

## 6th International Conference on Environmental Micropaleontology, Microbiology, and Meiobenthology (EMMM-2011)

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The study of microorganisms is an indispensable element of fundamental research in the fields of ecology, microbiology, and micropaleontology and the role of microorganisms as indicators of contamination and ecological changes in modern and ancient marine and freshwater basins constantly increases.

The ecology of various extinct and extant microorganisms is widely studied throughout the world. This is illustrated by the organization of five international conferences on *Micropaleontology, Microbiology, Meiobenthology, and Environment: EMMM* in Israel (1997), Canada (2000), Austria (2002), Turkey (2004), and India (2008). About 810 researchers from 55 countries participated in the five conferences EMMM.

The 6th International Conference EMMM-2011 was held in Moscow and St. Petersburg and consisted of two stages.

The first excursion stage of the 6th International Conference EMMM-2011 in St. Petersburg on September 15–18, 2011 was organized by Karpinsky All-Russia Geological Research Institute and included visit to Chernyshev Central Research Geological Museum in St. Petersburg (TsNIGR Museum) and three ecological and paleoecological field excursions in St. Petersburg and its vicinity.

(1) Excursion to the Ordovician sections in the vicinity of St. Petersburg, guided by A.V. Dronov (Geological Institute of the Russian Academy of Sciences).

One-day excursion at the Lower Paleozoic deposits in the vicinity of St. Petersburg included observation of several classical outcrops of Cambrian and Lower and Middle Ordovician deposits, which display transition from terrigenous and dense cold-water carbonate deposits to moderately aquatic limestone rich in fossils. On the way, excursionists visited well-known Sablino caves on the beautiful Tosna River, with a waterfall. The man-made caves at Sablino near St. Petersburg are a unique underground complex consisting of a number of labyrinths with lakes and huge chambers. The caves were formed when pure quartz sand was extracted there for Russian glass and crystal industry. Even the Imperial crystal was pro-

duced using this sand. The sand was initially extracted by hand; as a result, a complex system of tunnels was formed.

(2) Excursion “Holocene Biochemogenic Travertine-like Freshwater Carbonates of the Izhora Plateau,” guided by M.Yu. Nikitin (Herzen State Pedagogical University of Russia).

Izhora Land, Ingermanland, and Ingria are historical names of the Izhora Plateau, which is a relatively small area in the eastern Baltic Region southwest of St. Petersburg, bordered by the southern bank of the Neva River, Gulf of Finland, Narva River, and Chudskoe Lake on the west and Ladoga Lake and the southern bank of the Volkhov River on the east. The maximum altitude is 176 m (Duderhof Hills). In the geological structure of this plateau, the main role is played by Ordovician carbonate rocks, which form an abrupt bench (clint) in the northern part and descend gently sloping on the southeast. With reference to the structure, this area is extremely dislocated. The system of disjunctives and folds forms a complex picture, the genesis of which has heatedly been debated over almost two centuries. The numerous creeks and small rivers of spring alimentation are mostly oriented according to the tectonic pattern. During the Holocene, these streams deposited specific microbiolytic carbonates resembling somewhat travertine, but of biogenic nature, produced by bacteria and cyanobacteria. Thus, the term *Izhora paratravertines* was introduced. These paratravertines were most intensely formed during the first part of the Holocene. Under the name *calcareous tuff* (travertine), these rocks were used in the past for furnishing architectural sights of St. Petersburg. Paratravertines of various types are rich in paleontological remains of charophytes, mosses, mollusks, ostracodes, and insects. The study of these fossils provides a considerable body of information on the state of ecosystems, landscapes, and climate in the past. Many deposits of these carbonates are regarded as nature monuments, although their present state requires immediate interference of the international scientific community.

(3) Excursion on the Okhta River in St. Petersburg, guided by V.A. Shakhverdov (Karpinsky All-Russia Geological Research Institute).

The Okhta River is one of the most polluted rivers of St. Petersburg. In 2009, the official services controlling the state of environments found six sources of industrial contamination in the city. During the excursion, the water in the lower current of the Okhta River was examined by a geochemical multidetector. The probe allowed the measurement of specific electric conductance of water, pH, Eh, T, and concentration of dissolved oxygen, ammonium, and nitrites. The complex of data was shown which enable to define industrial and home contamination.

The second scientific stage of the 6th International Conference EMMM-2011 was held in Moscow on September 19–22, 2011, organized by the Borissiak Paleontological Institute of the Russian Academy of Sciences included excursion in the Orlov Paleontological Museum and eight scientific sections.

(1) Micro- and meioorganisms as indicators of environments (44 reports);

(2) Micro- and meioorganisms and the origin of life on the Earth (7 reports);

(3) Ecological changes and evolution of the biota in the Phanerozoic (20 reports);

(4) Prediction and interpretation of ecological problems (4 reports);

(5) Bacteria, micro- and meioorganisms (9 reports);

(6) Morphology and biodiversity of micro- and meioorganisms (4 reports);

(7) Degassing in the Earth biosphere and natural conditions (12 reports);

(8) Methodology and computer technologies (3 reports).

The major purpose of the 6th International Conference EMMM-2011 was to support the study of environments, in which the various microorganisms are used as indicators of contamination, habitats, and ecological changes in ancient marine basins.

The results reported in the field of ecology and paleoecology are based on various extinct and extant organisms: Foraminifera (25%), meiobenthos (17%), Radiolaria (14%), spores-and-pollen (14%), Bacteria (14%), Conodonts (6%), Ostracoda (6%), and Diatomea and nannoplankton (4%).

*Proceedings of the 6th International Conference "Environmental Micropaleontology, Microbiology, and Meiobenthology,"* Russia, Moscow, September 19–22 (Alekseev, A.S. and Afanasieva, M.S., Eds.), Moscow: Paleontol. Inst. Ross. Akad. Nauk, 2011) contain 103 reports of 187 authors and coauthors from 82 organizations of 16 countries:

111 leading scientists from 22 cities of Russia, including 24 institutes of the Russian Academy of Sciences, 13 state universities, and 3 federal and departmental research institutes, presented 76 reports;

76 leading scientists of 42 organizations of 15 foreign countries, including Belarus, Great Britain, Vietnam, Germany, India, Iran, Italy, Canada, Macedonia, Norway, Slovakia, USA, Turkey, Ukraine, and Japan, submitted 27 reports.

Among foreign delegations of the 6th Conference EMMM-2011, the Ukrainian colleagues took the first place, providing eight reports of 23 authors and coauthors from ten scientific organizations. Scientists from Turkey took the second place (4 reports of 12 authors and coauthors from 7 scientific organizations). Researchers from India took the third place (5 reports of 9 authors and coauthors from 3 scientific organizations).

Among institutes of the Russian Academy of Sciences, scientists of the Institute of Oceanology of the Russian Academy of Sciences took the first place, 17 authors and coauthors presented 13 reports. Workers of the Geologic Institute of the Russian Academy of Sciences took the second place, 16 authors and coauthors made 9 reports. Scientists of the Borissiak Paleontological Institute of the Russian Academy of Sciences took the third place, 7 authors and coauthors made 7 reports.

Researchers of Moscow State University were the first among universities of Russia, 11 authors and coauthors made 7 reports. Scientists of Tomsk State University took the second place, 4 authors and coauthors presented 4 reports.

The 6th International Conference EMMM-2011 in Moscow is of great importance for the development of fundamental research in the field of ecological features of habitats of extant and extinct microorganisms and offers considerable scope for gaining experience and establishment of scientific contacts with scientists throughout the world, and receiving new information on scientific achievement in the field of ecology, microbiology, and micropaleontology.

At the final session, participants of the 6th International Conference EMMM-2011 accepted the following resolution:

(1) to regard the 6th International conference EMMM-2011 in Moscow and St. Petersburg as successful;

(2) to conclude expedient to organize in the future international conferences devoted to (1) results of fundamental scientific studies in the field of ecology, microbiology, and micropaleontology, (2) significance of microorganisms as indicators of contamination of the environment and ecological changes in extant and ancient marine and freshwater basins;

(3) to recommend to organize the 7th International Conference EMMM in 2014 in Bucharest, Romania.

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