

ROMANOVSKY V.I., ZHILINSKY V.V., BESSONOVA Yu.N. The comparative analysis of corrosion stability carbonaceous stalya to the elektrohimicheskim disinfecting solutions by method

The comparative analysis of corrosion activity of chlorine-containing disinfecting solutions, such as sodium hypochlorite, hypochlorite of calcium and chloric lime, and also saturated solution of ozone in water to carbonaceous stalyam of brand steel 20 and St3 is presented in article. For definition of group of firmness of metal in relation to solution of different concentration the deep and weight indicator of corrosion has been calculated. The physical and chemical processes happening on a metal surface in the processed environments are described.

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BASIC PRINCIPLES AND FACTORS OF LOCATION OF MILITARY GARRISONS IN TOWNS OF VOLYN IN THE SECOND HALF OF THE 19TH CENTURY

Introduction. Long period in history of Volyn region is associated with its entry to the Russian Empire. After three divisions of Poland on the territory of the Right-Bank Ukraine it was extended an administrative system in accordance with Russian model [1].

Firstly, by the order of Catherine II on April 23, 1793 it was created the Iziaslav Viceroyalty centered in Izyaslav. The territory of liquidated Volyn and northern part of Kyiv provinces entered to it. Later Viceroyalty was renamed as Volyn centered in Novograd-Volynsky, but there was a lack of necessary institutions for governors. In 1797 the Viceroyalty was abolished and by the decree of Paul I on August 29, 1797 it was created the Volyn governorate. In 1804 Zhytomyr was appointed as governorate center, because "it was fitted by all provincial institutions, private houses and outbuildings for provincial officials" [2].

Administrative and territorial changes in governorate went further on. They became relatively constant only with the formation of the South-West territory in 1832. At this time Volyn governorate included 12 counties: Zhytomyrskiy, Ovruchskiy, Novograd-Volynskiy, Starokonstantynovskiy, Rivnenskiy, Volodymyr-Volynskiy, Iziaslavskiy, Ostrozkiy, Dubenskiy, Kremenetskiy, Lutskiy and Kovel'skiy [3, p. 231–235]. It existed until 1925.

Volyn governorate occupied a special place among the other provinces of the South-West territory, placed along the state border of the Russian Empire, which ran through the Zbruch river and further to the northwest. It differed from other governorates by its size, population, ethnic composition. In Volyn lived representatives of numerous nations and nationalities. The most numerous indigenous people among them were Ukrainians, also Jews, Russians, Poles, Germans and Czechs [4].

Main part. A borderline situation and political conditions imposed certain features on life of the region, primarily reflected in the location of border agencies and sufficiently large contingent of armed forces, comprised of famous military units – the Ril'skiy, Selehinskiy, Kamchatskiy and other regiments. Their presence has left some tracks on the face of Zhytomyr, Ostrog, Lutsk, Rivne, Kremenets and other cities [5] (fig. 1).

In 1820-30 years in the Volyn governorate there were placed a variety of forces: 3rd infantry corps, 5th infantry corps, troops of the army, which included infantry regiments and an artillery battery. In such a deployment of forces, cities of Zhytomyr and Dubno always were appointed under the divisional apartments, and military hospitals were concentrated in Zhytomyr and Lutsk.

Among the most countable parts of governorate by the number of apartments there were such frontier counties: Kremenetskiy, Dubenskiy, Volodymyrskiy and their county towns. Because of poor population and its low number, the smallest troops quartered in Lutskiy and Ovruchskiy counties.

To reduce the constant uploading of population by the quartering of troops, increasing its concentration in strategic areas, strengthening the borders with neighboring Austro-Hungarian Empire, it was decided to build a separate garrison settlements in each county. By the end of the 19th century in every county town of Volyn governorate there were placed military garrisons. The total number of which stood for 11 units. The only exception was Ovruch town because of its relatively low population and the location in the county of landmark institutions and prisons. In addition to the abovementioned its natural conditions (the swampy area of the county) influenced greatly either. The presence of both the factors and institutions also determined the type of army – the only armed force was the infantry edge.

According to the "Military Statistical Review of the Russian Empire" it was prepared an alphabetical list of places suitable for placing various headquarters and squadron households across Volyn governorate [6].

In total there were 170 settlements with military dislocations that today are the part of Volyn, Rivne, Zhytomyr, Khmelnytsky and Ternopil regions, and are also a little part of Belarus. The main types of forces were infantry, cavalry and artillery (fig. 2).



Figure 1 – Volyn location as part of the Russian Empire in the 2nd half of the XIXth century

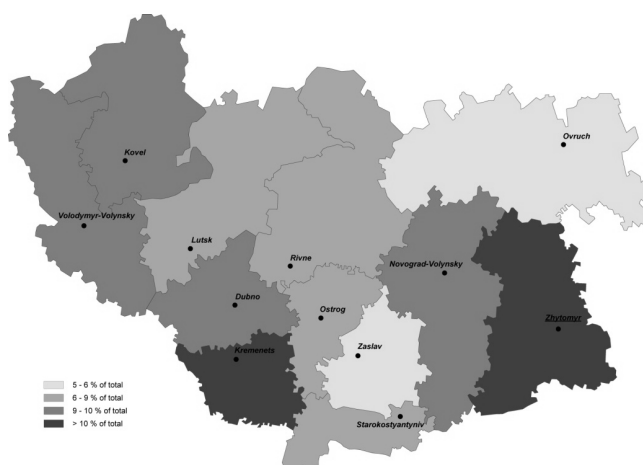


Figure 2 – Percentage number of militaries in districts of Volyn province

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Figure 3 – Settlements of Volyn region with militaries

Table 1 – Quantitative indicators of military dislocations in settlements of Volyn

№	County	Infantry	Artillery	Cavalry	Total	Percentage, %
1.	Volodymyr-Volynskiy	11	1	4	16	9,4
2.	Dubenskiy	12	1	3	16	9,4
3.	Zhytomyrskiy	17	2	4	23	13,5
4.	Zaslavskiy	6	1	3	10	5,9
5.	Kremenetskiy	8	2	7	17	10
6.	Kovelskiy	12	1	3	16	9,4
7.	Lutskiy	7	1	3	11	6,5
8.	Novograd-Volynskiy	6	4	6	16	9,4
9.	Ovruckiy	10	-	-	10	5,9
10.	Ostrozkiy	8	2	3	13	7,6
11.	Rivnenskiy	4	3	4	11	6,5
12.	Syarokostyantynivskiy	5	3	3	11	6,5
Total:		106	43	21	170	100

Regarding to the quantitative characteristics, the most military housed was Zhytomyr county – 23 towns, the smallest – Zaslav and Ovruch. The reasons are primarily administrative and territorial characteristics: Zhytomyr was a governorate town, and therefore strengthening the military contingent was the logical step of the Staff. As for the smallest quantitative indicators, these counties were the smallest in its area and its population (fig. 3).

If to consider the territorial location of military settlements, they are placed mostly in southern part of the governorate, particularly near the border with neighboring Podolia and Austro-Hungarian Empire. The main factors that guided the General Staff of the Russian Imperial Army, forming a military deployment were also natural regions and transport features:

1. The availability of old fortifications with stone or wooden buildings, hospitals, stables, playpens and others.
2. At the confluence of rivers with the mills, ferry, stone bridges.
3. On rivers.
4. On the important posts of border guards, customs and so on.

5. On the railway tracks and crossings.
6. On pedestrian roads.

All settlements with located forces, where combined with each other by roads, and none of them was cut off from the system of fast communication during an attack or from any other necessary notification of neighboring locality.

Additional factors taken into account in the deployment of troops were Polissya swamps. In the north part of the governorate there is the smallest number of fortifications, and in the most of wetlands they are absent.

All the buildings of military garrisons in the Volyn governorate dated the last decades of the 19th century. The exact date is difficult to determine, because the documents which would identify them had not survived. The order of appearance can be seen on maps and plans of county towns. In the second half of the 19th century such cities as Rivne, Lutsk, Ostrog, Dubno, Volodymyr-Volynsky were roughly equal in value to the province, differing only in population, industrial development and remoteness from the provincial capital. The placing of military objects on their territories was standard in all the cases. Garrison settlement set aside on the outskirts of cities where there was mostly a residential area, away from the local fairs and other public buildings. This was due to the scale of constructions, because a lot of buildings included large dimensions for housing and for education, training and others. One also needed a room for servicing of this construction type (one should note the warehouses, assistance buildings, parade-ground, etc.).

Another factor that affected the deployment of military garrisons was the highway. By that time the railroad was the main kind of transport both in the Russian Empire and in Europe. That's why the preference was given to the areas close to the railway junctions, as could be seen in Rivne and Dubno. It should be noted that new transport routes had been actively laid in the second half of the 19th century for interconnection of major cities. In Rivne it was Kyiv-Brest highway that passed through the center of the city near the garrison, in Ostrog it was central street that connected it with Rivne, in Volodymyr-Volynsky – with Kovel, and in Dubno – with Kremenets.

The military garrison settlement consisted of a complex of housing and ancillary buildings, with the main square and its internal infrastructure. It should be noted that the military residential buildings were divided into two types:

officers' houses (BOS) and soldiers' barracks. They were located around the main square (parade-ground). They were often placed as letter "П" to open the access from the square to the main road (Ostrog, Dubno). It was quite more rarely when the square (parade-ground) was centered in the heart of the town and it was built on all its sides (Rivne). Officers' houses usually were detached from the main complex, sometimes they were built quite separately. They were located along the road, had separate entry and a small yard area.

Another attribute of the garrison was a Garrison Church. In 1900 the project of typical military church by Fedir Verzhbysky was approved for the whole empire. In bordering Volyn governorate there were built seven churches according to this project. Among them there were the county centers of Volodymyr-Volynsky, Zhytomyr, Kremenets (Bilokrynitsya), Ostrog, Starokonstantyniv and in Volochisk and Trostyanets [7].

Conclusions. Today, due to the considerable pace of urban development of the territories, military garrisons have lost their original meaning and location. They are lost among buildings of later periods, but the structure of their location is traced quite clearly now, that can become a good example of town planning and military architecture for study and preservation.

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SERGIYUK I.M. Basic principles and factors of location of military garrisons in towns of volyn in the second half of the 19th century

The special bordering position of Volyn and internal political circumstances in the Russian Empire in the second half of the nineteenth century led to the location of a large number of militaries. The main factors were the presence of fortifications location, the confluence with the ferries, mills, border guard posts, railway junctions, etc. Military garrison settlement consisted of a complex of housing buildings and auxiliary facilities, a parade ground, and internal infrastructure.

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КОЛИЧЕСТВЕННЫЕ ИЗМЕНЕНИЯ НОРМЫ РЕЧНОГО СТОКА РЕКИ ПСЕЛ ПОД ВЛИЯНИЕМ ХОЗЯЙСТВЕННОЙ ДЕЯТЕЛЬНОСТИ И ИЗМЕНЕНИЙ КЛИМАТА ДЛЯ ВОДОХОЗЯЙСТВЕННОГО ПРОЕКТИРОВАНИЯ

Введение. Нормой стока реки принято называть среднюю арифметическую величину годового стока за многолетний период с неизменными географическими условиями и с одинаковым уровнем освоения. Важность знания величины нормы годового стока заключается в том, что она является основной и устойчивой характеристикой водных ресурсов речного бассейна (определяет потенциальные водные ресурсы), которая используется при гидрологических расчетах для водохозяйственного проектирования.

Так как формирование нормы речного стока происходит в условиях хозяйственной деятельности, а именно под влиянием осушительных и оросительных мелиораций, урбанизации территории, агротехнических и лесохозяйственных мероприятий, зарегулирования и переброски речного стока, необходимо определять влияние каждого отдельного вида и всего комплекса такой деятельности.

Научные исследования, связанные с оценкой нормы стока, можно разделить на три направления:

- гидролого-статистический (норма стока – среднее значение стока реки за многоводный период с одинаковым числом полных многоводных и маловодных гидрологических циклов, представляет собой основную характеристику речного стока – гипотеза о стационарности гидрологических процессов);
- гидролого-хозяйственный (норма стока не является постоянной величиной и рассчитывается отдельно для прошлых и будущих

периодов в условиях изменений климата и различного хозяйственного освоения того или иного речного бассейна – гипотеза о нестационарности гидрологических процессов);

- эколого-гидрологический (норма стока – показатель «хорошего» или «плохого» состояния речной системы, то есть насколько надежно данная речная система может функционировать при той или иной антропогенной нагрузке).

В данном случае используется гипотеза о нестационарности гидрологических процессов, суть которой заключается в необходимости расчетов нормы стока по характерным и конкретным интервалам времени (с 1984 по 2014 год) с учетом тенденции влияния хозяйственной деятельности и климатических условий. Эта гипотеза определяет эколого-гидрологическое направление исследований.

В качестве объекта исследований выбран **речной бассейн р. Псел** до гидрологического поста Запселье с площадью водосбора 21800 км² (рис. 1). Наблюдение за гидрологическими характеристиками на данном бассейне ведется на трех постах (таблица 1).

С помощью программных обеспечений Google Earth и ArcGIS был выполнен ряд операций по уточнению гидрографических характеристик бассейна (таблица 2), а именно: длины реки, падение реки, коэффициент извилистости реки.

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