

## THE PERIGLACIAL VEGETATION IN FINNISH KARELIA

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The general features of the development of the periglacial vegetation in Finland were described already in the 1970s by Donner (1971, 1978) and Hyvärinen (1971, 1972, 1973). Their descriptions were based on studies made in the Salpausselkä region in Karelia, where limnic deposits originating from the Late-glacial period afford a basis for reliable analyses.

According to them, an *Artemisia*-rich pollen zone, regularly found in the limnic bottom deposits represented the end of the Late-glacial. It ended ca. 10100–10000 B.P. and was followed by an at first gradual, then steep rise of *Betula* and successive maxima of the pollen of *Rumex*, Cyperaceae-Poaceae and Ericales and of the spores of Lycopodiales.

In 1990 a re-investigation was started of two sites, Koivusilta and Mustalampi, studied in the 1960s by Repo and Tynni (1967, 1969). The three co-authors were joined for this new investigation by Geoffrey Lemdahl (a coleopterologist) from the University of Lund, and Kristiina

Eskonen (a diatomologist) from the University of Joensuu. Our intention was to specify the earlier results in greater detail with the help of new methods. The analyses of macroscopic remains were especially useful in providing a great deal of new information (Bondestam *et al.* 1994).

It became possible to distinguish several sub-phases in the periglacial vegetation. The *Artemisia*-rich pollen zone corresponded with a phase of open pioneer vegetation. This was then followed by a phase of rich fjell heath vegetation characterized by *Dryas octopetala*, *Salix herbacea* and *Salix polaris*. In the pollen diagram this phase corresponded with the maxima of Cyperaceae-Poaceae and *Rumex*. The beginning of the rise of the *Betula* pollen curve was caused by *Betula nana*, which, together with Ericales dwarf-shrubs, dominated a poorer type of fjell heath vegetation.

The *Artemisia* phase, which ended ca. 10150–10100 B.P. along with the phase of the rich fjell

heaths, is best regarded as belonging to the Late-glacial proper. The phase of dwarf-shrub heaths, which began ca. 9800–9400 B.P. with *Betula nana* as the dominant plant, evidently initiates the Holocene. This intermediate phase is likely to represent a continental facies in the Late-glacial/Holocene succession, corresponding with *Empetrum-Juniperus* facies further west. A few hundred radiocarbon years later (9400–9100 B.P.) this treeless vegetation was replaced by advancing light birch-aspen forests (*Betula pendula*, *Betula pubescens* and *Populus tremula*). Pine (*Pinus sylvestris*) also arrived at almost the same time.

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