

European Association
of Vertebrate Palaeontologists

9th Annual Meeting
Heraklion, Crete, Greece
14-19 June, 2011

Program and Abstracts

editors

Alexandra van der Geer
Athanasios Athanassiou



Natural
History
Museum
of Crete
University of Crete

NCB naturalis

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of Vertebrate Palaeontologists**

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Host Committee

George Iliopoulos¹, Charalambos Fassoulas², John de Vos³,
George Lyras³, Alexandra van der Geer³, Olga Tzortzakaki¹,
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Program and Abstracts

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Because the area is classified as work terrain, it is closed off for collection activities. Fortunately the authorities did allow a test with a Mega Beach Cleaner for collection of sediments. This Mega Beach Cleaner collected the first fifteen centimetres of top soil in a trajectory of 2.5 km and deposited it into large bags which were then transported to NCB Naturalis for further research. To test the efficiency of the Mega Beach Cleaner against traditional surveys by trained people, we also conducted a regular survey of the research area.

The processing of the sediments collected by the Mega Beach Cleaner provided an excellent opportunity to give amateur palaeontologists a chance to work on the material and also to educate the general public. In total seventy amateur researchers helped us to sort twelve cubic metres of sediments, the results of which will be used for further scientific research. Another cubic metre was collected especially for scientific purposes and we were able to educate seven hundred children and their parents about the prehistory of the North Sea and have them involved in picking out and recognising bones and shells.

Museums' digitalized vertebrate collections as tools for educational scenarios for school students of compulsory education

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The Geological and Palaeontological museum of the University of Athens, based on the digitization project of a part of the Museum's collections, has created a trilingual interactive multimedia production designed in order to enhance the awareness, provision of information and education of school students mainly in matters of palaeontology. The aim of this production, under the title "Journey in Time and Space", was to support: a) the scientific literacy of school students and b) encourage cross thematic educational procedure in schools (Fermeli and Dermitzakis, 2008).

"Journey in Time and Space" through interactive activities lead to further questions for investigation which may be answered through examination of the "real" objects and information available at the museum. Especially, the vertebrate collection offers an excellent opportunity to combine exhibition material and digitalized collections in order to develop scenar-

ios for interactive educational multimedia applications for school students. Through an educational environment that promoted the development of observation skills, quest for information, decision-making procedures, critical thinking and systematization and following the spiral development of the material, two sets of activities were designed: one for Primary and one for Secondary education (Fermeli and Dermitzakis, 2010).

Through describing such initiatives, we hope to provide inspiration to other researchers to "open" scientific collections to school students, as well as to develop computer-supported collaborative learning environments in order to support geosciences literacy.

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GEOschools: a European project for innovative teaching of geosciences in secondary schools

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Teaching geology as a separate discipline in secondary school curricula has been progressively reduced during the last twenty years in most European countries. Within this unfavorable situation a proposal was made for an innovative "Geoscience teaching in secondary schools" (GEOschools) in the framework of a European research project. The main objective would be, by means of a thorough analysis of the current educational situation, to provide the European earth sciences education school community with advice, sup-

port, and different teaching aid instruments (Fermeli *et al.*, 2011). GEOschools aims to bring together geoscientists from universities, museums, geoparks, teaching training institutions and schoolteachers. Among the key results of the project is the development of teaching modules on specific geological subjects. The ultimate goal of this part of the project is to find effective ways of engaging students and geosciences teachers in a new learning approach, placing geology at the same level of other sciences in secondary schools. Geology is a science laboratory of which is Earth. For this reason, "field work" is selected as the main methodological background for the development of this topic. In order to test and evaluate the proposed modules some selected activities will be proposed to bring the teachers and practicing geoscientists together. This will include fieldwork in geoparks, exomuseums (e.g. Katharo in Crete, Greece) and geotopes, as well as teaching activities in museums and in the classroom (Meléndez *et al.*, 2009). GEOschools wishes to improve teacher's teaching and students' understanding of geosciences. Moreover, combining educational research and practice in the schools; ideas, knowledge and skills that it supports will contribute to the development of a quality lifelong learning and promote a European dimension in systems and practices in the field helping young people acquire the basic life-skills and competences necessary for their personal development, for future active European citizenship.

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Plio-Pleistocene small mammal diversity in the south of East Siberia

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Small mammals (insectivores, lagomorphs and rodents) are important components of modern mammalian faunas of Siberia. They belong at least to twelve families, including more than 28 genera. The studied region consists of two territories — Transbaikalia and Prebaikalia. In the past, small mammals were more abundant and diverse. The earliest record of extinct small mammals in the region is from the Late Miocene, characterized by predominance of archaic dipodids, lophocricetins and the presence of *Microtodon* and *Microtoscopes*. Early Pliocene faunas were more diverse, including taxa with wide Eurasian distribution, such as murids, *Hypolagus*, *Stachomys*, *Kowalskia*, *Sicista*, *Ochotonoides*, *Prosiphneus*, *Promimomys*. The latter two genera were dominant in the faunas. The Middle Pliocene was characterized by the reduction of siphneids and *Promimomys* and the increase and diversification of lagomorphs and rodents. For the first time, the arviculids *Mimomys*, *Villanyia*, *Pitymimomys*, the peculiar hamster *Gramovia* and the small sized *Cricetulus* appeared, whereas *Kowalskia* still existed. The characteristic features of the Late Pliocene are the explosive radiation and abundance of the ground squirrel *Spermophilus*, the first appearance of *Clethrionomys*, *Cromeromys* and *Allactaga*, the reduction of the rooted vole *Mimomys*. The cementless *Villanyia eleonora* and *Prosiphneus praetingi* were replaced respectively by the more advanced *V. klochnevi* and *P. youngi*. In the beginning of the Early Pleistocene, reorganization in the small mammalian faunas occurred. Almost all Pliocene rooted voles disappeared and *Borsodia*, *Allophaiomys*, *Terricola*, *Lasiopodomys*, *Eolagurus*, *Microtus* appeared and flourished. The observed biodiversity increase was probably caused due to a climatic change towards cooler and drier conditions. Faunal analysis indicates that during the Pliocene and Early Pleistocene southern Siberia was inhabited by common Transbaikalian and Prebaikalian taxa. In the Middle Pleistocene the first three above-mentioned genera disappeared. *Ellobius*, *Lagurus* and *Meriones* appeared due to the increase of aridity and decrease of temperature. During the Late Pleistocene the climate in the Transbaikal area became cold and arid, and in Prebaikalia cold, but less dry. Faunas differed significantly. In Prebaikalia inhabitants of tundra-forest-steppe or mammoth steppe landscapes were characteristic, whereas in Transbai-