

Introduction

All of the assemblages are poorly preserved. The grains are frequently broken or corroded and the finer morphological details may be obliterated. This poor preservation often prevents a reliable specific identification although the objects may be referable to a genus.

All of the samples are cuttings so the assemblages must be interpreted with extra care. The top of the range of diagnostic species is probably more reliable than the first appearance for the former will be unaffected by cavings or carry down. The top of the range is not fool-proof, however, for spores and pollen may be re-worked into younger sediments.

Diagnostic species may be limited or absent from an assemblage. Under these circumstances, the nature of the assemblage as a whole may indicate the zone, although with less confidence than if the determination is based on diagnostic species. Confidence is further reduced if this approach must be used for cuttings.

SPORE POLLEN ZONATION.

Spore pollen zonation follows Stover & Partridge (1973). Partridge (1976) modified the ages of the zones somewhat and subdivided some of the zones. The Lower *N. asperus* Zone of Stover & Partridge (1973) is subdivided into an older Lower and a younger Middle *N. asperus* Zone, without diagnosis or description (Partridge 1976). A discussion of the Middle *N. asperus* Zone in Stover & Partridge (1982) shows that it is based on the species which first appear in the upper part of the Lower *N. asperus* Zone (in Stover & Partridge, 1973), e.g. *Triorites magnificus*. This discussion in Stover & Partridge (1982) is used as a diagnosis of the Middle *N. asperus* Zone.

Partridge (1976) and Stover *et. al.* (1979) list subdivisions to the *M. diversus* Zone without diagnosis or description. Under these circumstances, subdivision of the *M. diversus* Zone is not possible.

Spores and pollen identified are listed in Table 1 and the ranges of diagnostic species shown in Fig. 1.