

of the neck which are subjected to the pressure, while the central depressed part is less affected. Accordingly the cartilaginous covering of the joint is spread especially over the two lateral swellings of the neck; the depression between these remains free (plate 95, fig. 3, *b*). But now the two swellings act very differently. The medial swelling presents a direct continuation of the medial edge of the surface of the trochlea, as we can see by taking a corresponding impression with lead wire (fig. 495, *e*). The action of the lateral swelling is wholly different. It rises sharply from the surface of the trochlea (fig. 495, *f*). Consequently, when the foot is flexed in a dorsal direction, the medial swelling slides smoothly under the articular surface of the tibia, without altering essentially the edge of the latter; at most it deepens a little more the depression of the articular surface at the base of the malleolus. On the other hand, the lateral swelling presses itself against the edge of the articular surface, flattens it and produces the above-mentioned overspreading of the cartilage on the anterior surface of the bone. If this explanation is right, the edges of the cartilage-covered surfaces on the astragalus and tibia must fit each other exactly, when brought into an extreme dorsiflexion. Indeed that is so in our case. This, too, gives a certain proof that our astragalus belongs really to the fragment of tibia.

That the squatting position gives rise to this strong dorsal flexion is shown by the fact that the change just described on the lower joint is often accompanied by a corresponding one on the upper joint. We find there often a rounding off of the posterior edge of the joint-surface, which shows itself especially on the lateral joint-groove and causes the joint-groove to appear convex in its posterior segment. Also this characteristic is indicated on the left tibia head, even if not very marked (fig. 495, *a*). It would correspond about to No. 2-3 of Thomson's scheme (1890, p. 211). The cause of this variation is doubtless to be found in the strong flexure of the knee, through which the posterior, upper surface of the condyles is brought against the posterior edge of the joint-surface of the tibia. It is at least doubtful whether the backward divergence of the head of the tibia (plate 95, fig. 2) is also produced, or increased, by strong bending of the knee, since it seems to occur in cases where such a function can not be shown as a cause. An examination of this divergence by Manouvrier's method (1893, p. 231) gave an angle of inclination of 10° . The angle of retroversion could not be measured; with the considerable curvature of the tibia it is not possible to speak of a straight diaphysis axis so that we have no criterion for the position. An inclination angle of 10° lies perfectly within the range of variation of modern Europeans and exceeds but little the average value, 8.5° , found by Manouvrier for 72 European tibiae (French) (1893, p. 236). The described curvature of the thigh bone, as well as of the tibia, by enlarging the space for the flexure muscles of the upper and lower part of the leg, facilitates squatting; this is so self-evident that one might consider whether this habit did not contribute to the increase of those curvatures.

Also the low position of the condylus medialis tibiae seems to be more common among primitive peoples (plate 96, fig. 1).