Plant gums and mucilages have been known and in use since very early times and they seem to have been of commercial value for several years especially in India, Asia, Africa etc. The growth of the gum industry has continued rapidly. Several new gums are finding industrial acceptance and new biochemical approaches to the modification and production of gums are rapidly evolving. For, the new gums, new uses and new technologies are constantly emerging.

Wild onion mucilage is abundantly available in India from *Urginea indica* plant. Wild onion polysaccharide is studied because it is already being used in the textile industry, and it is hoped that a better understanding of its chemistry and physical properties would lead to greater and better use of this gum which is potentially available in large quantities. The practical aspect of gum is not considered.

In Part I of this thesis an attempt has been made to understand the constitution of wild onion polysaccharide by various methods used in the structural investigation of polysaccharides and, based on the results obtained, important structural features of the gum have been indicated.

Part II of the thesis is concerned with the oxidation of secondary hydroxyl groups of guar gum. Making use of the oxidizing system DMSO-\(\text{Ac}_2\text{O}\), a few aminodeoxy sugars have been synthesized.