Nadezhda V. Lobanova
ON THE CHRONOLOGY OF ROCK ART IN KARELIA (RUSSIA)

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INTRODUCTION

The rock art sites of Karelia are among of the most valuable clusters of north European prehistoric petroglyphs (Fig. 1), comprising of thousands of images that reflect in a specific form the spiritual life and lifestyle of Neolithic people. For 170 years, they have been of major interest for researchers. Recently, petroglyphs on the shores of Lake Onega and the White Sea coast (in the lower reaches of the Vyg River) have been the object of thorough field surveys by an international team (Lobanova 2007; Janik 2014). In the course of this work, the methods for their discovery and documentation were improved, the body of sources was expanded annually, and data on the natural and cultural context at the time of creation of rock art were updated. These new materials broadened the data pool, and enabled a deeper and more comprehensive understanding of related key issues. New groups of carvings were discovered, including previously unknown motifs and probably the earliest rock art cluster on the eastern shore of Lake Onega (at Cape Koryushkin Nos). Some signs of mutual influence and possible direct contacts between the authors of Onega and White Sea rock carvings were revealed. The aim of this paper is to clarify the ages of Lake Onega and White Sea petroglyphs in the Republic of Karelia, north-west Russia. Based on a detailed analysis of the natural and cultural settings of the monuments and recent dating of all Stone–Iron Age cultural forms of Karelia (Kosmenko 2004; Tarasov & Khoroshun 2016), the author substantiates a chronological framework of the Karelian rock art. The main stages of its development are described in detail. This topic has been discussed to some extent by the author in previous Russian publications (Lobanova 2014; 2015a; 2015b; 2016), and the current article summarises all data on the dating of Karelian petroglyphs, which may be useful for a wider circle of researchers who do not read Russian.

Fig. 1. Map of northern Europe with the largest rock art sites; 1) Lake Onega, 2) White Sea, 3) Kanozero, 4) Alta, 5) Nämforsen. Illustration: N. Lobanova.

LAKE ONEGA AND WHITE SEA PETROGLYPHS

The pool of petroglyphic sources in Karelia is quite large and fairly well-preserved due to the very hard ancient granitoid bedrock. Over 1200 individual petroglyphs are known in 25 groups (on 15 capes and six islands) on the eastern Lake Onega shores (Pudozhskiy district, Republic of Karelia). They are scattered over a length of 20 km, at the ends of capes and on near-shore islands, and occupy the shore at an altitude of 0.01–2 m above the Lake Onega water level (Table 1).

The White Sea petroglyphs, i.e. over 3400 separate figures, have a compact distribution within an area of c 1.5 km^2, in 12 known locations on large and small islands in the lower reaches of the Vyg River, at an elevation of 15–19 m above sea level (Table 2). Carving groups in north-west Russia were created in special, very scenic places that people had probably visited and appreciated before the carvings appeared – in fishing areas or along the routes of seasonal animal migrations, along busy waterways. People gathered there in certain times of the year to celebrate and perform rites.

The two rock art complexes, on the White Sea and Lake Onega, have signs of mutual influence and obvious contacts between their authors in some cases. Both sets of rock art were carved in a similar technique and manner. There are identical motifs and compositions, as well as archaeological context. These and some other traits indicate a common basic worldview and culture of the populations, as

No	Rock art group	Elevation above lake level (m)	Number of carvings
1	Kochkovnavolok I	1.1–2.0, mainly 1.3–1.5	93
2	Kochkovnavolok II	1.8–1.9	3
3	Kochkovnavolok III	1.1–1.7, mainly 1.5–1.6	27
4	Kochkovnavolok IV	0.3	1
5	Kochkovnavolok V	1.1–2.3, mainly 1.8	95
6	Bol'shoy Golets Island	1.1	5
7	Mikhaylovets Island	0.2	1
8	Cherniy Nos	1.1	3
9	Karetskiy Nos	0–2.1, mainly 0.6–0.8	163
10	Moduzh Island	0.4–1.1	24
11	Peri Nos I	0–0.8, mainly 0.6–0.8	15
12	Peri Nos II	0.2–1.2	18
13	Peri Nos III	0.2–1, mainly 0.5–0.6	294
14	Peri Nos IV	0.3–0.4	30
15	Peri Nos VI	0–0.5	112
16	Peri Nos VII	0.2–0.7	5
17	Besov Nos I	0–0.9	29
18	Besov Nos II	0.2	1
19	Besov Nos III	0.5–1.8	172
20	Kladovets Nos	0.1–1.5	48
21	Koryushkin Island	0.5–0.7	12
22	Koryushkin Nos	0.4–0.6	22
23	Gazhiy Nos	0.7–1.2	13
24	Bol'shoy Guriy Island	0.3–1.0	27
25	Maliy Guriy Island	0.5–0.7	13
Total			1226

Table 1. Lake Onega rock carvings.

No	Rock art group	Elevation (m a.s.l.)	Difference between the highest/lowest carving (m)	Number of carvings
1	Yerpin Pudas I	17.5–17.75	0.25	32
2	Yerpin Pudas II	18.1–18.3	0.2	7
3	Yerpin Pudas III	19.5–20	0.5	114
4	Yerpin Pudas IV	19.2–19.6	0.4	29
5	Besovy Sledki I	19.5–20	0.5	397
6	Besovy Sledki II	19–19.5	0.5	71
7	Besovy Sledki III	19	0	3
8	Bol'shoy Malinin Island (south)	15.6–15.7	0.11	8
9	Group 2:1 (Nameless Island I)	14.9–15.1	0.2	18
10	Group 2:2 (Nameless Island I)	14.5	0	2
11	Group 3 (Nameless Island II, north)	15.3–16.5	1.2	26
12	Group 4:1 (Nameless Island II, south)	16.3	0	3
13	Group 4:2 (Nameless Island II, south)	16.93	0	12
14	Zolotets I	14.63–15.75	1.12	101
15	Old Zalavruga	14–15	1	590
16	New Zalavruga, sub-group I	15.5–15.8	0.3	56
17	New Zalavruga, sub-group II	16–16.2	0.2	65
18	New Zalavruga, sub-group III	16	0	16
19	New Zalavruga, sub-group IV	15.6–15.8	0.2	424
20	New Zalavruga, sub-group V	15.2–15.4	0.2	16
21	New Zalavruga, sub-group VI	16–16.2	0.2	106
22	New Zalavruga, sub-group VII	16.1–16.3	0.2	22
23	New Zalavruga, sub-group VIII	15.8–16	0.2	118
24	New Zalavruga, sub-group IX	16–16.4	0.4	64
25	New Zalavruga, sub-group X	15.5–16	0.6	95
26	New Zalavruga, sub-group XI	15.4–16	0.6	69
27	New Zalavruga, sub-group XII	14.5–15.1	0.6	130
28	New Zalavruga, sub-group XIII	14.8–15	0.35	105
29	New Zalavruga, sub-group XIV	14.6–15	0.55	139
30	New Zalavruga, sub-group XV	14.6–15.1	0.5	125
31	New Zalavruga, sub-group XVI	15.5	0	27
32	New Zalavruga, sub-group XVII	15.6–16	0.4	97
33	New Zalavruga, sub-group XVIII	16.4	0	27
34	New Zalavruga, sub-group XIX	16.2–16.25	0.05	13
35	New Zalavruga, sub-group XX	16–16.3	0.3	122
36	New Zalavruga, sub-group XXI	16–16.2	0.2	24
37	New Zalavruga, sub-group XXII	16–16.1	0.1	32
38	New Zalavruga, sub-group XXIII	15.7–15.8	0.1	12
39	New Zalavruga, sub-group XXIV	16–16.2	0.2	15
40	New Zalavruga, sub-group XXV	14.7–15.2	0.5	55
41	New Zalavruga, sub-group XXVI	15.6–15.8	0.2	13
42	New Zalavruga, sub-group XXVII	15.1–15.2	0.1	9
43	New Zalavruga, sub-group XXVIII	15.7	0	8
Total				3420

Table 2. White Sea rock carvings.

well as their chronological proximity. Yet, the sites have some vivid distinctive features and stylistic preferences (probably partly due to the natural environment) by which they can be differentiated.

A considerable number of prehistoric and medieval settlements have been discovered and explored in the vicinity of petroglyphs (more than 60 on the eastern shore of Lake Onega, including the Neolithic burial site Kladovets, and over 80 sites in the lower reaches of the Vyg River; see Tables 3–4). Some of them are contemporaneous with the rock art. These sites are located at some distance from the petroglyphs, and only traces of short-term stays near the carvings have been found.

CHRONOLOGY OF KARELIAN PETROGLYPHS

Introduction

The question of dating Karelian petroglyphs was raised even by their first explorers (Ravdonikas 1936; 1938; Linevskiy 1939; Bryusov 1940; Savvateev 1970; 1977; Savvateev et al. 1978), but they reached no convincing conclusions. Some papers recently published on this topic contain unfortunately outdated ideas, namely, on the dates of the Neolithic-Eneolithic cultural layers in Karelia. In these papers, the timeframes of rock art making, for example in the White Sea area, are unreasonably wide – two thousand years or even more (Zhul'nikov 2006; Gjerde 2010; 2013; Janik 2010). In essence, these authors support the old point of view of Savvateev (1970) and Devyatova (1976). Archaeological materials from the numerous sites located next to the White Sea petroglyphs (see Table 4) were not used, with the exception of the site Zalavruga I. L. Janik made an attempt to clarify the absolute and relative dating of the Vyg River petroglyphs based on data from geology, geomorphology, paleogeography and archaeology from publications of the 1970s that are now out of date (cf. Kosmenko 2004; Lobanova 2004; 2015b; Tarasov & Khoroshun 2016). Based on the elevation of the Zalavruga rock art groups and two radiocarbon dates, obtained from charcoal samples from hearths at sites overlapping the petroglyphs (Table 4, site No 28), she believed that it was possible to obtain an exact chronology of petroglyphs, since any change of water level would have affected their placing. A relative chronology with seven successive phases of carving the rock surfaces of Zalavruga was proposed, and the amount of figures and dominant themes defined in each of them. In my opinion, this approach is somewhat formal and one-sided, and the proposed hypothesis is not fully consistent with the latest data on the ancient environment in the White Sea area and the revised chronology. According to Janik (2010: 91), the creation of Zalavruga rock art dates to c 2200/2135–1890/1770 BC (Janik 2010:91). However, this corresponds to the age of the Eneolithic cultural layers that cover most of the Zalavruga rock art panels, and therefore, petroglyphs must be associated with an earlier time.

Archaeological finds of different periods in the cultural layer of the same site in the lower reaches of the Vyg River show that people would have had the possibility to stay here – as well as to carve images on the rocks – any time from the mid-Atlantic period to the present day (Savvateev 1977; Lobanova 2015b). Consequently, elevation marks are not necessarily essential for the chronology of archaeological sites, especially petroglyphs, neither on the eastern shore of Lake Onega nor in the Vyg River delta. To date, we have sufficiently complete and reliable information about the climate and vegetation history and the White Sea shore displacement during the Holocene. Changes in the environment during the post-glacial time were more or less synchronous in the vast territory of north-west Russia (Kul'kova et al. 2001).

The present author's task is to specify the common chronological boundaries for the petroglyphs of Karelia and to determine the relative dates of groups of images by analysing and systematising all the data currently available. The dating of all Stone–Iron Age cultural types has been significantly changed (Kosmenko 2004; Lobanova 2004; Tarasov & Khoroshun 2016; Tarasov et al. 2017). The nature and dynamics of the coeval natural processes can be depicted in more detail and with better argumentation (Yelina et al. 2000; 2005; Demidov et al. 2001; Shelekhova & Lavrova 2011). The potential for this

No	Site	Elevation (m a.s.l.)	BP	±	Lab-index	calBC (68%)	Dating
1	Besov Nos I	36.5–37	-	-	-	-	N
2	Besov Nos II	34	-	-	-	-	N
3	Besov Nos III	34	-	-	-	-	N MA
4	Besov Nos IIIa	34–34.5	-	-	-	-	N
5	Besov Nos IV	34.8–35	-	-	-	-	N E
6	Besov Nos V	35–35.5	-	-	-	-	N MA
7	Besov Nos VI*	38–38.5	8300 7560 8120 7320 8180 7315 7815 7795 8340 4080	80 70 70 75 70 105 95 65 80 70	TA-1421 TA-1454 TUa-1291 TUa-1292 TUa-1293 Ua-10310 Ua-10311 Ua-10312 Ua-10313 Ua-10309	7458–7216 6470–6405 7242–7025 6185–6103 7305–7105 6319–6087 6870–6562 6707–5947 7489–7271 2817–2533	M N MA
8	Besov Nos VIa	38	-	-	-	-	N
9	Besov Nos VII	35	-	-	-	-	N
10	Besov Nos VIII	35–38	-	-	-	-	N MA
11	Gazhiy Nos I	40	-	-	-	-	M N
12	Karetskiy Nos I	35	-	-	-	-	N
13	Kladovets I	37.5	-	-	-	-	N
14	Kladovets Ia	38	-	-	-	-	N
15	Kladovets Iб	39	-	-	-	-	N
16	Kladovets II *	35–37	4200 3200 2360 2310 2670	100 100 100 70 120	(TA-?) (TA-?) (TA-?) (TA-?) (TA-?)	2892–2644 1600–1365 680–430 491–259 874–734	M N E
17	Kladovets IIa	35–35.5	-	-	-	-	N E
18	Kladovets III	35.5–36	-	-	-	-	N
19	Kladovets IV *	36.5–37	7840 3400	60 60	TA-1451 TA-1410	6806–6624 1792–1630	M N E
20	Kladovets V	36.5–37	-	-	-	-	N
21	Kladovets Va *	36–37	5850	80	TA-1450	4910–4500	M
22	Kladovets VI *	36.5–37	-	-	-	-	M N E
23	Kladovets VII*	37	-	-	-	-	M N E
24	Kladovets VIII *	36.5–37.8	7760	100	TA-1445	6752–6512	M N
25	Kladovets IX *	37	5310	80	TA-2288	4247–4053	N E
26	Kladovets burial ground	36–36.5	4560	80	TA-1785	3434–3131	N
27	Lebediniy Nos I	34.8	-	-	-	-	N
28	Bol'shoy Guriy Island	36.5–37	-	-	-	-	N E B

*Table 3. Archaeological context of the Lake Onega petroglyphs. Dating: M – Mesolithic, N – Neolithic, E – Eneolithic, B – Bronze Age, EIA – Early Iron Age, MA – Middle Ages. * Sites with house depressions. All radiocarbon dates in this paper have been calibrated with CalPal Online (http://www.calpal-online.de/cgi-bin/quickcal.pl), quickcal2007 ver. 1.5.*

No	Site	Elevation (m a.s.l.)	BP	±	Lab-index	calBC (68%)	Dating
29	Maliy Guriy Island	35.4	-	-	-	-	B
30	Peri Nos I	35–35.8	-	-	-	-	N
31	Peri Nos II	35	-	-	-	-	N
32	Ust'-Vodla I	33.5–34.2	-	-	-	-	N B
33	Ust'-Vodla II	33.7–34.1	2350 2700	90 100	TA-2287 TA-2289	659–313 986–794	E B EIA MA
34	Ust'-Vodla III	34.5–35.6	-	-	-	-	N E
35	Ust'-Vodla IV	33.2–33.8	-	-	-	-	B EIA
36	Ust'-Vodla V	0.4–0.7	-	-	-	-	N B MA
37	Chernaya Rechka I	34.2–34.9	6200 5950 5800 5500 5540 4185 4700 3240 2080	100 100 100 100 120 150 80 100 60	TA-1634 TA-1648 TA-1550 TA-1651 LE-1223 LE-3745 TA-1633 TA-1649 TA-1650	5273–5025 4969–4729 4574–4546 4446–4244 4512–4268 2965–2573 3599–3395 1643–1431 AD 183–35	N E
38	Chernaya Rechka II	35–35.7	-	-	-	-	N
39	Chernaya Rechka IIa	34.8–35.8	5930 5420	80 100	TA-2353 TA-2203	4918–4728 4349–4111	N E
40	Chernaya Rechka III	33.4–33.7	-	-	-	-	N
41	Chernaya Rechka IV	33.9–34.5	-	-	-	-	N
42	Chernaya Rechka V	33.5–33.7	-	-	-	-	N E B
43	Chernaya Rechka VI		-	-	-	-	N
44	Chernaya Rechka VII	33.5	-	-	-	-	N E
45	Chernaya Rechka VIII	36–36.5	-	-	-	-	M N
46	Chernaya Rechka IX	35.5–36	-	-	-	-	B
47	Chernaya Rechka X	36.5	-	-	-	-	N
48	Chernaya Rechka XI	36	-	-	-	-	-
49	Chernaya Rechka XII	35.5	3930	80	TA-1784	2539–2305	N E
50	Chernaya Rechka XIIa	36.5	-	-	-	-	N
	Chernaya Rechka XIII		-	-	-	-	N
51	Chernaya Rechka XIV	35.7	-	-	-	-	N
52	Chernaya Rechka XV	36.5	-	-	-	-	N MA
53	Chernaya Rechka XVI	35	-	-	-	-	N
54	Chernaya Rechka XVII	35.5	-	-	-	-	N
55	Chernaya Rechka XVIII	35.5	-	-	-	-	N
56	Chernaya Rechka XIX	35.2–35.5	-	-	-	-	E
57	Chernaya Rechka XX	35.5	-	-	-	-	N

*Table 3 (continued). Archaeological context of the Lake Onega petroglyphs. Dating: M – Mesolithic, N – Neolithic, E – Eneolithic, B – Bronze Age, EIA – Early Iron Age, MA – Middle Ages. * Sites with house depressions. All radiocarbon dates in this paper have been calibrated with CalPal Online (http://www.calpal-online.de/cgi-bin/quickcal.pl), quickcal2007 ver. 1.5.*

No	Site	Elevation (m a.s.l.)	BP	±	Lab-index	calBC (68%)	Dating
1	Besovy Sledki I	20.9–21	-	-	-	-	N E
2	Besovy Sledki II	20.9–21.4	-	-	-	-	N E EI
3	Besovy Sledki III	20.4–21.6	-	-	-	-	N E EIA MA
4	Besovy Sledki IIIa	20.9–21.3	-	-	-	-	N E EIA
5	Besovy Sledki (riverbed)	-0.5–1.2 (lower riverbed)	5430 5180 5000 4495	50 60 60 60	GIN-129 TA-522 TA-431 TA-471	4332–4248 4057–3919 3905–3723 3203–3094	N E BIA
6	Besovy Sledki ('Sanctuary')	22	-	-	-	-	N E
7	Vygostrov IV	19.4	-	-	-	-	N
8	Shoirukshin Island	21.5	-	-	-	-	N E EIA
9	Shoiruksha Rapids	20.8	-	-	-	-	N E
10	Yerpin Pudas I	21.5–23.7	6510 5990 5860 5825 5460 5240 2040 1090	120 100 100 80 80 50 60 50	TA-344 TA-799 TA-472 TA-413 TA-800 TA-795 TA-412 TA-473	5570–5360 5022–4774 4850–4604 4779–4585 4386–4198 4167–4003 155 BC–AD 12 AD 987–898	N E EIA MA
11	Yerpin Pudas II	20	-	-	-	-	N E EIA MA
12	Yerpin Pudas III	20	-	-	-	-	N E
13	Yerpin Pudas IV	21	-	-	-	-	N E
14	Vygostrov II	20.5–21.2	-	-	-	-	N
15	Zolotets I	16.5–23.7	-	-	-	-	N E EIA
16	Zolotets II	24–26	-	-	-	-	N E
17	Zolotets V	12.7	-	-	-	-	E EIA MA
	Zolotets VI	17.4–18.8	3780 3785 4150 4620 5160	150 100 80 60 150	TA-801 TA-394 TA-793 TA-391 TA-421	2430–2214 2385–2075 2844–2616 3496–3266 4173–3805	N E EIA MA
18	Zolotets VII	14.2	-	-	-	-	E EIA MA
19	Zolotets VIII	12.6–13.1	-	-	-	-	E B EIA
20	Zolotets IX	14.6–16	3990	60	TA-798	2640–2432	E EIA
21	Zolotets X	14.4–15.5	3300	60	TA-390	1660–1520	E B EIA VA
22	Zolotets XI	16.4–17.4	-	-	-	-	N E.
23	Zolotets XV	14	-	-	-	-	E B EIA MA
24	Zolotets XVI	14.5–16	-	-	-	-	E
25	Zolotets XX	18.4–19.5	3670	80	TA-792	2176–1956	N E
26	Zolotets XXI	21.6–22	-	-	-	-	N E

Table 4. Archaeological context of the White Sea petroglyphs. Dating: M – Mesolithic, N – Neolithic, E – Eneolithic, B – Bronze Age, EIA – Early Iron Age, MA – Middle Ages, ME – Modern Era.

No	Site	Elevation (m a.s.l.)	BP	±	Lab-index	calBC (68%)	Dating
27	Zolotets XXII	22–23	-	-	-	-	N E
28	Zalavruga I	15–16.7	4010 4775	70 70	GIN-130 TA-393	2629–2429 3640–3384	N E
29	Zalavruga II	17.5–18.3	-	-	-	-	N E
30	Zalavruga III	20.2–20.8	-	-	-	-	N E
31	Zalavruga IV	19.4–20	3700 3810 3800 4430	100 50 50 80	TA-797 TA-994 TA-794 TA-392	2258–1970 2358–2180 2335–2165 3282–2982	N E B EIA
32	Zalavruga XV	16	-	-	-	-	E
33	Zalavruga XVI	16	-	-	-	-	E
34	Nameless Island I	17.5	-	-	-	-	E
35	Gorely Most II	10	-	-	-	-	E B EIA
36	Gorely Most III	7.5–10	-	-	-	-	E B
37	Gorely Most IV	7.5–8.5	-	-	-	-	N (2 fr. pottery) E B EIA MA
38	Gorely Most V	9–10	-	-	-	-	E B EIA MA
39	Gorely Most VI	9–10	-	-	-	-	E B EIA MA ME
40	Gorely Most VII	11.5	-	-	-	-	E B EIA MA ME
41	Gorely Most VIII	9.5	-	-	-	-	N (1 fr. pottery) E B EIA MA ME
42	Lis'ya Gora	21–22	-	-	-	-	N

Table 4 (continued). Archaeological context of the White Sea petroglyphs. Dating: M – Mesolithic, N – Neolithic, E – Eneolithic, B – Bronze Age, EIA – Early Iron Age, MA – Middle Ages, ME – Modern Era.

in greater in the rock art of Karelia compared to the primeval rock art elsewhere. Many groups of carvings in the largest site of European Russia, Zalavruga, were covered with cultural layers with fairly accurately dated artefacts, and therefore, the upper time limit of the petroglyphic tradition in this area can be set. The lower time limit cannot be earlier than the Neolithic, because, as indicated by paleogeographic and archaeological data, this territory became available for human use no earlier than the mid-Atlantic.

Lake Onega rock art chronology

The territory along the eastern shore of Lake Onega has been actively used since the Mesolithic. The actual timeframe of the Onega rock art was determined by analysing its cultural and natural context. According to paleogeographic data, the most favourable conditions for creating the Onega petroglyphs were in the Neolithic, in the second half of the Atlantic (4500–3100 BC); earlier, at about 5000 BC the water level in Lake Onega was still 3–4 m higher than at present, and gradually lowering (Devyatova 1986: 14–37, 94–5). The most representative archaeological materials of the Neolithic time were found on the eastern shore of Lake Onega. Sites with Pit-Comb Ware of all stages of its evolution, situated on promontories and islands near-by rock art sites, were most probably directly related to it (Lobanova & Filatova 2015) (Fig. 2). It can be assumed that the first petroglyphs most probably appeared near the mouth of the Chernaya River at Cape Koryushkin Nos, and later rock art began to spread to other adjacent capes (Lobanova 2014; 2016). Very late in the Atlantic period, the water level rose (Devyatova 1986: 13 Fig. 6).

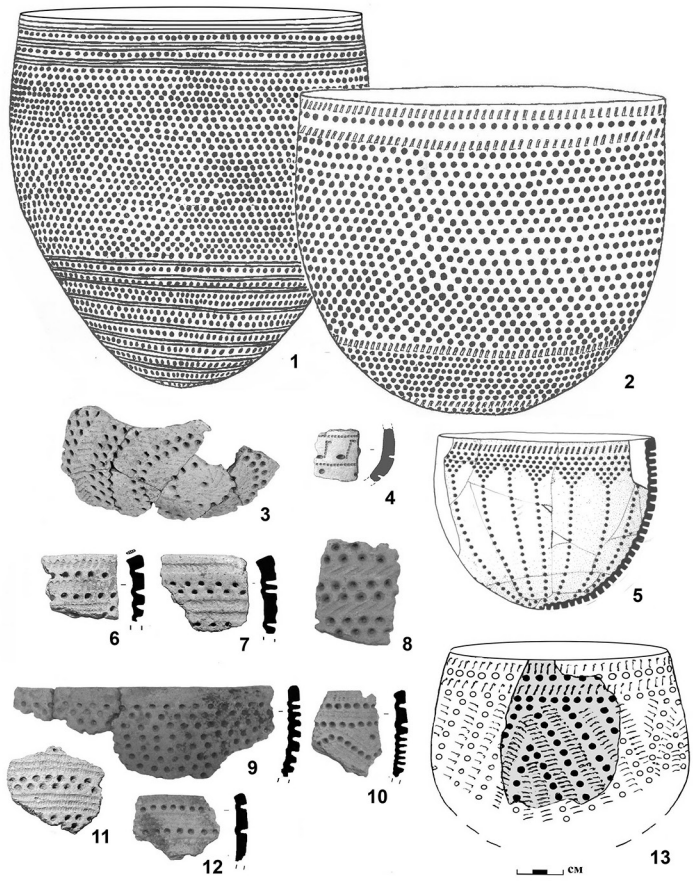

Fig. 2. Neolithic Pit-Comb Ware from the sites in the vicinity of rock art; 1–5) Chernaya Rechka I site (the eastern shore of Lake Onega), 6–13) Yerpin Pudas I site (the lower reaches of the Vyg River). Illustration: N. Lobanova.

It is believed to have been limited in scope and duration, as during that time people rarely came to make petroglyphs here: many surfaces were either constantly under water or emerged only in dry weather. The most actively used place at that time was Cape Kochkovnavolok (northern part of the complex), where petroglyphs occupy higher elevations. The images became larger in size, were expressed through an outline and, generally, schematically (Lobanova 2015a). The number of motifs also decreased sharply. The final stage of making petroglyphs appears to be associated with the Late Neolithic (c 3200–2900 BC). The rock carving tradition could have been terminated by the early Subboreal transgression and the global cooling event at approximately 2900–2800 BC; this lasted several hundred years (Devyatova 1988: 15). It is believed that the transgression was quite pronounced (2–3 m). Petroglyphed surfaces remained submerged for several hundred years – until around the mid-3rd millennium BC. It is unlikely that the scant Eneolithic population (with Asbestos and Porous Ware), which at that time settled on the eastern shore, revived this tradition. Most likely, it had been lost by then, although many rock carvings were there to be seen.

This schematic representation of the evolution of Onega rock art is by no means exhaustive and definitive in its conclusions. A lot remains to be done to comprehend and interpret new and previously available materials, naturally, using case-by-case comparative analysis and incorporating other sites of this type from north-west Russia and Fennoscandia.

White Sea rock art chronology

The natural and cultural contexts of the White Sea petroglyphs show clear parallels with the Lake Onega rock art, summarised above. During the Atlantic period, 6000(5800)–2900(2700) BC, the White Sea was in a regression stage, with a maximum at 3700 BC. I believe that it was then that rock art appeared. The possibility

to make carvings lasted until the turn from early to late Atlantic (3000–2800 BC). The Atlantic regression ended around 3000 BC and a short-lived transgression followed (2900–2700 BC) and flooded all Zalavruga petroglyphs. Later, Eneolithic cultural layers were formed, including Porous and Asbestos Ware dated to the period 2700–2200 BC. These obscured many rock art groups in New Zalavruga. As a result of excavations at Zalavruga I, it was discovered that many rock art groups were overlain by a thick (up to 1 m) layer of river sediments dated to the early Subboreal, in which later Eneolithic cultural layers were formed (including Porous Pit-Comb, Late Porous and Asbestos Ware). The age of alluvial deposits covering the Zalavruga petroglyphs is most probably 3000–2800 BC as evidenced by a radiocarbon dating from Zalavruga I (4775±70 BP, TA-393, charcoal from a fireplace; Savvateev 1977: 205). The date was previously correlated with Rhomb-Pit Ware, but taking into account the revised chronologies, correlation with Porous Pit-Comb Ware looks probable (Lobanova 2015b).

Summing up the multiple factors – paleogeographic settings, geological conditions, radiocarbon dating, archaeological materials – one can assume that the conditions most favourable for the emergence and development of rock art in the White Sea area were created in the Atlantic period (3700–3000 BC), but probably several hundred years later than on the eastern shore of Lake Onega. The two centres of rock art functioned simultaneously (with contacts and mutual influence) until the end of that climatic period and ceased to operate when it turned to the next, the Subboreal. Another regression of the White Sea was recorded at around 2000 BC (Shelekhova & Lavrova 2011) when many petroglyph sites were re-exposed and became accessible. It is unlikely that the petroglyph carving tradition was resumed at this time. All petroglyphs on the Vyg River are generally similar in style, type, and carving technology, and no later layers overlying them are

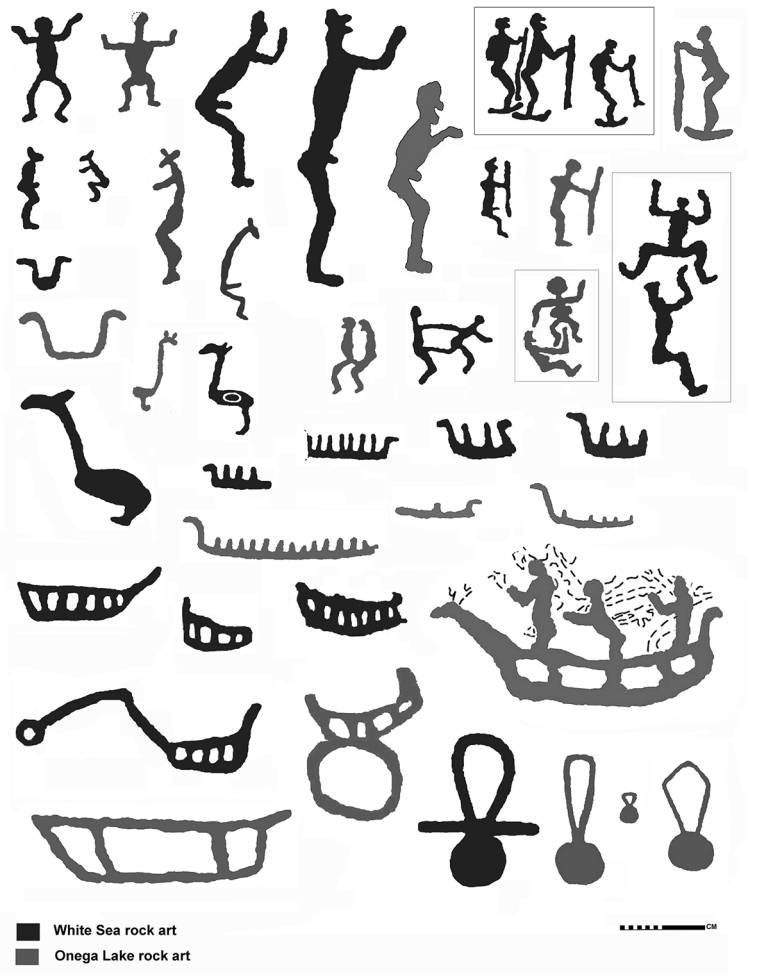

Fig. 3. Similar motifs and compositions in Karelian rock art. Illustration: N. Lobanova.

found. An early stage of rock art is represented by the Besovy Sledki I–III group (a considerable part of the figures). This can be seen both in the nature of the carvings themselves, and in the presence of archaeological materials in the riverbed directly under the petroglyph-bearing rock panels. Similarly-dated groups are Yerpin Pudas IV, with very similar beluga figures, and Yerpin Pudas I rock art site, with the similar deer images – static and with straight limbs – and specific boats with shortened proportions, high sides and without rowers. At that time and later, ancient artists probably moved on also to the small unnamed island and Yerpin Pudas III. The heyday of rock art is manifested on Zalavruga in multi-figured and very expressive scenes, some not found elsewhere. Apparently, at this stage, tradition was fading due to dramatic alteration of the natural environment.

CONCLUSIONS

Careful analysis of the natural and cultural context of the rock art of Karelia leads to the conclusion that it is not possible to date it only on the basis of the elevations of the carving groups. The most probable general timeframes of Karelian petroglyphs hardly exceed a thousand years during the Neolithic, which is a quite narrow period, especially in comparison with many other rock art sites in Fennoscandia. The creators and admirers of this rock art were representatives of the Pit-Comb Ware Culture at all its phases, from 4200 to 3000 BC (Fig. 2). Two or three successive stages can be distinguished in the development of the petroglyph tradition, which are more clearly visible in the Onega rock art panels.

The presence of similar motifs, and in some cases even identical petroglyphs in both of Karelian rock art complexes (for instance, typical Lake Onega boats with swan stems at the Yerpin Pudas IV site, or whaling scenes on the Onega rocks, etc.) may indicate possible direct contacts and mutual borrowing between the authors of these rock carvings (Fig. 3). However, the chronology of the petroglyphs of Karelia is still far from being fully defined and requires further close attention from researchers, especially in the light of new discoveries. No less important is the study of similarities in the rock art of Lake Onega and White Sea. It is possible that the Lake Onega petroglyph tradition, which appeared a few hundred years earlier, gave a certain impetus to the emergence and development of carving traditions in the lower reaches of the Vyg River.

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