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MORPHOLOGICAL PECULIARITIES IN THE PANJABI, AND THEIR BEARING ON THE QUESTION OF THE TRANSMISSION OF ACQUIRED CHARACTERS. By R. HAVELOCK CHARLES, M.D., M.Ch., F.R.C.S.I., F.L.S., *Professor of Anatomy, Medical College, Lahore; Surgeon-Captain, Bengal Medical Service; Surgeon, Mayo Hospital, Lahore; Fellow of the Panjab University.*

IN the October number of the *Journal of Anatomy and Physiology*, vol. xxviii., in an article on the "Influence of Function, as exemplified in the Morphology of the lower extremity of the Panjabi," I pointed out certain characteristics of the bones of the lower limb of natives of the Panjab, whereby these could be distinguished from those of Europeans. I cited changes in the acetabulum, the shape and size of the inferior cornu of the facies lunata and of the cotyloid notch, &c. It was shown that the articular surface of the head of the femur was relatively and absolutely greater than in the European, and that it was prolonged so as to adapt itself to the modified facies lunata of the cotyloid cavity. That the *upper* surface of the internal condyle of the femur is partly articular. That the upper surface of the internal tuberosity of the tibia slopes considerably down and in, being never flat. That the external tuberosity has its condyloid articular surface convex from before backwards, and that the articular area is well prolonged down posteriorly. That a facet or facets were to be found on the anterior surface of the lower extremity of the tibia for articulation with similar surfaces on the neck of the astragalus during extreme flexion, or during extension or extreme adduction of the ankle-joint in the squatting and sartorial postures. That

on the neck of the astragalus were one or two facets—one external, and one internal—the latter continuous with the pyriform malleolar articular surface. That this pyriform malleolar area was to be found extending far forwards (and when so, it is concave from before back) on the inner surface of the neck, and is most in use during the sartorial posture, this position being rendered easier by the characters noted. It was also pointed out that the foregoing peculiarities in the morphology of the hip-, knee-, and ankle-joints of the Panjabi skeleton are owing to the influence of the squatting and sartorial postures which are commonly assumed by Orientals when engaged in their daily avocations, or when indulging in rest after their labours. It was suggested that the peculiarities might either be acquired or inherited.

Others have shown that Neolithic European remains, as regards facets on the lower extremity of the tibia and on the astragalus, present a marked contrast to the modern Western types.

It is highly probable that the Cave-dwellers of Europe, with prehistoric Man generally, sat upon the ground—in the sartorial and squatting positions: thus one can account for the anatomical markings found on their osteological remains.

The habits of Europeans of the present day, and for many centuries in the past, have changed, squatting on mother earth being a posture not adopted by any European race for ordinary purposes of work or rest.

The characters of the joints have also changed: the facets found on the tibia and astragalus of Neolithic skeletons are not to be seen on those of the present day in countries of the West. Why? The bones have been modified to suit the change of posture due to the adoption of the chair. No advantage would accrue to the European from the possession of facets or modified articular areas on his bones, fitting them for the squatting or sartorial postures. He uses neither, nor has he done so for ages. Want of use would induce changes in form and size, and so from generation to generation the small differences would be integrated till there would eventually be total disappearance of the modifications in question.

Were an European to adopt from his birth Oriental customs