INTRODUCTION
Genetics is described as a science, which deals with heredity and variation. Human heredity deals with the way by which characters are transmitted from generation to generation. Variations on the other hand, are mainly of two types, namely hereditary and environmental. Hereditary variation refers to differences in inherited traits. Environmental variations are those, which are merely due to environment (Gupta, 1997). Yule (1907) stated that quantitative variations may be controlled by number of individual genes Bateson (1902) raised the possibility that characters showing a continuous range of variation, such as human stature can be determined by large number of Mendelian factors. Pearson (1904) analyzed this possibility mathematically assuming that Mendelian factors have equal additive effects. There was complete dominance of each gene over its recessive allele when it is heterozygous and the two-allele pair was equally frequent.

There are a large number of human characteristics, which may be used in studying the human variations; some are more easily observed and distinguished than others. In fact the study of human character in the most interesting phase of the study of genetics (Winchester, 1974). The genotypic variation occurs at several levels some genetic variations involve the differences in the chromosomal complement of the individuals. Others occur at the level of DNA i.e. variations in number and location of transposable DNA sequence (Hartl, 1983).

Although the environment often influences certain gene expressions but human phenotype is mainly the product of human genotype. The enormous phenotypic variability in the human species is the result of enormous genotypic variability. Phenotypic diversity is clearly seen in some traits, such as height, colour of skin, hair or
eyes, shape of nose, ears, shape of hair lines, types of eyes, social characters, weight, growth rate, mental abilities, athletic skills, etc. (Ahluwalia, 1985). All human being belong to a single species Homo sapiens. It means they are all genetically capable of interbreeding and producing self-fertile offspring’s, but among humans, there is large phenotypic variability, except for identical twins. It is highly improbable that two persons would be genetically identical. Some of this variability is specific to the persons who live in particular geographic areas and these are the racial differences (Good enough, 1984).

Johannsen (1909) first time published the result of clear distinction between the hereditary determinants or genes and its effect. He also formulated the genotype phenotype concept. The genotype of an individual represents sum total of genetic make up. On the other hand, phenotype represents features, which are produced by interaction between genotypes and environment. The observable or measurable expression of gene is referred to as trait.

There are three types of traits i.e. neutral traits (rolling of tongue, form of hair, colour of hair and the ear lobes) where both alleles are frequent, traits under selection where one allele is frequent and other less frequent (hitch hickers thumb, hair on mid digital finger, bent little finger, interlocking of hands, earlobe): selectively fixed traits where one allele is significantly with high frequency (widow’s peak and dimple in cheeks) is near fixation in the populations and the other allele is at selective disadvantages (Verma, 1996).

The traits may be visible to eye (Morphological & behavioural traits) or may require special test for its identification (serological traits) in the present studies an attempt has been made to study the
morphological traits, behavioural traits serological traits and genetic diseases among different caste groups of human population in hard core tribal areas of Bharmour and Pangi regions of Chamba district. The main aim of present study is to contemplate the backward, geographically isolated and neglected tribal areas of Chamba district. It is also to know how the environmental factors such as clean and pollution free environment diet, climate, social & geographical barriers are responsible for the survival of the fittest genes and the suppression or non-activation of the others.

Several workers have made various studies of similar type in the past on the tribal areas of Indian origin. Statistically significant and non-significant differences in most of the biological variable have been observed between Pangwalas and Gaddis of Himachal Pradesh (Singh and Bhasin, 1983). The skin tracts and sub cutaneous tissue thickness have been studied in Gaddi boys from the Bharmour sub tehsil of the Chamba district (Himachal Pradesh, India) aged from 4 to 20 years (Singh and Sidhu, 1987). Sharma and Bhalla (1987) studied the Malaneese of Malana, an isolated community living in the midst of Himalayas in district Kullu, Himachal Pradesh. Bhasin and Khanna (1992) studied the distribution of genetically, morphological and behavioural traits of Indian region. The tribal group possesses high levels of genetic diversity due to social stratification and practice of strict endogamy (Babu et al., 1996 and Papiha et al., 1996).

Landsteiner (Winchester, 1963) reported four kind of blood group i.e. A, B, AB and O in human population. Individuals of blood group A and B have antigen A and B on their red blood cells respectively the persons of blood group AB have both the antigens present on their red blood cells, but in the blood group O both A and
B antigens are absent. Land Steiner and Wiener (1940) reported another blood group Rh-factor. The symbol Rh comes from the first two letters of the species name of the monkey (Macacus rhesus). The name given to many of the other known blood grouping (Kell, Lewis Duffy etc) are those of the family in which the grouping was first recognized (Roth well, 1978). Kaur et al, (1980) studied ABO groups in the member of Gaddi tribe of Himachal Pradesh. Differences in gene frequencies clearly indicated biological distribution in scheduled tribe (Kanet) and a scheduled caste (Koli) of Kinner district on serological variants (Papiha et al., 1980 and Papiha et al., 1996). The variations of ABO blood groups with Rh factor were studied in tribal population of Andhra Pradesh (Veeraju 1988; Murty et al., 1993; Ramana et al., 1996; Papiha et al., 1997 and Rao et al., 1999).

In recent year there has been great increase in appreciation of the genetic in understanding disease of man. The interethnic comparison and animal analogues indicate that the genetic constituents of the individual plays a significant role in determining susceptibility to the infection and the severity of diseases after infection (Mckusick, 1978). A number of diseases are heterogonous in cause and multifunctional in their underlying gene basis e.g. diabetes and hypertension (Hertl, 1983). Various studies on genetic diseases has been made by several workers in the past on India population. Rao (2002) studied dietary pattern and glucose intolerance infraction with diabetes among rural Indian population. Verma (1998) studied hypertension and diabetes, are more prevalent due to environmental factors. Panicker et al., (2004) studied correlation of genotype with phenotype in Indian patient with primary congenital glaucoma.