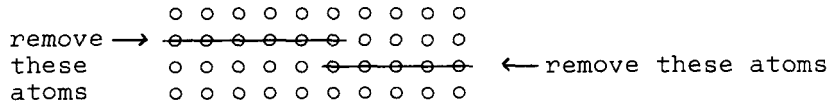


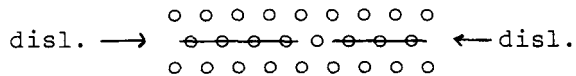
## CHAPTER 21

1. In fcc the nearest neighbors to a given atom lie in  $[110]$  and equivalent directions -- thus these directions are lines of closest packing. In bcc the nearest neighbors lie in  $[111]$  and equivalent directions. There is a lively interest in the channeling of fast ions along open channel directions in crystals.

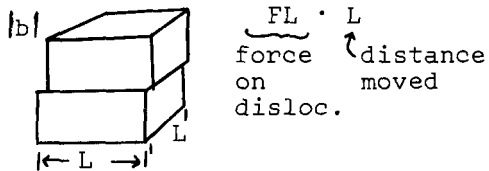
2a.



b.



3. When a dislocation moves a distance  $L$  through the crystal, the crystal advances by a distance  $b$ . The work  $\sigma L^2 b$  may be expressed as



Thus  $F = \sigma b$  is the force/unit length on the dislocation.