8. Summary

About 2000 dried collection of metacarpals and metatarsals from our medical College and from B.J. Medical College, Ahmedabad of unknown sex were examined for number, position, direction of nutrient artery's canal and to find out a constant formula by which length of these short bones may be determined when broken bones are examined.

These bones are also known as miniature long bones or short long bones. Bones were preserved in the departments. Use of Vernier’s calipers, magnifying hand lens were utilised for measurements. Total length of bone and position of nutrient foramen from the base were noted down and findings were tabulated.

Results were analysed and compared with previous studies. It was concluded that in these short long bones, there was a single foramen. This was in the majority of cases situated in the middle third of the shaft. Few bones did not show nutrient foramina. After cessation of growth of these bones, nutrient artery is obliterated and is replaced by periosteal blood vessels. Some bones showed multiple foramina.

The position of nutrient foramina in metacarpals was as under:

Medial surface in first and second metacarpals.
Lateral surfaces in rest of them.
The position of nutrient foramina in metatarsals is as under:

Lateral surface in first, second and third metatarsals.
Medial surface in fourth and fifth.

In all bones, foramen was directed away from the growing end, so favouring growing end theory of Schwalbe.

By considering various statistical formulae (S.I.S.D standard error standard deviation), it was not possible to arrive at constant ratio between the total length and distance from base as the position of the nutrient foramen was highly variable. An effort was made to find out a constant factor of errors, but it was not possible. Visually, it is also appreciated that position was also different in respect to anterior and posterior aspect on different surfaces.

From this study, it was concluded that nutrient foramina in these short long bones were usually situated in the middle third in most of them and all were directed away from the growing end, supporting growing end hypothesis. Due to varied position, any constant ratio between length of the bone and distance of nutrient foramen from base is not deduced. The present study was comparable with the previous study done by V.R. Mysorekar and S.M.Patake (1977).