

the usual alcoholic dryness and the usual slate-gray colour. In such cases, Dr. Dolbeau discontinues using the alcohol, and has recourse to starch poultices. Once the swelling has disappeared—an event which occurs simultaneously with the establishment of copious suppuration—Dr. Dolbeau resumes the use of the glycerine dressing, and syringes the wound every morning with pure alcohol, so as to cause the separation of all the portions of tissue destroyed by the suppuration.—*British Med. Journ.*, Nov. 20, 1869.

57. *Diseased Elongation of the Bones of the Extremities in Relation to Surgical Practice.*—Prof. LANGENBECK, in a recent paper read to the Berlin Medical Society, draws attention to a consequence of disease of bone first noticed by Stanley, and further demonstrated by Paget. He observes, that until the twenty-third or twenty-fifth year, the bones may, under the influence of general disturbances of nutrition or local disease, undergo greater variation in form and size than the soft parts. In the rickety subject defective length is a more characteristic sign than either the curvature or the chemical condition of the bones. The influence of paralysis in checking the growth of bone requires more investigation, for while in some cases this is found to be imperceptible, in others it is very considerable. Affections of the epiphyses and of the joints will naturally give rise to considerable shortening, and all the bones of the same extremity may participate in this on account of the forced inactivity. The same effect is also observed when the joint itself is not diseased, but kept in a state of forced contraction; but here probably the result is a mechanical one produced by the altered mode in which the deposit of new bone is made. How small a power need be exerted to produce this effect is seen in the fact, that when fingers are united together, but are yet able to perform all their principal functions, their bones, if the web be not properly divided, will remain shortened. In a still greater degree the same effect is exerted by cicatrices from burns in the neighbourhood of joints.

It is, however, to abnormal elongation of the bones that attention is chiefly directed in this paper. This may easily take place to the extent of one or two centimetres, or more, without detection, unless careful admeasurements be made. A long bone, as a general rule, grows longer and thicker in proportion as it has been in an inflamed or hyperæmic condition, and a hyperæmic condition of the soft parts is also competent to produce this change. Thus, in a case of inguinal aneurism, Broca found that the femur had increased two, and the tibia one centimetre in length. Ulcers of the leg occurring early in life produce the same effect; and although chronic inflammation and caries of joints exceptionally arrest the growth of bone, in other cases they lead to its elongation. The great majority of cases of increased growth, however, arise from chronic disease of the diaphysis of the bone, *i. e.*, osteo-myelitis or necrosis.

A very interesting case is given in which careful admeasurements were made at the autopsy, and all the bones on the diseased side were found considerably longer. A remarkable appearance noted was the diminution of the circumference of the upper articular surface of the tibia by one, and of the lower surface by half a centimetre. This may be attributed to the fact of the greater longitudinal development of the diaphysis having taken place at the expense of the epiphysis. In the arrested growth of the rickety bone, on the contrary, the circumference of the articular surface is increased. The fibula, in the above case, although not diseased, had increased by two centimetres in length like the tibia. Another important point was, that the femur of the same side also underwent considerable elongation, for while the tibia was found to have increased by two centimetres, the whole limb, measured carefully during life, was found to be five centimetres longer than the other. Similar observations are reported by Paget and Bergmann; and Langenbeck has met with the same circumstances in the upper extremities.

Bearing the above facts in mind, it occurred to Prof. Langenbeck whether they might not have their surgical application in the treatment of shortening of the bones of the extremities. As necrosis occurring in young subjects is the most frequent cause of abnormal elongation of bone, and is probably due to the abiding stimulus of the sequestrum, it might be expected that the insertion

of a foreign body in the bone would be attended by a similar result. He therefore instituted some experiments on young dogs, employing Dieffenbach's ivory pegs as having a near resemblance to bony structure. These were followed by most favourable results, the effects being in fact just the same as those observed in necrosis, viz., an elongation and thickening of the shaft, and a lessening of the epiphysis. Moreover, the bone remained undistinguishable in any other respect from normal bone, being neither inflamed nor in any way diseased. So the matter stands at present, for although Professor Langenbeck believes that surgical interference will be advantageously employed in this direction, he has not yet resorted to it. He observes, that while a few centimetres shortening is of little consequence as regards the upper extremity, it is of serious import in the lower, and any reasonable means of removing it or diminishing it should be employed. Excision of the joints in children will acquire an additional importance also, if we are enabled by the introduction of one or two of the pegs immediately after the operation to prevent the arrest of growth in the limb. Subjects suffering from paralysis are favourable for the trial of the means, as they will with less difficulty sacrifice the five or six months necessary to be passed in quietude to secure the success of the experiment. One of the most important results of the trials made on dogs is the demonstration of the efficacy of extension in elongating bone. The fibula, to which nothing has been done, was found to have increased two centimetres as well as the tibia, and yet to have undergone no displacement. This was effected by the stretching effect exerted upon it by the tibia, to which it had become united in one bony mass. Of the possibility, by suitable extension of increasing the length of shortened bones, there can be no doubt, although the determination of the amount of this by admeasurement is very difficult.—*Berlin Klinische Wochenschrift*, June 28.

[In relation to the above subject a very interesting paper by Drs. Weinlechner and Schott, which we have not space to notice, will be found in the *Jahrbuch für Kinderheilkunde*, 1869, heft 3, entitled, "On Elongation and Shortening of Bones after Fractures, Caries and Necrosis and Inflammation of the Joints."]—*Brit. and For. Med.-Chir. Rev.*, October, 1869.

58. *Bending of the Radius in an Adult*.—Dr. R. FARQUHARSON records (*British Med. Journal*, Dec. 4, 1869) the following case of this rare occurrence :—

"On the 15th of last October, I was watching a football match on Rugby School Close, when J. S., aged 18, asked me to look at his right arm, which had been injured during the game. On cursory inspection, I could detect nothing far wrong; and, considering his symptoms due to a severe bruise, merely recommended rest and fomentation. Next day, he again presented himself, stating his conviction that he had bent his forearm by the accident. Naturally rather incredulous, I made a careful examination, and found that he was quite right, and that a well-marked distortion really existed. Both bones were affected in some degree; but the chief strain had been experienced by the radius, which described a considerable curve, with the convexity inwards. No feeling of crepitus could be detected, nor any trace of irregularity along the margin of the bone; and motion, although attended by slight pain, was altogether unaffected. The deformity readily yielded to firm manipulation over the knee; but, as it speedily returned on the withdrawal of the force, it was necessary to apply an anterior and posterior splint.

"On October 20th, the splints were removed; but the bend of the radius, though decidedly less marked, could still be observed. Reduction, if I may so call it, being effected as before, the splints were readjusted. On October 26th, on uncovering the arm this morning, it was found to have entirely regained its normal shape; a slight degree of weakness and stiffness only remaining. Since that date, it has rapidly recovered strength, and has never given rise to uneasy sensations of any kind."

What is remarkable in this case is that no predisposing cause could exist; for the patient "was not only stout and well developed, but of special activity in those games which most severely test the frame. We must, therefore, look upon the case as one of an exceptional nature, in which bending of a perfectly sound bone took place, irrespective of fracture; and the record of such an event