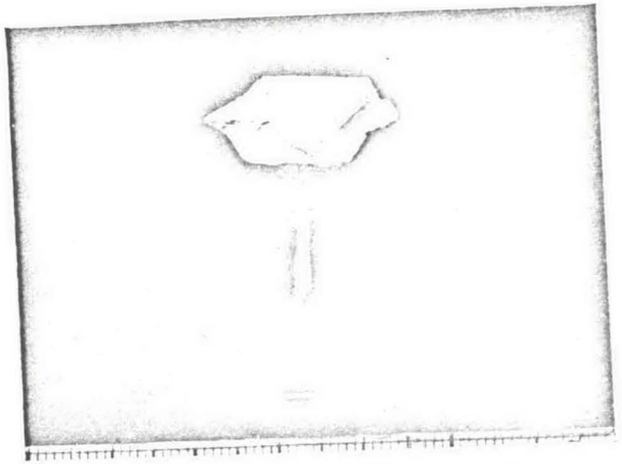
paraffine wedges driven into it. Even in this case, the crystal would develop a filigree pattern; but if the conditions of the experiment be slightly altered so as to prevent the formation of the wedges of paraffine, it is believed that a salt crystal, on account of its great plasticity, might be flattened out to almost any required extent and might be molded into any desired form.

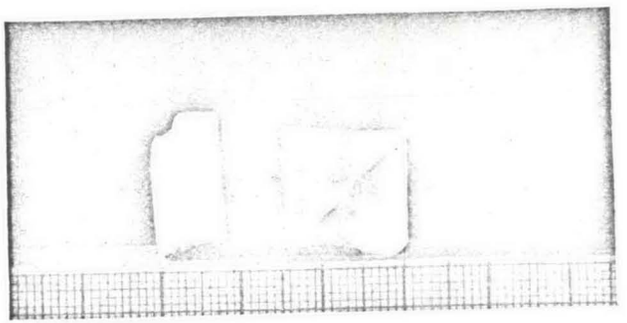
Iceland spar.—Since in considering the deformation of marble the effect of differential pressure on the constituent calcite grains is described, it is unnecessary here to repeat these descriptions. It may, however, be of interest to refer to a single experiment on the deformation of a large cleavage fragment of Iceland spar.

In this a cleavage rhombohedron of Iceland spar, measuring 0.73 inch (18.54 mm.) between the acute angles of the rhombohedron, was embedded in alum in a copper tube of the usual type, having a height of 1.25 inches (31.75 mm.), and a wall thickness of 0.125 inch (3.175 mm.), the tube being closed by a thick plate of cast iron placed against one end and a plate of machinery steel placed against the other, the rhombohedron being so set that its acute edges would come against the metal plates at either end as the deformation progressed. The tube was then squeezed down to a height of 0.473 inch (12.01 mm.), under a load of 83,000 pounds. On dissolving away the alum it was found that the calcite rhombohedron had been pressed into the metal plates at either end, leaving a faint but clearly perceptible impression on the machinery steel at one end and a somewhat more distinct one in the cast iron at the other. Neither of these, however, was so distinct as those produced by the fluorite (see below). The edges of the calcite which produced the indentations remained quite sharp and showed no granulation, but the crystal under the pressure has been converted into a perfect twin crystal, the plane of twinning being at right angles to the direction of maximum pressure (see Plate II, Fig. *a*).

Fluorite.—Passing to the next higher member of Mohs's Scale of Hardness, the action of differential pressure on fluorite was investigated. Five experiments were made with this mineral. For the first, a group of twinned fluorite crystals, green in color and consisting of three interpenetrating cubes from Weardale, Durham (England), was selected, the largest of these crystals being 0.82 inch (20.8 mm.)



(*a*) Twin of calcite produced by compression



(*b*) Fluorite crystal before and after compression

(*c*) Nickel steel disk penetrated by the edge of a crystal of fluorite