Joint workshop of the working groups on the taxonomy of the Cenozoic macrobotanical record of Eurasia and on the taxonomy of Neogene palynomorphs

Sofia, October 4, 2012

Report

(Elżbieta Worobiec, Dimiter Ivanov, Torsten Utescher)

Topic: Atlas of Pollen and Spores of the Polish Neogene, Vol. 4 ***[presented by E. Worobiec]***

Volume 4 of this crucial work for identifying Neogene pollen and spores of the European record and for obtaining detailed information on their Nearest Living Relatives is going to be released soon. It will comprise a total of 133 plates and therefore has to be split into part 1 and part 2.

- Orders treated: Nymphaeales, Magnoliales, Arecales, Alismatales, Proteales, Santanales, Saxifragales, Vitales, Myrtales, Celastrales, Malpighiales, Fabales, Rosales, Fagales, Malvales, Sapindales, Cornales, Ericales, Garryales, Lamiales, Aquifoliales, Apiales, Asterales, and Dipsacales
- 213 morphospecies belonging to 74 morphogenera
- 6 new morphogenera, 41 new morphospecies, 26 nov. comb.
- Detailed information on NLRs of key taxa crucial for palaeoclimate and vegetation reconstructions

We are looking forward to see the atlas printed.

Topic: Non-pollen palynomorphs

- The potential of algal micro-remains (e.g. colonial green algae and zygospores of Zygnemataceae) was outlined (studies of A. Bertini and E. Worobiec)
- A. Bertini informed that she is involved in studies on non-pollen palynomorphs (e.g. algae) of international group of researches: COST (European Cooperation in the field of Scientific and Technical Research), PATERLAM (PAlaeo-Tools for Environmental Reconstruction and LAndscape Management). Send e-mail to Adele Bertini (abertini"at"geo.unifi.it) for more details.

Topic: Integration of diverse plant records - the prospects of joint studies *[presented by A. Bertini and E. Martinetto]*

It was underlined that NECLIME and co-operation between its groups provide an ideal frame to work on integrative approaches.

1) PCS

The working groups recommend the application of the PCS in different basins and on different types of floras

- Pre-requisite: Knowledge about sedimentary facies
- Comparison of models reconstructed from the same organ type between different basins
- Combination of models obtained from different organs for the same basin
- However: The PCS still needs calibration with modern data (work in progress: A. Bertini; A. Vassio; E. Martinetto)
    - E.g. palynology: analysis of surface samples; altitudinal elements (D. Ivanov)

2) Ecological transects – basin-wide

The vegetation existing in different regions should be compared based on "ecological transects" consisting of charts showing sketchy vegetation reconstructions. Such transects could be constructed for the Tethys (Italy, Greece / Bertini, Bruch, Martinetto, Mantzouka), Paratethys (Bulgaria, Hungary / Ivanov, Bozukov, Hristova, Tsenov, Hably, Erdei) and Cenozoic North Sea realm (Germany, Poland / Worobiec E., Worobiec G., probably Słodkowska, Utescher).

Prerequisites for such transects are a high number of sites per study area and availability of abundance of the components. In this context, interpretation of floristic elements could be revisited (e.g. interpretation of altitudinal elements).

Topic: Reference Collections – online resources for identification

The working groups recommend providing information on reference collections and important online resources for identification at the NECLIME website. The working group highly welcomes a possible exchange of reference materials with the herbarium of the Xishuangbanna Tropical Botanical Garden / Chinese Academy of Sciences kindly offered by our colleague Zhou Zhe-Kun. Other exchanges should be initiated.

- Please send information on links to collections / resources you would like to see on the NECLIME website to the coordinators of the working groups

Topic: Taxon complexes in the Cenozoic plant record

The whole plant approach continues to be a significant topic. Information on taxon complexes will be provided on the Palaeoflora website

Topic: NECLIME database - recent critique concerning CA and Palaeoflora climate data

- Currently a manuscript is in preparation aiming to explain again potential and limitations of the CA and the Palaeoflora Data Base

Topic: Plant Functional Types and biome modelling within NECLIME - recent advances

[presented by L. François]

- The 26 pft classification system (comprising shrub pfts) have been implemented in the CARAIB model. First model/proxy data comparisons using atmospheric data of a middle Miocene model run (xx) reveal very promising results.
- The approach reveals its potential in detecting errors concerning pft classification of fossil taxa (probability for the coexistence of pfts, cf. Francois et al., 2011).
- A newly developed classification system comprising 40 pfts (Erdei/Utescher) is presented allowing for considering more components important in Cenozoic vegetation, such as mangroves and tuft trees. 4 classes for hygrophytic / aquatic components are included. The additional functional types are only in parts suitable for modelling
- New modelling studies (work in progress)
    - Regional study focussing on Eurasia
    - Global study using different atmospheric model runs

Topic: Co-operation with AIQUA *[presented by A. Bertini]*

AIQUA, the Italian Association for Quaternary Studies, offers a variety of scientific activities that might be of vital interest for some of our members. The journal AMQ of the AIQUA, Alpine and Mediterranean Quaternary, invites related research or review paper. Please visit contact our colleague, Adele Bertini, if you require any further information. Corresponding links will be available on our website.

Forthcoming meetings

The working group on taxonomy of Neogene palynomorphs plans to meet again next year, in Bratislava. We will inform you.