1. The distribution of the higher basidiomycetes of the Sibsagar district is studied. The distribution in regard to the types occurring in soil and felled timber is analysed and the types enumerated.

2. The statistical methods are applied to study the nature of distribution of fungi, depth of penetration of the sporophores in soil basing on Poisson distribution equation. The observed and expected values and "Chi-square" test of probability indicate the agreement of Poisson distribution. "Co-efficient of dispersion" and "Nearest-neighbour statistics" method also used to study the nature of distribution and the result found to be overdispersed or gregariously distributed.

3. The edaphic factors such as soil pH, moisture content, organic carbon, total nitrogen, available phosphorus pentoxide and available potassium oxide have profound influence on the growth of the different types of fungi.

4. The climatic factors profoundly influence the growth of the different types of fungi, number of types being highest in the rainy and summer season.

5. Different aspects of colonization of fungi on soil and timber are studied. The variation in number of fruit bodies or variation in the growth of different types of fungi in successive stages has been observed.

6. Histological changes caused by the fungi in wood are studied and the nature of distribution of hyphae in different cells of the infected wood is recorded.

7. The adaptations of some types of the fungi to soil and wood and stages of colonization on two substrates are also indicated.