4. Materials and Methods

(i) Materials

1000 metacarpals and 1000 metatarsals were collected from our department and anatomy department of B.J. Medical College Ahmedabad. Bones were scrutinized, damaged and abnormal specimens were excluded. They were preserved in the departments. Separate plastic jars were used and they were labeled.

After cleaning with soapy solutions bones were dried and labeled with indelible ink. Following instruments were used:

1. Vernier's caliper for measurement of length of the bones and distance of nutrient foramen from the basal end.
2. Magnifying biconvex hand lens for location of the foramen when it was very small.
3. Fine metal needle for confirmation of the direction of the nutrient canal.

(ii) Methods

Metacarpals and metatarsals were examined for number of foramina, their position on the shaft with respect to medial or lateral surface and distance from the base of the
bone. The nutrient foramen was detected by a prominent groove which led into the foramen. There is a complete ridge at the beginning of the canal. When in doubt, simple magnifying biconvex lens was used. When more than one foramen was encountered, larger one was considered as main foramen.

For measuring length of bones Vernier's caliper was used. The length of the bone is labeled as 'L'. The distance of the foramen from the basal end of these bones was measured by a divider. It is labeled as 'N'. For finding out foraminal index Hughes (1950) formula for foraminal index was used.

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\text{Foraminal Index (F.I.) = N \times 100/L}
\]

where \(L\) = total length of the bones in centimeter with fractions
\(N\) = distance of the nutrient foramen from the basal end of metacarpals and metatarsals

When the direction of the nutrient canal was obscured, stiff thin needle was used to confirm it.
Bones kept in separate plastic jars with other instruments.
Vernier caliper showing measurement of 1st metatarsal and magnifying lens