

Geoarchaeology

Karl W. Butzer

Karl W. Butzer has recently described the nature of cultural and mineral sediment accumulation in settlement mounds, in his volume *Archaeology as Human Ecology*. Such materials include organic-cultural refuse, collapse rubbles of mud brick and the like, as well as water and wind-laid beds. The rate and type of build up differs on living floors, in streets and alleys, or in and around community structures, such as civic buildings, walls, terraces and drainage systems. Furthermore, during times of demographic expansion, construction in a village mound outweighs decay, so that garbage, or collapse rubbles due to accident or selective razing, show little net accumulation because they are cleared away and dumped elsewhere. But during times of progressive demographic decline or catastrophic destruction by natural or human disasters, garbage and collapse rubbles build up and are then affected by running water, by biogenic agents, and by wind. In other words,

mound sediments can be used not only to identify the horizontal distribution of activity areas but also the vertical record of demographic processes.

Once abandoned, a mound is slowly lowered by compaction and weathering, as well as by erosion through gravity movements, surface water, and wind; such sites are frequently also used as quarries for rock, mud, pottery temper, and fertilizing compounds; finally, shifting streams may also undermine and erode a mound. As the topographic form is gradually flattened, potsherds move downslope and initially concentrate around the lower periphery of a mound, where trampling reduces them in size; eventually the sherd debris is increasingly buried within waterlaid sediments or turned down into the soil by plowing. Such insights can significantly aid in archaeological surface surveys, in selecting those parts of a mound best suited for informative test excavations, and in interpreting the long-term settlement history recorded within a mound.