made on the injured part, and the depressed piece raiſed with a levator. Should this be inſufficient, it may be affec­ted by means of the trepan : this indeed requires the greatest caution, but it may certainly be attended with advantage when the patient’s life is in danger.

Fractures of the vertebræ generally end fatally. We judge of the existence of fracture there by examining the parts, by the ſeverity of the pain, and by palsy occurring in the parts ſituated below the injured part.

When any parts of the vertebræ near the integuments are loosie, they may be replaced with the fingers, and retained by proper bandages. When this is impoſſible, ſome of the latest authors think it adviſable to make an inciſion, and raise any portions of the bone which may be depreſſed.

Sect. IV. F*racture of the Bones of the Superior Extre­mities.*

The ſcapula is ſeldom fractured; when it is, the fracture is eaſily diſcovered by the pain, the immobility of the arm, and by the touch. The parts may be replaced with greater eaſe if the muſcles connected with them be relaxed. They are retained with difficulty. A long roller ſhould be em­ployed for this purpoſe, with which the head and ſhoulders are alsp to be ſupported. The arm ſhould alſo be ſuſpended to relax the muſcles as much as poſſible, and inflamma­tioni particularly guarded against by local bloodings.

fractures of the humerus are easily diſcovered by the pain, the immobility of the arm, and a grating noiſe on handling the parts. In reducing the fracture, the muſcles ſhould be completely relaxed by bending the arm and raising it to a horizontal posture. Extenſion, if neceſſary, may be made by one aſſiſtant graſping the arm between the frac­ture; and the ſhoulder, and another between the fracture and the elbow. After the reduction, one ſplint covered with flannel ſhould be laid along the whole outſide, and another along the whole inside of the arm; and then a flannel roller applied ſufficiently tight to ſupport the parts without in­terrupting the circulation. The arm may either be ſupported in a sling or Mr Park's leather caſe, (fig. 104). The bandages ſhould not be removed or several days, unleſs ſome urgennt symptoms render it neceſſary. In about a week, however, the arm ſhould be examined to ſee whether the bones have been properly ſet.

When both of the bones of the fore-arm are broken, the fracture is easily diſcovered ; but when only one bone is fractured, eſpecially if it be the radius, the firmneſs of the other renders the difcovery more difficult ; the grating noiſe, however, on moving the bone in different directions, will generally be a sufficient ſymptom that a fracture has taken place. When the fracture happens near the wriſt, particular attention is neccessary in order to prevent a ſtiff joint. In order to re­place the parts, the muſcles are to be relaxed by bending the joints of the elbow and wriſt, and the limb extended a little above and below the fracture. After reduction, a ſplint reaching from the elbow to the ends of the fingers is to the applied along the radius, and another along the ulna ; and both are to be ſecured with a roller or twelve tailed bandage. When the ſplints are applied, the palms ſhould be turned towards the breaſt as the moſt convenient poſture. The arm ſhould be hung in a sling. A partial dislocation of the bones of the wriſt ſometimes attends a fracture of the radius, by which a stiff joint, under the beſt practice, is apt to mine, or permanent painful ſwellings of the sore arm. In ſuch caſes, the patient ought to be warned of the danger, that no blame may be afterwards incurred.

When the olecrarum is fractured, the arm muſt be kept in am extended ſtate during the cure, by applying a ſplint opposite to the joint of the elbow, reaching from the middle of the humerus to the points of the fingers. The arm ſhould be hung by the patient’s side, to which it ſhould be fixed by means of ſtraps. To prevent the conſequences of a ſtiff joint, the dreſſings ſhould be removed about the eighth or tenth day, the fore-arm for ſome time slowly moved backwards and forwards, and the joint rubbed with an emolient oil. By a repetition of this at proper intervals, a ſtiff joint may be prevented.

Anchyloſis, or ſtiffneſs of the joint, commonly ſucceeds fractures of the bones of the wriſt, owing to the great in­flammation which enſues, and to their not readily reuniting from their ſmallneſs. To prevent this as much as poſſible, after replacing the bones, the injured parts ſhould be leech­ed freely, and in proportion to the violence of the ſymp­toms. Splints ſhould be applied exactly as in fractures of the fore-arm, and the arm ſupported by a sling.

In fractures of the metacarpal bones, a firm ſplint ſhould be applied over the whole palm and inside of the arm, from the points of the fingers to the elbow, in order to prevent the action oſ the flexors of the fingers. The beſt ſplint for a fractured finger is a piece of firm paſteboard properly fit­ted and ſoftened in water till it can be readily moulded into the form of the part. This ſhould be applied along the whole length of the finger, and ſecured with a narrow rol­ler. At the ſame time, a large roller ſhould be applied over the inside of the hand to prevent the parts from being moved. To prevent ſtiffness, the dreſſings ſhould be removed about the end of the second week, and the joint cautiously bent; and this ſhould be repeated daily till the cure be com­pleted.

Sect. V. *Erasures of the Bones of the inferior Extremities.*

Fractures of the body of the thigh bone are readily diſcovered by the grating noiſe when the ends of the bones are forcibly rubbed together, by the ſhortness of the limb if the fracture be oblique, and by the limb being unable to ſuſtain the body. But fractures of the neck of the bone are often not easily diſtinguished from dislocation of the joint. In general they may be diſtinguiſhed by the circumſtances mentioned in treating of luxations of this bone. In forming a prognoſis, we ought to conſider that no fractures are more apt to diſappoint our expectations than thoſe of the thigh, eſpecially when the neck of the bone is broken, owing to the difficulty of diſcovering the place of the frac­ture, and of retaining the bones even after they have been replaced. In order to reduce fractures of the thigh, the muſcles are to be relaxed by moderately bending the joints of the thigh and knee : w hen this is done, unleſs there be much pain and tenſion, the bones are easily replaced by one aſſiſtant holding the upper part of the thigh, while another ſupports and gently pulls down its lower extremity, while the ſurgeon is employed in adjuſting the fractured pieces. It is more difficult to reduce fractures of the neck of the bone, on account of the great ſtrength and various direc­tions of the surrounding muſcles. In general, however, we ſhall succeed by moderate extenſion, if we take care previouſly to relax all the muſcles as much as poſſible ; if we do not ſucceed, we muſt have recourſe to machinery.

The greateſt difficulty is to retain the bones in their situation after they are replaced. The limb muſt be firmly ſecured by ſplints made of thin slips of wood glued to leather (fig 105. *a* and *b),* or of thick paſteboard. One ſplint, broad enough to cover half of the thigh, ſhould reach from the top of the hip joint to a little below the knee, and another, covering about a third part of the thigh, from the groin to a little below the knee. The ſplints ſhould be lined with flannel. They are to be ſecured by a twelve-tailed bandage, and over all a thin pillow ſhould be put nearly as long as