of movements at its articulation with the carpus. The metatarsal bone of the great toe assists in supporting the weight of the body, is constructed with great solidity, lies parallel with the other metatarsals, and has a very limited degree of mobility. The carpus is small in proportion to the rest of the hand, is placed in line with the forearm, and forms a transverse arch, the concavity of which constitutes a bed for the Flexor tendons and the palmar vessels and nerves. The tarsus forms a considerable part of the foot, and is placed at right angles to the leg, a position which is almost peculiar to man, and has relation to his erect posture. In order to allow of their supporting the weight of the body with the least expenditure of material the tarsus and a part of the metatarsus are constructed in a series of arches (Figs. 290, 291), the disposition of which will be considered after the articulations of the foot have been described.

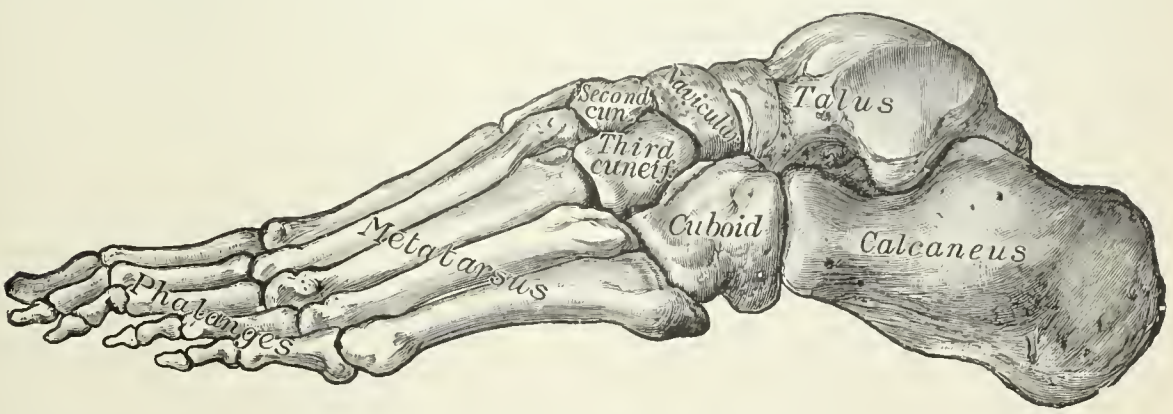

FIG. 291.—Skeleton of foot. Lateral aspect.

The Sesamoid Bones (Ossa Sesamoidea).

Sesamoid bones are small more or less rounded masses embedded in certain tendons and usually related to joint surfaces. Their functions probably are to modify pressure, to diminish friction, and occasionally to alter the direction of a muscle pull. That they are not developed to meet certain physical requirements in the adult is evidenced by the fact that they are present as cartilaginous nodules in the fetus, and in greater numbers than in the adult. They must be regarded, according to Thilenius, as integral parts of the skeleton phylogenetically inherited.[1] Physical necessities probably come into play in selecting and in regulating the degree of development of the original cartilaginous nodules. Nevertheless, irregular nodules of bone may appear as the result of intermittent pressure in certain regions, *e. g.*, the "rider's bone," which is occasionally developed in the Adductor muscles of the thigh.

Sesamoid bones are invested by the fibrous tissue of the tendons, except on the surfaces in contact with the parts over which they glide, where they present smooth articular facets.

In the upper extremity the sesamoid bones of the joints are found only on the palmar surface of the hand. Two, of which the medial is the the larger, are constant at the metacarpophalangeal joint of the thumb; one is frequently present in the corresponding joint of the little finger, and one (or two) in the same joint of the index finger. Sesamoid bones are also found occasionally at the metacarpophalangeal joints of the middle and ring fingers, at the interphalangeal joint of the thumb and at the distal interphalangeal joint of the index finger.

In the lower extremity the largest sesamoid bone of the joints is the patella, developed in the tendon of the Quadriceps femoris. On the plantar aspect of the foot, two, of which the medial is the larger, are always present at the metatar-

[1] Morpholog. Arbeiten, 1906, v, 309.