

Slaty Cleavage in Sedimentary Beds

Slaty Cleavage is a pervasive, parallel foliation (layering) of fine-grained platy minerals (chlorite) in a direction perpendicular to the direction of maximum stress. The process produces the rocks slate and phyllite.

Slaty cleavage can be seen in the pictures below. Both photos contain alternating sandstone and shale beds with the bedding planes running from upper right to lower left. These are the individual depositional units.

But, notice that there are lineations running diagonal through the beds (close to horizontal in the left picture). These diagonal lineations are not part of the original sedimentary rock. They represent slaty cleavage, developed when the rock was compressed and folded. The slaty cleavage runs perpendicular to the directed stress, which was not parallel to the bedding.

