PREFACE

In recent times use of drugs for therapeutic need and for simply habit-of-taking-drugs has been increasing at an alarming rate. During the past few years a number of drugs have been proved to have mutagenic effects. So the need of screening of pharmaceutical compounds for potential mutagenicity has recently been realised. Benzodiazepines constitute a group of tranquilizers having immense pharmaceutical importance. Their wide-spread abuse is also a great concern now. However, benzodiazepines have not been thoroughly evaluated for their cytotoxic and genotoxic effects. Moreover, reports so far made on the potential mutagenicity of some selected ones reveal contradictory results. Keeping all these in view we have made here an attempt to evaluate the effects of three commonly used benzodiazepine tranquilizers, viz: Diazepam, Chlordiazepoxide and Nitrazepam on mitotic, meiotic and post-meiotic cells of mice. The effects on mitotic and meiotic cells are concerned with the cytogenetic effects for the evaluation of which a battery of protocols (metaphase chromosome analysis of bone marrow cells, micronucleus test, spermatocytic chromosome analysis and dominant lethal test) have been employed. The idea of using different protocols is to obtain a reasonably comprehensive picture of their effects. Their effects, qualitative and quantitative, on the male gametes have also been studied.

The works have been presented in seven chapters. The 'Introduction' chapter includes in addition to introduction to the subject and literature review, an introduction to different
protocols employed here. Chapter 2 includes material and methods in general. The effects of three tranquilizers have been presented in three subsequent chapters (Chapters 3, 4 and 5). In chapter 6 an attempt has been made to compare the effects of three drugs to reveal their relative effectiveness. The work has been summarised in the last chapter.