Geoarchaeology in Wild Kurdistan – Scientists from the universities of Heidelberg and Munich conducting a drilling campaign on Lake Ganaw

Presently media in Europe report regularly on war, terror and refugees from the area of the Fertile Crescent in the Near East, where towards the end of the last glacial period more than twelve thousand years ago prehistoric people on the footslopes of the Zagros Mountains changed during the so called Neolithic Revolution from a non-sedentary way of life as hunter-gatherers to a sedentary way of life as farmers and herders, thus bringing forth our cradle of civilization. One of the presently few – though vulnerable – islands of peace in the region is the Kurdistan Region in northern Iraq. The landscape which is characterized by steppe- and Mediterranean climates provides an enormous wealth of cultural remains preserved in historic and prehistoric tell sites, i.e., settlement remains which over the millennia grew up above the natural land surface now emerging as conspicuous mounds within the landscape that are excavated and investigated by archaeologists from all over the world. However, in contrast to the archaeological wealth the comparably dry landscape holds hardly any natural archives which allow the continuous reconstruction of the past climate and environments, their changes through time and their interaction with (pre-)historic cultures. One such archive are the limnic sediments at the bottom of Lake Ganaw, a small karst lake, ca. 350 m in diameter, in the Rania plain at the footslope of the Zagros Mountains ca. 10 km southeast of the city of Rania. The German science Foundation (DFG) presently finances a drilling campaign on Lake Ganaw in order to gain cores of profundal sediments and to test their suitability for geoarchaeological analyses for the reconstruction of the palaeolandscape. The project is run by an interdisciplinary team of scientists from the Ruprecht-Karls-University Heidelberg (palaeobotanist Prof. Dr. Manfred Rösch, Institut für Ur- und Frühgeschichte und Vorderasiatische Archäologie; geomorphologist and luminescence dating specialist Dr. Annette Kadereit, Heidelberger Lumineszenzlabor, Geographisches Institut) and the Ludwig-Maximilians-University Munich (archaeologist Dr. Simone Mühl, Institut für Vorderasiatische Archäologie). Simone Mühl who got her PhD in Heidelberg in 2011 has carried out already several archaeological surveys and excavations in Iraqi Kurdistan. With the help of the drilling team Daniel Quentin, David Kleiner and Felix Wolter the drilling campaign was conducted from 22nd September to 7th October 2015. The campaign revealed much thicker limnic sediments than the two to four metres mentioned in the literature. Ca. 50 m below the water table and after having penetrated more than 18 m of sediment the technical limit of the hand-driven drilling equipment (Niederreiter / UWITEC piston corer) was reached. Now the geoarchaeologists hope that the sediment cores, gained in sections of 2 m length each and enclosed in plastic tubes of 6 cm in diameter, will be transported undamaged and undisturbed to the Palaeobotanical Laboratory of the Landesdenkmalamt Baden-Württemberg in Gaienhofen-Hemmenhofen on Lake Constance where they shall be preserved at a temperature of 4 °C to serve for the reconstruction of palaeoclimatic and palaeoenvironmental changes in Iraqi Kurdistan. Also with respect to the geomorphometry and the layering of the water body Lake Ganaw proved more complicated than expected; further investigations will be necessary on these issues. During the preparation of the field works and during the drilling works on Lake Ganaw the German scientists were supported in many ways by the Antiquities Directorates of Sulaymaniyah (director Kamal Rashid; Saber Ahmed Saber; Awaz Sehad Xaidan) and Raparin (director Barzan Baiz Ismail), as well as by the dean of the Faculty of Sciences and Science Education of the University of Sulaimani (UoS) Prof. Dr. Bakhtiar Aziz and the head of the Department of Geology Dr. Diary Mohammed. Without their kind help it would not have been possible to successfully accomplish the drilling campaign on Lake Ganaw. The close scientific cooperation shall be continued in the near future, e.g., by
mineralogical and geochemical analyses of subsamples from the sediment cores in the modern laboratories of the University of Sulaimani. If the transport to Germany will be according to schedule the sediment cores will be opened and inspected for the first time at the end of November 2015 in the laboratory of Prof. Dr. Achim Brauer at the Helmholtz Centre Potsdam (GFZ) in order to take few test samples for pollen analyses and numeric datings which shall give a first estimate of the time frame covered by the sediments and their potential for vegetation reconstruction as a basis for follow-up proposals for detailed analytical investigations. Not least in view of the actual political developments in the Near East, the German scientists are glad for the throughout positive experiences they made with many sincere people they met in the beautiful landscape of wild Kurdistan and they hope that their cooperation will also be effective as an – at least small – contribution to the further development of the presently flourishing education and research landscape of Iraqi Kurdistan. According to Prof. Dr. Bakhtiar Aziz talented students from Germany who wish to spend a term at the University of Sulaimani are most welcome. Courses are taught in Kurdish, and partly in English.

  From left to right: Dr. Simone Mühl and Dr. Annette Kadereit with Prof. Dr. Bakhtiar Aziz and Prof. Dr. Diary Mohammed on the shore of Lake Ganaw.

- Television report on 29th September 2015 on Kurdistan-TV: https://youtu.be/L67Wzg2IuQ
  The visual impressions give an idea of the drilling works on Lake Ganaw, also to viewers who do not understand the Kurdish language.