MICROMORPHOLOGY OF FELDSPAR IN SURFACE LAYER OF A TYPIC SALORTHID.

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ABSTRACT

Mineralogical investigation of the feldspar sand grains collected from the fine sand fraction of the Khurrianwala K-feldspar. Muscovite has been found to be much more common constituent than biotite. The abundance of light minerals was quartz (dominant), Na-Feldspar (major), illite (mica) and K-feldspar (minor) and calcite (traces). Microtextural determination of feldspar grains revealed the following features: 1) elongated and rounded irregular shapes; 2) etched surface morphology; 3) silica coatdings at the grain surface; 4) an overgrowth of tubfular and lenticular crystdals; 5) rough grain surface; 6) embedding of lenticular crystals under silica coatings; 7) serrated outer boundary of the grain and 8) stepped cleavage pattern. These features revealed the solution, precipitation, overgrowth, etching and cleavage planes as the main shaping mechanism of feldspar sand grains in the surface layer of a Typic Salorthid.

INTRODUCTION

Feldspar, sn important constituent of the light mineral fraction with a particle size between 50-420 μm, is universally present in soils (Doeglas et al., 1965). These minerals are susceptible to weathering under atmospheric conditions which is of fundamental importance in soil fertility. Studies related to micromorphological

MATERIALS AND METHODS

A surface soil sample (0-5 cm) was collected from the Khurrianwala soil series (*Typic Salorthid*). This was air-dried and sieved through 2mm sieve. The physical and chemical measurements suggest that the sample was salinesodic (Richards, 1954) with sandy silt loam texture (Hodgson, 1976).

The fine sand fraction (200-60 μm), obtained by wet sieving, was used for the separation of heavy and light minerals. Light minerals were separated from the heavy minerals through density separation. The technique is defined by Shahid et al., (1990). Separated light minerals were then studied under an optical microscope both by immersing in methyl salicylate (Refractive index = 1.54) in a watch glass and also in a permanent mount on a glass slide using Canada balsam (R.I. = 1.54).

STUDIES BY X-RAY DIFFRACTOMETERY (XRD).

Separated light minerals were also studied by XRD. For XRD analysis the light minerals were ground