

boot and holding the instep. This description of the pain is very characteristic.

Secondly, deep tenderness is present about the heads of the third and fourth metatarsal bones. In almost all cases pain may be elicited by firmly holding the head of the fourth metatarsal bone between the finger and thumb. In moderately severe cases it requires somewhat continued pressure to do this, but in bad cases the slightest pressure causes exquisite pain.

Thirdly, the afflicted foot is broader across the heads of the metatarsal bones than is normal.

Fourthly, on examining the sole, a large corn may be seen over the heads of either the second, third, or fourth metatarsal bones, one of which is felt to be prominent in this situation. This prominence of the head of one of the metatarsal bones, taken in conjunction with the character and the starting point of the pain, are diagnostic of the disease.

Fifthly, a peculiar twist of the foot has been observed, the portion in front of the tarso-metatarsal articulation being twisted inwards, so that the base of the fifth metatarsal bone is exposed to the pressure of the boot, and the patient complains of constant pain in that spot.

Sixthly, a tracing of the foot is typical. There is a bulging instead of a re-entering angle behind the ball of the great toe.

PATHOLOGY.—The heads of the first three metatarsal bones are nearly on a line with one another, and are less movable than the remaining ones; the head of the fourth is a quarter-of-an-inch behind that of the third, while that of the fifth is nearly half-an-inch behind the head of the fourth; and between the heads of the fourth and fifth, branches of the external plantar nerve pass. When the transverse arch is compressed, the head of the fifth metatarsal bone (it being very mobile) and its proximal phalanx come directly into contact with the head and neck of the fourth metatarsal, and consequently the nerves are compressed.

This supposed pathology is amply proved by the "X" ray.

While this anatomical explanation suffices in the case of the fourth and fifth metatarsal bones, it does not explain the instances of metatarsalgia beginning between the second and third and third and fourth bones.

The theory of treading upon rather than pinching of the nerve is, in the opinion of many, more in accord with clinical observations; and in support of this theory there are three anatomical facts, namely, the proximity of the painful area to the communicating fourth branch of the internal plantar nerve; the collapse of the anterior arch; and in most cases the fact that the bulk of the body weight in walking on the toes is borne on the first and fourth joints.

DIAGNOSIS.—This must be made from flat-foot chiefly by reason of the pain. As already stated in many cases of Morton's disease, flat-foot of a minor degree is present, but it is rarely so marked as to explain the acute and agonizing pain of metatarsalgia. Cases may be considered to partake more of Morton's disease than of flat-foot when the pain begins about the heads of the metatarsal bones, and is of the paroxysmal nature already alluded to. In some cases not a trace of flat-foot exists, but the arch of the foot is exaggerated, so that in this instance no confusion