

BOTANICAL AFFINITIES OF SPORES AND POLLEN FROM THE TRIASSIC OF THE SOUTHERN ALPS

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Spores and pollen are produced in large numbers by plants and distributed by wind, water or animals up to thousands of kilometers away from the source area. Due to their high number and high preservation potential, they are particularly suitable to reconstruct past environments and climate. This works very well in relatively young sediments containing spores/pollen of still living plants or pollen of angiosperms. However, the older the rocks, the higher the percentage of spores and pollen originating from extinct plants, and therefore with unknown biological affinity. In order to reconstruct the botanical affinity, it is necessary to identify the original plant, and in particular the corresponding reproductive organs. In the Dolomites and the Southern Alps in general, there are a number of fossiliferous localities (Kühwiesenkopf/Monte Prá della Vacca, Piz da Peres, Rifugio Dibona, Dogna, Recorao) with fossil plants from the Triassic in an exceptionally well-preserved state of conservation. Dozens of different species of horsetails, lycophytes, ferns, seed ferns, cycads and conifers were found, always containing vegetative organs (stems, branches, leaves) but often also with the presence of male and female reproductive organs. Micro- and megaspores have been found in situ in sporangia of the sphenophyte *Equisetites mougeotii*, as well as the lycophytes *Selaginellites* and *Isoetites*. Several fertile fronds of possibly osmundaceous ferns (*Gordonopteris lorigae*, *Scolopendrites grauvogelii*, *S. scolopendrioides* and *Anomopteris mougeotii*) have yielded isospores. Cones attached to a well-preserved conifer shoot assignable to *Voltzia recubariensis* yielded bisaccate pollen. The detailed study of these reproductive organs permits to identify the palaeobotanical affinity of a considerable number of spores and pollen types previously known only dispersed in the sediment.