

The assemblage from 4600 feet is dominated by specimens of the acritarch *Epicephalopyxis indentata* and all other palynomorphs with the exception of *Nothofagidites emarcidus* are rare. Because no zone diagnostic spore-pollen were found, this assemblage is placed in the Middle *N. asperus* zone primarily on the presence of *Hystriosphera ellipticum*, which has been recorded from other assemblage containing diagnostic Middle *N. asperus* spore-pollen. *Operculodinium centrocarpum* was identified at 4600 feet.

Lower *Nothofagidites asperus* Zone - The assemblages from sidewall cores 26 and 24 at 5037 and 5195 feet, respectively, are allocated to this zone. Preservation in both assemblages is good to fair, species diversity is moderate to rather high for this part of the section, and neither sample contains dinoflagellates. Spore-pollen from 5037 feet are dominated by specimens of *Nothofagidites* spp., but not overwhelmingly so, and proteaceous pollens are fairly common. Most species of angiosperm pollen are represented by very few specimens. The co-occurrence of *Proteacidites ornatus*, *Tricolporites moultonii* (neither known above the Lower *N. asperus* zone) and *Tricolpites thomasi* (does not occur below this zone) justifies the Lower *N. asperus* zone assignment.

The assemblage from 5195 feet contains about the same number of species as that from 5037 feet, but it has fewer specimens. It is placed in the Lower *N. asperus* zone because of the combined occurrence of *Dryptopollenites semilunatus*, *Gothanipollis* sp., *Periporopollenites magnus*, *Proteacidites alveolatus* and *Tricolporites delicatus*. No specimens of *Proteacidites pachypolus* were found in the assemblage and specimens of *Nothofagidites* spp. are more numerous than those of *Haloragacidites harrisii*.

*Proteacidites asperopolus* Zone - Palynomorph assemblages from sidewall cores 23 at 5415 feet and 22 at 5610 feet are abundantly fossiliferous with moderate to high species diversity. Preservation is quite variable ranging from fair to excellent with most specimens being well preserved. The assemblage at 5415 feet is placed with the highest confidence in the *P. asperopolus* zone because it has both the qualitative and quantitative characteristics of the zone. There is, for example, a decided reduction in the relative abundance of *Nothofagidites* - both in specimens and species, with a reciprocal increase in the relative abundance of *Haloragacidites harrisii*. Specimens of *Cupanieidites* spp. and *Myrtaceidites* spp. are fairly common and proteaceous pollen are amply represented. In addition, specimens of *Proteacidites pachypolus* and *Santalumidites cainozoicus* are frequent. The assemblage also contains a variety of undescribed pollen, of which some are sufficiently distinctive to warrant description. Species identified in the assemblage that are not known to occur below the *P. asperopolus* zone in the Bass Basin are *Milfordia homeopunctatus*, *Monocolpites marlinensis*, *Proteacidites asperopolus*, *P. plemmelus* and *Tricolpites incisus*. *Myrtaceidites tenuis* and *Proteacidites grandis* have their last (youngest) occurrence in the sample at 5415 feet.

INTERPRETIVE