

Pre-Congress A4 Trip: Middle Permian - Lower Triassic continental sequences in Vologda and Arkhangelsk regions (north of European Russia) and localities of flora, tetrapods, non-marine fishes and invertebrates, 4-10 August

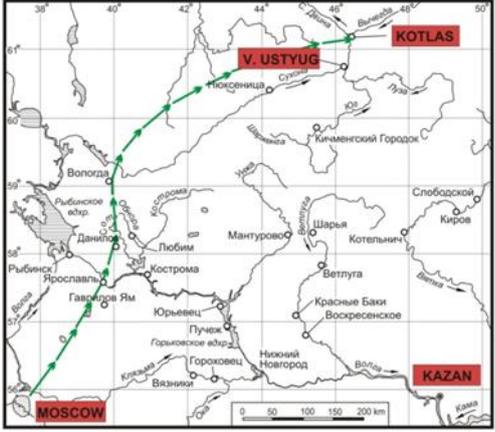
The trip will go ahead if 7 or more people attend (up to 15)

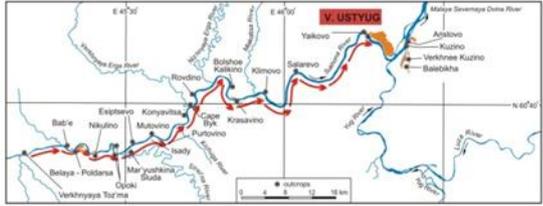
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The cost of the field meeting will be about €900 for the Vologda and Arkhangelsk regions trip. The fee includes accommodation, full meals during the excursion days in Arkhangelsk and Vologda regions, road and water transport, excursion to Veliky Ustyug and field trip guidebook.

Date	Event	
<p align="center">3th August</p>	<p>Departure of excursion group from Moscow to Kotlas by railway.</p> <p>Cost does not include Moscow – Kotlas railway ticket, lunch or evening meal. The approximate price of the ticket is €100. The approximate cost for the each meal in the dining car is 10 - 20 €.</p>	 <p align="center">Moving Moscow - Kotlas</p>
<p align="center">4th August</p>	<p>Arrival in Kotlas (Arkhangelsk region). Move to the famous Sokolki locality by car.</p> <p>Point 1. The Sokolki locality near the town of Kotlas is world famous for its exceptionally preserved Upper Permian pareiasaurids; its amphibian and reptile fauna is one of the key points of the excursion. This locality was discovered in the late 19th century by Professor Vladimir P. Amalitzky (Upper Vyatkian, Wuchiapingian – Changhsingian).</p> <p>Moving to the Savtaty and Eleonora localities area by car (near the village of Gorka, Malaya</p>	 <p align="center">Sokolki Locality</p>

	<p>Severnaya Dvina River).</p> <p>Field lunch</p> <p>Passage to the right bank of the Malaya Severnaya Dvina River.</p>	
	<p>Point 2. Savvatiy locality. Alluvial deposits with tetrapod bones cut into paleosols in the lower part of the Gorka village stratigraphic section at the Savvatiy locality (Upper Vyatkian, Wuchiapingian – Changhsingian).</p> <p>Point 3. Eleonora locality described from the upper part of the Gorka village stratigraphic section, Eleonora locality consists of abnormally large numbers of organic remains from the Vyaznikovian level (Upper Vyatkian, Changhsingian).</p> <p>Move to Velikiy Ustyug (Vologda region)</p>	 <p>Savvatiy Locality</p>
	<p>Accommodation is arranged near Velikiy Ustyug town in the well-appointed “Santa’s Grotto” (“Votchina Deda Moroza”) hotel complex. This Russian Santa's Home has a good infrastructure and many amenities (www.oao-dedmoroz.ru).</p>	 <p>“Votchina Deda Moroza” Hotel complex</p>
<p>5th August</p>	<p>Exploratory route along the Sukhona River. Full succession from Wordian to Wuchiapingian is observed at the overlaid part of the section.</p> <p>Point 1. Verkhnyaya Toz’ma - Belaya – Poldarsa outcrops. The transition from the basin to the continental deposits, Kiama - Illavara boundary (Nizhnyaya Ustia, Sukhona and Poldarsa formations, Urzhumian – Upper Severodvinian, Wordian – Capitanian)).</p>	 <p>Route along the Sukhona River</p>

Point 2. Opoki locality includes fern and lycosid remains. This stratigraphic level also contains the problematic fossil plant *Acanthopteridium spinimarginalis* Naugilnykh et Arefiev, 1999 (Poldarsa Formation, Upper Severodvinian, Capitanian)



Opoki Locality

Point 3. «Opokstroy». The river route will pass the former 'Opokstroy' prison camp, one of the 'Gulag' camps described by Nobel laureate Aleksandr Solzhenitsyn; it is an opportunity to view the ruins of the era of Stalin's totalitarianism

Field lunch



Ruins of Opokstroy, former GULAG prison

Point 4. Esipovka locality of footprints formed by large pareiasaurid reptiles, and described as *Sukhonopus primus* Gubin & Bulanov, 2003 (Poldarsa Formation, Upper Severodvinian, Capitanian).

Point 5. Konyavitsa. New locality of plant remains (Poldarsa Formation, Upper Severodvinian, Capitanian - Wuchiapingian).



Sukhonopus primus footprints (Esipovka locality)

Point 6. Cape Byk. Overview of basin sediments of Wuchiapingian.

Point 7. Rovdino – Klimovo – Salarevo outcrops. Overview of terrestrial sediments of Poldarsa and Salaryovo Formations (Upper Severodvinian – Lower Vyatkian, Capitanian–Wuchiapingian).

Return to "Votchina Deda Moroza" hotel complex



Cape Byk

6th
August

Becoming familiar with the most significant outcrops on the Sukhona River.

Moving to the area of Isady - Purtovino villages by car. Passage to the left bank of the Sukhona river.

Point 1. Mutovino outcrop. Mutovino section represents the boundary between Severodvinian and Vyatkian. This section represents a complex fluvial succession containing numerous fossil faunal and plants remains (the upper part Capitanian - the lower part Wuchapingian).

Field lunch

Moving to Klimovo village area by car.
Passage to the left bank of the Sukhona river.



Mutovino Outcrope



Phasmida (stick insect) and Mecoptera (scorpionfly) from Mutovino channel

Point 2. Klimovo outcrop is characterized by two fluvial channels with different features, reflecting the dynamics of the Ural's alluvial system. The upper channel includes bones of tetrapods. The system of channels in Klimovo underlines pedogenic profiles composed of seven mature paleosols (Salaryovo Formation, Lower Vyatkian Wuchiapingian).

Return to "Votchina Deda Moroza" hotel complex. As a cultural complement to the scientific program, it is planned to visit the ancient city of Veliky Ustyug.

Additionally, evening discussions about problems of Permian-Triassic succession will be held at the conference hall of "Votchina Deda Moroza".



Klimovo outcrop, and some of its tetrapod canines



Viliky Ustyug

<p>7th August</p>	<p>Continued dating of the most significant outcrops on the Sukhona River.</p> <p>Moving to Poldarsa area by car.</p> <p>Point 1. Nikulino outcrop. Locality for fish, bivalve and plant remains, early paleosols of the Poldarsa Formation (Upper Severodvinian, Capitanian).</p> <p>Field lunch</p> <p>Moving to the Strel'na River by car.</p>	 <p>Nikulino outcrop</p>
	<p>Point 2. Mar'yushkina Sluda section on the Strel'na River contains three fluvial channels. The upper channel includes bivalves and tetrapods (Poldarsa Formation, Upper Severodvinian Lower Vyatkian, Capitanian–Wuchiapingian).</p> <p>Return to “Votchina Deda Moroza” hotel complex.</p> <p>Friendly dinner. Meeting with the journalists of the Vologda region press.</p>	 <p>Mar'yushkina Sluda outcrop includes three channels</p>
<p>8th August</p>	<p>Dating of terminal Permian and Triassic deposits on the right bank of the Malaya Severnaya Dvina River.</p> <p>Moving by car and ferry through Malaya Severnaya Dvina River.</p>	 <p>A skull of the dicynodont <i>Dicynodon trautscholdi</i> lies on the bank of the Malaya Severnaya Dvina River (National geographic Russia, 2004. № 10).</p>

Point 1. Aristovo outcrop. Locality for the remains of fish, bivalves and plants. This section contains beds with the Sokolki tetrapod assemblage (*Chroniosuchus paradoxus* zone, (Salaryovo Formation, Upper Vyatkian, (Wuchiapingian - Changhsingian).

Field lunch



Bivalves from the Aristovo locality

Point 2. Verkhnee Kuzino outcrop. Transition interval from Permian deposits to the Triassic (uppermost Vyatkian, Changhsingian).

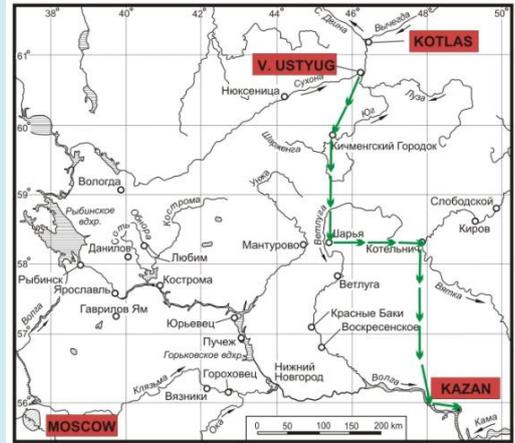
Point 3. Balebikha outcrop. The Permian – Triassic boundary. Layer enriched with magnetite spherules of cosmic origin.

Return to “Votchina Deda Moroza” hotel complex.



Balebikha outcrop

Departure from Moscow to Kazan by car.
Moving to the Kichmegskiy Gorodok area.



Moving V.Ustyug - Kazan

9th
August

Point 1. Nedubrovo outcrop is one of the key Upper Permian localities of the tour, located on the Kichmenga River. It is characterized by plant and insect assemblages, considered “transitional between the Permian and Triassic”. Paleontological and isotopic-geochemical findings of its deposits correspond to the top part of the Changhsingian. Very low $\delta^{13}\text{C}$ values were set here by pedogenenic carbonates, which allows the deposit to be correlated with event-level outcrops at the top of the Permian system.
Field lunch.



Nedubrovo locality and *Vetlugaspermum* from this outcrop

	<p>A further move in the direction of Kazan.</p> <p>Accommodation in a hotel in Kotel'nich (Kirov region). Cost does not include evening meal. The approximate cost of each meal in the hotel is 10 - 20 €.</p>	
<p>10th August</p>	<p>Departure from hotel</p> <p>Point 1. Kotelnich paleontological museum. Participants of the excursion will visit the local paleontological museum to see local finds of complete tetrapod skeletons.</p> <p>Point 2. Kotelnich outcrop. Overview of the known localities of complete terrestrial tetrapod skeletons (Vyatka Formation, Upper Severodvinian, Capitanian–Wuchiapingian).</p> <p>Field lunch.</p> <p>A further move in the direction of Kazan.</p> <p>At the end of the day, the tour group will arrive at Kazan to participate in the plenary ICCP-2015.</p>	<div data-bbox="1050 430 1343 683" data-label="Image"> </div> <div data-bbox="976 698 1439 770" data-label="Caption"> <p>Skeleton of the dromosaur <i>Suminia getmanovi</i> from the Kotelnich locality</p> </div> <div data-bbox="957 833 1493 1173" data-label="Image"> </div> <div data-bbox="1002 1187 1445 1344" data-label="Caption"> <p>Skull and part of the skeleton of <i>Deltavjatia vjatkensis</i> lie on the bank of the Vyatka River (GEO Russia Magazine, 2000, No 9)</p> </div> <div data-bbox="935 1420 1503 1639" data-label="Image"> </div> <div data-bbox="973 1662 1471 1738" data-label="Caption"> <p>Kazan Kremlin (listed as a UNESCO World Heritage Site)</p> </div>