Philippe, Steemans

ipc2008_c556_00878_philippe

Abstract title:

An Ordovician cryptospore and trilete spore assemblage from Saudi Arabia

Abstract:

The QSAIBA shallow core hole in NW Saudi Arabia penetrates a sequence of Ordovician-Silurian rocks. This study concentrates on the Sarah and Qasim Formations, below the Qalibah Formation (Qusaiba Member) that is Llandovery (Aeronian) in age. A detailed palynological analysis of these formations has been undertaken including spores (this study), chitinozoans (Paris *et al.*, IPC, Bonn 2008) and acritarchs (Le Hérissé *et al.*, IPC, Bonn 2008). Four assemblages of chitinozoans have been distinguished, dating the oldest samples as late Caradoc or earliest Ashgill and the youngest as Rhuddanian in age. Acritarchs suggest similar ages. The forty studied samples all produced rich assemblages of well-preserved palynomorphs of low thermal maturity (yellow to orange in color). They are dominated by marine elements, but most of them also contain spores. The spore assemblages contain the classical assemblages of cryptospores well-known in many coeval localities on the Gondwana and Euramerican plates. Envelope-enclosed cryptospores are abundant (e.g., *Segestrespora* spp., V*elatitetras* spp.). Naked monads are less frequent (e.g., *Gneudnaspora* spp.). Of interest is the occurrence of a new genus of quadrahedral tetrads. It is similar to the ?alga *Quadrisporites*, but has a thicker wall, is sometimes enclosed within an envelope, and never has an operculum similar to that seen in several species of *Quadrisporites*. Identical specimens of this new genus have also been observed in the Llandovery from Paraguay. The most interesting aspect of this study is the discovery of laevigate and ornamented trilete spores that occur in most of the samples. The assemblage of trilete spores is composed of specimens of laevigate *Ambitisporites*, *Synorisporites* ornamented either with low verrucae or convolute muri and a ?*Synorisporites* or *Aneurospora* ornamented with grana or small verrucae. These are the oldest trilete spores known. Hitherto, the earliest accepted record of trilete spores was of extremely rare small *Ambitisporites* from the Hirnantian of Turkey. In general, rare *Ambitisporites* have been reported in the Rhuddanian and lower part of the Aeronian, becoming more abundant in the upper Aeronian. *Archaeozonotriletes* makes its appearance in the Telychian and the earliest ornamented trilete spores (*Synorisporites* spp.) are reported from Homerian layers from the UK. Some specimens observed in Saudi Arabia seem to be similar to the UK ones. This discovery suggests that our conception of the primitive vegetation and its terrestrialization has to be re-evaluated (Wellman *et al.*, IPC, Bonn 2008).

Pref. Session: 40. Miller/Steemans/Wellman: Paleozoic palynology of the Arabian Plate and adjacent areas

Pref. Presentation: oral

Author(s)

University	Name	Country	Organization	Email
	Philippe, Steemans	Belgium	University of Liège	p.steemans@ulg.ac.be
	Charles, Wellman	United Kingdom	University of Sheffield	

Merrell, Miller	Saudi Arabia	Saudi Aramco
Mansour, Al-Ruwaili	Saudi Arabia	Saudi Aramco