

RESEARCH FIELD:

Palaeontology - Palaeobotany – Palaeocarpology – Palaeoecology

RESEARCH TOPIC:

The role of fruits and seeds in palaeoenvironmental and taxonomic studies

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RESEARCH DESCRIPTION:

Carpological research was developed at the Earth Sciences Dept. of Turin in order to obtain palaeoenvironmental and biostratigraphic information on some geological formations of NW Italy, which frequently yield fruit and seed assemblages. Two parallel carpological collections, fossil (CENOFITA) and recent (MODERN CARPOLOGICAL COLLECTION), have been built up, thus permitting us to carry out studies on both fossil and recent fruits and seeds with multiple ecological, environmental and taxonomic applications. The geographic area covered by our carpological studies is mainly represented by northern and central Italy. The time span considered is mainly from 6 Myr to the present. The aims of the research comprise: i) the extension of databases of the fossil and modern carpological collections, a massive compilation of data usable for several types of analyses; ii) the assessment of the complex relationship between the frequency of the fruits/seeds of a plant species in a sedimentary deposit and in the standing plant communities, as a fundamental step for the improvement of palaeovegetation reconstructions; iii) the improvement of the method for the analysis and graphical rendering into Plant Community Scenarios (PCSs) of the quantitative data collected from fruit and seed assemblages. This research provides useful results for both Earth Sciences and Biology, because it permits to build up a complex picture of the distribution of several plant species in space and time, which can be interpreted in terms of migration, extinction and microevolution. Therefore, the interpretation of such a picture allows, from one hand, to assess the age, the palaeoenvironment, and the palaeoclimatic context of some sedimentary successions on the basis of the record of particular plant taxa. On the other hand, the past records of the living plant species or their ancestors is of great value for phylogenetic studies and, when considering the geographic position, also for phylogeographic ones.

RESEARCH PRODUCTS:

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- Teodoridis, V., Bruch, A.A., Vassio, E., Kvaček, Z., Martinetto, E., 2011. Plio-Pleistocene floras of the Vildštejn Formation, Cheb Basin, NW Bohemia – new reconstructions of vegetation and climate. 12th Annual NECLIME Meeting 27th-30th September 2011, Bucharest. Program and Abstracts. Anuarul Institutului Geologic al României, Geological Institute of Romania 77, 31-32. ISSN 0250-2933.
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- Vassio, E., Martinetto, E., Friedrich, M., 2008. Dendrochronological evidence for simultaneous tree-growth in two Pliocene forests of NW Italy. In: *Terra Nostra*, Abstract Volume. Bonn, Germany, August 30 – September 5 2008, BERLIN: GeoUnion Alfred-Wegener-Stiftung, vol. 2, 294-295, ISBN/ISSN: 0946-8978.

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