
Alteration of Andesite in Wet, Unstable Soils of Oregon's Western Cascades¹

J. R. Glasmann

Department of Soil Science, Oregon State University, Corvallis, Oregon 97331

¹ Technical paper 6131, Oregon Agricultural Experiment Station, Corvallis, Oregon.

Abstract: Alteration products of andesite cobbles from wet soils formed in volcanic colluvial material were studied using petrographic, electron microscope, X-ray powder diffraction, and thermal techniques. Augite phenocrysts altered by congruent dissolution leaving voids which were subsequently filled with smectite. Plagioclase also altered to produce micrometer-size spheroidal aggregates of smectite. Halloysite was not observed within the altered cobbles, although it was abundant in the soil matrix. The formation of smectite in the altered cobbles was probably favored by the restrictive drainage of the microenvironment in combination with wet soil conditions.

Key Words: Andesite • Halloysite • Scanning electron microscopy • Smectite • Soil • Weathering

Clays and Clay Minerals; August 1982 v. 30; no. 4; p. 253-263; DOI: [10.1346/CCMN.1982.0300402](https://doi.org/10.1346/CCMN.1982.0300402)
© 1982, The Clay Minerals Society
Clay Minerals Society (www.clays.org)
