**Vaclovas Intas Museum of Rare Stones**

Audioguide

The Republican Vaclovas Intas Museum of Rare Stones here, in Samogitia, Mosėdis Borough, was established in 1979. Already in 1984 the planting of Museum of Rare Stones Park was started in Mosėdis, and in 2000 the dendrological collection of the museum was declared to be a nature object protected by the state.

The museum collects, accumulates, researches, exhibits, restores and preserves the most interesting Lithuanian boulders most valuable for science, reveals their natural variety, nature, scientific significance, promotes ecology ideas and engages in other activity.

The establishment of the museum is a natural result of the work of doctor Vaclovas Intas who had lived in Mosėdis. Till the establishment of the museum the doctor had already gathered a collection of boulders of Glacial Period, had planted about a thousand plants of various sorts and shapes in the borough.

At present the museum is subject to the Ministry of Environment. In it more than 150 thousands of boulders of various sizes Baltic region rocks common in Lithuania are exhibited. The biggest exhibit weighs 50 tons, and the smallest – only several grams. The exposition arranged in renovated flourmill building which is 200 years old introduces geological maps, fossil animals and plants, classification of rock fragments, stones brought from various countries and presented to the museum. Here also the foreign bodies surgically removed from human organism, the collection of cross-sections of the trees growing in Lithuania are displayed. In the museum open-air exposition there are more than 200 big boulders which are exhibited in the terrace of Bartuva valley – an area of 14 hectares. All of them rolled in to Lithuania together with the glaciers from Scandinavia during the period of early Pleistocene – late Palaeolithic.

In the chamber part museum valuables which reflect Lithuania’s geologic development and variety of erratic blocks, present information on the structure, composition and evolution of Lithuania’s land depths are exhibited, they reveal the scientific, cognitive, cultural value of boulders. In the museum stands, information terminals exhaustive information on the formation of Earth and rocks, their origin, the boulders brought by the glaciers to our land is presented. In the glass-cases original boulders and their fragments are exhibited. Here they have been placed in groups according to their origin and sorts.

At the Hall of Glacial Period boulders visitors‘ attention is attracted to the bust of Vaclovas Intas. It was created from gesso by a professional sculptor Rimantas Eidėjus, an inhabitant of Mosėdis, in 2012.

1. **Vaclovas Intas Notebook**

In this notebook the establisher of the museum doctor Vaclovas Intas used to fix the work of every day, the addresses of the people with whom he communicated and to write various remarks and sayings. People remember that met at his work and asked how he was doing, Samogitian Vaclovas Intas used to reply: “As a dog in a well – you neither get out nor lap…” And if somebody inquired how the doctor succeeded in working with stones, he used to answer: “I am the best geologist among doctors, and the best doctor among geologists”.

During his life Vaclovas Intas accumulated a great collection of various rocks.

What is a rock? That is a crystalline, partially crystalline or amorphous aggregation. An amorphous rock is formless having no crystalline composition. Rocks form on Earth, other cosmic bodies or simply in the very cosmos during the time of natural processes. They are described and distributed according to their origin, way of formation and circumstances. Some rocks form in the depths of the Earth – in the crust, mantle or even core. Magmatic rocks form from magma, i.e. from the melt existing in the depths of the Earth. Metamorphic rocks, also called secondary, form from magmatic or sedimentary rocks which have been in the depths of the Earth twice and have been influenced by high pressure and temperature.

1. **Granite**

That is a magmatic intrusive rock of rosy colour with dark grey inclusions. Its composition is granite, structure – coarse-grained, texture – massive. Granite is composed of mafites biotite and hornblende, of felsites feldspars of red shade and grey quartz. In the exhibit orthoclase ovoids with a rim of oligoclase typical of granite are distinctly seen. The most famous examples of such rock in Lithuania are the Puntukas Boulder and the Šilalė Kuli (Great Sheaf). This exhibit is a clod of a pancake shape split from a boulder. It was found in Mosėdis Borough. Granite is a good construction material out of which rubble, finishing plates, stairs, monuments and other articles of high quality are made.

1. **Pyterlite**

For many years geology scientist Algirdas Gaigalas used to consult Vaclovas Intas, assisted him in selecting stones for the museum collection and sorting them. The scientist himself was collecting boulders as well, presented quite a big number of them to our museum. This pyterlite is one of them.

Pyterlite name comes from Finnish town Pyterlahti. That is a species of rapakiwi granite which has come from the western part of Finland. This rock is of granite composition, coarse-grained structure. Big crystals reminding of egg shape of 2-8 cm size surrounded by a mass of very small grains are typical of pyterlite. After rising to the surface this rock very quickly weathers: influenced by wind, sand, water and sun, the petty mass falls and big “eggs” – crystals remain. They are motley – from red to dark grey colour.

Visitors can see round black quartz spots around the light crystals in the exhibited rock. Only due to them these rocks are called pyterlite.

1. **Spotted Sandstone**

The spotted sandstone distinguishes among other rocks by brown spots of up to 1 mm, light grey colour and in some places greenish shade. That is an aqueous detrital rock cemented with clay cement. Some sorts of sandstone are highly resistant to weathering. Its solidity depends on the mineral composition, texture and degree of rubbing of sand particles. Such rocks are employed in construction and some of them are used as a sharpener. This spotted sandstone is fine-grained, quartz, of a shape of a cut pancake. In some places greenish shade is seen – this is the remaining polishing powder.

1. **Quartz**

Quartz is a mineral which can be transparent, smoky, black and “milky”. The colour depends on the minerals of which it is composed. “Milky quartz” is a mineral of silicon dioxide – the most common mineral on Earth. The name was given to it by the ore-diggers of medieval Saxony. That is a non-fissile crystal, the fractures of which are conchoidal. This mineral is found in various geological environments. Quartz of light grey colour marked number 5 differs from the other samples of quartz placed by it in its composition, in it besides quartz there is light rosy potassium feldspar.

1. **Baltic Almond Stone**

Baltic almond stone is a magmatic effusive rock. Its colour is grey, in some places – dark grey. In the rock of almond texture, medium acidity, plant remains – phenocrysts, - of 1-2 cm are distinctly seen, also visitors can see elliptical cavities and cavities of sphere shape filled with chalcedony and iron hydroxides. This Baltic almond stone was found in Mosėdis Borough.

1. **Quartz Porphyry**

Quartz porphyry of brownish red colour is a magmatic effusive rock of granite composition. Its structure is glassy porphyric, the texture is massive. The very name “porphyry” reflects the peculiarities of the composition of the rock: its phenocrysts are composed of grey quartz and rosy feldspars, some of them are nearly idiomorphic, of 1-10 mm size. The exhibited quartz porphyry of boulder shape is cut nearly into halves and polished. It was found on the beach of the Baltic Sea – in Šventoji. Such rocks are employed as finishing stones.

1. **Kinne Diabase**

That is a magmatic sub-eruptive rock of a mottled, dark grey colour, basic composition and varied grain structure. The exhibited Kinne diabase is composed of 3 minerals: light grey, nearly white plagioclase of felsites minerals, black mafites mineral augite and light grey, nearly white olivine. Wavy surface is typical of Kinne diabases. Its knobs are of 10 mm height up to 15 mm width. This rock of knobby pebble shape formed approximately 1.5 billion years ago. It was found in Varėna Region.

1. **Granite Gneiss**

Granite gneiss is a metamorphic light grey rock which has formed during the time of regional metamorphism under the action of small pressure and high temperature. It is of medium-grain structure, gneissic texture. The granite gneiss is composed of light grey quartz, the size of which is up to 7 mm, dark brown red granite, also called almandine, and a bit of biotite. This rock was found in Mosėdis environs.

1. **Syenite – Pyroxenic Granite**

Syenite is a magmatic intrusive rock of grey colour, of coarse-grained structure, massive texture belonging to the basic group of anorthosites. The exhibited syenite is composed of bluish, light grey plagioclase. The cleavage of syenites is perfect; the crystals are monoclinal, prismatic. This rock is an intermediary syenite sort related with granite in which the dark minerals are noticed – namely due to that it is called pyroxenic.

1. **Rapakiwi**

“Rapakiwi” is a Finnish word. It means “rotten, decayed stone”. That is a magmatic intrusive rock, brownish red with dark inclusions, of granite composition, coarse-grained, massive. It is composed of mafite minerals – biotite and hornblende, rosy felsites minerals feldspars and dark grey quartz. The rock was found in Varėna Region Barčiai village.

1. **Granophyre**

Granophyre is a magmatic intrusive rock. Its composition is granite, varied grained. That is a rock of porphyritic structure, massive texture, composed of mafite mineral biotite, felsites feldspars and quartz minerals. The phenocrysts are composed of red and light red potassium feldspar and of grey quartz. The granophyre formed in the Aland Islands approximately before 1.5-1.6 billion years. The exhibited rock is of pebble shape with cut and polished side. It was found on the beach of the Baltic Sea – in Šventoji.

1. **Obsidian**

It is thought that the first sample of obsidian rock was brought from Ethiopia to Rome by Roman Obsius. He decided to name the new stone similarly to the sound of his name. The Latin name “Obsid**ia**nus **la**pis” means “Obsidius’ stone”. In fact it is not a stone, but a non-crystallized volcanic rock of various chemical composition, a species of volcanic glass. The razor-edge rock of black colour formed under sudden cooling of tenacious lava of acid rhyolith composition which did not manage to crystallize.

Strong shining, conchoidal fracture, massive texture, glassy structure is typical of it. The colour depends on the gas, ore mineral inclusions or iron oxidation degree. Obsidian is employed for finishing and in jewellery craft. Vaclovas Intas brought it to the museum from Armenia, environs of Sevan Lake.

1. **Labradorite**

That is a magmatic intrusive basic species of anorthosite composed of more than 90% of mineral plagioclase labrador. In its composition augite, titanomagnetite, ilmenite, more seldom – apatite is found, sometimes in its composition potassium feldspar, quartz and biotite are also found. The colour varies from grey to black with rainbow shades. That is a rock of especially coarse-grained structure, massive texture, the crystals of which are distinguished for bright internal reflection of bluish colour – irisation. This rock enhances the aura and by its merry colours gives joy.

1. **Gabbro Norite**

Norite is an intrusive magmatic rock composed of plagioclase and orthopyroxene. Its name comes from the name of Norwegian mythic hero Nor. This rock is of gabbric structure, massive texture. It is found together with gabbro in the laminar intrusive bodies where platinum is found. In gabbro norite visitors can see light grey crystals similar to sticks. The rock is composed of light grey rotten from the outward plagioclase and black augite. This exhibit was found in Skuodas Region Šaukliai Village.

1. **Mica Slate**

A slate of mica, or quartz, is a metamorphic supra-crystal rock which has formed during regional metamorphism under the influence of high pressure and low temperatures. The rock of light grey colour, silk shine is of a phyllite structure, slate texture which is composed of mica, or sericite, and quartz. Such rock easily cleaves in thin plates or cakes. The slate reminding of a sliver of a chipped wood was found in Mosėdis Borough.

1. **Migmatite with Garnets**

This intermediate rock is of various blastic structure. Every person looking at exhibited migmatite can see two different rocks – stripes of light grey and dark grey or black colour. These are re-crystallized larger mineral blasts affected by migmatization. The stripes of the old rock which have been splendidly retained distinguish as well. The re-crystallized stripes are coarse-grained, of spotted textures, composed of quartz. In the migmatite there are plagioclase crystals, garnets which form rosy spots of 10-30 mm size, biotite and a small quantity of hornblende. The exhibit was found in Skuodas Region Kulaliai firing ground.

1. **Stone Axe**

In the Stone Age and the Brass Age people used to employ stone for the production of various primitive tools. In Lithuania for the production of axes mostly basic volcanic rocks were used.

This tool marked number 18 is an accidental archaeological finding. It is made of diabase – a magmatic effusive rock. It is of dark grey –brown colour, of a fine-crystal, diabasic structure, massive texture. Our ancestors used to produce axes from diabase due to the fact that diabase is one of the hardest rocks.

1. **Quern**

In the museum a primitive quern of a barrel type is preserved. That is a difficult to turn tool which used to be employed in everyday life. The granite edgestone used to perform the mechanical work during turning – it used to mill flour. This quern was brought to the museum from Skuodas Region Barstyčiai village.

The rocks exhibited in the hall of aqueous rocks have formed of rotten magmatic, metamorphic and older rocks. Most often they form in water where the decayed rotten rocks accumulate, their sedimentation takes place. The clay, sand and carbonate aqueous rocks are the most frequent, salts are rarer met. Sandstones, sands, shelly grounds are the detrital rocks of aqueous group which are composed of rubbed and razor-edged rocks and mineral grains.

1. **Petrous Tree**

This stone is a tree which grew thousands of years ago. It illustrates a natural process- petrifaction, when as time flies, water melts the organic substances of a tree and the cavities are filled with minerals. The colours of petrous tree depend on the chemical additives. This tree by its appearance and composition reminds an agate. It also has healing properties – cleans the liver and blood.

1. **Sandstone with Ammonite**

Ammonites are shelly squid mollusks which appeared in Devonian period and became extinct 65 million years ago. The closest present ammonite relatives well known to us are in shelled cephalopods – squids, sepias and octopuses. The most famous ammonite attribute is an external shell turned into a spiral. The ammonites had a unique property – they could live under the lack of oxygen as well. The exhibited mollusk is petrous in sandstone and has a shade of mother-of-pearl.

1. **Coral Calculus of the Right Kidney**

The human body stones most often form in the bile, urinary bladder and kidneys. This coral calculus formed in the right kidney of a person who was ill with nephrolithiasis. A man falls ill with nephrolithiasis due to various reasons and calculi of different sizes and various composition form. Most often they are mixed, they contain proteins and salts. Coral calculi take the whole pelvis. The composition of the exhibited coral is polymictic, i.e. it is formed of several elements.

In the glass-case placed on the left side of the door lichen and moss growing on the stones are exhibited. Lichen is lower perennial plants adapted to living in the most severe world places and most often they consolidate in the places where only several organism groups can exist. Lichen lumps grow on the rock and stones burnt by the sun dappling them with multicoloured spots. Moss is distributed in nearly all the world. It mostly grows in damp places, in the forests, swamps, on the rocks, rarer – in the water.

The mineral collections are exhibited in the Mineral Hall; they were collected and presented as a gift to the museum by its establisher, Professors of Geology and other persons interested in stones and minerals.

In the second half of the 20th century in Mosėdis the establisher of the museum doctor Vaclovas Intas started to collect and number the more interesting stones found in the fields. Negotiating with the specialists of other spheres he achieved that the establishing of a stone park was started in this borough. The doctor performed nearly all the work for his means.

A geologist, Doctor of Physical Sciences, Professor Albertas Bitinas, a specialist of Quaternary Geology sphere, presented four mineral collections to the museum. This scientist presented the first collection to the museum on the international event devoted for the commemoration of the Planet Earth’s year which took place in 2008. A bit later other collections accumulated by Albertas Bitinas went to the museum as well.

A geologist, Doctor of Physical Sciences Gediminas Motuza investigates the structure, development, minerals and impact craters of Lithuania’s crystalline basement. The professor presented the collected collection to the museum in 2009. Motuza is the principal adviser of the museum when recognizing rocks and minerals.

Audronė Ilgevičienė is the establisher of Astro-minerology Centre. In 2009 in the museum she read a lecture on the subject “How can a stone help a man?” and presented it a collection of most colourful minerals.

Diplomat, former Minister of Foreign Affairs Vygaudas Ušackas who was born and brought up in Skuodas presented to our stone museum an especially valuable collection of pegmatites brought from Afghanistan.

Collections collected by them were also presented to the museum by Ervinas Preikša, Albinas Ulskis and Deividas Jurkevičius.

1. **Rhodonite**

That is a mineral of silicate class pyroxenoides group. Its crystals are composed of the plates of triclinic crystal system. Sometimes they are up to 10 cm prismatic shapes. Their colour can be black, dark red, cerise or rosy brown with black veins and spots of manganese oxide. Rhodonite forms under the conditions of contact and regional metamorphism in comparatively low temperature from rocks containing much manganese – in the volcanic-aqueous manganese ores, slates and elsewhere. This mineral fortifies the heart and improves the blood circulation, stimulates quicker healing of wounds.

1. **Agate**

Agate is a mineral of oxide class quartz group. That is a stone of the most numerous quartz family. This colourful chalcedony mottled with concentric rings and parallel lines is named after Agate rivulet flowing through the Sicilia Island, as supposedly in this place it was found for the first time. Its beautiful species are employed in creating jewellery and decorative articles.

The exhibited agate is surrounded by rocks. That is a splendid sample illustrating how in the cavity which has formed among rocks a mineral is growing. Agate cures from negative emotions, has other healing properties as well.

1. **Meteorite of the Pure Iron**

This meteorite is a partially fused piece of a massive substance which fell on the Earth’s surface. The shape of the meteorite depends on the conditions of falling through atmosphere and impact on the Earth’s rocks. Stone meteorites are more frequent than iron. Meteorites can weigh from several milligrams to several dozens or hundreds tons. The exhibited meteorite had fallen in Africa Kalahari plane.

1. **Citrine**

That is a mineral of oxide class – the transparent species of quartz. It got its name due to its yellow shade. Citrine crystals are of pole shape, mineral crystals coalescences are often found in their texture. Citrine deposits are rather rare, so these minerals are valued very much, employed in jewellery. Most often it is rather difficult to falsify minerals, but citrine has its substitute: out of heated amethyst or smoky quartz the jewelers obtain artificial citrine which differs from the natural citrine in red shade. Citrine fortifies nervous system, immunity, stimulates the functions of pancreas, stomach.

On the right side of the museum cash-desk, in the glass-case of Vygaudas Ušackas collection, we introduce to the visitors exhibits brought from Afghanistan. Here everyone can see several minerals which had grown into one.

1. **Pegmatite**

Pegmatite is a rare magmatic veinstone having coarse-grained pegmatitic structure. This impressive especially valuable pegmatite is composed of the crystals of precious stones – topaz, kunzite, albite and quartz.

1. **Fluorspar**

That is a mineral of fluorspar class. Vanadium, cerium, iridium, radium and other substances can be its admixtures. Fluorspar crystals are of cubic shape, often overgrowth twins are met. A fluorspar can be colourless, white, yellow, green, violet, blue, rosy and even black. Its shine is glassy, cleavability is perfect and fracture is concoidal, fragile. That is a rather common mineral, forming when temperature and pressure changes by a big interval. It is found in dolomites and limestone, aqueous and volcanogenic rocks, in the zone of hypergenesis of tin, lead, zinc, ore deposits. The coloured crystals are often employed for producing decorative articles. This fluorspar is polished; egg form is given to it. Such mineral suits for people doing hard physical work or tense brainwork, fortifies bones, teeth, improves memory.

1. **Tiger’s-eye**

Tiger’s-eye is a mineral of oxide class. It can have admixtures of lithium, natrium, magnesium, aluminium, calcium, potassium, titanium and iron, bubbles of gas and liquids. Tiger’s-eye can be of yellow colour of brownish shade, gold yellow, rosy shade of brown, greenish up to brown colour. Its colours make more than 30 varieties reminding of the shades of a tiger’s eye. The mineral is of shining glass, a surprising optical effect is typical of it: if you roll the stone from one side to the other due to the fibrous quartz structure it seems that its surface is shimmering. Most often this material is polished completely flatly, in small ingots or plates, so that the optical effect could be revealed better. This stone assists in making a decision, helps not to be confused while doubting and experiencing stress.

1. **Chalcopyrite**

Chalcopyrites are minerals of sulphide class. Their crystals are rare, some of them are two accrete, the so-called twins. Most often they make uniform grained aggregates and inclusions. The colour of chalcopyrite is copper yellow having a greenish shade. On the Earth surface it oxidizes and turns to malachite. That is a widely common mineral of the Earth crust forming in hydrothermal veins and metasomatic contact zones – in skarns, greisens. It is met in magmatic rocks a bit rarer. Chalcopyrite is one of the most important copper ore minerals.

The museum is inviting visitors to visit the Stone Park established in 14 ha area in which great Glacial Period boulders are exhibited. Also everyone can see a square of granite sculptures which were created by Lithuanian, Latvian and Russian artists. In the future the number of pieces of art here will grow. The Stone Park boasts of dendrologic, i.e. plant, collection as well. In it there are 16 especially valuable ligneous plant sorts, among them: Caucasian fir, beech, honey locust, chokecherry, balsam, Japanese magnolia, Niedzvecki apple-tree and others. It is impossible to say good-bye to Mosėdis without visiting the former homestead of doctor Vaclovas Intas which is located on Akmenų street.