

uniformly. If H1 cross-linking played a significant role one would anticipate that some rearrangement of chromatin and banding would occur when this histone was removed. If the chromosomes are then treated with trypsin, banding is produced (3-5). (ii) G banding can be produced in chromosomes where all the histones have been retained by prior fixation in formalin (4).

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the ascocarp may lack septal pore swellings (3), their presence has been demonstrated in vegetative hyphae of an imperfect fungus with ascomycetous affinities (2). The septal pore swellings of basidiomycetes are probably not a part of the cross wall but resemble vacuoles, and they are absent in dead cells (4). Thus they may be absent from fossilized basidiomycete septa.

The author points out that species of the ascomycete *Tuber* are reported to bear clamp connections. However, neither the presence of clamp connections in *Tuber* nor the analogy between crossers of the ascomycetes and clamp connections of basidiomycetes has been fully accepted (5). The presence of a free-living dikaryophase in a complex organism like *Palaeosclerotium* would be most unusual, as it is absent from all but a few simple ascomycetes, but is typical of basidiomycetes.

*Palaeosclerotium* could represent more than one organism, as noted by Dennis. He interprets figure 1C (1) as demonstrating an organic connection of clamp-bearing hyphae to the fruiting body, which is crucial to his argument, but this is not clear in the micrograph. Interpretation of this fossil as possessing features of both these fungal groups must be viewed with caution.

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## On *Palaeosclerotium* as a Link Between Ascomycetes and Basidiomycetes

Dennis (1) suggests that a fossil *Palaeosclerotium* is a link between the ascomycetes (Ascomycota) and basidiomycetes (Basidiomycota). He does not provide a convincing case that this organism is intermediate between these two fungal groups. Septal pore swellings are illustrated and interpreted as dolipores characteristic of septa of dikaryotic hyphae of some basidiomycetes. However, septal pore swellings are also found in some

zygomycetes, ascomycetes, imperfect fungi, and monokaryotic hyphae of many basidiomycetes (2), which makes it hazardous to interpret these structures as characteristic of basidiomycetes. What is unique to many members of the latter group is the septal pore cap, a modified form of endoplasmic reticulum which surrounds the septal pores and is unlikely to be preserved in the fossil record. Although the nonascogenous hyphae in

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