return to prohibitive measures in the field of forest management that were taken under Peter the Great (strengthening of feudal orders in relation to the forests) could not have been made at the new stage of forestry modernization.

Thus, the book ‘The History of ‘Enslavement’ of a Natural Resource. Forestry in Russia in 1696–1802’ is the first modern complex study on the history of forest management during the period of foundation of the Russian Empire. The work makes a significant contribution to the Environment History in Russia, giving an idea not only about the specifics and the context of the development of forestry in the 18th century, but also helping specialists dealing with other epochs to understand the specifics of the state policy in the sphere of usage of forest resources. E.M. Lupanova’s study allows expanding the field of study relating to the history of legislation in forest protection, building intellectual ‘bridges’ to the history of the state and municipal government, to the history of social thought and so on. At the same time, it seems that the subject of further research may include issues insufficiently covered in this monograph, such as the environmental consequences and extent of deforestation in the 18th century, as well as practices of forest conservation and their effectiveness. The book will be useful for specialist historians, biologists, geographers, culture experts as well as non-specialist audiences.

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STUDENT ABOUT THE TEACHER

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The Russian North in the life and the creative geography of Alexander V. Kamkin

Abstract. The article gives a brief overview of the contribution of the famous Vologda historian, ethnologist and culture studies scholar Alexander Vasilyevich Kamkin (1950-2017) to the study of the history and culture of the Russian North. On the one hand, the North is viewed as a place, or rather a space, where the scientist spent his life and his work was taking place, and on the other hand, as the main object of his interests.

Key words: A. V. Kamkin, the Russian North, Vologda State University, peasantry, orthodoxy, rural parish, ‘sociocultural origins’, ethnography

Introduction

Any biography of a scientist is always, to a certain extent, geography; moreover, a scientist can spend his everyday life and carry out his scientific activities in the place that has nothing to do with the area of his research interests. Alexander Kamkin (1950–2017), Professor of Vologda State University, is in this sense, a pleasant exception. A historian, culturologist and ethnographer, he was always connected with the North, and he has devoted all his life to his studies.

Main part

Alexander Kamkin was born on the 14th February 1950 in Vologda. His father, Vasily Aleksandrovich, a railwayman, came from the village of Alekino, Sokolsky district of Vologda region (previously named as Totsky district of Vologda Governorate). As Alexander Vasilyevich admitted, his grandmother played the main role in

his education, and, as a result, his immersion in the village and the peasant culture harmonized with his initially urban origin. His character integrity, being early laid, as well as the natural curiosity that was common for his generation avid reading, possibly contributed to the development of the works of the historian.

After finishing school, Alexander entered the Department of History at the Faculty of History and Philology of Vologda State Pedagogical Institute. At the very beginning of his studies, he met the outstanding historian Pyotr Andreyevich Kolesnikov (1907–1996). As it later turned out, this meeting significantly determined the fate of the young man. He wrote his first scientific work devoted to the agreements regulating the recruitment of free men engaged as peasants, precisely under the guidance of Pyotr Andreyevich.

In terms of life geography, Pyotr Kolesnikov was a complete opposite of his student. A native of Kuban, he studied and taught in Saratov, and in 1960 moved from Ustyuzhna to Vologda. Apart from Vologda, both Kolesnikov and Kamkin, were unwittingly connected with Totma. In 1957, Kolesnikov wrote and defended his candidate's thesis on Totma's social and economic history in the 17th century.

In Vologda, in the 1960–70s, Kolesnikov's works began to form a scientific school on the agrarian history of the European North. After graduating from Vologda State Pedagogical Institute in 1971, Kamkin also devoted his life to the school, but to a different one. It was the school where he was teaching, secondary school No. 29 in Vologda. In 1977, Alexander Vasilyevich began to work part-time under the guidance of Kolesnikov at the Department of History of the USSR at the recently established Faculty of History at Vologda State Pedagogical Institute. Later, following the insistence of his mentor, he entered the graduate school of the Institute of History of the USSR. His scientific adviser was Ekaterina Iosifovna Indova (1916–95), a recognized expert on the history of the peasantry of the 18th–19th centuries and its social movements. Ekaterina Iosifovna had a very difficult personality and did not have many direct followers among the students. Whilst choosing the topic for her Vologda post-graduate student, she showed perseverance and insight. Partly due to her efforts, Kamkin chose a northern peasant of the 18th century as a 'hero' of his studies. Ekaterina Iosifovna gave this young Vologda teacher and her student a 'winning ticket' to the scientific world of both capitals.

Alexander Vasilyevich always thought with gratitude about his post-graduate years, and especially about the seminars and the discussions of dissertations on the Soviet history during the period of feudalism. These seminars and discussions gave the young researchers a possibility to communicate directly with the distinguished historians – “people from front pages” – and served as a real laboratory for the development of his ideas and as a school for their future scientific growth. Kamkin always paid sincere respect to his 'boss' (as he ironically called Ekaterina Iosifovna) and valued both her peculiar solicitude and elegantly sarcastic sense of humor.

In 1983, at the Leningrad branch of the Institute of History, Kamkin defended his thesis ‘Legal awareness and rulemaking of state peasants in the European North (second half of the 18th century)’. For its time, it was an innovative work with conclusions based on the author's interpretation of sources, both newly introduced into the scientific circulation and already widely known, based on peasants’ instructions to the Legislative Commission. The original, independent and creative character of peasant rulemaking, identified by Kamkin, found its way both in the impact on the elaboration of the state policy and its legislative design, and in common with the legal initiatives that were adopted in the northern volosts. Such initiatives were closely connected to the entire system of peasant settlements, the territorial administrative system and the relations with the authorities defined by the above. Thus, the rulemaking of northern peasants expressed the specific character of their life overall, and their special role in the Russian social universe during the period of Enlightened absolutism. According to Kamkin, such rulemaking was not just the way of objectifying the collective aspirations and interests, but rather peasant’s creativity, the expression of their nature, their special *northern* character and their worldview mostly based on the long-standing traditions of self-government¹.



For Alexander Vasilyevich, the 1980s were not only the peak of his teaching and administrative activities at the Faculty of History at Vologda State Pedagogical Institute, but also the period of intensive research of the archives. They covered not only Moscow (Russian State Archive of Ancient Acts) and Leningrad (Archives of Leningrad Institute of History, Central State Historical Archives), but also the provincial repositories – the state archives of Arkhangelsk and Vologda regions, as well as the archives of Karelia and Komi Republic. His research related to the European North, as he himself defined it², with all the main centers of historical science in the country. At the time, Kamkin became a regular participant of the major scientific conferences:

¹ Kamkin A.V. *Legal Awareness and Rulemaking of State Peasants of the European North (Second Half of the 18th century): Extended Abstract of Candidate’s Thesis*. Leningrad, 1983.

² Kamkin A.V. *Public Life of a Northern Village in the 18th century: Ways and Forms of Peasant Social Service: A Textbook for a Special Course*. Vologda, 1990, p. 3.

among them is the Symposium on the agrarian history of Eastern Europe. He was a member of the editorial board and one of the authors of the first volume of ‘The History of the Northern Peasantry’ (for these, he prepared, for example, a paragraph on peasant’s legal awareness and attitude towards the state)³.

For Kamkin, the North as an object of historical study was mostly a space of peasants’ living arrangements with their scenarios, arising and coming to life within traditional peasant communities, communes and volosts. He studied such communes and volosts similarly in terms of space or geography, and, which is more important, in terms of their nature. These administrative subdivisions formed in the North under the conditions of weakened state pressure and a special type of social relations, pushed A.V. Kamkin to the question about a northern Orthodox parish as the key element of the ‘triad’ of peasants’ self-government. The syncretic unity of the territorial, administrative and confessional principles in this self-government-related care about a parish church towards the system of community's functions and, accordingly, towards the liability of responsible persons and nomenclature of elected positions. Kamkin’s textbook, published in 1990 and devoted to the problems of public life in the northern villages, briefly describes the role of the church, peasants’ religiosity and the Orthodox faith itself in the internal consolidation of the world and its status-role division. Kamkin contributed to this, introducing into the circulation the documents of various church institutions – religious boards and ecclesiastical consistories of the eparchies of Arkhangelsk-Kholmogorsk, Vologda and Olonets, along with the materials of volosts’ local libraries/reading-rooms and management boards. Over time, this led to the conviction that “the re-creation of the history of peasantry is no longer possible because of underestimation or exclusion of the church”, that “a parish did not simply co-exist with the peasant world for centuries but rather merged with its destiny”⁴. Kamkin acted as a restorer of the pre-revolutionary historical and geographical tradition already mentioned in the works of M. M. Bogoslovsky and S. V. Yushkov.

Kamkin’s desire to combine history and geography was not accidental: the whole development of his scientific interests came from one single aspect – peasant studies. Therefore, he never moved from one topic to another, and there was no coincidence. On the contrary, each of his new ideas grew out of the previous ones, thus creating a common system. We might say that the different topics of his work rather enriched each other. Thus, all his previous research experiences prepared and led to his appeal to the history of the Northern Orthodoxy. Emerging towards the beginning of the

³ *The History of the Northern Peasantry*; In P. A. Kolesnikov (Ed.). Arkhangelsk, 1984. V. 1. Peasantry of the European North in the period of feudalism, pp. 339–347, etc.

⁴ *Kamkin A. V. Rural clergy and peasantry in the 18th century. Some problems of parish life in the European North of Russia. The European North: History and Modernity.* Petrozavodsk, 1990, p. 25.

1990s, his approach to the consideration of various forms of social existence of the northern peasantry was initially multidisciplinary. The strength of the documentary basis of the research, the methodological and methodological approaches and the methods of working with the archival materials, taken from the ‘real’ history, were combined with the ethnographic empiricism, orientation on vivid description with the effect of presence and with the analysis of specific phenomena of people's life and cultural generalizations.

In 1992, Kamkin published his main book – ‘Orthodox Church in the Russian North: Essays on history until 1917’. This easy-to-read but thoughtful book, which was not very long, marked another step in the development of not only regional but also national historiography of the Orthodoxy history. It was one of the first experiences of a monographic representation of the problems within the church life from the historical and cultural angle, and yet no other pieces of serious research on that topic have been done without any references to it. The book appealed to a wider audience, which predetermined its educational character, combined, however, with genuine scientific knowledge supported by the strong source base. The book is also very personal in everything, starting from the knowledge and understanding of the phenomena of the church life and ending with the actual religious experience. It regards the church from the point of secular science, as a living spiritual and social organism. Its existence, being part of the historical process, is subordinated to its own inner logic, which cannot be understood without references to the fullness of people's life and without considering the non-rational essence of the church itself, and its inevitable reciprocal influence on the spiritual landscape of the people⁵. This moral and methodological position determined the structure of the work, going from a parish as “the main spiritual and organizational unit” of the church to its other subsystems: monasteries, eparchies and, finally, the clergy, with “guarding, teaching and governing” pastors⁶.

In 1993, Alexander Vasilyevich took his doctorate at the Institute of Ethnology and Anthropology of the Russian Academy of Sciences. Kamkin noted that “the topic of a rural Orthodox parish is undeveloped” and considered that a parish should be viewed in parallel with a volost, as one of “organizing and regulating mechanisms of economic, social and spiritual life⁷”. In his thesis, he proposed a typology of northern parishes depending on their demographic characteristics and features of geographical organization and revealed the dynamics of changes in the richness of the network of parishes of the said region.

⁵ Kamkin A.V. *Orthodox Church in the Russian North: Essays on History until 1917*. Vologda, 1992, p. 6.

⁶ Ibid, p. 117.

⁷ Kamkin A.V. *Traditional Peasant Communities in the European North of Russia in the 18th century: Extended Abstract of Doctor's Thesis*. Moscow, 1983, pp. 3, 6, 12.

In the mid-1990s, Kamkin was awarded the title of professor. Having reached the formal peak in his scientific career, he decided to take quite an unexpected step that many people would not understand – he began his work on a series of textbooks for secondary schools under the general title ‘Origins’. In these textbooks, in simple terms, understandable for children, he intended to describe all the main definitions, images and ideas of the Russian folk culture, its subject and spiritual content. It was a very difficult task, which would be feasible only for someone who has the shared bloodline with this culture and lives immersed into it; a task that requires work and talent, which is completely different from what is necessary and common for an academic scientist. Undoubtedly, Kamkin fully achieved this task. Over two decades, ‘Origins’ has become an integrated educational program for primary and middle school (grades 2 to 9) with its own methodological tools, followed by a vast and cohesive community of history teachers from 62 Russian regions, where they teach this course today.

It goes without saying that Kamkin's return to school pedagogy overshadowed his scientific activities, but in no case interrupted them. Moreover, for Alexander Vasilyevich, teaching and ‘enlightenment’ were inseparable from his scientific research. The expert and tremendous methodological work to improve and popularize the course dramatically changed Kamkin’s life. At that moment, he could pick up to Sakhalin or Khabarovsk, only a few days after a performance in Kaliningrad.

It was in the middle and in the second half of the 1990s that Alexander Vasilyevich began his work with graduate students. Under his supervision, they mostly studied the individual issues of ethnography of the church life in the North in the pre-revolutionary and Soviet times. He based his work on the postgraduate studies with the deepest confidence in them and with understanding of their emerging scientific individuality. Kamkin always knew when and to what extent he could get involved in the work of an emerging researcher to direct it in the best possible way. He gave his students freedom of initiative, and therefore the opportunity to make their own mistakes; in return, he demanded only one thing, responsibility in everything, and he did it so delicately that it was impossible not to fulfill this promise. On part of his students, he expected not a stereotyped but creative, genuinely independent view of a topic, and his most important task was to bring a young author to his own discoveries, however small they might be. His reasonable self-withdrawal from the detailed process of thesis writing hid much more concern and respect for his students than the most meticulous and imposed everyday help.

It is natural that the formation of his own scientific school brought Alexander Vasilyevich back to the topic of Vologda. In a series of historical and regional almanacs ‘The ancient cities of Vologda region’, he acted as an editor-in-chief of the issues devoted to Totma, which was so close to him, and prepared several voluminous documentary publications for the topics about Vologda. Within the framework of the in-

ternational scientific project initiated by T. Shanin and V.P. Danilov, Kamkin wrote a detailed article in the format of a chronicle about his father's village Alekino⁸. He combined his homeland studies with the participation in the editorial board of 'The Encyclopedia of Vologda' and of the book of essays under the title 'Vologda in the past millennium', where he wrote chapters on history and topography of the city in the 17th–19th centuries⁹.

Kamkin made considerable efforts to commemorate his teacher P. A. Kolesnikov. He prepared for printing the last book of Pyotr Andreevich – 'Journey to Genealogy' (1997), repeatedly spoke with reviews of his life and work, participated in the organization of conferences dedicated to his teacher¹⁰. This, obviously, contained something more than mere gratitude, duty or even love of a student to his mentor. Alexander Vasilyevich, considering himself a 'graduate' of the scientific school of Vologda created by Kolesnikov, was keenly aware of the need to preserve and pass the tradition that he had laid down, and probably saw this tradition as part of the historical and cultural heritage of the North. Even the short stories about Kolesnikov that sometimes appeared in conversations with his own students (especially those who did not get a chance to see Pyotr Andreevich and to learn from him) were important for Alexander Vasilyevich in terms of passing on this special and personal tradition.

We can feel the same need for promoting continuity in Kamkin's scientific and organizational activities. He became a co-chairman of the revived Vologda Society for the Study of the Northern Territory (Northern Krai) and the chairman of the Northern Department of the Archaeographic Commission. He actively participated in the foundation of the Vologda department of the Russian society of historians and

⁸ Artemova O. V., Beznin M.A., Kamkin A. V., Sablin V. A. Historical sketch on the villages of Alekino, Leont'evschchina, Utkino. *Vologda: Local History Almanac*; In M.A. Beznin (ed.). *Vologda*, Issue 2, 1997, pp. 274–391 (see pp. 274–315 about the village of Alekino).

⁹ *Totma*. *Local History Almanac*; In A.V. Kamkin (ed.) *Vologda*, 1995. Issue 1; *Totma*. *Local History almanac*; In A.V. Kamkin (ed.) *Vologda*, 1997. Issue 2; *Totma*. *Local History Almanac*; In A.V. Kamkin (ed.) *Vologda*, 2001. Issue 3; Kamkin A. V. *Vologda in the 1780s in the memoirs of contemporaries* (A.A. Zasetky. Historical and topographic news, economy notes to the ordnance survey). *Vologda. Local History Almanac*. Vologda, 1994, Issue 1, pp. 279–301. Kamkin A.V., Spasenkova I.V. Reports of Vologda deans (materials on the church history of Vologda [1906–1907]). *Vologda. Local History Almanac*, Issue 1, pp. 440–453. *The Encyclopedia of Vologda*; In G.V. Sudakov (Ed.). *Vologda*, 2006; *Vologda in the Past Millennium. Essays on the History of the City*; In Yu.K. Nekrasov (Ed.). *Vologda*, 2004; *Vologda*, 2006.

¹⁰ See: Kamkin A.V. Pyotr Andreevich Kolesnikov – the historian of Ustyuzhna. *Ustyuzhna. Local History Almanac*. Vologda, 1995, Issue. III, pp. 411–420; Kamkin A.V., Tikhomirov S.A. Pyotr Andreevich Kolesnikov (1907–1996). *Archaeographic Yearbook of 1996*. Moscow, 1998, pp. 401–404; Kamkin A.V. In memory of Pyotr Andreevich Kolesnikov. *Materials of scientific readings in memory of Pyotr Andreevich Kolesnikov*. Vologda, 2000, pp. 3–9; Kamkin A.V. On the author and his book. *Kolesnikov P.A. Journey to Genealogy*. Vologda, 1997, pp. 5–6.

archivists, which acted as an umbrella authority in the organization of the scientific and practical conference ‘Historical local studies and archives’. The conference was taking place in Vologda for nearly two decades (1994–2012) and played an important role in coordinating the efforts of historians, archivists and local researchers, who studied not only the Vologda region, but also the whole of the European North.

The geography of Kamkin’s communication is another special aspect of his creative activity. For many years, Alexander Vasilyevich maintained contact and collaborated with Moscow historians (V.I. Buganov and A.V. Buganov, I.V. Vlasova, M.M. Gromyko, O.V. Kirichenko, A.I. Komissarenko, V.A. Tishkov, K.V. Tsekhanskaya, S.O. Shmidt, etc.), with scientists of Arkhangelsk (V.I. Goldin, A.A. Kuratov, N.M. Terebikhin, S.O. Shalyapin, etc.), of Petrozavodsk (A.M. Pashkov, M.V. Pul’kin), of Syktyvkar (I.L. Zherebtsov, M.A. Matsuk) and of Yekaterinburg (M.V. Khaidurov, etc.). By the end of the 1990s, Kamkin’s works acquired international fame. For several years, he took part in the Slavic Studies Graduate Colloquium at Sorbonne and worked as a guest lecturer at the University of Innsbruck (Austria). In 1998, the German translation of his monograph on the Orthodox Church in the Russian North was published¹¹.

In 2001, Kamkin organized the Department of Theory, History of Culture and Ethnology as part of the Faculty of Foreign Languages and Cultures at Vologda State Pedagogical University. He built a small but highly professional team of specialists. Today, such professionals as M.S. Cherkasova, Doctor of Historical Sciences, R.L. Krasilnikov, Doctor of Philology, I.V. Pugach and I.V. Spasenkova, Candidates of Historical Sciences, as well as L.A. Yakushev, Candidate of Cultural Sciences, work at the department. The intensive scientific work takes place in parallel with the preparation of students in the focus area of Culturology. Thus, Professor M.S. Cherkasova regularly publishes a commentary edition of sources on the history of Vologda region during the Middle Ages; R.L. Krasilnikov conducts research in the field of literary studies in thanatology; L.A. Yakusheva studies theatrical texts of Vologda for many years.

A.V. Kamkin also played an important role in the revival of historical education in Cherepovets. It is not only that his former students still account for half of the teaching staff of the Department of History (since 2013 – the Department of History and Philosophy) of Cherepovets State University. For many years, Alexander Vasilyevich was the chairman of the state examination and certification commissions for the courses and program studies related to History, helped on the methodological and organizational matters to open a post-graduate program for students studying the his-

¹¹ Kamkin Alexandr W. *‘Was für ein tiefer Glaube’: Zur Geschichte der Russischen Orthodoxen Kirche in Russlands Norden*; Alexandr W. Kamkin. Aussaat Verlag, (1998).

tory of Russia, and in every way contributed to the scientific work of his Cherepovets colleagues.

In the 2000s and the early 2010s, Kamkin's studies of the Russian North came to a qualitatively new level in conceptual and methodological terms. They were devoted to the issues of cultural succession: the changing semiotics of the cultural landscapes of the North, the formation in this region of a network related to places of memory, stable zones and hotbeds of cultural activity, where settlement, administrative arrangement and economic development of the territory and its sacred significance accompanied each other. Such a threefold topography of a place (with natural, administrative/settling and religious aspects) as a network of loci of different orders corresponds to the "universal triad of the world of the Russian North" (volost-commune-parish) and is objectified in the whole system of various images and symbols. Among these symbols are peasant residences, a village, a parish church, a fountain, a spring, a chapel, a road, a monastery, a city, a patrimony, etc. The Soviet and post-Soviet periods brought a new logic of the cultural development of the region, where meanings, symbols and landscapes came to the forefront, that were introduced into the northern environment and that were, on the one hand, associated with forced urbanization, and on the other hand, with aggressive borrowings from the post-Perestroika period.

The program of integrated study of regional cultural transformations since the earliest times until early 21st century was briefly presented to the participants of the master class 'The Russian North: The history of the image' that took place in Vologda in February 2001. It became part of the visiting school ('Winter Academy') of the Institute of European Cultures at Russian State University for the Humanities¹². A. V. Kamkin later devoted a whole series of works to this problem. The most significant one was a collective monograph written by Alexander Vasilyevich's students under his guidance. In this work, the existence of the Orthodox tradition is seen from different angles and perspectives, in terms of Kamkin's integrative approach¹³.

Conclusion

Over the last eight years, Kamkin was seriously ill, but despite that, he continued his work: running the Department at the University, working with young researchers, writing, giving speeches and travelling. His love of life, the subtle sense of humor and wise self-irony always supported everyone who was fortunate to know him, to work with him and to learn something from him. He belonged, probably, to the rarest variety of teachers – those, who by being close to you, make you grow, using casual

¹² See: Kamkin A.V. *Theory of perception: from the verbal to the visual (Materials of the master class)*. Institute of European Cultures. Available at: <http://www.iek.edu.ru/academ/aakamk.htm> (date of access 16.01.2018).

¹³ *Orthodox traditions in the Russian European North in the 18th – 20th centuries*; In A.V. Kamkin (ed.). Vologda, 2007.

jokes, sharp remarks or merely taking looks; who set the mental and moral bars high, so that you want to comply with these standards. An outstanding scientist, he was so simple and modest in communication that it usually took time for his partner to understand the scope of his personality. He was the author of about 250 scientific papers, supervisor of 12 post-graduate theses, but he was never after any ratings, titles or awards. He was certainly a devotee of science and, despite that, was very down to earth.

Alexander Vasilyevich passed away on the 10th December 2017. It is still ahead of us to appreciate his personality, his path in science and his legacy, as an independent historiographical phenomenon. However, one thing is already clear. His contribution to the general framework of study of the history and culture of the Russian North should not be interrupted.

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GUIDE FOR AUTHORS

MANUSCRIPT STRUCTURE AND STYLE REQUIREMENTS

1. General requirements to the contents of articles

1.1 Articles presenting results of original scientific research are accepted for publication in the journal, as well as reviews, scientific reports and bibliographical reviews on the latest Russian and international studies in history and political science.

1.2 The journal publishes only original research papers not previously published elsewhere and not containing any incorrect or excessive citation.

1.3 Submitted articles should correspond to the subject matter of the journal in the following key areas:

- History
- Political Science

1.4 Submitted materials should be characterized by academic novelty and integrity. This presupposes that an article contains a historiographical overview.

- Per international standards of publication, a reference list should include no less than 20 sources, where international editions amount to one third of the total number of publications.

- Most of the references should be from Scopus, Web of Science, with DOI and URL.

- Excessive self-citation should be avoided (references to the author's works should not exceed 10 % of overall number of references).

1.5 Manuscripts, which do not correspond to the subject matter of the journal or do not meet the style requirements, will not be considered for publication.

2. General style requirements

2.1 Manuscripts should be in the format of .doc (Word 1997-2002) or .docx.

2.2 The recommended volume of an article is one publication base sheet (40 000 characters with spaces).

2.3 Page parameters: 210 x 297 mm (A4 format), portrait orientation. Page margin: all 20 mm. Normal font, TimesNewRoman. Font size: 12 point in the main text, 10 point in footnotes. Line spacing: one and a half. The text should be without automatic hyphenation at the end of the line. The title of the article: bold font, center aligned. Page numeration: right bottom.

2.4 The text of the manuscript should be in a single file. Provisionally, the manuscript is divided into two parts: the first one contains UDC, information about the author, an abstract, key words, the text of the article and a list of references; the second one should be entirely in English and includes information about the author, an abstract (not mandatory), key words (not mandatory), a list of references.

3. Composition and presentation rules for the section in the Russian language

3.1. Information about the author of the article: last name, first name and patronymic (if applicable) of the author in full, degree/s (if any), title (if any), position, affiliation (name of the organization, place of work/study (in full), city, country, author's contact details: telephone number and email address.

3.2. UDC and the title of the article.

3.3. An abstract of **400-600 characters**, which must be informative and informative (it should briefly reflect the content of the article as close as possible, as well as its structure and conclusions).

3.4. Key words (8–10).

3.5. The text of the article. The article should have the following structural elements:

- a) Introduction;
- b) Main text;
- c) Conclusion.

3.6. List of references.

4. Rules on graphic presentation data

4.1. Drawings, tables, diagrams, charts, etc. are to be numbered, the sources are to be provided and printed within the margins of the page.

4.2. All highlights in the text of the article must be only in italics (not in bold or underlined).

4.3. Depending on the complexity of graphic materials, the Editorial Board retains the right to remove them from the text.

5. References in the text and in footnotes

All footnotes are given per page in 10-point size. (*Author*. Title. Place of publication (without publisher's name), year of publication. Pages) at the bottom of each page.

When referring to an electronic resource, a full and accurate link to the Internet resource and the date of retrieval are to be added at the end of the footnote.

In case the source is an archive document, the name of an archive in full without abbreviation is to be given first followed by an abbreviation in brackets. Fund. Series. Record. Sheet. When referring to documents from the same archive, only abbreviation is used for its name.

Examples:

Glebov S. Evraziistvo mezhdru imperiei i modernom. Istoriia v dokumentakh [Eurasianism between Empire and Art Nouveau]. M., 2009. P. 27.

Starostina T. Posleblokadnyi tranzit. Dnevnik [Transit after the blockade. Diary] // Sever. 2005. No. 5–6. Pp. 127–133.

Lazarev G. Frantsuzy ukhodiut iz Mali [The French leave Mali] // *Gazeta.ru*. 06.02.2013. URL: http://www.gazeta.ru/politics/2013/02/06_a_4954773.shtml (retrieved: 22.02.2014).

The State Archive of Vologda region (SAVR). F. 366. S. 1. R. 1188. L.3. (when referred for the first time)

SAVR. F. 3105. S. 1. R. 3. L. 1 verso. (when referred for the second time)

Vysochaishe utverzhdennoe Polozhenie o gubernskikh i uezdnykh zemskikh uchrezhdeniiakh ot 1 ianvaria 1864 g. [Statute on governorate and district institutions approved by the Imperial, dated 1 January 1864] // *PSZ*. S. 2. Dep. 1 V. XXXIX. St.-P., 1867. N 40457. Pp. 18–20.

Stocking M.K. (ed.) *The Journals of Claire Clairmont. 1814–1827.* Cambridge, 1968. P. 325.

Boisbouvier Ch. Mali : le retour de la Françafrique? // *RFI.fr*. 23.07.2013. URL: <http://www.rfi.fr/afrique/20130722-mali-presidentielle-francafrique-hollande-fabius-traore-tiebile-drame> (retrieved: 26.02.2014).

6. Rules for arranging the list of references

6.1. The list is to be numbered in alphabetical order.

6.2. The list is to include only scientific works.

6.3. **All references to sources should be given as footnotes and not included in the list of references at the end.**

6.4. **Monographs** should be presented as follows:

- *Last name, first name and patronymic (if applicable) of the author/s;*
- Title of the book;
- Information about the book in the following order: place of publication, publishing house, year of publication. Pages.

Examples:

Potemkina M.N. Evakuatsiia v gody Velikoi Otechestvennoi voiny: liudi i sud'by [Evacuation in the years of the Great Patriotic War]. Magnitogorsk: MaGU, 2002. 264 p.

Cross A.G. 'By the banks of the Neva': chapters from the lives and careers of the British in 18th – century Russia. Cambridge: Cambridge University Press, 1997. 474 p.

6.5. **Dissertations and published summaries of dissertations:**

Arslanova Ch.R. Evakuirovannoe i deportirovannoe v Bashkirskuiu ASSR naseleenie v gody Velikoi Otechestvennoi voiny (1941–1945) [Population evacuated and deported to Bashkirskaya ASSR in the years of the Great Patriotic War]: published summary of dissertation. Ufa, 2006. 25 p.

Iskhakova G.R. Sotsial'naia politika Sovetskogo gosudarstva v gody Velikoi Otechestvennoi voiny (na materialakh Bashkortostana) [Social policy of the Soviet State in the years of the Great Patriotic War]: PhD dissertation. Ufa, 2002. 147 p.

6.6. **Articles in journals / collections of articles** are to be presented as follows:

- Last name, first name and patronymic (if applicable) of the author/s;
- Title of the article // Title of the collection of articles/journal;
- Publisher's imprint in the following order: Year of publication. Number. Pages. DOI index (if available)

Examples:

Kumanev G.A. Voina i evakuatsiia v SSSR. 1941–1942 gody [The war and evacuation in the USSR in 1941-1942] // *Novaia i noveishaia istoriia*. 2006. No. 6. Pp. 7–27.

Solodyankina O.Y. European widows as governesses in the 18th – and 19th-century Russia // *Women's History Magazine*. 2010. Issue. 63. Pp. 19–26.

6.7. **References to electronic resources** are to be provided in a similar manner, as in the previous sections, but at the very end of the reference the exact link to the internet resource and the retrieval date are to be added.

Example:

Stansfield G. Iraqi Kurdistan: political development and emergent democracy. Taylor & Francis e-library, 2003. URL: https://www.academia.edu/3271178/Iraqi_Kurdistan_Political_development_and_emergent_democracy (retrieved: 04.10. 2014).

6.8. When reference is made to an electronic publication (articles or monographs), the full name of the site is to be provided.

7. Composition and presentation rules for the section in the English language

7.1. Information about the author of the article:

- Last name, first name and patronymic (if applicable) in full, transliteration (for automatic transliteration we recommend using the site <http://translit.net/>; **it is essential to select LC standard** in the main menu of the site, in the 'Options...' section), degree (if applicable), title (if applicable), position, author's email address;
- Affiliation (name of the organization, place of work/study in full (full official name of the organization in English, post code, country, city, street (in transliteration), building).

7.2. The title of the article – English translation.

7.3. Not mandatory: Abstract in English, **between 400-600 characters in volume** (must be written using commonly used terms and expressions in the field, must constitute an independent text, be informative and rich in contents, as far as possible reflecting the contents, structure and conclusions of the article).

7.4. Not mandatory: key words in English (8–10 words or word combinations).

7.5. References.

8. Presentation rules for 'References' section

8.1. The structure of references to publications is to be totally identical to the list of references in Russian.

8.2. In the 'References' section, as in the list of used literature, only scientific articles and monographs are to be included.

8.3. All references to sources are to be given as footnotes.

8.4. **Monographs** are to be presented as follows:

- Last name, first name, patronymic (if applicable) – transliteration (for Russian authors), **LC standard**;

- *Title of the book in italics* – transliteration, **LC standard**, if the book is published in Cyrillic characters, followed by the English translation of the title in square brackets;

- Year of publication;

- Information about the publication as follows: location of publishing house, name of the publishing house;

- Pages,

- if the book is in Russian, add (In Russian) at the end.

Examples:

Ter-Minasova S.G. *Rossiia i Zapad: dialog kul'tur* [Russia and West countries: dialogue of cultures]. Moscow: Tsentr po izucheniiu vzaimodeistviia kul'tur, 2000. 320 p. (In Russian)

Bevir M., Rhodes R.A.W. *Interpreting British governance*. London: Routledge, 2003. 150 p.

8.5. Articles **in journals** are to be presented as follows:

- Last name, first name, patronymic (if applicable) of the author/s – transliteration (for Russian authors) **LC standard**;

- Title of the article – transliteration, **LC standard**, if the article is written in Cyrillic characters, followed by the English translation of the title, in square brackets;

- Information about the publication as follows: *Name of the journal (in italics)* – transliteration, **LC standard**, year of publication, number, pages, DOI index (if available);

- if the article is in Russian, add '(In Russian)' at the end.

Examples:

Dunin A. *Guvernery v starinu v pomeschchich'ikh sem'iakh* [Tutors in landowner families in old times]. *Istoricheskii vestnik* [Historical Herald], 1909, vol. 117, July, pp. 185–194. (In Russian)

Cross A.G. An Anglo-Russian Medley: Semen Vorontsov's other son, Charles Cameron's daughter, Grand Duke Alexander Pavlovich's English playmate and not forgetting his English nurse. *The Slavonic and East European Review*, 1992, vol. 70, no. 44, pp. 708–721.

Cross A. English – A Serious Challenge to French in the Reign of Alexander I? The Russian Review, 2015, vol. 7, no. 1, pp. 57–68. DOI: 10.1111/russ.10756

8.6. Articles **in collection of articles** are to be presented as follows:

- Last name, first name, patronymic (if applicable) – transliteration (for authors whose name is in Cyrillic characters), **LC standard**;
- Title of the article – transliteration, **LC standard**, if the article is written in Cyrillic characters, followed by the English translation of the title, in square brackets;
- Information about the publication of the collection of articles as follows: In last name, first name, patronymic (if applicable) of the editor – transliteration, **LC standard, (ed.)**. *Name of the collection of articles (in italics)* – transliteration, **LC standard**, followed by the English translation of the title (if written in Cyrillic characters), in square brackets; place of publishing: the name of the publishing house in transliteration, year of publication; pages, DOI index (if available);
- if the article is in Russian, add (In Russian) at the end.

Examples:

Chudinov A.V. Frantsuzskie gubernery v Rossii kontsa XVIII v.: stereotipy i real'nost [The French tutors in Russia at the end of the 18th century: stereotypes and reality]. Karp S.Ia., Mezin S.A. (eds.) *Evropeiskoe prosveshchenie i tsvilizatsiia Rossii* [European Enlightenment and civilization of Russia]. Moscow: Nauka, 2004, pp. 330–334. (In Russian)

Solodyankina O.Yu. Personal transfer of the message and undesirable acquaintance to the addressee: reputation of the governess. Stogova A.V. (ed.) *Incidents and Failures in European epistolary culture*. Moscow: IVI RAN, 2016, pp. 125–154.

8.7. **Links to electronic resources** are to be provided similar to the previous sections, but at the very end of the entry the exact link to the internet resource and the retrieval date is to be added.

Examples:

Dabla-Norris E., Minoiu C., Zanna L.-F. 2010. *Business cycle fluctuations, large shocks, and development aid new evidence* [Washington D.C.], International Monetary Fund. Available at: <http://site.ebrari.com/id/10437418> (accessed: 20.06.2014).

Frot E. 2009 *Aid and the financial crisis: Shall we expect development aid to fall?* Stockholm Institute of Transition Economics, Stockholm School of Economics. Available at: http://papers.ssrn.com/so13/papers.cfm?abstract_id=1402788 (accessed: 28.05.2013).

