CHAPTER 1

INTRODUCTION
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Anthropology is the science of man and it is a field science. The distinguishing feature of anthropology is its holistic approach, wherein, it tries to understand the human species as a biological, socio-cultural and historical entity. Anthropology deals with all biological and socio-cultural aspects of human kind from savagery to the civilized stage. Socio-cultural anthropology is concerned with language, attitudes, traditions, customs, values, kinship, family, marriage, economy, technology, power, authority, religion, history and pre-history of the human being. Biological anthropology is the study of human evolution, variation, inheritance, body build, pigmentation, blood types, etc. Therefore, anthropology is a holistic science, with the entire study of human species as the focus of study.

All the so-called social sciences like, History, Economics, Psychology, Political Science, Sociology, also deal with people but normally concentrate on a single aspect related to man. For example, History deals with past written records, economics studies the production, distribution and consumption of goods, the market system and different systems of exchange, but they would very rarely take into account the effect of kinship and religion on the Economic system. But Anthropology aims to investigate human culture at all times, everywhere, and deals with all most all aspects related to man.

The sub-fields of Anthropology can be classified into five major categories viz., Socio-cultural anthropology, Physical/Biological
anthropology, Archeological anthropology, Linguistic anthropology and 
Applied and Action anthropology. Traditionally focusing on simple, 
isolated and small scale societies of the world, Socio-cultural 
anthropology deals with the culture of existing people.

The Physical or Biological anthropology is primarily concerned 
with the origin and evolution of man and primates with a special 
reference to higher primates, the antigenic growth and development of 
man and primates, and on the other hand it deals with the concept of 
"variation". Its main focus is to study, why he differs physically, even 
when he comes under one class called Homosapiens. Biological 
anthropologists are fundamentally interested in the study of human 
variation and to analyse how this variation results from the interaction 
of biology and culture. Physical anthropology is often related with the 
study of ecology in its perspective, in other words, the processes that 
bring about human variations are studied in the context of the 
relationship between the environment and species and also other 
organisms in the environment. The population geneticist is primarily 
concerned in finding answer to such questions as ‘How does population 
‘Z’ and population ‘Y’ affect the genetic structure of ‘Z’ or in a 
population of small size?’, “How has the inbreeding affected the 
distribution of genes?”. (Swedlund and Ar Melagos, 1976).

Although John Graunt is to be regarded as father of demography, 
this honour goes to Thomas Robert Malthus, another Englishman 
(Srivastava, 1983). The word demography was first popularised by 
Acille Guillard (1885) who considered demography as the mathematical
knowledge of the movement of the population as well as the physical, social, intellectual and moral condition of the population. As Donald Bogue points out "Demography is the empirical, statistical and mathematical study of human population (1971)". The research in the field of demography covers the population growth and decline, composition of population and the distribution of population in space. Demography is comparatively a recent science though it emerged as a separate branch of study as far back as 1662.

Thompson (1953) defined, 'Demography is the study of population which is primarily concerned with the following questions. What are the differences in population that take place in the size of population? How are these differences brought about? What is the significance of these differences? What are the differences that take place in the distribution of the population? What kinds of people are found in any given population? How do these people vary from those in other groups?'.

The explanation, given by various scholars gives an idea that demography is basically concerned with the size and number, structures and characteristics, distribution and differences taking place over a period of time in a population. Therefore, the subject matter of demography encompasses the study of mortality, social mobility, migration and fertility. It also includes socio-cultural explanation of fertility behaviour, demographic events like births, still births, deaths, marriages, sex and fertility experiences.
The concept of “population” can be defined in a number of ways, but most population concepts involved a classification of hierarchical categories in which small units are defined in terms of the extent to which people share common characteristics. According to Harrison et.al., (1964) “Genetic or Mendelian populations are defined by the extent to which the individuals share a common gene pool”. In Anthropology, a population is recognized according to certain particular components which are demographic, genetic, social, cultural and ecological. Usually in all languages the term population is used in some geographical and ecological context. One usually speaks of the population of a town, or of a city, or of a particular place. Such a population may correspond to the one recognized by the genetic experts, who tries to find out the primary relationship of the individual concerned with the locality. Therefore, it is convenient to differentiate the population in terms of the distribution of genes or by the way of gene frequency. Mendelian population studied by Theodosius Dobzhansky has experimented this. He defines, “a reproductive community of sexual and cross fertilizing individuals which share in a common gene pool” (cited in Harrison et.al, 1964). The biggest Mendelian population is the species. Since every individual potentially, if not actually shares all the genes present in the species, but different species, because, they do not mate together, must draw upon different gene pools.

Definition of a population for demographic purposes in which the study is primarily concerned to the explanation of fertility, mortality
and migration can be made entirely on arbitrary grounds. The group of individuals in which, a demographer is interested to study, may correspond more or less to a genetic, social or ecological population. Sometimes Mendelian populations are defined by the extent to which the individuals share in a common gene pool. We emphasize on the degree of genetic and biologically interconnectedness. When population units can be socially defined, the members of that population share common identical, cultural traits. Thus, there is certainly social and cultural traits are parallel to the genetic concept of population.

To study, particular type and size of population unit, anthropologists are primarily concerned with small units instead of choosing big units as the demographers usually do in their population study. The word Anthropological population has been coined to emphasize such studies. Demographers are involved in studying the populations at the regional or even more commonly national levels. A demographic approach in the field of Anthropology is being introduced from population geneticists working in the field of biological anthropology. In the collection of genetic adaptational data, anthropologists had developed considerable scale. Most of the methodology used for analysing of this data came from theoretical geneticist or non-academic anthropologists.

The concept of population has been studied since the time immemorial that, human beings, just like other organisms tend to lead their lives in groups or clusters or populations. They are normally organised in a particular form although this form may change from
time to time. According to Harrison and Boyce (1972) populations are not just conglomerations of individuals, but they are ordered coherent systems. This system is something more than simply the sum total of the individuals of which they are integrated. The population structure is normally manifest in a series of general physical and cultural characteristics and in a particular biological and cultural history. When we see in total, the structure of a population is an extremely complex phenomenon and unique in itself by being different from the structure of other populations. This complexity and uniqueness arises basically from the fact of variation and uniqueness that we see in the individuals of the populations. This variation and uniqueness observed among the individuals in a population is the result of the interaction of physical and cultural factors operating simultaneously on these individuals.

A kind of unique structure can be seen in every human population which can be studied and understood in terms of its age, size, sex composition and distribution. Processes of fertility, mortality and migration are the key determinants of population structure. The differential operation of these processes is responsible for the determination of structural dissimilarities that exist between populations at any given point of time and within a population through time (Morris, 1973). Many attempts have been made all over the world to study the population structure of isolated tribes and the dynamic forces of evolution operating on them utilizing multi-disciplinary approach, namely the populations of Xavantes, New Guinea, Eskimos, Malnesia, Micronesia, Central African and Central American
populations. These studies have utilized Ethnography, Archeology, Geology, Demography and population Genetics apart from sophisticated statistical analysis and have focused their attention on the inter and intrapopulation variability and micro-evolutionary processes. In India also several studies of this type have been conducted to understand the population structure of isolated tribes namely, Tharus (Srivastava, 1964), Pahira (Basu, 1969), Chenchus (Sirajuddin, 1994) and so on.

Therefore, the subject matter of anthropology is very broad in its nature and scope and studies the entire range of human behaviour from holistic approach; it has not lagged behind in studying the crime and defiance, which are inseparable parts of human existence. The anthropologists like, Ceasar Lambroso (1876), Hooten (1939), Majumdar (1950), Malinowski (1951) and others have made significant contributions to understand crime and defiance and have laid anthropological foundations to this problem. The term Criminology has been coined by a French Anthropologist; Paul Topinard the etymological meaning of the word Criminology is derived from Latin and Greek words. The Latin word ‘Crimen’ means ‘Crime’ and The Greek word ‘Logos’ means ‘Study or Science’, obviously, the criminology is the study of crime. Defining Criminology, Sutherland and Cressey (1965) say that “Criminology is the body of knowledge regarding crime as a social phenomenon. It includes within its scope the process of making laws, of breaking laws and of reacting toward breaking of the laws”. Discussing about the criminological approach Vetter et. al., (1986)
opines that "Criminology emerged in the twentieth century as an interdisciplinary approach to the systematic study of crime, criminals and criminal behaviour. Although it is primarily scientific in its orientation and emphasis, other non-scientific approaches occupy an important place in the criminological enquiry". As regard to the scope of criminology, Allen et. al., (1981) say that "Criminology might be said to encompass the following".

Firstly, the process by which certain types of behaviour are criminalized that is, made illegal whether by legislative or administrative action. Secondly, Social Control the process by which formal and informal measures are taken in a society to control the activities of people so that criminal law is not violated. Thirdly, Preventive measures of an environmental or ecological nature taken in a society or community to diminish the opportunities, likelihood, or temptations for criminal behavior. Fourth, Criminal behaviour and the settings, statistics on incidence and frequency, modus operandi and consequences. Fifth, Criminogenesis the factors present in individuals, groups or a society that make law breaking more likely or less, so that social-structural components of society that induce or reduce crime. Sixth, the offender, who commits crimes, why, and with what rationalizations. Seventh, the Police-their roles, duties, privileges and responsibilities; their place in the social control apparatus and in the prevention of crime and apprehension of offenders. Eighth, the Criminal Justice System, in the rules of prosecutors, judges, juries and defense counsel; the "rules of game" for determining innocence or guilt
of the accused, Ninth, Penology or Corrections – the nature of punishment imposed upon the quality offender, including probation, parole, fine, incarceration, corporal and capital punishment, exile and others; also reform and rehabilitation, and the efficacy of punishment as deterrence and lastly, Victimology, the study of the victims of crime, their relationship of any two offenders; victim proneness, victim restitution and other aspects of victimization.

As referring to its boundaries, one of the well known criminologist Bemmelen (1959) opines that “Criminologists are “the kings without countries”, because their territories have never been delineated. It might be more adequate and to be sure more humble, to regard Criminology as a permanent guest who must dine in order to survive at other people’s tables. Criminology draws its basic concepts and methodology from the behavioural sciences, biology and.....” (cited in Reckless, 1961).

Wolfgang (1963) explaining the professional entity of a criminologist opines that those who are performing the professional role such as Probation Officer, the Psychiatrist in a penal Institution, the Technicians in the Police Department, and so on, are occasionally referred as Criminologists. A person cannot be regarded as Criminologist if he performs a professional role. A Criminologist is one, who in pursuance of his professional role is principally devoted to the task of scientific study, research and analysis of the phenomenon of crime, criminal behaviour or treatment of offenders. Further, he narrates that, “it becomes clear then that regardless of the diverse
nature of contributory professions to criminology, there is an independent discipline to be learned and a special professional role to be performed”. There are units of analysis, a framework of reference, and a body of collected, organised, and analysed knowledge available constituting required learning before an individual can function as a scientific student in the field of Criminology. Thus, “the Anthropologist, Psychiatrist, Psychologist, and Sociologist, who have also obtained mastery, understanding, and knowledge of the body of information and research contained in the field of Criminology and whose professional roles are centered around the study and research of crime or of criminal behaviour are all Criminologists” (cited in Reckless, 1961).

Crimes usually depend on the culture, religion, ideas and environment of every society. Its pattern will go on changing when there is a change in the values and attitudes of individuals in a particular society. What is considered as crime in one culture, may not be considered in another culture as one and the same because of their variational factors. What act is looked upon as crime today, may not have been regarded as such yesterday and vice versa. When the new rules and regulations are imposed in society due to change, particularly of technological nature, the concept of crime assumes new meaning. The culture, religion and philosophy of a society are determined to a great extent by the geographical environment of the region and accordingly the laws are made. Therefore, the laws differ from one culture to another. When the laws differ on its cultural background, the crime also differs from one culture of entity to another.
Among tribes, it is customary that, no girl would be given in marriage to a boy unless he proves himself to be an expert criminal (Ramanujam, 1975). Cradle marriages and child marriages were common in the past, but now, marriage below the age of 18 years in case of a girl and below 21 years in case of a boy is not permitted. Taking dowry was a custom in Indian society, but now, under Dowry prohibition Act, 1961 it is an offence. “Sati” was glorified in early days specially in some states of northern India, but now, under Commission of Sati (prevention) Act, 1987 it is an offence. Termination of pregnancy was an offence earlier, but as per Medical Termination of pregnancy Act, 1971, it is not an offence. Attempt to suicide was an offence under Section 309, Indian Penal Code till recently. The Supreme Court recently in P. Rathinam Vs. Union of India, held that Section 309 violates the Article 21 of the Constitution. Accordingly Section 309 of Indian Penal Code is repealed (SCC 1994).

Among scholars, there is no unanimity on certain statements on the term ‘crime’ and some of them are explained briefly in the following terms. Reckless (1940) says that “Criminal behaviour is the violation of social order. Crime, sociologically speaking, is fundamentally a violation of conduct norms which contain sanctions, no matter whether found in the criminal law of the modern state or merely in the working rules of special groups” (cited in Madan, 1983). Morris (1953) views that “In principle, crimes are acts that are considered by those in authority to be sufficiently inimical to the general welfare as to warrant official interdiction and punishment”. Allen et. al., (1981) try to give a working
definition of crime. According to them “Crime is any form of conduct forbidden by law and for which authorised government personnel can inflict punishment when those violations carry relatively severe penalties and provoke moral outrage against the offenders”.

From the above explanation we can understand that some identify the criminals on their attitudes, techniques and skills in the commission of crime and other emphasize on the nature of the anti-social behaviour patterns. When there is no similar thought on the definition of criminal, naturally we have to depend on practically applicable definition. According to Tappan (1947) “only those are criminals who have been adjudicated as such by the courts” (cited in Barlow, 1978). Barlow (1978) says that “Criminal is a person whose conduct has been labeled as crime by those who created and administer the Criminal Law”.

Always the factors behind the commission of crime should be noted. Various theories have been propagated by many Criminologists of the world regarding the cause of criminality. Barnes and Teeters (1966) say that “A crime is committed only when a peculiar combination of personal and social factors come into juxta-position with an utterly unique physical structure of a human being to create specified crime situation”.

Demonological theory is one of the earlier theories regarding the causation of crime. According to this theory crime is committed mainly, because of the person who is possessed by evil spirits on such
causation. Barnes and Teeters (1966) opine that “since evil spirits infested the person and had to be driven out, the conventional notion of primitive punishment was either to exorcise the evil spirits to get rid of the one possessed by death or exile “social death”. In part, this doctrine was based on the concept of protecting the community or family group against further outrages by the offending individual, but for more important was the belief in the necessity and desirability of placating the gods”.

Classical theory or the theory of “free will” is based on hedonistic psychology. The chief proponents of this theory are Ceasere Becaria (1738-1794) and Bentham (1745-1832). This theory of hedonistic psychology explains that man governs his behaviour by considerations of pleasures and pains. The pleasures anticipated from the particular act may be balanced against the pains anticipated from the same act. The actor was assumed to have a “free-will” and to make his choice with reference to hedonistic calculations alone. This was regarded as a final and complete explanation of the causes of crime and no need for further investigation of causation could be imagined (Sutherland and Cressy, 1965).

The scholars like Ceasere Lambroso (1911), Garafallo (1914) and Enricoferri (1970) have attributed criminality to inheritance. Ceasere Lambroso, the chief proponent of positive school of criminology, in his book, “L’ uomo delinquent” published in 1876, writes that “the criminal is primarily born type and is marked by definite physical and mental stigmata”. Most of the earlier current anthropological theories have
influenced on Lambroso and his opinion that criminal often represents an atavistic type that is, a throw back to the primitive (Vedder et. al., 1953). Lambroso also tells that there is a close relationship between crime, epilepsy, insanity and delinquency as a whole. Lambroso contends that “born criminality is not peculiar to Italians, but also is present in other cultures”. One such example mentioned by him was the criminal tribes of India (cited in Mannheim, 1960).

The theory of born criminality went under lot of discussion and criticism by Charles Goring (1870-1919) and others, when it was empirically verified under his chairmanship (Cavan, 1962). As a result, Lambroso gradually modified his conclusions regarding the “born-criminal” and reduced the proportion of the criminals to the “born criminals”, from approximately 100 percent to about 40 percent (Sutherland and Cressey, 1965). Lambroso may have been wrong in insisting on his “born-criminal” type but his contributions to the science of criminology can never be forgotten. From his studies, there arose a science of criminal Anthropology, which had a very popular reception during the latter part of nineteenth century (Barnes and Teeters, 1966). Due to his significant contribution in the field of Criminology Cesare Lambroso is considered as the father of Modern Criminology (Vedder et. al 1953). Hooten (1939), agreeing with the findings of Lambroso disposed of Charles Goring’s study, as unscientific, saying that he distorted “the results of this investigation to conformity with his bias”. Hooten attempted to show that crime and
other forms of anti-social behaviour are due almost exclusively to physical and racial factors (cited in Barnes and Teeters, 1966).

Crime was studied from the cartographic approach in England and France from 1832 to 1900. The early proponents of this approach Guerry, Quetlet and others were mainly concerned with spatial distribution of crime and delinquency. However, work on this aspect is carried out by Majumdar on tribal population of U.P. Discussing on morphological homogeneity, Majumdar observes: There is a progressive broadening of the head from the Eastern to the Western districts of U. P. among the vagrant and criminal sections of the tribal population showing perhaps assimilation of brachy-cephalic element. But the few measurements that he has given, viz. the Habura 73,71, the Bhatu 74,83 and the Dom 73, 79 show that these groups are dolichocephals and closely resemble their counterparts the Paniyan 74 (Risley), the Chenchu 73,89 (I. Census, 1931) in South India. But they differ so much from each other in their nasal indices. The Nasal Index of the Bhabus is 68. 47, of Habura 71. 21, of Dom 75. 70, of the Chenchu 81, 38 and of the Paniyan 95. (cited in Kapadia, 1952). Since there are no large scale anthropometric studies conducted on criminal tribes in India, it is not possible to formulate any valid hypothesis regarding their morphological homogeneity.

On economic factors the thinkers like Karl Marx and Friederich Engels, gave considerable explanations to explain crime and other social problems. They were of the opinion that crime results from existence of invariable economic conditions (that is poverty) within a
society. The views of Marx and Engels were incorporated by the Dutch writer, William Adrian Bonger (1916), in to the formal theory of defiance connecting the crime with the economic conditions. He said that the criminal is the product of capitalistic system (cited in Vetter et. al., 1986). Anthropologists like Biswas (1960), Criminologists like Gillin (1931), Historians such as Bruce (1968) attributed tribal criminality to poor economic conditions (Simhadri, 1979).

Analysing the cause of tribal criminality Starte (1936) opines that even though originally these people were harmless, they could not get proper employment because of their nomadic nature and restless life. As a result, it was not possible for them to peruse honest occupations, and in so far as they met with difficulties, they turned their attention to crime (cited in Sethana, 1989). The scholars such as Sutherland, Tarde, Durkeheim and Merton explained that the social situations and structure are primarily responsible for the violation of law in society (Simhadri, 1979). The theories given by criminologists suggest that the causation of crime has not shown its authenticity. Eventually the social thinkers used the “multiple-factor” approach to explain the case of criminality. Explaining the cause of criminality, Ferri (1826) version is that “Crime is the result of manifold causes, which although found always linked into an intricate network, can be detected however, by means of careful study”.

Crime is the result of manifold causes, which, although found always linked into an intricate network, can be detected, however, by means of careful study. The factors of crime can be divided into
individual or anthropological, physical or natural, and social. The anthropological factors comprise age, sex, civil status, profession, domicile, social rank, instruction, education, and the organic and psychic constitution. The physical factors are: race, climate, the fertility and disposition of the soil, the relative length of day and night, the seasons, meteoric conditions, and temperature. The social factors comprise the density of population, emigration, public opinion, customs and religion, public order, economic and industrial conditions, agriculture and industrial production, public administration of public safety, public instruction and education, public beneficence, and in general, civil and penal legislation. Explaining the causes of delinquency and crime, a British Psychologist Cyril Burt (1938) points that, “Crime is assignable to no single universal source nor yet to two or three. It springs from a wide variety, and usually from a multiplicity of alternative and converging influence” (cited in Barnes and Teeters, 1966).

Theory of multiple causation gained its momentum from the research works of David Abrahamsen (1960), Sheldon and Eleanor Glueck (1950), Willian Helay (1969), and others. Albert Cohen (1951) criticised this theory since it does not offer any single explanation with regard to the cause of criminality.

The academic attempt made on certain tribal societies with respect to the causation of crime, a few anthropologically oriented studies suggest that the total life of criminal tribes have been extremely rare. Malinowski who is called the father of field work in anthropology
and his book entitled "Crime and Custom in Savage Society" (1951) tried to examine crime, custom, magic among Malanesians of Trobiand Island as integral part of their socio-cultural life and having close association with other aspects of culture like agriculture, economy, religion, kinship etc., is one best example of such a study. Another attempt made to study on similar grounds is that of Majumdar (1950). He tried to bring to the fore, as to how the traditional rules, laws, customs are strictly obeyed by the members of the community exemplifying the nature and extent of social solidarity existing among ‘Ho’ tribal community.

These studies have neither taken into account the examination of their criminal behaviour and its relationship with other aspects of culture, nor have they tried to look into the reformatory and rehabilitative aspects of these criminal tribes. They have not attempted to look to these criminal tribes as integral part of the larger society but have only tried to study these criminal tribes as isolated entities in the so called “National Park” concept of Verrier Elwin. Such anthropologically oriented studies on criminal tribes in India and elsewhere have basically tried to concentrate on the socio-cultural life of the criminal tribes emphasizing their traditions, customs, kinship, behaviour, economic organization, political authority, and religious beliefs from the people’s point of view.

Therefore, under these circumstances there is an urgent need to understand the total life of the Ex-Criminal Tribes from a combined perspective encompassing socio-cultural, biological and criminological
approaches which will provide a holistic perspective to the study of criminal tribes.

Socio-cultural perspective will provide an in-depth and comprehensive understanding of the traditions, customs, and other primitive institutions of the ex-criminal tribes, the biological perspective will help in the understanding of the population genetic structure and the biological and genetic diversity of these tribes which may throw light on the etiology of the criminal behaviour and finally the criminological perspective will enable one to understand the planning and implementation of some of the reformative and rehabilitative programmes for these tribes.

Therefore, in the present study on my research theme, an attempt is made to understand the “Kanjarbhat Tribe” settled in Dharwad and Gadag Districts from an anthropological point of view with reference to their socio-cultural and biological aspects. Here an in-depth and comprehensive analysis has been made on institutions related to tribe “Kanjarbhat” like family, marriage, kinship, economic, political, and religious beliefs. Demographic structure of the “Kanjarbhat Tribe” includes the sex-ratio, fertility and mortality rates. The genetic structure and genetic variability of the “Kanjarbhat” population has been studied in terms of “ABO and Rh” blood groups and in terms of several dermatoglyphic determinants like pattern types, different types of indices, total ridge count, “a-b” ridge count, “atd” angle and “c” line polymorphism. The main purpose of to test their blood groups and the study of finger prints is to draw a
comparative line between the “Kanjarbhat” and other population in Karnataka. So as to know the origin and reason for the migration of “Kanjarbhat” and also to understand the criminological point of view on their criminal behaviour. Then, synthesizing all these aspects, it is attempted to study the “Kanjarbhat” from socio-cultural, biological and criminological perspectives to provide a holistic approach. Finally, with regard to upliftment and rehabilitation programme by the Central and State Governments, Missionaries and any involvement by Non-Government Organisation has been analysed.

REVIEW OF LITERATURE

The term tribe is derived from the Latin word ‘tribes’ meaning the ‘poor or the masses’. In English language the word ‘tribe’ appeared in the sixteenth century and denoted a community of persons claiming descent from a common ancestor. This chapter attempts to give an insight into the tribal studies in India and abroad in particular.

TRIBAL STUDIES CONDUCTED IN INDIA AND ABROAD

The Indian tribal society is a unique society which comprises of diversity of nature and people. In our country, known for the extreme poverty of the masses, the tribals constitute the core of the poor. Poverty, poor health and sanitation, illiteracy and other social problems among the tribals are exerting a dragging effect on the Indian economy. The Five Year Plan formulated the implementation of a series of investment-backed schemes and projects for the betterment of the conditions of the tribals living in the rural and urban areas. Many of
the tribes with their forest-dwelling culture do not have the motivation or the skill of settled cultivation. As a result, their land has been alienated to their better endowed tribal neighbours or non-tribals. There have been many tribal studies in India and abroad based on tribal Demographic variation, Serological variation, Dermatoglyphic pattern, Criminological dimension and Rehabilitative programmes etc. It is highly imperative to have a look at these tribal studies by various Anthropologists, Criminologists and Research Scholars, etc.

**DEMOGRAPHIC STUDIES CONDUCTED IN INDIA**

Bhasin (1990) studied the effects of consanguineous marriages on mortality among Yadava abd Kamma cast groups of Andhra Pradesh. Out of 667 families 230 families are found to have genealogical relationship. Yadava and Kamma populations show high percentage of still births and miscarriages in consanguineous marriages for all the conceptions. The mean co-efficient of inbreeding (F) among Yadava was higher (0.04709) as compared to Kamma (0.02119). In the urban-rural breakup the urban group of both communities shows higher F value.

Basu (1990) studied and found that Lepchas eat fish and a type of tuber viz. diascoria, while Sherpas did not. It was observed that diascoria had a fecundity-inhibiting function resulting in lower fertility among Lepchas as against Sherpas though both shared a similar physical environment.
Sinha (1990) reviewed the fertility among the tribal groups of Gujarat, Madhya Pradesh, Maharashtra and Rajasthan and found the general marital fertility rate to be 169.4 births/1000 females or males against 152.2 births/1000 female or males.

Basu and Jindal (1990) made an indepth study of a primitive tribal group, i.e., Kattiya Khondhs of Tumdibandha block of Pulbani district, Orissa. The average age at menarche among Kuttiyas was found to be 14.5 years. It was observed that the average number of pregnancies per month was 5.09 and 3.89 respectively among mothers of completed and in complete reproductive life cycles.

Datta (1990) while conducting demographic investigations among the Kora tribal population of Midnapur, West Bengal found that sex ratio to be 882 females per 1000 males which was quite low compared to the all India scheduled tribe population.

Datta (1990) reported from her study that Koras, a scheduled tribe of Midnapur, West Bengal, had a mean of 3.30 surviving children in their completed age of fertility rate. She found the crude birth rate and total fertility rate to be 41.81 per 1000 population and 4.42 per 1000 Kora women respectively. These values were relatively higher than the national figures for these measures. However, these values were in agreement with most of the tribal groups in India.

Gogi (1990) studied and found (1961-71) that the rate of growth of Tribal population in North India was lower than that of the general
population. This was mainly because of a very low natural growth of the tribal population in the North East region.

Gurumurthy et. al., (1990) studied demographic and health determinants of infant deaths among the Sugali tribal group in the Kalyanadurgam and Beinguppa blocks of Ananthapur district of Andhra Pradesh. He pointed out that out of 348 infant deaths 45.4% were neonatal and 54.6% were post neonatal. About 25% infant deaths occurred due to dysentery/diarrheas and 20% due to maternal factors such as prematurity birth injury, multiple birth, low birth weight, birth asphyxia and so on.

Saxena (1990) in his study conducted among the Tharu and Buk's tribes of Uttar Pradesh reported that the Tharu and Buk's coupales displayed a high level of fertility which was well reflected in the tendency to achieve higher order births even at younger ages.

Pandey (1990) observed high fertility and mortality in Muslim tribal groups and attributed it to the low level of education and income, lack of knowledge of family planning method facilities, lack of proper sanitation and drinking water.

Parasuraman and Rajan (1990) discussed the estimation of vital rates among the scheduled tribes in Western India. A very high proportion of 0-14 population to the total population indicated a higher level of fertility and high mortality.

Bhattacharya et. al., (1991) studied menarche and menopause among the Mahar community of Maharashtar. The age at menarche
among the Mahar ranges from 11 to 15 years. The mean menarchial age was found to be 13.98±0.12 years. And the mean age at menopause was 43.03±0.50 years. T ranges from 37 to 47 years respectively.

Kshatriya (1992) investigated the cultural norms that particularly affect women's health and attitudes towards marriage, marriage practices, age at marriage, values attached to fertility and sex ratio of the child, pattern of family organization her status in the society, decision making capability and ideal role demanded of women by social and cultural convention.

Khonasdier (1992) studied few aspects of the Panar Sutonga and Mopala in Jainti Hills, district of Meghalaya. In his work, he found that out of 585 pregnancies 8 terminated in to twin birth. The frequency of multiple birth was 1.42% and 1.37% live births out of the total pregnancies. The index of opportunity for selection was estimated to be 0.4012 and 0.6807.

Gupta and Jaiswal (1992) studied age at menarche in three different caste groups of Jammu city. They found mean menarcheal age to be 13.25±0.13, 13.70±0.12 and 13.55±0.13 for Brahmin, Rajput and Mahajan, respectively. However mean age at menarche between Brahmin and Rajput was statistically significant.

Basu and Kshatriya (1992) studied the fertility and mortality trends among the Dudh Kharias of Sunderagarh district of Orissa. They reported that the estimated total fertility crude birth rate, crude death rate and infant mortality rate were 5.39, 38.5, 11.80 and 102.4
respectively. All these demographic parameters showed higher values than the Indian national population level according to the 1981 census. These were similar to those of the other Indian tribal populations.

Singh and Shukla (1992) worked on menarche in five-endogamous groups of Tharu tribal females of Uttar Pradesh. They dealt with the mean menarcheal age 450 rural girls belonging to five endogamous groups of Tharu a scheduled tribe of India inhabiting terai track of U. P. The endogamous groups are Rana, Jogia, Dangura, Katharia, and Pachhimata. The results reveal that the heterogeneous distribution of mean menarcheal age and they discussed with genetic and non genetic factors involved in the age. Finally the results are also compared with other similar studies of Indian population.

Basu et. al., (1993) while conducting research investigation on 481 households among the Jaunsaris of Jaunasar Bawar, Deharadun, they found a crude birth rate of 42.67 per thousand population and infant mortality rate of 79.64 per thousand live births. Polyandry and polygamy were found to co-exist in the study sample.

Reddy et. al., (1993) worked on consanguinity and inbreeding effects on fertility and mortality among Mala of Chittor district, Andhra Pradesh. Data were colleted from 190 households of Malas. The proportion of consanguineous marriages (60.53%) was found to be higher than that of non-consanguineous (39.47%) marriages. The autosomal and sex linked inbreeding co-efficients are 0.04112 and 0.03948 respectively. The pregnancy wastages and mortality are high
and total conceptions, live births, surviving offspring are low among consanguineous matings than in non-consanguineous matings.

Chatterjee Shikha (1994) made an attempt to examine the relationship between age of menarche, menopause and fertility in a sample of 194 ever married post menopausal women of Paschatya Vaidik Brahman women of West Bengal. The data show the early maturing women are more fertile (7.67±1.41) than the late maturing women (5.17±1.10) and there is no apparent correlation between fertility and menopausal age. But effective marital period is better predicted by age at menopause.

Sharma et. al., (1995) studied the effect of menarcheal age on fertility among Gond, a tribe of Maharashtra. Data on menarcheal age and fertility were collected by interviewing 96 Gond women of Nagpur district. It has been found that the average menarcheal age among Gond is 13.69±0.24 years. The menarcheal age indicated the upward trend in the pre-menopausal women. The adolescent sterility suggests inverse correlation with the menarcheal scale. While the relation between the fertility and menarche is parabolic. The value of co-efficient of correlation i.e. r=0.656±0.06 between the menarcheal age and fertility is significantly high (r=0.66±0.057). Thus, it suggests that variation in the most menstrual cycle is one of the factors responsible for differential fertility.

Basu (1996) studied the selection intensity among Sonwal Karachis of Assam. The value for selection intensity reported to be
0.445, showing the moderate intensity with fertility and mortality components 0.330 and 0.084 respectively.

Rao Rajendra (1996) studied the marriage distance and pattern of mate exchange among Dhangar and Kamar tribes of Chattisghar region of Madhya Pradesh, to know the migration and spatial distribution of genes. On the basis of his study he has drawn some assumptions.

Bhasin et. al., (2002) worked on consanguinity and its effects on fertility and child survival among Muslims of Ladakh in Jammu and Kashmir. 503 married women belonging to Balti, Brokpa and Arghun population groups of Ladakh were chosen. The incidence of consanguinity was found relatively low at 19.3 percent, when compared with other Muslim population groups of Northern India. The mean coefficient of inbreeding has been estimated as 0.0116 for Ladakh Muslims as a whole. The most prevalent type of consanguineous marriage is that between first cousins. The Ladakh Muslims also show increased fertility and decreased proportion of surviving children in consanguineous than in non-consanguineous marriages.

Dharani Priya et. al., (2003) studied selection intensity among Kshatriya an endogamous population of Andhara Pradesh. Data compressed of 193 women in the rural and 162 women in the urban area who had attained menopause. It has been observed that prenatal deaths are more (0.3704±0.0435) in the urban area. While pre-reproductive deaths are more (0.3627±0.0423) in the rural area. High mortality (0.0987) component of Crow's Index of Opportunity for total
selection may be the result of poor medical facility and health care in this area. A comparative study of this index in Andhra population shows that the index is inversely proportional to the caste hierarchy.

Sarswathy et. al., (2003) studied the effect of consanguinity on fertility and offspring mortality among 350 ever married Kolam women of Adilabad district, Andhra Pradesh. Findings showed that Kolams with consanguineous matings have shown a significantly elevated fertility. However, consanguinity is not found to significantly influence the offspring mortality up to the age of 9 years. At different stages of life up to 9 years the mortality was somewhat higher (13.85) in consanguineous mating. This can be explained on the basis of the fact that inbreeding invariably leads to increased selection intensity and thus, furthers the elimination of abnormal genotype.

Tiwari et. al., (2003) Studied the age at menarche and its association with age at marriage and age at first birth. The study was conducted in urban/rural area of Anand district in Gjarat State. A total sample size of 100 ever-married women in the age group 13-49 years was taken from ever married women of the study area. The results showed that all the coefficients of correlation accept two, are significant at 0.01 level, and most are significant at the 0.001 level. This shows that age at menarche, age at marriage and age at first birth are correlated. The average birth intervals for women having early menarche (<12 years) has a longer birth interval for each birth interval as compared to women having late age at menarche (>15 years). It might be due to the fact that women who have late menarche, the age
at marriage being higher than early matures may try to complete the desired family size as early as possible.

Biswas Rajan Kumar et. al., (2004) studied age at menarche and menopause among Saharia women a primitive tribe of Madhya Pradesh. Data were collected from 333 households of six Saharia villages. Findings revealed that as a primitive tribe Saharia are positioned under socio-economically backward condition. Age at menarche and menopause of women are varied regarding the different socio-economic factors. In comparison age at menarche of Saharia women (13.5 years) is high, when compared to Gond (12.8 years) and Kamar (13.49 years), but it is low when compared to Hill Korwa (13.67 years), Munda (14.65 years) and Abujhmara (15.0 years) tribe of Madhya Pradesh. Mean age at menopause of Saharia women has been found to be 44.6±1.17 years which is comparatively higher than the mean age at menopause of Kamar (43 years), but lower than Hill Korwa (44.63 years) tribe of Madhya Pradesh.

Thvarte (2005) made an attempt to deal with the natural selection among the Vaiphei of Churachandpur, Manipur based on the differential fertility and mortality components, from 38 ever pregnant women aged 45 + years and observed that, the ‘T’ value is 0.344 and low contribution of mortality component in the population.

Lakshmi et. al., (2005) studied opportunity for natural selection among three endogamous sub-populations of Andhra Pradesh, supposed to belong to one common stock. Data were collected from 846
married women, 301 from Arya Vysya, 258 from Thrivarnika and 287 from Kalinga Vyasa groups. Out of these Kalinga Vyasa women were found to have completed their reproductive life. The total index of opportunity of selection is; Arya Vysya (0.6920), Thrivarnika (0.6271) and Kalinga Vyasa (0.5412). However, the mortality component is more in Kalinga Vysaya (0.1493), reflecting the poor medical facilities available to them due to their low socio-economic profile compared to other two populations.

Lakshmi et. al., (2006) studied age at menarche in three caste populations of Andhra Pradesh. The sample includes 301 women from Arya Vysya, 258 from Thrivarnika and 287 from Kalinga Vyasya aged between 17 and 71 years. The data were collected from Visakhapatnam, Vijayanagaram and Sikakulam. To find out the age at menarche of post menarcheal women, recall method was used. In comparison it has been observed that there is a decrease in mean menarcheal age of Arya Vyasya 13.56±0.06 years, Kalinga Vyasaya 13.04±0.06 years and Thirvarnika 13.50 ± 0.07 years. Further in two other population groups of Andhra Pradesh mainly which have been studied at different times show decrease in mean menarcheal age of Viswa Brahmins 12.76 years and 14.76 years in Telaga, and a secular trend leading to decrease of the mean menarcheal age is evident.

Sharma Neeru et. al., (2006) conducted the study to find the mean age at menarche in two caste groups i.e. Brahmin and Rajaputs of Jammu comprising of 50 samples in each group. The results revealed that the value of the mean age at menarche in Brahmin and
Rajaput girls were 13.857±0.0125 years and 13.859±0.0125 years respectively. ‘t’ value indicated that there is no significant difference (t = 1.87) at mean age at menarche between these two groups.

Rao et. al., (2006) studied selection intensity among Khond of Andhra Pradesh, collected materials from 242 Khond households from 12 villages of Vishakapatnam district. The index of selection intensity among Khonds (0.614) is observed to be lower than Kolam (0.728) and higher than in tribal population of India which ranges from 0.61 in Sungalis, 2.25 in Kotas and Chenchu (0.370) of Andhra Pradesh. Selection intensity among Konds is found to be lower when compared with Raj Gond Pardhan, Hill Kolam, Manne Kolam, Chenchu and Yanadi tribe of Andhra Pradesh. This could be attributed to the availability of health care facility, better nutrition and socio-economic conditions and bio-genetic factors considering the size of the population. The sate of demographic dynamics reveals that the Khond is passing through better demographic transition.

Veena and Bhat (2009) have made an investigation on age at menarche in two different caste groups. i.e., Lingayath and Adikarnatakas. This study was to assess the level of knowledge regarding rituals, taboos, food pattern, social restrictions, health problems and nutrition observed during the menstrual period. The sample for the research comprised of 200 Lingayath girls and 200 Adikarnataka girls in the age group of 11-18 years from Mysore districts. The results reveal that the mean age at menarche among the Adikarnataka girls is 13.64.
DEMOGRAPHIC STUDIES CONDUCTED IN ABROAD

Stepan Kunitz (1976) worked on fertility, mortality and social organization of American Indian tribes. The overall conclusion of his study is that, the changing infant mortality resulted from the contemporary socio-economic factors and factors related to the traditional forms of social organization and personality structure.

Chamie (1977) accounted for the religious differentials in fertility in Lebanon. Significant fertility differences were observed among Muslims and Christians. Dependence of religious fertility differentials based on cumulative fertility on the levels of wife's education was noticed. He concluded that, at low levels of wife's education differences in fertility are great and at high level religious differentials in fertility are found to be insignificant.

Jean Brainyard (1982) in his study on the mating structure of a nomadic pastorals of Turkana, concluded that, the 30% of mate selection among them was a large proportion in genetic term for preventing genetic differentiation on local level. It was confirmed that the Turkana clan exogamy showed little genetic significance for either settled or nomadic individuals.

Tawiah (1984) worked on the determinants of cumulative fertility in Ghana. The multivariate analysis of the relationship between cumulative fertility, age at marriage, level of education, religion, form of marriage and residence of husband was carried out. The conclusions of the study revealed that, the age at marriage was inversely related with
cumulative fertility. More pronounced differentials were observed for older and rural women than the younger and urban women. The significant fertility differentials were found associated with the level of education, religion, form of marriage. Husband's residence was pointed out as a poor predictor of cumulative fertility.

Kwawukume et. al., (1993) studied menopausal age of Ghanaian women. A prospective survey involving 152 women in Alcosombo district in Ghana was conducted. Among them 29 were excluded because they were not sure of their birth dates and data from 123 women were analyzed. Result reveals that the age at menopause in Ghanaian population was 48.05±3.62 SD, and 48 years respectively. Tiredness, sleeplessness, palpitations, weight gain, hot flushes, irritability, anxiety and headache were the major symptoms at menopause. Hot flushes or flashes was the most disturbing symptom at menopause.

Coombs et. al., (1996) analyzed the longitudinal fertility data of Detroit to draw inferences about abortion and foetal mortality. They concluded that the higher foetal mortality rates among the sub-groups are due to the availability of intensives and financial means for induced abortions.

Nesrin Reis et. al., (1997) studied the age at menopause and factors influencing the age at menopause from 282 women in Erzurum, Turkey. The mean age of menopause was found to be 45.3 years and ranged from 35 to 54 years. Positive relationships were found between
age at menopause and marital status, body mass index, gravidity, parity, age at menarche, menstruation and menstruation breeding period. Whereas, negative relationships were found between age at menopause and smoking age at first birth, abortion status and oral contraceptive use.

Bener et. al., (1998) examined the association between some biosocial factors, consanguinity and age at natural menopause in the United Arab Emirates (UAE). In a sample of 800 UAE females aged 40 years and above, there were 742 (85.8%) respondents. The median age of natural menopause was 48 years. There were statistically significant differences between women in consanguineous and non-consanguineous marriages with regard to BMI (p<0.002), occupation (p<0.008), weight (p<0.0001), age (p<0.03), age of menopause (p<0.005), parity (p<0.0001), mother’s age at menopause (p<0.007) and sister’s age at menopause (p<0.002). The study showed that among UAE women, consanguinity of marriage, maternal and sister's age at menopause, BMI, parity number and smoking habits significantly influence the natural age of the menopause.

Khayat Rita et. al., (2005) studied consanguinity and its effect on infant and child mortality in Egypt, by using country’s Demographic Health Survey 2000 data a nationally representative sample of 16957 households from six governorates of Egypt that includes 15573 ever-married women aged 15-49 years. To see clearly the impact of consanguinity on offspring’s mortality, the group of women has been divided into three separate categories, namely, 'close consanguineous',
'remote consanguineous' and 'non-consanguineous' marriages. The result show 30% and 19% higher risk infant mortality among close and remote consanguineous couples, respectively. Similarly the risk of child mortality is found higher among the close consanguineous couples by more than 50% and among remote consanguineous couples by 27% as compared to non-consanguineous unions.

Bener et. al., (2006) studied consanguineous marriages in Qatari population. A sample of 1515 married Qatari females aged 15 years and over participated. The degree of consanguinity between each and her spouse, and degree of consanguinity between their parents were recorded. The rate of consanguinity in the present generation was high (54.00%) with a co-efficient of inbreeding of 0.2706. The commonest type of consanguineous marriage was between first cousins (34.08). Double first cousin marriages were common (3.01%) compared with other populations. The consanguinity rate in the state of Qatari has increased from 41.08% to 54.05% in one generation.

Blanco Villegas et. al., (2006) studied reproduction pattern in consanguineous and non- consanguineous marriages in La Cabrera, Spain. The result reveals that first component correlated positively with the number of live births and with the duration of the reproduction period. It also reveals the positive correlation with variables describing the beginning of the marital union and the negative association with the two variables that described neonatal and post-natal mortality. Fertility was the variable that offered the best explanation of the reproductive pattern (32.00%) followed by the marital structure.
It was concluded that in the La Cabrera population, consanguinity appears as a socio-cultural process that affects the marital structure and alters that reproductive pattern, prolonging the reproductive period, which results in a greater number of offspring. Lower infertility rates and the possible compensatory effect for infant mortality may reflect biological factors making the wife's reproductive period more efficient.

**BLOOD GROUPS STUDIES CONDUCTED IN INDIA**

An investigation by Singhal et al., (1991) is pledged to throw discernible light on the nature of existence of ABO-Hp association and whether it is a contributing factor toward infertility of the couple. 250 couples were tested at Patiala and result revealed various interesting facets of interaction and infertility.

Rami Reddy and Kalyani (1991) studied blood groups among 170 Badagas and 76 Todas of Nilgiris, Tamil Nadu to know the correlation between blood groups and diseases. Results point the bronchial asthma which was common in both tribes which also show higher proportions of (O and B) blood groups. Among Badagas and Todas "A" and "AB" are more frequent. Enteric fever, tuberculosis, cataract, corneal ulcer and diabetes in Badagas alone generally show larger group proportions of patients than of controls.

Sharma (1995) has conducted a study on maternal foetal ABO blood group incompatibility and its effect on the postnatal growth and development among the children. This cross sectional study were
carried out on 303 Khairwar tribal children (163 boys and 140 girls) aged 1 to 15 years of Surguja district, Madhya Pradesh, India. The measurements include body weights, height-vertex, height illiospinale, biacromian breadth, billiocristal breadth, total upper arm extremity length, upper arm circumference, calf circumference, head circumference, biceps skinfold and triceps skinfolds.

Gupta Sagrika and Singhal Praveen (1999) have carried out a study on 100 Muslim individuals of both the sexes of Haripari village (Tehsil Tral) of Pulwama District of Srinagar (Jammu and Kashmir) for the distribution of ABO and Rh blood groups. A trend A>AB>B>O has been observed. The frequency of Rh-ve is 5%. The frequency of gene p (0.509) is maximum followed by r (0.316) and q (0.154) genes. Gene has frequency 0.226. The chi-square values show insignificant differences among various sub-castes of Muslims. The results of the present study have been compared with other Muslim populations of India.

Dhingra Rajni and Anandalakshmy (2000) have designed to understand the connotations of blood as reflected in the responses of adolescent girls (13-17 years). The study also aimed to look at the changes in the attitudes of girls towards loss of blood through donation, injury and menstruation due to the impact of science teaching in the school. It was hypothesized that older girls (15 and 16 years) would give more scientific explanations compared to younger girls. The sample under study consisted of 60 girls (students of IX and XII, 30 from each class). Mothers of 5 girls from each group were also interviewed. It was found that a greater proportion of older girls gave
scientific explanations to some issues, suggesting that school education had an impact. This impact was also seen in the fact that daughters, more than their mothers, gave scientific explanations. A variety of beliefs associated with blood emerged from the responses. The initial expectation that the term ‘blood’ would carry a complex connotation was thus supported.

Rami Reddy et. al., (2000) have said that the LH system, first introduced in India in 1979, is either present (LH) or in humankind like the Rh system. The present work is the specific of its kind among the tribal population of South India. It is based on a sample of 400 randomly selected unrelated individuals of both sexes, 200 each from the Yerukala and Sugali tribes drawn from Cuddapah district of Andhra Pradesh. The distribution of LH* and LH in B blood group varies significantly between these tribes. LH* appears to be more in proportion in A, and A, B groups of our study samples than in those studied earlier. The X2 values reflect statistically significant inter-tribal difference as well as difference between the two tribes and others.

Guha Manjula et. al., (2000) said fertility has become the most important issue during the present time in the study of population. It is conditioned by a member of bioenvironmental and Socio-cultural factors. ABO Blood group is linked up with the nature and extent of fertility, and the selective effect of this group a rouses special interest among the geneticists because of its influence on fertility. The paper examines how far the serological incompatible factors bring effective circumstances in fertility pattern. It tries to highlight this specific
situation among the womenfolk of Bhatra tribe living in five villages in Bastar district in Jagdalpur Tehsil, Madhya Pradesh.

Jain et. al., (2003) have collected serological data on Mahar of Nagapur city. The blood samples were tested for A1, A2, BO and Rh (D) blood groups, Hbs, B-thalassaemia and G6PD deficiency. This new Buddhist group represent as one of the biggest scheduled caste communities of Maharashtra and shows significant heterogeneity with respect to Hbs gene across Maharashtra.

Balgir (2005) made a field study among scheduled tribes constituting a major chunk of the total population of India. Out of about 475 tribal groups in India, 75 are primitive tribes. A total of 2,488 children aged 05-16 years belong to 15 major scheduled tribes, viz., Bathudi, Bhatra Bhumiz, Bhuyan, Gond, Kharia, Kissan, Kolha, Kondh, Lodha, Munda, Oraon, Paraia, Santal and Saora. They were screened for ABO and Rh (D) blood groups at random from various Ashram schools in eight districts of Orissa. The ABO and Rh (D) blood groups distribution showed the high frequency of B over A blood group in 12 major scheduled tribes except Bhumij, Gond and Lodha.

Krihika et. al., (2006) made an investigation of ABO blood groups among three little known sub-tribes of the Adi tribe, namely, the Panggi, Komkar and Padam, of the East and Upper Sing districts of Arunachal Pradesh, India. Blood group O was the predominant group in the Komkar and Padam, whereas group A was the predominant group in the Panggi. Blood group AB was found to be the least frequent
group in all three studied populations. The populations showed significant difference in blood groups A (43.00% in Panggi, 23.00% in Komkar and 18.00% in Padam) and O (33.00% in Panggi, 54.00% in Komkar and 61.00% in Padam). The chi-square test indicated significant deviation from Hardy-Weinberg equilibrium, suggesting high heterogeneity among the tribe.

Tripathy Vikal et. al., (2006) in their investigation of ABO and Rh (D) polymorphisms conducted on 923 Tibetans living in exile in four different places (both high and low altitudes) in India. The frequencies of alleles p, q, and r for the ABO blood group system were found to be 0.1295, 0.2544 and 0.6152 respectively, and alleles D and d of the Rh blood group system the allele frequencies were 0.9428 and 0.0572, respectively, for the total data. No significant difference was found for the allele frequencies among the four places for the two blood group systems. The allele frequencies were in Hardy-Weinberg equilibrium for the ABO blood group system and show East Asian affinity for the Tibetans.

Subhashini (2007) worked on ABO blood groups and Rh (D) factor has been studied among Irulas, one of the most dominant hunting tribe of Pondicherry. The frequency of O, A, B and AB blood groups were recorded 34.00%, 20.05%, 39.05 and 06.00%, respectively. Rh negative found to be 06.05%.

Jai Prabhakar et. al., (2009) studied on frequency distribution of the ABO and Rh (D) blood groups among the Gangadikar-Vokkaligas of
Mysore, Karnataka. The O group recorded the highest frequency, followed by A and B. The incidence of Rh (D) negative was 2.67% and the frequency of recessive d allele was 0.1633.

Rai et. al., (2009) worked on ABO blood groups and Rh (D) factors among the scheduled caste (chamar) population of Jaipur, Uttar Pradesh. The B, O, A and AB blood group percentage are recorded as 31.04%, 30.09%, 29.04% and 08.02% respectively. The allele frequencies of O, B and A groups are found to be 0.564, 0.224 and 0.212 and Rh (D) allele frequency is 0.793.

**BLOOD GROUPS STUDIES CONDUCTED IN ABROAD**

Bhasin (1970) tested the blood samples among 529 unrelated Newar individuals from Nepal. Frequencies of antigen A1 A2 MNS1 and Rh factor were calculated. Newar groups possess a frequency of k gene ranging between 4.77% to 7.61% of the gene for secretor ranging between three groups of Newar (Shrestha, Gubhaju and Jyapu) were not discernible for the blood groups and ABH secretion.

Thomas (1970) worked on selective differentiation of the ABO blood group gene frequencies in Europe. ABO gene frequencies had been analysed within four European countries as well as in the aggregate of twenty five countries to decide whether sub population and population differences occur at random or selectively. The differentiation proved to be everywhere of high degree predominantly of selective origin. In Switzerland, the correlation test indicates a significant influence of selective forces. The differentiation patterns in
Sweden with N-s main extension and in Czechoslovakia with E-W main extension are just the opposite of each other. France clearly shows the continental differentiation pattern. The characteristic decreasing order of differentiation of the gene frequencies for the whole of Europe is p, q, and r with large distances.

Malcolm et. al., (1971) made an extensive study of blood group gene frequencies (ABO, P, Rh, MNS) for the Bundi people of the New Guinea Island determined on 759 individuals belonging to 15 different clans. Data showed some slight heterogeneity between clan divisions but increasingly marked heterogeneity when compared with neighboring Chimata, Goroca and Simbai people. Intermarriage patterns within and into Bundi were constant with blood group data.

Alfred et. al., (1971) made a survey of nine blood group systems. Field study was conducted among some North Eastern British Columbian, Indian bands. The sites contained Beaver, Slave and Greek speakers. A significant result revealed was, Hardy-Weinberg equilibrium observed in the combined MNSs system. No age trends sex were observed by him.

Welch et. al., (1975) studied 161 inhabitants of the Seychelles Islands for blood groups, serum proteins and red cell enzyme polymorphisms. The results of the Seychelles surveys reported in his paper provided additional biological evidence to support the anthropological view that the present day Creole-speaking inhabitants of the Islands result from an admixture of African and Caucasian stock.

Polychronopoulos et. al., (1977) collected data from 666 young Greek male subjects and 163 girls to study the relation between ABO, Rhesus ‘B’, blood groups and serum Cholesterol, triglycerides and phospholipids. Rh negative subjects had higher serum cholesterol levels than Rh positive. No difference was found in ABO and Rh groups as regards the distribution of triglyceride and phospholipids levels.

Cartwright et. al., (1977) in their investigation of “Serum proteins and is enzyme polymorphism from Nottingham, England”, observed that among 1000 blood samples collected from Englishman the regional differences were found. Blood samples were typed for red blood cells, acid phosphate, adenylate kinase, esterase and transferring. Regional differences among these levels were interpreted as variability due to variation in residence location, urban, rural, or pit village.

An investigation of Salzano et. al., (1978) a total of 363 Ayoreo Indian from three localities of Southern Bolivia and Northern Paraguay were studied in relation to 33 genetic systems which are expressed in blood and one in saliva. Results revealed that South American, Indian showed no variation at the Estense ‘D’ locus very high frequencies of LMS (MNSs blood groups) and acid phosphates system as well as a low
frequency of P1, No Diego (a) or GM (x) positives were found among them.

Befaptante et. al., (1979) investigated HL-A antigens determined for the A and B loci among 164 Chamorros living on Guam, Rota and Saipan in the Southern Mariana Island of Micronesia. The overall antigen phenotype and gene frequencies for the Chamorros population were presented and comparisons were made between Chamorros and other pacific population using HL-A antigen phenotype frequency distributions and analysis of genetic distance. Result agreed with historical accounts of admixture between Chamorros and Philippines during the Spanish colonial era and data from blood group studies show close similarities between those populations. The disease, amyotrophic lateral sclerosis is very high frequency among Chamorros, also exhibits high local prevalence’s in Japanese and Philippines, who are in closest to proximity to the Chamorros by genetic distance analysis.

Banerjee et. al., (1981) made brief study of 543 random samples of blood collected from unrelated male blood donors of Amman, Jordan and were analysed for ABO and Rh (D) blood groups. Serum haptoglobin, transferring and albumin 56pd. The results revealed that the estimated gene frequencies of 194 subjects fall within the reported range of gene frequencies of Arabs in general with a high frequency of genes.

Balgir (1986) studied serological markers carried out at the Department of Psychiatry P. G. Institute of Medical Education and
Research, Chandigarh, India. The sample comprised 300 adult manic depressive psychotics (150 Unipolars 150 Bipolars) from North Western part of India diagnosed according to APA DSM-III (1978) criteria. ABO blood groups and haptoglobin type have been studied with special reference to their association with Unipolar and Bipolar affective disorders. The results revealed that both the red cell antigens (ABO blood groups) and serum proteins haptoglobins studied and statistically significant difference between the Unipolar and Bipolar affective disorders supportive the indications of a genetic distinction between them.

Rasmson and Mossberg (1987) worked on distribution of ABO genes in Southeast Sweden. The blood samples collected from about 78,000 conscripts born 1900-1935 in Southeast Sweden have been analyzed for regional differentiation using hierarchical subdivisions of the area. The results show, the heterogeneity was present at all levels of division. Gene diversity among the sub populations has been compared to a corresponding estimate performed on data from the country of Vasterbotten in Northern Sweden.

Schineida Horacio et. al., (1987) studied on ABO blood groups in natural population of Black handed Tamarins (Sagecinus Midas Riger) Eighty one black handed Tamarins from the Tucurui Region were tested for ABO blood groups. Eleven belonged to ‘A’ group 45 to group ‘B’ and 25 to ‘AB’ . The result revealed ABO system appeared to be polymorphic, with three alleles occurring at the following frequencies.
A=0.26, B=0.66 and O=0.08. The observed distribution fitted the expected on the basis of Hardy-Weinberg equilibrium.

Taylor et. al., (1987) dealt with migration and changes in ABO and Rh blood groups in Britain. He concluded after his investigation that, the force of internal migration towards national genetic homogeneity is seen in a Cohort to 8850 British women who were ABO and Rh (+ve or -ve) typed and located by residence in one of the 40 countries or country group areas in England, Scotland and Wales in 1958 and again in 1974. The climes of phenotypic frequencies of types O, A, B, Ab, Rh +ve and -ve were plotted by polynomial regression on easting (longitude) and northing (latitude) and show a persistent integeneity but with statistical significant inter-regional shifts that account for the slightly flatter carriers for some of the geographic distribution after 16 years.

Fox et. al., (1981) conducted an investigation to know the ABO blood group association with cardiovascular risk factor variables like serum lipids and lipoproteins. Samples were determined for 656 white and 371 Black adolescent school children particularly in a community based screening programme. This was followed by appropriate adjustment of lipid values for concomitant variables mean. Two levels of ABO phenotypes were found to differ significantly in both races. (A>B in Whites, B>O in Blacks). Analysis of phenotypic ratio at different percentile levels of lipid and lipoprotein distribution indicated that phenotypic ratios for Black and White children ranking above the 85th percentile of their respective B-LDC distributions. Results differed
significantly from ratios prevailing in the remainder of the study population.

Salzano et al., (1991) worked on 31 genetic systems obtained for 421 individuals belonging to the Arara, Arawete, Mundureucu and Jamamadi tribes of Northern Brazil. The data were analysed together with those of 24 other Amazonian groups. The Genetic distances and corresponding devdrogremos indicated a cluster of 14 related tribes living near North of the Amazon River. The results show only a modest correlation with linguistic and geographic relationships among these groups.

DERMATOGLYPHICS STUDIES CONDUCTED IN INDIA

Sarkar (1972) conducted dermatoglyphic studies among the Mech of Jalpaiguri, West Bengal. A dermatoglyphic study was carried out among 138 male and 119 female samples belonging to the Mech community of Jalpaiguri district, West Bengal, for finding out sex variation, and their ethnic relationship with other allied group. The analysis showed significant existence of a sex distribution of principal pattern types, in the mean total number of triradi on fingers.

Ghosh and Nanda (1975) have conducted a study on finger dermatoglyphics of the Lodha of Midnapur West Bengal. The data on dermatoglyphics were collected from the Lodha of Midnapur in 1969. On the basis of whorl/loop ration the Lodha have been considered as Mundari group of people. Bhowmick (1956) pointed out from
anthropometric study that the Lodha show close resemblance with the Veddah.

Sakar (1976) worked on a dermatoglyphic study of four Hindu Castes of Midnapur. Some aspect of digital dermatoglyphics of four major Hindu Castes inhabiting Midnapur district of West Bengal are reported. All together finger prints of 514 male belonging to Kayastha, Sadgope, Mahisya and Adi-kaibarta were investigated. Results revealed the Adi-Kaibarta group deviates from others in respect of three pattern indices, while the Kayastha, Sadgope and Mahisya Stand close to one another in respect of PII. The intergroup differences in mean PII were not significant.

Ghosh (1978) worked on dermatoglyphic assessment of the Rajgond, Pardhan and Kolam. Finger and palm prints of both the sexes of the Rajagond, Pardhan and Kolam of Yeotmal district of Maharashtra were examined. Results revealed that the main line index showed that the Rajgond and Pardhan were homogeneous but they were significantly different from the Kolam.

Shukla and Tyagi (1980) studied finger dermatoglyphics of the Sindhis of Lucknow. Sindhi is the general name applied to score of people, who speak the Sindhi language as their mother tongue and belong to that land which is known as Sindh. The method as suggested by Cummins and Midlo (1961) have been followed, however ridge counting was done on the line suggested by Holt (1949). Finger prints were collected from 170 Sindhis (90 males and 80 females). Results partaing to intersex difference in respect of pattern intensity index are
significant. The difference between total ridge count and a-b ridge counts among males and females vary considerably (153, 79, 122, 69, 67, 13, 42, and 67 respectively).

Mathotro et al., (1981) worked on palmar dermatoglyphics in three nomadic Mendelian isolates. The paper reports the palmar dermatoglyphics of males and females of the three Mendelian isolates Patils, Chougules and Komtis of the nomadic Nandiwallas of Maharashtra, India. Result revealed the vast range of variation observed in several palmar features among these groups. It can best be explained as a result of genetic drift and founder effect.

Tersex differences among Patil and Komtis are non significant, but among Chougules it is significant ‘C’ line termination at ulnar end is more frequent among Patil and Komtis and at radial end it is more among Chougules. Pattern intensity index values among Patil and Chougules are 14, 78 and 17, 31 respectively, whereas in Komtis it is 12, 01.

Tyagi and Tiwari (1981) studied finger dermatoglyphics of the Khattri, one staunch Hindu caste group residing mainly in the northern parts of India, whose main occupation is trading. One hundred sixty five individuals (80 males and 85 females) of Khattri community living in Lucknow, Gondo and Bahraich were finger printed during the year 1972. The prints were analysed for pattern types as suggested by Communis and Midlo (1961), and the ridge counting was done according to the method of Holt (1949). Interrex differences among Khattris in terms of pattern intensity index values are insignificant.
Khattris show much difference with Gondo and Bahralces in terms of these two index values. Gondo and Bahraices also significantly differ in their total ridge counts and 'c' line polymorphism. Khattris are found to be more homogenous, formed in to a one breeding isolate population.

Sayee et. al., (1989) worked on dermatoglyphics in chromosomal abnormalities. The study was done to determine the correlation if any between dermatoglyphics patterns and a few specific chromosomal abnormalities. Significant differences were found in the total finger ridge count and the 'atd' angle.

Debashis Basu et. al., (1992) worked on dermatoglyphic features of Mana Namasudra Bengalee Immigrants (MNBImf) comprising of 112 males and 110 females. Sec difference in pattern distribution on the palmar interdigital areas shows statistical insignificance. The 11.9.7-formula is predominant (28.63%) in females over other two main line formulae. The pattern open/Arch is more frequent in both sexes than in any other patterns. And the order of pattern intensity on the palmar areas is IV>III>Hypo> Thenar/IWII interdigital areas. An intergroup comparison among the Bengalee subgroups revealed its close affinity towards the other subgroups.

Soma Mallick (1992) studied on palmar dermatoglyphic patterns of an Island community viz, the Nicobarese in Andaman Island which constitutes a very important group of people so far as its ethnic and cultural settings are concerned. The data highlight the nature and extent of bilateral palmar prints of 60 male and 54 female Nicobarese. After analysis of the data thus arrived at have been compared with
women of other Indian population groups which arouse many interesting points.

Reddy Chandrasekhar et. al., (1992) studied on Bilateral palm among 1000 males, 200 each of five endogamous Reddi populations viz Pokanti (PNR), Pedakanti (PTR), Akuthota (ART) and Palle (PLR) Their palm prints were collected and analysed for the C-line terminations. A common pattern of higher frequency of radial types on right palms (58.0% to 53.5%) and ulnar types on left palms (53.5% to 31.5%) was observed. The proximal ending of C-line was found to be more frequent on left palms compared to the right ones among all the populations. Higher incidence of the total absence of C-line was noticed among PRL (Left=18.5%; Right =8.0%). Bilateral difference was found to be highly significant among all the populations. The present findings were compared with that of the other population of Andhra Pradesh to see the variation with regard to this trait.

In the study of Kapoor and Dash (1998) Dermatoglyphic parameters used to determine the extent of variation among the normal and thalassaemic patients up to 17 years of age. Forty patients with thalassaemia and 80 controls matched for age, sex and caste were studied from the same region. Out of 40patients, there were 25 males (62.5%) and 15 females (37.5%). The percentage of whorls among male patients are more than the controls. Loops show higher percentage on digit I and III in female patients than the controls. Both male and female patients show the mean value of angle atd and mainline Index is higher as compared to controls.
Misra Sulekha et. al., (1998) worked on the association between coronary heart disease (CHD) and finger dermatoglyphics. It has been examined in a sample of 50 CHD patients (33) males and (17) females and 50 controls (28 males, 22 females) belonging to Patiala region. The samples were collected from Government Rajendra Hospital/college, Patiala. The parameters included in the study are presence of patterns, whorls, loops, arches and composites, bimanual differences and various indices such as Pattern Intensity Index, Dankmeijer’s Index and Furuhatara’s Index.

Arti Kumari (1998) worked over tries to focus, though in a limited perspective, the nature and extent of Palmar Dermatoglyphics of the Kayasth caste group living in Ranchi town and its industrial township at Dhurwa. Prints of 305 parental pairs, collected from six different sub-castes of the Kayasth, have been analysed for the purposes of this investigation which depicts some interesting data.

Mandal Basanta Kumar and Sharma (2000) worked on interdigital ridge counts of the pain among the Lodha of Midnapore district of West Bengal. The sample comprises of 122 (67 males and 55 females) unrelated Lodha individuals. The findings show no significant bilateral as well as bisexual difference among this population. To make comparison 4 different populations are taken in addition, where the Lodha is found to be distantly related with other populations, though among females the Lodha show a close relationship with the Brahmin and Bhangi.
Singh Udai Pratap (2000) studied finger dermatoglyphics of the Oraons who are now divided in two separate religious groups i.e. Christian and Traditional Oraons. It is based on the data which consists of 400 Oraon finger prints equally representing each group i.e. 200 Christian Oraon and 200 Non-Christian Oraons. The analysis includes both qualitative as well as quantitative measures. It is noted that no clear picture of differentiation between two religious groups emerges except few micro changes who are statistically insignificant. However, in some instances the significant bisexual differentiations are observed. Lastly, the facts are put into discussion with their neighbour groups to find out the dermatoglyphic relations of the Oraons with other Indian populations.

Gangadhar and Reddy Rajasekhara (2003) worked on finger dermatoglyphic of male and female Adikarnatakas, a scheduled caste population of Mysore City of Karnataka State. The analysis includes both qualitative and quantitative characters. Finger pattern type loops (57.11%) were common followed by whorls (27.89%) and arches (15.00%) in the general population with significant sex difference and insignificant bilateral difference. Henry's plain arches are twenty two times higher than tented arches; ulnar loops are seventeen times higher than radial loops and true whorls are nine times larger than composites in the general population. The symmetry of patterns (including arches, loops and whorls) is 76.67% in either sex of the population. The left hand (32.78%) is more monomorphic than the right hand (31.11%) in either sex pattern intensity index. Dankmeijer's
Mishar Anand Murti et. al., (2004) have made an investigation on dermatoglyphics. It is a well-established discipline in the field of diagnosis of different health problems, genetic disorders and diseases. Various studies are now available to show a strong association of Dermatoglyphic traits with different health problems. The material for the present study consists of 48 bilateral palmar prints of breast cancer patients, which were collected from different hospitals of Madya Pradesh. The equal numbers of bilateral palmar prints were also collected from unrelated children to be used as control group. Trait wise differences between the breast cancer patients and the control group were calculated by using Chi-square test. The findings of the study show that main line formula 11.9.7 shows lesser frequency among the breast cancer patients, 23-95 percent (Rt.-33.33% Lt. 14.58%) as compared to the control group i.e. 27.08 percent (Rt. 25.00% Lt. 29.16%). The palmar main line formula of the Breast cancer patients and the control group shows non-significant difference.

DERMATOGLYPHICS STUDIES CONDUCTED IN ABROAD

Nylander (1971) worked on finger prints and the determination of Zygosity in twins. Zygosity was determined 183 pairs living in Aberdeen city, Scotland by blood group studies, general appearance and finger prints. The usefulness of simple methods and finger print analysis to
determine Zygosity was examined and it was found that comparisons using ridge counts were more efficient than those of pattern types.

Grace (1974) worked on the palmer dermatoglyphics of 200 males and 200 females of the Negroes and coloured communities in Durban, South Africa. Negroes in this study of the Zulu race have thenar patterns and an extremely high prevalence of loops in the 4th interdigital area. The results revealed that a number of significant difference were found between the races reported here. Coloured males had more thenar patterns on the left palm than had Negroes (0.25>p>0.01) and when both hands were considered the coloured males excess was significant (0.005>p>0.001). Here no similar differences were seen in the females.

Spence et. al., (1974) studied dermatoglyphics of childhood psychosis, a family study. Two studies report statistically significant difference in dermatoglyphics pattern individuals with childhood psychosis and randomly selected controls. Such differences could constitute fairly strong evidence that some factors, genetic or environmental, disrupted the development of the children in utero. They studied a group of psychotic children using their parents and normal siblings, as controls. Results reveal that there are no differences between affected children and their relatives.

Shiano et. al., (1975) worked on the palmar a-b ridge count and sex chromosomes. The a-b ridge counts on the palms of 480 normal Japanese (351 male and 124 females), plus samples of 25 Japanese with Klinefelter's syndrome and 5 with Turners syndrome were studied.
Increased numbers of sex chromosomes were associated with the reduced mean sum of the a-b ridge counts.

Loersch et. al., (1978) worked on genetical distance and dermatoglyphic characters. This work attempts to evaluate the dermatoglyphic (genetical) distance between two Polish population samples in related to the inter population distance coefficients estimated within each sample. All the coefficients have been based, in turn, on frequencies, of finger tip, palmer pattern elements. The results revealed of a comparison of various combinations of dermatoglyphic characters with one another in respect of all successive values of a distance coefficient. The values of inter and intra population distance coefficient obtained from samples consisting of family units have been compared with those estimated in samples of non-related individuals.

Tutton and Kachariah (1980) studied dermatoglyphic traits in an Amish-Mennonite population in Ontario for finger and palm prints of 63 males and 63 females. Amish-Mennonites were examined for evidence of an inbreeding effect. Here no significant deviations were found from the general pattern seen in other populations of similar origin in terms of distribution and frequency of palmer and digital patterns, the total ridge counts, the main-line index and the maximal and angle.

Meier Robert (1981) worked on sequential developmental components of digital dermatoglyphics. The concept of development field was varied utilizing principal component analysis in a sample of 791 Eskimos (Inuit) of North Western Alaska and 289 Easter islanders.
Preliminary testing gave some support to this idea, but the author felt further tests should be done preferably with embryonic material.

Russo (1982) worked on digital dermatoglyphics in Italians. Finger prints of 420 male and female subjects from Bologna (Italy) were analysed. Sexual dimorphism and bilateral asymmetry were observed in the group. Results revealed an increase in the frequency of whorls from North to South Italy and an increase in biological distance with increasing geographical distance were found.

Harrey and Suter (1983) worked on dermatoglyphic affinities of the Lithuanians. Studies were done with reference to samples of 83 men and 102 women of Lithuania, origin obtained in the United Kingdom and comparative data for samples from Northern, Central and Eastern parts of Europe. Results revealed that dermatoglyphic affinities were assessed univariately by compressions of mean total ridge counts and by multivariate analysis, using the E2 distance of Edwards (1971).

Meier et. al., (1987) worked on dermatoglyphic development and timing of maturation. Digital and palmar prints obtained from the Fels longitudinal study were analysed according to the traditional Cummins and modlo methodology. Results revealed that the findings might be related to an interaction between the differential timing of the development of digital and palmar volar pads and the concomitant factors involved in the different timing of maturation within and between the sexes.
Bie De (1991) conducted studies to know the genetic and environmental variation in the maximum ‘atd’ angle in twins. In samples of 270 twin pairs (110 Mz Pairs and 160 Dz pairs), maximum ‘atd’ angle (most proximal axial triradius, whenever more than one is present, was used to determine ‘atd’ angle) were determined correlation, Variances and covariance’s were significantly higher in Mz than in Dz twins.

CRIMINOLOGICAL STUDIES CONDUCTED IN INDIA

The Criminal Tribes Act (1911) was passed by the Governor General in Council of India (1924). Criminal Tribes means a tribe, gang or class of persons declared to be a criminal Tribe by a notification under section 3, which says that, if the Local Government has reason to believe that any tribe, gang or class of persons is addicted to the systematic commission of non billable offence, it may by notification in the Local official Gazette, declare that such tribe gang or class is a criminal Tribe for the purpose of this Act.

Kapadia (1952) who studied on the criminal Tribes of India, furnishes detailed information about the nature and modes of the criminality among various criminal tribes of India. He explains, the Bhamptas are railway thieves ‘par excellence’, the Sansis of Punjab, Uttar Pradesh and Rajasthan are more prone to dacoity and are distinguished by special feature of pelting stones. The Kallan considers robbery as a duty and right sanctioned by descent. The Fadna are swindlers who pretend to turn metals in to gold. The Gopalas engage themselves in cattle stealing. The Manggarudis are cattle prisoners and
cattle, goats and sheep lifters. The Kolis commonly steal only bullocks and buffaloes. The Chapperbands are known for pilfering and petty larceny, counterfeiting coins. Lamanis kidnap women and children. The Kaikadis commit robbery and dacoity and disguise themselves as Jungams (Lingayat priests), fortune tellers, medicine men or shepherds to pick-up information. The Chandrasedi often disguise himself as a woman and travel in the third class women's carriage and carry on his trade.

Mehth (1955) has mentioned that, “the largest number of criminal groups lived in Uttar Pradesh, Madhya Pradesh, (Bharat) Hyderabad, Rajasthan, and Punjab. The Gutakajats of the Punjab, the Muslim Multatis of Udaipur and the Nomadic Vanjaras were once upon a time enterprising traders, pioneers and pathfinders in this country”. The Government of India, under British Rule, passed an enactment in 1871 according to which the tribes committing criminal activities were categorized as criminal tribes and organised tribal criminality as a fact was recognized. Whoever belonged to such tribes was recognized as criminals. This act was in force until 1952. Further he says that, on the recommendation of the Indian Jail Inquiry committee (1919-20). The criminal tribes Act was again amended in 1923 and it was applied to the whole of British India in 1924. The committee recommended that a formal inquiry was necessary before any individual was registered as a member of a criminal tribe.

Biswa (1960) being an Anthropologist has studied the criminal tribes activities like, gambling, begging, theft, prostitution and
addiction to liquor among the Nats, Kanjars, Bhekuts, Baurias and Bajigars of Delhi State.

Sethna (1964) has made a special investigation on criminal habits among a few criminal tribes. The Chain Mallahas are clever in pickpockets, the Breads of Bombay were noted for highway robberies, the Ghantichors of Deccan were expert bundle thieves, the Bhars and Pasis belonged to United Provinces, and commit burglaries and dacoites and sometimes commit murder if interfered with by their victim. The Bhils mainly subsisted on theft of crops.

Fuchs (1973) conducted study on the so-called criminal castes, Thugs and Pindaris of British administered provinces in India. Further he says that Sansis (Kanjarbhat) claim Rajput origin and were successful field robbers and thieves. Chanpperbands of Bijapur District (Karnatak) were known as fake coiners.

Ramanujam (1975) opines that the offender and criminals of first order were helped by many people among them the association of a women folk is noteworthy. These women are specialist locating the house of wealthy people. Since they go as beggars in the villages and by the virtue of visiting each and every house they know who is rich and poor and accordingly feed the information to their men folk who inturn go there to loot and rob things later.

Ramanujam (1975) opines that all criminal tribes and the criminal habits were always carried on with the assistance of their women folk. To support this Simhadri observes about Yerukulas as
follows. The women folk were famous as soothsayers or fortune tellers. But their main job was to assist the male folk by working as intelligence. This clearly indicates the nature and extent of crime by women of criminal tribes in the cause and promoting the criminal cult.

He further suggested the prevention and detection of crime, gave certain calves to curb the criminality among the criminal gangs (ex-notified tribes). He says the Barwars are expert thieves and dacoits and operate at fairs, pilgrimage centers around festivals but never resort to violence. The Doms in general and Magaliya Doma in specific; their favourite forms of crime were burglary, highway robbery and dacoity. The Kepmains or Thogamalai Korwars of South India were specialists in theft from Post Office, Banks, Treasuries and Business counters. The scorpions; the very sign of scorpion was used for secret correspondence and mutual identification while operating in criminal acts like blackmail, car and motor thefts and even gunrunning.

Ramanujam (1979) has discussed on prevention and detection of crime, and the activities of important ex-criminal tribes and their modus operandi.

Sethna (1980) has discussed as under the criminal tribes in the population of India in his book 'Society and the Criminal Tribes'. They had their own rules and customs. They were in conflict with the law of the state and with the Police Haikerwal called their condition as a state of war more than a state of crime. They were courageous as well as cunning. The population of the criminal tribes was estimated to be some four million spread all over India.
Menon Geetha (1987) reveals that the impact and the loss of common property resources is very severe on tribal women. She shows that the hardships of the tribal women have been increasing. Thus tribal women are the major victims of the deprival of the traditional rights of the tribals in common property resources.

Chatterjee Chaitali (2001) study explores the societal attitudes towards the landmark Supreme Court judgment on the issue of sexual harassment at workplace and investigates how the judgment can help women at the work place. Questionnaire was circulated in Central Government offices and discussions were held with eminent personalities like journalists, writers and novelists, lawyers, theatre workers, film makers, social activists, professors, and IAS and IPS officers. It was found that 100 percent organizations were aware of the judgment given in August 1997, but the circular had reached only 84% of central government offices as yet. Study revealed that sexual harassment was severe for women in the unorganized sector where jobs were not protected; while in Central Government offices generally these incidents hardly came to the forefront. About 92 percent organizations stated that no such incident occurred in their offices; 60 percent organizations declared that they had instituted a complaint committee as directed by the Supreme Court order, while 24 percent had not formed any such committee. Very few Indian companies had a separate and clear policy on sexual harassment; 8 percent of them stated that they had other cells, e.g. Women's Cell, Personnel Department, Employees Grievance Cell, etc. to deal with the issue; 4
percent did not have any information about it, and 4 percent felt that this sort of committee was not required because they had their own Human Resource Development Departments to resolve such cases without much publicity. Study also found that dress and behavioural characteristics of women were often cited as the cause for sexual harassment. Study suggests that as sexual harassment at workplace is a punishable offence under Indian Penal Code, service conduct rules should be changed so that the problems of sexual harassment get due importance; and strict punishment should be introduced for committing such a crime.

National Resource Centre for Women (2002) investigated that there were 16,373 rape cases in India in 2002. Incidence of rape cases reported an increase of 1.8 percent in 2002 over the previous year. Madhya Pradesh alone reported 17.7 per cent of total rape cases in the country, followed by Uttar Pradesh (8.6%) and Maharashtra (8.3%). At the national level, there were 16,378 rape victims, and the number of cases were 16,373. Of these, 10,730 were in the age group of 18-30 years, followed by 2,992 in the age-group 30-50 years, and 1,325 in the age-group 14-18 years. Offenders were known to the victims in a majority of the cases.

National Resource Centre for Women (2002) conducted study on number of 'Dowry Death' cases in 2002, they were 6822, a decrease of 0.4 per cent over the previous year. 27.7 per cent of these cases at national level were reported by Uttar Pradesh alone, followed by Bihar (13.6%) in 2002. The highest rate of crime (1.2 per one lakh population)
was reported from Haryana, followed by Uttar Pradesh (1.1) and Bihar (1.1).

National Resource Centre for Women (2002) has investigated that Immoral Trafficking cases reported in India in 2002 were 11,242, a steep increase of 27.8 per cent over the previous year's record of 8,796 cases. Chhattisgarh alone reported 4656 cases (41.4%), followed by Tamil Nadu 3530 (31.4%) and Karnataka 1388 (12.3%). The highest rate of trafficking was from Chhattisgarh, 21.9 per 1,00,000 population, compared to 1.1 at the national level.

National Resource Centre for Women (2002) has conducted a study on number of cases of Sexual Harassment in India in 2002. They were 10,155, an increase of 4.2 per cent over the previous year (9746). Sexual Harassment cases include eve-teasing. Andhra Pradesh reported the highest incidence of sexual harassment cases numbering 2,024 (19.9%), followed by Uttar Pradesh 1,887 (18.6%) and Tamil Nadu 1,718 (16.9%). Haryana had the highest rate 6.6 per 1,00,000 population, compared to national level rate of 1.0.

National Resource Centre for Women (2002) has investigated on number of 'Molestation' cases in 2002. They were 33,943, a decrease of 0.5 per cent over the previous year (34,124). Madhya Pradesh reported 21 per cent of the total number of 'Molestation' cases, followed by Andhra Pradesh (11.2%) and Rajasthan (8.0%).

National Resource Centre for Women (2002) made an investigation on Incidence of Torture cases, cruelty by husband and
relatives, in India. In 2002 increased from 49,170 in 2001 to 49,237 in 2002, an increase of 0.1 per cent over the previous year. Of these, the highest incidence was reported by Andhra Pradesh 7,018 (14.3%), followed by Rajasthan 5691 (11.6%) and Uttar Pradesh 5,679 (11.5%). The highest rate in the country at 9.8 was reported from Rajasthan compared to 4.7 at the national level.

National Resource Centre for Women (2002) has conducted a study on abduction, the ever-increasing violence against women. It is yet another manifestation of low and unequal status of women and the girl child, besides being detrimental to their development. Violence against women and the girl child, both domestic and at work place has been showing an alarming trend, especially during the recent past. As per the latest data (2002) published by the National Crime Records Bureau, New Delhi, the total number of crimes committed against women has been increasing year by year from 1.21 lakh in 1997 to 1.31 lakh in 1998, and 1.36 lakh in 1999 to 1,47,678 in 2002. Of the total 1,47,678 crimes against women in 2002, torture claims the highest share of cases 49,237; followed by molestation 33,943, rape 16,373; kidnapping and abduction 14,506; immoral trafficking 11,242; sexual harassment 10,155; and dowry deaths 6,822. Amongst the States, while Madhya Pradesh reports the highest incidence of 12.6 per cent of the total crimes, Uttar Pradesh and Maharashtra followed suit with 12.5 per cent and 10.0 per cent respectively. Delhi which shares 1.3 per cent of the country’s total population, accounts for 1.8 per cent of the total crime, and holds the fourth highest crime rate in the country.
with 17.9 (number of crimes per one lakh population), while the all
India crime rate stands at 13.8. The Tenth Plan will, therefore, address
the problems of violence against women, on top priority basis, through
a well-planned Programme of Action (POA) with both short and long-
term measures at national and State levels. Situation also demands
activating the enforcement machinery, besides bringing some necessary
amendments both in the Indian Penal Code and related legislations to
make the punishment of various crimes against women more stringent.
Initiating efforts in close collaboration with the committed NGOs to
bring forth societal re-orientation is yet another important area for
intervention during the Tenth Plan. However, the National Commission
for Women, in close collaboration with the non-governmental
organisations already working in this field, can play a lead role in
combating the day-to-day increasing violence against women and the
girl child. All forms of violence against women, physical and mental,
whether at domestic or societal levels, including those arising from
customs, traditions or accepted practices shall be dealt with effectively
with a view to eliminate or curb its incidence. Institutions and
mechanisms/schemes for assistance will be created and strengthened
for prevention of such violence, including sexual harassment at work
place and customs like dowry; for the rehabilitation of the victims of
violence and for taking effective action against the perpetrators of such
violence. Special emphasis will be laid on programmes and measures
to deal with trafficking in women and girls.
National Resource Centre for Women (2002) has conducted a study on foeticide related to the problem of gender bias and the persistent discrimination against the girl child. There are sex-related harmful practices of female foeticide and female infanticide leading to unwanted abortions and the present high rates of female infant mortality of 65 (2002) compared to 62 of males, female child mortality of 18.6 (2002) as compared to 17.0 of males in the age group 0-5 years as per Sample Registration System Report 2002, and maternal mortality of 407 (1998) (More details under the section on Development of Children). Based on the 2001 Census, sex ratio in the age group 0-6 years is abnormally high in favour of males in the States of Delhi, Gujarat, Haryana, Punjab, Himachal Pradesh, Chandigarh and Uttar Pradesh. Besides, a multi-centric study sponsored by the Department of Women and Child Development in 1993 also confirmed that while Female foeticide is taking place sporadically all over the country, Female Infanticide exists as a common phenomenon amongst certain communities. The Tenth Plan will, therefore, initiate action to enforce effectively both the Indian Penal Code, 1860 and the Pre-Natal Diagnostic Techniques (Regulation and Prevention of Misuse) Act, 1994 to control/eradicate female foeticide and female infanticide, respectively with a close vigil and surveillance on the situation, along with severe punishment for the guilty. Besides long-term measures, efforts will be made to usher a change in the mindset of people treating the girl child as unwanted, subject to neglect and discrimination within and outside her home. There were 84 cases of female foeticide and 115 cases of...
female infanticide reported in 2002, compared to 55 cases of foeticide and 133 cases of infanticide in 2001, which were 52.7% and -13.5% over the previous year respectively.

Chakraborty Indrani (2003) has conducted study during 2001-2003 in Kolkata and 24 Parganas (South) to examine the effectiveness of Section 498A, 304B and 306 of I.P.C. in addressing problems of domestic violence and dowry death; and to analyse the role of law enforcement agencies, judiciary and non-government organizations. Sample of the study included 21 and 11 officer-in-charge of police stations, 6 and 5 Public Prosecutors, 3 and 2 advocates, 8 and 4 NGO personnel, and 7 victim girls each from Kolkata and 24 Parganas (South), respectively. Data was collected from crime index and Khatian from 18 police stations of Kolkata and 11 police stations of 24 Parganas (South) and also through interviews. A total of 128 victims were found from 18 police stations. Victims generally aged between 19-40 years and majority of them were illiterate. It was found that irrespective of the nature of marriage, women became victims of domestic violence, dowry death and abetment of suicide. Victims mainly suffered physical torture viz. beating, searing with burning cigarettes, pushing a pregnant women causing miscarriage; and mental torture, like trying to prove women as 'insane', trying to defame her of having sexual relationship with some other person, intentional avoidance and non-sympathetic attitude, addressing her as a 'whore', etc. Reasons for torturing were generally demand for dowry; extra marital affairs; differences of opinion; and higher earning of wife. 70
percent respondents of NGOs felt that domestic violence is linked with the status of the women. Under Section 498A complaints were lodged by the victim from the first month to 13 years after marriage. Under Section 304B and 306, victim's blood relatives lodged a complaint after the death of the victim. The accused and arrested person in cases related to 498A, 304B and 306 of the I.P.C. was generally found to be husband, either directly involved or on instigation by other family members. 87.5 percent respondents of NGOs worked in collaboration with the police, lawyer, and public prosecutor, and 12.5 percent resolved conflicts between the victim and other members of the family through counseling. 38 percent officers in charge, 22.2 percent public prosecutors, and 12.5 percent NGO workers felt that Section 498A was deliberately misused. South 24 Parganas reported 4 times more cases than Kolkata, mainly from Joynagar, Canning, Diamond Harbour and Basanti. 80 percent victims were illiterate. Extra marital affairs had been identified as the major reason for torture. Only a few NGOs dealt with the cases of domestic violence and dowry deaths. NGOs did not rely on Law Enforcement Agencies and Judiciary while resolving the cases. Rate of conviction was found to be very low in cases under Section 498A, whereas the accused person in 70-80 percent cases under Section 304B and 306 have been convicted. Public prosecutors, advocates, and officers-in-charge commented that most of the women were misusing the provisions of Section 498A of I.P.C. It was recommended that traditional attitudes and social norms need restructuring to remove gender bias. Mass awareness campaigns and
seminars should be held, and lawmakers and enforcers should work jointly with activists and social workers towards eradication of gender imbalance and domestic violence. The process of investigation by the police should be transparent and they must develop a trustworthy relationship with the public so that the common man comes forward to cooperate without fear. More public prosecutors should be appointed to redress the grievances of victims. There is a need to reconstruct the justice delivery system, which would ensure an enquiry and investigation before arresting the accused person, especially in cases of women and aged, and conclude the investigation within a definite time period. NGOs should organize women's meeting in different localities and create awareness on legal provisions. Police sensitization programmes should also be held to impart legal education to lower grade police personnel. Local Self Government personnel should take active part in combating domestic violence and dowry death. Police should keep a strong vigil the rural areas where the cases of domestic violence are reported more.

Srivastava and Agarwal Sweta (2004) have discussed the rising violence on women in modern times and its relations with the violence shown on television and in the cinema. In a country where women are held in high esteem and worshipped, they would be depicted in a lewd manner in most of films. Today Indian women suffer hunger, oppression, physical and mental torture, dishonour, illiteracy, disease and general neglect. So the question arises, Do the visual media have any relation with the crimes being perpetrated on women today?
Reckless (1940) stated that crime is fundamentally a violation of conduct norms which contain sanctions, no matter whether found in the criminal law of modern state or merely in the working rules of special social groups.

Gillin (1945) is of the opinion that "Crime is an act that has been shown to be actually harmful to society, or is believed to be socially harmful by a group of people that has the power to enforce its belief and that places such an act under the ban of positive penalties".

Bayley (1969) studied the region wise diversity of crime. He says, it is the richness of social and geographical conditions that gives scope to Indian crime, its incredible and fascination of heterogeneity. It is unduly concentrated in the urban areas of any country rather in rural areas.

Sibnath Deb (2002) has conducted study on child sexual abuse. It is a common incidence in every society and culture. But the cases of child sexual abuse are either not reported or under-reported especially in the developing countries owing to social stigma, for lack of intervention agencies and/or lack of justice. It has been estimated that in the general population 1 in 3 girls are sexually abused before the age of 18. For boys, the odds are 1 in 8. The average age of child sexual abuse, eleven, although some psychopaths have been known to strike upon children much younger. However, it has tremendous negative impact on over all mental and social development of the children. This
article reviews various aspects concerning this issue like definitions, etiology, prevalence/incidence, consequences, and legal measures available in India to combat this social problem and suggests prevention and intervention methods in the light of Indian scenario.

REHABILITATIVE STUDIES CONDUCTED IN INDIA

A new trend in ethno methodology which came during the British period was a theory propounded by Verrier Elwin (1943) who suggested that tribals should be kept isolated in their hills and forests. Elwin's theory is known in social anthropology as 'public park theory'. He suggested that ordinarily the non-tribal people should not be allowed to enter into tribal pockets without permission of the state government. This system would guarantee the isolation of the tribals.

Ghurye (1943) contested the theory of Public Park. He argued that the tribals were nothing more than backward caste Hindus. They should be treated at par with the Hindus.

Following Ghurye's argument, Majumdar (1944) took a slightly different position. His suggestion was that the cultural identity of the tribals as far as possible should be retained. He feared that if the isolation was broken the tribals would lose their ethnic identity. To maintain it, he hypothesized that there should be 'selected integration' of the tribals. While spelling out, he argued that not all the elements of civilisation should be allowed to enter the tribal area. Only those which have relevance with tribal life should be permitted into such area. Such a policy would keep the tribal away from the vices of urban life.
Logan William (1951) mentioned the 'adima' system prevailed among the aboriginals and untouchable classes of Malabar. The exploitative attitude of the feudal lords towards adima was vividly explained by him. Logan's pioneering work has shed light on the exploitative system of feudal landlordism in Malabar in the Nineteenth century.

The scientific study of tribal economy in India was first undertaken by two scholars Nag and Saxena (1958). They made an extensive field tour in the areas of Madhya Pradesh like, Mandla, Bilaspur, Durg, Balaghat and studied the Baiga economy in the context of general economic theories laying emphasis on the sources of economy of Baigas. Saxena followed the model of Nag and studied the tribals of Western Hills in Madhya Pradesh and presented the economy of five tribes. These two studies have some limitations like, exclusion of socio-cultural conditions of the tribes on their study areas.

Luiz (1962) made a detailed study of all the 48 tribes of Kerala. He has discussed their mode of living, occupation, diet, religion, taboos, marriage and rituals. He provides an insight into the changing pattern of the tribal's social life in the context of the reformation conditions of the State as a whole.

Ayyappan made several systematic studies on the various tribes of Kerala, 'nayadis of Malabar' (1937) and 'Erulas of Kerala' (1944) are the important studies. Later he conducted a subsequent study on Erulas in 1965 and the results were published which give an insight into the changes of reformative that took place in the Erula community.
Thurston’s (1966) monumental study was a systematic study and a detailed ethnographic survey on the whole of South India and we find an account of the changing pattern of the hill tribes of Kerala. He noted the settled way of life adopted by Paniyas of Wayanad as a result of their contact with the outside world. He also focuses attention on the way of life, customs and tradition of other communities in the region.

Vidyarthi (1970) attempted to examine the impact of urbanization on tribal culture. He studied the impact of the emergence of a heavy engineering complex in a tribal belt of Chotanagpur by analysing the pattern of socio-economic changes that occurred in this region owing to large scale industrialisation.

Mathur (1971) traces the socio-linguistic evolution of the tribes of Kerala. In addition to giving some valuable statistical information, the author describes some of the important problems facing the tribals like land alienation, bonded labour, indebtedness, status of tribal women etc. This book also mentions briefly some of the recent political development among the tribals like the formation of tribal organisations and the influence of naxalite movement on them etc.

Speaking about the process of modernisation among the tribal people in India’s borders, Roy Burman (1973) rightly maintains that, tribals live among the non-tribals, but hardly share a common life. Their contacts are few and formal. In fact, according to him, the tribals in urban areas are in neither of the two worlds fully. Many of them adopt the technology, skill of the modern world, still retaining the emotions of the tribal world. At the primitive level of aspiration, tribals
were not concerned with the fact that they were a minority at the regional level. Now, with political and occupational aspirations at the regional level and national level, tribals begin to feel themselves as a significant minority. This is the gift of modern education in particular and the modernisation in general. Through his study he expresses his dissatisfaction regarding the strategies for tribal's modernisation.

Dean Joros (1973) in his study presents his views on the relation between political socialisation of the tribals and integration process or the effect of tribal welfare programmes on their political socialisation. He reveals that by analysing the political socialisation process of tribals, a more complete evaluation of tribal welfare programmes would be ensured. This view is also explained by Mathur (1977). He points out that induction into political culture and integration into the mainstream of national life are part of one and the same process and without political socialisation being achieved, tribal’s integration into the national social life is impossible. Political socialisation must precede their integration into national life. Motivation and objective underlying the tribal welfare programmes and political socialisation are common.

Doshi (1978) takes a case study of Bhils, on the process of unification and integration. He said that, a sort of integration is achieved by the tribals with the wider society as a result of political unification. They are aware of the working of democracy, democratic institutions and identification with the level of values. This study has limitation like neglecting the economic aspects of tribals.
Rao Gopala (1978) examines the process of transfer of land from the tribals to the non-tribals and the various factors influencing such transfers, by taking a case study of Mondemkhal, a mixed village of tribes and castes, at Parvathipuram taluk of former Srikakulam district. Data were collected by canvassing schedule and by holding prolonged interviews with the tribal elders and village officials. Land has been alienated by some people to finance agricultural operations. Cultivation requires cash to buy cattle and to pay the labourers. It is clear from the study, that credit being taken on pledging land led to land alienation. Land has a tremendous prestige value in the rural context and it could stand as a security both for borrowing and lending.

Roy Burman (1978) speaking about the tribal integration process, points out that, in the present context integration means four things: independent thinking, democratic style of life, secularism and planned economy. These are urgently needed for the tribals to integrate themselves into the mainstream.

Sharma (1980) has discussed the status of tribals in India during ancient times. The epistemological theoretical perspective about the tribals of this period is very clear. It was the time when the Aryans and, at a later period, the high caste Hindus made all efforts to have their hegemony over the tribals. Sharma has applied material approach to the study of history. This study of tribals is based on the assumption that the mode of production involving the theory of surplus leading to class formation continues to the best working hypothesis, not withstanding countless assertions to the contrary.
Panday Jaganath (1981) tries to analyse the classes and class relations in three villages of Orissa and considers the particular mode of production operation in the economy. The study covers predominantly a tribal village, a village characterised primarily by feudal relationships and a village mainly showing signs of capitalist development in agriculture.

Bose Pradeep Kumar (1981) in his paper, questions the validity of observing stratification pattern among Indian tribes on the basis of caste hierarchy or 'Sacred' hierarchy or division on class basis. This is observed in the context of Gujarat tribes. Tribal population in modern market and production systems and their incorporation into modern political systems have shown regional variations in occupations, use of modern machinery etc. Data were collected from seven districts of Gujarat, through survey method and random sampling, identifying four distinct classes: rich peasant, middle peasant, poor peasant and agricultural labourers.

Pameche Renuka (1985) has studied political aspects of the Bhils and the process of the formation of elite in Bhil Society. Elaborate accounts of the traditional political system of Bhils and the impact of the modern system on them are given. A serious limitation of this book is that, it has not taken into consideration the socio-economic aspects of the poor tribals.

Thakur Deverndra (1986) made an elaborate study about the Santhals in Bihar. The study highlights their socio-economic conditions. It has been observed to what extent they were responsive to
the projects and programmes undertaken during the different
development plans.

Before the introduction of Five Year Plans, during the colonial
rule, the tribals in the country as a whole remained in isolation. If the
problem of untouchables in pre-independent India was that of
pollution, vis-a-vis purity, the problem of tribals or adivasis was that of
isolation. They were considered backward and savage. Lamenting on
such an approach to the study of Indian tribals, Yogendra Singh (1986)
obscures, the colonial ethnographers, for instance, took a placid, even a
synchronic view of the tribal society. The conceptional framework
development by the British administrators influenced ethnographers
and anthropologists were inspired by the then prevailing model in
anthropology. Tribal communities were treated as isolates and the
primitive condition was described as a state of Arcadian simplicity.

Christoph Von Furer-Harnendart (1988) has discussed the
pattern and causes of disintegration of the traditional tribal system,
failure of welfare programmes by taking the example of two tribes, Apa
Tanis of Arunachal Pradesh and Gonds of Andhra Pradesh. He found
that the two tribes stood at opposite ends of a spectrum today. While
Apa Tanis were clearly set on upward path, the Gonds were threatened
by an apparently irreversible decline in their fortunes. He claims that
Apa Tani tribe of Arunachal Pradesh numbered about 15000, achieved
development and integration without losing its identity because of
protection given by the Government of India.
Ramakant Prasad (1988) deals with the tribe of Bihar which has a little population and is living in different ecological settings. This tribe represents variations within a culture due to various ecological settings. It depicts the total way of the tribe name 'pabhaiya'. This book further illustrates how a small tribe exists with its socio-ecological conditions and the problems it is facing today. It deals with the problems and prospects of the tribe and gives an outline for development and protection of such a marginal tribe in Indian continent.

Reddy (1989) in India, studied the Sardar-Sarovar project, initiated under Narmada project, envisages the construction of 30 major, 135 medium, and 3000 minor dams and power complexes near the Navagan village, Gujurat. As a result of the construction, an estimated 1358 families will be displaced, of which an overwhelming majority are tribals consisting of Vasavas and Tadvis. Moreover, the project involves the submergence of 1519 hectares of agricultural land and 3459 hectares of forest land. This paper examines the socioeconomic impact of the Sardar-Sarovar project on tribal life in Maharashtra, India. Overall, findings indicate that the uprooting of the tribals from their natural habitat will not only disrupt their way of life but also erode and eventually destroy their social, cultural, religious and economic traditions and their capacity to achieve a meaningful existence based on their present environment. Moreover, it will involve their abandoning their attachments to their ancestral property and being deprived of the opportunity of living among their kinsmen. In
addition, the perspective ousters were also apprehensive of tribal rivalries and unhappy interaction when people from different subgroups and villages converged on the new settlement. Based on the findings, the displaced people require a planned approach of rehabilitation in order to minimize the hardships in resettling. Some of the measures for planned rehabilitation of displaced tribal people are outlined.

Mohanty (1989) has reminded us of the urgent necessity of evaluation of how for tribals have improved their economic-conditions and how far they have been integrated into the larger Indian society. He believes that giving tribals full freedom to manifest their genius will help their integration.

Sengupta Nirmal (1990) maintains that the process of rapid industrialisation since independence has added dimension to the problem of the tribals, as the majority of the tribal concentration in the country are in the areas endowed with rich natural resources. The establishment of resource based industries in such areas has inevitably led to the displacement of the tribals.

Buddudeb Chaudhudi et. al., (1992) 'Tribal Transformation in India', in five volumes, is a collaborative effort of Indian scholars to capture the changing tribal scenario and a whole diversity of issues related to tribal economy, agronomy, politics, ethnicity, ecology, education, technology transfer, social political movements, religious faiths and rituals in an indigenized, yet more articulate framework, with both diagnostic and remedial models. With the latest
concepts/research tools in anthropology and related disciplines, the
authors make a fresh look at micro and macro level dynamics of the
tribal situation in India. Vis-a-vis the socio-cultural relations.

Deogaonkar (1994) traces the origin and growth of the efforts for
the development of tribal population in India. Apart from examining
various approaches to tribal development, it enumerates the
administrative structures and organisational strategies adopted during
the last many years of planning, the outlay on tribal development
during the plans and the priorities adopted have also been indicated.
The Tribal Sub-Plan strategy and its implementation has been
examined elaborately. The personal policy adopted in tribal
development finds a special and critical treatment.

Rudolfe Heredia (1995) reveals his view that 'if the developmental
dilemma that confronts our tribals is to be successfully addressed,
tribal integration will require their mobilisation not just to preserve
their cultural autonomy but to redress their minority status as well'. So
that they can participate in their own development. For this, tribal
education will have to play a major role.

Reddy Sudhakara (1995) in his comprehensive study, discusses
the processes and problems of displacement, rehabilitation and socio-
cultural changes that occurred among the displaced Scheduled Tribe,
Yanadis of the Shriharikota Island in Andhra Pradesh where the rocket
launching station was established by Indian Space Research
Organisation, Government of India. The author also tries to portray the
traditional social and cultural fabric and adaptation of the Yanadi islanders prior to their displacement, which serves as the basis for understanding the continuity and change in the environment, society and culture. He analyses the rehabilitation programmes and the resultant factors and the forces behind the system of forced migration and adaptation of the Yanadis to the new environment, outside the rehabilitation centers. He also describes the pattern and processes of continuity and change on the socio-cultural set up of Yanadi islanders.

Panda Bhujendra Nath (1996) has made a sincere attempt to study the personality adjustment, mental health, attitude and academic achievements of more acculturated Saora tribes. Through an in-depth analysis, this book gives practical suggestions to teachers, and policy makers to realise the pros and cons of tribal acculturization. Thus the findings have obvious implication for policy makers in tribal education and development.

Tripathy (1999) book contains eleven selected contributions of eminent authors relating to various issues and problems of tribals along with policy options. The role of financial institutions and co-operatives in mitigating the tribal economic problems, the impact of development plans and poverty amelioration schemes, etc., are discussed at length. Based on secondary as well as field data collected through survey, this work portrays the evaluation and analysis of tribal problems and policy paradigms to tackle the problem of backwardness in tribal regions.

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Jain (1999) gives some insight into the Bhils and Mians of Rajasthan. The objective of the study is to find out the development attained by these two tribal groups. The development is through various sources. In the First Year Plan, the State government is committed on constitutional ground to bring the tribals at par with the other tribal groups who are economically and socially advanced.

Bakshi and Bala Kiran (2000) present the social-economic status of several scheduled tribes inhabiting in various regions of our sub-continent. Their life-style, customs and traditions are quite different from the population in our rural and urban areas. In fact 'they live in their own world'. Their social backwardness has been assessed to various levels and schemes have been launched for the education of their children, to provide them health facilities and jobs for their daily needs.

Mehta Prakash Chandra (2000) presents an over all review of the tribal development measures adopted during the 20th century. According to him the government failed to provide them basic minimum needs for their subsistence. The first half of the century, they were administered by the British government and the local rulers. They were not bothered about the needs and welfare of the tribals. Hence, during the first half of century they were exploited by the then rulers.
OBJECTIVES OF THE PRESENT STUDY

By keeping the review of literature and discussions in the mind, in the present study an attempt has been made to understand the demographic, serological, dermatoglyphic variation, criminological dimensions and rehabilitative programmes among the “Kanjarbhat” population living in Dharwad and Gadag districts of Karnataka State.

Following are the main objectives of the present study:

❖ To understand the variation of the “Kanjarbhat” incorporating the sex ratio, age-sex marital status, fertility and mortality rates among them.

❖ To examine the genetic structure and genetic variability of the “Kanjarbhat” population in terms of ABO and Rh (D) blood groups and several dermatoglyphic variation like types of finger print patterns, different types of indices, total ridge counting, a-b ridge counting, atd angle and c line polymorphism.

❖ To know the “Kanjarbhat” from the criminological point of view encompassing the nature, extent, etiology and the dynamics of their criminal behaviour.

❖ To examine the rehabilitative programmes of “Kanjarbhat” population.

❖ To study the “Kanjarbhat” from socio-cultural, biological and criminological perspectives to provide a holistic approach. And

❖ To compare the results of various aspects of the “Kanjarbhat” with some other Karnataka populations in order to see their genetic variation and ethnic position and other related aspects.