THE ANATOMY OF THE DISTAL LIMB SEGMENTS OF THE ABORIGINAL SKELETON

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C O N T E N T S

CONTENTS (Continued)

S U M M A R Y

In the present study of the distal limb segments of the Australian aborigine, the long bones of the upper and lower extremities (i.e. radius, ulna, tibia and fibula) were given more importance than those of the hand and the foot. This is mainly because of the lack of skeletal material of these parts in most of the skeletons examined except the talus and the calcaneum.

The aims of the study of these distal limb segments of the Australian aborigine are:

1) to establish an aboriginal standard for the long bones under study
2) discover any sexual differences in these long bones
3) to compare the findings with measurements made on living aborigines and, finally,
4) to make comparisons with other ethnic groups.

In all the bones examined, generally, there are no significant differences between the right and left sides in the means of measurements of the two sexes, but there are highly significant sexual differences between the means of the majority of the linear measurements.

In comparison with other peoples the Australian aborigine has relatively the longest radius and ulna next to that of Negro and yet these bones are less robust.

In general the carpus of the Australian aborigine has attained the maximum human growth and the carpal bones are well developed.

The tibia is remarkably long and slender in which respect it differs markedly from all other peoples described by Martin. The most striking features of the typical Australian aboriginal tibia are its medium platycnemia, marked antero-posterior bowing of the shaft and retroversion of the proximal end.

From the study of the tibia of the Australian aborigine it is ascertained that the following measurements may be used for the determination of the sex:

1) maximum length (spino-malleolar)
2) bicondylar breadth
3) circumference of shaft (middle)
4) shape of outline (transverse section) at the level of nutrient foramen.

The fibula of the Australian aborigine is long, slender and more or less straight with comparatively poorly developed articular extremities and is in the general line of bones of other aboriginal populations.

The high values of the tarsal-length and tarsal-breadth indices as well as the high values of the talar and torsion angles of the talus of the Australian aborigine reflects the flat foot of the Aborigine.

The presence of the squatting facets on the tibia and talus and the high incidence of some features such as the 'quadricipital groove' (occurring in about 90% of the tibiae examined), the 'ilio-tibial facet' (about 79%) in the case of the tibia may be attributed to the characteristic way of squatting adopted by the Aborigine (called the 'aboriginal way of squatting') while at rest.

The estimated stature of the Australian aborigine from the long bones under study and the comparison of the upper and lower limb proportions revealed that they are more like the Negroes figure.

In the present study, despite the paucity of the material it has been attempted to construct new formulae for the estimation of stature from the dried long bones because of the need for a separate set in the case of the Australian aborigine. The new formulae for the male Aborigine are:

1) S = 76.63 + 2.687 × (Humerus)

2) S = 87.59 + 2.981 × (Radius)

3) S = 96.18 + 1.514 × (Femur)

4) S = 91.74 + 1.861 × (Tibia)

(stature expressed in cms.)

However, since these formulae were based on a meagre data they may be adopted only provisionally for the estimation of stature from the long bones of the male Australian aborigine.