



The Federal Agency of Scientific Organisations
The Institute of Archaeology
of the Russian Academy of Sciences



Comprehensive archaeological investigation

undertaken during building work, restoration, reconstruction, land projects,
earthworks, improvement projects and property management



About the Institute of Archaeology

The Institute of Archaeology of the Russian Academy of Sciences (hereafter called the IA RAS, or Institute) is one of Russia's leading archaeological bodies, founded in 1919.

Each year the IA RAS carries out over 200 archaeological heritage preservation projects. Around forty expeditions and teams research archaeological sites ranging from the early Neolithic to recent times, over a geographical spread stretching from the Baltic Sea to Chukotka on the Pacific coast.

The Institute comprises 16 scientific divisions, with a total of over 160 specialist staff – archaeologists, historians, anthropologists, paleo-botanists, and paleo-zoologists and others. Among the staff there are five Correspondent Members of the RAS, 37 Doctors of Science and 67 Doctoral Candidates of Science.

The Institute operates technical facilities where deep-level scientific research is carried out – enabling the efficient and rational organisation of archaeological projects and rescue archaeology work, at the highest scientific standards whilst keeping to tight deadlines.

The depth of experience, use of wide-ranging methods, use of GIS-modelling, and collaboration with paleo-geographers, geologists, hydrologists, paleo-botanists, and soil sciences all enable the Institute's archaeological researches to be carried out at the highest scientific level.

The Institute is classified as a scientific methodological centre which actively works in collaboration with the Scientific & Methodological Council for Cultural Heritage at the Russian Ministry of Culture, and enjoys time-honoured interaction with many other scientific bodies, both in Russia and overseas – museums, universities, and archaeological centres.



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The IA RAS operates in the following fields in its work for the preservation of archaeological heritage:

Setting Up Archaeological Projects

Compiling the scientific project documentation for the preservation of sites of archaeological heritage.

Development of the foundation plans in construction territories, including outlaying protection zones for objects of cultural heritage.

Ensuring the defined 'Protection of Objects of Archaeological Heritage' within the construction project plans.

Developing programs and organisational plans for field rescue archaeology works, along with allied project documentation for carrying out works to secure the preservation of objects of archaeological heritage.

Planning the relief-projection protection zones for objects of archaeological heritage.

Archaeological Research

Surveying areas of economic activity for the possible presence (or absence) of objects of archaeological heritage. Surveying previously-identified archaeological sites with the aim of researching them fully, establishing what the boundaries of their sites were and where they stood, along with other parameters relating to them; as well as assessing their current state of preservation. Clarification and developments of status documentation.

Rescue Archaeological Work

The scientific research of sites of archaeological heritage in the interests of their study and preservation. Such projects are carried out primarily through manual excavation, using approved scientific methodology.

Archaeological Observation Works

Archaeological field research in zones where construction work is going on at sites of cultural heritage, where considerable disturbance of the cultural layers is expected.

Underwater Archaeological Operations

Full-scale underwater archaeological expeditions of differing levels of complexity, including operations conducted

at great depth, low water temperatures (up to 1 °C), poor water visibility caused by activity from local underground work – in the interests of identifying and researching sites of archaeological heritage. Planning operations for the protection of archaeological heritage sites. Underwater rescue archaeology conducted in areas where construction work is planned.

State Historic and Cultural Expertise Intervention

Members of the IA RAS who are acknowledged experts in their field, with attestation from the Ministry of Culture of the Russian Federation, may be invited, in accordance with prevailing legislation, to carry out State historic and cultural expertise intervention, in circumstances such as:

- plots of land which are subject to economic development;
- documents which justify the inclusion (or exclusion) of sites of cultural heritage in (or out of) the Register of such sites;
- documentation supporting carrying out works to preserve sites of cultural heritage.

The Identification Of Individuals From History

Comprehensive interdisciplinary research which involves classical methodology in anthropological and archaeological research. Widespread use is made of the latest methodology: photo-grammetry, three-dimensional skull scans, geometric morphometry, radiological microscopy, and genetic research.

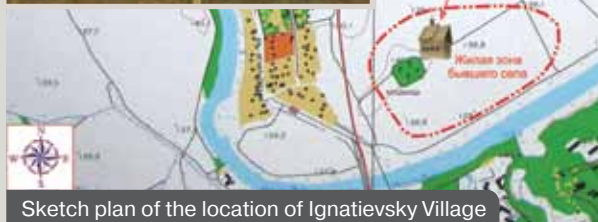
Most frequently instructions to begin such research into the identification of individuals from history stem from the Ministry of Culture of the RF, and from the Russian Orthodox Church, in the interests of establishing the burial locations of specific historic individuals – as part of the process of carrying out subsequent reburial of their remains, and setting an appropriate tombstone or memorial, or – in particular cases – incepting the process of their subsequent canonisation.



Central Ring Road (CRR), Zvenigorod

Overall scale of the construction work: more than 500 kilometres

2009–2015



Sketch plan of the location of Ignatievsky Village



During the excavations

The CRR, or Central Ring Road, is a large-scale road-building project aimed at improving transport infrastructure in Moscow Suburban Region.

Over August to October 2015, a suburban archaeological expedition team from IA RAS carried out preservation archaeological excavations on a stretch of the construction location of the CRR transport development, at the intersection with the Zvenigorod city limits, and covering a total area of over 2000 square metres. The perimeter of the land earmarked for the road's construction lay within the western limits of the territory of a major archaeological site – the substantial suburban village of Ignatievsky. This is first mentioned in historical records in the Scribal Book of 1558, described as patrimonial estates of the Yelizarov family – who were a branch of Old-Muscovian boyar dynasty, the Dobrynins.

During this project, an extensive collection of over 900 individual items was compiled, alongside more than 20,000 fragment pieces of medieval ceramics – all of which provide valuable insight into the overall social, cultural and developmental profile of this medieval settlement.

A number of exceptional medieval items were collected among the finds. These included some bronze belt-hooks and belt-spacers, an ornamental clasp from a money-purse, some fragments of coin weights, some kiln-baked terracotta tiles, a large number of items of Christian metalwork, and silver and copper strip-coins from the reigns of Tsar Ivan the Terrible, Boris Godunov, Mikhail I, Alexei (Alexis) I, and Peter the Great. The number of costly items from an upper social echelon is evidence of this village's high social status.





The site revealed numerous Medieval weapons – arrow-tips, fragments of chain-mail armour, belt-hook fasteners, and parts of sword scabbard encrusted with silver ornamentation – which suggest a military detachment formerly stationed at the settlement.

The remains of over 60 buildings now submerged in the ground were examined. In one was a colossal pit (over 100 cubic metres in volume), apparently a cache of weaponry stashed below the floor-boards of a local boyar. This makes it the first such private arsenal to be found in Moscow Region. Its inventory included two metal military helmets from the troubles times of Ivan the Terrible – with astonishing silver and gold encrusted decoration. One of the helmets was even found with its leather carrying-case. These are the only known finds in Russian archaeology of special cases for transporting and storing military equipment away from the battlefield.

Rescue Archaeology operations in Zvenigorod made a unique group of military objects of the 17th century available to scientists. This archaeological investigation can be cited as a successful example of the new prevailing situation in legislation, which has been particularly devised to permit archaeological research at the sites of impending construction work.



1. A bronze crucifix, 15th or 16th century. 2. Clasp of a leather money-purse, 14th or 15th century. 3. Coins of the 16th and 17th centuries. 4. Detail of a sword scabbard, 16th century. 5. Arrow tips, and chinks of chain-mail, 16th century. 6. Helmets with earpieces, 16th century. 7. A hook for erecting a portable military tent, and a cauldron hook. 8. A Muscovite horseman. German 16th engraving from the collection of P. Dashkov. 9. Belt hook, 16th or 17th century. 10. An engraved ammunition belt, 17th century



High-Speed Motorway, Kaliningrad Region

2008–2012

Area over which work was conducted: more than 100,000 sq metres

During the building of a high-speed motorway to the city of Kaliningrad, extremely wide-scale Rescue Archaeology work was conducted, on archaeological sites ranging from the Bronze Age to the present day.



The village of Luzhki – overall view of the excavations



The Holmy Cemetery – Burial complexes

The archaeological remains were discovered to be in dense proximity along the projected route of the new motorway, and work was undertaken to investigate them – including observational methodology and excavations.

The rescue archaeology investigations were made in parallel with the road construction itself, and this enabled the preservation of cultural heritage sites whilst still enabling the road to be built within the projected schedule.

Among the most noticeable finds discovered during this operation were materials related to burials from the Roman Era, and from the era of the Great Migration of Peoples (2nd–4th centuries) which reflect the area's pre-history – in addition to finds from the early stages of the formation of Prussian culture (11th–13th centuries) and from the early period of the Great Horde occupation.



The Holmy Cemetery – Horse burials



1. A steel sword. 2. A bronze mace. 3. The bronze tip of a sword scabbard. 4. A ceramic jug. 5. A ceramic pot

The Bridge over the River Oka for the Murom town bypass

2006, 2008, 2012

The total area where works were undertaken – over 5000 square metres



Protected archaeological works
by the Volga Expedition of 2006

The Podbolotievsky Cemetery, 2012

In 2006, archaeological investigations were undertaken at the site of the forthcoming building works for a bridge over the River Oka. Measures were proposed for the preservation of sites located within the area of the planned building work.

In 2008 rescue archaeology works were held. The cemetery and village of Dmitrievskaya Sloboda were researched, and valuable material was recovered which enables hypothetical reconstruction of the Murom Poochya (the central area ancient Murom – *trans*) in the Bronze Age.

In 2012, as part of the same project, rescue archaeology work was undertaken within the designated construction zone for the bypass road, where the Podbolotievsky Cemetery was researched – a site known to scientists for over 100 years. Burials from the 8th and 9th centuries were excavated – relating to the native Murom people prior to the arrival of Slavic settlers in the area.



Murom decorations



The Kerch Straits Bridge and access roads leading to it

2014–2016

Area over which works were conducted: more than 100,000 square metres



The Kerch Bridge is a new transport route across the Kerch Straits – joining mainland Russia to the Crimean Peninsular.

During the planning stages for the bridge, one of the main tasks was to identify the optimum route for the serving supply roads – including the need to preserve sites of archaeological heritage which lie within the construction zone. While still at the technical and budgeting stages, specialist staff from the IA RAS analysed archive material relating to four different proposed road schemes, and identified the most acceptable version which would avert damage to the sites. Following on from this choice of route, archaeological inspection work, including under-sea inspections, was carried out, in result of which the locations of 40 archaeological sites within the zone of the Kerch and Taman peninsulars were determined and recorded – along with the development of preservation plans for these sites of archaeological heritage at every stage of the construction project, along with full budgetary costings of the implications for carrying out such work.

Over 2015–2016, as part of the construction of access roads leading to the Kerch Straits Bridge, archaeological

surveys were undertaken at the village and cemetery of Vinogradny-7 – covering a total area of 100,000 square metres. At the present time, this survey remains the largest-scale research project of its kind to be undertaken over such a restricted time period.

Research at this site included cultural layers and remains from the early Iron Age – remnants of previous Greek colonisation of the area – through to the Middle Ages, including remains of estates and villas of the Hellenistic period, and remains of a rural village (8th–9th centuries). For the first time ancient roads and road junctions were researched, along with the remains of ancient moats (6th and 7th centuries BC) along with commercial and construction-related sites. The greatest interest was focused on the necropolis centres which surround the settlement, and memorial complexes which are connected to them. Different kinds of burial sites were researched, including from the Medieval period (8th and 9th centuries AD), but also from the Bronze and early Iron Ages, and from the Classical era (from the 4th to 1st centuries BC), where burial complexes were found of a type not previously known around the Bosphorus.

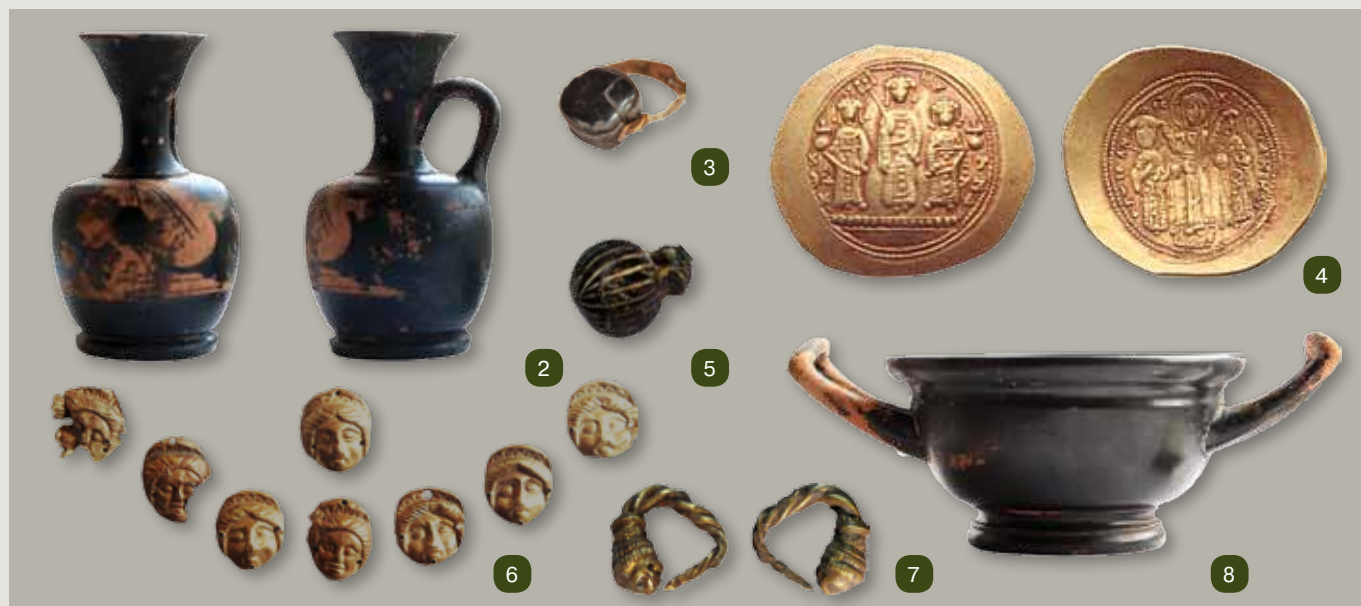
A great number of finds were identified, including amphoras, household objects, weapons, coins, jewellery, and similar. The greatest interest is in three particular finds. A silver medallion depicting a female deity (Aphrodite Urania) with signs of the zodiac around its edge – from a 2nd–1st century BC burial. Currently these are the oldest-known zodiacal signs to be found from the Greco-Roman world. A jewellery set with sewn-on platelets, including a platelet depicting a female deity; and bimetallic earrings showing the image of lion's heads. A collection of Medieval coins, including Bulgarian and locally-produced Byzantine currency. Of all of them, the most significant for the Taman Peninsular is a silver coin showing the face of Vladimir The Great of Kiev (Sviatoslavovich, also known as *Valdamarr Sveinaldsson*, 958–1015 AD).



1



Overall view of the excavations



1. A silver medallion (brooch) showing the image of a female deity (Aphrodite Urania?) and signs of the zodiac around the perimeter, 2nd or 1st century BC. 2. Black-lacquered Greek Amphora, Attica, early 4th century BC. 3. Signet ring: bow – gold; mount – silver; stone – jet. Late 4th century BC. 4. Coin of Byzantine Emperor Romanos Diogenes IV, 11th century AD. 5. Mounting, jet, 4th Century BC. 6. Gold sewn platelets showing the image of female deity (Demeter), early 4th century BC. 7. Gold earrings with lions head motif, early 4th century BC. 8. Black-lacquered bowl, Attica, mid 4th century BC



The Crimean Energy Supply Bridge

Total area over which works were conducted: over 30,000 square metres

2015–2016



Ilichevka – excavations in progress



Ilichevka – Overall view of Excavation 1.
A complex of buildings from the 2nd–3rd centuries AD

The Crimean Energy Supply Bridge is composed of cabling, overhead power lines and substations provided the Crimean peninsula with energy linked to the Russian National Electric Grid.

Prior to the construction of the Energy Bridge, specialists from the IA RAS carried out rescue archaeology work over a huge area of Krasnodar Province, covering the villages of Keslerovo and Karl Marx in Krymsky Region and the settlement of Ilich in Temriuksky Region.

As a result of the investigations of the Keslerovo-4 Earthworks, 22 burials and 5 sites of archaeological heritage were studied, covering periods from the mid-Bronze Age (8th c BC) to the Middle Ages.

Close to the village of Karl Marx, a dual-ritual grave of the 9th–10th centuries was discovered, which yielded a great collection of metal, ceramic and glass artefacts – some of which are utterly unique and have no known equals at similarly-dated sites in the region.

The Ilichevka Hilltop Settlement site is reasonably well-known. It was written up from the 19th century onwards by Dubois de Montp re, K. Hertz, and P. S. Pallas, and from 1870 archaeological investigation began. From 1949 onwards works were conducted here by the IA RAS.

Over 2015 and 2016 a cultural layer relating to the late Bronze Age and early Iron Age was identified at the location, including over 200 sites – most notably, a multi-level domestic complex (3rd–4th centuries AD), refuse piles (2nd–3rd centuries), paving from a substantial villa (20×20 metres, with 5 rooms) and wineries (1st century BC to 1st century AD) including the grape-press and 2–3 cisterns.

These studies enabled more detailed knowledge of the region's ancient history. Several thousand finds were lodged with the Tamansky Museum.



Burial from the late Bronze Age



Ilichevka. Excavation 3. Winery, 2nd–3rd century AD



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1. A fragment of an inscription from the cult of Aphrodite, early 1st – early 2nd century AD. 2. Single-stem grey-glazed lamp, made near the Bosphorus: 1st century BC – 1st century AD. 3. Fragment of a red-glazed cup, 1st century AD. 4. Dirham coin, 8th–9th century AD. 5. Clay pitchers, 8th–10th centuries. 6. Gold earrings, 9th–10th centuries. 7. A signet ring, 9th–10th centuries. 8. Part of a harness, with images, 9th–10th century AD. 9 & 10. Belt-fasteners, with drawings, 9th–10th centuries



Cheboksary Hydro-Electric Station

Area of survey work: over 100,000 hectares

2011–2012

The Cheboksary Hydro-Electric Station (HES) is situated on the River Volga, forming part of the Cheboksary water basin, and is one of the largest HES plants in Russia.

The earliest archaeological works connected with the HES reservoir were conducted by the Institute (at that time, the Institute of Archaeology of the Academy of Sciences of the USSR) during 1969–1972, while the reservoir area was being prepared for flooding.



Archaeological sites within the area of the Cheboksary HES Reservoir



Project solutions for preserving the 'Mound of Kurмыш'

During 2011–2012, in preparation for raising the reservoir water level to above 68 metres, the IA RAS carried out pre-project archaeological surveys over the flooding area of the Cheboksary Reservoir, which included:

- ≈ searching for an identifying objects of archaeological heritage known from archive records – and clarification of their boundaries and size;
- ≈ checking the flooding area for the possible presence (or absence) or objects of archaeological heritage;
- ≈ carrying out detailed survey of objects of archaeological heritage using GIS methodology and compiling technical

topographical maps to aid the work of the project development team;

- ≈ developing a plan for “Preservation of Sites of Cultural Heritage” as part of the project documentation.

During the project, ways of preserving 121 sites of archaeological heritage were developed, which were under threat of devastation when the water level of the Cheboksary HES reservoir was raised above the previous level of 68 metres. During the project measures were proposed for the preserving sites, including the possible use of engineering constructions and dams.

The Zaramag Hydro-Electric Station

Area of survey work: 6,300 square metres

2007–2008



The Mamisondon graveyard, seen from the south



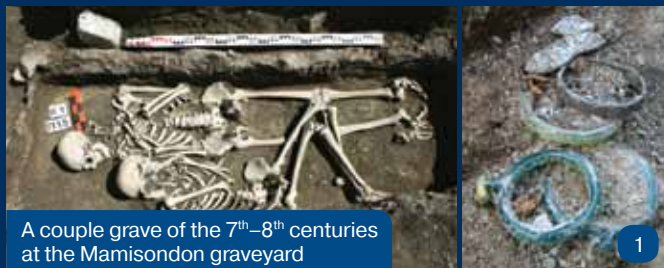
Construction of the Zaramag HES

The Zaramag Hydro-Electric Station (HES) is a section of hydro-electric installations along the River Ardon, in the Alagirsky Region of North Ossetia.

As part of the project titled 'Zaramag Hydro-Electric Station Reservoir on the River Ardon', the IA RAS undertook Rescue Archaeology operations in the flood-zone at the settlement of Nizhny Zaramag.

Study was made of an early-mid Bronze Age settlement at Chidgom, and an early Medieval graveyard at Mamisondon. Material retrieved during the excavation work at the

settlement revealed details of the architecture, traditions, customs and lifestyle of the region's inhabitants in the 3rd and 2nd centuries BC. 167 burials were examined at the graveyard, and inter-disciplinary research took place – including analysis of soil, timber, glass, metal, and fragments of fabric. The skulls gave the opportunity to present the appearance of the people who lived in the Zaramag area in the Middle Ages. The material which was unearthed prompted a significant re-think of the history of this region during the migrations linked to the Arab-Khazar wars.



A couple grave of the 7th–8th centuries at the Mamisondon graveyard



1. Glass rings. 2. Bronze rings. 3. Pendant rings from a graveyard burial



Port Taman

2011

Area of survey work: approx 4,400 hectares



Construction of the dry cargo area of the Taman Sea Port, in the district of Zhelezny Rog, near to the Taman Temriuksy station in Krasnodar Province – is one of the most ambitious, significant, and large-scale projects in Russia's current history.

Scientific surveys were carried out, including analysis of the species range and of archive materials, as well as a detailed archaeological survey on both land and offshore which was aimed at confirming the locations and degree of preservation of archaeological monuments, in order to further the development of the construction project documentation.

During this research 26 sites of archaeological heritage were surveyed, including earthworks, necropolis complexes, and settlements dating back to the Bronze Age and Middle Ages.

An archaeological survey was undertaken of the parts of the Kerch Strait which fall within the area of the proposed construction of the port facilities, including hydro-acoustic and visual surveys (scuba) of the Strait, confirming the locations of archaeological sites within the area; photo and video records were made, trench slices were taken at sites, and the stratigraphy of the surrounding area was recorded.

A comprehensive series of scientific and research measures were developed for the preservation of sites of archaeological heritage during the building of the Port Taman project, which take into consideration the urgency of the construction schedule and the tight details on which it is predicated.

Fibre-Optic Cabling

2009–2010

Overall scale of the project – over 500 km

Work was carried out involving the creation of a unified multifunctional telecommunications network in Moscow Region by the State corporation Rostelecom. The research formed the basis for the draft framework for the preservation of sites of archaeological heritage, and enabled alterations to be incorporated into the project documentation, based on the physical preservation of such archaeological heritage sites. Proposals were made for bypassing the areas of archaeological sites, or for going under their locations using underground horizontal drilling technology. These kinds of proposal, in addition to protecting the sites in question, also

enabled economies of timing and cost in the construction of the Fibre-Optic Cable System.

The IA of RAS has many years of experience in surveying linear sites, and one of the significant examples of such projects is the passage route of the Fibre-Optic Cable System in Moscow Region.

During the fieldwork for this project many dozens of Neolithic and Bronze Age sites were surveyed, hill-forts and settlements from the Iron Age, Medieval settlements and earthwork graveyards. Among the sites related to this project were the remains of the medieval fortress hill fort of Staraya Kashira.



Transport links from Tuzla to Vyshesteblievskaya and M25



Area of survey work: approximately 40 kilometres

2014

Comprehensive archaeological work (surveys) were undertaken to confirm the boundaries and parameters of sites of archaeological heritage, as part of establishing the project documentation involved in the “Building the Dry Cargo Taman Sea Port” project. 48 different archaeological heritage sites were surveyed in total.

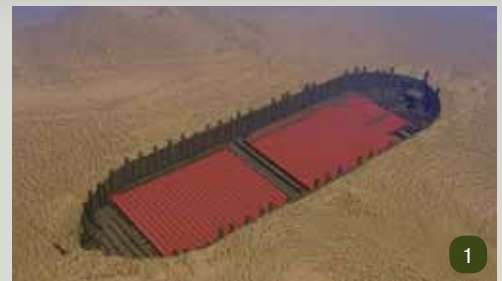
A plan for the Preservation of Sites of Cultural Heritage was developed as part of the construction plans, including a detailed listing of all the sites of cultural heritage within the boundaries of the construction area, along with proposals for their preservation. This gave the developers full and detailed information by which to analyse the possible costs for carrying out these recommendations and preserving these sites within the scope of the development project.

1. The town of Tuzla 15. The profile of round basins from Maykop civilisation. 2. The town of Tuzla 12, a touchstone. 3. The Spit of Tuzla graveyard, a balsamic glass high-necked phial (mid – late 1st century AD)

The Volkhov River Bridge

Archaeological scientific under-sea surveys were made of a sunken ship close to the location where bridge supports for the Volkhov River Bridge are planned. This was low-temperature work (temperatures below + 1 °C) involving very murky water.

The hull of the vessel was cleaned of 100 cubic metres of silt sediment. Radio-carbon dating, along with dating of domestic objects discovered on board the vessel permitted establishing the date on which it sank.



1. A 3D visualisation of the results of the archaeological site determination of the sunken ship. 2–4. Underwater archaeological operations in progress



The Gulf Of Finland

2014

Underwater archaeological investigations connected with future development of the Primorsky Oil Terminal and economic upgrading of the surrounding shore areas.

Systematic underwater excavations were carried out on the historic merchant ship *The Archangel Raphael*, which sank here in 1724. These surveys were made in connection with the future development of the Primorsky Oil Terminal, and subsequent economic development of the shore areas around the Baltic Sea.

A valuable collection of finds was removed from the site and taken for museum conservation, including items from the 17th and 18th centuries. In some cases this material included organic objects.

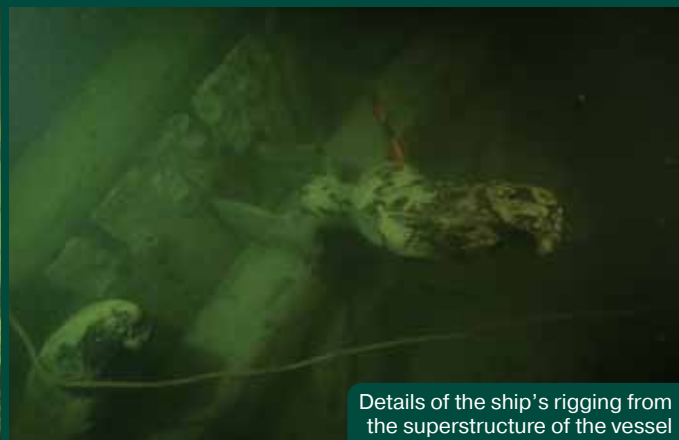
A brick with a band, produced in Lübeck in the 17th century



A kaftan garment of the 18th century, found in the central section of the ship's hold



Grain barrels, from the central section of the ship's hold



Details of the ship's rigging from the superstructure of the vessel

Port Taman

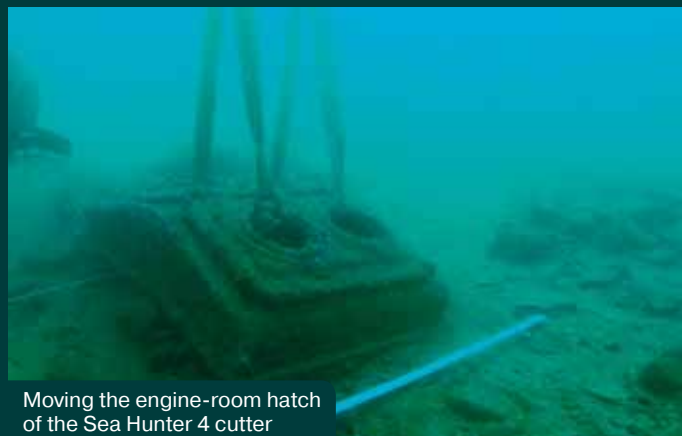
2014

Underwater archaeological investigations made along the shoreline

Area of shoreline survey work – 200,000 square metres

As part of the underwater archaeological survey work, distance surveying was carried out over an area of 200,000 square metres of the shoreline, by cataloguing the magnetic and acoustic anomalies and carrying out identification on these.

As a result of this survey work, undersea objects of cultural heritage were located (objects of scientific and technological significance) relating to the period of the Second World War – the cutter Sea Hunter 4 was found, with anchor boxes and bottom-laying mines.



Moving the engine-room hatch of the Sea Hunter 4 cutter



Moving the anchor box of bottom-laying mines



The engine of the Sea Hunter 4



The anchor-box of the bottom-laying mines.



Building for the Sochi Olympics

Area of survey work: over 20,000 square metres

2008–2012

As part of the preparations for building the premises for the 22nd Winter Olympic Games, to be held in Sochi in 2014, rescue archaeology work was carried out at 12 sites of archaeological heritage within the construction zone area of the Olympic site, within the Lower Imeretia area and at Krasnaya Polyana near to Sochi, in the Krasnodar Province.

The research covered sites from the early Iron Age, and from the Middle Ages. The most exceptional site to be studied among those within the construction zone was the Byzantine church at the village site of Veseloe, which was excavated by the expedition and prepared for museumification.



Overall view of the church at Veseloe



An underground store-room at the church at Veseloe



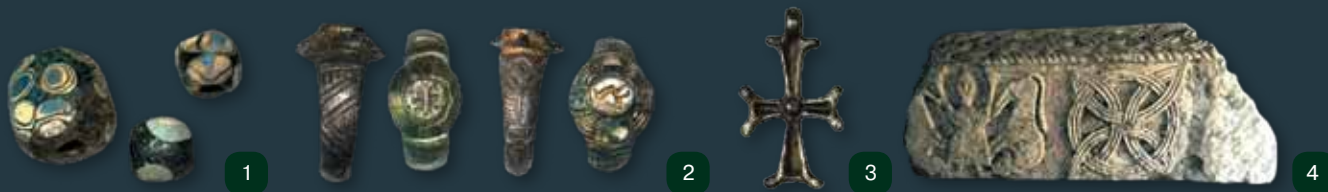
A burial in the western narthex



The central apse of the church



The fallen-in arches and roof of the church



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The village of Veseloe: 1. Buildings



A vessel from a burial at the earthworks graveyard of Veseloe-2



A dwelling from the Southern civilisation. Ruins of textile ceramics



The village of Veseloe 1. Broken pottery-ware



1. Beads. 2. A bronze signet-ring. 3. A bronze crucifix pendant. 4. A fragment of a whitestone altar-rail. 5. A silver coin. 6. Bronze fibulae. 7. Bronze pendants. 8. A bronze clothes-pin. 9. A ceramic whorl. 10. Stone weights



South Stream Gas Pipeline

2013–2014

Area of survey work: over 50,000 square metres



Archaeological investigations under way
at the Natukhaevskoe-IV Settlement graveyard

The IA of RAS carried out comprehensive archaeological surveys in connection with the preparatory stages for the pipeline's construction.

Due to the highly compressed deadlines, a significant level of the rescue archaeology work was carried out in parallel with the early stages of construction of the pipeline, at various different sites of archaeological heritage. This approach successfully enabled the contractors to stick to the announced deadlines for work, while still keeping ahead of possible damage by construction and protecting the sites in question.



Excavations at the Medieval settlement of Natukhaevskoye-V, during December 2014

Over two years, more than 10 sites of archaeological heritage were studied, of which the most ancient were from the Bronze Age (3rd and 2nd centuries BC), and the most recent from the Middle Ages (11th–14th centuries AD). One major scientific discovery arose from the study of a series of Maykop culture burials from the Bronze Age (4th century BC), which were excavated in unusual topographical surroundings – on the slopes of a river valley.

The information obtained during this research has great significance for the study of the history of the peoples of Southern Russia.



A graveyard at the site of the Natukhaevskoye-V Settlement. Bones being cleaned



1. Ceramic-ware from burials beneath Bronze Age earthwork mounds at the Arpachin-III and Trekhbalochny graveyard sites. 2. Finds from a graveyard on the site of the Natukhaevskoye-V settlement. 3. A medieval burial in a stone grave hollowed out from burial mound on the area of the Natukhaevskoye-V settlement



Bronze-Age Earthwork excavations from Kabardino-Balkarii

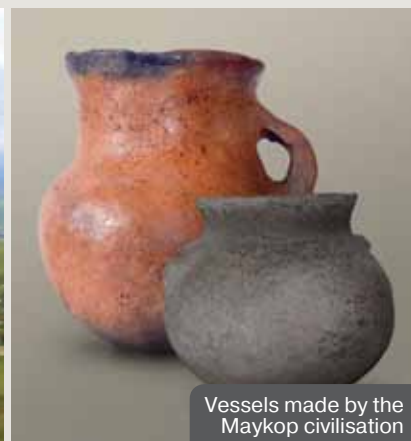
2014

Preservation and rescue archaeology works were carried out in the rebuilding area of gas pipelines in the Baksansky and Elbrusky Regions of Kabardino-Balkarii, involving excavations of a group of earthworks known as Köndelenskaya-1.

These earthworks date from the early and middle Bronze Age (mid 5th to early 3rd centuries BC), and are notable for their complex stone-and-earthwork architecture.



Overview of the Köndelenskaya-1
earthwork group in the Baksansky Gorge



Vessels made by the
Maykop civilisation



Stone architecture
of the Bronze-Age barrows



A Maykop
civilisation burial



A stone box



Ground-stone axes and bronze knives

Material which aids conjectural reconstruction of the history and civilisation of this region in the Bronze Age was collected. A wide range of belongings were recovered from the earthwork barrows, including many jewellery items and ritual objects.



Bronze jewellery from North Caucasian cultures: 1. Clothes pins. 2. Ritual vials. 3. A charm ring. 4–5. Pendant necklaces. 6. Hemispherical cymbals. 7. A bracelet. 8. Some parts of a belt



The Moscow Kremlin

2007

Area of survey work: over 700 square metres

Unprecedented rescue archaeology work was undertaken in the Tainitsky Gardens of the Moscow Kremlin, which investigated cultural layers of the 13th to 17th centuries.



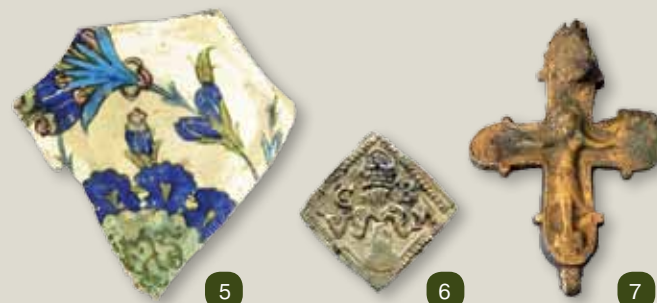
The excavations in progress



The work had to be completed under the complex prevailing conditions of the Moscow Kremlin (which is the functioning seat of government of the Russian capital, and thus features comprehensive security systems, operated by both the Kremlin Commandant's Office, and the Federal Security Services), and a very large area of the cultural layer requiring survey – meaning that strict security procedures for equipment had to be observed during the dig.

An ancient building was unearthed on a lower Kremlin terrace, along with part of its adjoining street from the 15th–17th centuries. During the excavations dozens of premises were uncovered and researched, including a cellar where a birch-bark

manuscript was discovered – the third to be found in Moscow, and with the longest text known from such documents in the 14th century. The document's text has been preserved with good legibility, and details the property of a certain Turabey (from the period and name, apparently a soldier of the Golden Horde who had joined the service of the Grand Prince of Muscovy). This same cellar also contained an unusual collection of imported ceramic-ware items, unlike any known from museum collections worldwide. Another similar cellar contained the remains of victims of one of the fires in the Moscow Kremlin during the 15th century. The collected finds from the excavations run to a total of several thousand items of valuable antiquities.



1. A section of the Birch-Bark Manuscript. 2. A building from the 15th century. 3. A leather bag, 15th century. 4. The excavations in progress. 5. A broken section of a Turkish faience platter, 16th century. 6. A Swedish gold coin, 17th century. 7. A pectoral bronze cross, 13th century



The Moscow Kremlin

November 2015 – October 2016

Area of survey work: more than 500 square metres

Comprehensive rescue archaeology works were undertaken under the leadership of Dr N. A. Makarov, the Director of the IA of RAS, at the site of «Corpus 14» of the Moscow Kremlin, which was in the process of being demolished. The primary objective during these works was in identifying the location of the former Chudov Monastery, the Voznesensky Monastery, and other buildings known to have stood on the site prior to their demolition in 1929–1932. Work also aimed to identify cultural deposits related to the development and overbuild of this part of the city during the period of the 12th century to early 14th century.

The archaeological work had to be completed with regard to the special state security procedures in operation within the Moscow Kremlin, and similarly took place simultaneously with the demolition of «Corpus 14» of the Moscow

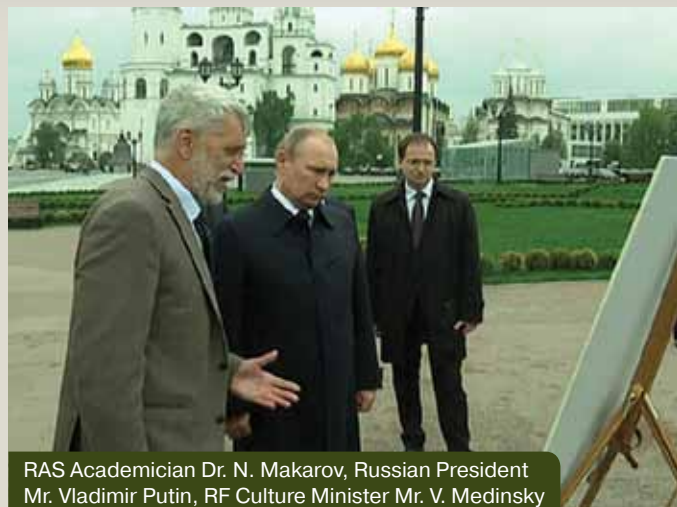
Kremlin – circumstances which added further difficulty and complexity to the study.

The archaeological studies resulted in successful determination and pin-pointing of the foundations of the Chudov and Voznesensky monasteries; of the Small Nikolaevsky Palace; burials from the monastic cemetery of the late 14th to 17th centuries were found and studied, including burials in costly whitestone sarcophagi of members of the boyar-class families, along with the tombs of priests. Among the many expensive items retrieved during the excavations were unusual stone molds for casting metal weights, late 12th or early 13th centuries, and with an inscription marked on them.

Ancient buildings were unearthed and are now planned for museumification as part of the museum exhibits of the Moscow Kremlin.



○ – The Chudov and Voznesensky Monasteries



RAS Academician Dr. N. Makarov, Russian President Mr. Vladimir Putin, RF Culture Minister Mr. V. Medinsky



Stratigraphy of the excavation wall

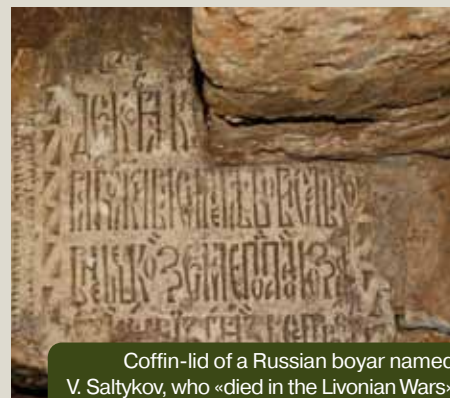


Remains of the church foundations



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Coffin-lid of a Russian boyar named V. Saltykov, who «died in the Livonian Wars»



10

1. Map titled «Kremlengrad», 1664. 2. Mold for metal weights, with a cyrillic inscription, 12th–13th centuries. 3. A block of white stone, with ornamentation, 12th–13th centuries. 4. Bookbindings, 13th century. 5. A lead textile seal, Flanders, latter 15th century. 6. Broken sections of glass bracelets, early 13th century. 7. «Volosnik» hairband, 16th–17th centuries. A fashion accessory, now under restoration. 8. Conjectural portrait of a woman wearing a volosnik during the 16th–17th centuries. 9. Reconstruction of a male portrait, made by S. Nikitin. 10. The reconstructed volosnik



Zaryade (Moscow neighbourhood)

2015

Area of survey work: 98 square metres



The archaeological work in progress

Zaryade is a historic Moscow neighbourhood, in the southern section of Kitai-Gorod, which became settled during the 12th and 13th centuries.

As part of the rebuilding of a leisure zone in the area, the IA of RAS undertook archaeological investigation work to the South-Western part of Zaryade. The Institute's staff studied a strongly-developed cultural layer (up to 6m deep). The results of the survey unveiled sections of an ancient Moscow road – a big, or «great» street, and its ancient wooden paving (Morinsky pereulok). The street once ran from the banks of the Moscow River to the Kremlin Gates. The excavation was made near the site of the former Customs Gates, and uncovered a series of small items – coins; keys; saddlery items; weapons; lead European and Russian weights for goods and documents; buttons; signet-rings; rings and ear-rings; personal religious charms; and book-bindings.

In the 14th century cultural layer were found many items of Asiatic origin (i. e. relating to the Golden Horde). These included a bracelet with attached metal ornaments; ceramics; a fragment of a bronze mirror bearing an Arabic good-luck inscription (no such mirror had previously been found in Moscow).

The most significant object found at the dig was a birch-bark manuscript cut by a professional scribe, with a text detailing a number of financial transactions, and dating to the late 14th or early 15th century.

The results of these excavations gave supplementary backing to the Moscow City Government authorities to create an archaeological museum within the city park at Zaryade.



RAS Academician, Dr. N. Makarov; Moscow Mayor Mr. S. Sobyenin; Chairman of the State Duma, Mr. E. Naryshkin; Expedition Leader Dr. L. Belyaev



The road paving of former Mokrinsky pereulok



Items from the 13th to 16th centuries, found along the «Great» Road: 1. A pendant cross. 2. A wheel spur. 3. Goods Weights from the city of Poppingen, a trading town in Belgium. 4. A plaque in the shape of a lotus. 5. A signet ring. 6. A charm ring. 7. A bone clothes-pin. 8. Book-bindings. 9. The birch-bark document



Yaroslavl

2004–2013

Area of survey work within the area of the Yaroslavl Kremlin – approximately 9,000 sq metres



Cleaning a mass burial

Yaroslavl is one of Russia's very oldest cities, founded in the 11th century at the confluence of the Volga and Kotorosl Rivers. The Old City Centre of Yaroslavl is classed by UNESCO in its listing of World Heritage Sites, and is known as one of the major centres of the Golden Ring of Russia. Modern Yaroslavl is the third-largest city in the Central Federal Region – the city is fast-growing, with an ongoing civic building program.

As a result of studies made in the historic centre of Yaroslavl, it became possible for the first time to pinpoint the cultural layer, structures and city fortifications of the City Defences of the 11th century, and to identify parts of the fortifications themselves – an earthwork/wooden installation which stood 18 metres in height, along with the foundations of its moat. These finds all point to a founding date for the city in the 11th century.



Remains of the city fortifications



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Digs unearthed nine mass graves contained bodies of local citizens, extensively disfigured by violent injury. These remains confirm written accounts of the sack of Yaroslavl by Batu Khan's armies in February 1238. Excavations also found the foundations of Assumption Cathedral, demolished in 1930 along with St John the Baptist's church, belfry, and cemetery.

During work at the site of the rebuilding of the city's main cathedral – the first known stone church of the city, Assumption Cathedral (1215 AD), the locations of its belfries (one of the 17th century, another of the 19th century) were pinpointed. An extensive collection of finds was made, and study was undertaken of the remains of domestic and commercial buildings from different eras.



1–4. Domestic items and jewellery from excavations in Yaroslavl. 5. Ceramic tiles. 6, 11, 14. Amber pectoral crosses. 7. Glass jewellery. 8. A rattle. 9. Chessmen. 10, 13. Metal jewellery. 12. A metallic pectoral cross



WORK ON CULTURAL HERITAGE SITES
AND WITHIN THE AREAS OF HISTORIC TOWNS AND CITIES

Veliky Novgorod (Novorod-On-The-Volkhov)

Area of survey work: over 7,500 square metres

2008, ongoing



Excavations at Rogatitsky-2.
The Mezhusadeby Stockade,
from the 11th century



Meeting of Russian President Vladimir Putin with the
Director of the IA of RAS, Dr. N. Makarov, and archaeologists



Excavations at Desyatiny-1.
Dobrynia High Street,
from the 14th century



Excavations at Desyatiny-1.
A dungeon, early 11th century.

Veliky Novgorod is one of the earliest-known and famous cities in Russia – founded in the 9th century AD. During the Middle Ages the city was the centre of Novgorodian Rus. It later became the capital of the Novgorodian Lands within Muscovy, and then as part of the Russian Empire. The city has historically been divided

by the River Volkhov into two sides – the Market Side, and the St. Sophia Side. This division has been reflected in the city's development – a historical process which is being studied to this day. The city preserves exceptional monuments of Old Russian architecture of the period prior to the Mongolian Invasions of the 13th century.

As a result of the investigations pursued in areas of the city's historic centre which are earmarked for new construction projects, staff of the IA of RAS succeeded in fully studying the cultural layer to a depth of 6 metres. Exceptional material was retrieved which extensively broadens our scientific knowledge

of the history of Russian Medieval cities. Among the huge collection of artefacts uncovered – which have been transferred to the collections of the Novgorod City Museum – were many rare and unusual items, which included objects found for the first time in Novgorod, and in Russia as a whole.



1. A bag-fastener, showing the image of a cimbale (or psaltery) player, 14th century. 2. An encolpion, 14th century. 3. A lead seal, latter 11th century: 1 – Sviatoslav Yaroslavovich; 2 – Vladimir Monomakh. 4. Finds from the 11th to 18th centuries



Vladimir

2006–2008

Area of survey work: over 2,500 square metres



The excavation site after the end of the dig



Fragments of amber



Amber being cleaned



A collection of amber in a cellar

Vladimir was the medieval capital city of North-Eastern Rus – located on the left bank of the Klyazma River. Today Vladimir is one of the most-visited tourist destinations in the European area of Russia, and is a major halt on the Golden Ring of Russia.

Archaeological work over three years has centred on the centre of the modern city of Vladimir. During a stage-based process of investigation of areas of residential housing, six

mansion houses and two streets from the Medieval period of the city's history have been studied. The finds which have been made include items which testify to the wealth and high social status of their original owners – glassware vessels of Syrian origin, decorated with ornamentation in gold and enamel-work; and Kashin-ware lustrated dishes, high-quality weaponry, and similar finds.



1

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Glass beads, vessels, and fragments of lustre-decorated tableware

Within the grounds of one of the mansion houses, in the cellars of the building – which burned to the ground during the fires of 1238, during the ransacking of the city by the Mongolian army of Batu-Khan – a treasury of raw amber was found, totalling more than 200 kilograms in weight. This exceptional find is the largest in Russia, and indeed anywhere in Europe. It confirms that the city of Vladimir-On-Klyazma was one of the principle international trading towns for amber – on the same level as the cities of the Baltic coast, Poland and the Bulgarian Volga.



3

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1. Tiles. 2. Ceramic toys. 3. Keys. 4, 6. Arrow tips. 5. A spur



Kaliningrad

2006–2014

The city of Kaliningrad (known as Königsberg prior to 1946) is the most westerly regional centre of Russia. It is a city that was founded by Germanic knights of the Teutonic Order, on the tallest hill of the eastern bank of the River Pregol – on the site of the Prussian hill-fort of Twangst, in January 1255, to serve as a fortress. Fieldwork rescue archaeology work was carried out in the Altstadt district (the historic city centre) of Königsberg and Lastadi (the city's port district).

In Altstadt and Lastadi the area of survey work was approximately five thousand square metres. The depth of the cultural layer able to yield archaeological artefacts was 5.5 to 6 metres.

The cultural layer of Königsberg's medieval Hanseatic city was studied – covering all periods from the late 13th century to the early 20th century.

The investigations took place under very difficult physical conditions, using hydraulic equipment – at a distance of 15–20 metres from the River Pregol, at a depth of more than 3 metres below the river's water-level. By using a system of engineering and hydraulic apparatus, the rescue archaeology operation fully succeeded in reaching the level of dry ground below. The studies unveiled structures, and materials of organic origin. During the study, interesting construction techniques were discovered, which had been used during building in the floodplain of a city which has a high level of ground water, with a presence of loose soil used for filling in the fortress moat. For the first time the brick-built defensive walls of the 14th were unearthed – which protected the Altstadt from the river side.

Collections of private items were made, along with large-scale materials – including a great number of numismatic finds (including medal mounts of the 14th century, and Swedish coins from the 17th and 18th centuries; weaponry items; tableware and kitchen items of glass and ceramic origin; knives, locks, boneware combs, leather shoes, wooden utensils and barrels, jewellery, other domestic items, tiles, stove-tiles, building ceramics – all dating from between the latter 13th century and the early 20th century. An exceptional find was of two complete stained-glass windows, found in the fill-in rubble of the castle moat. These windows consisted not only of their wooden frames, but also the leading between the panes, and some of the coloured glass itself.



1. Window-frames with stained glass and inter-pane leading. 2. A necklace. A piece of steel armour. 3. Steel and bronze spurs



Mass graves. The process of removing debris

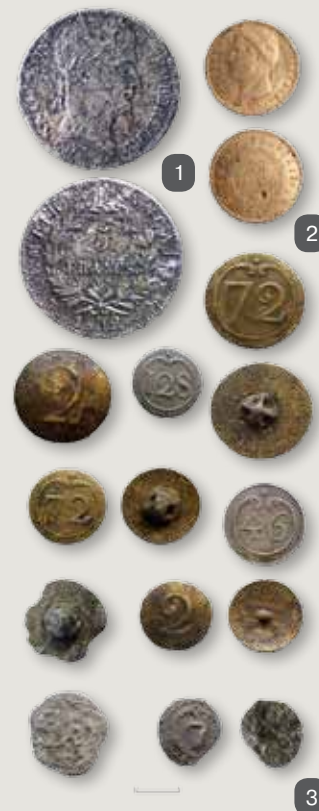
Altstadt – Steindamm. Area – approximately 16,000 sq metres. Depth of cultural layer from 2 to 6 metres.

The investigations studied the remains of a wooden bridge; an earthworks bastion from the city's earliest defensive fortifications of the 17th century; and the city's cemetery, where twelve mass graves were opened and researched, belonging to French officers of Napoleon's Grande Armée du Nord. Rescue archaeology was undertaken for comprehensive study, including specialist researchers from numerous different disciplines (archaeologist, anthropologists, paleo-zoologists, and military historians specialising in historic uniforms). This approach enabled significant qualitative improvements in the research work whilst simultaneously foreshortening the deadlines required for completion.

The work revealed examples of military uniforms, textiles and leatherware items, a complete shako military helmet, buttons indicating regiment numbers which took part in the Russian campaign, ammunition buckles, rifle flints, bullets, French coins minted in 1812, and numerous personal belongings. The corpus of finds which were gathered during the excavations in Kaliningrad makes a very serious and valuable collection.



Skeletons of buried troops and officers of the *Grande Armée du Nord*, 1812



1. A five-franc silver coin, dated 1812. 2. A gold coin for 20 francs, dated 1811. 3. Bronze buttons showing regiment numbers of the *Grande Armée*



The Russian Park-Museum Complex in the city of Jericho

From 2010 ff.



Overall view of the excavations at Jericho



A stone building



The expedition team in 2012

The Russian-Palestinian Jericho Expedition – is Russia's only archaeological project to be carried out in Israel. The project is carried out under the terms of an international agreement signed in 2012.

The IA RAS expedition in Jericho carries on the work begun on the same stretch of land by Russian scientists as early as the 1880s – which were suspended in the early 20th century, and resumed from 2010 onwards. The works are intended to expand the museum complex, and involve rescue archaeology excavations, scientific research, and the organisation of the museum – from developing its concept and setting up its collections through to creating the displays and the scientific background to them.



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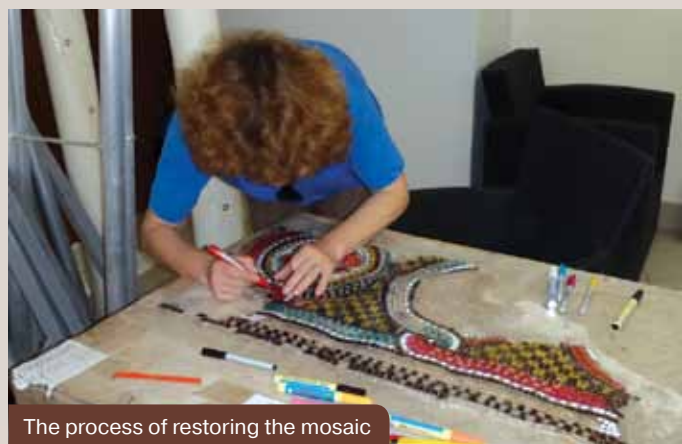
4



Fragment of a multicoloured mosaic of the 6th – 7th centuries AD



The museum



The process of restoring the mosaic

The archaeological research work has unveiled a monastery from the Byzantine period (5th–7th centuries AD) with a magnificent multicoloured mosaic and a pottery-making area. Comprehensive restoration work has been undertaken, and it is planned to create an open-air display area and an archaeological laboratory.

Hundreds of finds (from the 2nd century BC onwards) have made it possible in just one season to open an exhibition in a specially-built museum building. The display was opened in time for a visit by the President of the Russian Federation and the Head of the Palestinian Governmental National Administration on 19th January 2011.



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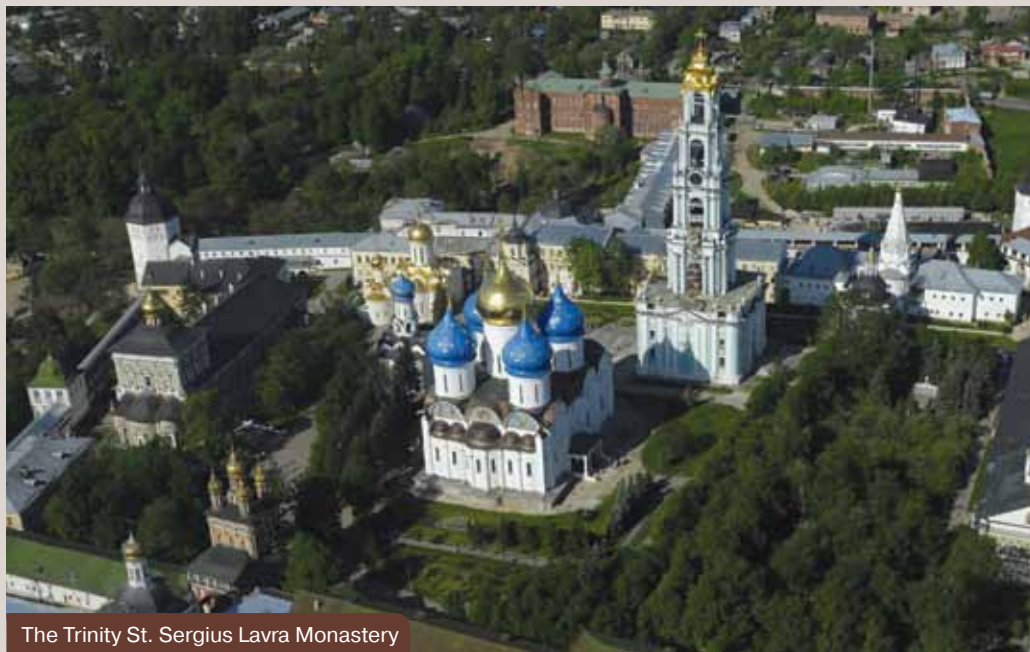
1. Architectural details. 2. A jug from the Mamluk period. 3. A lantern. 4. A church lantern (bronze, 6th–7th centuries AD). 5. A damaged pitcher. 6. Luthor. 7. A coin minted during the Jewish kingdom of King Herod the Great. 8. A sestertius of Emperor Phillip I. 9. Weights for 30 pieces of silver



The Trinity St. Sergius Lavra Monastery

Area of survey work: over 1000 square metres

2003, ongoing

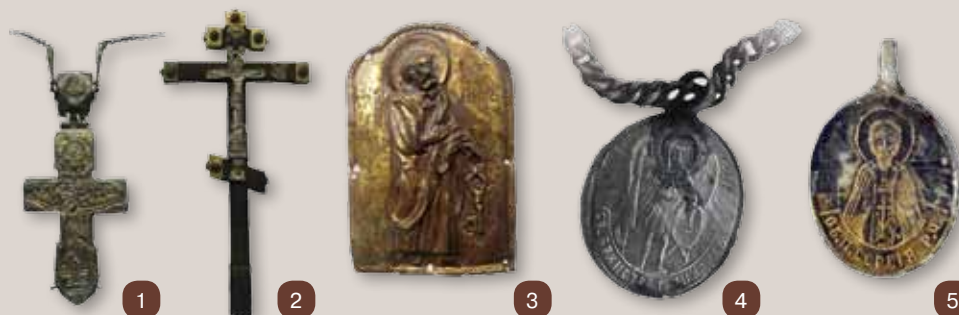


The Trinity St. Sergius Lavra Monastery



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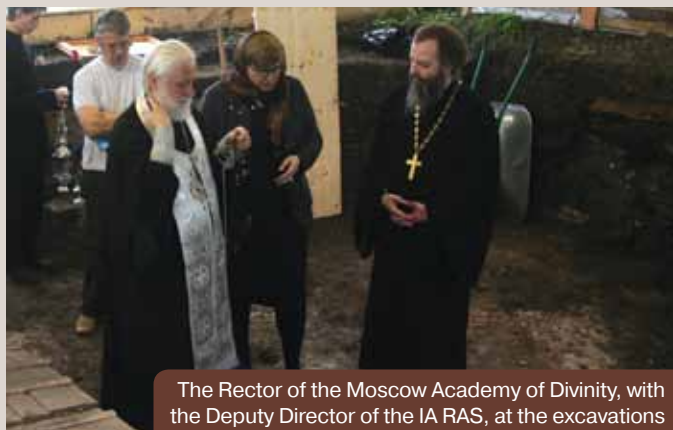
The Trinity St. Sergius Lavra Monastery is a historic and cultural monument of Federal significance, listed as a UNESCO World Heritage Site. The complex remains a functioning monastery, and the cultural layers within its grounds are of immense scientific significance.



1. A copper alloy pectoral cross, from the burial of Kirill Florinsky.
2. A wooden priest's cross with copper facings and inserts of coloured glass, from the burial of Kirill Florinsky.
3. A copper alloy plaque with a mitre, with a relief image of the Apostle Peter, from the burial of Kirill Florinsky.
4. A pendant from a burial (the Academic graveyard).
5. A pendant from a burial (the Academic graveyard).
6. A grave cross (sketch)



At work at the excavations



The Rector of the Moscow Academy of Divinity, with the Deputy Director of the IA RAS, at the excavations



A hairpiece from a burial (the graveyard of the Church of the Holy Spirit at the Apostles)



Restoration of clothes from a burial in the Academic Graveyard

There are identified cultural layers from the 14th and 15th centuries at the Trinity St. Sergius Lavra Monastery, as well as architectural archaeological sites (the foundations of the Monastic Refectory of 1464, along with other now-lost stone and timber buildings). There is also the Lavra cemetery, which contains dozens of white stone tombstones from the 16th to 18th centuries.

The monastery's own historic archives were lost in the fire of 1746, which means that in many cases the only source of information about the lives of those who lived at the monastery is the archaeological record.

Archaeological excavations and surveys of the grounds of the Trinity St. Sergius Monastery have been carried out by specialist staff of the IA RAS since 2003, as part of the restoration projects. This research has included pinpointing the location of the graveyard in the central area of the monastery – close to the Smolensk Church, within the grounds of the Academic Gardens. Research into numerous graves within the cemetery has revealed the remains of tombstones, brick-built vaults, white stone sarcophagi, and white stone gravestones. In 2013 the Archaeological Ruins of the Bastion of the Carpenter's Tower of the Trinity St. Sergius Lavra Monastery were unearthed.



The Voskresensky New Jerusalem Monastery

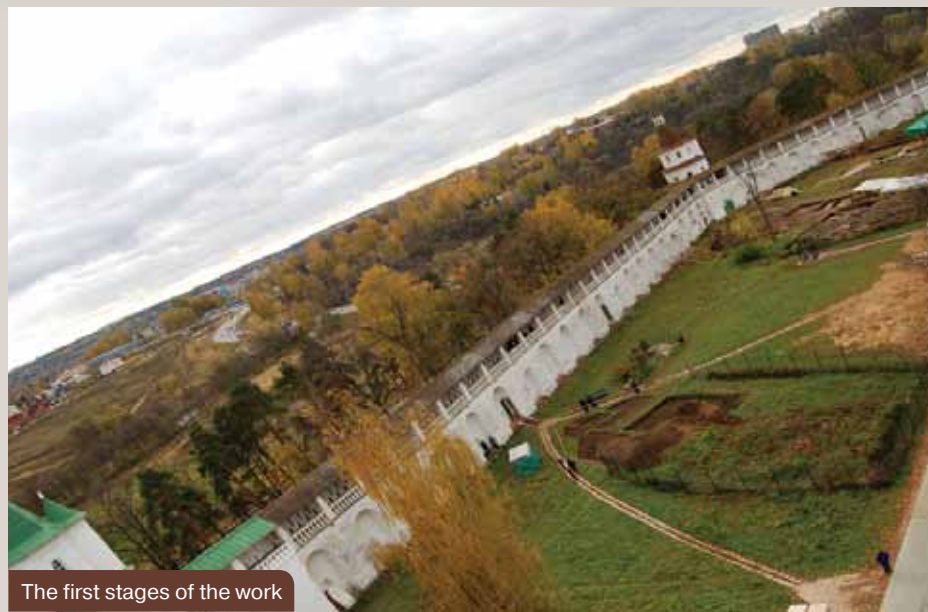
2009–2016

Area of survey work: over 15,000 square metres

The Voskresensky New Jerusalem Monastery (in Moscow Region, near to the town of Istra) was founded in 1656, by the Russian Orthodox Church Patriarch Nikon. Archaeological research has been going on at the grounds of the monastery since 2009, connected with the restoration projects for the monastery. The initial stage of work involved a pre-project survey, which enabled the compilation of data for the geomorphology of the

hill, on which the monastery was built. The study also revealed the stratigraphy and preservation status of the cultural layer, the foundations of the Voskresensky Cathedral of the monastery, and other buildings and architectural remains of structures of which there are no details given in written records. All these materials, along with the architectural records became a part of the project documentation for plans to restore the monastery.





The first stages of the work

This exceptional long-term project involves a full-time dedicated expedition team of young scientists, who are working in close collaboration with the project managers of the restoration (the Central Scientific Restoration Project Workshops, or CSRPW). The project has enabled the full completion of an overall restoration and conservation plan, including communications and vertical planning.

As a result of this large-scale field-work research, an ensemble of approximately 40 structures from the 17th and 18th centuries was identified and recorded. These include a foundry for casting bells; kilns for firing tiles and ceramics; a graveyard with its tombstones intact; the remains of palace buildings; holy

springs; and bridges. All of these objects are now being prepared for museumification. The materials which have been recovered are being entered into the State Register of Cultural Heritage Sites, along with plans for their restoration and museumification.

The materials are extensively used as part of the restoration process. For example, the collection of tiles has made it possible to restore the appearance of the stoves which heat the rooms. Finds made during the excavations – approximately 10,000 items – will form the basis of a future museum. The archaeological work which has gone step-by-step with the restoration works have enabled a new interpretation of the history of this crucial site in Russian culture – where, in the 17th century, Patriarch Nikon began the sole full-scale copy of the Tomb of Our Lord in Jerusalem.



The monastery hill, in the 18th century



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1. Overall view of the monastery, during restoration. 2. Russian Prime Minister Medvedev, with the All-Russian Patriarch Kirill, and their entourages view a temporary exhibition of the excavation finds, 2014. 3. The graveyard. 4. A bell-casting pit. 5. A clay mold for casting crucifixes, from 1670–1680. 6. A gold coin, from Hungary, early 16th century. 7. Ceramic water-ducts in the shape of angelic heads



The Novodevichy, or New Maiden Convent of Our Lady of Smolensk, and remains of the Church of St. John The Baptist at the New Maiden settlement, 16th – 18th centuries

Area of survey work: approximately 2,000 square metres

2012–2014

The New Maiden Convent of Our Lady of Smolensk is a cultural and historical monument listed by UNESCO as a World Heritage Site. Since 2007 the IA of the RAS has been carrying out monitoring of the preservation level of the cultural layer, along with preservation work in parallel with engineering and restoration work at the Convent.

The pre-project and preservation excavations at the Church of St. John The Baptist are being undertaken with the aim of studying the historic topography of the church and restoring it. It was destroyed by Napoleon's army during the occupation of Moscow in 1812.



The Icon of the New Maiden Convent, early 18th century

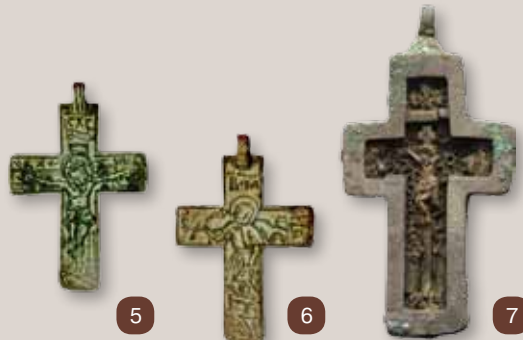




Remains of the cemetery and church of St. John The Baptist, 16th – 18th centuries

It has been possible to pinpoint the location of the church; to study its foundations and its cultural layer; to study the ground level of the graveyard, and the tombstones which are still in place; the bell-foundry was examined, along with the apse of the church. The materials recovered were used in support of a decision by

the convent authorities and city administration to make a complete restoration of the church, and were used as source material in the project documentation for this restoration – making the move from just preservation, to renovation. The project established the church's foundation stone, in the basement levels of the church.



1–3. Tombstones from the 16th to 17th from the cemetery of the Church of St John The Baptist and its monastery. **4.** A column. **5.** A pectoral cross, late 17th. **6.** A pectoral cross showing the image of St. Nikita Besogon, late 17th century. **7.** A pectoral cross showing an image of the Crucifixion, made in Central Europe in the late 17th or 18th centuries



The Zachatievsky Convent in Moscow

Area of survey work: over 3,000 square metres

The Zachatievsky Alexeivsky Convent is the oldest such foundation in Moscow. Rescue archaeology work by specialist staff of the IA of RAS has established that the convent first appeared on this site in the 15th century. The research gathered material to be presented in a museum exhibition. The most important practical outcome of these researches has been the preservation of the engineering constructions of the

16th to 19th centuries, in their original locations, and including these constructions within a new underground museum. This has made it possible to solve the issue of the regeneration of a derelict cathedral with contemporary approaches and functionality – and for the developers to fulfil their projected plans, and build a museum crypt under the existing convent church.

2003 – ongoing





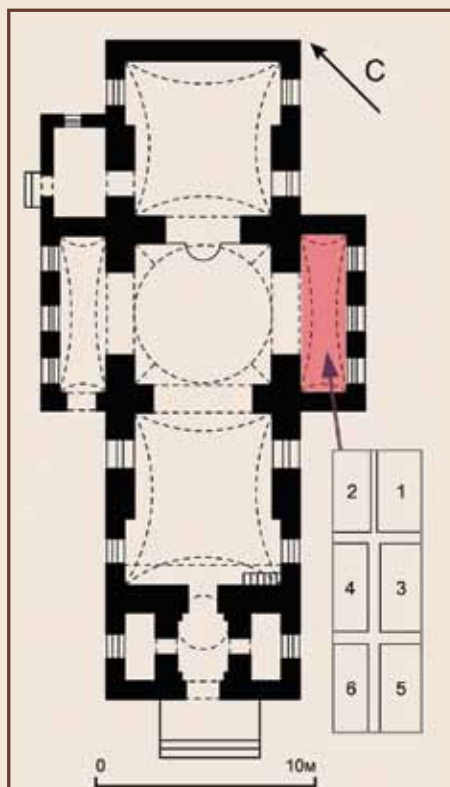
A number of practical issues were resolved for the planning and further restoration of the convent, including the introduction of continuous monitoring, and gaining support in the media. The

excavations came to the attention of the upper echelons of the Russian Orthodox Church on several occasions, including the patriarchs of Moscow and of All Russia, Alexei II, and Kirill

1. Ceramic tableware, 16th century.
2. Museum hall with a reconstruction of the basement-level cells of the 15th and 16th centuries (using authentic pitchers of the 16th–17th centuries).
3. The central hall of the museum crypt with a section of the foundations of the 16th–19th centuries.
4. Russian Orthodox Patriarch Kirill and a group of his staff, in the museum crypt.
5. A tombstone of the late 14th or early 15th centuries.
6. Patriarch Alexei II views an exhibition of finds, accompanied by Mother Superior Juliana of the Convent, and the excavation leaders, 2006.
7. An angel.
8. Reconstruction of the base of the throne.
9. A pectoral cross.
10. A hair band (headwear of ladies of the nobility)



The identification of historic personalities



Burials in the Yermolov family vault

1. The grave of A. P. Yermolov
2. The grave of P. A. Yermolov.
3. The grave of K. A. Yermolov.
4. The grave of V. N. Yermolova.
- 5 & 6. Unused grave spaces.

Over 10th–11th December 2012, and again over 4th–17th June 2013, research work was carried out at the grave of Alexei Petrovich Yermolov (1772–1861) at his family's burial vault, on the right-hand side of the Church Of The Trinity in the city of Orel. General Yermolov distinguished himself in battle in the Napoleonic Wars of 1812, and his career continued in the Caucasus thereafter.

The Yermolov family vault contains the remains of Pyotr Alexeyevich Yermolov – the father of A. P. Yermolov (†1832); Alexei Petrovich Yermolov himself (†1861 r.); Klaudius Alexeevich Yermolov, the son of A. P. Yermolov (†1894); and Varvara Yermolova, the wife of K. A. Yermolov (†1897) (see Fig 1).

The archaeological investigations enabled the facts to be established of substantial disturbance of the family remains – most probably the result of grave-looting during the period from 1938 to the 1970s.

Identification of those buried in the vault was made possible by comprehensive cross-discipline researches, including archaeological, anthropological and paleogenetic analyses, along with other contemporary techniques. The use of photogrammetry enabled a three-dimensional model of the burials, making an initial description of the location of the graves in the ransacked tomb possible (see Fig 2).





The fragments of uniforms which were discovered in the crypt enabled highly certain identification of the bodies as being A. P., P. A., and K. A. Yermolov (see Figs 3 & 4).

Using a geometric morphometry technique, the family likeness between the three generations of the Yermolovs in the crypt was established (see Fig 5).

3D scanning was made of the skulls found at the crypt site, along with radiological microscopy and genetic testing.

Paleogenetic research confirmed the direct family line between the three men – thus confirming the presence in the crypt of the three generations of men of the Yermolov family.

Reconstruction of the skull of P. A. Yermolov, which was undertaken using methodology developed by Dr. M. M. Gerasimov, made it possible to note a series of characteristics particular to the appearance of the famous general.



1. Plan of the Church of the Trinity in the town of Orel, with a layout of the graves in the Yermolov family vault.
2. Three-dimensional model of the graves of P. A. and A. P. Yermolov.
3. The burial uniform of A. P. Yermolov.
4. The general's epaulette – before and after restoration.
5. Results obtained using the geometric morphology technique.



5

Pinpointing of the tags (landmarks) used for comparison of the images of the members of the Yermolov family



Rock-Face Art monuments (petroglyphs)

The location of examples of rock-face art are an integral part of our cultural and historical landscape. A project to develop a contemporary method of documenting these works of rock-face art enables them to be catalogued and preserved without any damage to them, by taking a distanced segment of the cultural work in question. This method was developed by the petroglyph expeditions of 2005 from the IA of RAS to Chukotka and Khabarovsk Region, and to other regions.





Researchers from the IA of RAS employ contactless documentary methodology when studying petroglyphs. This method takes a contactless silicone matrix and then creates a backup copy using positive casts of various materials, while photo-grammetry is deployed to adjust the proportions – so that exact objective modelling of the stones and the artworks on them can be established. This studies the appearances of the petroglyph surfaces by using photo-documentation at multiple shooting angles – which can detect difficult-to-detail imaging and uses a knock-out engraving method. Additional photography is made using differing spectral ranges (UV, visible light, IR) to establish the biological activity in such monuments.

This methodology permits the monitoring and determination of aspects of deterioration, to establish the threat priorities to such works which are in the open air – and identifies and documents previously unnoticed aspects of known artworks. In 2014 this kind of comprehensive monitoring proved invaluable during the catastrophic flooding that affected petroglyphs in the Khabarovsk Province of Russia.

1. The Scheremetyev petroglyphs, at the Ussuri River in Khabarovsk Province. 2. Image on a fragment of stone with a petroglyph, recorded using the photo-grammetry method and subsequent export to orthophotography, at Sikachi-Alyan, Khabarovsk Province. 3–6. Petroglyphs cast from a silicone matrix, from Pegtymel, Chukotka Region

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