

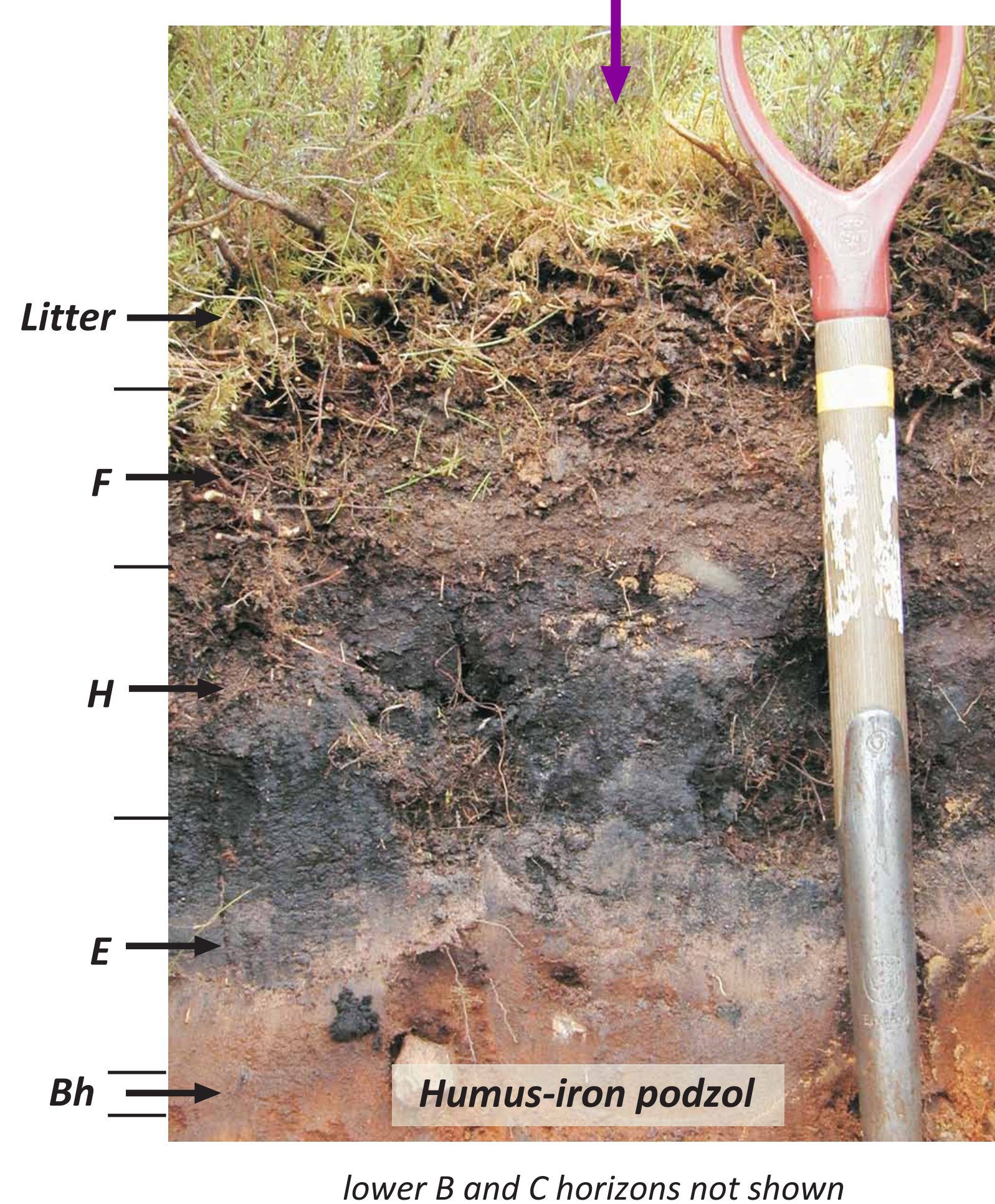
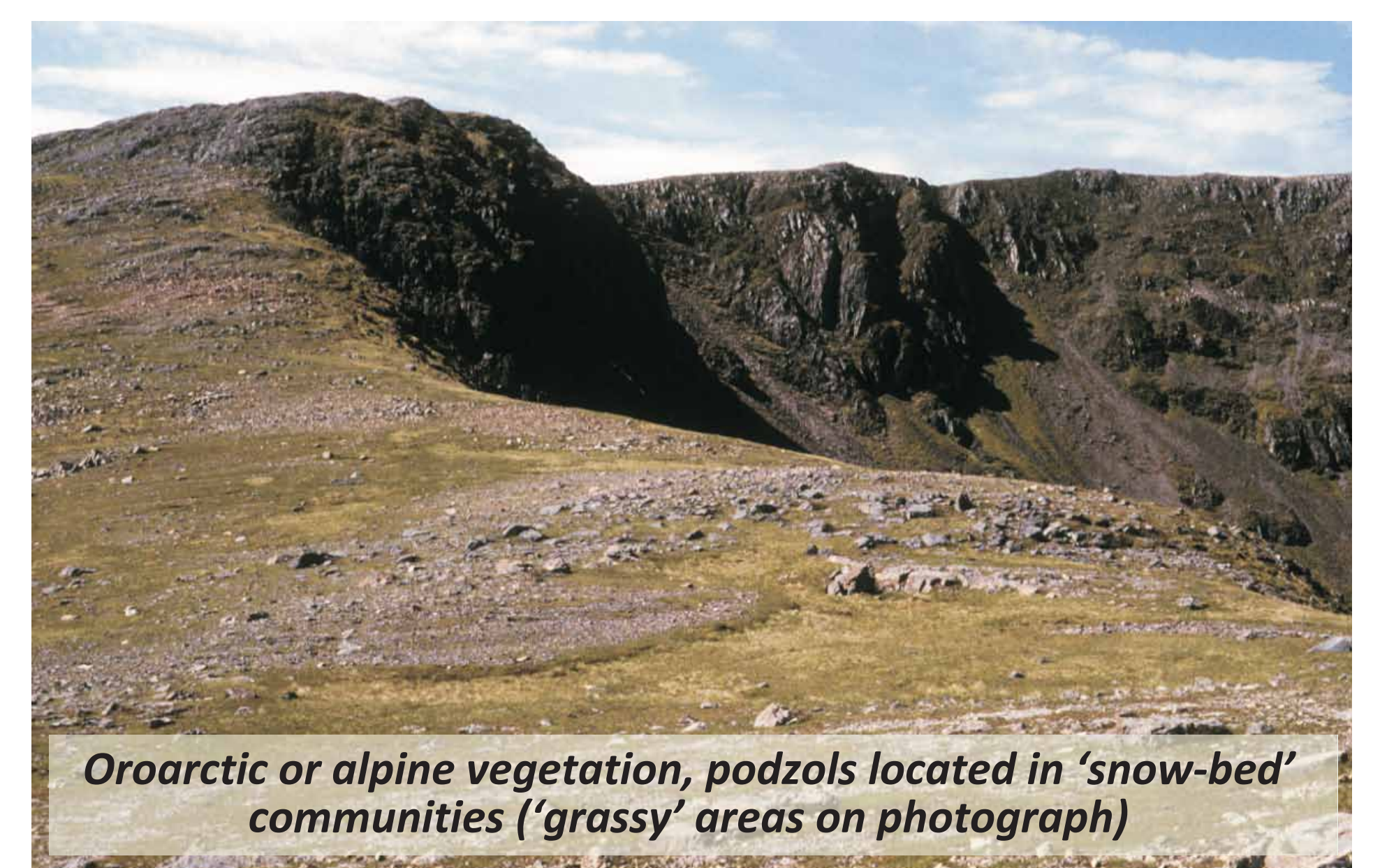
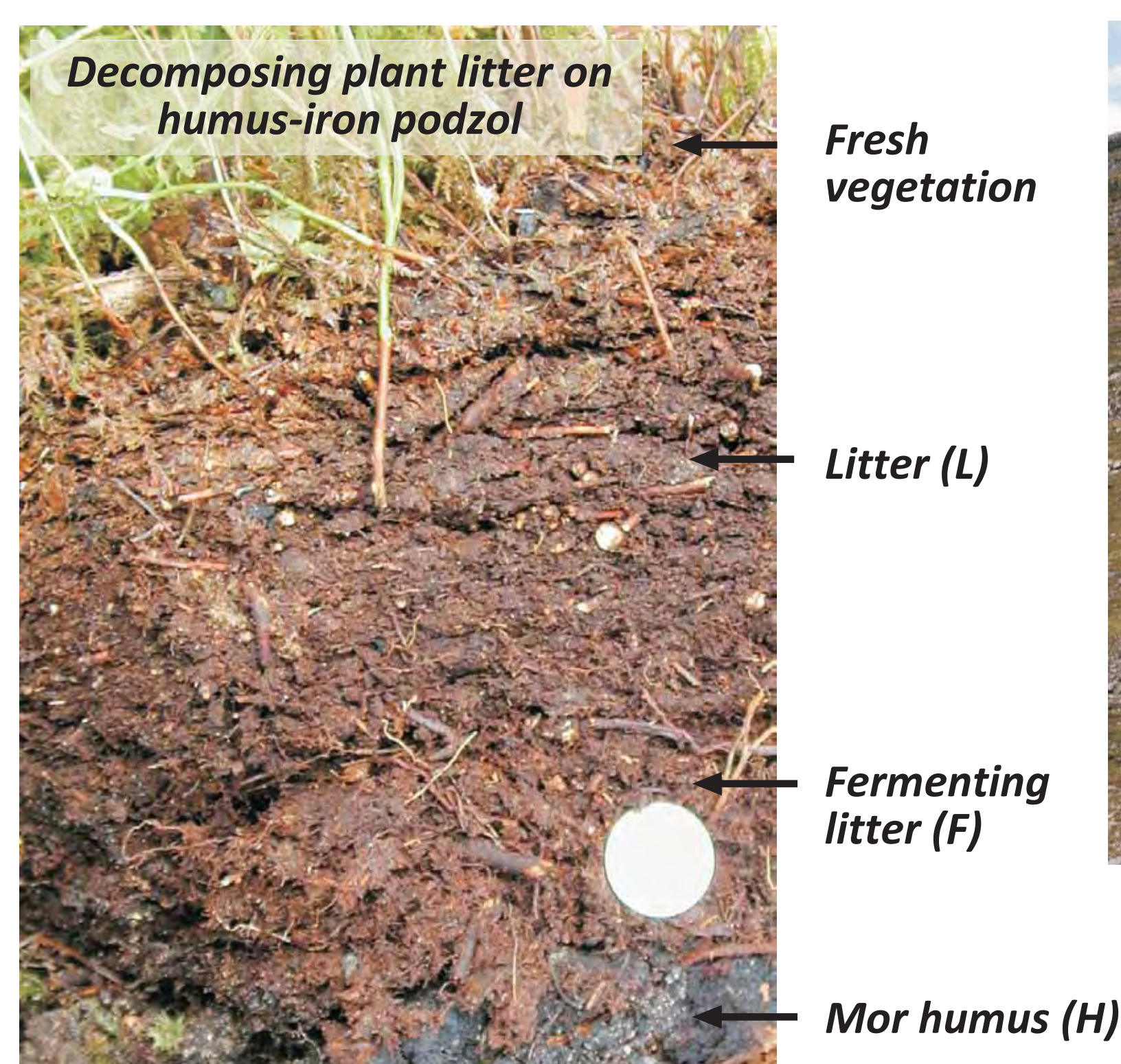
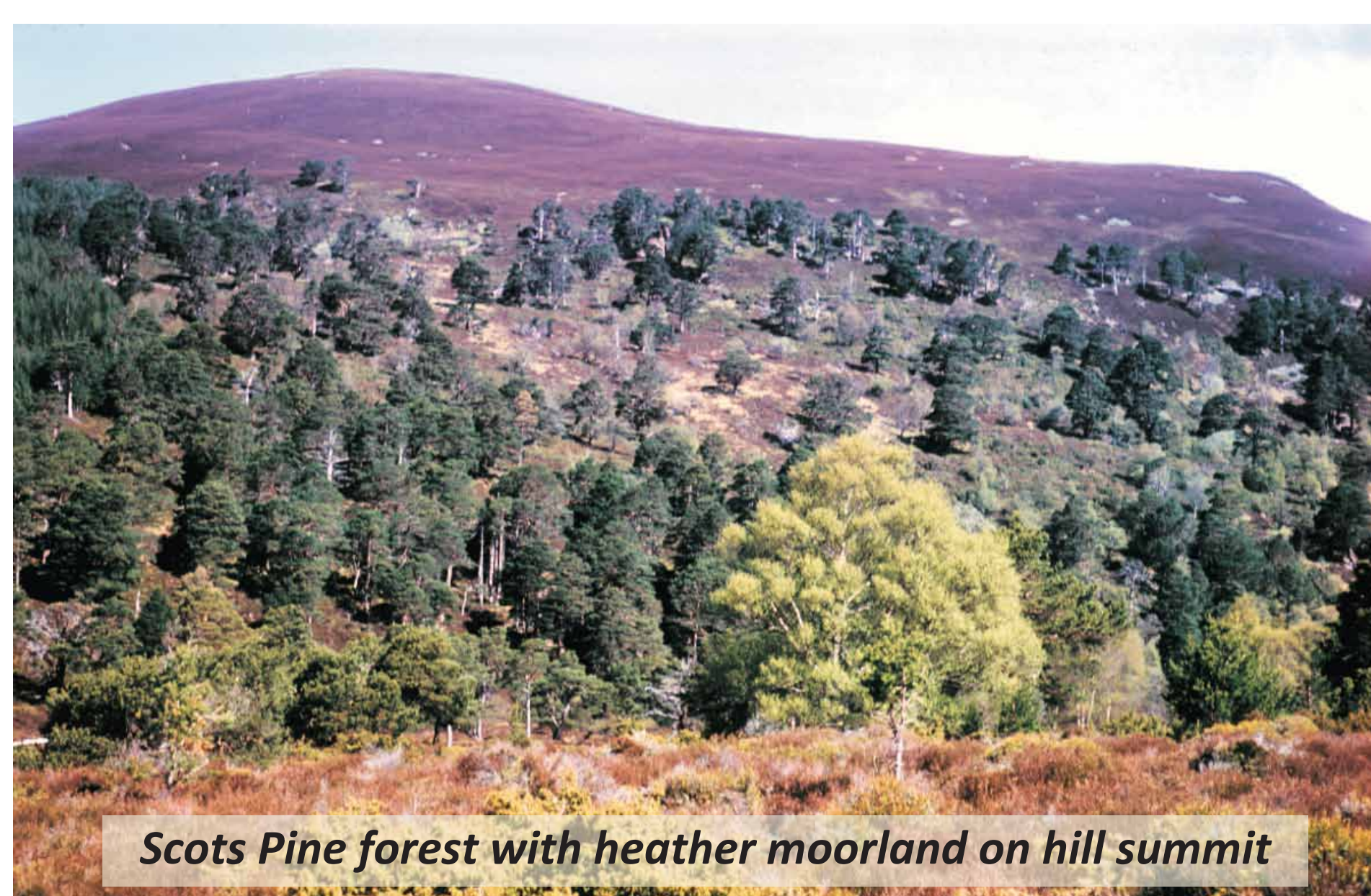
3. Podzols

J H Gauld and L A Dawson
The James Hutton Institute
Email: lorna.dawson@hutton.ac.uk

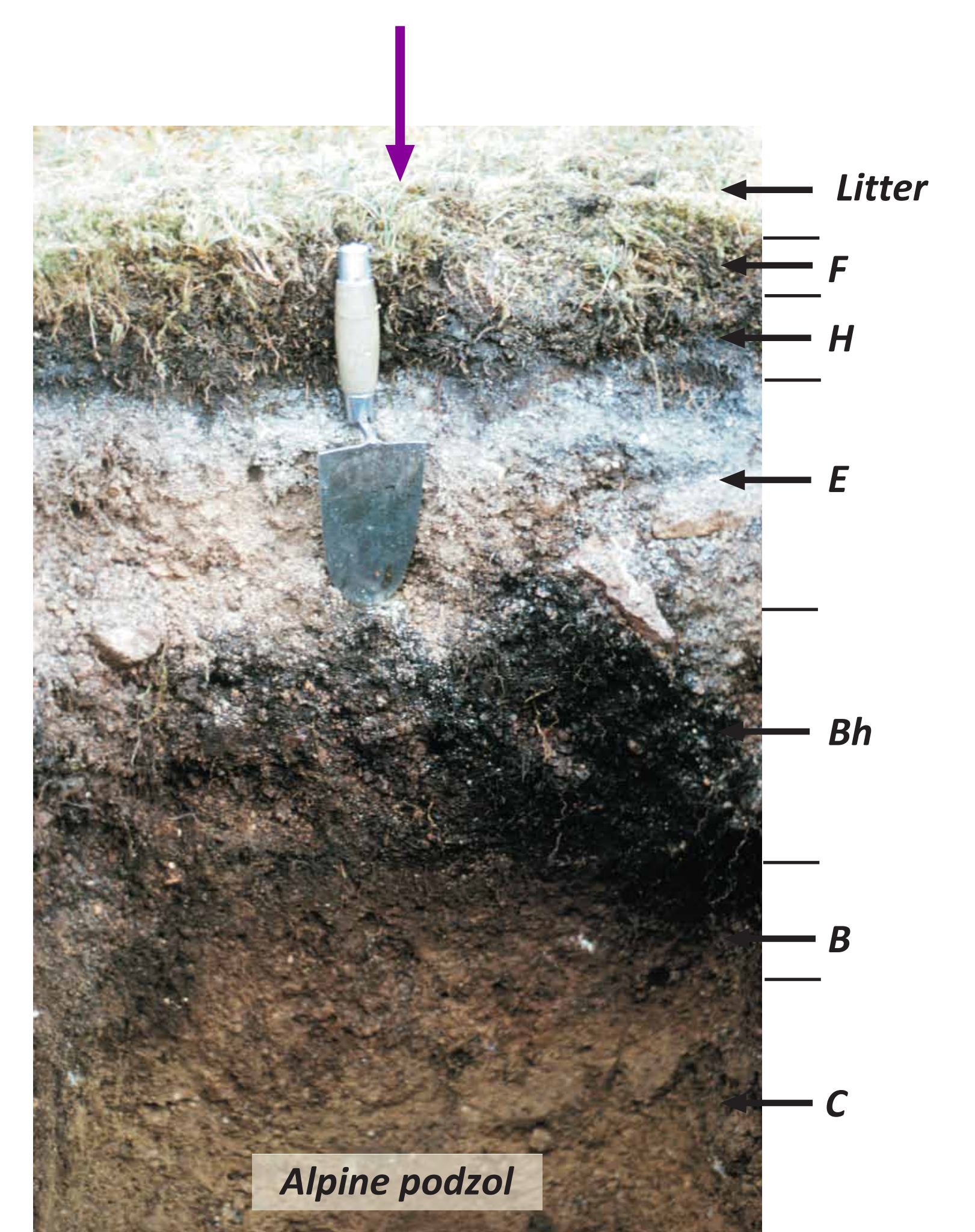
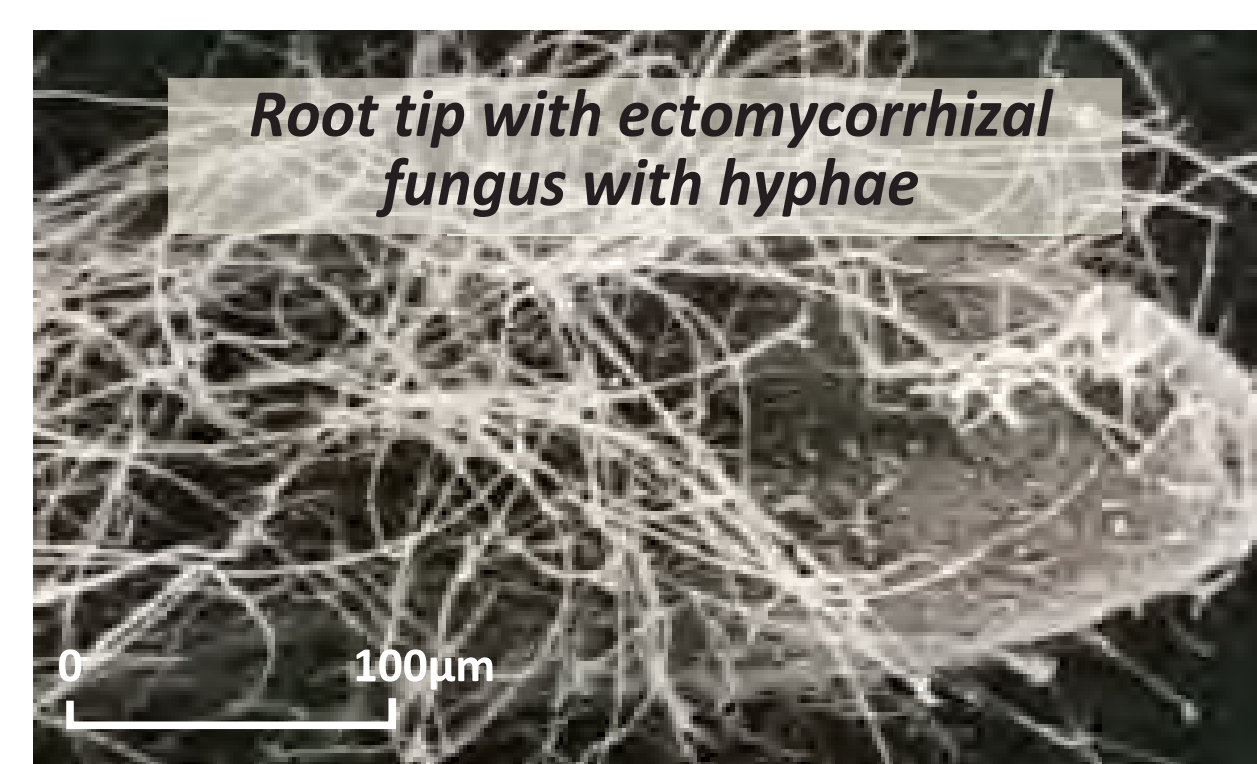
General characteristics: An extensive group of **leached**, acid soils, podzols have a distinctive light coloured horizon immediately beneath superficial, organic horizons which show progressive **decomposition** from fresh, annually supplied material (L horizon) through partially decomposed organic debris (LF horizon) to **mor humus** (H horizon) with no recognisable plant remains. The light coloured **eluvial** or **E horizon**, a direct result of loss of iron/aluminium oxides following long-term weathering in the presence of organic acids, rests on a brightly coloured zone of iron/aluminium deposition (the **illuvial** or **B horizon**) or on a darker zone of organic deposition. The relatively unaltered C horizon is present at variable depth. A number of sub-groups are identifiable and most podzols are free draining. *Derivation: from the Russian words pod = under and zola = ash*

SOIL FORMING FACTORS

PARENT MATERIAL	Acid rocks, often granitic or schist derived.
VEGETATION/ORGANISMS	Pine woodland, heather moorland. Acidity and lack of light limits the range and number of organisms which cause breakdown of plant material. Organic breakdown is slow and mainly by fungal activity, with mites of secondary importance. No earthworms present due to acid conditions.
CLIMATE	Cool, humid to alpine conditions with precipitation > evaporation so that translocation or leaching of material is active.
TOPOGRAPHY	Stable sites from sea level to mountain summits.
TIME	Long-term since end of last ice age, 10,000 years.



ORGANIC MATTER BREAKDOWN



Uses: Podzols are generally infertile, non-productive soils. By virtue of their occurrence in cool, wet conditions, often within steep hill terrain, they have been used principally for forestry and recreation rather than for large-scale settlement or widespread intensive agriculture. In Scotland their use for grassland production and stock rearing is important. Where agriculture is practiced, the semi-natural vegetation has been removed, the soil ploughed and the topsoil limed (to decrease acidity) and fertilised (to increase nutrient-status). Continual fertilisation is necessary to maintain adequate yields.