IUGS UNESCO	**2015 Meeting Report Form** **Project Number and Title:** IGCP 610 "From the Caspian to Mediterranean: Environmental Change and Human Response during the Quaternary"

MEETING:

Date: 22-30 September 2015
Place:Astrakhan, Russia

SCOPE AND RESULTS OF MEETING:

Title: The Third Plenary Meeting and Field Trip of IGCP 610
Date: 22-30 September 2015
Place: Astrakhan, Russia

Itinerary:

22 September: Arrival and Registration.

23 September: Field Trip 1. Archaeological complex "Selitrennoe Gorodische" (ancient settlement). Exposure of the Quaternary Caspian sediments near Selitrennoe vil.

24 September: Field Trip 2. Archaeological complex Gorodishche Samosdelka (ancient Itil settlement).

25 September: Field Trip 3. Sections of the Pleistocene deposits Cherniy Yar, Nizhnee Zaimische, Tsagan-Aman.

26 September: Field Trip 4. Sections of the Pleistocene deposits Lenino, Seroglazovka. Baer Knolls.

27-28 September: Technical sessions.

29 September: Field Trip 5. Volga Delta. Museum of Russian watermelon.

30 September: Excursions in the city of Astrakhan: Astrakhan Kremlin, Museum of Regional Natural History, Closing of the Conference.

30 September - 1 October: Departure from Astrakhan to respective countries.

The Program of the conference is enclosed and also available at http://www.avalon-institute.org/IGCP610/pdf/Programme_2015.pdf

The Third Plenary Meeting and Field Trip was organized by the M.V. Lomonosov Moscow State University, Astrakhan State University, Astrakhan Museum-Reserve, Russia, and the Avalon Institute of Applied Science, Winnipeg, Canada, and hosted by the Astrakhan Museum-Reserve. The Meeting and Field Trip were held in the Northern Caspian region in the city of Astrakhan and the Astrakhan region (Fig. 1).

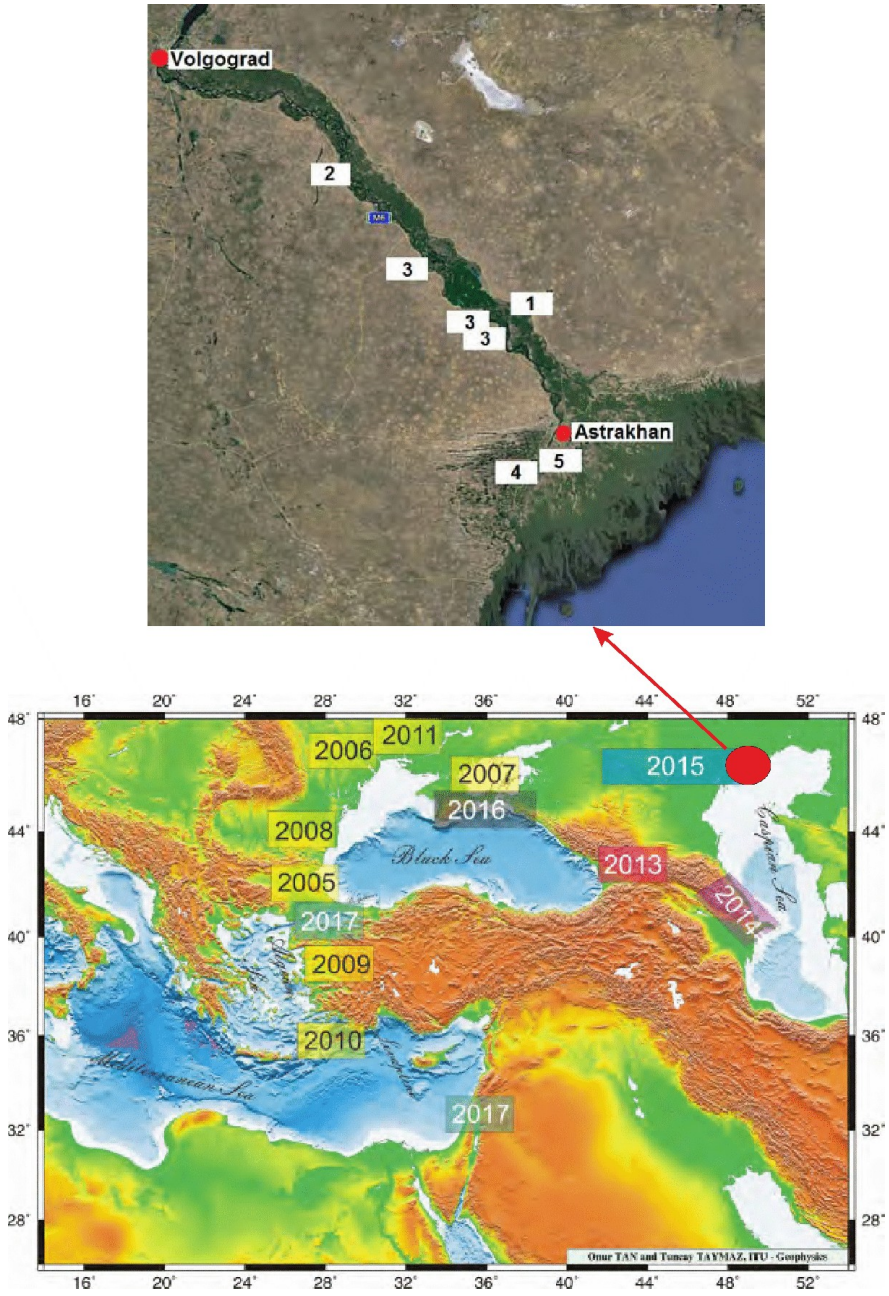

Figure 1. The Caspian-Black Sea-Mediterranean "CORRIDORS" (lower): in yellow are the locations of IGCP 521-INQUA 501 meeting and field trip sites (2005-2011); in other colors are sites to be studied by the present IGCP 601 Project: 2013 – Tbilisi, Georgia; 2014 – Baku, Azerbaijan; 2015 – Astrakhan (Lower Volga), Russia (marked in red circle); 2016 – Sevastopol (Crimea) and the Taman Peninsula, Russia; 2017 – Haifa, Israel, and Istanbul, Turkey. (upper): Map of the Lower Volga region with geological and archaeological sites to be visited during the Field Trips on September 25 (1), 26 (2), 27 (3), 28 (4), 29 (5) 2015.

The Astrakhan region extends along both sides of the Volga-Akhtuba floodplain for 400 km, and it is bordered on the east by Kazakhstan, on the north and northwest by the Volgograd region, on the west by the Republic of Kalmykia, and on the south, it is bounded by the Caspian Sea. Thanks to its unique geographical location, the Astrakhan region is a land of considerable natural contrasts.

Field trips were focused on the spectrum of Quaternary geological sequences exposed within sections of the Lower Volga area. This includes major exposures in the Volga valley between Astrakhan and Volgograd: Cherniy Yar – Nizhnee Zaimische, Kopanovka, Lenino, and Seroglazka. The conference participants were able to see deposits of the Baku, Early Khazarian, Late Khazarian, Khvalynian, and Novocaspian transgressions, and the continental sediments separating them: Singilsky, Chernoiarsky, and Atel. Participants were able to select samples for faunal, palynological, and other tests. They also observed the Baer knolls (named for Karl Baer, who described them for the first time in the 19th century), which are east-west elongated ridges in the Caspian Lowland, a unique natural formation that has no analogues in the world.

Archaeological tours were held at the main ancient sites of the region. The first is the archaeological complex "Selitrennoe gorodishche" (Saltpeter Settlement), which is located 130 km north of Astrakhan. In the XIII to XIV centuries, it was the capital of the richest nomadic state in the Middle Ages, Sarai-Batu, seat of the Golden Horde founded by Genghis Khan's grandson, Batu Khan. A natural outcrop of the Caspian Pleistocene sediments is situated on the Akhtuba coastal cliff near the archaeological complex, so it was also available for a visit. Another archaeological site of the region—Gorodishche Samosdelka (the Ancient Itil Settlement)—is located 45 km below Astrakhan on the right bank of the Old Volga river. The main part of the settlement is situated on an island, surrounded by dried up canals. Cultural layers of this medieval city, with a total depth of about 3–3.5 m, contain the artifacts of the Khazar Khaganate Culture, the golden age of the city Saksin (XI to XIII centuries) which predated Sarai Batu. There also is located the famous Museum of Russian Watermelon. September is the best time for this delicious fruit. Plans have been made to visit other archaeological and historical places in Astrakhan: the Astrakhan Kremlin, that was built between 580 and 1620, and the Regional Natural History Museum, which covers the history of the natural environment of the region and displays many of the paleontological finds from the Pleistocene deposits of the Volga valley, together with historical and archaeological objects.

Achievements of the Meeting

The Third Plenary Meeting and Field Trip made the following possible for the participants: (1) To discuss the actual status of the project and progress made by participants. Particular attention was paid to scientific approaches for integrating environmental, anthropological, ethnological, and archaeological data in order to trace the history of ancient humans from the Caspian to Mediterranean during the entire duration of the Quaternary. (2) To introduce young scientists, especially from the Eastern countries, to new analytical techniques and state-of-the-art interpretation of data. (3) Encourage east-west dialogue and integrate researchers from different countries into the international R&D community, as well as contribute to the preservation of cultural and religious heritage through the discussion of ancient cultures, civilizations, and their legends.

The two days of Technical Sessions were organized into five panels and five Oral/Poster sessions. Panel 1 was titled "PANEL 1: RECENT ECOSYSYTEMS AND PROCESSES"—moderators: Nelly Sergeeva (Russia) and Valentina Yanko-Hombach (Ukraine, Canada)—and included three ORAL presentations. The presentations covered a range of climate, precipitation and faunal migration in the "CORRIDORS". Panel 2 was titled "STRATIGRAPHY, PALEONTOLOGY, AND PALEOENVIRONMENTAL RECONSTRUCTIONS"—moderators: Nikolay Panin (Romania) and Andrey Chepalyga (Russia)—and included 15 ORAL presentations with two key-note talk given by Tamara Yanina and others (Russia) and Nikolay V. Esin and others (Russia, Ukraine, Canada). The presentations covered a range of topics on the processes of formation within the "CORRIDORS" and the Paratethys Sea-Lake degradation, origin and taxonomy of the Quaternary Ponto-Caspian foraminifera and mollusks, morphodynamics of loess watersheds, changes of landscape and migration of humans, correlation of marine and continental deposits, ecostratigraphy, etc. Panel 3

was titled "TECTONICS"—moderator: Nikolai Esin (Russia) and Hayrettin Koral (Turkey)—and included three presentations on the neotectonics of Anatolia in the crossroads of an evolving orogen (key-note), vertical movements of the coast and shelf of the Black and Mediterranean seas and their impact on coastal processes, and seismic-geotechnical hazard zonation. Panel 4 was titled "MODELING"—moderators: Nikolay Esin and Alexander Kislov (Russia)—and included two presentations devoted to modeling of climate and marine ecosystems. Panel 5 was titled "ARCHAEOLOGY, HISTORY, AND ETHNOLOGY"—moderators: Andrey Chepalyga (Russia) and Olena Smyntyna (Ukraine)—and included six presentations with a key-note talk by A. Chepalyga (Russia). The presentations were devoted to new data on the North Black Sea corridor of the first European migrations focused on the discovery of multilayered Oldowan sites in Crimea (key-note); reconstruction of the archaeological landscape of the western shore of the Caspian Sea at the end of the upper Pleistocene-Early Holocene; paleoanthropology of the Yamna-culture populations in the Kumo-Manych depression: craniological specificity of the Yamna culture people from the Lower Volga region; paleoanthropology of fossil hominins from the Levant and Iraq; and response of humans to global climate change in the NW Black Sea region at the Pleistocene-Holocene boundary.

The POSTER session included 34 poster presentations with wide range of subjects on geophysics, morphotectonics, structure and genesis of islands, remote sensing, transgressive-regressive sea-level changes and coastline migration, economy of Late Mesolithic–Early Neolithic communities with respect to climate changes, marine habitats, lithostratigraphy, paleogeography, palynology (diatoms, pollen, NPP), deepwater peloids, modern fauna of the anoxic zone as a remnant of the ancient anoxic biosphere, mud volcanoes, underground freshwater sources, micro-(foraminifera) and macrozoobenthic communities, environmental stress caused by the Danube discharge into the Black Sea, and the first evidence of Lower Paleolithic open-air sites in Eastern Georgia.

The Technical Sessions were followed by the Round Table that enabled participants to discuss the progress of IGCP 610 and to plan future strategy in running the project. One of the key problems that participants discussed was organizing the Fourth Plenary Meeting and Field Trip in 2016. According to our working plan, it should be held in Crimea. But due to the geopolitical problems (no need to discuss it here), this will be next to impossible to achieve. An alternative place is required. The most beneficial for the project would be to run the conference and field trip in Turkmenistan. However, it will not be easy to organize because Turkmenistan is a rather closed country. The assistance of UNESCO at a high administrative level is badly needed to achieve this goal (for more details see the Annual Report).

The five days of field trips (by bus) were led by prominent Russian geologists and archaeologists and were focused on the archaeological sites "Selitrennoe Gorodische," Gorodishche Samosdelka, and Pleistocene stratotypes and important outcrops Cherniy Yar, Nizhnee Zaimische, Tsagan-Aman, Lenino, Seroglazovka as well as Baer Knolls and Volga Delta (Fig. 1). For more information see the Field Trip Guide and reference to it.

Outcome of the Meeting

1. The 207-page Proceedings of the Third Plenary Meeting (http://www.avalon-institute.org/IGCP610/pdf/Proceedings_IGCP_610_2015.pdf) contain contributions from 107 scientists from two continents and thirteen countries; 77% of the contributors are from developing countries (Fig. 2), many of them belong to the category of young scientists and students (for names and affiliations see the Financial Statement). About 50% of participants are female.

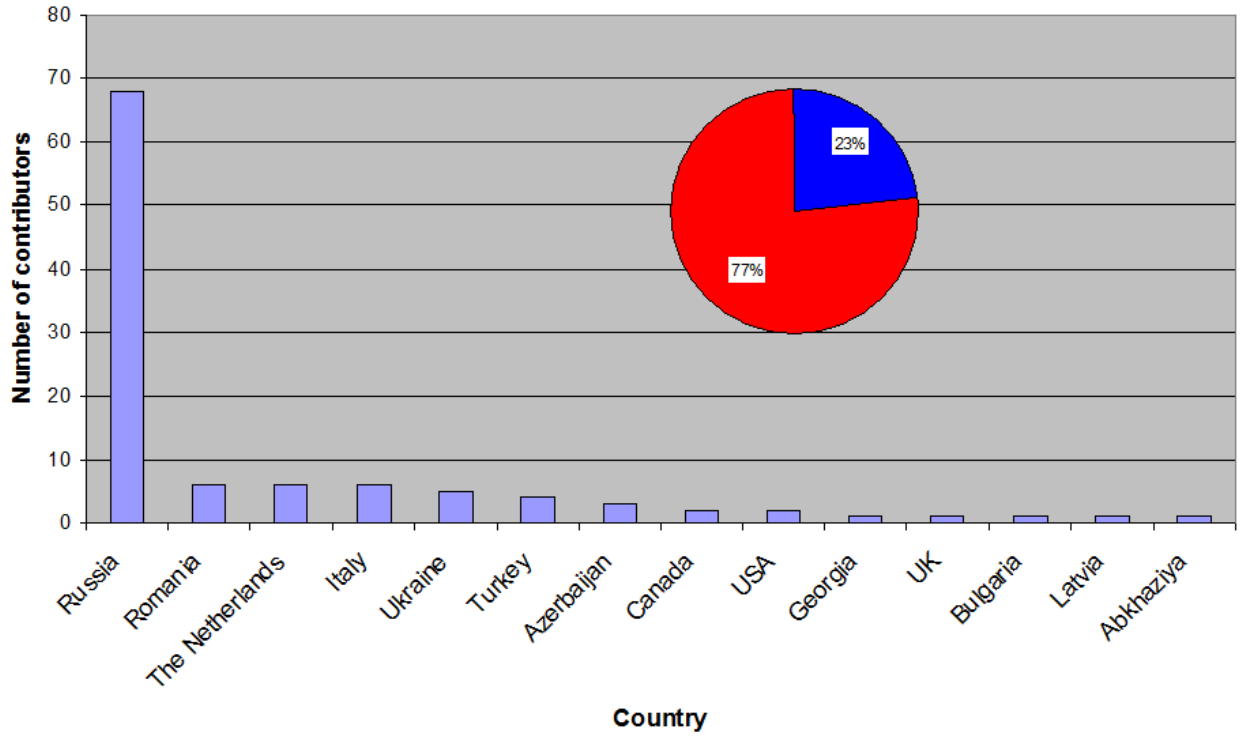

Figure 2. Number of countries and contributors to IGCP 610 Third Plenary Meeting and Field Trips. The circle shows the percentage of scientists from developing (red) and developed (blue) countries, respectively.

2. The 44-page Field Trip Guide describing the geological structure and Quaternary geology of the Lower Volga region and geological and archaeological sites to be visited during the Field Trips (http://www.avalon-institute.org/IGCP610/pdf/Field_Trip_Guide_IGCP_610_2015.pdf). The Proceedings of the Conference and the Field Trip Guide for this meeting will be sent to the IGCP Secretariat by post.

3. Special Volume of *Quaternary International* "**IGCP 610 III**" that will collect about 25 articles presented at the meeting. It is planned for publication in 2016.

4. The project generated much public information that is available on a number of websites and media showing its significant impact:

http://www.ocean.ru/content/view/2193/89/, *http://igcp610.onu.edu.ua/*, *http://igcp610.onu.edu.ua/germaniya,http://igras.ru/news/790*, *https://twitter.com/blackseastudies/status/319447691182620672*, *http://www.gia.az/view.php?lang=en&menu=1&id=1699*, *http://www.ims.metu.edu.tr/Sayfa.php?icerik=DuyuruOku&did=1075*, *http://meetingorganizer.copernicus.org/EGU2016/session/20759*, *http://lienss.univ-larochelle.fr/Carozza-Jean-Michel-Pr*, *http://newstes.ru/2015/09/27/pod-astrahanyu-sotrudniki-gibdd-otkopali-avtobus-s-inostrancami.html*, *etc.*

5. Preparation of a number of video films and photo galleries devoted to the Third Plenary Meeting and Field Trip of IGCP 610 is in progress. It will be uploaded on the project website shortly.

Overall, the meeting provided an excellent opportunity for international discussion of different methods and interpretations used to analyze the history of a huge geographical area from the Caspian to Mediterranean during the full duration of the Quaternary. It encouraged an exchange of

data and publications, as well as encouraged future collaboration between physical and social scientists over the Globe. The meeting brought together multidisciplinary scientists from all over the world, and in the process enhanced West-East scientific dialogue by providing a supportive background for collaboration regarding the correlation and integration of discoveries on the influence on humans of climatically/tectonically induced sea-level changes and coastline migration.

Signature of Project Leader and Date

Co-Leader  Prof. Dr. Valentina YANKO-HOMBACH

Co-Leader  Prof. Dr. Tamara YANINA

1 December 2015