SUMMARY
The study comprises investigation of growth trends in two abnormal groups viz., mental retardates and mongols. A sample of 216 mentally retarded individuals (142 males and 74 females), ranging in age from 6 to 25 years, constituted the subject material for the present study. The control sample of normal individuals comprised of 153 males and 140 females in the age group 6 to 18 years. The subjects were examined for 31 anthropometric measurements (linear and circumferential) in order to demonstrate the differences in the pattern of growth associated with the two abnormal conditions. The male and female subjects of the three samples (normals, retardates and mongols) were classified according to the age; each age group was of one year age interval. The data were processed statistically for measures like mean, S.D., S.E., C.V. etc. in the computer IBM 1620. The results were analysed to evaluate the significance of inter-group and bisexual differences. In addition, all physical measurements were changed to standard scores which were utilized for purposes of comparison of retarded and mongol subjects of different ages and sex with the normals. Anthropometric measurements of the control sample of the normal children provided the norms for growth evaluation of mentally retarded and mongoloid children.
Growth aberrancies in the segments of the body that are most affected due to developmental disorders concomitant with mental retardation and mongolism are summarized as under:

**Mental retardates**

Compared to the normal children, the present sample of retardates (both sexes) was found to be smaller in almost every dimension. Most noticeably depressed of all anthropometric variables in male retardates was head length and least affected was the measure of circumference of the body i.e., the chest girth. In female retardates, head circumference was found to be most notably reduced and the least depressed was the measurement of chest depth. Head height and breadth were also found to be consistently, though only slightly below the normal range. Consequently, the circumference of head showed remarkable reduction in both sexes of retardates at all age levels. Due to greater reduction in head length than in head breadth, the head form in both sexes of retardates was found to vary from mesocephaly to brachycephaly (in contrast to this, in normals, head form ranged from mesocephaly to dolichocephaly).

Linear measurements of height viz., stature, sitting height (vertex) and sitting height sternale (trunk height) were also found to be significantly depressed in both sexes of retardates. Maximum mean stature of male and female retardates at maturity (18 to 25 years of age) was comparable to the stature of 16 years...
old normal males and females. Biacromial diameter, which is a measure of the shoulder breadth of the body, was found to be more depressed than stature. Interestingly, weight showed relatively lesser depression than stature.

The lower limbs showed greater reduction in total length than the upper limbs in both sexes of retardates. The growth of hands and feet was equally affected both lengthwise and breadthwise, resulting in smaller hands and feet than normal.

The facial measurements in retardates (both sexes) were practically unaffected except bizygomatic breadth, physiognomic facial length, and nasal depth. Likewise dimensions of the chest in both sexes of retardates showed no significant deviation from those of the normals.

The appearance of clear cut bisexual differences in various anthropometric measurements in mental retardates was in general found to be delayed by about two to three years.

Mongols

The mongols (both male & female) were found to be more severely retarded than mental retardates for most of the body dimensions considered in the present study. Most affected segments of the body include length and circumference of the head; approximately 63 to 75 per cent of mongol (males & females) subjects were more than two standard deviations below the normal population mean for these dimensions. Head breadth and head height showed only a slight reduction. Consequently, the head form in mongols
was found to vary from brachycephaly to hyperbrachycephaly. Flat occiput was typical of all mongol subjects.

Mongols (both sexes) were found to be notably shorter in stature than normals at all age levels. Other linear measurements of height, namely, sitting height (vertex) and sitting height, namely, sitting height (vertex) and sitting height sternale (trunk height) did not show marked reduction in either sex. Trunk height of adult mongols closely approximated that of the normals. As a result, the trunk height in proportion to stature (relative trunk height) was considerably greater in mongols as compared to the normals. Biacromial diameter, which is a measure of shoulder breadth was only moderately depressed in mongols; 27 per cent of mongols were more than two standard deviations below the normal mean for this dimension. Interestingly, mongols were only slightly below normals in weight.

Mongols showed reduction in the length of the lower and upper extremities. However, lower extremities were more severely affected than upper extremities. Length and breadth dimensions of hands and feet of both sexes of mongols were also depressed. The depression was more pronounced in the lengthwise direction than breadthwise resulting in the typical short and stubby hands and feet in mongols.

Bizygomatic breadth, which is a measure of breadth of the face, showed marked reduction in both male and female mongols. All other facial measurements, namely, bigonial diameter,
physiognomic and morphological facial length, physiognomic and morphological superior facial length were also similarly reduced in both sexes of mongols. External orbital breadth was also found to be considerably depressed in mongols. All nasal dimensions viz., nasal height, breadth and depth were also reduced in mongols. Ear length and ear breadth were likewise affected. Ear length was more depressed than ear breadth. Thus, the size of the ear in mongols was found to be much smaller than in the normals.

The dimensions of the chest in female mongols were found to be within the normal range; none of the female mongols were more than two standard deviations below the normal mean for any of the chest dimensions. On the other hand, mongol males showed reduction in all measurements of the chest. The chest depth was relatively more affected.

Unlike normals, mongols did not show significant bisexual differences for most of the bodily dimensions studied.