Section i. Plutonic, Intrusive, or Subsequent Phase of Eruptivity

We have here to consider the structure of those eruptive masses which have been injected or intruded into other rocks, and have consolidated beneath the surface. One series of these masses is crystalline in structure, but with felsitic and vitreous varieties. It includes most of the eruptive rocks, and especially the more coarsely crystalline forms (granite, syenite, quartz-porphyry, granophyre, liparite, diorite, etc.). The other series is fragmental in character, and includes the agglomerates and tuffs which have filled up volcanic orifices.

After some practice, the field-geologist acquires a faculty of discriminating, even in hand-specimens, crystalline rocks which have consolidated beneath the surface, from those which have flowed out as lava-streams. Coarsely crystalline granites and syenites, with no trace of any vitreous ground-mass, are readily distinguishable as plutonic masses; while, on the other hand, cellular or slaggy lavas are easily recognizable as superficial outflows, or as closely connected But it will be observed that such differences with them. of texture, though furnishing useful helps, are not to be regarded as always and in all degrees perfectly reliable. We find, for example, that some lavas have appeared at or near the surface with so coarsely crystalline a structure as to be mistaken by a casual observer for granite; while, on the other hand, though an open pumiceous or slaggy structure is certainly indicative of a lava that has consolidated at or near the surface, a finery cellular character is not wholly unknown in intrusive sheets and dikes which have consolidated below ground. Again, masses of frag-