

point at which the State ceases to be interested in the child.

While the liberty of the wise parent should be safeguarded, it should be a difficult matter for the child ailing in any sense to escape detection, or avoid the treatment that would ensure it a happy, healthy childhood, and lay the foundations for a useful citizenship.

DEFORMITIES OF THE FEET.*

[Slightly Abridged.]

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My object in this lecture is to give you a general survey of the disabilities to which the foot is liable, and to indicate to you the methods of treatment which are adopted for the various conditions and in the different stages.

Much of what I shall touch upon lies exclusively in the province of the surgeon, but it seems to me desirable that you should be given an insight into these conditions and the methods of treatment, because many of these cases—most of these cases—pass on from the surgeon to the Physio-Therapy Departments, in which you work.

The work of the surgeon is to prepare and perhaps re-fashion the structure.

The work of the Physio-Therapy Department is to re-establish the function.

The inter-dependence of the surgical and the after-treatment sides is nowhere more marked than in that branch of surgery devoted to Orthopædics. The extreme importance of the close relationship is not always recognized sufficiently.

When it becomes more fully recognized the efficiency will be increased. To illustrate the point consider for a moment a moderately severe case of flat foot.

The surgeon wrenches under an anæsthetic, and immobilizes in plaster, and then after the necessary period of rest passes the case on for massage, mobilization, baths, and re-education to establish muscular balance, and co-ordination in walking.

The surgeon does not cure the ailment by his manipulation, but prepares the structure and fits it for its functional re-development. The masseuse could not cure the ailment and re-

establish the function without the preliminary surgical work. The inter-dependence of the two branches is obvious in this case. It is equally true of most orthopædic work.

Some understanding of the general principles on which cases are dealt with before they reach the stage in which you see them and deal with them is essential for the intelligent carrying out of your work, and it is with this object in view that I have collected the following facts together in this paper.

THE NORMAL FOOT.

Function and Structure.—Before one can begin to appreciate abnormalities, one must have an accurate understanding of the normal, and the normal must be studied from two points of view (1) Function; (2) Structure.

The function of the foot is (1) To act as a support for the body weight when standing. (2) To act as a lever to propel the body on motion. For the proper performance of these two distinct functions it is constructed on certain anatomical lines, for it has to show (a) elasticity under pressure; (b) alteration and adaptation to strain as the body weight is shifted from one part to another in walking.

The anatomical arrangement of the foot which permits of function in this way is best understood by a consideration of the arches (1) outer longitudinal, (2) inner longitudinal, (3) transverse. The first is composed of the os calcis, cuboid, and 4 and 5 metatarsals, and is in contact with the ground generally. The second is the important arch. As you know, it is the arch which gives way so often, giving rise to what is known as flat foot. The outer arch is lower, more solidly braced, and best adapted to weight bearing.

The Transverse Arch is, as its name implies, transverse to the long axis of the foot. It is formed by the metatarsals, the heads of 2, 3, and 4 being on a higher level than 1 and 5. This arch extends right back to the calcis.

The foot as a passive support is everted. The position of the lower limb, in order to allow of standing with the least muscular fatigue, is as follows:—

The pelvis tilts slightly backwards, throwing the tension on the strong anterior ligaments, and the Y ligament of the hip. The femur rotates slightly inward on the tibia, which in its turn falls slightly to the inner side of the foot. When the foot is in the attitude of rest, the normal position is to stand slightly on the inside. In flat foot the attitude of rest is maintained when the foot is in motion.

The Foot in Active Motion.—In active

* A lecture delivered to the Members' Conference Incorporated Society of Trained Masseuses, October 5th, 1917.

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