Juvenile delinquency is a complex problem and is claiming a heavy toll in India. The word delinquent comes from Latin verb 'delinquo' means to fail or to do wrong, and juvenile means a young person. When a child behaves in a manner considered to be not conforming to the norms of the society, and when he deviates from the accepted norms he is termed as delinquent.

Scores of definitions have been inforced by scholars to designate delinquency as an abnormal act, which is disapproved by their social system. According to Burt (1938), delinquency is antisocial tendencies and is subject of official action. Plant's (1934), comprehensive psycho-analytical explanation on juvenile delinquency reveals that the act is the result of prolonged frustration in aggressive ways. Sheldon (1942), opines that the delinquency is a behaviour disappointing beyond reasonable expectation.

So the deviant behaviour exhibited by juvenile delinquents is indeed a reflection of their social consciousness and their interaction towards that particular social group. Delinquency is a dynamic social concept with respect to space and time. The gradient of the deviant behaviour is subject to vary under different ecological conditions. The incidence of delinquency shows striking difference in urban and rural societies.
There is no precise definition of juvenile delinquency, however, some authors emphasise on legal aspect i.e. violation of law, arrests court etc., while others stress the element of "Unofficial delinquency", which is a behavioural oriented study of delinquency. Though violation of law is a problem for the police and violation of social norms become a worry for parents, community and educational institutions. From the psychological point of view, the antisocial activities of a particular juvenile age group may be due to frustration and conflict which lead to aggression and rebellion. A complex problem like delinquency has been studied from the above point of view by Austin (1978), Cohen (1965), Denis (1966), Lynn (1969), Shah (1969), Seth (1960), Sabnis (1958), and William (1959).

The biological basis of deviant behaviour, ordinarily cannot be isolated from socio-economic situations, which sets in the norms of his social consciousness. It has been reported that under similar socio-economic circumstances certain individuals are prone to delinquent tendencies. This anomalous condition could best be attributed to biological basis of delinquency. The higher incidence of deviant behaviour among feeble minded children supports the above hypothesis.

On constitutional criminality, Hootan (1939) shows that criminal behaviour is a direct result of inherited biological inferiority and so much so, a particular type of crime could also be related to a specific anatomical traits.
Sheldon (1949) developed a rating system and reported positive association between delinquency and mesomorphism.

Goring (1913) based his findings on intricate measurements of the physical characteristics of criminals and refuted Lambroso's hypothesis.

The defective intelligence was related with crime by Anderson (1919), Goddard (1910), and Ermold (1919).

There are many neurological conditions which influence deviant behaviour and crimes of violation. According to Ostow and Ostow (1946), Gibb (1945), Hill and Ponds (1952), Thompson (1953), Stott (1962), Larsen (1964) and Esztenek (1964) also stress the neurological basis of delinquency.

Berman (1932) asserted that all crimes are caused by imbalance or a deficiency in the secretion of endocrine glands and that specific types of crime could be associated with specific endocrine malformations.

The endocrinological theory of crime is supported by Schlapp and Smith (1923). The authors believe that all criminal behaviour are based on biochemical dysfunction.

Podolsky (1958) has argued that many types of criminal behaviour are caused by hyperinsulinism and hypoglycemic crises. A similar study was made by Molitch (1937).

The genetic basis of delinquency is an old hypothesis and the belief that criminals are born and not made is finding
revivalism through cytogenetical studies the relationship between delinquency and chromosome morphology has been supported by Beneszech (1973), who noticed longer chromosome in aggressive, delinquent psychopathique. A similar findings were made by Harvey (1970). The author compared antisocial behaviour with the occurrence of a large Y chromosome. Marinello et al. (1969) found XYY syndrome in tall man and juvenile delinquents. Bartlett et al. (1968) observed chromosome of male patients in a security prison and found several anomalies in the prisoners chromosomes. Nielson (1968) also noticed XXY chromosomal constitution in criminal psychopaths.

The recent renaissance in understanding human behaviour, finds newer interpretation through ethologist and socio-biologist. The ethologist give evolutionary interpretation of social behaviour, while socio-biologist plead for genetic basis of human behaviour. They believe in genetical predisposition of deviant behaviour.

Several physical features showing genetical predisposition have been appropriated to study abnormal human behaviour and disordered personality. Out of several physical traits, the dermatoglyphics traits find better recognition in the modern scientific literature. Ascorelli (1906), Abel (1936) and Bugg and Poll (1938) studied the dermatoglyphics traits among criminals. The study on mentally deficient individual was conducted by Cummins (1939), Pons (1956), Kumbnani (1972). The work on human abnormalities and simian crease relations finds ample citations.
Longdon-Down (1909), Rittmeister (1936), and Kervinen (1954) made extensive probe of simian creases in relation to feeble mindedness. A similar observations were also made by Crookshank (1924), Portius (1937), Penrose (1940), Ushida and Soltan (1963).

The work of Tunkan (1954), on criminals of Turkey indicates simian crease relationship. The author restricted his work essentially to a 'single transverse crease' defined by Wurth (1937).

With relation to simian crease and juvenile delinquency, a solitary reference of Rittmeister (1936) stands prominent. The author studied the minor criminals of Holland and found higher incidence of simian crease among them.

The behavioural attributes of criminals with palmar creases other than simian creases has recently been studied by Rawat (1980) and Chaube (1980). The former studied on palmar creases among murderers show higher incidence of single radial base creases while later made his observation on criminals of Sagar, which included murderers, thieves and rapists.

The palmar flexion creases again have found recognition in the study of deviant behaviour. This was made known by the recent work which was based on a crease methodology, developed by Bali and Chaube (1971). The Bali and Sharma (1980) studied plantar crease features in juvenile delinquents, the same authors made their observation on palmar creases of mentally retarded children.
It may be pointed out that early work on deviant behaviour is exclusively restricted to simian creases.

The present application of palmar creases to the problems of delinquency perhaps is a maiden attempt. The early work is simian crease oriented and other palmar creases have been not taken into account.

Bali and Sharma (1980) in their subsequent work gave genetic inter-relationship between palmar and plantar creases. Thus creating scope for plantar creases in the study of juvenile delinquency.

Havat and Bali (1980) studied in detail the attributes of crease morphogenesis among criminals on the basis of crease surface area, crease transversality, crease length, crease breadth and position of base point etc.

For convenience, the thesis has been divided into two parts. Part one examine the general description of juvenile delinquency in relation to palmar creases and palmar dermatoglyphics. This part comprises of seven chapters giving details regarding socio-economic background and crease morphogenesis with its relation to juvenile delinquency.

Part second deals with the palmar creases and dermatoglyphics of mentally retarded children. Part two is distributed into four chapters giving crease morphogenesis, and chromosomal expression in relation to mental retardedness.