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CONTEST

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History

Reviews

Summary

Geopolitics

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The strategy of Canada in the Arctic and Russia: is it possible to find mutual understanding? [1]

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Abstract

Canada's Arctic policy on the modern stage is analyzed in the article. It is also studied Canadian and Russian relations in this region. They are identified, like the most ‘problematic’, and also the favourable spheres for cooperating of 2 states in the Far North. It is concluded that among ‘official’ arctic powers, Canada is the most likely partner for Russia in the regional cooperating.

Keywords: *Canada's Arctic strategy, Canadian and Russian relations cooperation and rivalry in the Far North.*

Canada, along with other "official" (coastal) Arctic states (Russia, the USA, Norway and Denmark), is a key "player" in the questions of the regional policy. And although by its material and human resources, it can not be compared to similar polar "heavyweights" like the USA and Russia, Canada still shows significant activity in the Arctic, as it has vital interests to her in the region. This is shown as the growing attention of Ottawa to developing its Far North and the intensification of its diplomatic efforts in the Arctic. Given the growing influence of Canada in the matters of the Arctic policy, and particularly its position on a number of contentious issues in the region, Russia is interested in the fact that "the country of the maple leaf" was her real partner in the field of international policy. This article attempts to analyze the contemporary Canadian Arctic strategy and to identify the possible areas of cooperation between Moscow and Ottawa in this region.

[1] The article is written as the part of the research project, which was financed by St. Petersburg State in 2011–2012 (grant № 17.23.482.2011).

What is important for Canada in the Arctic?

Up to the last times (mid-1990s), Canada did not show an appreciable interest in the Arctic. Ottawa has paid little attention to the development of their territories in the Far North. Security in the Arctic towards much ensures as the mechanism of military and political cooperation with the USA, which during the "Cold War" understood the Arctic as an area of strategic military confrontation with the Soviet Union and were therefore interested in the "cover" of the polar North American (including Canadian area) of a hypothetical attack from Moscow over the North pole. That is the purpose of protecting the USA and Canada from the "Soviet military threat" haunted system NORAD (Command aerospace defense of the North America), which operates today too. [10] However, with the end of the "cold war" motivation of Canada in the Arctic policy issues varies considerably, and come to the fore not only geopolitical as economic, environmental and humanitarian considerations.

First of all, in the political establishment, and in the mass consciousness of Canada has increased awareness of the fact that Canada is the "North Country." The Canadian North accounts for 40% of the land area of the country, although the area is barely populated (it is home to only 107 thousand people) and poorly economically cultivated[2]. It should be noted that the statement 'North' for Canadians is broader than the statement "Arctic" and it geographically includes some land, which are situated southerly to the Arctic Circle: Northwest Territories, Nunavut and Yukon, and the islands and waters to the North Pole. Understanding the economic lag behind other regions of these territories, Ottawa seeking to build the political course and the basic meaning of which is the integrated development of the Canadian North. The "long-range" this course - is not only the "pull-up" datation site in terms of its development up to the Canada-wide standards, and the establishment there of the strategic sourcing for the future, as well as strengthening its geopolitical and geo-economic position in the Arctic as a whole (in an increasingly international of competition in this area of the planet.) Lets note "in brackets" that the similar tasks create for themselves and other members of the Arctic "five" [4, 9, 11, 18, 23].

About the economic motives, which are the main thing for Canada in the Arctic policy, the main interest for Ottawa is the prospect of cultivation oil and gas fields in the far north. According to some estimates, in the Arctic is more than 90 barrels of oil and 47.3 trillion cubic meters of gas and 44 billion barrels of gas condensate, which is about 25% of the undiscovered hydrocarbon reserves in the world [38, p. 1]. Along with the traditional oil and gas deposits in the coastal Canadian Arctic are huge reserves of methane hydrate, which, when it will be launched the commercial production, will be enough to secure the country for several hundred years. [8]

However, until now about a third of not cultivated oil and gas reserves of Canada remain unused. It is not yet developed enough to secure technology, and Canada does not conduct drilling on its Arctic shelf. Not worked out the mechanism of insurance coverage in case of major accident and a threat to the surrounding environment will happen.

[2] Hannaford J. Canada's Arctic Foreign Policy. 2011. 24 January. P. 4. URL: http://www.circumpolar.gc.ca (request data: 12.08.2012).

There are significant reserves of valuable minerals, deposits of diamonds, copper, zinc, mercury, gold, rare earth metals and uranium in addition to oil and gas resources in the Canadian North. So, thanks to the Arctic resources, Canada is the third largest producer of diamonds in the world[3]. In the Arctic zone of Russia (AZR), Canadian companies are attracted by huge reserves of rare metals, minerals, ores and other raw materials of strategic importance - apatite ore, nickel, cobalt, copper, tungsten, titanium, chromium, manganese, platinum, tin, mercury, gold, silver, diamonds and other important features, such as nickel deposits in the AZR, it is a complex composition of the ores from which a large number of simultaneously extracted copper, platinum group, as well as gold, silver, selenium and tellurium, which dramatically increases the value of the ore, despite the high cost of production and manufacturing in the Far North [2, p. 128].

Arctic attracts Canada by its not cultivated bio resources. Arctic seas are habitat of the variety of unique species of fish and animals, including polar bears, arctic foxes, narwhal, whale, walrus, beluga. More than 150 species of fish inhabit the Arctic and sub-Arctic waters, including species, which are important for fishing - herring, haddock, flounder [16].

Ottawa also notices the fact that the Arctic - is rapidly emerging international transport corridor (to be exact - the corridors), which has great potential for the future. As for the sea routes, the melting of polar ice increases the navigation in the so-called Northwest Passage (NWP) on the control of which Canada claims. In the case of exemption from the ice the strait will be comparable to the economic attractiveness of the Northern Sea Route (NSR) around Russia's Arctic coast. The fact is that it significantly shortens the route from East Asia to Europe and the USA East Coast and Canada (compared with routes through the Panama and Suez canals), and it does not require transit fees for passage on it. So, the way from London to Yokohama via EWS is only 14,062 km, while the route through the Panama Canal - 23 300 km, and the Suez Canal - 21 200 km [19].

As for the air routes, the cross-polar routes – are the fastest growing area in the world air transport. The intensity of the air from the North America to Europe and Asia (and vice versa) across the North Pole is growing every year, with about four times faster than the average in the airline industry. According to some expert estimates, the northern route to the transit through the Siberian airports could potentially become a major market for Asian-North American air transit [17].

Canada, like many other countries of the world, concerned about the global climatic changes that directly affect the environment, economic activity and health. And in this sense to monitor the situation in the Arctic, which is figuratively called "the smithy of weather ‘on the Earth, is a top priority for the scientific community of the country. For these purposes, Canada has established centers of the polar research, involved in monitoring the environment in the Arctic.

The increased interest of Canada to the Arctic in the last decade was also due to the activation of other Arctic and non-Arctic nations (China, Japan, India, South Korea, etc.) and international organizations

[3] Statement on Canada’s Arctic foreign policy. Exercising Sovereignty and Promoting Northern Strategy Abroad. Ottawa: Government of Canada, 2010. P. 12. URL: http://www.international.gc.ca/polar-polaire/assets/pdfs/CAFP_booklet-PECA_livret-eng.pdf (date of request 15.08.2012).

(NATO, EU) in the region. By the end of the first decade of the XXI century, nearly all the Arctic Powers signed the doctrinal documents that outlined their territorial claims in the region (also including the interests of Canada.) Special resonance in Canada has caused Russian expedition of A. Chilingarov in the summer of 2007, in which the ocean floor at the North Pole was the flag of Russia. Extremely negative reaction caused Ottawa is also known for the interception of Russian strategic bombers near Canadian airspace in February 2009. All this contributed to the growth of the alarmist sentiments in the "land of the maple leaf" [6, 30]. Assertive policies of the Asian "tigers" and "dragons" that do not hide their intentions to participate in the division of the Arctic "pie", also forced Canada to hurry to the definition of priorities in the Far North.

All these factors, like the presence of significant economic interests in the region, the vast arctic areas, escalating of the international competition over the Arctic, etc. - led an active policy in the far north of Ottawa, including claims section of its land reserves. Let's note that the Canadian sector of the Arctic in size (25%) is at the second place after to (40%). As noted, Canada is one of the "five" so-called "official" Arctic states, which, according to current international law, have pre-emptive legal basis for the economic development of the adjacent Arctic shelf.

Like Russia, Canada is trying to use the sectoral principle of dividing the Arctic spaces, which aims to control the space up to the Arctic of the Northern pole (that is the dividing line conventionally carried from the North Pole along the meridian to the extreme East and the West points of the continental Arctic coast of Canada).

It is interesting to note that Canada is almost the first among the Arctic states declared their sovereign rights to all its boundaries adjacent to bodies of water and the islands to the North Pole. In 1903, when Canada was still a dominion of the British Empire, the country's defense ministry issued a map with plotted lines between the meridians 60 º sector and 141o west longitude converge at the North Pole. In 1907, Senator P. Poirier, speaking in the Canadian parliament, said that all the islands and land lying between these meridians are under the sovereignty of Canada. In 1925, the addition was made to the royal decree of 1880 on the Northwest Territories, in accordance with which Canada passed all British possessions in the North America. Under this law, all foreign governments were forbidden to engage in any activity in the Arctic area without the permission of the Canadian government. Law enacted in 1926 and 1938, was confirmed by Canadian sovereignty over the islands and lands located in the sector between longitudes 60 ° and 141o west longitude [1, p. 28]. In 2006, on the wave of interest in the Arctic linked to global warming, the Canadian government has reaffirmed its sovereignty over the Arctic, and stated the need to strengthen the armed forces to exercise effective control over the region. [27]

The Northern strategy of Canada

Canada was the last from the countries of the polar "five" has taken an official doctrine of the Arctic. Doctrinal development of the policy framework in the Arctic, Ottawa refers to the beginning of the 2000s. In 2002 adopted a document entitled "The Northern Dimension of Canada's foreign policy", providing a series of the government actions to ensure NIJ international cooperation in the Arctic [22, p. 8]. In

2008 year, a defensive strategy "Canada - above all," in which much emphasis on Arctic issue[4]. For the first time in the Arctic doctrine of Ottawa was systematically published in the official document "Strategy for the Northern Canada: Our North, Our Heritage, Our Future" (the Strategy or the Northern Strategy), published in 2009[5]. The main directions of this strategy are:

- *The protection of the sovereignty of Canada in the Arctic*. Implementation of Canada's sovereign rights in the Arctic has two dimensions - internal and external. With regard to the internal aspect of sovereignty, it is, above all, the creation of an appropriate legislative, economic, social, scientific research, and institutional frameworks for the northern territories of Canada. While Ottawa actively modify their national legislation with a view to tightening environmental requirements applicable to foreign vessels that cross not only the territorial waters of Canada, but its exclusive economic zone. These ships are also required to notify the Coast Guard of Canada, many foreign powers (especially the United States) is considered a violation of the principle of freedom in navigation.
- The external dimension of Canadian sovereignty in the Arctic includes three main aspects: the resolution of territorial disputes with its neighbors, expanding exclusive economic zone by the "increment" of the continental shelf in the Arctic, the development of the multilateral cooperation in the region, including the improvement of security in the face of natural and man-made challenges. The Strategy emphasizes that, along with the economic, political and legal mechanisms to protect its sovereignty in the Arctic and Canada may use military instruments. So, plan to build up its presence to increase control over the land areas, sea and air space in the Arctic.

- *Provision of the social and economic development of the Canadian north.* It is a large-scale development programs of extractive industries and infrastructure in the area (for the preservation and development of the economic structure of indigenous peoples). The main sources of wealth of the region in the near future will be the development of gas fields near the mouth of the Mackenzie River and diamond mining. In addition to that provided for annual federal subsidies the Northern Territories of 2.5 billion Canadian dollars in the development of health, education and social services. Also, a special federal agency for the Northern Development, whose main task was to attract investments into the economy of the region.
- *The protection of the environment and adaptation to the climatic changes.* The Strategy emphasizes that economic planning will take into account the conservation of ecosystems, the creation of national parks, the transition to energy sources that are not accompanied by the emission of carbon into the atmosphere, participation in the international standards governing the economic activities in the Arctic. The federal government has allocated 3.5 billion Canadian dollars for 15 years to eliminate the

[4] National Defence. Canada First Defence Strategy. 2008. URL: http://www.forces.gc.ca/site/pri/first-premier/June18_0910_CFDS_english_low-res.pdf (Date of request: 01.08.2012).
[5] Canada's Northern Strategy: Our North, Our Heritage, Our Future. URL: http://www.northernstrategy.gc.ca/cns/cns-eng.asp Date of request: 01.08.2012).

environmental disaster areas, most of which is located in the northern regions[6]. B In the strategy was task to preserve the leading position of Canada as the power in the field of the research in the Arctic.

- *The development of self-government, economic and political activities of the Northern Territory as the part of the policy for the development of the north.* In addition to federal grants for these purposes income from mining communities through the transfer of indigenous ownership of profitable items such as gas pipelines and other scheduled program of devolution (decentralization) control of the northern territories and the transfer of more powers to the last.

Obviously, that most of priorities of Ottawa's policy in the Arctic are in the sphere of sustainable socio-economic and environmental development of the Canadian North. Its Arctic strategy has internal rather than external orientation (which, by the way, unites it with the Russian policy in the Far North).

Military-political aspect is important, but not decisive in the strategy of the North Ottawa. For Canada, the direct military threat in the Arctic region is missing. The main motive of welfare and even some military build-up in the region of Canada is that today it does not have the resources for real control over the vast expanses of the North, nor the experience of military operations in the Arctic. Canada historically has not been quite the military activity in the Arctic, the "cold war" is largely relying on the United States, and therefore is here equipped with deep-water ports, advanced communications systems and communications, icebreakers and large armed groups. Military tasks set out in the strategy of the North of Canada, are very limited in scope and aimed primarily at eliminating obvious "gaps" in the system of the national security and the protection of the Arctic towards the country's economic interests in the region. The action plan in tune with Ottawa that take other Arctic powers. [14]

What pushes Canada and Russia to the conflict in the Arctic?

World expert-analytical community usually prefers to focus on the "problem" areas of Russian-Canadian relations in the Arctic, which include the following spheres:

- Territorial disputes. Like Russia and Denmark, Canada claims to extend its shelf by underwater Lomonosovs Ridge. Similarly to the competitors, Ottawa intends to apply to the UN Commission on the shelf (approximately - in 2013). It was to proving that the Lomonosov Ridge is an extension of the North American continental platform, in 2007, conducted a joint US-Canadian study on the shelf in the north of Alaska to the Alpha-Mendeleev Ridge and eastward to the Canadian Arctic Archipelago. [25] Russia is preparing a similar application so in such case Russia and Canada are the competitors.
- The conflict over the Lomonosov Ridge – is not only a territorial dispute with Ottawa Arctic neighbors. Canada also challenges in Denmark about the belonging of the small (measuring only 1.3 sq. km.) uninhabited island of Hans (this conflict is already close to a settlement), and draw a line in the Lincoln Sea. The United States, Canada maritime border dispute in the Beaufort Sea, namely the maritime space 6250 square nautical miles, presumably rich in oil and gas. Ottawa and Washington also disagree on the status of FFP. Canada insists on its sovereign rights to this passage, and the USA considers it

[6] Ibid. P. 22.

international waters. However, these arguments are not considered serious enough to prevent cooperation with these countries, including the military-political sphere. [31]

- *Increased of the military activity in the Canadian Arctic*. As already noted, in recent years, Ottawa, trying to eliminate the gap in the field of military security in the Arctic and in order to support their economic interests "power arguments", is increasing its military presence in the region. In particular, it is planned to build military training center on the bank of FFP in place Resolyut Bay (595 km from the North Pole) and objects of maritime infrastructure. To strengthen the capacity of the Coast Guard plans to build deep-water berths (city Nanisivik), a new icebreaker Diefenbaker and 6-8 patrol vessels capable of operating in ice conditions[7]. To monitor the Arctic spaces will use the latest Canadian space satellite like RADARSAT-II, as well as the possibility of a joint Canadian-American system NORAD intercepted signals intelligence station in the town of Ehlert (island of Ellesmere Island, Canadian Arctic Archipelago). Scheduled program to modernize and increase the units of Canadian Rangers by the end of 2012 to 5 thousand people. They are largely recruited from the local indigenous populations, and to monitor and carry out search and rescue operations in the Arctic. [14]

In 2010, the Government of Canada announced the purchase from the USA of 65 new F-35 Lightning II for a total sum of $ 16 billion, including aircraft maintenance for 20 years. It is not clear, though, against whom they intend to use in the Arctic: F-35 is designed to perform tactical missions in support of ground operations, bombing and conducting close air combat, but the landing troops in the Canadian North, none of the Arctic "players" and has no plans to pair of old Russian bombers flying training flights mainly to air Canadian border does not constitute any serious threat. According to experts of the Canadian Institute for Defense and Foreign Policy, these purchase rather a guarantee of security for the future, than the answer to today's challenges. [33] According to other estimates, for Canada other relevant goals are to develop patrol aircraft to monitor the coast and the sea power capacity. [37] These and other initiatives have led to a doubling of the total military spending of Canada than to the late 1990's [28, p. 127].

Since 2008, Canada began to realize in the Arctic regular military exercises. Their stated goal – is the protecting of Canadian sovereignty in the Far North. In April 2010, for the first time in the history of Canadian military exercises were conducted landing and taking off from the ice cover Falcon aircraft of the SS-117. Then the exercises were held divers ice diving for a long time.

Since August 2010, on an annual basis, are hold the arctic exercises "Nanook" with the naval forces of the USA and Denmark [7, 32] (according to experts, this activity to test the joint action was not even in the "cold war"). In this exercise involved the best ships on each side: missile destroyer "Porter" (USA), carrying the latest anti-aircraft missile system family "standard missile-3", one of the world's few frigates "Vederen" (Denmark) adapted to action in the Arctic ice, the frigate "Halifax" (Canada), is the only foreign ships in the USA aircraft carrier group. [34] Invite such exercises Canada Russia has no plans. Canada, the USA

[7] Statement on Canada's Arctic foreign policy. P. 7.

and Denmark in the Arctic together not only provide teaching, but also perform patrol functions and work out the rescue operation on the waters.

However, Russian and foreign experts urge not to overestimate the importance of the Canadian military preparations, as, in their opinion, it is rather a demonstration of its commitment to protecting its economic interests and respond to the "non-traditional" (non-military) challenges in the region than preparation for a large-scale military conflict [5, 35]. For the latest from Canada has neither the desire nor the logistical capabilities. In the area of strategic defense, Ottawa still intends to rely on the United States. This scenario seems to her the most beneficial financially and functionally. Last doctrinal documents of the USA national security[8] confirmed Washington's intention to take "responsibility" for the defense of the "western sector" of Arctic (obviously from Russia?) [13, 15].

- *The impact of the political situation at the Arctic policy of Ottawa.* Unfortunately, the rate of the Arctic Canada is often hostage to political (especially election) battles within that country. Politicians belonging to different camps, take into account the fact that the majority of Canadians believes reaffirm the sovereign rights in the Arctic - the number one priority in the foreign policy of the country. According to one opinion poll, 52% of Canadian "northerners" (residents of the three northern territories) and 60% of the "southerners" (residents of 10 southern provinces) believe that Canada's military presence in the Arctic should be strengthened, and 50% of Canadians believe that territorial disputes in the Arctic should be resolved in favor of their country (even at the cost of worsening relations with neighbors). [39] According to another survey, 40% of Canadian respondents in favor of a "hard line" in Arctic policy issues. [29

  Particularly common in national policy in the struggle for the Arctic "map" play Canadian conservatives. For example, their leader (the current Prime Minister of Canada) S. Harper often acts with anti-Russian and pro-American statements (especially during election campaigns)[9]. Despite the fact that not all Canadians approve of anti-Russian rhetoric of S. Harper, such actions do not contribute to the Canadian guidelines rapprochement between Moscow and Ottawa on Arctic issues.

In the search of common points: Perspectives of Russian-Canadian cooperation in the Arctic

Cooperation between Russia and Canada in the Arctic did not begin today or even yesterday. It has its roots in the Second World War. In 1941-1945 Canadian sailors participated in the convoys that went from the North America and the United Kingdom to the northern ports of Murmansk and Arkhangelsk USSR and played an important role in supplying the Soviet front arms and ammunition. The Arctic cooperation is not in the military and in civilian areas began in the mid-1960s. In June 1965, the Canadian Minister of the Northern Affairs Arthur Lang arrived on a visit to Siberia. Then the Canadian northern territories visited by a

[8] The National Military Strategy of the United States of America 2011: redefining America's leadership. Washington: Department of Defense, 2011. P. 11 . URL: http://www.army.mil/info/references/docs/NMS%20FEB%202011.pdf (date of request 13.01.2012).

[9] См., например: Prime Minister Steven Harper's 2011 Convention Speech, June 13, 2011. URL: http://www.conse rva-tive.ca/press/news_releases/ prime_minister_stephen_harper_s_2011 _convention_ speech (date of request 01.08.2012).

group of Soviet specialists. At about the same time began to develop the concept of "polar neighborhood", signed an agreement on cooperation between the Canadian Department of Energy, Mines and Resources and the State Committee of the USSR Council of Ministers for Science and Technology [20]. Of particular interest to the Arctic cooperation showed Alexander Yakovlev, who ten years as ambassador to Canada, and later was one of the closest advisers of Mikhail Gorbachev and the "authors" of "perestroika" and "new political thinking." It was he, who set the vector of cooperation in this area. In 1984 he signed the Soviet-Canadian protocol on the scientific and technical cooperation in the Arctic, which has been regularly changes and it was extended many times.

Legal basic of the modern Russian-Canadian relations is the political agreement about the consent and cooperation of the June 19, 1992, and a number of the economic agreements: Agreement on trade and commercial relations (1992), the Agreement on the Promotion and Reciprocal Protection of Investments (1991), the Agreement on Economic cooperation (1993), the Agreement on Avoidance of Double taxation (1995), of the Agreement on air services and an agreement on the principles and the basis of cooperation between the Russian Federation and the provinces and territories of Canada (2000), the Agreement on co-operation in the peaceful use of nuclear energy (1989)[10].

There are a number of bilateral documents directly on the Arctic issues. So, December 18, 2000 adopted a joint Russian-Canadian cooperation in the Arctic and the North, which outlines the main areas of bilateral cooperation in the region[11]. In November 2007, during a visit to Canada of the Prime Minister were made agreements of the 9 branches of industry: the Russian-Canadian cooperation in the Arctic, on the use of atomic energy for peaceful purposes in the field of agriculture, fisheries, veterinary and phytosanitary control and financial.

Together with the legal is strengthening an institutional framework in Russian-Canadian relations. In 1995, a Russian-Canadian Intergovernmental Economic Commission. The structure of IEC consists of sub-committee on agriculture and working group on construction, fuel and energy, mining, and cooperation in the Arctic and the North. Up to this day was held eight meetings of the IEC. The last session was held in Ottawa in 2011, together with the Russian-Canadian forum on animal husbandry and the Russian-Canadian Business Council that Canada-Russia Business Summit. The holding of the ninth day of the meeting the IEC scheduled for 2013 in Moscow[12].

In addition, since September 2002 the (formally – outside of the IEC) Russian-Canadian group is working on cooperation in the field of climatic changes. In October 2005, was created by Canadian-Russian

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[10] References Ministry of Foreign Affairs in RF. URL: http://www.mid.ru/bdomp/ns-rsam.nsf/1f773bcd33ec925d432569e7004196dd/ 852c88fa2fd18a9f43256a2c0049b418! Open Document. Russian-Canadian economical and trade relations. URL: http://www.montreal.mid.ru/ (Date of request: 01.08.2012).

[11] Joint Russian-Canadian statement about the cooperation in the Arctic and (Ottawa, 18 December 2000 years). URL: http://www.minregion.ru/Arctic/548/561/1356.html (Date of request 01.08.2012).

[12] Russian-Canadian economical and trade relations. URL: http://www.economy.gov.ru/minec/about/structure/depamerica/doc20120313_02?presentationtemplate=docHTMLTemplate1&presentationtemplateid=2dd7bc8044687de796f0f7af753c8a7e&WCM_Page.ResetAll=TRUE&CACHE=NONE&CONTENTCACHE=NONE&CONNECTORCACHE=NONE (Date of request 01.08.2012).

Business Council (CRBC), which included a working group on agriculture, mining, energy, information and telecommunications technology, transport, finance, forest industry.

Despite the presence of the above-mentioned conflict potential, Russia and Canada have many opportunities for the Arctic cooperation:

- *Trade and economic cooperation includes several promising directions.* Thus, the project "The Northern air bridge" involves the creation of an integrated system of communications in the Arctic (eg, by launching satellites in highly elliptical orbits and developing the necessary ground infrastructure) to provide air service between the airports in Krasnoyarsk and Winnipeg. In May 2011, the Working Group on the Arctic and the North of the Russian-Canadian IEC endorsed the intention of the Krasnoyarsk Territory and the Canadian province of Manitoba to start working together this project. In November 2011, a meeting of the Steering Committee for the project, which was coordinated action plan to implement the project.[13]. Today we are looking for investors, deciding the main questions about the role of the states in this project.

Another project - is "Arctic Bridge" - which involves ensuring cross-polar shipping between the ports of Murmansk and Churchill. One of the conditions of its implementation should be the development of the Murmansk port special economic zone. The parties are currently developing a business plan for the project.[14].

The largest joint investment projects in the Russian Arctic are: 1) the purchase and the development of gold deposits "Dome" and "Double" in Chukotka (company Kinross Gold); 2) the development of silver-polymetallic deposit "Mangazeysky" in Yakutia (ZAO "Project" / Silver Bear Resources); 3) the design work and the supply of equipment for the construction of the third phase of the project "Snag oil fields" in the Nenets Autonomous District ("Globalstroy Engineering» / SNC LAVALIN); 4) the development of the field "Fedorova tundra" (Murmansk region) 5) the development of Canadian technology, "cold asphalt" in the construction of highways in extreme Arctic climate (Yakutia), 6) the development and production of all-terrain vehicles on the arctic maritime inflatable caterpillar, 7) the promotion of the Nenets Autonomous District of wind-diesel systems, work in the Arctic conditions, etc[15].

- *Scientific and technical cooperation.* June 2, 2011 adopted a joint Russian-Canadian statement on cooperation in the science, technology and innovation, which outlined the following priorities: energy and energy efficiency, nanotechnology, biomedical technology, climate research and the Arctic[16]. As for the Arctic, it should be noted that in the absence of the icebreakers, special courts to

[13] Protocol № 1 of the meeting in Russian – Canadian of the steering committee of the project «The Northern Air Bridge». URL: http://pda.www.minregion.ru/upload/documents/2011/12/011211-4-1.pdf (Date of request: 01.08.2012).
[14] Russian-Canadian economical and trade cooperation
[15] Russian-Canadian economical and trade cooperation of activities of the working group about the Arctic and the North in the Intergovernmental Russian Canadian economic commission in 2012–2013. URL: http://pda.www.minregion.ru/Arctic/552/650/1693.html (Date of request: 01.08.2012).
[16] Joint Russian-Canadian declaration about the cooperation in the science, technologies and innovations. URL: http://old.mon.gov.ru/press/reliz/8568,print/ (Date of request 01.08.2012).

conduct research in ice, reliable space communications systems, Canada is interested in attracting the corresponding potential of Russia to conduct joint research in the region.

- Numerous scientific and educational projects in Russia and Canada also include cooperation with Canadian universities of NArFU named after M.V. Lomonosov (Arkhangelsk). Development of comprehensive relations between the two countries much support to the Russian Society for the Study of Canada, created in Soviet times (1989), and which has more than 100 faculty, researchers, students and graduate students specializing in the study of the "northern neighbor."[17].
- *Ecology.* Cooperation in this area is on the line as bilateral programs, and international organizations. Working Group on the Arctic and the North IEC implements a range of the projects under the program "Conservation and restoration of the biological diversity of the northern territories, and of the environmental protection, cooperation in the field of agriculture and forestry"[18].

In 2011, the Russian government has decided to allocate 10 million Euros for the period 2011-2013 to support tool projects, created under the auspices of the Arctic Council (AC). Thus was "launched" a collective fund, which will be directed at the elimination of sources of the environmental pollution and the elimination of the so-called environmental "hot spots" in the Arctic[19].

Indigenous Peoples. In this area, Russia and Canada, especially a lot of common ground, as in the Arctic regions of both countries live related to each other the northern nations. In accordance with the Declaration of the Russian-Canadian cooperation in the Arctic in 2000 implemented a number of programs aimed at creating favorable conditions for the indigenous peoples of the North. One such program ("Exchange of experience in managing the Northern Territories"), launched in 2011, carried out with the participation of the Plenipotentiary Representative of the RF President in the Siberian Federal District, and the Department of Indian Affairs and the Northern Development of Canada. The scientific supports give the Institute of Economics and Industrial production (IEIE) of the Northern Branch of the Russian Academy of Sciences. Over the last ten years in this program, a large number of joint workshops on federalism and regional development with the participation of indigenous peoples. So, the staff learned IOEPP Canadian experience and developed a training course "for Indigenous peoples in decision-making in the mineral resources", which was proposed to the study of the representatives of the Russian Association of Indigenous Peoples of the North, Siberia and the Far East. Other components of the program associated with the exchange of experiences in the field of corporate social responsibility and the introduction of mechanisms of public-private partnerships in the North. [24]

In 2006-2009, with the assistance of the Canadian International Development Agency, Ministry of Regional Development of the Russian Federation and a number of Russian organizations for indigenous

[17] Official web page ROIK: http://www.racs.ru.
[18] The plan of activities of the working group about the Arctic and the North of the working group about the Arctic and the North in the Intergovernmental Russian Canadian economic commission in 2012−2013.
[19] Thesis's of the speech of the Ministry of the Foreign Affairs of the Russian Federation S.V. Lavrov on the ministry session of the Arctic council (Nook, Greenland, May 2011). URL: http://www.mid.ru/brp_4.nsf/0/0A903DB9D0991BABC325788F00364B7B (Date of Request: 22.05.2011).

northern people were realized Russian-Canadian cooperation program for the development of the North. It was held in the Yamal-Nenets and Khanty-Mansi Autonomous District and the Khabarovsk Territory. Among its projects mainly on humanitarian cooperation, the development of natural resources and small businesses, there are, for example, "Technology juvenile justice or justice specialization as a way to protect the rights of the child", "Masters of the tundra: assistance to the local population in remote villages (communities) Yamal in small business development for the production of traditional national souvenirs "or" Introduction of Canadian wood bison in the Yamal-Nenets Autonomous District. "Funding for the program from the Canadian side was about 500 thousand Canadian dollars.

Through the working group on the Arctic and the North IEC implemented numerous projects to create a model of traditional indigenous land indigenous minority people, the development of local sports and cultural exchanges between the indigenous people of the Russian and Canadian North[20].

In January 2012, the Canada Fund for local initiatives supported project of the Institute of the North WPC Herzen to create a resource center "Laboratory for the study of languages and cultures of indigenous peoples of the North." Of the project's task is to form the younger generation the small northern people interest in innovation, research and development in the field of preservation of native languages and cultures. In particular, the lab plans to create electronic files, websites, multimedia tools and virtual museums of folk traditions, traditional knowledge, beliefs and endangered languages of northern ethnic groups. The amount of support was 728 thousand rubles and will be sent to the technical equipping of the center. [24]

As part of the AU Russia is working to establish a public Internet archive data about the development and culture of the Arctic - "Electronic Memory of the Arctic", and support for young herders of the North collaboration with indigenous organizations to clear the area of sources of environmental pollution, etc[21].

- *The solution of the territorial disputes.* Despite the fact that Russia and Canada are rivals on the issue of the section of the Arctic area, they share a number of common principles that enable them to cooperate in this subject area. First, the two countries for the resolution of disputes through negotiations and on the basis of international law. That is how Moscow and Ottawa are going to solve their dispute over the Lomonosov Ridge, potentially rich oil and gas resources. Second, both countries favor sectoral principle of dividing the Arctic spaces (when the North Pole is seen as a point from which to draw direct lines of longitude). This principle is more favorable to them than the so-called "median line method", where the division according of the principle of equidistance boundary line of the coastline (or reference points coastline) contiguous states. A sectoral principle would greatly increase the area of the Arctic controlled spaces between Russia and Canada. Third, Russia and Canada are in favor of consolidating the status of

[20] The plan of activities of the working group in the Arctic and the North in the Intergovernmental Russian Canadian economic commission in 2012−2013.

[21] Об участии министра иностранных дел of the Ministry of the Foreign Affairs of the Russian Federation S.V. Lavrov on the ministry session of the Arctic council (Nook, Greenland, 12 of May 2011). URL: http://www.mid.ru/brp_4.nsf/0/DF738F6B00993389C325788F0029145B (Date of request: 22.05.2011).

transit shipping routes in the Arctic (MPS and FFP) as internal waters, which would bring the two countries to considerable economic benefits.

Some experts believe that the degree of the conflict between Canada and Russia on the section of the shelf is exaggerated, and a compromise between the two countries is possible. "Continental nature of the Lomonosov Ridge is no doubt in the world scientific community, - said Deputy Director of the Institute for Research ocean - geology Victor settled. - All applications submitted in strict accordance with the UN Convention, ratified by all but the United States. Of course, these areas are contiguous, and the exact boundaries will need to be negotiated. But there is no fundamental dispute with Denmark and Canada on the shelf "[21].

In March 2012, when the Prime Minister of Russia, Vladimir Putin proposed a Russian-Canadian group of scientists to determine the boundaries of the Arctic shelf. "Cooperation in the Arctic would be helpful, in my view, would increase the level of trust (between Russia and Canada). Let's be here to work. Create a joint team of our experts, the scientists could present their research at the government level, "- he said at a meeting with foreign media. [3]

Cooperation within the framework of international organizations. Of all the international organizations working in the area of the Far North, Moscow and Ottawa leading role in this area is removed to the Arctic Council, an initiative of Canada in 1996. The overall goal of both countries is to transform the AU in the lead (and full), an international organization with the right to make binding (for its members) solutions. According to Moscow and Ottawa that the AU should be the organ in which would solve all the major problems of the Arctic region (from the environmental and transport security to ensure the rights of small nations and cultural cooperation in the Arctic.) As already noted, not all members of the Council agree to such a plan, but the USA is almost throughout its existence de facto sabotaged his work (though in words speak of the importance of this international institution).

Moscow and Ottawa have similar positions on a permanent observer in the AU for non-Arctic states and international organizations. The fact that several members of the Council, is in need of additional financial resources and advanced technologies (Norway, Denmark, Iceland), advocates for the specified status to China, Japan and South Korea. Denmark, Finland and Sweden, as members of the EU who are interested in strengthening the organization's position in the Arctic, the EU offered to endow permanent observer status in the AU. [12] Russia and Canada have long been proposed to better define the status of permanent observers from the AU for non-Arctic states and international organizations. Thus, for Non-arctic States and international organizations would be clearly stated the limit of their capabilities in the Arctic and at the same time affirms the priority of the five Arctic states. This is beneficial for both Russia and Canada have the longest border in the Arctic. Such a document, allowing to streamline the process of granting observer status of non – arctic states and organizations, as well as clearly defining the rights and obligations of observers from the AU, in the end was drawn up and signed at the Ministerial Council meeting in

Nook (Greenland) in May 2011.[22]. At the next ministerial meeting of the AU, which is planned for 2013, will be taken first decisions about who will still be granted observer status in the Council.

In order to further institutionalize AU Moscow and Ottawa has long offered to form a permanent secretariat and provide funding for more efficient operation of the working groups of the Council. It was under the influence of Russian and Canadian at the ministerial meeting in Nook, it was decided to create a full AU secretariat, based in Tromso (Norway). Secretariat's budget will be relatively small. Most of it will make money for payment of ten employees, including the head of the secretariat. The budget also provides for their maintenance and travel to events. The approximate amount of 1 million Euros.[23]. For the program projects will be used contributions to the addition to the regular budget.

It is important to note that the growing influence of the Council in the region prevents claims of NATO to become the main "provider" of security in the Arctic (especially for zealously serve the USA.). It is expected that, with the Canadian presidency of the AU in May 2013 will a significant strengthening of the Council.

- *The scope of security.* In parallel with the strengthening of its military capabilities to protect its economic interests in favor of Canada to demilitarization the Arctic, as well as Russia. Experts reputable Canadian International Council believes that Canada should not be carried away by the military component of security in the Arctic. More productive traditionally strong feature of Canada as a mediator and peacemaker [36, p. 58].

Moscow and Ottawa have taken steps to cooperate in the field of security. Since 1994, an inter-agency memorandum of cooperation in the military field, according to which the parties exchange of visits by high-ranking military officials, and conducted military staff talks. Since 2002, Canada participates in the global partnership, in which in 2004 signed a bilateral intergovernmental agreement on cooperation in the destruction of chemical weapons, the dismantlement of nuclear submarines decommissioned from the Navy, accounting, control and physical protection of nuclear material and radioactive substances. Canada has pledged over ten years of one billion Canadian dollars (annually to 100 million Canadian dollars) for this purpose[24]. Let's note, that most of these projects are realized in Russian Отметим, что значительная часть этих проектов реализуется в Российском Arctic

In line with the policy of Ottawa to demilitarize the Arctic should be taken of its initiative to create the Arctic zone free of nuclear weapons. [26] At the time, Ottawa, despite the dissatisfaction of Washington, declared its territory a nuclear-free, and then offered to extend this status to the entire region. In practice this means that the region can not use, own, develop, test and produce nuclear weapons. In addition, concerted measures to monitor compliance with the agreement on a nuclear-free zone. Russia as a whole takes this idea a positive (recall that Moscow acted with a similar idea in the days of Mikhail Gorbachev), but she has a question about the geographical scope of such a zone. She agreed to the establishment of a

[22] Transcript of Russian Foreign Minister Sergey Lavrov, the Russian media on the basis of participation in a meeting of the Arctic Council.
[23] The same place.
[24] Russian –Canadian relation URL: http://www.montreal.mid.ru/ (Date of request: 01.08.2012).

nuclear-free zone in the Arctic, with the condition that it is not a dislocation becomes subject and activities of the Northern Fleet, which included a two-thirds strategic submarines equipped with nuclear weapons.

* * *

Currently, Canada's Arctic policy is characterized by a combination of contradictory tendencies. On the one hand, Ottawa, like other members of the Arctic "club", is trying hard enough to defend its national interests in the High North (especially in the matter of the section of the continental shelf), which causes conflicts with other regional "players", including Russia. On the other hand, Canada does not want to settle disputes "force" means. On the contrary, it is open to cooperation with other interested parties and is for increasing the authority of international law and organizations in the Arctic, the demilitarization of the region, strengthening of international cooperation in science, environmental protection, providing favorable conditions for the development of indigenous peoples, etc. This creates conditions to turn Canada into a potential partner of Russia in solving the issues of the Arctic. At least if you compare Canada with other members of the Arctic "five", she with Russia far more common ground in the field of regional cooperation, than, say, the U.S. or Denmark. It seems that if there is political will on both sides could work together to, on the one hand, to neutralize the existing conflict potential in the Russian-Canadian relations, and on the other - to strengthen the mechanisms for bilateral and multilateral, non-bloc cooperation in the Arctic.

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Putin's breakthrough in Arctic

We're going to our efforts here (in the Arctic) build
and work on many fronts.
V. V. Putin, July 30, 2012

© Lukin Yuri Fedorovich, Doctor of History, professor, honored worker of Higher education in Russian Federation. Contact phone: +7 (8182) 68 34 47. E-mail: ylukin@atnet.ru.

Abstract

Ecology, Economy, Security of Russian Arctic – are the strategic and important steps in 2012. It is the beginning of the general cleaning of the Arctic. The Arctic shelf of Russia, Prirazlomnoye. 'NK 'Rosneft': policy towards the strategic partnership with ExxonMobil, Eni and Statoil. To be strong – is the guarantee of the national security.

Keywords: *Arctic, ecology, policy, Putin, shelf, modernization.*

Ecology, Economy, Security of the Russian Arctic: Strategically important steps of the Russian state in 2012

From Vladimir Putin in his current six-year term in being a president, many expect major breakthroughs in all spheres of life. Arctic zone of the Russian Federation in this regard is no exception. It is important to identify the significant events in 2012, as "Putin's Arctic breakthrough" in the environment, economy, and security[1]. Complicated geopolitical situation around the Arctic waited long to implement concrete steps, a kind of a real breakthrough in the Arctic Russian activities. Putin, even he was in the chair of the Government of the Russian Federation, visited April 29, 2010 the archipelago of Franz Josef Land, and even then he shortly formed the strategic tasks of the Russian state, *"Geopolitically, the deepest interests of Russia are related to the Arctic, because here provides security, defense capability of Russia*. Let us not forget that in the Arctic is our main base of the fleet, here are the patrol routes of the nuclear submarines and long-range aviation and economic interests ". [1] Region should be developed, and the more active, is the better. Answering on the question: "What should we do now?" Putin proposed a general cleaning in the Arctic, and invited everyone to participate in this process.[2].

[1] Breakthrough –is the most important stage of the attack, but it is only the beginning of a long and difficult way.
[2] The Prime Minister visited the archipelago of Franz Josef Land. Vladimir Putin proposed a general cleaning in the Arctic, to clear it from the rubbish. URL: http://www.ntv.ru/novosti/191877/#ixzz22VGLrRJU. Photo 29.04.2010. URL: http://img.ntv.ru/home/news/20100429/pu1.jpg (Date of access: 03.08.2012).

Putin repeatedly returned to the problems of the Arctic in the course of other appearances in 2011-2012. He believes that the environmental component should be a key leitmotif of human activities in the North, because, although the severity of the image of the Arctic, it has a very fragile ecosystem on our planet. The price of the inattentive, careless relation to it is very high, and the consequences are very serious, "- such statement of the Russian leader is not a tribute to fashion.[3].

Speaking in the Arkhangelsk sea port, at July 30, 2012 during a meeting with members of the expedition of eliminating the ecological damage in the spoiled areas of archipelago of Franz Josef Land, Putin again stressed: "Today we are sending scientific ecological expedition to the islands of Franz Josef Land. This is a significant event for Russia, because it is; firstly, confirm our growing activity in the Arctic. We're going to step up our efforts here and we will work on many fronts: we will develop new fields, build infrastructure, particularly ports, roads, bridges, and so on. Of course, we'll be here strengthening our military component. But the implementation of all of these activities, of course, we will strive for balance between development and nature ... Today's event - your expedition - we, in fact, begin a great start of a new project: The general cleaning of the Arctic ". [2]

These trips, meetings with people, performances can reveal not only Putin's Arctic policy, but also his personal attitude to the problems of the Arctic in the XXI century. Summary of the main concrete actions started earlier and continued in 2012 - the year of the Russian Arctic, is a pretty impressive list of the strategic steps for the Russian state.

[3] Russian Prime Minister Vladimir Putin discussed the future of the Arctic with scientists, businessmen, prince of Monaco and the president of the Iceland. URL: http://www.ntv.ru/novosti/240006/; http://premier.gov.ru /events/news/D cdj\v dscnegktyb yf ajhevt16536/ (Date of access 03.08.2012).

First, the strategic paradigm for the implementation of plans for the economic growth in the Arctic is the search for a reasonable balance with the environment, taking into account the most stringent environmental standards. Gentle, civilized attitude to nature - it is a prerequisite of all the development programs. Turbulent economic activity in the Arctic will only benefit if the economy between the interests of

nature conservation and the task will be provided with a reasonable, competent balance, is not for ten, fifteen, twenty years, but really in the long term. According to Putin, the environmental component should be a key to the leitmotif of human activities in the North, because, although the severity of the image has a very fragile Arctic ecosystem on our planet. Price inattentive, careless attitude to it is very high, and the consequences are very serious.

In 2012, in reality and not only in the words the general cleaning of the Far North and the Russian Arctic began. Among the first projects - cleaning of Franz Josef Land from the accumulated barrels of oil. For this purpose from the federal budget by 2015 allocated 2.3 billion rubles. Similar works are expected by Wrangel Island, and by Russian settlements on Svalbard. There will also be conducted a evaluation of the

ecological status in seven major regions of the Arctic zone. The implementation of these initiatives will not only improve the environment in the Arctic, but will develop unique technologies for the rehabilitation of polluted territories.

Vital importance for Russia is playing the national park "Russian Arctic" in the northern part of Novaya Zemlya, where nature is preserved in its natural state and the birds are not afraid of human.[4]. Creation of the national parks in the Russian Arctic in general should be a priority of the national policy that will strengthen Russia's sovereignty over the Arctic islands, create conditions for the development in the future Arctic tourism, transport and social infrastructure.

Secondly, It is creating a system of warning, monitoring and emergency situations of natural and man-made disasters in the Arctic zone of Russia, on the base of creating ten complex emergency - rescue missions, the specialized regional centers that will appear along the Arctic coast of Russia. The ministerial meeting of the Arctic Council in May 2011, signed the first legally binding instrument *pan-Arctic - Agreement* on the cooperation in the aviation and maritime search and rescue in the Arctic. Pursuant to this agreement and the implementation of its FTP Russia and establish an effective system of protection against the effects of natural and man-made disasters in the Russian Arctic. As part of the federal program "Risk reduction and mitigation of natural and man-made disasters in the Russian Federation up to 2015" in

[4] The national park «Russian Arctica». URL: http://www.rus-arc.ru/ (Date of access 26.08.2012).

Dudinka such center opens up in 2012 in Murmansk - in 2013. As part of the federal program in the Far North to 2015, a total of ten will be equipped with modern complex rescue centers.

Thirdly, the real fact of the growth of the economic activity in Russia in the Arctic was the installation of a platform "Prirazlomnaya" in the waters of the Pechora Sea and the start of oil production in the Arctic shelf in 2011-2012. According to various experts hydrocarbon deposits in Russia, located on the ground, mostly exhausted their resources, their production is up 60%. Currently Russia oil producer competes with oil-producing countries in the Middle East. However, the problem arises as to preserve Russia's competitive advantages in the coming decades, while there is a dynamic demand for oil and gas. The main hope for Russia in the growth of hydrocarbon production, to avoid a sharp decline in oil production, it is the continental shelf, particularly in the Arctic. Only here you can expect the most significant additions to reserves, opening and commissioning of large and giant fields. In the Arctic, known 61 major oil and gas field to the reserves of over 500 million barrels of oil equivalent (2009), 43 of these deposits are in Russia, 6 - in Alaska, 11 - in Canada and 1 - in Norway[5]. In the strategies and policies of the Arctic states, the key motivating factor in the development of the Arctic is the interest in the extraction of hydrocarbon resources. In September 22, 2011, Vladimir Putin said, that in Arkhangelsk during the second International Arctic Forum "The Arctic - Territory of Dialogue", Russia really starts to develop the Arctic shelf opens a new chapter in the history of the Arctic exploration and the economic activity here will increase [3].

Fourthly, the qualitative expansion of opportunities for a peaceful solution to the economic problems encountered in the transition from opposition to the Arctic on the principle of solidarity "The Arctic is for Russia and the world," is the conclusion of the strategic agreements with leading Russian companies oil companies with advanced technology and experience implementing large projects in seas. In April-May 2012, the state-owned company OAO "NK" Rosneft "with the active participation of Vladimir Putin, signed a strategic agreement with American, Italian and Norwegian oil companies ExxonMobil, Eni and Statoil to develop the resources of the Russian continental shelf.

Another project of JSC "Gazprom" – is the Stockman field - moving very slowly and is in crisis due to a number of reasons, analyzed and summarized by me on the basis of a study of multiple sources, including:

I. Due to the unstable economic situation in the world gas markets, changes in market conditions in connection with the ongoing European financial crisis, the trend of falling demand for gas and the price reduction

[5] The Arctic holds about 22% of unresolved global resources of oil and gas. URL: http://www.neftegazexpert.ru/ neftegazline/neftegaztext71482.html (Date of access 26.08.2012).

II. For braking Stockman used widely publicized increase in costly and environmentally dangerous shale of gas production in the USA and similar dubious projects in other countries.

III. Discovery of promising new natural gas fields on the offshore warm Mediterranean (Cyprus, Israel), and other Caspian Sea, where exploration, drilling, production is less expensive than in the harsh conditions of the Arctic, and plan for their development and logistics based on the latest technologies.

IV. Technical complexity of the project, selection of gas liquefaction in the Arctic, which has led to disputes between the partners.

V. Choice of cost-effective model for the development of the Stockman field, investing significantly more expensive project in the design process.

VI. Underestimation of modern production technologies with the use of liquefied natural gas, LNG floating plants, technological backwardness of Russia in general.

VII. Gazprom's lack of experience in the implementation of the development of hydrocarbon fields in the Arctic Ocean.

VIII. There are legal and tax regime in Russia, according to foreign partners, not helped to facilitate the development of mutually beneficial agreements and strategic partnerships.

Stockman project - is, firstly a business project aimed at making a profit. It is only normal, that foreign partners of Gazprom so thoroughly consider the cost, calculate the risks, seeking relaxation in the tax regime. Who would benefit from the decision to suspend the Stockman project? The answer is obvious - competitors. Gas demand in the world does not decrease, but increases, new market niches for additional gas supplies in connection with the closure of nuclear power plants in Japan and Europe. Gazprom's competitors today are actively promoting their new projects in mining and processing of liquefied gas, really ahead of Russia. Russian Gazprom once again postponing the decision on Stockman certainly loses its competitive edge, dynamic and open those niches that are still affordable. This is a matter not only of the Stockman project, but other projects carried out in cooperation with international partners, to strengthen competition in the global hydrocarbon markets, the gradual, slow ousting Russia from the market. Russian Arctic rate in such a situation will increase manifold.

Fifth, the Russian government has taken on the 2 of August 2012 a decree "About the program of exploration of the continental shelf of the Russian Federation and the exploitation of its mineral resources for the long term" (2012-2030 years). The aim is to maintain a competitive advantage in the global market of the Russian Federation of hydrocarbons and energy security of the national economy and the social sphere[6]. Main tasks of the program are the details and the structure of the assessment of hydrocarbon resource base by increasing the degree of geological knowledge of the continental shelf and the formation of the industrial and the social infrastructure for the pilot projects on the continental shelf in order to fill the advanced oil and gas.

Sixth, July 3, 2012 the State Duma of the RF adopted in the final version of the Federal Law № 608695-5 «On Amendments to Certain Legislative Acts of the Russian Federation in the state regulation of

[6] About the program of exploration of the continental shelf of the Russian Federation and the exploitation of its mineral resources in the long term. URL: http://government.ru/docs/19888/ (Date of access: 02.08.2012).

commercial navigation in the waters of the Northern Sea Route," submitted by the Government of the Russian State Duma on 4th of October 2011, which establishes the status of the SMP as the national transport route and introduces a concept of "waters of the Northern Sea Route," in defense of the national interests of Russia. Multiplied by the volume of cargo the Northern Sea Route. Began a long-awaited update of the atomic icebreaker fleet. August 3, 2012 LLC "Baltic Shipyard - ship" declared the contractor for the construction of the head of the atomic icebreaker new generation capacity of 60 MW, which will be commissioned before 30 December 2017.

Seventh, Russia began building a modern infrastructure of the NSR. This is a comprehensive transportation project designed to ensure a rapid development and the development of the northern territories of the Russian Federation, to address critical economic, social problems, creating new industries and jobs, and the integration of its support NSR harbors with other transport modes, modernization of river, road, and rail routes communications, the northern airfields, airports, upgrading polar aviation and Russian icebreaker fleet, the development of communication, navigation and hydrography in the Arctic, including Russia's global positioning system (GLONASS) and multi-purpose satellite system, "Arctic", the project of opening an ice-resistant platform observatory " the North Pole. " Begins modernization of existing Arctic ports and construction of new port facilities and terminals. On July 20, 2012, to commence construction of a sea port Sabetta on the Yamal Peninsula. Enlivened other infrastructure projects (the Northern latitudinal - Polar Transsiberian ", etc.), created coastal infrastructure.

Eighth, for the basis of the state policy in the field of naval activities prior to 2020 (05/29/2012). "We believe - said Putin that our country needs to maintain and enhance its status as one of the leading

maritime nations of the world. Thus, our Navy should have all opportunities to effectively address a range of problems. *First.* First of all we are talking about the development of the naval component of the strategic nuclear forces, participation in global naval parity. *Second* - is the formation of multipurpose marine general groupings that can reliably counter military threats from the sea, to ensure the reliability of transport, communications and security of merchant ships, to effectively combat piracy.[7]. The third task is directed to the use of the Navy as a tool to protect the national economic interests. In particular, in regions such as the Arctic, where lies the rich bio-resources, the reserves of hydrocarbons and other minerals. In order to create a new image of the Navy general purpose will be allocated very solid money - 4.44 trillion by 2020. [4]

Ninth, the modernization of the defense industry began, which includes 1,353 companies and or-

[7] Putin V.V. An opening speech at the meeting, "About the implementation of the state program of armaments to equip the Navy." URL: http://президент.рф/выступления/16086 (Date of access:: 08.10.2012).

ganizations, with more than 2 million people, including Sevmash, "asterisk", "Arctic", etc. [8] On the state program of armaments and on the program of the modernization of the defense industry is investing an unprecedented means of Russia in the coming decade - almost 23 trillion rubles. The Council on 31 August 2012 Putin especially has emphasized that we have to improve the whole mechanism of defense, you need to make a powerful, comprehensive breakthrough in the modernization of the military, as it was in the 30's of the last century. You will need to master the high-tech, basic and critical technologies for the production of modern and competitive products. And on this basis, to provide advanced technological advance for the production of advanced systems of weapons and military equipment production in sufficient quantities and with high quality. [5] The potential of sea-based nuclear forces in 2020 will be significantly upgraded by entering the fleet of eight new nuclear submarine projects "Borey" built at Sevmash. In 2012, the first nuclear submarine "Yury Dolgoruky" final test, the second nuclear submarine "Alexander Nevsky" is factory tested, 30 July 2012 at the Sevmash shipyard in the presence of Vladimir Putin laid a new submarine - "Prince Vladimir".

Tenth, it was created twenty modernized border posts to monitor the northern border and the Northern Sea Route, under the federal program "The state border of the Russian Federation (2012-2020 years)." Part of the frontier of modern type with updated features will be located next to the nine rescue centers MOE and the Ministry of Transport, which is scheduled to open in the development of the Northern Sea Route, the rest - in remote islands in the Arctic Ocean.

The above and other measures of the Russian state will create a critical mass and improve the geopolitical situation in the Arctic. 2012 becomes, as the year of qualitative changes in the Arctic to Russia for the better site, it doesn't matter, what the skeptics are talking about, there is an opposition and named "friends of Russia." Problems here storage rings elk quite a lot and can only be addressed strategically calibrated steps of the Russian state in the years ahead. Such steps will be actively pursued. And I, like many other experts, perfectly aware that this is only the beginning. Without a proper political will in Russia, unfortunately, little is being done. If we are the opposition and many in the West demonized Putin's role in all the troubles of the Russian society, that's why then not mention his real positive contribution to the development of the Arctic, its ecology? Arctic breakthrough Putin - is a breakthrough Arctic Russia, strategic steps of the Russian state as the real beginning of the great work on the protection of national interests in the XXI century and continued to hundreds of years of the Arctic exploration.

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« Arctic-Fund » – is the territory of dialogue

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Abstract

In this article, according to the example with the scientific-educational project 'Arctic Fund' was presented the activity of the Research Library of the NArFU in the sphere of creating of a united information space, according to the main spheres, which are reflected the national interests of Russia in the Arctic.

Keywords: *Arctic vector of the development, educational model, Scientific Library of the University, research and educational portal.*

The modern society requires a new look at how to work with sources and carriers of information, and also at the model of the University Library. The strategic goal of the Research Library of NArFU named after M. V. Lomonosov – is the formation of a single interactive information environment, efficiently and proactively responding to the growing needs of the reader, the development of the library functions as a full participant in the educational and research activities, the center of the educational, scientific, social and cultural life of the University and the region. Libraries and universities are interrelated and determine the conditions of each other: The Modern Library is a catalyst for the development of the University and its transformation into a leading world-class university, which in turn determines their needs and it form the further development of the library.

The formation of the new model library is in the direction of NArFU named after M. V. Lomonosov is creating by the following interrelated vectors of the development: scientific, educational, and local history of the Arctic, cultural, educational, and social. Arctic, homeland vector plays an important political role and focuses on the formation and the development of the Information resources related to the study of the Arctic, and also includes the formation and study of the foundations of teachers of NArFU named after M. V. Lomonosov, scientists and local historians.

The Arctic plays an increasing role in the life of the Arctic states themselves, and the world community as a whole. "The Arctic region is intended to be as the platform for combining forces for a genuine partnership in the economy, security, science, education, and in the conservation of cultural heritage of the North", - said Putin at the International Forum "The Arctic - Territory of Dialogue" September 23, 2010 [1].

To creating the mechanisms of accumulation and the mechanisms of creating the maximum availability and transparency of information about the historical and cultural heritage, the development and implementation of fundamental and applied research in the practice of management, innovation in the Arctic, as well as preservation of the Arctic as a zone of peace and cooperation - the main goal of Russia's policy in the Arctic, as reflected in the "Principles of State policy of the Russian Federation in the Arctic for the period up to 2020 and beyond", approved by President Dmitry Medvedev, 18 September 2008. According to the document, the foundation for the generation and dissemination of knowledge should be the creation of an innovative infrastructure to support the implementation of methods of informing the public on priority areas for the policy in the Arctic region.

In May 2011, NArFU named after M. V. Lomonosov, as a participant in the formation of a union information space dedicated to the Arctic, performed the idea of the development of the "Arctic-fund."

The aim of the project – is the accumulation, classification of information resources, public access to the accumulated knowledge of life in the Arctic region of the Russian Federation in the context of the main directions, reflecting Russia's national interests in the Arctic.

The Scientific Project Manager – is Anatoly Ivanovich Smirnov, President of the National Institute of Global Security (NIIGloB), member of the Presidium of the Academy of Natural Sciences, doctor of Historical Sciences, Professor, Extraordinary and Plenipotentiary Ambassador of the Russian Federation in Norway.

The realization of the project was taken by the Scientific Library of the University.

In the future, "Arctic Fund" should become a union scientific and educational platform of interaction of the Arctic Region. The project tasks are:

- The creation of the unique informative fund, which includes following components:

a) The collection of full-text documents on the Arctic issues (books, archival materials, research papers, research reports, conference papers, PhD and doctoral theses, expeditions, etc.);

b) The collection of multimedia (video, audio, photos);

c) Thematically and bibliographic databases in the main areas of the project, comprising a structured description of the stored information, the distributed on the main topics;

- systematization of information according to the main target areas of the project, and if necessary, it translated into digital form;
- preservation, and the centralized storage of large amounts of information;
- the development of multi-language research, information and research source as a means of concurrent access to the main areas of structured project information;
- Developmenr of the friendly navigation and search for information on the resource, based on the algorithm of intelligent search queries, providing high accuracy of this information and does not require the user to a good knowledge of the subject of research;
- providing access to electronic copies of the documents and materials held in libraries, museums, archives, the Barents Euro-Arctic Council and not previously available to a wide audience;

- a scientific social network profile, serving as a means of communication the world scientific community in various areas of the Arctic issues; create a virtual Training Center is integrated into distance education.

The first stage is finished, during which was formed by a core component of the project. Its basis was the collection of the library literature in the languages of the Nordic NArFU named after M. V. Lomonosov. Today is:

- identified agencies and organizations, leading to the development of Arctic issues;
- conducted to select the most relevant information on various data carriers for profile subjects (books, periodicals, maps, summaries of dissertations, visual materials, etc.), in libraries, museums and archives, the Barents Euro-Arctic Region;
- a gradual digitize of the most important objects of scientific information collections library of NArFU and the partner organizations of the project in the Barents Euro-Arctic Region;
- Developed and successfully tested a basic functional information-analytical portal "Arctic Fund", built on SharePoint 2010 and integrated with the automated information system IRBIS.
- Portal information is available around the clock domains in arctic-fund.ru and Arctic fond.rf;
- formed and approved by the main thematic sections "Infology of the Arctic", which is reflected on the web portal;
- implemented a system of full text search in content site;
- by updating the portal employee NArFU, constantly updated electronic catalog;
- designed and implemented a mechanism for the provision of electronic library resources, which, according to the signed license agreements, can only be placed in the local access;
- it is working to promote the portal of teachers and students of the university and attract sponsors to supplement the content, the staff ECHZ exercise training on working with materials portal;
- Portal is presented at international scientific conferences;
- regularly (at least three times a week) updated section of the portal "News"

Works are carried out in a professional manner. The project involves leading experts of the library.

Formation of the portal content "Arctic Fund" is both retrospective and contemporary publications. Authors are invited to enter into a license agreement with the transfer of exclusive or non-exclusive rights to the work for a fee, as well as cost.

The Section "Infology of the Arctic" supervises by the scientists of NArFU leading experts in various fields. Each of the subsections preceded brief information and analytical information on the relevant issue.

To all the full-text documents in the Library is made an identification record by the specialist. It includes the following: "author", "title", "output", "core content", "abstract." Made organizing documents with tables of subject classification, subject headings. Enter keywords that reflect the content of the document.

Portal database is indexed in all major search bases, so you can quickly find the information regardless of whether the user is drawn directly to the portal or not.

The Search in the online catalog is a portal for all content, and in its thematic sections. By making a request to the relevant requirements, we can make a full-text search across all documents available in the database or to limit the content of bibliographic descriptions. The system allows the user to see the names used in the query terms used by the author of each work. Full texts are provided with a special software platform (Silverlight), including a browser plug-in, in accordance with a license agreement for the right to use the works in formats. Pdf or. Doc.

The rapid reporting allows us to see the photos and video of the Arctic expeditions, regional and international forums and conferences. The portal requires Russian and English versions.

These characteristics distinguish the portal "Arctic Fund" from other information products, which can be found in the Internet.

Directly from the portal, with the support of JSC "Lanit" a working group of library staff of humanitarian and natural science literature. The manager of the project "Arctic Fund" is the Deputy Director of the Department of Information and Library Development of NArFU - L.A Morschihina.

We invite individuals and organizations - holders of content on the Arctic issues to participate in the project "Arctic Fund".

NArFU suggests:

- ✓ conclude a cooperation agreement, designed to support the mutual interests of the participants;
- ✓ make digitization of the funds or get an electronic copy of the documents on the basis of a license agreement;
- ✓ create a section of the partner organization in the portal "Arctic Fund";
- ✓ integrate resources in distance education;
- ✓ organize and conduct joint activities aimed at promoting the activities of the partner organizations.

The development of the project is planned on 2012–2014. And the "Arctic Fund" will progress in accordance with the decision of the tasks set by the designers.

We believe that a comprehensive approach to the implementation of the project will have significant scientific, educational, political, economic and social benefits for the development of the capacity of the University of the Arctic Region and the world at large.

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Social well-being of the population of the mono-specialized city

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Abstract

The article deals with the concept and the distinctive characteristics of the health and social well-being, mood and social mood, the main approaches to the study of the social well-being, its species and indicators, as well as features according the research of such phenomenon like mono-specialized city.

Keywords: *social well-being, social mood, social welfare, social expectations, indicators of the social well-being, mono-specialized city.*

One of the key performance indicators of the social development of the area and the quality of life of people living there is the social well-being of the population. Well-being in terms of the science of psychology is more focused on the interpretation of the concept of "personal health". Well-being can be defined as a kind of the general characteristic inner feeling comfortable psychological and physical health of the individual. Well-being is subjective and depends on the exposure time, external and internal factors. Being - is the process of understanding their feelings, including mood, so in other words, we can say that health is conscious mood.

Social well-being is different from the physical well-being that is relatively long and stable state, against the background of which runs during the specific period, and sometimes the life of one or more generations.

Sociological aspect of the social well-being is a complex of an individual satisfaction with their health, sociological status, financial situation, implementation of other business legal protection, family welfare, communication links, as well as the social-economic and political situation in the city, region and country whole. According to the opinions of the scientists A.A Dregalo and V.I. Ulyanovsk, named an important indicator of the population is the peace of mind it is the social well-being, which is defined as the value and emotional relationship to their social status and level of satisfaction of their needs and interests [1, c. 488].

Social well-being belongs to the scientific category, which requires a comprehensive and multidisciplinary approach to the study. The theoretical basis for the study of issues related to the social well-being, more accumulated in the psychology than in sociology, where this concept is still not clear.

In national science, there are two main approaches in the study of the phenomenon of social well-being of the population and its interpretation. The essence of the first approach is to determine the social well-being as an integral subjective indicator for measuring the perception of well-being, which is measured by the satisfaction / dissatisfaction with the life situation and its individual characteristics. Adherence to this theory can be seen in the works of EN Golovakh, AP Gorbachik, N.V Panina, where social well-being is considered as attitudinal relation of man to the system of social relations and their role in this system [2, p . 45-47]. This approach is justified provision that social well-being is determined by the degree of satisfaction of their social needs. The second approach is presented in the studies L.E. Petrova [3, 2000], J.T.Toshchenko and S. V. Kharchenko, where social well-being is considered as the initial building block of the social mood [4, 1996].

Indicator of the social well-being in the context of this approach is the need of the individual for self-preservation itself as a social object, as well as assessment of the extent and level of prosperity surrounding microenvironment.

Researcher L. Kulikov identified as an indicator of social well-being overall life satisfaction, reflected in the evaluation of individual well-being [5, 2000]. Under this theory, we can identify five types of well-being:

1) Psychological well-being - a sense of unity, peace and calm. This condition occurs when there is no contradiction in the subjective view of the world of the individual, appropriate perception of circumstances;
2) Physical (bodily, somatic) welfare - Addressing the need for bodily comfort, physical well-being;
3) Social well-being – is the individual satisfaction with their social status and the current state of the society, satisfaction with interpersonal communication in micro social environment;
4) Spiritual well-being – is awareness and experience of the meaning of life, the possibility of initiation to the spiritual riches of the culture, the presence of faith, the possibility of free expression;
5) Material well-being – is the satisfaction of the material side of life (housing, food, recreation, etc.), financial stability.

Satisfaction with various aspects of life depends on the level of claims, respectively, higher claims, the lower the level of satisfaction, and it is related to the value orientations and life strategies of man. Value orientations cause individual's attitude to the changes and depend on its life strategies. The concept of "life strategy" can be defined as the ability to self-build their lives, her conscious regulation according to individual life priorities. Scientific studies OA Khasbulatov and LS Egorova identified three types of life strategies: a survival strategy, development strategy and paternalist strategy [6, 2002]. Survival strategy focused primarily on their own resources, by any means provide for themselves and their families. Development strategy requires this type of behavior and design of life in which there is rejection of dependency, self-reliance in achieving the goal, motivation for success, focus on self-development and self-actualization. Depending on the life strategies of man constructs his future. An important element of social well-being here will be the social expectations, which includes the expectation of the future development of the country, region, city, and the idea of his own life.

In his research about the questions of the changes in the social well-being of Russians for 1994-1998 G. Voronin highlighted two unobservable manifestations of the social well-being: the level of satisfaction with life and character of world view, which can be attributed to his performance, and ten external manifestations of the social well-being, which can be attributed to it. The [6, 2001]. Indicators of the social well-being - it is a subjective assessment of their position in the social, economic, legal, family, and personal aspects of life.

By studying the social well-being, it is important to consider that the psychological and social well-being is a fundamental phenomenon in this equally, with important methodological and theoretical load is carried by the concept of "mood." The concepts of "health" and "spirit" have genetic differences. Under well-being, we understand as the subjective sense of the psychological and physiological comfort of the internal state of the individual. Mood – is the general emotional state over time stains mental processes and behavior. Humor can be defined as the rapidly changing human condition that occurs in response to external objects.

Social mood as a socio-psychological education is, above all, the result of spiritual and practical understanding of the world, which is formed in the process of understanding of reality that affects this reality and is an important characteristic of social consciousness.

Социальное настроение связано с оценкой общества и оценкой себя в обществе. Social mood connects with the assessment and evaluation of the community in the society. Assessment themselves in society is shown through evaluation of their social status, wealth, quality of life, education and cultural development, as well as self-esteem, which arises as a result of assessments of their own life experience, their success or failure.

Based on the typology of social mood, which was proposed by A.V. Petrovsky and M.G. Yaroshevsky, different kinds of social mood (political, ethnic, religious) can be related to different aspects of the life: political, economic, cultural, [7, p. 56]. Depending on the subject can be identified individually configured, when the bearer is an individual, and as a popular trend and the mood of different layers, groups, nations, social institutions.

Social well-being is determined by the situation in the country, the region, and in the process of socio-economic sphere and the features of the permanent place of living. Mono-specialized city - is a special type of community that is characterized by the unity of the city and the local industry, as well as monocentric nature of the economy.

Viability of urban society mainstays determined not only the actual level of well-being, but also the perception of the existence of conditions specific to this type of settlement.

There are two key indicators that affect the social well-being, external and internal. The external indicators include socio-economic, climatic, political, environmental, which don’t depend on the individuality of the respondent; to the inside - the individual characteristics of the respondent, such as social status,

place of residence, age and gender characteristics, psychological factors, which are the unconscious determinants of the respondent's behavior.

The differences of opinions of the respondents, which raised from the interaction of these two indicators that structure the perception of socio-economic situation of different groups of respondents and to identify the most significant problems of social development of mono-specialized City and recommended solutions. In the study of social mood and well being of the population mainstays to identify the key characteristics and indicators of this phenomenon. For indicators of social well-being treated as proper indicators, as well as more abstract in content indicators of mood and feeling. As part of the survey can be used an unlimited number of different indicators to measure the subject. To study the social well-being of the population of single-industry towns can use the following features and indicators (Table 1).

Table 1

Characteristics and indicators of the social mood of the population of the mono – specialized city

Characteristics of the social well -being	**Indicators of *the social well -being***
Assessment of external conditions	–performance evaluation of local authorities - assessment of the credibility of the local authorities -assessment of the social climate of the urban environment
Assessment of internal state	-Health Assessment -Assessment of the social optimism - Evaluation of the basic values
Satisfaction with life	- Assessment of family welfare - Assessment of their material well-being - With their life conditions - Their position in the society - Personal perspectives

Thus, we can conclude that the concept of "health" and "mood" for all their similarities have the significant differences. Mood, as a kind of the psychological background basic human activity, may be conscious and unconscious. Well - being, as a rule, is the awareness of the feelings of the individual, including mood. In studying the phenomena of "social well-being" and "social mood" should allocate their main characteristics and relevant indicators. The principal characteristics are the structural elements of mood and feeling. In this case, indicators of social mood and social well-being can match. However, given that some of the characteristics of social mood may be unconscious, they cannot be the building blocks of social well-being.

The specificity studies of the social well-being in mono –specialized city, primarily associated with the features of this type of settlement, which are manifested in the form of isolation from large cities, one-sided development of economic orientation, depending on the local industry and a sharp decline in living standards as a result of socio-economic degradation of vital areas.

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Social and medical problems of the population of the circumpolar countries – challenges of the modern development of the Arctic

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Abstract

The article is based on a review of data, which were submitted in the foreign scientific journals, which reflect the results of the research, which were carried out in the framework of the discipline 'Public Health'. The characteristic of the social and medical problems of the population of the circumpolar countries in the early XXI century is given.

Keywords: *Arctic, North, public health.*

The Arctic is a vast geographical area, adjacent to the Northern Pole of the Earth, with an area of more than 22 million square feet. km. Six countries (Russia, USA, Canada, Denmark (Greenland), Iceland, Norway) have territorial possessions in the Arctic, and access to the Arctic Ocean basin. Together with some areas of Finland and Sweden, the total population of the circumpolar regions in the middle of the 2000s was 3.74 million people, of which 9% - are indigenous peoples. [31]

The last decades of the XX century were for the Circumpolar time of an active development of its resource potential. The economic effect of the latter, estimated at 30 trillion dollars, began to prevail in the minds of the management of the Arctic over the real threat posed by this process. Ecological and climatic problems, uncomfortable living conditions in the North, conditional reduction potential in life population, take a back seat to geo-strategic advantages that will extraction of natural resources in this region of the planet.

Since the beginning of XXI century, the study of all the aspects of the life of the population, either permanently or temporarily living in the circumpolar areas of the Earth, has become systematic. One of the

priorities in this process is to examine the state of the public health. For its implementation in the second half of the XX century, the national governments in the Polar Regions were created large research centers. Up to this moment, based on their accumulated amount of new knowledge that is sufficient to actually solve many of the social and hygiene problems associated with living in the Arctic. Another result of this research activity is the emergence of periodicals, which displays the results of studies related to the far north. To public health in this international edition is the journal of the Barents region «Circumpolar health».

The aim of this work is to systematize the information on the major problems of public health in the Arctic region, named by the researchers on the global level.

Methods

The current review is based on an analysis of the data presented in the international scientific journals and displays the results of research carried out within the discipline of "public health" for the last 6 years (2006-2011). The selection of publications was Implemented using resources information network MEDLINE (PUBMED). Search publications for review by the keyword «Arctic» 7352 gave a reference to the article (26/02/2012). When limiting the query words «Arctic» and «health» («The Arctic" and "health") - 1183 reference. On the number of articles were excluded publications that reflect the results of research on genetic characteristics of the indigenous peoples of the North, the results of the pilot studies, articles on the problems of zoology and veterinary science, historical reviews, articles, published before 2006. The survey also did not include material from the "non-fiction" literature. Considering these limitations, all were selected for analysis 37 publications.

Discussing the results

Range of the scientific issues in the field of the public health in the northern circumpolar territories, which focuses the interest on the foreign researchers, is wide enough, even despite the fact that the subject has systematically investigated recently. Table 1 shows the results of the review. The four major groups of problems, aspects of which are mostly explored in the foreign research centers for the past six years.

Table 1

Groups of the problems, the main categories and themes in the field of public health, identified in the review

Group of the problems	The main categories	The main topics
The climatic features and the state of the Arctic environment and its impact on the human health	А. The influence of the Arctic climate o the health of the population Б. The pollution of the environment В. Climatic changes	- The negative risks of the Arctic climate on the human health - Features of the anthropogenic pollution in the Arctic (associated with the development of its resource potential) -The impact of the pollution on the human health - The impact of the climatic changes on the population in the Arctic
The health of the indigenous people	А.Etno-specific features of the health status of indigenous peoples in the Arctic	- The low life expectancy -Lack of exercises -Genetic features

	B. "Westernization" way of life of indigenous people C. Features of the demographic situation D. Features of the risk factors for the health of the indigenous people of the North, depending on the country of the residence	- Characteristics of the impact of traditional risk factors of the drugs (smoking, alcohol, drugs) -High rate of infectious diseases
Features of pregnancy and childbirth; peculiarities of certain groups of diseases in the Arctic	A. Characteristics of pregnancy and childbirth B. Cancer C. Non-communicable diseases	
The main challenges of the health care system in the Arctic	A. The inequality in the access to the medical help B.Strategy of the prevention programs, taking into account the peculiarities of the Arctic	

Features of the climate and the condition of the environment in the Arctic and its influence on the human's health

The influence of the climatic conditions on the health and quality of life in the Arctic territories assessed by the overwhelming majority of researchers as any adverse [19, 26, 37]. Among the specific risk factors, the most significant are long-term exposure to cold, and the synergistic affect each other wind, precipitation and annual aperiodicity light. [19] Global warming has also affected on the health of people living in high latitudes [19]. In particular, in the Irkutsk study established a direct link between the sharp fluctuations in temperature (cold waves in winter and heat in summer) and the rate of the population of large cities. [26] Canadian and Finnish scientists have confirmed an association between living in the cold Arctic climate and higher infant mortality and lower life expectancy. Showed that an increase in average temperature in January for every 10 ° C (at the meridian flow from north to south) Increases the average life expectancy of six years and reduce the infant mortality rate by four per 1000 live births [37].

The research, conducted in the Yamal-Nenets Autonomous District, indicates the children born in the North, more prone to non-infectious risks to their health than children also live in the Far North, but born in the southern, more favorable climatic regions [32]. High salt intake, low physical activity, dyslipidemia, hyperglycemia, smoking, low magnesium concentration in the blood plasma, overweight, high blood pressure is a partial list of the risk factors, the prevalence of which this group is estimated as the highest [32].

The influence of the global warming as a factor that threatening the population's health status also is being studied in the foreign scientific schools. In addition to the individual epidemiological studies implemented large-scale national and international projects, which aim to coordinate joint efforts of the public services of health protection and public organizations? This direction is a priority for the World Health Organization (WHO).

In assessing the contents of the scientific publications on this topic were identified most important two aspects.

Firstly, global warming is the reason not only of the complication of the disease burden, fluctuations in mortality from specific states, but also brings with it a change in the living conditions of the Far North. This issue is particularly to indigenous peoples in relation to the potential risks to their traditional ways of food (breach of the conditions in the grazing of the deers or reduction of biodiversity of the ocean). [11] The research, conducted among the Nenets living on the island Vaigach (Arkhangelsk region), confirms this fact. More than half of the respondents had already been forced to change the usual way of life due to global warming. [12]

Secondly, improving of the transport accessibility of the Far North to the melting of multi-year ice can lead to increased migration from the southern territories of the countries bordering the Arctic Ocean. Experts see this as a serious threat to the indigenous people who may be at high risk for the spread of new infectious diseases, and further, have uncontrolled changing the traditional way of life. [11] Climate change causes increased incidence of injuries, stress, consumption of unsafe food and water [7, 14]. Population health danger lies in the inversion of the life cycles of pathogens dangerous diseases (including parasitic). [13]

Environmental pollution is another important social and hygienic problem of the Arctic. The main groups of pollutants relevant for the region are:

1) heavy metals (cadmium, lead, mercury);
2) persistent organic pollutants:

   - Industrial waste (poli and hlor having biphenyls);

   - Pesticides, chlorine-organic compounds (dioxins, furans, chlorinated dog-titsidy, DDT, geksa hlor benzin) [28].

   There is the following general property of approaches to the study of the problem in foreign publications. Because the major industrial centers with a permanent population, which are out of Russia and norther to the Arctic Circle practically absent, foreign researchers are considering the indigenous people of the Arctic as a major group exposed to this threat. In particular, for several years continue to study the effects of anthropogenic pollution on the endocrine system, which is likely to be able to explain a significant sexual dimorphism among minority ethnic groups in the Arctic. [6] Evidence of the negative impact of the environment on health is recognized as a fact the higher the incidence of gastric cancer in comparison to the Sami population in southern areas of Sweden and Finland. [18]

Relatively new direction of the scientific research for the foreign experts is studying the population health threats of the population in the circumpolar areas that come with development of resource potential of the Arctic. Oil and gas production in the continent and its offshore dangerous potential environmental impacts, which can radically change the living conditions of indigenous peoples of the North. [4] Anthropogenic pollution of the Russian Arctic is also studied abroad. [28] The researchers note the irregularity and lack of systematic data collection on the state of the environment in our country, even in recent times, alt-

hough they had confirmed the fact that in the last decade, the blood in the Russian Arctic has decreased significantly metabolite concentrations of organic pollutants [28].

In addition to the representatives of the indigenous people of the North, to the group of the most exposed to the pollutants include pregnant women and children. They are characterized by generally higher risks of cancer, disorders during pregnancy and birth, low birth weight of the fetus at birth, congenital abnormalities (see below).

The health of the indigenous people

There are dozens of indigenous people (one in Russia - about twenty), the state of health of a group which is a popular research topic of foreign experts in public health, who is living In the Arctic regions of Russia, the USA (Alaska), Canada, Denmark (Greenland) and Norway. The study of this problem is in terms of three basic things:

1) high exposure of the indigenous people of the Arctic to the natural and anthropogenic pollutants, climatic changes;
2) access to the health care disparities (in comparison with the southern regions and, depending on the socio-economic welfare of the country of residence);
3) The "Westernization" of the individual lifestyle of indigenous people (mainly the Western Hemisphere).

In general, the state of health of the small ethnic group of the circumpolar territories is characterized by the following features

- low life expectancy (in comparison with the population of the southern territories);
- high infant and child mortality;
- high prevalence of the infection and number of non communicable diseases;
- high level of injuries, suicides, compared with the population of the southern territories.

In turn, the quantitative and qualitative study of these factors is complicated by certain behavioral characteristics of the indigenous peoples of the North:

- high prevalence of substance use, which influence on the psyche (nicotine, alcohol, drugs (for American Indian Alaska));
- unbalanced diet (more calories, containing more cholesterol and less minerals and vitamins);
- sedentary lifestyle (as a consequence of "Westernization" phenomenon that is characteristic of American and Canadian Indian tribes). [25]

Available data indicates a stronger combined of the negative influence of these risk factors on the health status of a group of representatives of the small ethnic groups of the Far North. For example, for the Inuits of the North America found that smoking is associated with a lower dietary intake of many essential trace elements and vitamins. [27] Inuits smokers consume less thiamine, niacin, vitamin B6, folate, magnesium, sodium, protein, omega-3 fatty acids, iron, vitamin B12 and selenium [27]. Almost half of the male smokers and women consume less than the required amount of saline-soluble vitamins (A and C), folate,

calcium, and magnesium. This, in turn, is the additional risk of metabolic disorders and complication of the disease burden. [27]

Unlike other countries that have territorial possessions in the Arctic, Russia's more relevant is the study of health risks to the population, which does not relate to a group of indigenous people. This is due to many reasons. In the former Soviet Union policies to stimulate migration to the northern regions consistently implemented for decades, thereby, on the one hand, the radical change in the ethnic composition of the population of the traditional Arctic, on the other - has caused the unique demographics of the region. For other countries, by contrast, historical residence of Europeans and their descendants in the Arctic was not a mass phenomenon. Even now, the circumpolar territories Europeans are in the majority in the "shift camp" mode. It is therefore considered that the study of the effect of prolonged exposure to the environment and living conditions in the Arctic on their health is an extremely complex task.

Ethno specific features of the health of the indigenous population of the Arctic

The health status of indigenous people has a number of features that are caused by genetic factors and living conditions of the Far North. Fairly common for small ethnic groups Circumpolar is a relatively high prevalence of thyroid autoimmune disorders. [9] Life expectancy in the population of indigenous people is generally lower in comparison with the population of the South. But this feature is relative and depends on the socio-economic characteristics of the region and country. Even in prosperous Canadian Inuit life expectancy ten years less than the national average, despite the large number of times that Government measures to prevent disease and promote healthy lifestyles. [23]

Considering the prevalence of some important groups of diseases in the population of the small ethnic groups have following features. First, it is a high variability in incidence and mortality from cancer. For example, all the Sami living in the northern parts of Norway, Sweden, Finland and the Kola Peninsula, the incidence of this group of diseases is less than for the population of the southern regions (standardized to 30% on average). [18] The exception is cancer of the stomach, the researchers explain that special diet of the people (salted fish, smoked meat, etc.). [18] This fact is even more surprising in the sense that the area has repeatedly been Saami radioactive fallout (tests on Novaya Zemlya in the 1950s and 1960s, and in 1986, following the Chernobyl accident). [18]

The Arctic indigenous people bear a significant burden of noncommunicable diseases. The prevalence of some of them on tens of percent is higher than the average for the population of the southern territories. [31] In particular, for the Inuits of Greenland is characterized by a significant incidence of both forms of diabetes mellitus (40% above the world average). [31] For the indigenous people of the northern Russia (Nenets, Selkup) characterized by a high incidence and prevalence of tuberculosis, rheumatic fever, congenital heart disease, alcoholism. [31] At the same time, among the peoples, traditional way of life, there was low in comparison with the population of the southern territories, the incidence of coronary heart disease [31]. The indigenous person of the Arctic Circle is characterized by a high prevalence of hypo vitaminosis of D [30]. In turn, researchers have drawn parallels between this feature and the high preva-

lence, in comparison with the population of the southern territories, rickets, cancer, diabetes and obesity [30].

«Westernization» of the life style of the indigenous population

Historically, the indigenous population in the Arctic has physical active on-times of life, because they have difficulties in obtaining food. Today, the representatives of the small ethnic groups receive funding from the budget of their states; have numerous social benefits, so that the last time they are gradually moving away from the traditional activities. [31] Some indigenous people in the Arctic at the beginning of the XXI century were so embraced by as it is called "Western" way of life, creating a real threat to the status of their group health. This process is accompanied by a significant decrease in the physical activity, a high prevalence of behavioral risk factors (smoking, alcohol consumption and drug use) among small ethnic groups called "Westernization" [3, 31]. The consequence is widespread in the population of the indigenous people (especially the Western Hemisphere), obesity, which increases the risk of cardiovascular disease [31]. A large proportion of women, for example as Intuits of the North America and Greenland, continue to smoke and consume alcohol, even during pregnancy, causing even greater harm to the health of future generations [24].

Representatives of some of the indigenous people of the Arctic have their own unique "collections" of risk factors. For American Indians, for example, is characterized by a significant prevalence of marijuana, cocaine, inhaled substances and chewing tobacco, while the indigenous people of Russia – is alcohol. [29]

"Westernization" of the way of life of the small ethnic groups of the North is the reason of the number of the negative social phenomena. [1] Results of the systematic review conducted by. V. Leti with colleagues in 2009, according to the striking increase in the death rate from suicide for the young people living in the some Arctic regions (up to twenty-fold compared to the world average). [22]

The features of the risk factors for the health of the representatives of the indigenous population of the North

The diet of the indigenous people, as the risk factor for the health has the longest history of the research. M.V. Lomonosov in the XVIII century connected it to the physical features of a person's status. In particular, the Lapps (Sami), according to his words, the food consumed mostly fish (Grombah S.M., 1961On the contrary, samoyadi (Nenets) in his memoirs - "the growth of them is not small, broad and strong," and for this reason, Lomonosov believed in the meat diet (Grombah SM, 1961).

In the XX-XXI centuries, appeared the methods that allow researchers to determine the level of the influence of the diet on the characteristics of diet on the human health. Therefore, indigenous peoples can again be divided into heterogeneous groups. Historically, the small ethnic groups of the North, mainly consumed fish rich in polyunsaturated fatty acids and selenium, characterized by relatively low prevalence of abnormalities of the cardiovascular system, cancer [3, 31]. The more significant exercises they had the less negative impact of climatic conditions was. But in the XXI century, a number of fish diet of indigenous people of the North began to be seen more as researchers have a risk factor that is associated with a high con-

centration of it hazardous to human health. In other words, small ethnic groups of the Arctic have been the victim of industrialization in Europe, America, and later in China and India due to the transport of pollutants from the air masses and ocean currents.

For the representatives of the indigenous people of the North have relatively high in comparison with the population of the southern territories, the incidence of infectious and parasitic diseases (such as giardiasis, tularemia) [13]. This is due to the traditional crafts and environmental conditions [16].

Features of pregnancy and childbirth; the features of the longing of the several groups of the illnesses in the Arctic

Despite the number of studies, particularly pregnancy and childbirth in the regions of the Far North in general are badly studied. [3] Among the most recent issue of congenital anomalies of the fetus is the most urgent, which contributes to the presence of a set of risk factors: pollution, lack of study of the so-called "talidomidovoy 'problems, life of women living in the Far North. [3] Comprehensive analysis of this problem and prevent the fact that the creation of specialized registers, accounting fetal anomalies in the northern regions is relatively recent (15-20 years ago). The degree of accuracy and completeness of the data contained in them, still due to the level of socio-economic development of the region. Accordingly, the results of research conducted on the basis of such registers and databases in full cannot be transferred to the general population. [3] It should be noted that the Murmansk region in Russia is one of two places in the Arctic (except Alaska), where the registers are ethno-specific data.

The results of the research have shown the deterioration in the health of the pregnant women, who are living in the Far North [2, 10, 35]. In particular, over the last thirty years in the Murmansk region (1970-2000's) increased to the half the proportion of women with anemia during pregnancy: from 43.7 to 89.8% [10]. Fetal weight during the birth for mothers, who had suffered from anemia, is in average of more than 48 grams. [10] At the same time, the exclusion from the analysis of confounding factors, women who had anemia, had a lower probability of stillbirth. (OR = 0,68; 95 % CI 0,52, 0,89) or premature confinement (OR = 0,66; 95 % CI 0,58, 0,75) [10].

The influence of the climatic factors on the course of the process of pregnancy is much less important in comparison to the quality, access to care and overall socio-economic well-being of individual territories of the Far North. In particular, in two adjacent regions (Murmansk region and the northern Norway), the index of the perinatal mortality is different in almost half (10.7% vs. 5.7 per 100 000 in the 2000s). [2] The situation is similar to the prevalence of preterm birth (8.7 vs. 6.6%, respectively) [2].

The state of the dentist health of the people, who are living in the Far North, to the same extent due to the socio-economic welfare of the country and climate. This is another aspect of inequality in the status of health of the various countries bordering the Arctic Ocean. In particular, in Russia, 91.8% of adolescents have fifteen years of decay, and the index of the CPU (carious, sealed, extracted teeth) the average equal to 4.92 [15]. Have its own characteristics depending on where you live teen. In the cities of the Russian Arctic average extracted teeth is lower than in rural areas (2,15 vs. 2,95, p = 0,006), while the fillings -

higher (2,71 vs. 1,79, p <0,001) [15]. The higher incidence of dental caries is also noted in 4-5-year-olds and 12-15-year-olds in Alaska (USA) in comparison with the teenagers of the southern states - 7.3 and 5.0 on average decayed teeth in the north versus 1.6 and 1.8 is in the south. [8]

For the population of the Arctic areas of the Western Hemisphere (Alaska, Canada, Greenland) is noted with the high level in comparison with the southern areas, of the prevalence of infectious diseases, sexually transmitted infections (chlamydia), but especially among young people under the age of 20 years [21].

Due to the annual light aperiodizm for the Arctic population is typical, for example, a particular form of migraine, the occurrence of an attack that is associated with the elucidation of the weather, but has no annual cycles [5].

The main challenges of the health care system in the Arctic

The most important challenge to the national health systems of countries, who have territorial possessions in the Arctic, is the inequality in access to the health care in the Far North in comparison with residents of the southern regions. The proof of this statement is a higher incidence of certain diseases, chronic course of much pathology, late diagnosis and, consequently, higher death rates from a number of states (see above). Even more exposed to potential threats to the indigenous and rural populations of the Far North [20, 23]. At the same time the legislation of almost all countries that have territorial possessions in the circumpolar regions, ensures equal access to health care [23].

For the circumpolar regions marked following characteristics of the health service: significant variations between the documented duties of the medical staff and the amount of their actual work. [23] This is mostly typical to the middle staff. Abroad is recognized, that the role of middle staff in the rural areas in the circumpolar territories almost always goes beyond its jurisdiction. [6] In addition to the implementation of the medical surveillance of chronically ill sister often had to provide medical care in emergency situations. [23] .

The treatment of the chronic patients with the principle of continuity of the process - is another challenge to the health systems of the Arctic countries. [23] In this regard, particular attention is paid to the development of the specialists abroad of so-called "primary care» («primary care»), which can be translated into Russian as primary health and social care. [23]

Due to the nature of the health care in areas of the Far North (low population density) the national health services are being actively implemented in the practice of information technology [23]. There are two telemedicine systems: the so-called «tele health» and «e health» [6]. System «tele health» - is "the use of communication and information technologies to implement or support the implementation of health care services, where participants in the process (that is, doctors and patients) divided space" [23]. System «e health» - is the health care and medical information provided or enhanced through the Internet and related technologies. [23] The latter system is used as a means of counseling or training specialists in remote areas of the central scientific or medical centers [23]. In the scientific publications, the focus of researchers

is to study the following aspects of this theme: the application of telemedicine capabilities in specific circumstances; perception by physicians and patients of the fact treatment with telecommunications technology and economic efficiency of telemedicine [23].

The current review is based on the analysis of the data presented in the international scientific journals and displays the results of the research carried out within the discipline of the "public health" for the last 6 years (2006-2011). The selection of publications was Implemented using resources information network MEDLINE (PUBMED). Search publications for review by the keyword «Arctic» 7352 gave a reference to the article (26/02/2012). When limiting the query words «Arctic» and «health» («The Arctic" and "health") - 1183 reference. On the number of articles were excluded publications that reflect the results of research on genetic characteristics of the indigenous peoples of the North, the results of the pilot studies, articles on the problems of zoology and veterinary science, historical reviews, articles, published before 2006. The survey also did not include material from the "non-fiction" literature. Considering these limitations, all were selected for analysis 37 publications.

Conclusion

Public health in the circumpolar areas is one of the most researched topics in foreign research centers. In the framework of clearly determinate number of areas in which focused attention of epidemiologists and experts. In this review, four of these directions are:

1) The features of the climate and the state of the Arctic environment and its influence on the human health;
2) The health of indigenous people;
3) Characteristics of pregnancy, childbirth, and characteristics of the individual groups of the diseases in the Arctic;
4) The main challenges the health care system in the Arctic.

In each of the groups of the above-mentioned research problems abroad, it have been developed their own concept of perception, and thus the set of the research questions, research methods and interpretation of results. Certain complexity of the study of the social and demographic problems in the Arctic is the heterogeneity of its population. The indigenous people of the Far North have unique risk factors for your health than the risk of descendants of Europeans settled in these areas recently. Accordingly, in the foreign studies a clear trend considering all the problems of the public health interventions for groups identified above. This is a feature of the European and American Studies.

Another feature is the interstate nature of the research. Their results in this case are more scientific and practical value, as it allows estimating the contribution is the socio-economic component within certain social processes in the Arctic. Accordingly, it allows professionals to national health services to consider the effectiveness of the experience of foreign colleagues.

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Biological Sciences

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The influence of radio nuclides ^{137}Cs и ^{90}Sr on the soil microbial community on the territory of the underground nuclear explosion 'Kraton- 3' (Yakutia)

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Abstract

It was first conducted the microbiological studies of the soils in the underground nuclear explosion 'Kraton-3' (Yakutia). It was found that the soil area has toxicity to micro-and makroflore, inhibit seed germination, seedling development of the green part and the root system of plants. With theoretical and practical approaches, it is necessary to further study and evaluate the factual capacity of $^{Cs}137$ and ^{90}Sr in the microbial community to assess the environmental hazard or safety of radioactive waste and its possible effects on human health, animals, and, in general, the environment in the northern latitudes.

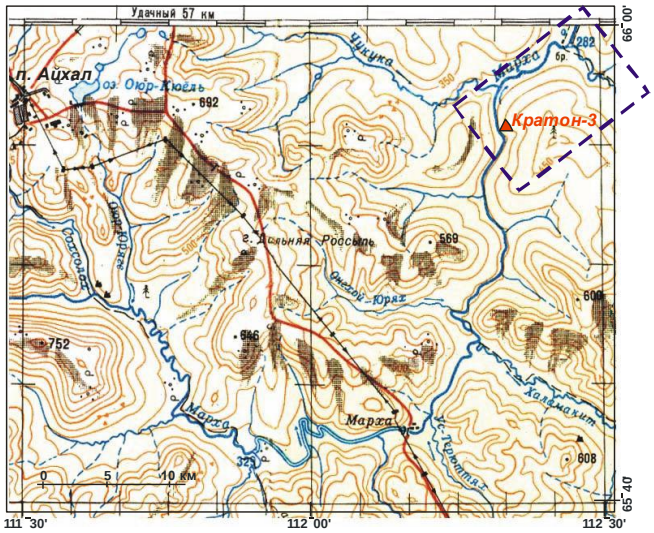
Keywords: *radio nuclides, micro- and macroflora, bacteria, fungi, ecological safety.*

Radiation situation on the territory of the Republic of Sakha (Yakutia), evolved over decades as a consequence of the global environmental pollution products of the nuclear explosions conducted at the sites of the planet and the accidents of nuclear power. Peak of the radioactive fallouts in the territory of Yakutia was in the years of 1961-1969, of which more than anything in 1963 when 595 cases precipitation samples were observed with elevated radioactivity. Their greatest number was recorded in the following areas:

Oimyakon - 37 cases; Verkhnekolymsk, Aldan, Bulun - 32 cases; Neryungri - 28 cases; Ust Yanskiy, Srednekolymsky - 27 cases. The maximum value equal to 1779.3 fallout Bk/km2 per day [1].

In the period from 1974 to 1987 in the republic were held twelve peaceful nuclear explosions, one of which, "Kraton-3", was held for the purpose of the deep seismic sounding of the sedimentary cover of the earth's crust, was alert, with emission in the atmosphere and the soil surface radioactive decay products.

The object of an underground nuclear explosion (UNE) "Kraton-3" is in the territories of Verkhnevilyuisk, Morkokinskogo area of the north-taiga, subzone permafrost-taiga of the boreal region of the Eastern Siberia, characterized by continuous permafrost zone of [2], 40 km to the east of the village Aikhal on the right bank of the Markha (left tributary Viluy), 160 m from the water (Figure 1-2).



Pic. 1. Location map of the object UNE "Kraton-3"

Pic. 2. General view of the sarcophagus "Kraton-3"

The maximum depth of the seasonal thawing or power seasonally thawed layer is 0.6 m - for peat, 1.0 m - for sandy loam and 2.0 m - for sand [3].

"Fighting" well has the coordinates of 65 ° 55 ′ 31,6 ′ ′ 'north latitude, 112 ° 19 ′ 57,8 ′ ′ east; altitude point of its inception above sea level - 308.99 m

In regard to the hydro geological area UNE "Kraton-3" refers to Olenyekskiy krioarteziansky basin. [4]

According to the borders of the object, can be named several types: upperfrozen waters of the seasonally thawed layer of the underflow and podozernyh taliks, Lower Ordovician interpermafrost (oldondinskaya Formation), Upper (morkokinskaya and Markha formation), medium-(chukukskaya suite) and Cambrian subpermafrost aquifer systems [5, 6].

Geological cross-section to a depth of 12-14 m is composed of alluvial sediments of Quaternary system (QIII3 +4- QIV), sand mixed with gravel and loam. Below, to a depth of 252-270 m, lies sequence of alternating lime stones and shales of the Lower Ordovician, dismembered at sohsodohskuyu (O1shs), oldondinskuyu (O1ol) and morkokinskuyu (O1mrk) suite. The lower part of the studied section to a depth of

584 m is composed of limestone and dolomite with interbedded shales of the Upper Cambrian (Є3). In the interval 165-185 m greeted hydroscopic horizon [6, 7, 8].

The main types of the soil survey areas are sod-carbonate and humus calcareous soils, formed on elyuviodelyuvii carbonate rocks - dolomite and limestone [9, 10]. Carbonate deposits are characterized by quiet gamma-background, with fluctuations in the level of radioactivity in the range 4.7 mR / h [11].

The first decontamination works at the site of the facility "Kraton-3" was held in 1981 on the project VNIPI Survey Systems (Moscow). Poured over the mouth of the mine hill soil 3 m high with a prohibiting sign-frame. Vault buried objects and wellhead platform was diked bulk up to 1 m.

In 1993, on the area of the radio-ecological expedition "Markha-93" were laid experiments with natural zeolite deposits Khonguruu (Suntarsky District, Western Yakutia) as a protective barrier. It was found that the Yakut mineral can absorb and accumulate radionuclides, which is consistent with the data [12] for the study of the sorption properties of zeolites klinoptilolitovogo type [13]. Expedition along with Cs and Sr isotopes found in the facility, "Kraton-3" presence 60Co, 137Cs, Pu and 125Sb in quantities exceeding global levels repeatedly. In particular, in lichens obtained from the dry forest near the track axis, the content 239, 240Pu reached the level of 7400 Bq / kg at 2.7 Bq / kg in the control area. [7]

Since then, the facility held about thirty research, and radio-ecological monitoring activities.

The results of a comprehensive site survey UNE "Kraton-3" over several years have shown [3, 9, 10, 13, 14, 15, 16, 17]:

- at the site of UNE "Kraton-3", which in 1981 was removed soil with vegetation and soil part, clearly visible pattern of distribution along the axis of maximum pollution radioactive trail with a decrease to the periphery;
- contamination levels of soil 137Cs, 90Sr and 239, 240Pu exceed levels by 2-4 global order;
- total stock of 90Sr on the project "Kraton-3" dominated much (2-3 times) of 137Cs;
- Detailed radiometric surveying at the site of UNE "Kraton-3" revealed two local spots of contamination with high levels of gamma radiation, one of which is located directly at the mouth of the well, where the level of gamma radiation reaches the maximum 125 mR / h, the second - 150 meters from the estuary to the north with two peaks: 230 and 250 mR / hr;
- the object "Kraton-3" significant levels of contamination of the surface layers of soil and vascular plants were also found at the site and the area of reclamation. In this case, on a section of the stock of 137Cs and 90Sr in the soil in 2000 times the global level of pollution;
- stored in the contamination, and the need to work to delay the migration of radionuclides.

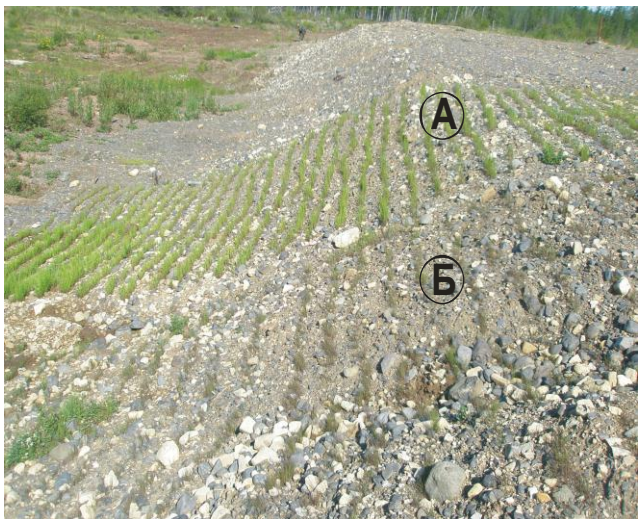
In 2007-2008, the ecological group from the Institute of Oil and Gas Sciences held expeditions in order to monitor for possible migration paths of 137Cs and 90Sr from the sarcophagus, "Kraton-3" and the construction of nine additional protective geochemical barriers based on zeolite materials deposit Khonguruu.

In order to create land cover on-site burial ground was laid two sites with seed pyreynika Siberian (Clinelymus sibiricus). In one of the delyanok were sown the seeds and fertilizers without sorbents to another - seeding perennial conducted after making zeolite fraction 1-8 mm and complex fertilizer "Hongurin" developed by employees IPNG RAS [18]. Thus, to migration of radionuclides has been put in the form of a

double barrier of zeolite sorbent materials, and will serve as the Siberian pyreynik shielding material providing the accumulation of nutrients in the sod layer [19].

In a A year in the experimental site with the introduction of zeolite and hongurina appeared steady growth of grass. Results of the first experience of creating a land-for-shelter at the site of UNE "Kraton-3" are shown in Pic. 3 and 4.

Pic. 3. Sowing seeds in the section with zeolite and hongurinom



Pic 4. The result of a year of seeding: A - site with zeolite and hongurinom, B - only the seeds

In 2008, for the first time the soils and the subsoils of the territory UNE "Kraton-3" were studied on microbiological criteria. As a control, were analyzed by the "background-clean" soil forest village Aikhal and Yakutsk.

Soil samples were collected by the sampler Adelman EIJKELKAMP company products according to IEC and GOST 17.4.3.01-83 17.4.4.02-8 [20, 21]. Radiometric measurement of gamma-radiation was carried out in accordance with conventional methods using a radiometer SRP-68-01 № 3189. [22] Cultivation and identification of microorganisms was performed in accordance with GOST approved and well-known teaching materials [23–25].

Studies have shown that the migration of radio nuclides at the object continues. Over 14 years zeolite adsorbed 137Cs on the level of 63,7 ± 7 and 90Sr - 26400 ± 5300 Bq / kg [26]. All resechers of the soils UNE "Kraton-3" had a strong alkaline reaction with the environment and low humidity. Total microbial population (TMC) in the soils of the object did not differ much in different samples and ranged from 3.2 to 617 thousand colony forming units (CFU) per 1 g of the dry weight (ACB) of the soil, which is 3-4 times less than in the control samples' background-clean "forest soils (Table 1).

Table 1

№ of the sample	Ground control sampling	pH of the soils	ACB soils, gm	Humadity of the soils , %	OMCH THOUSANDS KOE /g ASB
ML-1	UNE"Kraton-3" the dry zone forests	8,61	0,753	24,7	2,33

ML-3	UNE "Kraton-3", the dry zone forests near the coastal slope of the river Markha	8,53	0,789	21,1	29,90
F-2	UNE"Kraton-3" left bank of the Creek Bezzimyanni	8,46	0,476	52,4	617,52
K-1	Forest zone, village. Aikhal, Mirny District	7,32	0,508	49,2	30661,30
K-2	Forest zone, Yakutsk (Vilyuisk tract)	7,24	0,432	56,8	863117,00

The studied soils objects contain fungi and bacteria that can absorb radioactive substances that was the beginning of the new tests to study the possibility of using microorganisms as sorbents for the treatment of radioactive waste.

In general, the soils of the study area on the microbiological index regarded as poor. The species composition of the soil micro flora object of diversity and not much lower than those in control of the "background-clean" soil (Table 2).

Table 2

The fixation of the populations of the soil micro organisms

№ sample	The selected micro flora			
	Order	Kind	Sort	Type
	Eubacteriales	Bacillacae	Bacillus	agglomeratus
МЛ-1	Eubacteriales	Pseudomonadaceae	Pseudomonas	pseudoalcaligenes
	Actinomycetales	Micrococcaceae	Sarcina	sp.
	Eubacteriales	Bacillacae	Bacillus	agglomeratus
	Eubacteriales	Pseudomonadaceae	Pseudomonas	pseudoalcaligenes
МЛ-3	Eubacteriales	Moraxellaceae	Moraxella	spp.
	Actinomycetales	Micrococcaceae	Sarcina	sp.
	Mycota	Ascomycetes	Penicillium	sp.
	Eubacteriales	Bacillacae	Bacillus	мycoides
	Eubacteriales	Bacillacae	Bacillus	agglomeratus
	Eubacteriales	Enterobacteriaceae	Enterobacter	aerogenes
Ф-2	Eubacteriales	Streptococcaceae	Enterococcus	faecium
	Cryptococcales	Cryptococcaceae	Torulopsis	rhodotorula
	Mycota	Ascomycetes	Penicillium	sp.
	Actinobacteriales	Actinobacteria	Rhodococcus	sp.
	Eubacteriales	Bacillacae	Bacillus	мycoides
	Eubacteriales	Bacillacae	Bacillus	agglomeratus
	Eubacteriales	Enterobacteriaceae	Enterobacter	aerogenes
	Eubacteriales	Streptococcaceae	Enterococcus	faecium
К-1	Eubacteriales	Bacillacae	Clotridium	sp.
	Eubacteriales	Moraxellaceae	Moraxella	spp.
	Mycota	Ascomycetes	Penicillium	Sp
	Mycota	Ascomycetes	Aspergillus	albus
	Actinobacteriales	Actinobacteria	Rhodococcus	sp.
	Eubacteriales	Bacillacae	Bacillus	мycoides
	Eubacteriales	Bacillacae	Bacillus	subtilis
	Eubacteriales	Bacillacae	Clotridium	sp.
К-2	Eubacteriales	Pseudomonadaceae	Pseudomonas	fluorescens
	Eubacteriales	Pseudomonadaceae	Pseudomonas	alcaligenes
	Eubacteriales	Enterobacteriaceae	Klebsiella	oxytoca
	Eubacteriales	Streptococcaceae	Enterococcus	faecium

	Mycota	Ascomycetes	Aspergillus	albus
	Mycota	Ascomycetes	Aspergillus	niger
	Mycota	Ascomycetes	Penicillium	sp.
	Mycota	Hypocreaceae	Trichoderma	viride

The qualitative composition of the soil micro flora, presented on the territory of the UNE 'brief-3 "by the spore-forming bacteria of the genus Bacillus and non-fermenting bacteria of the genus Pseudomonas, indicating sluggish biodynamic with weak mineralization occurring processes.

For long periods of migration of radio nuclides in the soil of the object is quantitative and qualitative adjustment between individual groups of microorganisms.

It is also possible that the micro flora is sorbed radio nuclides, has a negative impact on human health, as in the North widespread in ration deer are lichens and mosses growing everywhere in the neighborhood to UNE "Kraton-3".

As the result the pollution of soil layers by adsorbed microorganisms radio nuclides enter the root of the plant and through the roots - in the leaves and stems. In this case, the soil microbial community at the site - an important link in fodder plant and animal life in the food chain, and the main way of radio nuclides in the body of animals and humans.

Thus, the presence of radio-ecological chain "soil - plant - a deer - a person" explains the situation of the radiation fund radiation of the region.

In order to determine the possible impact of not comfortable influence of the 137Cs and 90Sr on the plants was held the bio tests of the soils on the seeds of wheat varieties cultivated "Prilenskaya-6."

Found that the soil and water extracts of the studied object have phytotoxicity. Inhibit seed germination. Inhibit the growth of the plants (Table 3).

Table 3

The results of the Bio Tests

The sampling	The studied materials	The characteristics of the Bio tests			
		The percentage of the germination seeds	Root lenth, cm	Stem lenth, cm	Number of leaves on the stem
«Kraton-3», Zone of the dead forest	soil	4	5 ± 1	7	1
	Aqueous extract	4	3 ± 1	7	1
«Kraton-3»,near the river Marha	soil	28	5 ± 1	7	1
	Aqueous extract	28	5 ± 1	7	1
«Kraton-3»,the left bank of the steam Bezimyaniy	soil	8	10 ± 1	8	1
	Aqueous extract	8	10 ± 1	8	1
Forest zone, Village Ayhal	soil	96	17 ± 2	20 ± 2	3
	Aqueous extract	96	15 ± 1	21 ± 1	3
Forest zone Yakutsk (Viluysk tract)	soil	90	17 ± 2	21 ± 2	3
	Aqueous extract	96	17 ± 2	21 ± 2	3
Distilled wated	water	92	18 ± 2	21 ± 2	3

After a year of exposure of the zeolite UNE "Kraton-3", the radiometric measurements fixed the growth of gamma radiation at certain points, which indicates the migration of radio nuclides. They were set higher levels of specific activity of 137Cs, comparable with the zeolite has accumulated over fourteen this radionuclide exposure period at the facility, where the specific activity of 137Cs was in the individual control points 54.5 Bq / kg [26].

Unfortunately, for various reasons it was not possible to reexamine soils on the microbiological criteria and understand the ability of Siberian pyreynik Siberian to sorb radio nuclides after the creation of the stand in the experimental regions. This work is for informational research and serves the storage material for studying the factual capacity of 137Cs and 90Sr in the microbial community in the future, which will evaluate the environmental hazard or safety of radioactive waste and its possible effects on the human health, animals, and, in general, environment in the North.

Conducted in 2007-2008, the laboratory-field experiments established that in the soils of the object in the soil migrating radio nuclides have intoxication effects on the soil microorganisms as well as the plants. They inhibit the seed germination, the root growth system and the green part of the seedling.

Since xenobiotics don't recycle treated by the enzyme systems of the body, and much of the toxins even before entering the body turns into carcinogenic or mutagenic substances, the negative impact of radio nuclides on plants requires further study.

The researchers of the ability of bacteria and fungi to absorb radio nuclides will allow continuing to use microorganisms as sorbents for processing of radioactive waste.

Need to expand the monitoring is to "near wake" spread of radioactive contamination, as well as sampling of streams and ground water, especially in the lower sections where possible main migration melted snow and rainwater.

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The management of the regional informatization

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Abstract

In the article estimates the state of the informatization of the Arkhangelsk region in general and of the government in particular, analyzes the results of the target program 'Electronic Arkhangelsk region', the status of work on the creation of e-government in the region.

Keywords: *Arkhangelsk region, state and municipal management, information technology, e-government, target program 'Electronic Arkhangelsk region', the concept of information, register of public and municipal services*.

The main objectives of the regional policy of the social and economic development can not be solved without the proper information management and the use of modern information technology to help the process of regional management becomes more effective. Improvement of the management processes at all levels should be based on an orderly, strictly organized system of information support the use of information resources in the region.

The concept of using information technologies in the federal bodies of state power by 2010 the Government approved the order of the Russian Federation of Island 27.09.2004 № 1244-r. The concept of the regional information up to 2010 was approved by the Government of 17.07.2006 № 1024-r. Both concepts determine the priorities, principles and directions of the state policy in the field of information technology in the federal and regional government bodies in accordance with the objectives of modernizing state administration.

But in 2006, Ministry of Economic Development of RF has sent to the government a report about the changing for the better was of the state governance through the use of information and communication technologies. In it, in particular, noted that the mere growth of technical equipment of state and municipal government does not lead to a simplification and improvement of decision-making, and stated that the computerization of the State does not yet improve the quality of public administration.

It should be recognized that this is a long-standing conclusion is quite applicable to the process of information held by the government of the Arkhangelsk region. Note that, according to official data[1], until 2009 in the region annually updated rating readiness for the information society is in the first third of the regions of Russia, and in 2009-2010 passed several positions, moving to 34th place[2] (table 1).

Table 1

The place of the Arkhangelsk region in the ratings of the readiness to the informative society

Region	The place in the ratings of the preparing for the informative society				
	2004–2005	2005–2006	2007–2008	2008–2009	2009–2010
Arkhangelsk region	22	29	25	26	34

Advantage of the region is relatively high level (63.3%) of households equipped with personal computers (12-th place in Russia on this indicator). This tells about the high level of computer literacy of the population, reducing the need for access points.

In recent years in the area created backbone fiber-optic communication channels in 90% of the district centers of municipalities. Developing access to the Internet through the development of 2G and 3G-networks, 45.78% of households have access to the Internet (8th place in the Russian Federation), that is, half of households with a personal computer.

Informatization of the Education sphere of the region takes place below the Russian average, and the share of educational institutions that have a website and an electronic library, the region occupies the bottom of the rankings.

The level of the informatization in the culture of the region - the average in the country, but only 41.65% of the libraries have PCs, and only 17.68% of the libraries have access to the World Wide Web. It is significant that in the region there are 284 public access points to the Internet, including libraries - 43. Only in public areas used by more than 500 computers, which averages to more than 3000 people a month (or six people on the computer).

The level of the informatization in the medicine is slightly above average, with a fairly high level of equipment in Russian hospitals computers and low on access to the Internet.

Computerization of the government goes from the "top". Thus, the primary needs of the regional government are satisfied with computers, a local computer network, and computer equipment essential personnel governments reached 100%. At the same time, the local government of municipalities, only half the staff of key staff has a personal computer, with the mayor's office in the regional center of the figure is also close to 100%, and municipal equipment in remote areas of the region is poor.

[1] URL: http://www.dvinaland.ru/power/substitutes/blog/balashovrv/16.php.
[2] URL: http://eregion.ru.

And finally, in the Russian average level of ICT use in business. It may be noted the low level of use of the software for the management of sales and purchases of goods (38th place in the Russian Federation) and the almost complete lack of online stores in the region.

It seems that this situation was caused by the neglect of the authorities in the region to the informatization of all areas of the society. Only this can explain that in the region there is practically no legal basis information, normative legal regulation of its proceedings are conducted on the basis of the secondary legislation. Currently, the incompleteness of the legal framework is one of the main problems of information, which is hampering the development and effective use of information technologies and systems at both the region in general, and on the municipal level. Need to develop regulations governing the relations in the field of ICT.

At this stage in the Arkhangelsk region there are two key documents in this regard: 1) The concept of informatization of the Arkhangelsk region up to 2012, approved by the Administration of the Arkhangelsk region from 18.06.2008 № 102-ra/17[3]; 2) long-term target program "Electronic Arkhangelsk region" for 2011-2013, approved by the Government of the Arkhangelsk region of 19.10.2010 № 328-PP [4].

The most cursory analysis shows that the first document was very similar to the above order of the government of the Russian Federation from 17.07.2006 № 1024-p, following its ideology and logic. True, he has appeared in just two years after its prototype. The second document was adopted two years later and, it seems, is to develop and implement the ideas of the first. However, a comparison of texts provides no basis for such a life-affirming assumptions. We see that the problems are not solved for years, and their description is transferred from one document to another.

Thus, in the concept of the 2008 is written: "Since 2006, the executive states of the Arkhangelsk region is working to establish a regional information-analytical system of (further - RIAS). This system is intended for informational and analytical support management decision making on the socio-economic development of the Arkhangelsk region. "Open the target program-2010, says: "Since 2006, the executive authorities of the Arkhangelsk region is working to establish a regional information-analytical system of (further - RIAS). This system is intended for informational and analytical support management decision making on socio-economic development of the Arkhangelsk region. [5].

Study of the concepts of information and improve the systems of the regional governance leading ICT regions reveals that their main task is to create a regional information-analytical system with distributed sources of information, distributed users and distributed components - local databases.

Indirect sign of impending failure are indicators of the target program. Thus, in the results, we find that the proportion of reports over the RIAS in 2012 is planned to only 40% and in 2013 - only 60%. The share of the regional governments and local authorities connected to the RIAS will be, respectively, in 2012

[3] URL: http://www.archlaw.ru/gaiety/396_stat.html.
[4] URL: http://www.dvinaland.ru/files/reforma/docs/328pp.zip.
[5] URL: http://itconf.dvinaland.ru/index.php/raspisanie/9-1200-o-sozdanii-kompleksno-informatsionno-analitichesko-sistemy-arkhangelsko-oblasti.

- 30 and 4%, in 2013 - 50 and 50%. It is clear that such a system would give misleading information, and that's the most important subsystem of e-government in the region, as a pre-written concept of the regional information.

The author admits that the phrase "information and analysis" with respect to this information system simply the name service that accompanies it, and uses in its work. Set of technological possibilities it usually does not go beyond the group work together on documents, search for information and reference databases. I think, given the current level of ICT development, it is appropriate to advise the regional services in the information and analysis to follow the principles of distributed information resources. This means that the service itself directly creates and maintains on its own technical resources it needs only for the current job information resources, and to all the other organizes access.

Big disadvantage is the enclosed work. January 31, 2008 in the administration of the region was held a conference "Creation of the «e-government "in the Arkhangelsk region." The conference drafted a resolution „[6], in which the administration of the region recommended to develop in 2008 a long-term regional target program "Electronic Arkhangelsk Region" with the participation of all interested parties to enter into the composition of the Coordination Council for Informatization of the Arkhangelsk representatives of municipalities, to establish a working group with the Coordination Council for Informatization of Arkhangelsk development of e-government.

In two years in the target program-2010 we can read: "As part of the governor's administration and parliament was created the Council for Information of the Arkhangelsk region, the aim of which is to coordinate and organize the interaction of the executive bodies of the Arkhangelsk region, territorial bodies of the federal executive authorities, local self-government of municipalities region, organizations located in the region, for information and information management. But for many reasons organizational functioning of this Council for Informatization difficult and ineffective. However, the presence in the region, the current council for information is a requirement of the government of the concept of the regional informatization.

It is known that in practice, that the management solutions do not always have sufficient analytical work, economic and legal grounds. Insufficient the level of the system design of large information systems, and the potential, in particular the Institute of Information and Space Technology of NArFU, is not used.

Informational interests of the persons, who are decision makers in the government area and defines the problems solved by them, but experience shows that for effective information management can not be extended beyond the request of the first persons to be informed. The need to integrate scientific, expert, predicted forces of the region and to coordinate their activities is evident in terms of the governance and resource security.

Understanding the scale of the problems and the limited resources, it is impossible to maintain a staff of the professional experts in all fields. Therefore, the governments are very important to have a

[6] Yrkov D.V. The management of the regional development on the base of the informational technologies: The view from Arkhangelsk: Monography. Arkhangelsk, 2008.

"hand" of experts in various fields, opportunities and resources to quickly bring them to discuss the problems, a one-time consultation. Such a question presupposes that the government of people, professional credentials include the formulation of problems, the organization analyzes, coordination of experts, the implementation of procedures and technology expert, a synthesis[7].

During the study of the target program is striking into the eyes the strange distribution of the fund for the program through the years of the implementation (Table 2).

Table 2

The distribution of funding CPU "Electronic Arkhangelsk region" for 2011-2013

Sources and the directions of the funding	The amount of funding over the years, thousands of rubles			
	ВСЕГО	2011	2012	2013
Total	1 050 372,00	50 000,00	478 558,00	521 814,00
From the regional budget	1 050 372,00	50 000,00	478 558,00	521 814,00

It is surprising, firstly, a tenfold increase in funding between the first and second years of implementation, that just shows the character of a non-system works, and secondly, the lack of municipal and extra budgetary funding, which would be quite appropriate for such program. I think that if there would be a public examination of the opportunity to create a more optimal structure of the budget target program with the involvement of municipal and non-budgetary funds. In addition, the money could have been used in the first place, the infrastructure of information exchange with the municipalities. This is the most urgent task, as exemplified by the decision of the government of the Russian Federation from 08.06.2011 № 451 "On the infrastructure that provides information technology interaction of information systems used for public and municipal services in the electronic form." [8]». From the entire document I want to cite only one paragraph: "The interaction of the information systems of the executive authorities of the subjects of the Russian Federation, local self-government, as well as organizations involved in the delivery of public and community services said authorities in the territory of one of the Russian Federation, is performed using regional system of interagency cooperation, created in the region of the Russian Federation and to be connecting to a single system of interaction (the interaction of the regional system). "

In the field of the system of interagency of the electronic interaction (SMEV) as an infrastructure sub-system of e-government is preparing to be created.[9].

Its aim is to ensure the efficient electronic process of the Information interaction. The first phase of SMEV is to provide the basic functions of e-government: interdepartmental cooperation between state and local authorities.

Guidelines for creating the departmental systems, the requirements to specialists or integrators to create interactive services, as well as the methodology of the organizational issues planned to develop and

[7] URL: http://www.budgetrf.ru/Publications/Magazines/VestnikSF/2002/vestniksf158-02/vestniksf158-02030.htm.
[8] URL: http://www.consultant.ru/online/base/?req=doc;base=LAW;n=122509.
[9] URL: http://itconf.dvinaland.ru/index.php/ raspisanie/6-1040-o-perekhode-na-predostavlenie-gosudarstvennykh-i-munitsipalnykh-uslug-v-elektronnom-vide.

provide to the representatives municipal administrations responsible for the organization of translation services in electronic form, during the training seminar, was scheduled for the fourth quarter of 2011. As of May 2012, a series of training workshops have not yet been completed.

We should remember that by the order of the Russian Government of 15.04.2011 № 654-r "On the basic state of the information resources" approved list of the basic information resources used in providing state and municipal services. From 1 July 2011 the competent authorities, including the Pension Fund, the Federal Tax Service of Russia, Rosreestr, Federal Migration Service of the Russian Federation and the Ministry of Internal Affairs of the Russian Federation, provided the concerned authorities and organizations at their request electronically information on persons or objects and identifiers. Interested bodies and organizations that date is not recommended to independently collect and store information about people or objects contained in the relevant basic share, in respect of which they are not authorized agency.

For our region the situation is complicated by the fact that the federal agencies at the local level are, as a rule use the inter-municipal character. Thus, the tax office or branch of the Pension Fund serves the territory of two or three areas. In these conditions are particularly relevant two positions: a) the accuracy and reliability of the database of federal agencies b) a reliable system of information exchange. Otherwise forthcoming deployment network of multifunctional centers on the principle of "one window" will result in financial losses and hassle for residents of the Northern Province.

Of course, the regional government is to establish a roster of the regional information resources. It was believed that in 2009 in the regional register of the state and municipal information resources and systems were registered in 127 information systems and databases in the bodies of the Arkhangelsk region and 44 - in the municipalities of the Arkhangelsk region. But the author could not find in the public domain, this registry, so give here more relevant information on the roster is not possible. Allow use as an example the register of information systems in the Arkhangelsk[10], posted on the official website of the municipality (table 3).

Table 3

The structure of the automated information system of the Municipality «City of Arkhangelsk»

№	The name of the automated informational system
	Automated information system of the budget process in Arkhangelsk "Electronic Treasury" (AIS BP) Automated information management system of the municipal property "Property" (AIS UMI) The complex background of the legal support (CAS) "Consultant", "guarantee", "Code" Automated system of the corporate document in the municipality "City of Arkhangelsk" (ASKD) Geographic Information System MO "The city of Arkhangelsk" (GIS) Automated information system of town planning activities "Monitoring" (AIS JRT) Automated information system of the municipal order of Arkhangelsk (AIS MOH) Local area network of the City Hall (LVSM) Automated information system of the municipal services "Monitoring emergency housing municipality" City of Arkhangelsk "(AIS GC) An automated system for reporting information to the public "Internet portal to the official infor-

[10] URL: http://www.arhcity.ru/?page=118/7.

mation the municipality" City of Arkhangelsk "
Automated information system "Population" (AIS H)
The software package "Accounting and control orders mayor of Arkhangelsk" (PC UPM)

Considering, that the Arkhangelsk region, is not just the municipality and the administrative center of the Arkhangelsk region, it must be admitted that his information policy closely be linked with regional. [11]. For the development of effective information it would be prudent to create a coordinating body on the basis of the regional and city administrations. Such a structure is logical obliged the following functions:

- formation and implementation of common policies and the city information, take into account the interests of the government and appealing to all members of various urban and regional programs and projects;
- formulation of principles and establishment of a common information-telecommunications space with a trend towards unification of technologies and requirements for ensuring the integration of municipal, regional and other information resources;
- establishment and maintenance of information security, regulation of access to information resources;
- the development of common eligibility criteria, rules views, forms, reports and other formal requirements for the materials;
- administration, regulatory and legal maintenance of the information systems.

Electronic Journal "State Management" June 6, 2011 published an analysis of traffic portals of public services in the country[12]. Marked an increase in attendance of the public services portal of individual subjects of the Russian Federation. On the other hand, traffic portals of the state and municipal services to the majority of subjects stayed at extremely low level. Typical is the average of the daily attendance of the portal 0, 0002 -0, 0004% of the subject. For a member of the Federation with a population of 1.5-2 million people in attendance at the portal of 500-600 people per month is more a rule than an exception. Among the examined subjects are identified three top portals:

- 1st place - The Portal of the state and municipal services of the Novgorodskiy Region.In May 2011, the portal has registered 130, 882 visitors, accounting for 3,9 % of the Novgorodskiy region;
- 2nd place - the portal of the state and municipal services in the city of St. Petersburg: 84,383 visitors, or 1.8% of the population;
- 3rd place - the federal portal gosuslugi.ru: 998,938 visitors, or 0.7% of the Russian population.

One more 10-15 subjects of the Russian regions have portals, attendance of which is in the framework of any decency.

Internet users simply ignore most of the public services portals, because studies show that in the many regional portals of the state and municipal services are useful to the public and business information

[11] Yrkov D.V. Informative – communicative technologies of the management. Textbook. Arkhangelsk, 2010.
[12] URL: http://gosman.ru/?news=15461.

available. These portals are made just for the record (or for any other purpose), the conclusion comes to the magazine. Unfortunately, more recent data on attendance of the public services portal has been found.

Since October 2010, the regional portal and the reestr of the state and municipal services of the Arkhangelsk region functinioned[13]. At the beginning of May 2012 on the site there is the evidence of 173 and 419 services regulations execution services[14]. Counter portal visits from October 2011 to May 2012 has registered more than 18,000 visits.

In 2011, the Government of the layout was shown the service "provision of grants to pay for housing and communal services" fully electronic authentication using electronic map resident of the Arkhangelsk region. It was promised[15], that In July 2011, will be given the opportunity to provide five services electronically to the maximum phase, and after the pilot operation phase will be carried out "Replication Services" (September 1 - December 30, 2011), following which it will be possible to provide in electronic form 58 services to the highest possible stage of the translation. From 1 January 2012 it was planned to start the production of the universal electronic cards, but according to the reports, to let them have not started.

Continuous improvement of the information systems of the region, the promotion of the development, condition monitoring, quality, relevance, tracking information links, the use of the system in the practice of the management requires an organizational structure.

In the structure of the administration of the governor and in the government in 2010 established the Department of Information Technology, which is competent to develop and implement a unified strategy of informatization. The Department of Information Technology has become the management of seven experts.

It would be truer to say that the administration simply renamed the department. It seems that this is not the answer. The fact that the concept of information of public authorities of a section VI «regional information management"[16]. It says that the enforcement program requires information of the authorized body of the Arkhangelsk region, performing the functions of the state customer of the program and the chief administrator of budget funds to ensure program implementation, coordination of its implementation.

Any scientific methods can not explain this distribution of powers, as it is observed in the data sheet long-term target program "Electronic Arkhangelsk region" for 2011-2013:

- the state client coordinator: the administration of the governor and the regional government;
- main developer: the administration of the governor and the regional government;
- among the performers of the program: the administration of the governor and the regional government;

[13] URL: http://www.dvinaland.ru/power/substitutes/blog/balashovrv/16.php.
[14] URL: http://pgu.dvinaland.ru/web/guest/main.
[15] URL: http://itconf.dvinaland.ru/index.php/ raspisanie/7-1110-o-realizatsii-proekta-universalnaya-elektronnaya-karta.
[16] URL: http://www.archlaw.ru/gaiety/396_stat.html.

- control over the implementation of the program: the administration of the governor and the regional government.

By the way, the creation of one of the best systems for information security management Administration of the Yaroslavl region in strict compliance with the regional law "On information support government of Yaroslavl region," and the decision of the Governor "on politics in the field of information." The network of public authorities led by an independent department of information and analytical support for the Yaroslavl region[17].

In addition, in the concept of informatization of the organs of the state power of the Arkhangelsk region indicated that providing the information program requires public authorities carrying out the functions of the state customer activities in the field of information in different fields. For effective regional information necessary to create structures and units responsible for supporting the individual subsystems of electronic government.

We know that only five of the executive bodies of the state power of a department of information technology (3-5 experts) in the field of the executive works on one of skill in the field of information technology. Organizationally, these are the specialists (about 40 people) who doesn't subject to the department of information technology, which makes it difficult to coordinate their actions.

E-government - is a new form of organizations of public authorities, secured by the increased use of information and communication technology a new level of speed and convenience of obtaining organizations and citizens of the government services and information on the performance of government agencies. E-Government takes the interaction between society and the state to the next level, as a substitute for visits to government agencies, phone calls and sending paper mail.

The center for Applied Economics commissioned by the electronic journal "State management"[18], it created the rating of the Russian regions in terms of e-government, as of January 1, 2012 (Table 4). During its development, firstly, emphasized the special services that are required to implement in accordance with the decree of the Government of the Russian Federation № 1993-r. All these services are located on the portal, check. Secondly, consider the implementation phase of service, but does not match the level of services, to the developer portals. Thirdly, take into account the stability of the portals and the attendance of the state and municipal services, the availability of the MFC and kiosks per 10 000 population.

Table 4

Rating in terms of the RF subjects of e-government
On *the 1 of January 2012 (North –Western Federal Subject)*

№	Federal Sunject	The place in the region		The place in the RF		Grades					
North –Western Federal District											
1	Republic Karelia	4	4	35	48	116,25	57,25	3,00	0,00	48,00	8,00
2	Republic Komi	2	3	24	30	133,50	70,00	13,50	0,00	48,00	2,00
3	Arkhangel region	5	8	38	64	115,00	51,50	8,50	15,00	38,00	2,00
4	Nenezkiy Autono-	11	11	78	78	53,50	11,50	0,00	0,00	38,00	4,00

[17] URL: http://www.yarregion.ru/Government/epravitelstvo.aspx.
[18] URL: http://gosman.ru/?news=22234.

	mous Districtr										
5	Vologodskiy region	7	6	57	59	92,75	45,50	7,25	0,00	33,00	7,00
6	Kaliningradskiy Region	10	10	77	75	56,25	15,25	0,00	0,00	28,00	13,00
7	Leningradskiy Region	6	5	46	54	101,25	31,00	8,25	15,00	38,00	9,00
8	Murmansk Region	8	7	62	62	88,50	26,50	6,00	25,00	23,00	8,00
9	Novgorodskiy Region	3	2	25	26	133,25	69,75	9,50	10,00	33,00	11,00
10	Pskovskoiy Region	9	9	63	72	88,00	48,00	0,00	0,00	38,00	2,00
11	Saint Petersburg	1	1	3	4	210,50	49,00	7,50	65,00	68,00	21,00

In the present ranking of the Arkhangelsk region is not at the worst position, but on the basis of conducted analysis in this article, I must say that some questions require more serious and detailed study. Particular attention should be paid to the institutional component, as often to develop a plan or program is no mechanism to implement them, so that many of the plans are only good intentions, and most of their points without changes included in the new "promising" programs.

Reviewer – Zalivskiy Nikolai Pavlovich,

Doctor of Economy, Professor.

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Sustainable use of natural resources in the Arctic in the field of industrial fisheries (social-economic and environmental issues)

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Abstract

The article describes the aspects of sustainable development in the Arctic fishing industry as a socio-ecological-economic system. Describes the relationships and conflicts between the subsystems of the system, the directions of the state for fisheries management as a socio-ecological-economic system.

Keywords: *sustainable development, social, ecological and economic system, the fishing industry, government regulation.*

Throughout its history, mankind has enjoyed the benefits of the environment. In the process of the development of mankind has developed man-made environment type of the economic development, the principle of which is the transformation of nature in accordance with the needs of man. "Resource" path of human development is based on the premise: "Man - is the tzar of the nature." Formed psychology of the "conqueror of nature," which is taking care of their own needs, thoughtlessly exploiting the environment, has led to a crisis involving dangerous anthropogenic impact on the environment and generated by the existing mode of production on the one hand, the unsustainable consumption of natural resources and on the other - environmental releases of various wastes. There is a reduction not only of non-renewable re-

sources, but also those that mankind is able to recover in full scale. Exhaustion of natural renewable and non-renewable resources is now one of the most serious problems that occur at the level of the entire world economy, and at the level of the economy of one country.

Economic growth as an indicator of sustainable economic development

Defining indicator of sustainable economic development has always been the economic growth.

Today, the economic theory developed a number of theories of the economic growth. Representatives of some theories (classical and neoclassical) argue that the market system is capable of self-regulation. Self-interest is the main driving force behind the economic development, and the economy would operate more efficiently by eliminating its regulation by the state. Keynesian and Post-Keynesian theory of economic growth involves state regulation of national economy. According to this theory, is to develop a viable long-term strategy of the economic regulation of deep structural reforms, the introduction of a system of national economic planning, etc.

Economy's ability to the growth depends on many factors, which refers to the phenomena and processes that determine the rate and magnitude of long-term increase in real output, the possibility of raising the efficiency and quality of growth.

In any model of the economic development, there are direct factors that make the economic growth physically possible (quantity and quality of labor and natural resources, the level of capital, technology and organization of production, the level of entrepreneurial skills in the community), as well as indirect factors - conditions that would allow the of society's opportunities for growth (tax climate in the economy, the effectiveness of the credit and banking system, consumer, investment and government spending, the redistribution of productive resources in the economy, the current system of income distribution).

Environmental factor does not take a proper place in any of the groups among considered factors. The main assumptions of theories of the economic growth lie in the fact of t that nature is the source of inexhaustible resources and boundless sink waste, no need to harvest levels correlate with their reserves.

All the theories of the economic growth belong to the techno type of the economic development, which is based on the use of artificial means of production created without environmental constraints. The characteristic features of the type of the technological development are: rapid and debilitating use of non-renewable natural resources (primarily mining) and the super-exploitation of renewable resources (soil, forests and water resources, etc.) at a rate greater than the possibility of their recovery and rehabilitation..

However the profound destabilization of the environment as a result of the gigantic development of the productive forces, unprecedented population growth has led to a qualitative change in the relationship of nature and society, a huge increase in the load on the ecosystem. Therefore, in recent decades has come to awareness of the need of changing economic outlook in terms of environmental accountability.

Awareness of the risk of the further technological development of the economy has forced many countries to try to take into account environmental factors. In this regard, there was the concept of environmental protection. But quality does not help (although under this concept some countries have made

specific environmental stability), because the interests of the economy remain a priority, the maximum increase in the production in order to better meet the needs of people. In such conditions, environmental management and the cost of the environment on growth. However, the consideration of the environmental factors is considered necessary, while limiting the economic development.

The growing of the contradictions between the society and nature, which is manifested in the deterioration of the natural environment and the rapid growth of the world population, has become the main theme of the Stockholm UN Conference on the Environment in 1972. The conference was first formulated the concept of eco-development - ecologically-oriented social and economic development, in which the welfare of people is not accompanied by the deterioration of the environment and the degradation of natural systems.

The main principles of the eco development are [9]:

- regional and local problems should be subject to the eco global and national goals of preventing environmental crisis and optimization of the human environment (the principle of "think globally - act locally");
- the eco-development includes a function of early warning of adverse the environmental trends and provides safeguards to minimize them;
- the eco goals should be the primary to the objectives of the economic development. The economic system that considers the unlimited growth as progress, does not account for the environmental values and the damage to the steady build-up of production, has no right to exist; location and development of material production in a certain area should be in accordance with its environmental tolerant to anthropogenic influences.

Thus, the implementation of the eco-development ideas becomes one of the major challenges of our time.

In 1972 the first report of "Club of Rome" was published, it was created by the group of authors and the main person of the project was D. Meadows, "Limits of the Growth". This report traces the dynamics of the population, food production, industrial products, and consumption of resources and pollution of the environment with the extrapolation forecast up to 2000. The report examines four scenarios: continued depletion of resources, unlimited resources, limiting population growth and technogenic and stabilization scenario.

In 1972, in the Stockholm Congress has been ascertained the fact of the degradation, and formulated the task to preserve it for the future generations and identified some actions in some form arising from the growth model that would facilitate stabilization.

The concept of the sustainable development

In the late 70's - early 80's in the literature began to appear the concept of "sustainable development." In 1983, at the initiative of the UN General Secretary was created the International Commission for the United Nations Environment and Development (WCED). It was headed by the Norwegian Prime Minister Gru Harlem Brundtland.

The Commission's task was to consider the global environment and to offer a global agenda for the resolution. The commission's work was aimed at identifying the problems plaguing all walks of life through-

out the world. It turned out that the broad masses of the population of little concern to the problems associated only with the environment. People talked about the living conditions, resources, pressures on the population, education and health.

In 1987, the WCED has raised the question of the need for a new model of civilization. In the report "Our Common Future" was the impossibility to formulate and solve major environmental problems is their link to the social, economic and political. Since the publication of the report of the Commission Brutdtlanda entered into use the concept of the "sustainable development." It refers to a model of the socio-economic development, which guarantees the satisfaction of the vital needs of the present generation without compromising that possibility for future generations.

Close to the above interpretation of the concept of the "sustainable development" give Russian scientists: "The basic idea – is the development of the modern society should be organized in such a way as not to cause irreversible damage to the environment and future generations widow for needed them of vital resources. Ensure that the development of society is impossible without a long-term planning of all components of the society and, above all, the cash resources of the planet and the possible options for compensation as the depletion of the future.

The concept of the social –ecological –economic system

The concept of the sustainable development does not only affect environmental issues, but also treats them as one of the factors (along with the political, demographic, social and economic) and the consequences of the imperfections of modern devices of human civilization, including the organization of the economic activity.

The concept of the sustainable development is seen as a result of the development of the economic, environmental and social objectives of the society. Therefore, the sustainable development should be explored as part of the socio-ecological-economic system. Internal limits by formulas of this system are rational human needs, and the outer limits associated with the capacity of the biosphere. To move from the inner to the outer limits to revise the objectives and priorities and resolve system problems in the social, ecological and economic systems.

In the framework of the socio-ecological-economic systems can be realized simultaneously the three variants of the problem: economic, environmental and social.

The economic challenges include: the economic growth, quality, increase GDP, efficiency, healthy competition, and so on

In terms of the social issues than daily (poverty alleviation, food security, stabilization of demographic processes, training of human values, the preservation of health, and so on) is activated and the fundamental idea of the rights of future generations. Earth's natural resources are the common heritage of all mankind, as the living and future generations. In order for development to be sustainable, the natural reserve fund must be passed down from generation to generation is the least depletion and pollution.

Ecological tasks require the global security, environmental quality, quality of life and ecological balance. Sustainable development should ensure the stability of biological and physical systems. Pollution and loss of biodiversity reduces the ability of ecosystems to heal itself.

Social, ecological and economic system is self-organizing, so the harmonization of conditions for economic, social and environmental development can not be achieved automatically.

The proper functioning of the market mechanism in all areas, including environmental, involves not only the relative freedom of the exchange of goods, services, resources, etc., but also the inclusion of rather rigid centralized control mechanism in the sphere of relations between human society and the biosphere [3]. The relationship between the three components of the system must be effectively regulated by the government, because, working on ecological and economic systems, nature pursues its own goals (trying to maximize their income), which, as a rule, do not meet the requirements of sustainable development. The very same socio-ecological system is not able to defend their interests, and their responses are lagging in nature, which can lead to disastrous consequences, and therefore need a regulatory body (the state), which would impact on a nature for sustainable development.

State agencies and authorities, guided in their activities of the scientific understanding should in time to resolve contradictions arising in the sphere of nature, change its shape, design control mechanisms adequate to requirements of objective laws, not to hinder social development, and to encourage social and economic progress. Conflict resolution is possible with a focused management of the state.

It should be found a material process, which would proceed in accordance with the laws of nature and society.

In order to effectively manage the social, ecological and economic system, you must:

- The components of the subsystem and establish relationships between them;
- Reveal the contradictions between the problems solved each of the subsystems;
- An analysis of the interests of each of the conflicting subsystems;
- Develop a mechanism and tools of impact on the control of the subsystem.

It should be noted that the environmental and social priorities should not be construed as limiting of the economic subsystem. In essence, these restrictions are new criteria for transition to a new qualitative level of development. The contradiction between the individual subsystems socio-ecological-economic system should be seen as the problem, and the solution of which will go to a new level of human development.

Fishing complex of the North, as the social –ecological - economic system

Important sector of the Arctic in terms of the economic, environmental and social value of a fish industry..

Firstly, in terms of the social value determines the function of fisheriesas the food security. Marine industrial fisheries have a leading role in the country's population of fish and seafood in the size and range, sufficient to form a proper and balanced diet. Addressing food security of the country is a major socio-economic problems of the state.

Fish protein is rich in essential amino acids, without which the human body can not function properly: tryptophan, lysine, methionine, and the most useful – is taurine. It prevents the excretion of potassium from the heart muscle and helps in the prevention of certain cardiac arrhythmias.

Fish contains a lot of good fats, close to that of a human, and therefore easily digestible. The fact that animal fats, such as butter, contain a lot of cholesterol, and fish oils, on the contrary, God-you polyunsaturated fatty acids, which dissolve the cholesterol, significantly reduces the risk of such diseases as atherosclerosis. Feature fish oils are the presence in them of essential fatty acids: linoleic, linolenic and arachidonicing, called vitamin F, which are not synthesized in the human body, and therefore should be part of the food. Fat fish also contain important vitamins A, D and E. The liver is particularly rich in vitamins fish, mainly cod species (cod, pollock, hake, blue whiting, grenadier, etc.). Found in fish and water-soluble vitamins, which are the same in the flesh of animals, and vitamins A, D and E in a few times. Regulating metabolism, vitamins contribute to the conclusion of toxicants, and Tamino VI-A and E prevent cancer.

Marine fish and seafood are high in beneficial minerals, iodine, zinc, manganese, copper, etc. A lot of iodine in the tissues of benthic fish (cod, flounder, catfish, carp, etc.).

Secondly, the fishing industry, as the main element in the economic structure of the country having a complicated structure and diversified structure, provides employment. In addition to actually fishing industry, sub-sectors and industries, such as fish processing, conservation and reproduction of fish resources, it includes a range of support and service industries, as well as the institutions and social infrastructure. The most important ones are the repair, construction, transportation, packaging.. On average, one fisherman has 8-10 people working in related fields.

Fishing is a town-and region industry in many regions of the country, including the north. Social importance of the fishery sector of Russia is provide the employment, especially in the coastal areas of the North, where it is the main source of income, as well as the replenishment of the budget allocated to social infrastructure.

Thus, the value is determined by the fishing industry to its role in the food sector of the country (in the provision of the regions of clean and high quality fish products), as well as providing employment in the northern coastal areas.

The resource base of the fishing enterprises marine biological resources that are the part of large marine ecosystems.

The term "large marine ecosystem" (hereinafter - BED) came into general use only in the past few years. BED concept was proposed by the American researcher K. Sherman and his co-workers [10]. The essence of BED is the shift in the emphasis in the study and the management of the natural resources with a particular species, that is, the specific objects of fishing on the ecosystem within which these organisms exist and interact with the environment and other organisms.

Recently, major changes occur in the structure and functioning of the marine ecosystems. This is due, first, to the strengthening of human influence on the ocean, and secondly, with the change of the climatic conditions.

- The main factors that affect the BED, include:
- chemical contamination of the environment with the watershed land and from land-based sources;
- industrial fishing;
- maritime and oil and gas industry as a source of contamination;
- check of the new species.

As a consequence of the activity, the huge amount of pollutants, including petroleum hydrocarbons in marine ecosystems comes in different ways. Conventionally counting hydrosphere as passively accumulating environment, there are two groups of sources of pollutants: natural (endogenous and exogenous) and akva politehnogenic[4] The first group includes continental runoff (river runoff, coastal erosion), atmospheric deposition. The last type of source associated with the industrial activities on the marine actor, including maritime, mining, disposal (dumping), direct discharge, and emergency situation.

Potential sources of contamination from oil development can be divided into three groups:

1) Process of contamination during drilling and field facilities, loading / unloading of raw materials, pipelines, tanker and auxiliary fleet. The intensity of the contamination is usually dependent on the technical condition of the equipment and the production of culture;
2) spills of oil and condensate in an emergency during the drilling of exploration wells in the operation of ice-resistant platform for transportation of raw materials pipelines and tankers. The complexity of the situation in the Russian Arctic seas due to the presence of floating ice, icebergs are much higher than, for example, in ice-free waters of the North Sea;
3) The delivery of oil into the sea water due to violations of the geological environment. These include selection of natural ingredients from the depths (eg, discharge gas hydrate deposits when the temperature and pressure conditions), allocation associated with accidents due to geological structures bottom causes (submarine slumping, thermo karst phenomena soil erosion).

State fisheries depends on prey. Of particular importance in the definition of oscillation state fisheries have so-called trophic or "food" connection. They are complex in the sea, because the specificity of the habitat of field facilities in the water and on land is significantly different. The difference is that the pelagic - mobile biotope, which moves the whole biocenosis.

The process of the transformation of substances and energy in the ecosystem is predominantly through *trophic links* (from the Greek. Trofos - food) or by eating some other organisms.

The basis of all food links in the ocean is the primary energo saved a) plankton (plant and animal), b) nekton (only animal), c) the benthos (plant and animal). Plankton is different in that almost incapable of directed horizontal movements in the water, but some species of animal plankton capable of fairly extensive vertical migrations - the seasonal daily, developmental. Especially such migration characteristic of polar waters, where the vertical baroclinicity small.

Nekton representatives can make long-distance horizontal migrations of the thousand miles, that is highly mobile with respect to the environment. And they are characterized by vertical migration.

Benthos is divided into two groups: 1) sedentary, fixed plant and animal or sedentary benthic 2) migrantny benthos – the animals of this group are able to fairly extensive migrations along the bottom to 1-2

hundred miles a day, which allows them to move out of the zone of influence of one water mass to another.

Plankton, nekton and benthos are the primary caloric in the food chain. There are several trophic levels usually: 1) the primary producers 2) many copepods and euphausiids crustaceans, mollusks, and a few fish 3) a first-order predators (fish, cephalopods) 4) higher order predators (fish, shellfish, mammals) and etc and the number of the trophic levels can reach seven.

The influence on any link in the trofic chain leads to irreversible consequences.

High productivity of the calorics directly depends on the several factors inanimate: the intensity of solar radiation, the number and turnover of mineral salts, vertical stability of the water masses. In the absence of one of these components energotsen don't implement condition-potential opportunities. Consequence of operating oil and gas fields can be the oil spill, and the oil film will be a barrier to the penetration of water into the sunlight, which will block the reaction of photosynthesis.

As a result, the oil spill disrupted the natural course of the functioning of the biological community of the reservoir. This can be caused by a breach of some biochemical reactions in cells, which naturally affect the productivity of end links of the food chain.

Assessing the influence of the pollution on marine ecosystems, it is necessary to compare the volume of revenue from all sources, assimilative capacity of the sea. Assimilative capacity of the sea to influence the intensity of water exchange across borders and oceanographic factors: water temperature, horizontal and vertical circulation, ice cover, the rate of biotransformation and deposition of suspended solids. For example, the development of oil fields in the North Sea is especially dangerous, because due to the low water temperatures and air chemical, biochemical and microbiological oxidation is very slow. This leads to significant pollution of sea water and soils in relation to the temperate and tropical zones at the same rate of income.

The entering of the pollutants into the Arctic BED by the several ways:

- Deposition from the atmosphere;
- Fetching by the ocean currents принос;
- Removal of rivers;
- Direct discharge from the bank;
- Direct burial in the sea.

Pollution can be operational (produced and discharged continuously, albeit in relatively small quantities), and emergency (have sudden nature). The main operational ship pollutants include emissions from power plants sulfur and nitrogen oxides, carbon, ozone-depleting substances, and noise. These emissions are currently not regulated, but should be considered when assessing the impact of shipping on the environment.

In the areas of oil and gas fields of the offshore pollution completed a physical effect on her, and organisms from pnevmo sources with seismic exploration.

Among the anthropogenic factors that have a negative impact on the BED is commercial fishing. Rapid advances in fishing technology (power ships, high performance gear, etc.), selective removal of the changed property intensively exploited fisheries ecosystems. Commercial stocks of aquatic organisms spontaneously formed mainly by the nature and excessive withdrawal of their fishing area leads to the degeneration of fish, as the remaining individuals did not live up to this size, when they are able to bring a full-fledged offspring.

With the intensive development of fishing technology over the past 40-50 years due to the use of trawls. The most significant damage causes bottom trawling, which is ten times more dangerous than other activities and on the bottom of the extent of damage is greater than all the others combined. It to excessive ocean biosphere can not resist. Is a violation of trophic relationships, and the recovery of any energotsena goes very slowly. The main features of the life of ecosystems - their cycle, which maintain single-celled organisms, communicate in a network of multi-cellular organisms. [5] Violation of the reproduction of the primary organic matter will lead to degradation and possibly even the death of the ecosystem. Consequences of degradation will decrease as the number of non-commercial and commercial facilities and replacement of the aquatic organisms to humans on low-value. The size and diversity of the biological productivity of the fishing area, in this case down and the fishing area will lose relevance.

According to some scholars, one of the problems of unsustainable fishing is fishing during the spawning season. The basic meaning of the words "Putin" is associated with the organization of mass catch of a particular object. Another meaning, revealing the absurdity of such a mass of fishing - a move the fish to spawn. Yes, the effectiveness of fishing during spawning is very high. At such times, the fish becomes vigilant and easily accessible for removal, and the person is not thinking about the consequences of such an "effective fishing" pounced on it with all the means at its disposal.

Against the background of overfishing worsened the negative impact of the introduction of alien invasive species. Today, they are gaining new habitats. For example, crab significantly alters benthic system, affecting thus the primary links in the food chains.

Fishing industry like an element of the social – ecological –economic system

Along with the importance of state regulation and control in the BED should be noted the special role of business entities in the implementation of major tasks outlined in the concept of the development of fisheries.

The concept of sustainable development as a separate entity, not only as market participants, but also as an element of social, economic and natural environment. Accordingly, the management of sustainable development of enterprises in the social, ecological and economic system includes [7]:

- set of the principles, methods, means and forms of enterprise management, which ensure the achievement of the economic benefits, social benefits and environmental safety;
- the management of the processes of the changes of the company to provide a combination of efficiency with the implementation of the modern concepts of the rational, balanced use of the natural resources, protection of the environment and ensuring social needs.

Fishing enterprises (the link between the social and the ecological component of the socio-ecological-economic system) by its occupations are businesses that operate in an uncertain environment.

The first factor is the uncertainty – it is a state of the fleet. Since 1990 (the fishing industry has lost public support) in the fishing industry and the economy, a sharp decline in investment activity, which does not allow to update the worn-out and obsolete vessels of the fishing fleet. Outdated fleets not only does not allow fishermen to work effectively, but does not meet the criteria of technical, environmental, safety of navigation in the waters of fishing areas. Over the past few years the composition of fishing vessels basic types decreased by an average of 700 units. About 80% of vessels over 20 years old, 90% of fishing vessels of the industry is inefficient and obsolete vessels, designed by 60-80s with very high energy. [2] Performance characteristics have remained at the level of the last quarter century. For example, Russian vessels can catch a day with a maximum of 50-80 tones of fish, whereas Norwegian - from 500 to 1000 tons addition, engines Norwegian vessels spend a ton of fish oil produced 200 kg of fuel, Russia - 400 kg.

Up to this date, provided the state support: subsidizing fisheries organizations and individual entrepreneurs of the cost of the interest on loans for up to five years received the modernization of fishing vessels and lease payments under lease agreements for the purchase of fish processing, refrigeration and processing marine equipment. However, according to many experts, they are insufficient. Require the use of accelerated depreciation for fishing vessels of domestic buildings. Should be exempted from customs duties, as well as providing interest-free installments of the VAT on importation into the customs territory of fishing vessels purchased outside Russia. Should be exempt from VAT conducting ship repair works. Required to obtain a share of quotas FBG as collateral to get loans.

Also it is necessary to upgrade the domestic shipyards. Russian shipbuilding characterized an excess capacity, which is primarily designed for the repair and construction of naval ships. In this case, there is a significant lack of the production capacity, including specialized berth places for construction of large-scale fishing vessels. Due to obsolete technology equipment Russian shipbuilding enterprises can not compete with the ship-building enterprises in Spain, Portugal, China and South Korea.

Another factor of uncertainty, which influence on the efficient operation of the company, is related to the fisheries situation in a given area of the fishery. The economic viability of the fishing enterprises will affect biological productivity of an area of fishing, the quantity and quality of the extracted raw materials (highly liquid, low-value species FBG or requiring high processing). Climate – is the leading natural factor of the dynamics of the marine ecosystems and the formation of biological productivity. Current data of climatic changes in temperature and salinity, such as the Barents Sea, does not indicate a monotonic warming, but the rhythm of climatic fluctuations.

Obviously, that the variations of the bio productivity of the seas defines by the climatic variations. In turn, these variations depend on the productivity of generations of fish, their mortality, and migration routes. For example, in cold years, cod does not make long migrations, its commercial concentrations are

located in the southern and south-western parts of the Barents Sea. In warm years cod is widely distributed in the sea area and reaches the limit of its feeding area stations until the coastal waters of Novaya Zemlya in the east and in the north of Upland Perseus. [8]

Remoteness of the fishing area also affects the efficient operation of fishing enterprises. Now the press is much debate over whether the development of the domestic fleet of remote fishing areas. According to many experts, the development of fishing in remote areas of the fishery, need the following conditions:

- sufficient and sustained in the future the amount of the available fishing FBG;
- the protection of the state, which provides access to these resources, we are interested in fishing areas;
- the modern fishing vessels that can operate on the cheap-target species, ie, at a relatively low cost to produce significant amounts of OTC;
- the modern factory ship, capable of long-term off-line processing of large catches to lead and provide bunkering fishing fleet;
- the transport fleet, providing export products to customers;
- strong demand for mined sites.

In Russia, the state does not regulate the price of fish, raw or control services intermediaries for the sale of fish products, which leads to a significant increase in retail prices, which are higher than wholesale at 2-3. This is another factor that influences on the efficiency of fishing enterprises. Significant influence on the formation of producer prices has seasonality of the production, where over a period of time there is a seasonal overproduction, when they go to mass shipments of certain types of the fish products manufacturers, when the wholesale market dictate the prices wholesalers. During this period, does not prevent the sale of the goods, even at a loss to the manufacturer. Thus, the government should regulate the prices of fish products and control of intermediary organizations for their sale. Trade margins on brokering should be regulated.

Raw materials for the production of fish products are perishable, so you need to provide an enabling environment at the discharge port, fast and reliable payment fish. It should be noted that, the recent government and Rosrybolovstvo "control actions" in the fishing industry have led to the positive results, increased catches, poaching catches are smaller, in the reproduction of the FBG is positive. However, the need to improve the efficiency of onshore processing facilities, to develop processing of non explored illiquid OTC, small size of aquatic species and recycled materials. As the fish processing - is the most important unit of the Fisheries Industry, where a bulk of the surplus value of fishery products is necessary for the sustainable development of the economic component of socio-ecological-economic system, we need to develop high-tech industries in the fisheries sector, to improve the quality and range of fish products.

Thus, the fishing industry complex is a socio-ecological-economic system, sustainable development is not possible without government control, regulation and control. Moreover, the state must be controlled in several ways.

The first direction – is the management of the fishery, which should promptly adjust to a constantly changing stock of providing short-term and long-term benefits from its use. According to the Convention on

the Law of Nations in 1982, states are required to maintain the harvested species at levels which can produce the maximum sustainable yield. Regulating the use of the biological resources in the Russian EEZ is implemented by the state government, which uses the following methods [1]:

a) Quotas
b) Tax policy.
c) Technical measures
d) Biological measures
e) Tebiological measures
f) The fight against illegal, unreported and unregulated the fishing industry

The second direction - is to ensure the ecological safety. Ecological security must be seen as a system of the measures for the conservation of the Arctic ecosystems, as a principle of environmental management and as a pledge of successful transition to the sustainable development. To ensure the environmental safety, the following tasks [8].

- the development of monitoring and pollution in the Arctic, including the study of cross-border transport of pollutants in the region;
- the impact study of the problems of the Arctic environment by human activity in the Arctic, the construction and operation of commercial facilities and transportation;
- the creation of conditions for the natural reproduction of the biological resources, the protection of fauna and flora, scenic areas and the Arctic ecosystems;
- the implementation of measures to compensate of not preventing damage to biological resources as a result of the economic activity in the Arctic;
- the increase security in the Arctic zone, preventing accidents at fuel and energy complex and other facilities with the negative consequences for the fragile Arctic environment.

The third direction - is to ensure the necessary conditions for the functioning of the state of the economic component of socio-ecological-economic system - fishing enterprises, as follows:

- mandatory provision of this size quotas on aquatic organisms per vessel, which provides not only a break-even operation of the company, but also the complete (optimal) production load specific type of vessel in the fishery of the target species;
- creating the necessary conditions for financing the construction of ships. A certain amount of funding it should provide loans. Providing acceptable for ship owners credit terms of building new vessels involves the borrowing of funds for a period of more than 10 years and an interest rate of not more than 7-8% per annum;
- changes in tax and customs codes to release the building fishing vessels from the payment of VAT and customs duties for the importation of imported marine component equipment, certified analogues are not made at the Russian enterprises;
- reliable and fast payment of fishery products in the port;
- intergovernmental agreements on mining resources in remote areas of the ocean;
- subsidies on fuel.

In turn, the fishing company as an active participant in the social, ecological and economic systems (fisheries) should form the elements of the mechanism of sustainable development (the accumulation fund, stabilization fund, etc.). Stabilization Fund is essential to mitigate the impact of environmental factors on business operations. It should be used for commercial systems with a large one-time investment of resources in the implementation of the subsequent turnover of the production cycle.

The calculation of the stabilization fund is made individually for each company (using experimental statistics or the opinions of the economic experts') and depends on various factors: the length of the pro-

duction cycle, the proportion of equity and debt, the scale of financial flows, cash, the share of the consumption fund in the amount of profits.

Accumulation fund – is the special-purpose fund, which is formed by the contributions from earnings. The fund is earmarked for the development of the production, to fund capital expenditures, expansion and reconstruction of the enterprise, to finance new developments.

Thus, the consideration of sustainable environmental management in industrial fisheries yields currently possible to assess this area in a comprehensive study of the issues and identifies a number of important requirements for socio-ecological-economic system in the future.

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History

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To the question about the Northern Sea Route in the history of the Polar expedition of V. Rusanov

© © Zobnin Andrei Nikolaevich, Major stock, lifeguard of the 1 class , the officer-diver, historian, ethnographer, a member of the Russian Geographical Society. Author and Project Manager of the Marine Arctic Expedition of the Russian Geographical Society '1912–2012', dedicated to the 100th anniversary of the release of the three Russian polar expeditions: V. Rusanov, G. Sedov, G. Brusilov. Contact phone: +7 921 440 02 95. E-mail: zobninandr@mail.ru.

Abstract

The article describes the stages of formation and development of the ideas of the famous polar explorer, geologist V. A. Rusanov, which formed the basis of the plans of his last expedition in 1912. Based on Russian Arctic expeditions in 1909–1915 period (including the 1st and 2nd New Zemlians), and modern data on the Arctic navigation and weather conditions of the Kara Sea, the author puts forward and often justified the route cutter version 'Hercules' to the shores of the Taimyr autumn of 1912, winter 1912–1913 and the return trip to navigation in 1913.

Keywords: *expedition, Rusanov, ice, Kara Sea, the Arctic, Novaya Zemlya, Hercules, cape, high-latitude, Siberia, Yenisey, Desires, ball, path, way, Taimyr, wintering, Minins' sherries Gulf Pyasinskaya, currents, the East, parking, island , geology, and hydrology.*

Stubbornly go ahead in the risk of losing people and animals - that I can not allow that. If you want to win the game, we must act wisely.
From the diary of R. Amundsen

For already a century, the image of the ice schooner of the boundless expanses of the Arctic is haunted by the romantics and serious scientist. Millions of boys and girls brought up the example of the heroes of the polar trips, they read "to the holes" the novel by Kaverin "Two Captains". The motto carved on the memorial plate to R. Scott, "Fighting and finding, found and never bring up", and it became the life motto.

Past goes farther, covered with legends and various suggestions, and in many ways the participants of the events appear to us lifeless images, raised an enthusiastic crowd to its highest pitch, or thrown into the most remote corners of the human mind. And yet, they were ordinary people with their vision goals and ways to achieve them. And the challenge to show their commitment in a variety of real human life. See their real actions and understand their mistakes.

* * *

July 9, 1912 at 9:00 pm motor sailing cutter "Hercules" left the harbor of St. Catherine. "The captain was at the helm ..." Goodbye. Goodbye. Happily "- were from all sides. "Forward!" - Has ordered the captain. Methodically earned a motor. "Cheers" - a sudden there was on the beach, followed by a shot from guns. What greeted us crowd, accumulated on the shore. We, in turn, saluted the flag and inferior volleys of our rifles. The latter sent us the greetings from Alexander Biological Station ... "[1]. These lines from the diary of the participants in those events of R.L. Samoilovich left us the only documentary evidence of the beginning of one of the most mysterious expeditions of the XX century – the Arctic expedition of Vladimir Alexandrovich Rusanov.

[1] Shparo D. Shumilov A.V.Captain. «Hercules». M.: Politizdat, 1992. p. 127.

According to the scenario of the standard version, the autumn of 1912 the schooner "Hercules" for the first time in the history of the Northern Sea Route was from the Barents Sea to the mouth of the Yenisei River, skirting the north Cape Desire. Almost all researchers, referring to the well-known articles on the subject of Rusanov and his last letter, agree that the purpose of the expedition was the search of the high road to the east.

Indeed, in recent years Rusanov devoted to this problem, the solution of which, he believed, will give an unprecedented jump in the development of Arctic navigation and the economic growth of Siberian regions. On what is based the beliefs of B. Rusanov, by then he was the sufficiently experienced polar explorer? To clarify this question it is necessary to turn to the history.

In antiquity go first attempts to connect Europe and Asia via Northern Sea Route. And it is unlikely to be correctly identified here an historic championship before the start of the Great Northern Expedition, the proceedings of which were the basis of Russian national interests in the Arctic.

Considerable length and heavy ice conditions of the sailing to the east along the coast have created a wide variety of assumptions about the high latitude, and consequently, a shorter route to the coast of Siberia.

The first Russian scientific basis of the the possibility of such routes to the East was in the XVIII century, by Mikhail Lomonosov. The great Russian scientist, by leading a number of physical and geographical evidence of the summer melting of the ice in the Arctic, was convinced that "... the sun, though indirect rays whole shines almost constantly for six months, and can not warm him."

"On the eastern side of Shpizbergen - he wrote - the ice can not go to the coast of the three or four hundred miles stretch, hence in half and at the end of July, should the North by a new ocean between the Novaya Zemlya and Spitzbergen be clean and ice-free, and that meter pure ocean stretch far away to the east on the ice without a small measure for a thousand miles. These things should be a clean place to a width of about 80 degrees, from the Siberian coast about 600 miles. "On this basis, Lomonosov believed that swimming the most convenient way from the northern tip of Novaya Zemlya to the Chukotka Peninsula "... away from the Siberian coast for five and seven hundred miles Siberian Ocean in the summer months... "[2]

Opinions about the ice-free seas of the circumpolar space long held among the geographers and navigators. Some cause for this view could give the so-called Siberian polynya, located in two hundred miles north of the New Siberian Islands. Here, even in the winter the sea is covered with moving ice, and sometimes completely free of ice. More about this polynya in 1822 reported Gedenshtrom, believed that the north of the 76th parallel is "the Northern ocean, never freezing."

In 1870, the famous German geographer A. Peterman wrote that in high latitudes should be ice-free seas. Russian geographer A. Voeikov also suggested the presence of free water to the north of the Siberian coast. December 18, 1870 at the meeting of the Geographical Society, during the defending of the

[2] Berg LS Essays on the history of Russian geographical discoveries. Moscow-Leningrad: Publishing House of the USSR, 1949.

project of the Arctic expeditions "for the study of the Novaya Zemlya along the northern coast of Siberia to the Bering Strait," he said, referring to Gedenshtroma and Wrangel, which north of the New Siberian polynya finds more, said: "In the evidence, I have reasons to believe the continued of the Golfshtroma the east of New Earth "[3].

In November 1901, D.I. Mendeleev presented Witte memorandum "On the study of the Arctic Ocean." The great Russian chemist also expressed the belief that in the central part of the polar basin at least half of the surface is free water, and designed to pass through the Bering Strait to the North Pole. "I wish the truth, that is with the ships, victory over the polar ice - he wrote - Russia to an even greater extent than any other state, because none of them has such a large stretch of the coast of the Arctic Ocean, and here it pouring huge river, washing the greatest part of the empire, not only being able to develop not so much on the climatic conditions as due to lack of trade outlets across the Arctic ocean "[4].

Base to its assumptions of A. Voikova and D. Mendeleyev were wrong, because the relatively heavy and salty waters of Gulf Stream in the central parts of the Arctic Ocean sink to the depths, covered with layers of cold currents, and the cause of the Siberian polynya can not be.

Original proof of such conclusions in the Barents Sea was hydrological studies of the materials science in the Murmansk fishing expedition (MNPE) in 1898-1908 periods. Led initially N. Knipovich, then LL Breyfusom, expedition for ten years conducted a comprehensive study of the Arctic waters, combining academic research and applied research. One of the most important results of many years of work was a monograph N. Knipovich "Fundamentals of Hydrology of the European Arctic Ocean," published in 1906. He submitted the hydrological regime in the Barents Sea, with minor amendments, is relevant to this day.

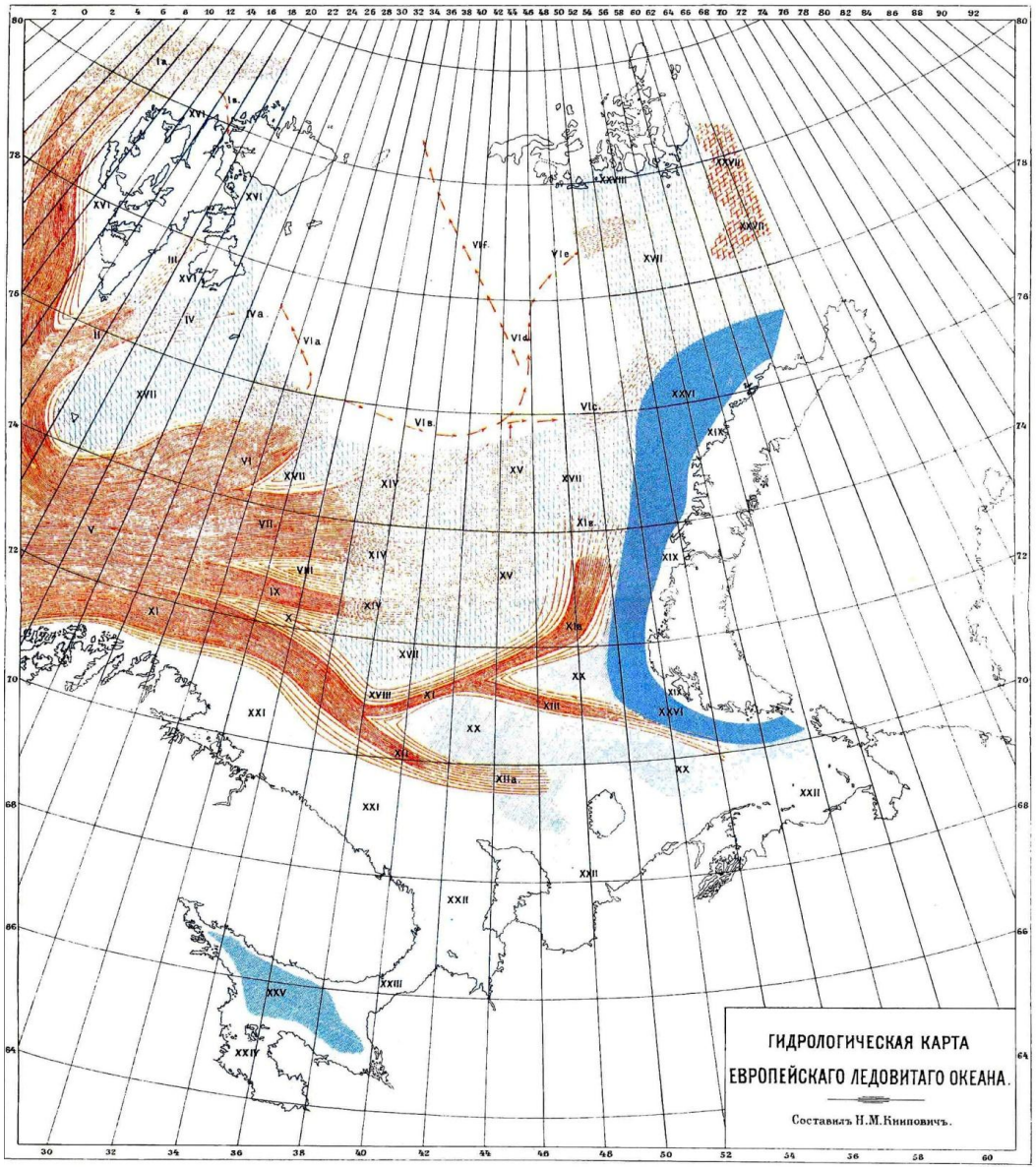
Powerful stream of warm Norwegian current as it moves to the east is divided into coastal and northern flow (Pic. 1). Meridians of the Kola Bay of the waters of the Coastal branch deviates to the southeast, moving along the coast of the Kola Peninsula, and goes to the White Sea. Another part of the coastal currents should be in the north-east, forming Murmansk current, and under the name "Zemlya" reaches Matochkina Bowl. The northern branch of the Norwegian current on the 30th meridian, separating the north-eastern, eastern and south-eastern branch is included in the general cyclonic circulation of the Barents Sea.

These and other studies formed in the basis of the greatest achievements of XX century - the practical use of the Northern Sea Route.

At the end of the war with Japan, the problem of the rapid delivery of goods to Siberia and the Far East North Sea has been raised to the height of the public interest. In 1906 starts the second state commission on the development of the Northern Sea Route, whose efforts produced the second Hydrographic Expedition of the Arctic Ocean and built icebreaking ships "Taimyr and Vaigach." One member of the commission, the famous explorer of the Arctic seas AI Varnek, in his work "The distribution of ice and navigation

[3] Voyeikov A. The news of the Geographical Society. VII. Dep. 1. 1871. p 167.
[4] Berg LS Essays on the history of Russian geographical discoveries. "Moscow-Leningrad: Publishing House of the USSR, 1949.

conditions on the sea route to Siberia," noted that "the conditions for navigation in high latitudes, not excluding the way around the northern tip of the New Earth, which yet not go any steamship, at least no worse than the way the southern straits, and can be, will be made when monitoring in the polar ice on this northern road, this will be the last and the best. "



Pic. 1. The hydrological map of the Barents Sea. Created by N.M. Knilovichem

It is difficult to say when the first idea of the Northeast Passage high latitudes captured Rusanov. Certainly it was no later than in 1909 - the time of his participation in the 1st Zemlya expedition.

The expedition by I.V. Sosnovskiy should held the researchers of the Novaya Zemlya in the colonization manner.

In the two months, in the period between the steamship flights, the expedition was instructed to gather the necessary information to select the location for the new encampment and plan further studies of the northern island. The head of the expedition was appointed - V. Kramer, an expert on the use of mineral resources of the Arkhangelsk province.

The participants of the first Novezemelskayas expedition with Arkhangelsk governor

V.A. Rusanov was invited as a geologist. His part in the French expedition of Charles Benard in 1908 was a good reference for the organizers of the Russian expedition of 1909.

Without making stops on the details in the materials of the company, it should be noted Rusanova initiatives in the research, which first took place in this part of the New Earth. Even then, not limited to the geological research, he studied paleontology, glaciology, hydrology, and with particular enthusiasm of the hydro meteorological research what would become the main focus in the formation of his designs. Expanding its research program, Rusanov collected material, which later formed the basis of his views on the prospects of the Arctic regions. These included observation since the French expedition in 1907, the discovery of glass spheres and buoys off the west coast of Novaya Zemlya (the 75th parallel), the priest, in his view, from the south of the Norwegian lighthouses, and, of course, contact with Zemlya Samoyeds, in his opinion, one of the most reliable sources on the climatological processes of the Kara and Barents Seas. Peculiar, sometimes similar to the legend, the residents of the colony Samoyed later enter the basis of his evidence.

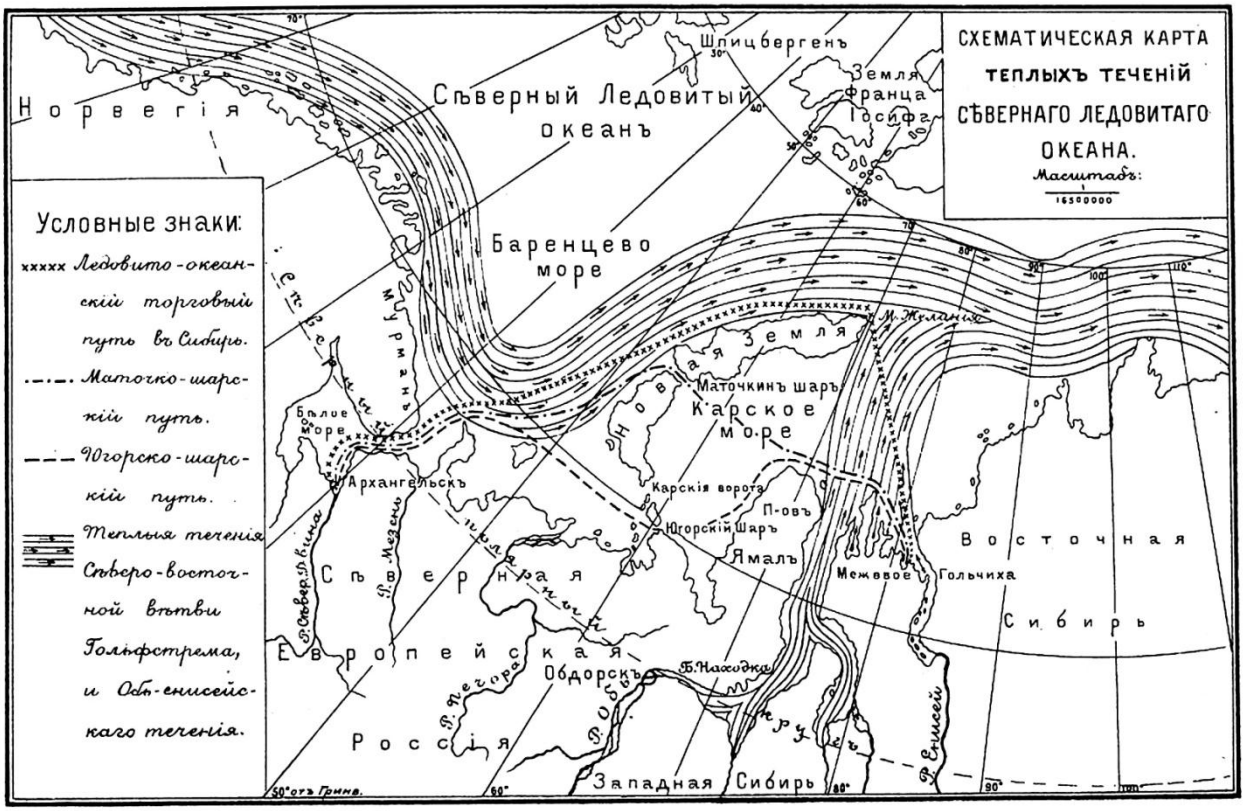
That's when the first conclusions to be made about the effect of the warm currents in the hydrological situation waters adjacent to the New Earth.

On the arrival to Archangelsk, Rusanov turned violent activity by the wide coverage of the research, and not only those areas that are related to geology. Mass of new ideas, acquired in the expedition, needed a way out. Its non-core education topics, familiarity with which, admittedly, was superficial, as reflected in the pages of newspapers and magazines. We must not forget - it was the beginning of XX century, when the narrow-minded interest in everything new, the unknown was higher than ever before, especially with respect to the polar so fired up by the world press. Race to the pole, arctic adventures were on the front pages of newspapers and journal of this time.

Rusanov, like many of his contemporaries, captured by the Arctic fever, could not be away from this problem. His quick mind and irrepressible energy demanding tasks larger scale. By the time the first task of the state in the Arctic became the Northern Sea Route. Progress in this direction is the most lively response of the authorities and the public. And here it is used to its diversified research, which, in his opinion, is directly related to the problems of Arctic shipping from the Barents Sea to the coast of Siberia.

In 1910, in St. Petersburg, under the redaction of the Arkhangelsk Governor I.V. Sosnowski published "Materials on the study of the New Earth", edition I. Summing up the results of the expedition in 1909, Rusanov brings unprecedented scale, the idea of "fast and risk-free trade ties with Siberia."

In his article "Is it possible the urgent shipping between Arkhangelsk and Siberia across the Arctic Ocean?" He first outlined the range of problems the solution of which can be in the coming years to open new Arctic journey. "Up until now, - wrote Rusanov - with unwavering tenacity and confusing trying to go to Siberia through the Kara Sea, skirting or New Earth or Vaigach possibly south: via Yugorsky through Kara Gate, more rarely through Matochkin. I suggest just the opposite. I propose to skirt the New Earth as much as possible to the north, and the Kara Sea is left apart. "To substantiate his proposals, he pointed out that "... an extended, slow and chilled, but still relatively warm, it should go round for the New Earth, once again leaning toward the east, it moves slowly over the polar ice from the northern coast of Siberia to Greenland "(Pic. 2).



Pic 2. Map of warm currents, composed of V.A. Rusanov to the article "Is it possible the urgent shipping between Arkhangelsk and Siberia across the Arctic Ocean?"

And, quite interesting in the development of the global ideas given in this regard, it is erroneous explanation Transpolar Drift ice, "If a broad and warm over the Atlantic Ocean to the west of the envelope is not a New Earth, it would be quite inexplicable laws of motion of a mechanism of permanent ice of the Arctic Ocean[5].

Here you can see that V. Rusanov was full of ideas, which was based on the same theory of all branches of the warm Gulf Stream on the northern tip of Novaya Zemlya and the northern part of the Kara Sea. It should be noted that it offers, without having to date, no scientific evidence, were more in the na-

[5] Materials of the research of Novaya Zemlya. No. I. Edited by B. Sosnowski. SPb., 1910. p. 73, 74.

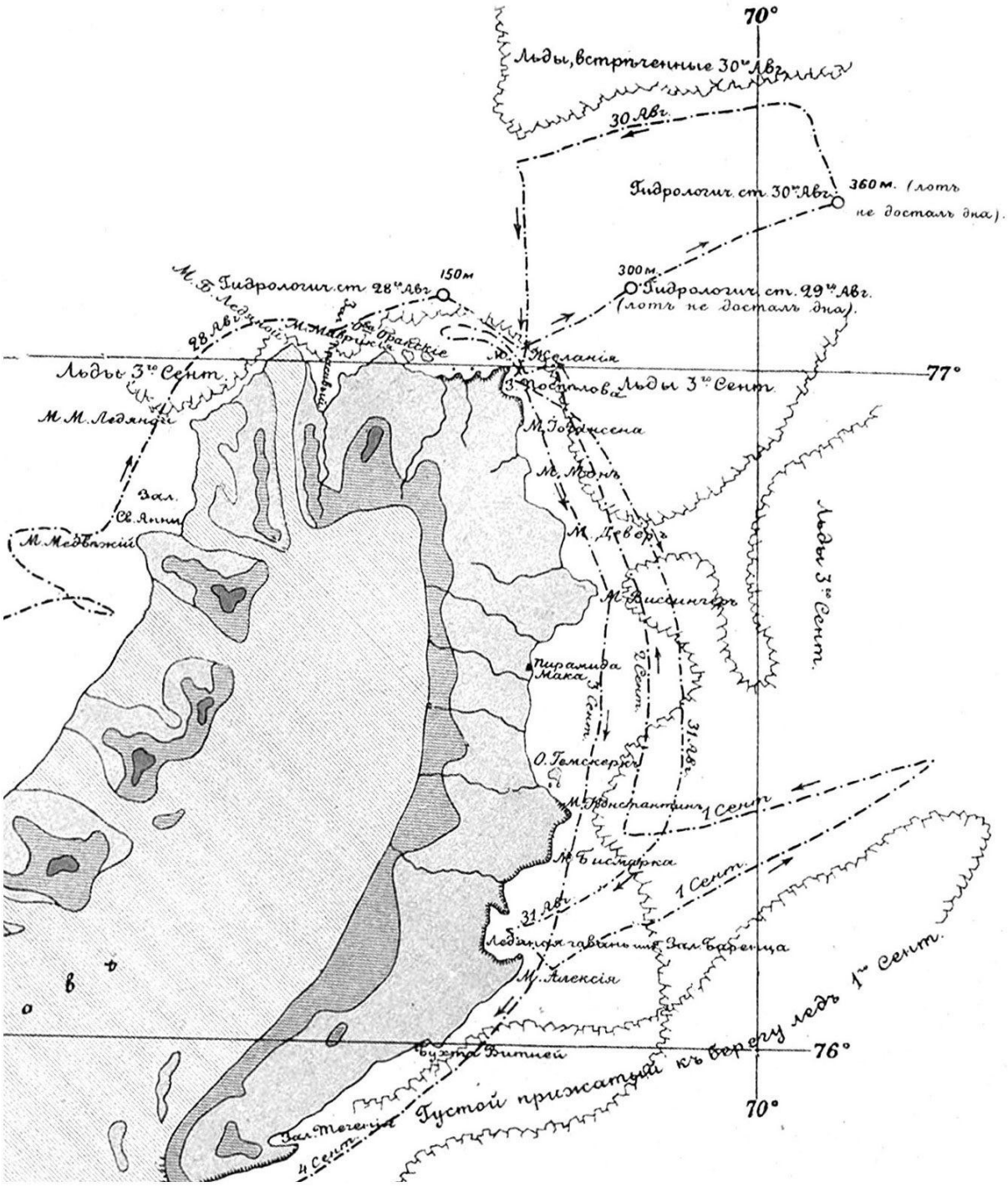
ture of speculation and built by his own admission, the "based on a critical review of the literature the question of maritime trade route to Siberia, based on practical observations and theoretical considerations.»According to the articles and speeches of the period, he sought to independently identify the problem, and as far as possible to express it.

For the final presentation of the project, believed Rusanov, lacking only the materials of hydrological research area adjacent to the northern end of the New Earth. "We need to keep in mind - he wrote - that the direction of flow in the northern part of the New Earth is still unexplored and that my views on this matter are hypothetical. That's why asking this fundamental question, in my opinion, should make the most important task of the expedition to Novaya Zemlya in 1910. This expedition will have to finally clear up the question of how useful my proposed trade route to Siberia. But for this it is not only needed to rise to the most extreme northern point of Novaya Zemlya, to Cape Desire, and round it. If the expedition will have positive results, then in 1911 it will be possible to make the first test flight from Arkhangelsk to the Yenisei to the new ocean-ice cover of the way "[6].

In the summer of 1910 was equipped the 2nd Novozemelskaya expedition. Program of the expedition, made by V. Rusanov (now the head of the expedition), included the continued examination of the northwest coast of Novaya Zemlya Peninsula Admiralty to Arkhangelsk lips, started in 1909. In addition it was assumed if time and circumstances to try to pass around the northern tip of the island. Rusanov for it was an opportunity to present all the necessary materials for a thorough review of the possible directions of Arctic shipping from the Barents Sea to the coast of Siberia.

In the middle of August in 1910 the two-masted sailing-motor cutter "Demetrius of Thessalonica" approached the north-western tip of the New Earth. By the time, the expedition of Rusanov conducted the extensive research to the west coast of the island. Since that time, was to begin the study, which formed the basis for completely new concepts of the Arctic navigation. In the report "On" Demetrios "around the New Earth. Description Zemlya Expedition 1910 ", published in St. Petersburg in 1911, is presented, in fact, the diary Rusanov," August 16. Rounded Cape Desire and came close to the yellow ground with overhanging cliffs above the sea, but again blew a fresh wind, which forced to go to sea again. Hove to and took a new hydrological series to the 20 kilometers of the north-east of Cape Desire.

[6] The same place. p. 75.



Pic 3. The northern end of the New Earth. The route of the cutter "Dmitriy Solunskiy," August - September of 1910. Fragment of the map, drawn by V.A. Rusanov

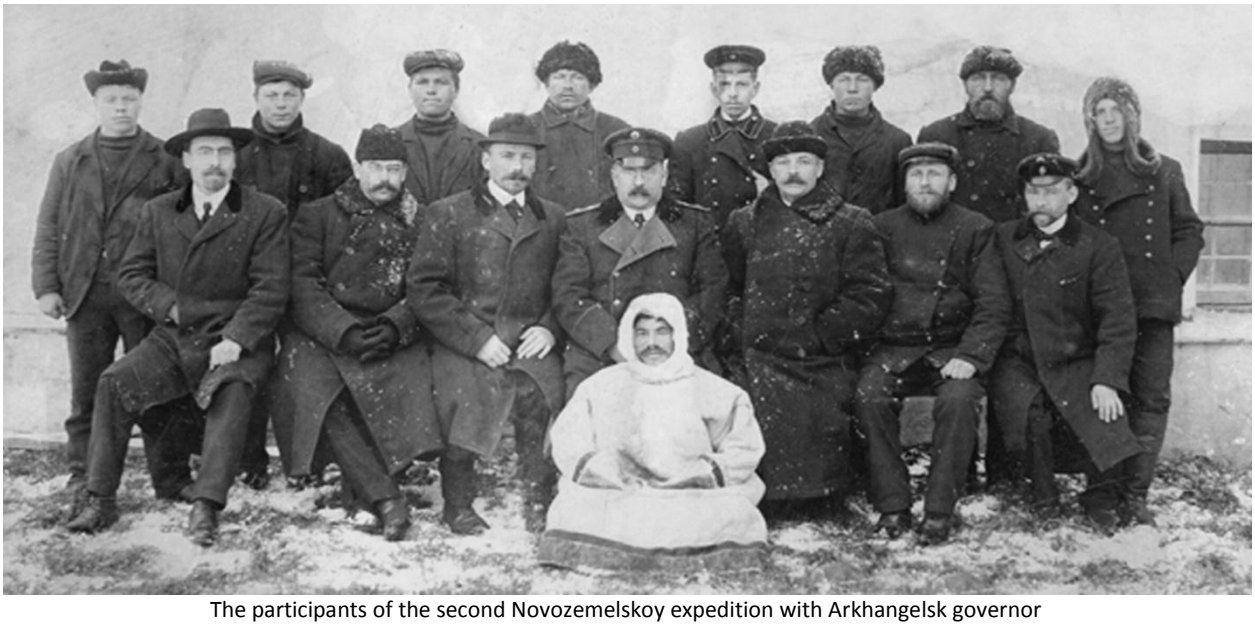
August 17. Rusanov invited the captain to go even further to the north-east to take third in the series of hydrological sphere, and in never before explored area. At 2 pm went into the hove for working in 55 kilometers to the north-east of the Cape Desire. The depth here was so great that the lot, dropped to 200 meters, not pulled out of the bottom. Unfortunately, the longer spare tench were not aboard, so learn the true depth was not possible. While lots of waters were taken from NNO on the horizon ice. It was the first marine polar ice, the expedition encountered at sea. The ship went straight to the ice and reaching a 77 ° 24 North. wide. band much broken ice, which stretched from east to west, to the right along it, avoiding

some places large blocks of ice. Passing, so about 50 miles to the west, they saw that the ice is wrapped to the north. Then turned back to the south and anchored on the east side of Cape Desire.

Thus, on the traverse of the Cape of Dreams was made only one hydrological cut with the length about 50 km (pic. 3).

"On 18 August, around midnight," "Dmitriy Solunskiy," "weighed anchor and went along the eastern coast of Novaya Zemlya to the Gulf in the icy of the Barents harbor. By the evening of the same day landed, from a high place to see coastal ice. When the members of the expedition went up the hill, around the Ice Harbor, we saw that the south-east all the Kara Sea from the shore to the horizon was covered with solid ice, and, despite a strong wind blowing from the shore, the ice that was still off the coast. Thus, the path to the south was cut off. It seemed impossible to go beyond the Kara Sea. But to the east, where the eye could reach, the sea was completely free of ice. It remained one of two things: either return the same way you came here, that is, the Barents Sea, which did not want to Rusanov, or try to get around the counter ice, heading east.,[7].

August 19 "Dmitriy Solunskiy," holding near the edge of the ice, passed to the east about 70 km, but the strong wind with snow forced to escape from a dangerous neighborhood with ice. Captain in the absence of visibility headed the northwest and back to the Cape of Desires. The whole next day and night was the storm. Strong wind filled the Orange Island ice, and out into the Barents Sea has been closed. August 21 team anxiously watched the approaching from the northwest to the ocean is vast fields of ice. The threat of loss of the vessel, pressed against the shore, was evident. The only salvation was a narrow channel along the northeast coast, the resulting shift of the ice under the pressure of the west wind. Inching along convergent and divergent channels south along the east coast of Novaya Zemlya, "Dmitriy Solunskiy," On August 27 went to Matochkin Bowl.



The participants of the second Novozemelskoy expedition with Arkhangelsk governor

[7] On «Dmitriy Solunskiy» and around Novaya Zemlya. The description of Novozemelskoy expedition 1910. Spb. 1911.

This is a fairly detailed description of a few days of the expedition at the northern end of Novaya Zemlya gives us a great number of very important facts that will help us to understand the development of ideas of V. Rusanov and evaluate his further conclusions. These materials were determinant in the analysis of his latest expedition.

Without a doubt, the 2nd Novozemelskaya expedition amended few changes in the understandings of V. Rusanov about the high latitudes ways to Siberia, and it became the most important and crucial step in the formation of his scientific views. A few days at sea near the Cape of Desires, gave an opportunity to see the complexity of the processes, which had been taking place there and took a fresh look at his problem. The change in his beliefs to a more moderate conclusions about alternative ways of the Arctic evident in his works.

Together with a description of the sailing of "Dmitriy Solunskiy" around the northern tip of Novaya Zemlya in 1911, it was published the final article of V. Rusanov "To the question about the northern sea route to Siberia," in which he presented all the accumulated his thoughts on this subject. It should be especially noted that this, in many ways contradictory, work displayed the fight of V. Rusanov with his old ideas and with new realities for him.

Admitting that "for lack of a more accurate and extensive observations in captivity, so we have to use poor materials, which we have « but he, nevertheless, questioned the long-term hydrological research materials of Murmansk scientific fishing expedition. His critical assessment of the research work of N. Knipovich about the hydrological regime of the Barents Sea, which is already built by not on the temperature characteristics, which Rusanov has extremely small, and by his suggested kinetic regime of water masses. Referring here on the historical sources of the previous expeditions (drift of "Tegetgofa"), stories of Samoyeds, own observations and suggestions and Rusanov tried to arguebut he didn't have scientific basement. He asked, "how couldn't see Golfstrema the Murmansk scientific-commercial expedition, which had in its major scientific powers and the means to enjoy the large multi-year extension of their work," and explained it to the researchers, by measuring the temperature and salinity of the water layers, left ignore the dynamics of the Gulf Stream cooled branches, which, according to Rusanov are the reasons of Kara polynya. "With the decreasing of the temperature of Golfstrema - he wrote - with decreasing of its calorific energy, it doesn't mean the decreasing of its its mechanical strength, its ability does not disappear with them take the ice to the north and to clear the way to Siberia, around the northern tip of Novaya Zemlya, around the Cape of Desires"[8].

Even the most superficial comparison of the hydrological materials of Murmansk scientific fishing expedition and the 2nd Novozemelskaya expedition becomes clear their incommensurability in the amount of the scientific data. According to the whole historical significance of sailing of "Dmitriy Solunskiy" around the northern tip of Novaya Zemlya, the main goal of the expedition - was"... to clarify the question of how

[8] The same place. p. 121.

useful the proposed trade route to Siberia" – it was not achieved. Ice conditions did not allow to held, which are necessary in this case, research waters surrounding of the northern tip of the island. One 50-kilometer hydrological incision to the northeast of Cape of Desires, on which is referenced V. Rusanov in his work, it was not enough to make a definite conclusion about the impact of the Gulf Stream on the ice conditions of the north of the Kara Sea.

It is now known that the currents in the Barents Sea play the most important role. During the navigation period along the Northern Sea Route, the chose of the best course from the Cape Desire to island Dixon determined by the position of the North Kara and Novaya Zemlya ice masses. If the prevailing northerly winds and the intensity of the Ob and Yenisei flow is insufficient, the ice of the North Kara ice massif held west of the Sverdrup Islands and Novaya Zemlya ice massif moves to the south along the east coast of the island of Novaya Zemlya. Dominated of the southern winds, the ice flow away by Ob-Yenisei to N[9].

But, despite of the criticism to the modern science, V. Rusanov realizes that his former statements have very little to do with reality. Recalling his recent performances and more well-known article "Is it possible to have urgent shipping between Arkhangelsk and Siberia? » He admits that before, when he was "not quite yet understand the complexity and originality of the organization of the Siberian Sea Road", posed the question rather than trying to give its decision "[10].

Its high aspirations, even with errors, are understandable and certainly deserve respect. Besides the need for serious study has become the basis of his views. In conclusion, the article "To the question about the northern sea route to Siberia," he comes to a very important conclusion, highlighting several equivalents to the ice conditions in the entrance areas of the Kara Sea in the west: the Straits Yugorsky, Kara Gate, Matochkin Shar, around the northern tip of Novaya Zemlya and high-latitude under the 78th parallel. Summing up his thoughts, he admits that there are lots of ways to "the northern coast of Siberia, but none of which we could say that it can be useful for navigation. Generally speaking, the path around to the north of the New Earth is expected to be less cluttered with ice. But in any case they can not be recommended exclusively. The choice of the path depends on the time of the previous position of the ice and winds. With the existing observatories, equipped with wireless telegraphy, and with the assistance of exploration ships, special cargo ships, not only to the exit, but the road will know the state of the ice, the wind direction, etc. Combining the information necessary for them to its geographical position at any given time, the court is always able to choose the safest and most convenient way for him "[11].

It will not have much time, and this conclusion will be the foundation in the use of the Northern Sea Route. In the "Guidelines for the approach to the Kara Sea in the west," "Guidelines for ships sailing through the Northern Sea Route" almost word for word repeated recommendations of V. Rusanov. "In some years the ice, carried out of the Kara Sea, can block the approach from the west to the Kara Strait Gate before the 15-25 of July. Then it may be more convenient approach to the strait Yugorsky where ice is

[9] Manual for the navigation of vessels through the Northern Sea Route. SPb.: Ed. HDNO, 1995. 415 p.
[10] Materials of the Research of the Novaya Zemlya. No. II. Edited by B. Sosnowski. SPb., 1911. p. 140.
[11] The same place. p. 143.

weaker. If unfavorable ice conditions on the approaches to the Straits Kara Gate and Yugorsky combined with the difficult ice conditions in the south-western part of the Kara Sea, it is recommended to follow the island Dixon, by passing the island of Novaya Zemlya in the north and rounding the Cape of Desire "[12].

Now, knowing the background of Rusanov's aspirations, you can proceed to analyze its future actions.

So, February 26, 1912 Rusanov received a letter from the Ministry of Internal Affairs with a proposal to "devote himself in the upcoming summer to the organization of the expeditions to the islands of Spitsbergen archipelago." Receiving once again the opportunity to go to the Arctic with the research goals, Rusanov on an unprecedented rise, said: "Russia faced with unprecedentedly great historic task. If this problem is solved if we can find out hundreds of millions of pounds of goods Siberian cheapest northern sea route, we thus conquer the global market "[13].

This internal appeal was determined in all the subsequent events. Expedition to Spitsbergen he regarded now as an opportunity to "move quickly on the issue of the Great Northern Sea Route ..." - the purpose for which he had lived in recent years. Member of Svalbard Research in 1912 R.L. Samoilovich later recalled: "Before I invite the expedition, V.A. Rusanov detailed the plans for his studies of the Arctic regions. "My job, - said V. Rusanov - is not limited to the study of the island of Spitsbergen. I want to use my trip to Svalbard is also to produce hydrological and hydrographic work between Spitsbergen and Novaya Zemlya, and visit the island of Solitude, to make geological survey it. '" New perspectives newly kindled in him a fierce desire to open the northern passage to Russia. Make the necessary series of hydrological studies, he correctly assumed, in the Barents and Kara seas, you can confidently talk about the dynamics of currents affecting the drift of the ice to the north of the New Earth, and the existence, in this regard, the open water to the Siberian coast.

All the known details of the expedition to Spitsbergen described enough, and there is no need to repeat them. But one thing still deserves attention. Expedition for a three-month (return of the "Hercules"

[12] Manual for the navigation of vessels through the Northern Sea Route. SPb.: Ed. HDNO, 1995.
[13] Shparo D.I., Shumilov A. V. Captain "Hercules." M. Politizdat, 1992. p. 115.

in Arkhangelsk was scheduled for October) was completed a little over a month. Rusanov, didn't make it a secret, that he planned to leave in August 15, Spitsbergen. He was in a hurry. It was already the middle of August, and the opportunity to move to the east as far as possible every day diminished. It is clear that he was looking at "a survey of Svalbard as a small first test."

Thus, to minimize the time spent on the archipelago, Rusanov headed forward Novaya Zemlya, simultaneously conducting hydrological studies the branches of the Gulf Stream in the Barents Sea. Taken by storm, "Hercules" had gone to the strait Matochkin.

From that moment begin the most mysterious and tragic part of the expedition of V. Rusanov. One small set of facts available to the researcher, could hardly contribute to the emergence of one plausible explanation for the fate of the expedition. It's been 100 years and we still have more questions than answers. And the only way to understand what happened, or rather, what might have happened to the crew of "Hercules", is to re-evaluate all the information that in some way have been connected with it. This is the case when the need for careful consideration of known data can be an important new search.

The first and the main mystery of the story was the text of the telegram, left by the head of the expedition in the Samoyed encampment in Matochkina Bowl before the leaving of the ship to the sea. Here is the complete text to the original spelling: "The telegram of the leader of the expedition in 1912, V.A. Rusanov left on Novaya Zemlya, in the Samoyed's colony – Matochkin Bowl in August 18 with a request to send it as an opportunity, to the following purpose: Petersburg Zhdanovka 9 Styunkel. The South of Spitsbergen, Island of Hope. Surrounded with ice «studying the hydrography of the Storm, we are souther than Matochkin Bowl. I went to the north-western tip of Novaya Zemlya from there to the east die if the ship was headed to the nearby islands on the way: Isolated, Novosibirskiy, Wrangel. We have reserves for the whole year. All are healthy. "

This last message made a lot of contradictions in the analysis of future plans in the missing expedition. There are a lot of interpretations of its meaning. The most common version was, that V.Rusanov mistakenly missed the excuse "not" before the word "die." That is to be understood "if the ship did not die, heading to the nearby islands on the way ...» Most likely, it was not so much trying to figure out how to justify the senseless intention of Rusanov. Especially since the stylistic evaluation phrases confirms the initial lack in the excuse of the building the entire proposal. L.L. Breytfus wrote: "Assuming that the V.A. Rusanov made a mistake and did not pay attention to the passage of the particle" not ", that is, assuming that he intended to go to the island is secluded and further to the east only, "If the ship does not die", and even then is not clear how one could decide to go to such a risky and requiring schee some time swimming with food reserve for one year »[14].

At first reading, some misunderstanding appears, caused most likely by the fact that in a hurry V. Rusanov did not take care of properly constructing sentences. But if you carefully read the message, the meaning is clear and it does not have absolutely any contradictions. V. Rusanov meant only that moving to

[14] The same place. p. 135.

the east at high latitudes of the 78th parallel, the distance from shore, and the ship could be lost at any point in their journey from the Cape to the Bering Strait Desire. "... If the ship dies I will go forward to the nearest islands on the way ...". It should be understood that if a ship crushed ice somewhere in the Kara Sea, the expedition will travel to the island of Solitude, and if in the Laptev Sea, the meridians Siberian Islands, the natural way to salvation will be the islands, and, finally, in the Chukchi Sea - to Wrangel Island. Further to the east, with the Wrangel Island Rusanov already traced unhindered access to the Bering Strait. These few words "... on the way to nearby islands ..." contain a basis for understanding the meaning of the message. Rusanov accurately described his high-latitude route from Novaya Zemlya to the Bering Strait, not traditionally along the coast, and from it a considerable distance to the north of the above named islands (Pic. 4).

Thus, this way, which was written in the should be held above the northern end of Novaya Zemlya, along the 78th parallel, between the islands of Solitude and Wiese: "... I will go to the islands of Solitude ..." (it is natural to go to the South after the sinking of the ship, and not to the North). The route crossed the unknown at the time the archipelago Severnaya Zemlya and out to the islands of De Long and to Cape Dezhnev.

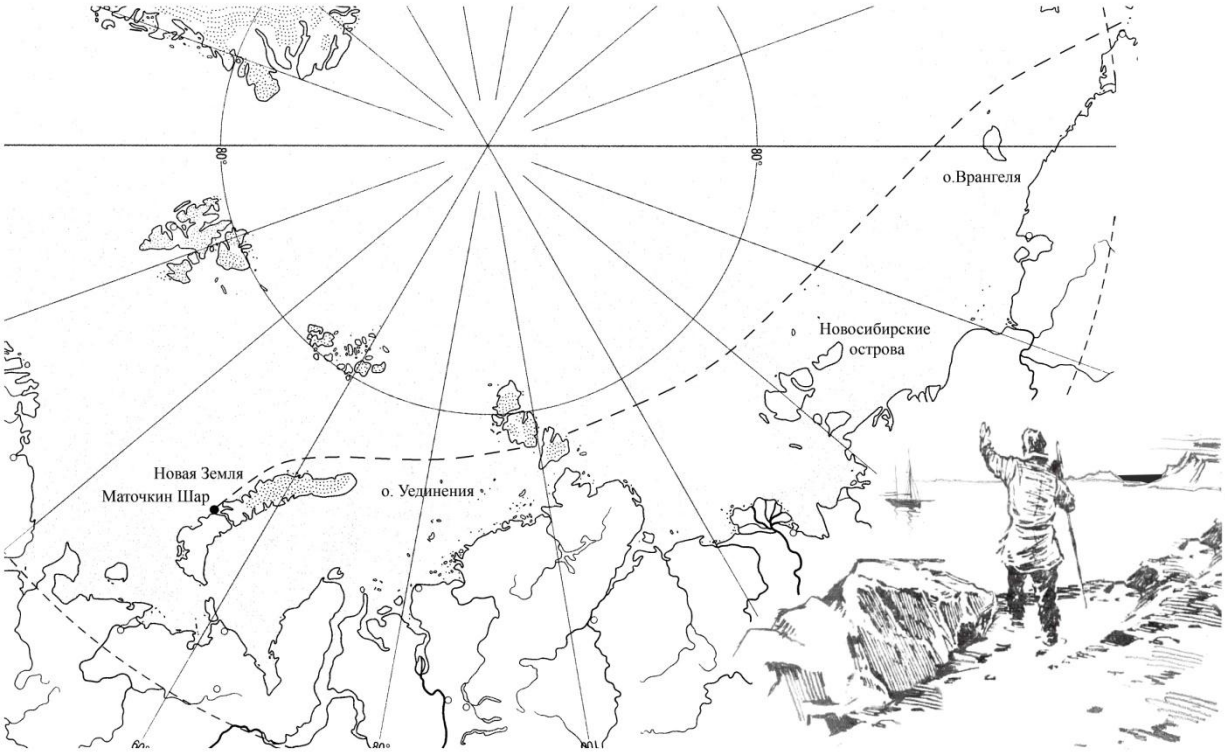


Рис. 4. The route of «Hercules», which was written in the telegram of V.Rusanov from 18 of august 1912

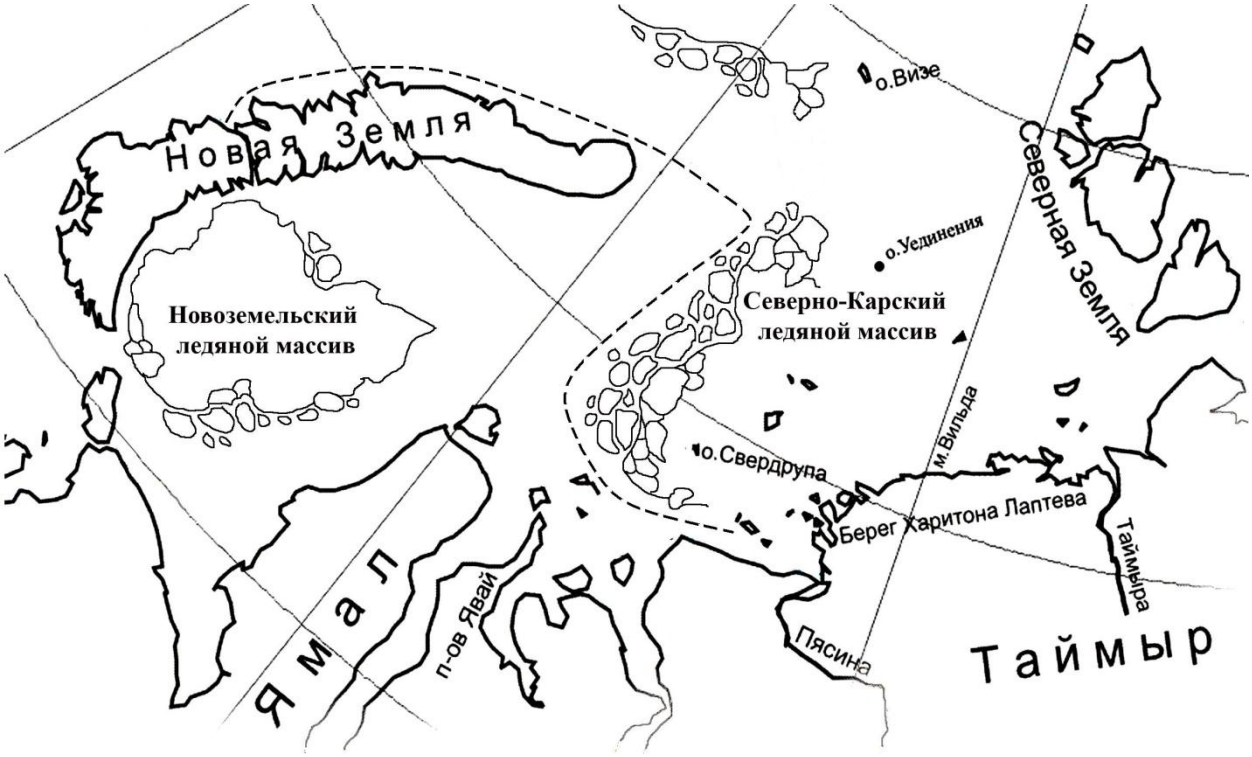
With the understanding of the meaning of written by V. Rusanov, comes the understanding that the more absurd solutions was difficult to make. Look at this as at a real intention of V.Rusanov means to name the expedition leader, as a perfect adventurer, or worse, as an absolutely stupid person in the Arctic shipping. Neither this nor that of Rusanov I can't say, of course, it is impossible. Therefore, he never wanted to be misleading. Note did not have the affirmative and carried a well-defined plan of the expedition. Most likely,

that he wanted to note a desire way of the expedition, which in the reality of which it is likely was at the question. It was written just in case. In case for some incredible set of circumstances high-latitude ice-hole will go far to the east.

* * *

The further route of the, "Hercules", continued to believe, laid to the northern tip of the island and in the early September, "Hercules" should enter into the waters of the Kara Sea. The expedition went forward to the coast of Siberia, which arrived safely in autumn 1912.

Developing this version, you can assume that to the beginning of September, "Hercules" went in the Kara Sea, before the north-west winds moved up the ice in the Barents Sea to the coast of Novaya Zemlya. This powerful ice massif subsequently intercepted the "Holy Foke" on the way to Franz Josef. Attempts of G. Sedov around the ice from the West didn't help, and the expedition stood in the peninsula of Pankratieva in winter. The same winds could carry ice from the Kara Sea coast of Novaya Zemlya. In this situation, seeing the ice-free sea east of Cape Desire, and V. Rusanov and A.. Kuchin as planned went forward the island of solitude and tried to move in this direction at least to the edge of the ice. After going so in clear water to the displaced to the south-east of the North Kara ice massif, "Hercules" could get around it with the W and S and go to the mouth of the Yenisei River (picture 5). At present time, this is the route used when sustained winds of the northern rhumbs cover the southern straits of Zemlya by ice masses. The length of the journey from Cape Desire by course of 142 ° to the island Dixon is 250 miles.



Pic. 5. The route of «Hercules» around the Cape of Wishes in the autumn of 1912

This version can be taken as the main, if not the circumstances that allow us to propose other assumptions, some of which is not less likely.

The first thing to consider the possibility of wintering on the easten bank of Novaya Zemlya. In the literature, this scenario occurs quite often. There would be no doubt in this regard, if next year's expedition is found off the coast of Taimyr. Reserves, as reported by V. Rusanov, on board had only for one year, so to the beginning of navigation (July 1913) the provision was already over-end, and would have to rely only on the hunt, which is in the Arctic has always been the only additional power supply. In this situation, nobody would go to the east. Naturally it would be after a severe winter goes to Arkhangelsk, and not to the coast of Taimyr. More on Svalbard, R. Samoylovich didn't agree with the optimism of Rusanov according the food supplies and sleep-suppressors. "The stock consisted of 2 or 3 barrels of cod and a few barrels of beef - re-called Rudolph Lazarevic - and a relatively small amount of any canned food. Were few and timber to build winter quarters. If we add to this that the fuel were only 60 tons of coal, it becomes clear how dangerous the expedition was wintering in the Arctic regions.[15].

Deny the possibility of wintering in Novaya Zemlya and the materials of swimming of the steam schooner "Andromeda" in the summer of 1915, which managed to explore the northeast coast of the island of Cape Desire to Bay Currents. The captain of the vessel Pospelov, supervised-shy search expedition, said in the log only sign on Cape Vissenger-Goft posed G. Sedov during the winter voyages in 1913. Other signs of stay Rusanov expedition to the Kara side of Novaya Zemlya were observed.

This fact suggests that the "Hercules" was not at the northern tip of the island and the coast of Taimyr, he did not go around the Cape of Desire, and the Cape of Menshikov, ie Kara Gate Strait. And there is a reason for this.

Firstly, it seems doubtful the decision to go to the Kara Sea, not having any idea about the ice con-ditions. Quick changes of the winds directions and, as a consequence, ice seas always lead to the encircle-ment of the vessel with ice.

Secondly, Rusanov said it. In the "Features of the navigation in polar waters," the article "To the question about the Northern Sea Route to Siberia," he says with conviction that "in the Arctic waters can not be satisfied with the usual type of the construction of vessels," and sea links with the Siberian ports should be provided only icebreaking vessels. For all his enthusiastic nature he could remember in Septem-ber 1910, when the danger of winter starvation loomed over the team of "Dmitriy Solunskiy." Small cutter "Hercules", which was in the icebound seas, was hardly suited to winter. Epic "Tegetgofa" in the same area of the Kara Sea would be here a small consolation. The captain A. Kuchin, knowing intent Rusanov, claimed that "thinks winter suffocate the whole expedition, but because he is the captain of the vessel, in any case, at a meeting with the polar ice will not dig into the ice ...".

[15] The same place p. 131.

There is another moment in the history, on which few people paid attention to justify the risk of Rusanov's aspirations. The fact that on the board was a woman, the bride of the chief of the expedition, the French Jean Juliet Sossin, is known and illuminated enough, but in the context of the leader of the very dangerous the plans, this fact was not considered at all. Perhaps it could be a key to understanding the true intentions Rusanov. Inviting her on an expedition, he would hardly have admitted the possibility of long-term transition to hummocky ice of the open sea after the sinking of the ship, as he wrote in a telegram, aware that the man is prepared for the hardest thing, what really is there to say about a woman. Risk the life of his future wife, Rusanov would not have become. In her presence he want only glory.

His desire for the supremacy in the matter of the Northern Sea Route is also not in doubt. Output from St. Petersburg good equipment Lieutenant G. Brusilov expedition, set for the same goal, could greatly push for stronger action. Rusanov knew quite unpredictable voyage around the northern tip of Novaya Zemlya can end in the best case a repetition of 1910, and all the credit of Russian pioneer of the Northern Sea Route will go Brusilov.

And here would be appropriate to remember R. Amundsen, who a year earlier, after knowing about the intention of R. Scott to conquer the South Pole, without the knowledge of the public began to prepare the expedition in order to get ahead of the Englishman. Parallel, which can be seen here, and the role in it A. Kuchin, could be a reasonable explanation for many. The captain of "Hercules" was a witness to a historic event September 9, 1911 in the roads of Funchal Madeira, Amundsen when the team announced his intention to go to the North Pole ... south. "This news struck all - A. Kuchin recorded in his diary. - No one suspected. Known only to himself Amundsen, Hiertsen, Nilsen and Prestrud. To me it made a bad impression. My first thought was the idea of parents: they are waiting at home. All my plans for the future again collapsed. But sadness soon passed. There was a drunk. New ideas, new plans, as far from the old, as the South Pole to the North ... I remembered the old Bjornson:

Raise your head, cheerful boy!
If you dream don't come true – one, another,
All the same –the new will sparkle!»[16].

There is no doubt that Alexander Stepanovich shared his impressions with the Rusanov. And that, apparently, do not miss the opportunity to repeat a "great company."

[16] The same place. p. 81.

Remembering the catch phrase "everybody loves a winner," Rusanov 31 (18) August left Matochkina Bowl cutter and sent not to the north, as indicated in the report, and to the south, ahead of Brusilov almost two weeks.

* * *

Anyway, at the end of September 1912 at the approach to the west coast of Taimyr "Hercules" met impassable ice and had to stand up for the winter. Multiple versions of the release of the expedition to the North Land and Rusanovs's championship in the opening of this archipelago are so unlikely that it is not subject to serious consideration.

Second, if it occurred during the summer season of 1913, then, is all-doubt, as a pillar with the inscription "Gerkules. 1913 "was not in the center of the island Mona, and the newly opened archipelago.

We must not forget the heavy ice conditions, marked by meteorologists in the eastern part of the Kara Sea. This is confirmed by subsequent expedition's materials.

August 22 (September 4), 1914, the barque "Eclipse", sent in the search of the expedition of Rusanov, left Dixon heading the east. The very next day, the islands of Scott Hansen, the vessel entered the solid ice field. With great difficulty, struggling narrow channels along the banks of Chariton Laptev, O. Sverdrup expedition, only 13 (26) September came to Cape Wild and got to hibernate near the Cape Shtellinga. The expedition member, representative of the Russian Navy Department, Dr. Trzhemessky in its report pointed out that "for the time, in spite of strong winds from the south, the ice on the east was impassable ..." In the opinion of the Sverdrup, the ice age was two years.

* * *

Wintering place for "Hercules", apparently, was chosen bay at the south-west coast of the peninsula Mikhailov. Of the three currently known sites Rusanivska expedition is the most preferred place for wintering ship and unlike the island Popova-Chuhchina completely safe with strong shifting of the ice seas. Based on a set of objects left the expedition, on a high promontory (Cape conspicuous, now Cape Rusanov) was placed a small camp. But the main wintering area is likely to be a vessel.

A few years later, in 1921, the traces of the coastal camp will be the detected by the Party of Begichev N. and L. Jacobsen. The search party was organized at the request of the Norwegian government, was to look for traces of two Norwegians, the expedition R. Amundsen's ship "Maud", and P. Knutsen Tessema, who died in the fall of 1919 during the transition to Dixon.

Searchers walked along the shores of Cape Chariton Laptev Wild to Dixon. At the western edge of the Cape Peninsula, Mikhailova N. conspicuous Begichev found the remains of a fire, and there among the ashes and embers, as he reported in Komseverput, "lie charred human bones and a lot of buttons and buckles, nails and something else: the shot cartridge paper and several rounds of ammunition from the rifle. "Items found near the fire, were collected by Jacobsen and packaged for delivery to Norway. Head of the research department of the Committee of the Northern Sea Route in Sibrevkome engineer S. Rybin looked at them in detail and described in his report:

«1. "Copper bullets from rifles - 6 pieces, each height - 55 mm diameter outlet - 7 mm, the diameter of the lower end - 12 mm. Year of ammunition - 1912-th.

2. Coin, apparently, nickel, - the French. Diameter - 24 mm. On one side of the image with the bust of a woman with a laurel wreath on his head. Clearly understands the inscription: "FRANCAISE"; on the other side: "RTE 25 CENTIMES". Year of the coin – is 1903.

3. Tea spoon, on the back hardly understands the stigma: "ALPAGHA".

4. A copper holder of a hunting rifle, diameter - 17.5 mm, on the back of a brand: "H. UTENDOERFFER NORNBERG № 16 ".

5. Hunting cartridges, paper, very spoiled, on the back of a brand: "RWS 16-16 GASDICHT". Paper cartridges are charged and not to shoot, and copper - shoot (as well as all the rifle).

6. Copper residue pocket barometer diameter top - 48 mm, height of the box - 21 mm, covered with strong rust on the dial are easy to parse numbers 72-74-76, there are other signs, but it is illegible. On the front side and back side of a pretty clear mark in the circle 4 letters: "PIIBN".

7. Buttons from clothing, metal, on one of them quite clear stamp with the words: "PARIS SAMARITAINE"; diameter of the buttons - 16.5 mm, and the other of metal buttons, apparently, from the underwear brand has a clear: "KODAK".

8. Rusty remains of a pen knife with 2 blades.

9. Strongly rusty blade large knife.

10. Metal frame from one eye goggles or eyeglasses.

11. Large smoked glass from snow glasses-canned.

12. Different buckles and hooks from clothing, button from the boot. On one buckle (on trousers or jackets) brand: "PRIMA SOLID"; French safety pins, nails, small scraps of steel wire diameter 3.5 mm, length of individual scraps of centimeters to 5-6.

13. Piece of thick cotton cloth, black and white in a cage.

14. Piece of gum, apparently, from the points-of canned food.

15. Iron tip of the gaff length 24 cm

16. Iron thin strip - Vol sled runners "[17].

Initially, these findings associated with the missing Norwegians, but when in 1934, the similar objects were found on the island Chuhchina - Popov, the question of their membership was revised. Historian, the polar explorer N.Y Bolotnikov, comparing findings with the findings Begichev N. Popov Chuhchina island, advanced version that the Cape was another conspicuous parking Rusanov expedition. Confirmed this version Urvantsev indicating shotgun cartridge, which, in his opinion, could not be at Knutsen and Tessema. Besides a variety of subjects indicates the duration of parking, which might not be the case with the Norwegians.

* * *

[17] Shparo D.I.,Shumilov A.V. «Three mysteries of the Arctic».

In the winter of 1912-1913 years for rusanovtsev, apparently took place without major incidents. The team worked on creating a camp and hunting. The restless head of the expedition, his bride and the captain of the vessel Kuchin make trips to survey of the surrounding islands. In the dark, the far raids were dangerous. When summer Rusanov and experienced hydrographer A. Kuchin passed to the east, along the Chariton Laptev. They were interested, above all, fast ice, which is not exposed in the past year. Its power and width can tell a lot about the possibility of the passage to Cape Chelyuskin.

How far to the east coast went the party of Rusanov, could clarify all the materials of the same expedition of Begichev-Jacobsen, which is in six kilometers from the northern tip of the Cape Sterlegov found another parking. Well known polar geologist, researcher Nicholas Taimyr Urvantsev wrote: "... Jacobsen found abandoned sled that looks quite similar to the ones that have Nganasans. They were similar to the sleds, which Jacobsen had seen in Norway. Kopylya, whivh were found the sleds were attached to the steel cable. Between Kopylov as spacers inserted curved copper tube, the tube has the same front between the upturned ends of the rails. Runners themselves are hit bottom thin iron plates. Near the sleds were visible the remains of the fire, but no other objects or its wreckages were not "[18].

Of course, there are no confidence that the sleds were belonged to the expedition of Rusanov because they could still belong to the Norwegians from the schooner "Maude" and rescue mission of O. Sverdrup on the barge "Eclipse", wintered in 1914-1915, about 90 km east of Cape Sterlegov.

Summer of 1913. The long-awaited time of the Arctic navigation came. We can assume that the "Hercules" with the first ice-free coastal of channels of the bay Mikhailov went to one of the northern islands of the archipelago Minin, who was later called Popova-Chuhchina (Pic. 6).

N.Urvantsev, reminding his trips in the Skerries of Minin, wrote that at the beginning of August in the Gulf of Pyasinskaya, ice has already gone, "... in the straits he was loose, broken, and off the coast of pure water, so that you can still sneak it" [19].

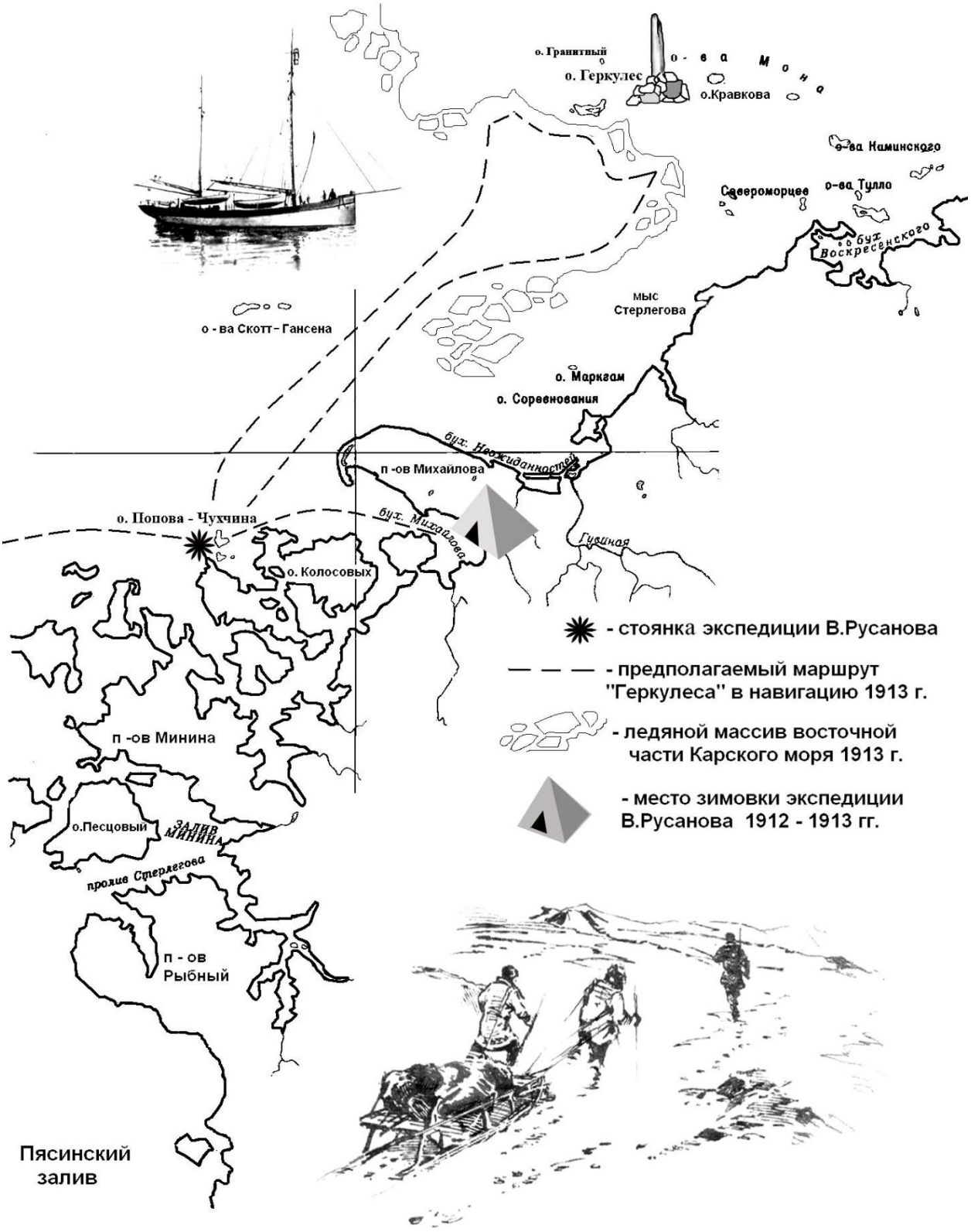
According the variety of items found on the island of the hydrographic expedition in 1934, we can assume that there was deployed a second long camp and unloaded from the ship a significant amount of equipment. Apparently, this was done to reduce the settlement or in the event of loss of the ship at the time of the research voyage to the east, along the edge of the ice. There is a big possibility,that Rusanov in August 1913 still tried to get around the ice to the north. Of course, his desire was doomed to fail. Ice brought by westerly winds, created a very heavy ice conditions in the eastern part of the Kara Sea. Navigation of the Northern Sea Route was interrupted for two years. Fast ice west coast of Severnaya Zemlya archipelago, connecting to the mainland shore ice, completely shut out in the Laptev Sea. This is confirmed by the materials of the expedition B. Vilkitsky.

In late August 1913, the icebreaking ships "Taimyr" and "Vaigach" from the east came to Cape Chelyuskin. The ice was so powerful that it could not pass the breakers to the west in the Kara Sea. Trying to

[18] Urvanzev N.N. «Taymis – is my Northern territory ». M.: Misl, 1978.
[19] The same place.

get around the ice to the north, the expedition discovered the unknown land. It was the last of Discovery. Large Arctic Archipelago that separates the Kara Sea from the Laptev Sea, has been named Earth Nicholas II (now the Northern Land). Icebreakers are passed along the east coast and back to Vladivostok. The west coast of the archipelago was tightly closed by ice, and the newly designated Strait, named after the chief of the expedition Strait Vilkitsky not opened and the following year. "Taimyr" and "Vaigach" after a severe winter 1914-1915 period at the eastern coast of Taimyr managed to break into the Kara Sea in the summer of 1915.

At the same time, when the newly opened archipelago solemnly established the national flag of Russia, "Hercules" was moving towards the east, then the north, exploring the location of the ice. Short of a few miles to the islands of Mona, the vessel near the ice edge was anchored. Most likely, there was decided to urgently go to the west.



Pic. 6. The western coast of Taymir. Shers of Minin

Rusanov on foot went to the islands for the last of the geological survey and the installation plaque. Made before in this case the post with a neatly carved inscription "HERCULES. 1913 ", which marked the easternmost point of the route of the ship and unfulfilled dreams leader of the expedition, was installed in the center of Mona Island, the island Veyzelya (now Hercules). After 21 years this column, broken sled on which he was brought to the island, and zinc box of ammunition were discovered Soviet hydrographer A.

Gusev. Doubt that the column was brought to the island from the ship, not a lot. One can see that the letters are cut cleanly and without any haste. Such work can only be done during the winter or a long voyage. After the death of "Hercules" in the frozen tent to do it nobody would, especially haul heavy column for many miles to the island.

At the end of August in 1913 "Hercules" headed to the west to the abandoned camp. By the time the northerly winds could score approaches to the islands and all that was found on the island, we would have to drag through the hummocks on the ship manually. In this case, the evacuation would be carried out in an emergency mode, and many things would stay there.

The things of Popov and Chuhchina were found later on the island, and they tell us about the possibility of the death of the sailors during the winter. Put away with many other things, they have been forgotten in a hurry or simply lost, covered in snow.

Such emergency evacuation of the people, who wintered is not uncommon in the Arctic. Known polar hydrologist writer V. Vasnetsov, recalling the sinking "Politotdelets" near the coast of Kolguev in 1937, wrote: "... people have repeatedly tried to withdraw from the island. To send a boat to the shore prevented the incessant surf. Finally turned out to be a good day, the boat came, and the people sat up around on the lonely shore, exhausted long wait, afraid to miss a moment, and hurried, leaving everything behind, to get to the ship. Our expedition was equipped with a fairly modest, a lot of that here has been abandoned, we could only dream of"[20].

* * *

From this point "Hercules" began a race against time. Everyone understood that spent most of the short Arctic navigation and procrastination will not get out of the Kara Sea. The second winter on the coast would be tantamount to death.

The further fate of the expedition is very similar to many tragedies in the Arctic, and depended on the time of return. Based on some of the findings made at different times, there is much speculation about the last route "Hercules" and the fate of its crew.

The place of the tragedy, according to one of the versions, is the mouth of the river Pyasina. Went through the narrow, ice-clogged straits archipelago in the sheres of Minin, "Hercules" could run aground, and the team, leaving the ship, went on boats in the inland. This assumption arose in 1974, when an expedition of "Komsomolskaya Pravda" on the western coast of the island in the archipelago P of the island Pestsoviy Minin from the bottom of the Strait of Deep was raised many ship parts and small pieces of skin vessel expert evaluation is possible to conclude that the representation of the object could belong to a ship expedition Rusanov. A close look at this version, it begs the question: what to the vessel took wade unfamiliar pilotage in respect straits Minina Skerries Pyasina to the mouth? "Hercules", if by that time he was alive, most likely would have gone to sea heading west, especially since the coastal fast ice formed much earlier than ice seas. Urvantsev, describing his work in the eastern part of the archipelago of Minin, recalled

[20] Vasnetsov V.A. Tales of the Nordic Seas. Gidrometeoizdat. 1977.

one occasion when, in early September, with the northern winds blow cold and the bay, where there was their motor boat, frozen. "Now I had to leave immediately - he wrote. - We are on the Gulf Pyasinskaya approximately hundreds of kilometers. Have to go out to sea, along the edge of the archipelago, where the excitement will not be formed at once continuous cover, and will only "pancake" ice "»[21].

Rusanovtsy could go to the mouth of the river Pyasina only if the "Hercules" sank or was iced to the north from the shers of Minin. This version is considered by the researchers to be the most likely, but it is doubtful that still have not found the remains of men, their equipment and boats on which they were going to Pyasina, and possibly up to her. All these significant evidence could not disappear without a trace. Appropriate here to recall the tragic story of the expeditions of De Long and Andrew, who were found in very remote areas, where the presence of people - a perfect rare.

As for the shers of Minin and Pyasina River, the great mistake was to considere this area, as an unexplored. Expeditionary campaigns, which could provide information on the latest parked Rusanovtsev originate from 1921, with the work here and N. Begichev Urvantsev. But widespread throughout the development of these sites begins with the 40-ies of the last century. The reason was the Norilsk plant - a new industrial center of Siberia. "... On the river and its tributaries Pyasina - recalled Urvantsev 45th city - walking boats and even tug" Pyasinets "with barges. Old abandoned villages lived and settled. On the banks of frequent fishing park, where in summer the fish hunted for the needs of workers Norilsk plant. " Also in 1945 Urvantsev doing geological survey of this vast region. "Our task - wrote Nicholas, - was in search of ore, especially rare, based on the geological survey of the mountains within Byrranga Yenisei Pyasinskaya Coast, Lower Pyasina its Gulf Peninsula Fishing, Skerries Minin and on up to the East Taimyr ... Usually we worked separately: I - on an island, comrades - on the other, and in the evening on the radio, the range of which was 150 kilometers, shared results of observations. The larger islands have studied together, spreading in all directions in the morning, so that in the evening close my route»[22].

At the same time, at the mouth of Pyasina in the exit to the sea, was a large fishing village of the Cape Vhodnoi, the sites were scattered along the coast and in the river Pyasina. On each such site worked for about ten people.

Thus, the long-term work in the sphere of geological parties, which examined in details all the islands and skerries of Minin and Pyasinskiy Bay, gives the opportunity to make a disappointing conclusion - last Rusanovskaya parking hardly associated with these places.

The expedition of "Komsomolskaya Pravda" in the 70's and most recently works of the prospecting enthusiasts of the city Oryol. It didn't give the optimism.

Following a review of the possible search area becomes Yenisei Bay and the mouth of the Yenisei. "Hercules" could go to the nearest settlement or to the places Golchikha and Megevoe, which were was located at the time on the left and right banks of the Yenisei Gulf. Rusanov not once mention the settle-

[21] Urvanzev N. N. Taymir – is my Northern territory. M.: Misl, 1978.
[22] The same place

ments in their articles as future first Siberian ports. In the difficult situation for the expedition, it would be the most sensible way to salvation. In another set of circumstances "Hercules" could go to the Obskaya guba and Baidarskiy bay.

In the research work of the famous polar explorer, Doctor of Historical Sciences M.I. Belov, who believed that on the way back "Hercules" could reach the south-western part of the Kara Sea, referred to the report of Captain icebreaker "Nightingale Budimirovich" Messer in 1919, where he wrote that between the island Beliy and Ugorskiy Shar, on the 72 ° 24 'north latitude and 65 ° east was seen "capsized boat ... From the ship was found only tank and bottom.

Thus, the expedition ship of V. Rusanov in the autumn of 1913, moving to the west could be icebound, with equal probability in any of the meridians of the archipelago to Minin Ugra Bowl. The team, in this case, leaving the ship, moved to the boats to the mainland. Survive in the desert shores of the Kara Sea, away from populated areas would be almost impossible.

Finds, which were marked by Belov, it is good for the version that is not in the literature. If we take into account the possibility of sailing "Hercules" around the Cape of Desire to the Siberian coast in the autumn of 1912, why not assume that Rusanov, the favorable outcome of wintering, tried to return by the same route? According to the scheme described in the article "To the question about the Northern Sea Route to Siberia", a piece of which was found on Popov Island-Chuhchina, Rusanov the alleged existence of ice-free water at the site of the Ob and Yenisei flow of the Kara Sea, which in his opinion, is the warm water directly to Cape Desire. In this case, the "Hercules" can exactly replicate the epic "St. Anna" and disappear without a trace in the icy expanses of the Arctic.

In conclusion, it should be noted that the version of the last days of the expedition of Rusanov can be very much, but, unfortunately, none of them has sufficient grounds for serious consideration. This is the case when only the new findings will make it possible to move forward. In the meantime, one thing remains – is to search.

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The historical types of the settlements on the Kola Peninsula, like landscape 'texts' of the Russian exploration [1]

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Abstract

Based on the description of the appeared historical types of the settlements in the Kola North. In the first article the way of looking at the process of development of the Russian-Arctic areas, which are contacted with each other landscape 'texts'. The approach is addressed to the depth of the cultural development of the northern area, allowing you to refuse from often simplified understanding of the development of a 'colonization' of empty spaces.

Keywords: *urbanization, city, industrialization, colonization, modernization, cultural landscape, Kola North, transformation, settlement.*

The occupancy of the Arctic areas is a very interesting phenomenon of the social history. Migration waves left on the surface of the defined landscape "text" as differently organized human settlements. During the last millennium in the process of exploring the Kola Peninsula by the communities in its territory were based on different historical types of settlements, including the churchyard, encampment, village, village, hamlet, a monastery, a colony, village, city, etc. It is quite reasonable to assume that all these historical styles were linked to each other - both in terms of their correlates, and in terms of a possible transformation, acquisition of one type of another. Consideration of this issue is important to elucidate the mechanisms of development of the northern spaces, in particular to reflect on one of the turns in history - the transition to the military and industrial urbanization in the Soviet period. On the Kola Peninsula this process was the most pronounced, as this area has become one of the most urbanized regions of Russia. Accordingly, in the study of the nature of the phenomenon of urbanization of the Arctic should have great importance not only to record the political and ideological features, caused by the external influences, but also of the social heritage, to which the territory met the appearance of cities.

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In the speeches of our Scandinavian colleagues often found a desire to regard the process of filling subarctic areas of Russia as lasting indefinitely "colonization" of desert spaces, whereby the Soviet urbanization of the North interpreted by them as a surface "coating" of the social media under the influence of an authoritarian state. One can hardly agree with this approach. Russian peace to take root among the polar landscape for centuries, forming a system of transfer of the experience of the social adjustment through the succession of historical types of the settlements: on-site or near the seasonal and small settlements grew large towns and cities.[2].

Before you make a review of the historical types of the settlements in the Kola Peninsula, it should be noticed the possible criteria for the analysis. These include: population, ethnic composition, the adaptation of the population (the degree of embeddedness), the main occupation of the population planning (regular, semiregular, chaotic), construction (wood or stone, low-rise or high rise), the legal aspects of the formation.

The first in the history of the development of the Kola Peninsula are seasonal settlements - graveyards and encampments, distinguished mainly by the ethnic composition of the population. Seasonal settlements had simple organization, relief shelters, and small in size.

Pogost (siyyt) – is the traditional village of Laparey (Sami), the appearance of which refers to the period before the arrival of the Slavic population. Local indigenous people – are the Sam, whoi lived in the communal tribal system, traditionally semi-nomadic life. In the summer, they were divided into groups and went to class fishing. There they founded the "summer" graveyards, consisting of tents (kuvaks). In the winter the whole memebers of the family lived in one place - a winter graveyard, where the houses looked like semi-dugouts, top covered with brushwood. Usually dug hidden under the snow to mask [9, p. 21-22]. A little later on the basis of tents appeared a new type of dwelling - Tower. Over time, the Sami and peaceful cooperation of the Russian population, coupled with a relatively high material and spiritual culture, has a progressive influence on the Sami society, which is becoming more sedentary. As a result, Sami graveyards are beginning to attach to a particular area, and the term "graveyard" begins to mean not only the village community, but also the area, which owned the members of this community. For the new life the old types of housing did not fit, so start building stupid Sami - chopped home from thick poles. In appearance resembled Russian dumb house used as a winter home. To the beginning of XVII century on the Kola Peninsula were 14 graveyards. As a rule, the population did not exceed churchyard 200. The largest pogosti treated Ponoysky, Kildinskoye (Munomoshsky) Lovozero[3].

Not later than in XIII century began the exploring of the ancient Russian Kola Peninsula, where its territory began to come to Novgorod for fish and furs, as well as for barter with the local population [4, p. 173]. The specific nature of fisheries forced people from Russian White Sea took place farm house, barns and temporary housing in place of Sami graveyards (siyytov), near the sea, near the mouths of rivers and

[2] The authors can not illustrate this view links to relevant literature and carried him out of verbal discussions with the Western colleagues.

[3] The collection of the materials on the history of the Kola Peninsula in the XV-XVII centuries. Leningrad, 1930. p. 55-62.

thus establishes seasonal settlements - encampments (Tony). Most of the Russian fishing industry came in the spring and summer, but some remained for the winter to hunt seals. For example, a typical example is the White Sea encampments Luvenga [10, p. 137], which in the XVI century, there were only two huts. Since the sixteenth century, there were encampments on the Murman coast. Spring fishing is concentrated in the north-eastern coast of Hank, which was to be called fishing. There have whole villages of the fishing camps - residential cottages with warehouses, baths, appliances for drying fish and sweat fat. Later in the largest encampments (like Teriberka Kharlovka) number in the fishing season fluctuated around 500-700 people [13, p. 19-20].

The appearance and the development of the seasonal settlements actually prepared the way for the emergence of the Kola North permanent settlements (villages, village settlement). The earliest mention of the first Russian villages - Umba and Varzuga[4]. - relates to 1466, and as a result, were then formed two parish - Varzuzhskaya Umbskaya. In the future appeared Pomeranian villages: Kuzomen, Tetrino, Olenitsa, Salnitsa etc. [9, p. 32]. Over time, these villages begin to grow, as a result of the chaotic planning increasingly began to resemble a semiregular, which has elements of the streets. However, the development took the form of low-rise buildings of stone buildings was not. Village arose spontaneously; therefore legitimizing their appearance did not exist. The population in most large villages ranged from 500 to 1000 people. In Varzuga in 1910 lived 1001 people, Kuzomen - 780 people, and in Kandalaksha in 1914 - 541 persons [10, p. 36, 93, 121]. Usually close to home built wooden barns, cellars and other outbuildings. The main street was arranged along the river, it facades of houses.

The difference between to the rural area and the village and viselka consisted of a higher cultural village: it usually had a temple. Temple had one of the best central locations, near people gathered for celebrations and rites [6, p. 10]. The village was usually less than the village, settlement, in turn, was a fragment of a village or villages, including, as a rule, several buildings. Settlements are often attributed to the villages or hamlets and were at some distance from them. For example, Salnitsa is 50 km from Kuzomen. In 1854, it is home to only 17 people [10, p. 231-232].

Large role in the development of the space belongs to the Church of the Kola Peninsula, which participated in the organization of communities of monks and monasteries. In the middle of the XVI century in the Kola Arctic have their local monasteries in Kola, Pechenga and Kandalaksha. Academician S. Platonov called attention to the fact that the Russian North "hermitage, founded by monks in the desert wilderness, certainly attracted the population, as ever was nakhodima random" prihodtsami "in their search for new commercial zaimok" [8, p. 33]. This rule, of course, act on the Kola Peninsula: in any case, at the origins of Russian settlements in the district town and village Kandalaksha Cola in the sixteenth century were based on these territories monasteries.

The population of the monasteries is usually not more than 200 people (including monks, novices and employees) and the migration of the clergy and laity was quite heterogeneous in terms of rootedness.

[4] Administrative-territorial division of the Murmansk region (1920-1993 years): Handbook. Murmansk, 1995. p. 18.

Monasteries in the XVI-XVII centuries arose spontaneously and didnt have the legislation. The face of the Kola monasteries featured the rambling wooden buildings. Only in-Trifon Pechenga monastery Sinodsky decree on the restoration of which is dated 1886 year, an attempt was made to give the layout a semiregular form [10, p. 272, 11].

Another historical type of settlement is a colony, which is defined as located in Murmansk settlement founded resettled migrants. The appearance of colonies refers to the 60-s of the XIX century, when the Russian government decided to provide benefits and privileges to persons who wish to move to the coastal strip in the Barents Sea [3, p. 5.4, 7, p. 195]. In a short time in the western part of the coast have colonies of Ura-Guba, Cheep-Navolok Vaida-Guba, Western People Titovka, etc., in the east - Teriberka Gavrilova Kildin etc. The basis of the population of the colonies was Russian, Finnish and Norwegian.

Many of the colonies emerged on the basis encampments: Eastern Liza, Kharlovka, Teriberka. Chaotic building encampments were processed in a prison in a semiregular form typical Pomorski village. In the center of the colony often built temples to which stretched streets and alleys with houses of the colonists.

Total number of the colonists is slowly but steadily growing. By 1899, on the Murmansk coast were more than two thousands of people, and in 1914 - already 3183 people [9, p. 323-324, 414, 447]. In one of the largest colonies - Ura-Guba - in 1913, 292 people lived [10, p. 281]. Murman population gradually takes root, vsledst-condition which colonies are more like a traditional village.

Since the end of XIX century, a new type of inhabitants – is a settlement. It helps to create the appearance in the Region of the industrial and transport infrastructure - mills and construction in 1915-1916 of the railway. Villages were formed by workers and railroad workers, sometimes on the spot or near historic villages, sometimes at a distance from them. In the pre-Soviet era of villagers could reach 500. For example, to Umbskomu mill in 1902 was attributed to 520 workers, and the first settlement at Kovdskom plant population in 1897 was 503 inhabitants [9, p. 425]. The top of the hierarchy of the settlements in the Kola Peninsula was the city. In dourbanization of the era in the Kola North city existed as a district center, which houses the government and the population did not exceed 1 000 (Cola, Alexandrovsk).

Cola appears in XVI century as fishing and trading settlement [12, p. 270-279]. Since 1582 in the residence of the Kola, the governor, and a year later, he created fortifications - fortress, with whom Cola acquired image of the medieval "city." In 1854, Cole was bombed by the British corvette "Miranda", resulting in the city not only lost the Kola prison, dvadtsatiglavogo Resurrection Cathedral, but virtually all residential development. However, after the fire occurred by Cola quickly recovered, though purchased at the same kind of common Pomeranian village: the layout of the city is a few streets with low-rise wooden buildings. Cola population reached its peak in the first half of the XIX century, reaching 900 people [5, p. 15]. In the second half of the XIX century, the number of inhabitants in it dropped to 600 [5, p. 12]. Loss Cola features medieval city has led to the skeptical assessments. Thus, the vice-governor of the Arkhangelsk AY Sofronov believed that "Cola so miserable city, the government acknowledged it useless" [1, p. 13].

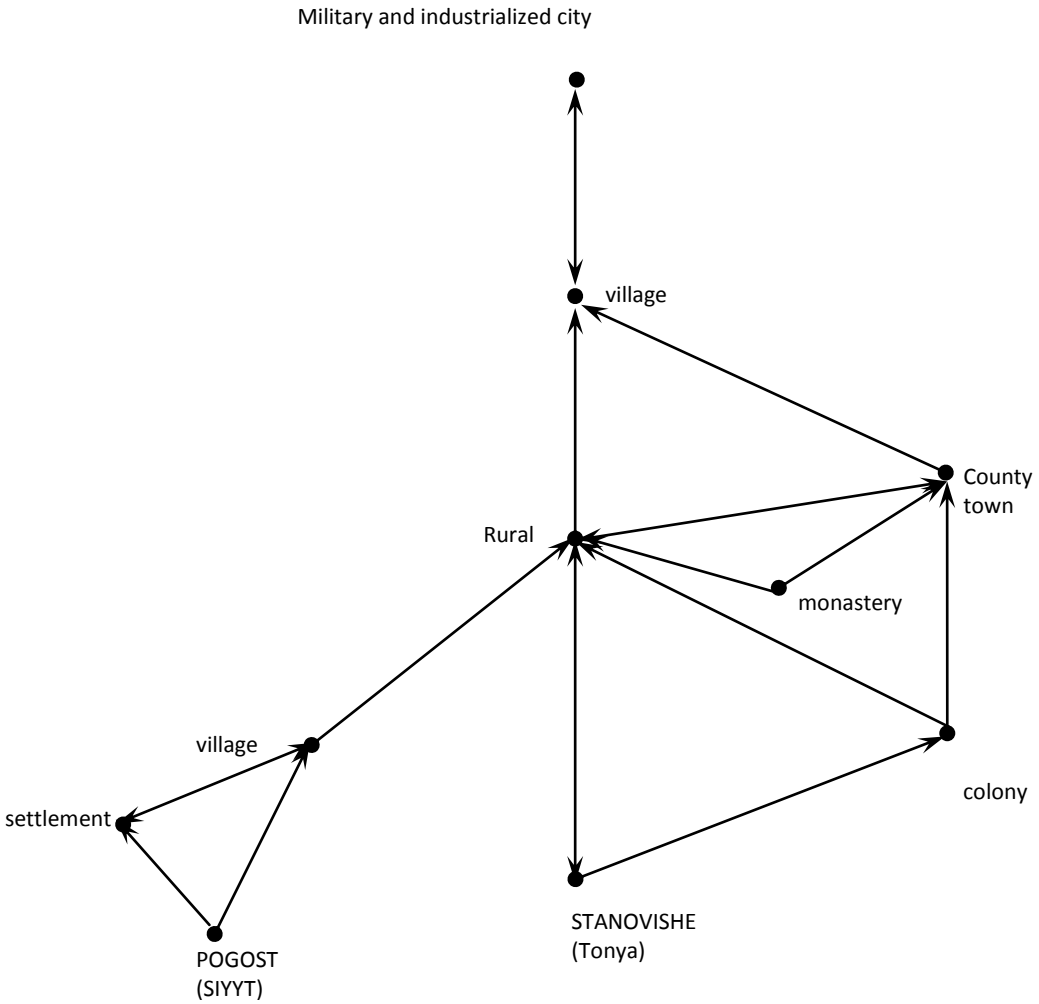
In 1899, the county offices were moved from Cole in just based on the location of the colony in Alexandrovsk. The main object for which arose and Alexandrovsk, was a commercial port. Alexandrovsk had all the attributes of the city and county government project was actually created in the shortest possible time. In the center, at the pier, located a rectangular area around which were grouped the major institutions - City College, treasury, a police station, a hospital with a maternity ward. From the area of the north-east on the only street - "Avenue" - lined up one-story model homes. They dragged along wooden sidewalks. City funded from the public purse, and among its inhabitants were many employees [1, p. 16-19]. Unlike medieval Cola created a new district center on fundamentally new technical grounds: the city was laid sewerage, electricity. However, the growth of the city (in 1914, its population was 627 inhabitants) and the port was limited to the lack of reliable communications with the center of the country [9, p. 407].

Urbanization, which began in the Kola North after the construction of the Murmansk railway, which grow out of the historical types of the settlements, which included the primitive, the "lower" forms to the more complex (Pic 1). The genesis of the military / industrial city on the Kola Peninsula could be the transformation of the village (Kandalaksha), the county town (Cole, Alexandrovsk-Polar). At the heart of a number of industrial cities in the Kola Peninsula (Murmansk, Kirovsk, Monchegorsk, Olenegorsk, Polar, Kovdor, Apatity, Polar Dawns) lay settlements that occurred frequently near the old settlements, but virtually from scratch.

So, officially opened to the October 4, 1916, in 10 km to the north of the former county center of Cola Romanov-on-Murman[5] in the first years of its existence, the city could be considered just a formality. Although there is a number of projects for the development and city planning, Murmansk developed spontaneously and buildings were chaotic. As homes population used vagons, dugouts, plywood houses, etc. By 1920, the population of Murmansk was 2.5 thousand of people, and the appearance of the city was more like a camp. Many accommodations are not very suitable for life, their number gradually decreased because of fires and decay. Rather like a conglomeration of villages of Murmansk (rail, port, naval base, and so on), rather than the city. The housing stock of the city in 1926 consisted of 76 buildings with a total usable living space of 1317 square meters. m [2, p. 23], and the city's population by the end of this year - 8777 people[6]. The slow pace of the population growth helped the unemployment[7], that's why many visitors were forced to leave the city. "The first impression, which the city produces is very sad: chaotic series like haywire houses miserable stalls instead of shops, a pathetic station," - that is how the Murmansk on visitors in the mid 20's. [8]. And on this "the village", so to speak, the first principle in the early 1930s, a rapid development of Murmansk, which was due to its transformation into a major center for the fishing industry, education, science and culture.

[5] From the spring of 1917 - Murmansk. See: Order of the Chief Kola district № 271 / / Kola maps. URL: http:// www.kolamap.ru / img / prikaz.jpg (date of access: 06/04/2012).
[6] Census of 1939. Main Results (Russia). SPb. 1999. p. 28.
[7] At the end of 1928 in Murmansk half of the workforce was unemployed. Polar truth. 1928. December 22.
[8] Boch G.N. Ecskursion to the north. State Publishing House. 1926 / / Wanderer. URL: http:// www.skitalets.ru/ books / severexp_boch / (date of access: 27.08.2011).

The specificity of the genesis of a city which owe a number of features of urban development and affect the choice of location and construction, especially the planning and construction, methods of resettlement, adaptation of the alien population and its relationship with local residents, economic specialization areas and the main areas of employment, and living conditions. At the same time, the city in its development process could provoke "suburban" landscapes, a kind of urban "satellites" in the form of towns and villages, is closely related to urban infrastructure. In each case, especially the origin of the Soviet city in the Kola North must identify and methodology of historical research.



PIC. 1. The Continuity of the historic settlement types of Kola Peninsula in the process of the development

The fact that in the region took place a long centuries process of formation of the various types of the historic settlements, largely explains why, in a time when the vast uninhabited spaces of the far north to the east and southeast of Arkhangelsk in the period of industrialization, but there is a "camp" settlements and towns in the Kola North already occurred transition to urbanization.

Illustrated our development of the historical types of the settlements indicates limited frequently used the term of the "colonization" to understand the history of the settlement in the Russian North. "Colonization" is more consistent with the situation of the primary appearance of the village on undeveloped, alien space, is a frontier. And in our case we can talk not only about the colonization of much of the

process of development are annexed territories, which imply an increase in the depth and complexity of the cultural rooting landscape "text."

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Reviewer – Goldin Vladislav Ivanovich,
Doctor of History, Professor.

Reviews

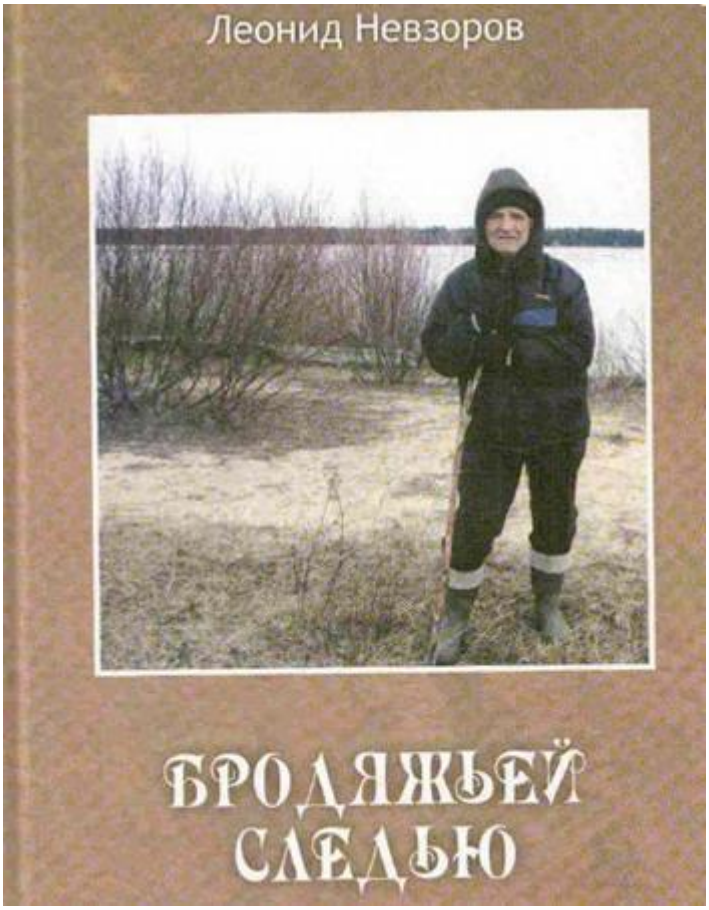
About the new book of L. I. Nevzorov ‘Tracks of the vagabonds’

© Gnezdov Sergei Valentinovich, Chairman of the Municipal Assembly of Deputies of the municipality ‘Vynogradovskiy municipal district’ of the Arkhangelsk region, member of Russian Union of Journalists.

Abstract

Reviewing a new book by L. I. Nevzorov about Pinejie ‘Tracks of the vagabonds’.

Keywords: *L. I. Nevzorov, Pynejie.*



«Tracks of the vagabonds» – is a new book, which was written by the writer and journalist Leonid Ivanovich Nevzorov, the continued of books, which he had written about Pinezhye - "Love to the mile «and "crazy village." Code, Red, Osyatkino, Northern, Nyukhcha, Mamoniha, Sosnovka - this route, which the author invented. This – is the top of Pinega. How people live in the countryside, how fished, hunted, how they work - this is in the book in the details.

The author devoted three volumes to the ancient River of the North, passing and drive to the Pinega. Nature lovers, hunting, fishing is something to read.

Leonid Ivanovich Nevzorov born in Pinega, creativity takes his lifetime. More than forty years he worked in the newspaper "Dvinovazhe", a member of the Union of Journalists of the USSR and Russia in 1966. Lives in Dvinsk Berezniki.To connect with Leonid Ivanovich, you can with the kelp of this telephone: +7 (81831) 2 10 50, +7 921 493 90 48.

UDK 630(09)(470.1/2)

Who cultivated Russian North? Objection to the Norwegian author[1]

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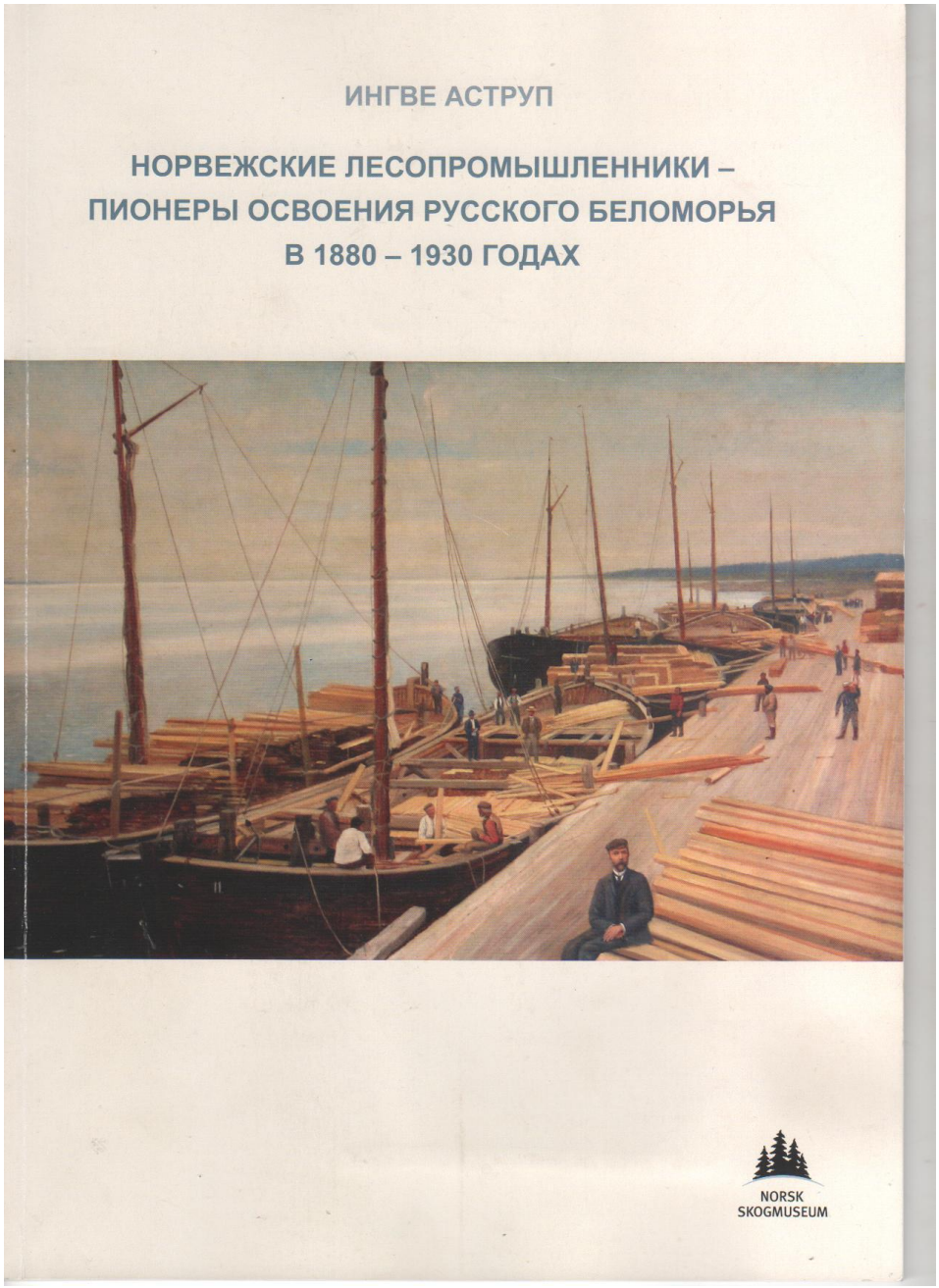
Abstract

Based on the critical analysis of the book Ingve Astrup 'Norwegian timber merchants – are the pioneers of the Russian Belomorye in the years of 1880–1930'. In the article analyzes the modern trends of Norwegian historiography about the coverage of the issues of the Russian-Norwegian relations.

Keywords: *Russian-Norwegian relations, historiography, Norway, Russian North, Russian Belomorye, exploration, timber industry.*

[1] The article was written with the support of the Russian Foundation for Humanities (project № 12-31-01200).



The book by Ingve Astrup "Norwegian timber merchants – are the pioneers of the Russian White Sea in the years of 1880-1930" was published in Norway in 2011 as a collection № 4 of the Norwegian Forest Museum in Elverum. [1]

It seems that this is a small colorful edition with unpretentious scientific aids and popular style of the presentation and it will be not very interesting to the prepaired reader. During the meeting with him appeared the feeling that you are dealing with a typical ideological product. The title of the book gives it a blatant sensationalism and a certain value, given that it came out in Russian and, therefore, faces the broad and unshod Russian audience. Only this fact made the author of these lines to take up writing reviews.

The author Ingve Astrup is an economist, former Director of the Norwegian Forest Museum Elverum, and a descendant of the family roots of Norwegian timber merchant Frederick Pryuttsa, well-known business in the Arkhangelsk region of the early twentieth century.

Basis of his book was a historical overview on the role of the Norwegian capital in the development of the forest production in the Russian North. It implies that in the nineteenth century, "Norway has become a leading exporter of wood products to Europe," creating their own sawmills in Sweden and Finland. At the turn of the nineteenth and twentieth centuries, Norwegians "have been actively working in Russia," in the White Sea. Further, the author shows the activity of a number of Norwegian companies (and among them his grandfather F. Pryuttsa). Talks about the hardships of the Russian revolution, which placed Norwegian breeders to the brink of collapse. Describes a revival of business activity during the NEP and its collapse at the end of 1920.

As noted by I. Astrup, the fate of F. Pryuttsa was linked to politics. He became an active participant in the creation of the fascist party "National Unity" in Norway in 1933, because, according to the author, was concerned about the communist threat and believed that "Norway is expected to achieve the economic and political influence in the north - western part of Russia. "I. Astrup did not hesitate to write that in the autumn of 1918, his grandfather wanted "the German occupation of Russian northern territories." From 1942 until his death in February 1945, F. Pryutts served as finance minister in Quisling's puppet government, created to support the occupying regime of Hitler. Just a few months, he has not lived up to the collapse of the Third Reich and the execution of Kvisling Quisling.

Actually, this is the factual outline of the book. If we talk about the subtext of the content, they generally fall within the framework of copyright regret the breakup of "huge projects in the East", leaving the Norwegian Timber from Russia.

Probably, we can understand the feelings of the child of the Norwegian forestry magnate. But how reveals the content the name of the book? The main contradiction is that the "pioneers" of the development of Russian White Sea by announcing foreigners. This confusion is even able to awaken the half-serious comparison of Norwegians with Spaniards penetrated into the wilds of the wild natives. Chronological framework included in the title of the book, however, explained that the author understands the "development" of the relatively short historical period, from the 1880s to the 1930s, when the White Sea and the very large area of Murmansk and to Pechora were actually not too bad settled and populated the Russian population. In the history of the Russian North had already entered the glorious pages associated with the construction of the medieval towns and castles, the birth of naval shipbuilding.

However, in the content of the book the author tries to clarify his position, noting that "when in the sixteenth century, Sweden and Norway have already had at their disposal water vertical saws, the work with wood in Arkhangelsk carried an ax and a handsaw," but only "mill and vertical saw ... were the forerunners of the Industrial Revolution.»Apparently, with the advent of "steam sawmills" I. Astrup and start their own "era of the development", thus overestimating the role of Norway in the history of the Russian North.

The substitution of the concepts is visible to the naked eye. Even if we consider the Norwegians related to the appearance of sawmill production in the Russian north, can not be elevated to the rank of "the

pioneers ". Firstly, because, as acknowledged by the author himself (and this is another contradiction) of 40 lumber mills working in the Arkhangelsk region in 1913, only 20 belonged to foreigners, among whom were businessmen, not only in Norway, but also from England, Germany, France, the Netherlands, Sweden and the Baltic countries. Half of the plants - they were Russian companies. Secondly, the concept of "development" (not translated, by the way, just for a single European language) means a much more complex and multifaceted phenomenon than the creation of industrial production.

If you use the logic I. Astrup, the "pioneers of the development" of the Northern Norway we can name Russian Pomors coast-dwellers, whose trading activity in the eighteenth and nineteenth centuries, recognized among the Norwegians themselves, according to the historian Einar Niemi, "The decisive factor in the creation of living conditions and opportunities along major Norwegian section of the North coast "[3, p. 15]. But should we imitate the example of the book under review? Norwegian participation in the creation of timber production in the Russian North actually looks not the beginning of the process of development, and the relatively small and, given the well-known result, still isolated episode in the millennial history of the development of the Russian White Sea.

If the author wanted to be objective, he could tell you about the problems that arose between the owners of the Norwegian timber companies and the Russian workers and forced breeders eventually leave Russia. Is the involvement of the Norwegian to the process of the development of the Russian White Sea is written in the petition of the workers' meetings aimed to the factory administration Pryutts September 25, 1917? It wsa writen: "We, the workers, very angry of the call actions of the entrepreneurs, and even if they do not go to meet our legal requirements, all rise up as one armed uprising and take it up to the revolutionary way of the organizing production" [2, p. 81].

But instead of the searching for the truth I. Astrup actively manipulates with the reader's trust. Thus, under the old photos of Arkhangelsk on the 24th page of the book is given the author's postscript: "The city was the administrative center of the province, which is home to many foreigners come from Scandinavia, the United Kingdom, but most of them were Baltic Germans." This comment clearly aims to make the uninitiated reader, who may or may not know that 94.6% of the residents of Arkhangelsk on the 1897 census as their mother tongue Russian [4, p. 104-111].

Obvious defects of this book suggest the general reflections on the Russian-Norwegian cooperation in the field of history. I remember in 1992 when there was a new issue of the Norwegian journal "Ottar" dedicated the partnership between Russia and Norway. This edition left no doubt about the scientific priority of creativity Norwegian researchers studying Russia. But those days have sunk into oblivion.

Against the background of the struggle that was in the international community over the Arctic, notably the emergence of new trends in the historiography of Norwegians and in the dialogue Norwegian researchers with Russian colleagues. In place of the ideas of the north ("Barents") the identity of the 1990s has now become appear opposite the desire to search asymmetry, and underscores the special status of the Norwegian polar latitudes.

I want to believe that these trends in the science are provisional. Traditions of good neighborliness and mutual respect must sooner or later prevail in the overall effort to find the historical truth.

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The results of the photo competition «My North.My Arctic »

Based on the provision of the photo competition «My North. My Arctic» to name the winners of the photo competition and to award with diplomas:

1st place – Chuprov Matvey Mihailovich, the head of the centre of the Arctic Initiatives, head of the family clan of the indigenious people of the North «You» Nenezkiy Autonomous District, – for the serie of photographers «Nenezkiy Autonomous District: life in Tundra».

2nd place – Sokolov *Vladimir Pavlovich*, captain of the long voyages, member of the Union of the Journalists of RF, ***Kovrijnih Boris Aleksandrovich****, photo journalist*, member of the Union of the Journalists RF, – for the picture story about the daily life of the development of the Arctic.

3rd place – Gernet Nikolay Sergeevich, journalist, photographer, Karpova Alina Vladimirovna, student of the Faculty of Geography and Geo ecology of the St. Petersburg State University, – for the photo reports about the development of the Arctic.

For showing the ecological and humanitarian problems of the North and the Arctic to award with diplomas: ***Kondtatiev*** *Igor Aleksandrovich*. amateur photographer; ***Menshikova*** *Marina Vladimirovna,* correspondent of the media center of NArFU; ***Nasteko*** *Yuriy Aleksandrovich*, Captain of NS "Mikhail Somov", honoured polar explorer, ***Pilugina*** *Anna Valerievn.,* graduate student of the Department of Philosophy, Department of Philosophy NArFU , a leading specialist of the department of the publication and the use of documents of State archives of the Arkhangelsk region.

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Working days in the development of the Arctic

© Sokolov P.V.


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© Karpova A. V. Finnset.

Resolution XV Selovetsky Forum
«Russian Arctic: history, present, perspectives»

Arkhangelsk **18–20 September 2012**

1. After the discussing of the problems of the history, the present and the perspectives of the Russian Arctic, XV Solovetsky Forum notes that in the Arctic zone of the Russian Federation is livingt 2.5 million people, or more than in the all of the other seven Arctic states (2.1 million). The Russian Arctic is not an empty space and is actively being developed for almost thousand years. More than 10% of the population are indigenous people, who have retained their distinct culture, the traditional economic activities and personal government. Historically, Russia has made a vital contribution to the polar exploration, the development of the fisheries, shipbuilding, ethnic and cultural evolution of the landscape, the development of the Arctic islands and marine areas of the Arctic Ocean, the exploitation of the national transport communications - the Northern Sea Route.

2. Solovetsky Forum declares ***Arkhangelsk is the capital of the Russian Arctic***, territory of the dialogue, Arctic solidarity and partnership. This status has an important geopolitical significance and emphasizes the historical priority of Russia in the development of the Arctic area. Archangelsk, which was founded in 1388 as the Archangel - Michael Monastery, became in the years 1583-1584, as the military fortress or "city", here in the years of 1693 -1862 were built 159 sailing ships. Marine compound of three armed sailboats committed many days sailing in the White Sea in 1694 under the command of Peter I, which was the beginning of the Russian Navy. Arkhangelsk – is the Gateway to the Arctic, from its moorings to the polar voyage sailed more than 300 expeditions. Archangelsk was historically the gateway not only to the Arctic, but to the West too, it was a meeting place of civilizations. Arkhangelsk – is a city of military glory. We ask encourage authorities and the government of the Russian state, the subjects of the Arctic zone of the Russian Federation, public organizations, all the northerners to support our initiative (ylukin@atnet.ru, m.nesterenko@narfu.ru).

3. Solovetsky Forum notes, that from Vladimir Putin in his current six-year term of ruling, many expect major breakthroughs in all areas of life. The Arctic zone of the Russian Federation in this regard is no exception. We can identify significant events of 2012 as "***«Arctic breakthrough of Putin»*** in the ecology, the economy, security, in which the real transition from words to action (general cleaning of the Arctic Islands, Prirazlomnaya, the program "Shelf-2030", FL on the area of SMEs, Arctic infrastructure, a comprehensive breakthrough in the modernization of the defense industry, etc.).

4. Suggest the working group (YF Lukin, E. A. Michailovskiy, M. Y. Nesterenko) to develop and submit to the regions and municipalities of the Russian Arctic ***"Arctic pact-2012"*** on the establishment of a network organization "Union of Russian Arctic" (ACP) as merging regions, municipalities Russia (Union Arctic regions, municipalities Russia - UArmR), the Council of the Arctic territories of Russia, to develop a road map for the implementation of the project (2012-2020), focusing on the introduction of *modern comfortable living in the North* (housing prices, utilities, taxes, agriculture, transport, roads), human capital, infrastructure Arctic. Politics, when people do not need, and the resources, has no future in the Arctic and the North of Russia.

5 Solovetsky forum examines ***the Arctic tourism*** as one of the important sectors in the Arctic, an integral part of the domestic and international tourism market. Cruise tourism from Arkhangelsk, Murmansk to the Solovetsky Islands, Franz Josef Land, Novaya Zemlya, Spitsbergen, the North Pole, on the White Sea, the Northern Sea Route is very actaul. Significant prospects have environmental, sports and adventure tourism (hunting, fishing, yachting, rafting, skiing, reindeer sledding, skiing, snow snowmobiling, etc.), event and entertainment (Day of the Cold - Day of the Arctic, Day of Arkhangelsk, Buran-Day, etc.), and scientific (visit cultural and historical monuments, archaeological tours). Promising congress tourism and business tourism in order to promote the regional and international cooperation in the oil sector, the use of the environmental symposia, conferences ethnographic, Solovetsky forums. Each one should have its own Arctic! There are opportunities to offer a modern and competitive tourism product and develop various kinds of tourism. Contact the Office of the Federal Border Service in the Arkhangelsk region for clarification on the procedure of admission of tourists to the islands of the archipelago of Franz Josef Land, Novaya Zemlya.

6. Need to develop the concepts of the complex informative and space information and support of the Russian Arctic and the North, the use of their results for the development of the regions and municipalities of the Russian Arctic, specialized GIS projects characterizing features of the present situation and the future prospects of the Arctic, to create a unified geographic information portal of the Arctic and interactive tourist map of the Arctic space using 3D-technology (JSC "SPC" REKOD "space Monitoring Center of the Arctic).

7. Use the best practices of the sociology and philosophy of the Institute of Shipbuilding and Marine Arctic Engineering (Sevmashvtuz) to monitor the socio-economic situation of the Russian Arctic, a social map of regions, using a system of evaluation of the social situations, including the Ten indices (ON Russow) social tensions relevance to urban problems, satisfaction with the general state of affairs, the main indicators of the satisfaction, the popularity of the social initiatives (projects), public awareness and the social well-being of the population (IISS) of the territory of social activity of the population, immigration sentiment, as well as evaluating the creative potential of the Russian regional communities - creativity index (R. Florida, A. Pilyasov): creative class, human capital and scientific talent, technology (innovation, patent applications), tolerance (index values and self-expression), International Index of Happiness (Happy Planet Index), reflecting the well-being people and the environment around the world (New Economics Foundation) and other techniques.

8. The participants of the Solovetsky forum believe, that the Arctic imperative balance between economy and ecology, between development and the preserving of the environmental protection. Environmental component should be a key leitmotif of human activities in the North, because with all the harsh Arctic-ity of the image has a very fragile ecosystem on the planet. We believe that it is necessary to measure seven times and only then start a large-scale of oil and gas production, respecting and observing the rights of indigenous peoples, old residents of the North, including Russian, Nenets, Komi, Yakut, Chukchi, etc.

9. Провести по возможности XVI Соловецкий форум на одном из островов Северного Ледовитого океана.

The participants of the Solovetsky Forum:

Belzkiy A.V.., Chairman of NP «Arkhangelsk regional touristic association »;
Bogdanova A.A., C. E. S., associate professor of the department of the regional studies and international relations of NArFU;
Boyakova S.I., D. H. S., Head of the department of the Arctic research works of the Institute of the Humanitarion research works and the indigenious people of the North Siberian department of RAS;
Bizova N.V., C. H. S., Head of the Department of the Geography and Geo Ecology of NArFU;
Vasilieva N.D., C. H. S, Associate Professor, p. n. with. The sector of the Arctic Research of the Institute of Humanitarian Research and Indigenous Peoples of the North SB RAS;;
Vinokyrova L.I. , Leading scientific worker of the Arctic Research Institute of Humanitarian Research and Indigenous Peoples of the North SB RAS;;
Gordienko S.I., associate professor of the Kyiv University of Tourism, Economics and Law, professional traveler, an expert on technology and psychology of survival of civilizations;;
GryshenkoE.B., Researcher, Institute of the Economic Problems of the Kola Scientific Center, Russian Academy of Sciences;
JIvihin K.., A leading specialist of "NPK REKOD";
Ievlev A.A., head of the Geological Museum of the A. Chernov Institute of Geology of Komi Science Center;
Kanashev V. A., General Director of "Pomeranian Souvenir";
Kolosov S.G.., Director of the Center of Space Monitoring of the Arctic NArFU;
Lavrentieva A.U., k f. n., p. n. with. center of the "Arctic Partnership" of NArFU;
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Shelarev A. A., AROO «Pomors expedition»; and others.

Totaly 98 persons.

Contents

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Abstracts, keywords

Geopolitics

Konyshev V. N., Sergunin A. A. **The strategy of Canada in the Arctic and Russia: is it possible to find mutual understanding?**

Abstract

Canada's Arctic policy on the modern stage is analyzed in the article. It is also studied Canadian and Russian relations in this region. They are identified, like the most 'problematic', and also the favourable spheres for cooperating of 2 states in the Far North. It is concluded that among 'official' arctic powers, Canada is the most likely partner for Russia in the regional cooperating.

Keywords: *Canada's Arctic strategy, Canadian and Russian relations cooperation and rivalry in the Far North.*

Lukin Y. F. **Putin's breakthrough in Arctic**

Abstract

Ecology, Economy, Security of Russian Arctic – are the strategic and important steps in 2012. It is the beginning of the general cleaning of the Arctic. The Arctic shelf of Russia, Prirazlomnoye. 'NK 'Rosneft': policy towards the strategic partnership with ExxonMobil, Eni и Statoil. To be strong – the guarantee of the national security.

Keywords: *Arctic, ecology, policy, Putin, shelf, modernization.*

Morscikhina L. A. **'Arctic-Fund' – the territory of dialogue**

Abstract

In this article, according to the example with the scientific-educational project 'Arctic Fund' was presented the activity of the Research Library of the NArFU in the sphere of creating of a united information space, according to the main spheres, which are reflected the national interests of Russia in the Arctic.

Keywords: *Arctic vector of the development, educational model, Scientific Library of the University, research and educational portal.*

Sociological sciences

Kashkina L. V. **Social well-being of the population of the mono-specialized city**

Abstract

The article deals with the concept and the distinctive characteristics of the health and social well-being, mood and social mood, the main approaches to the study of the social well-being, its species and indicators, as well as features according the research of such phenomenon like mono-specialized city.

Keywords: *social well-being, social mood, social welfare, social expectations, indicators of the social well-being, mono-specialized city.*

Vyazmin A. M., Sannikov A. L., Mordovsky E. A. **Social and medical problems of the population of the circumpolar countries – challenges of the modern development of the Arctic**

Abstract

The article is based on a review of data, which were submitted in the foreign scientific journals, which reflect the results of the research, which were carried out in the framework of the discipline 'Public Health'. The characteristic of the social and medical problems of the population of the circumpolar countries in the early XXI century is given.

Keywords: *Arctic, North, public health.*

Biological sciences

Erofeevskaya L. A., Aleksandrov A. R. The influence of radio nuclides ^{137}Cs и ^{90}Sr on the soil microbial community on the territory of the underground nuclear explosion 'Kraton- 3' (Yakutia)

Abstract

It was first conducted the microbiological studies of the soils in the underground nuclear explosion 'Kraton-3' (Yakutia). It was found that the soil area has toxicity to micro-and makroflore, inhibit seed germination, seedling development of the green part and the root system of plants. With theoretical and practical approaches, it is necessary to further study and evaluate the factual capacity of ^{Cs}137 and ^{90}Sr in the microbial community to assess the environmental hazard or safety of radioactive waste and its possible effects on human health, animals, and, in general, the environment in the northern latitudes.

Keywords: *radio nuclides, micro- and macroflora, bacteria, fungi, ecological safety.*

Management, economy

Yurkov D. V. The management of the regional informatization

Abstract

In the article estimates the state of the informatization of the Arkhangelsk region in general and of the government in particular, analyzes the results of the target program 'Electronic Arkhangelsk region', the status of work on the creation of e-government in the region.

Keywords: *Arkhangelsk region, state and municipal management, information technology, e-government, target program 'Electronic Arkhangelsk region', the concept of information, register of public and municipal services*.

Kibitkin A. I., Smirnova K. A. Sustainable use of natural resources in the Arctic in the field of industrial fisheries (social-economic and environmental issues)

Abstract

The article describes the aspects of sustainable development in the Arctic fishing industry as a socio-ecological-economic system. Describes the relationships and conflicts between the subsystems of the system, the directions of the state for fisheries management as a socio-ecological-economic system.

Keywords: *sustainable development, social, ecological and economic system, the fishing industry, government regulation.*

History

Zobnin A. N. To the question about the Northern Sea Route in the history of the Polar expedition of V. Rusanov

Abstract

The article describes the stages of formation and development of the ideas of the famous polar explorer, geologist V. A. Rusanov, which formed the basis of the plans of his last expedition in 1912. Based on Russian Arctic expeditions in 1909–1915 period (including the 1st and 2nd New Zemlians), and modern data on the Arctic navigation and weather conditions of the Kara Sea, the author puts forward and often justified the route cutter version 'Hercules' to the shores of the Taimyr autumn of 1912, winter 1912–1913 and the return trip to navigation in 1913.

Keywords: *expedition, Rusanov, ice, Kara Sea, the Arctic, Novaya Zemlya, Hercules, cape, high-latitude, Siberia, Yenisey, Desires, ball, path, way, Taimyr, wintering, Minins' sherries Gulf Pyasinskaya, currents, the East, parking, island , geology, and hydrology.*

Abstract

Based on the description of the appeared historical types of the settlements in the Kola North. In the first article the way of looking at the process of development of the Russian-Arctic areas, which are contacted with each other landscape 'texts'. The approach is addressed to the depth of the cultural development of the northern area, allowing you to refuse from often simplified understanding of the development of a 'colonization' of empty spaces.

Keywords: *urbanization, city, industrialization, colonization, modernization, cultural landscape, Kola North, transformation, settlement.*

Reviews

Abstract

Reviewing a new book by L. I. Nevzorov about Pinejie 'Tracks of the vagabonds'.

Keywords: *L. I. Nevzorov, Pynejie.*

Abstract

Based on the critical analysis of the book Ingve Astrup 'Norwegian timber merchants – are the pioneers of the Russian Belomorye in the years of 1880–1930'. In the article analyzes the modern trends of Norwegian historiography about the coverage of the issues of the Russian-Norwegian relations.

Keywords: *Russian-Norwegian relations, historiography, Norway, Russian North, Russian Belomorye, exploration, timber industry.*

Based on the appendixes of the photo competition 'My North. My Arctic', were named the winners, who took the 1st, 2nd and 3rd place, others.

Arkhangelsk was declared the capital of the Russian Arctic. It was decided to create a network organization 'Arctic Union of Russia' as the union of regions of municipal formations of Russia). (Union Arctic regions, municipalities Russia – UArmR).

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