



Figure 14 (on this and facing page). Thin-section micrographs. A, La Lajilla, upper Maastrichtian Mendez shale. B, La Lajilla, bubbly calcite spherules and limestone fragments (Unit I). C, Basalmost Velasco shale. D, Silty limestone (cf. Fig. 15, 112 cm) poor in foraminifers. E, Coxquihui, Mexico. Calcitic, bubbly spherule. F, La Ceiba, Mexico. Bubbly spherule composed of clay minerals with tar filling. Matrix is rich in coarse quartz grains and orbitoid fragments. G, H, Beloc, Haiti. G, Lowermost Paleocene chalk, poor in foraminifers. H, Uppermost Cretaceous chalk, rich in planktic foraminifers.

situation that might easily be mistaken for repeated sediment-depositional events followed by longer periods of burrowing. An *Ophiomorpha*-type burrow penetrates up to 50 cm below the top of the clastic complex (Fig. 21). These burrows consist of 1-cm-diameter, up to 3 m long, frequently branching, usually straight horizontal tubes, which follow the thin silt layers in between Unit III rippled sandstone layers. The horizontal tubes radiate from a central bundle of vertical burrows, observed at El Peñon to penetrate through several sandstone layers. The burrowing shrimplike animal is apparently capable of penetrating 50 cm down through sand layers before spreading out. Thus as far as we can establish, these burrows also *postdate* the deposition of the K/T sandstone unit. We assume that similar *Ophiomorpha*-type burrows at the same position in the Brazos River K/T clastic layer originate the same way, although there we did not observe the vertical central tubes.

The basal 2.75 m of Unit II at El Peñon are characterized by massive bedding, without any clear sedimentary structures except some water-escape structures and faint parallel laminations. A similar lack of sedimentary structures is also common in Unit II of nearby K/T outcrops Las Bruselas, Porvenir, Rancho Nuevo, La Sierrita, Loma las Rusias, and Los Ramones (Alvarez et al., 1992b). Apparently this massive bedding is shared by K/T outcrops in the northeastern Mexico area but is absent farther south. The water-escape structures indicate rapid deposition of massive sand or leading to massive sand by obliterating the earlier sedimentary structures.

Mesa de Llera, Mexico

A few hundred meters east of the microwave tower on the Mesa de Llera, next to the road between Ciudad Victoria and