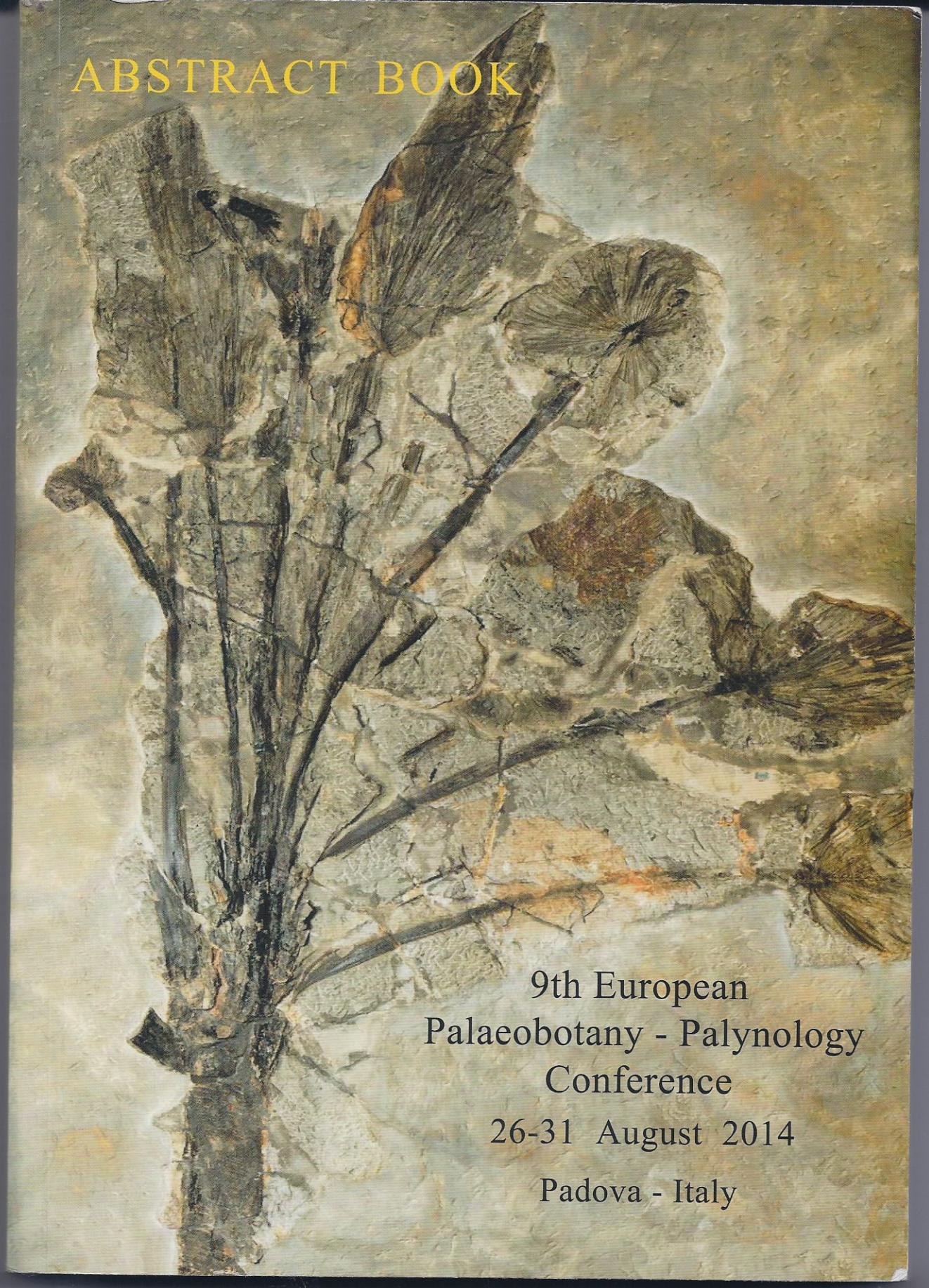
# ABSTRACT BOOK



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for the last 70 years, accompanied by high and stable sedimentation rates. AMS $^{14}C$ dates all lie within the same range; we interpret this as the result of a fluctuating reservoir effect in an undisturbed setting. We extrapolated the age of the core to ca 300 years. Sedimentary analyses also show relatively stable lake sedimentation during the last 300 years. Multivariate statistics distinguish two main pollen accumulation zones. Zone 1 covers the time between 1700 AD and the early 1900s and shows minor multidecadal variations in pollen composition. The subsequent Zone 2 spans the time until 2012, when the core was taken. The pollen record reveals a decrease in herb pollen starting ca 150 years ago and stabilizing at low level ca 100 years ago. The decrease is interpreted as the end of the Little Ice age in the region.

## A Comparison of Western and Northern Gondwanan Lower Silurian Acritarch Assemblages

TALK IN SESSION S37

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Diverse and abundant acritarchs occur in the middle-upper Llandovery Vargas Peña Shale of the Itacurubí Group, Paraguay, and Llandovery Qusaiba Member of Qualibah Formation, Saudi Arabia. The Vargas Peña Shale palynology samples were collected from the Galeano Quarry. Published graptolite and trilobite data from this locality indicates that the section is late Rhuddanian to early Telychian. Chitinozoans were interpreted to be of a similar age. The Qusaiba Member, dated by palynology and graptolites and depending on the locality, spans the Llandovery. Of interest are representatives the acritarch *Fractoricoronula*, which has morphotypes that occur in both areas. The FAD of *Fractoricoronula* n. sp. is within the early Telychian *Angochitina macclurei* chitinozoan biozone of Saudi Arabia and ranges into the overlying *Plectochitina longicornis* biozone. The specimens from Saudi Arabia that have been called *Veryhachium checkleyense* or *Fractoricoronula* n. sp. and ?*Dateriocradus monterrosae* from Libya are superficially similar to many of the Paraguayan specimens, but lack their irregularly distributed, small hair-like spines present on the processes and vesicle. The Vargas Peña samples contain *Domasia elongata/trispinosa* and would indicate an age no older than Telychian, and the Libyan samples are dated as no older than late Aeronian (age ranges that could overlap that of the Saudi *Fractoricoronula* n. sp.). The implications of this apparent paleogeographic difference raise questions as to the hierarchical significance of ornament in taxonomy. Should these species be placed in the same genus, or is a new genus required for specimens bearing hair-like spines (e.g., *Veryhachium* vs. *Villosacapsula*). Another acritarch that occurs in both areas is a *Leiofusa bernesgae*-like netromorph that has an encircling excystment structure that is displaced toward a pole, not medially located as in the type. An unnamed *Pterospermella* species, with a large central body and narrow flange is also present in both, areas but is morphologically and stratigraphically less well-known. At the generic level the assemblages from Paraguay and Saudi Arabia are similar. Representatives of *Ammonidium*, *Arkonia*, *Beromia rexroadii*, *Carminella maplewoodensis*, *Cymbosphaeridium*? sp., *Dactylofusa*, *Diexallophasis*, *Domasia*, *Duvernaysphaera, Eupoikilofusa*, *Geron*, *Leiofusa*, *Multiplicisphaeridium* spp., *Neoveryhachium neocarminae*, *Onondagella*, *Pteroverricatus*, *Sol*, *Tunisphaeridium* and *Visbysphaera* occur in both areas. *Crassiangulina* and *Dilatisphaera* are reported from the Qusaiba, but not from the Vargas Peña. At the species level, the similarity of the assemblages decreases.

## Palynological studies of Neogene palaeosinkhole deposits as a tool for palaeoenvironmental reconstruction – new examples from Poland

TALK IN SESSION S22

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Palynological studies of fillings of Neogene palaeosinkholes from the Opole region, Upper Silesian Upland, SW Poland were conducted. The studied deposits originate from two palaeosinkholes developed within Middle Triassic limestones that