



The Micropalaeontological Society

5th Silicofossil and Palynology Joint Meeting

Florence, 15th -16th September 2016

Abstracts Volume



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FLORENCE, 15th - 16th SEPTEMBER 2016

**"Silicofossil and Palynology Joint Meeting for Advanced
Research in Biostratigraphy, Palaeoceanography and
Palaeoclimatology"**

ABSTRACTS VOLUME

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**PALEOBOTANICAL ASSEMBLAGE FROM THE LOWER JURASSIC
AMBER BEARING LEVELS FROM THE ROTZO FORMATION
MONTI LESSINI (VENETIAN PREALPS, NORTHERN ITALY)**



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The Rotzo Formation (Lower Jurassic) is famous for its fossiliferous content, including plant fossils that have been collected and studied since the XIX century. The Formation is composed of bioclastic limestones and marls, deposited from shallow marine to lagoonal environments in the tropical zone. Of particular interest is the recent discovery of fossil resin (amber) in the Bellori section (Lessini Mountains, Verona). This section is about 20 m thick and composed mostly of marine limestones. The limestone is well stratified, with beds of 10 cm to more than one metre thickness. Intercalated in the limestones are clayey levels 3 to 40 cm thick, sometimes yielding well-visible coal and charcoal fragments.

The amber was found as millimetre-sized fragments in two clayey levels intercalated in the limestones. It is blackish to red-brownish in colour and can be subdivided, according to its size and shape, into droplets and tubular-shaped structures about 10-15 μm in diameter.

The palynological assemblages from the two clayey levels yielding the amber contain abundant *Classopollis* and trilete spores. *Classopollis* was produced by cheirolepidiaceae conifers that were probably well adapted to both wet and dry climates in a coastal area. The trilete spores in the plant assemblage are more diversified and belong to sphenophytes, horsetails, lycophytes and ferns. The dominance (more than 50%) of trilete spores (e.g., *Deltoidospora*) suggests abundant freshwater, corresponding to a general humid climate. A nearby marsh environment is inferred by the presence of freshwater algae such as *Botryococcus* and *Pseudoschizaea*; the latter is reported for the first time from the Lower Jurassic.

Some clayey levels yielded many very well-preserved cuticle fragments. They are generally thick, with a high number of slightly sunken stomata complexes on both sides of the leaves. These cuticles are currently under study: preliminary data suggest that most cuticles belong to *Pagiophyllum* cf. *rotzoanum*, a cheirolepidiaceae conifer, but the diversity in the cuticle assemblage is high. The exceptional preservation of the cuticles and other palynomorphs suggests negligible transport after shielding from the parent plants, and sedimentation taking place in calm water, free from wave action and surface disturbance, as well as sedimentation in low-oxygen conditions. Some of the clayey levels yielded also numerous pieces of charcoal with well-preserved vascular tissues.

Sedimentological and palynological analyses suggest for the amber-bearing clayey levels a lagoonal palaeoenvironment with humid climate, comparable to the present-day *Taxodium* swamp or cypress swamp and a bahamian-type marine environment, with the additional influence of monsoonal climate as in modern southern Asia.