Natural and Cultural Landscapes in the Past Reconstructed by Pollen Analysis

Abstract

Monuments and settlements inform us about our ancestors' activities and way of life, but the earth finds give little information about the landscape and how nature was exploited, and former human activities may even in some cases have left no such traces. Pollen analyses from long time series from lakes and bogs may, on the contrary, bring information about the natural vegetation, the extension of open areas produced by man and his methods of the exploitation of the natural resources at various time.

Pollen diagrams from large lakes or bogs provide an average picture of natural vegetation and human activities on a regional scale, whereas diagrams from very small wet hollows or soil yield a more precise picture of forest composition and human exploitation in the immediate vicinity of the site.

Naesbyholm Storskov on Sjaelland (Denmark) is rich in prehistoric monuments and field systems. A very small kettle hole, which contains a pond, was selected for examination. A prehistoric field extends to the edge of the hollow ; a colluvial layer derived by plowing stretches across the hollow and is buried in the peat.

The earliest natural vegetation recorded was late-glacial tundra with dwarf birch and juniper. In the early Holocene natural forests of pine and birch, hazel, and lime and hazel succeded each other. Natural forest occurred again in middle Subboreal time (lime, oak and ash) and in late Subatlantic time (beech).

Human activities were traced in early Subboreal time (Early Neolithic), and Late Subboreal and Early Subatlantic time (Late Bronze Age, Pre-Roman and Roman Iron Age).

The oldest cultural phase occurs immediately after the decline of the elm curve. Lime pollen predominates, and practically no pollen from herbaceous plants occurs, but the layers are rich in charcoal dust. Apparently only lime trees were left around the hollow, and all other vegetation was cleared by burning. The purpose of this activity was probably to provide leaf fodder by shredding of the lime. Shredding was formerly a widespread method for providing leaf fodder by the cutting of adventitious twigs along the whole trunk of the trees, except for the tree tops. The shredding activity was succeded by a grazing phase ; lime was replaced by hazel, oak, ash and alder, and openings

with grasses, plantain and other herbs were browsed by cattle. These human activities belong to the Early Neolithic and probably lasted some hundred years each. The area was then abandoned and was uninhabited for about two thousand years.

The field adjacent to the hollow was established in the Late Bronze Age and persisted until shortly after the Birth of Christ, according to radiocarbon datings. Pollen from perennial weeds such as grasses, plantain and sorrel predominates, and cereal pollen is scarce probably because few pollen grains are released from cereals other than rye, which was not grown at the time. After the abandonment of the field next to the small hollow, oak and hazel invaded, and openings in the forest were browsed by cattle. This activity persisted for some centuries ; the area around the hollow was then abandoned by man and was invaded by beech forest.

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