Figure 2.22. Burrow molds taken from fossiliferous siltstone facies. Burrows are distinguished by their circular to ellipsoid cross-section and are typically filled with fine sand and have silt and sand accreted to the outer surfaces (locality WR). Penny for scale.

Figure 2.23. Outcrop surface of fossiliferous shale. Note abundant fossil material including crinoid ossicles (1), ramose bryozoans (2), and brachiopod (3) fragments (locality WR) . Penny for scale.

Figure 2.24. Core section showing nature of fossiliferous siltstone facies. Fossil fragments are white (arrows) in core and the siltstone is blocky to massive. Also visible are horizontal burrows (B); (locality C5).

The lenticular bedding observed in cores and on fresh outcrops is the result of millimeter- to centimeter-scale laminations and lenses of fine sandstone within the finer siltstone. Faint, millimeter-scale ripple cross-laminations occur in the sand lenses in core and on fresh outcrop. Although no body fossils are present in this facies, horizontal burrow molds occur in most sections (Figure 2.25). The burrows are most visible in core and appear as circular to ellipsoid sandstone lenses in cross-section. These burrow forms typically distort and cross-cut laminations and lenticular bedding. The abundance of burrows is greater in the Island Creek siltstones, whereas the middle Farley siltstones have fewer burrows and much finer laminations (2 to 8 mm in the middle Farley v. 5 to 15 mm in the Island Creek) and lenticular bedding (Figure 2.25).

Environmental Interpretation

Reineck and Singh (1980) stated that lenticular bedding requires conditions of current or wave action depositing sand, alternating with slack-water conditions when mud is deposited. Furthermore, they concluded that it occurs primarily in subtidal zones and intertidal zones. Lenticular bedding is also a common feature of delta-front environments where sediment supply and flow strength fluctuate (Tucker, 1991).

Sedimentary structures similar to those observed in the middle Farley and Lane-Island Creek are found in the modern Mississippi delta. Moore and Scruton (1957) noted the presence of laminated to lenticular bedded sediments (their regular to irregular layers) in the Mississippi delta and they noted that these structures were present in two bands of sediments surrounding the delta in waters 6 to 300 feet deep. Additionally, they noted that such fine sedimentary structures as laminations and lenticular bedding are highly vulnerable to destruction and are most likely to be preserved in an environment which has rapid deposition or very few organisms (Moore and Scrunton, 1957).