Dislocations, with Fracture of the Humerus near its Upper End.—I have thus far omitted to speak of the treatment of dislocations of the humerus accompanied with fracture near its upper end. The older writers, almost without an exception, agree in declaring the reduction of these dislocations impossible, until the fracture had united. And, so late as the year 1828, we have the report of a case treated in this manner by a surgeon in Massachusetts. Dr. Warren, of Boston, himself reduced the dislocation at the end of four weeks, when the fracture was found to have united.[1] But since the introduction of anæsthetics, immediate attempts at reduction have more often proved successful; and in no case can the surgeon excuse himself for having omitted to make the effort.

Richet reports an example of this kind in a man sixty-eight years of age, in whom the dislocation was complicated with a fracture of the neck of the humerus. The attempt was not made until the fourth day, when it proved successful without extension. The fracture was afterwards adjusted and consolidated, so that he recovered the complete use of his arm.[2]

At a meeting of the New York Academy of Medicine in May, 1855, Dr. Watson reported a case of fracture of the humerus near its head, complicated with a dislocation into the axilla. The patient was a robust man, past middle age, and had received the injury by a blow on the shoulder from a steam-engine. He was very much prostrated at the time of admission into the hospital, and the examination was not made until the following morning. The arm was then found lying close to the side, but in other respects it presented the usual signs of a dislocation. Ether was immediately administered; and while extension and counter-extension were applied, and a sweeping motion given to the arm, drawing it from the body, firm pressure with the fingers was made in the axilla, forcing the head toward the socket, and the bone slipped into its position.[3]

In the *Transactions of the American Medical Association*, I have reported a case of supposed dislocation, accompanied with a fracture, which I succeeded in reducing on the eighth day.[4]

I have, however, twice failed in attempts to reduce similar dislocations.

The first patient, John Riley, æt. 49, was admitted to Bellevue Hospital, March 29, 1864, having received the injury two days before. The dislocation was subcoracoid, and the humerus was broken at its surgical neck. Having placed him under the influence of ether, assisted by Dr. Stephen Smith and several other surgeons of the hospital, I attempted to reduce the dislocated bone, but after a trial, prolonged through one hour or more, the effort was abandoned.

The second case was in a man aged about forty years, who was admitted to Bellevue Hospital in July, 1864, with a dislocation of the head of the humerus forwards, and a fracture of the surgical neck, of four weeks' standing. A surgeon had attempted reduction immediately after the receipt of the injury, but had failed. We found the fracture still ununited, and placing him under the influence of ether, we tried faithfully, by pushing and pulling, and by various other manœuvres, to reduce the dislocation, but without success.

[1] Boston Med and Surg. Journ., No. 1, 1828; also, Amer. Journ. Med. Sci., vol. ii. p. 238.

[2] Richet, Amer. Journ. Med. Sci., vol. xii., new ser., p. 293, from Bulletin de Thérap.

[3] Watson, Amer. Journ. Med. Sci., vol. xvi., new ser., p. 383.

[4] Op. cit., vol. ix. p. 93.

The fractures united in both cases promptly, and attempts were subsequently made to reduce the dislocation, but to no purpose.

Examples have been recorded, however, by surgeons, in which the reduction has been accomplished immediately, and without much difficulty, by simple pressure upon the head of the bone while the patient was under the influence of an anæsthetic, and without the aid of extension; indeed, it is quite doubtful whether extension in these cases is of any service. I have already said that I have once succeeded in replacing the head in its socket after the lapse of eight days. But if the surgeon were to fail by pressure alone, it would be proper to employ extension, especially with abduction, and manipulation.[1] In the event of a failure by these means, the case ought to be treated as a fracture, and the earliest period after the union of the fragments should be seized upon to accomplish the reduction of the dislocation. The occasional success of the older surgeons by this method is sufficient to warrant the attempt.

Compound dislocations of this joint will be discussed in a separate chapter devoted to the general consideration of compound dislocations of all the joints connected with the long bones.

§ 2. Dislocations of the Humerus Forwards. (Subcoracoid and Subclavicular.)

Causes.—The causes of this dislocation are the same as those which produce dislocation downwards into the axilla, except that it is more likely to occur in a fall upon the elbow or upon the hand when the line of the axis of the arm and forearm is thrown behind the body. Where my records have stated the cause, it has been ascribed to a direct blow upon the shoulder sixteen times, and to a fall upon the hand or elbow only twice. If it is the result of a direct blow, the impulse has usually been received rather upon the back than upon the outer side of the head of the humerus; or the upper end of the bone, having been originally thrown directly downwards upon the inferior edge of the scapula, may have been made to assume the position forwards, beneath the pectoral muscle, in consequence of the peculiar action of the muscles, or of the position of the arm in an attempt to rise. By this latter mode of explanation, the dislocation forwards is consecutive only upon a dislocation downwards.

In several instances which have come under my notice the dislocation has been due to muscular action alone. In one example the dislocation occurred frequently in consequence of epileptic convulsions. This was in the person of a lad, æt. 18, of a slender frame and feeble muscles. When the dislocation had taken place, he was frequently able to reduce it himself; sometimes he was obliged to call upon a surgeon, and at

[1] Hartshorne, Case reduced by Manipulation, Amer. Journ. Med. Sci., Jan. 1855, pp. 273–4, from Med. Examiner.

other times he left it out a day or two, or until it became reduced spontaneously. This spontaneous reduction generally took place at night, during sleep. At the time he called upon me the bone had been out two days, and he could not reduce it. I administered chloroform, and then made repeated and prolonged efforts at reduction, adopting all the usual modes of manipulation, but without resorting to mechanical appliances. The father now refused to allow me to proceed, and he was taken home with the bone unreduced. The following day he called at my office, to say that during the night, while asleep, and, he thinks, while turning over in bed, the bone suddenly resumed its place.

Drs. Edward L. Pardee and Glover C. Arnold, of this city, have recently met with a case of simultaneous dislocation of both shoulders, in a man æt. 38, caused by a fall from a carriage, his arms being extended in front of him, and the force of the concussion being received upon his hands. Both of the dislocations were subcoracoid; and they were easily reduced by Dr. Arnold.

Surgical writers occasionally refer to similar examples, but the number of cases of double dislocation on record is small. Most of those recorded have happened when the arms were extended in front of the body, as in Dr. Pardee's case just cited; and the dislocations were generally subcoracoid.

Pathology.—Omitting for the present to speak of partial dislocations, the existence of which, as a form of traumatic dislocation, I am prepared to question, I shall proceed at once to describe the anatomical relations and the various lesions which generally accompany a complete dislocation forwards.

Of these we shall observe two principal varieties, differing mainly in the degree or extent of the displacement.

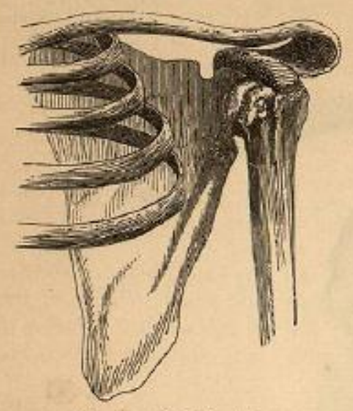
Thus we may find the head of the humerus resting *beneath the coracoid process* (subcoracoid), having the conjoined tendon of the short head of the biceps and of the coraco-brachialis lying upon its anterior surface, while its posterior and outer surface rests upon the venter of the scapula in front of the glenoid fossa; in which position it has usually thrust up, to a greater or less extent, the belly of the subscapular muscle.

Sir Astley Cooper, Fergusson, and others, when mentioning this form of dislocation, call it a "dislocation into the axilla;" by Boyer it is called a "primary luxation forwards." Dr. Wood, of New York, has reported an example, accompanied with a fracture of the neck of the humerus, which he has named "dislocation under the subscapularis muscle." The drawing which accompanied the report, made from the autopsy, sufficiently shows that it was a dislocation of the same character as that which I am now describing.[1] Dr. Parker has called attention to a similar case, an account of which was first given in Reese's edition of Cooper's *Surgical Dictionary*. The head of the humerus reposed in the "subscapular fossa."[2] By Malgaigne, Vidal (de Cassis), and others, this is called a subcoracoid dislocation, a term which, as being more distinctive and appropriate than either of the others, I shall choose to adopt.

[1] Wood, New York Journ. of Med., May, 1850, p. 282.
[2] Parker, Ibid., March, 1852, p. 187.

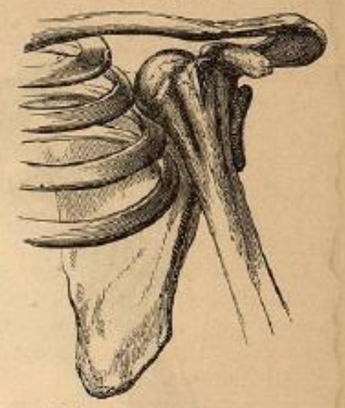
In the second variety, the head, having escaped from underneath the coracoid process, is made to approach nearer to the sternum, *so as to apply itself more or less closely to the inferior edge of the clavicle* (subclavicular). In which case the head and neck will be placed behind the

Fig. 284.



Subcoracoid dislocation.

Fig. 285.



Subclavicular dislocation.

pectoralis minor, and also behind the short head of the biceps and coraco-brachialis; or between these several muscles on the one hand, and the serratus magnus, covering the second and third ribs, on the other hand.

Upon the appearances which accompany this more advanced form of dislocation writers have generally based their descriptions, diagnosis, treatment, etc., of forward dislocations.

In either form of the accident, the deltoid, with the supra- and infraspinatus, is greatly stretched, and the two latter sometimes torn; the subscapularis is displaced upwards and backwards, while its tendon is in some instances completely wrenched from the head of the humerus. Mr. Erichsen has seen the lesser tubercle itself completely broken off in two examples of this accident which he has been permitted to examine after death.[1] Occasionally the axillary nerves are carried forwards with the head of the bone; and in this case the pain produced by their being thus pressed upon is even greater than in dislocations into the axilla.

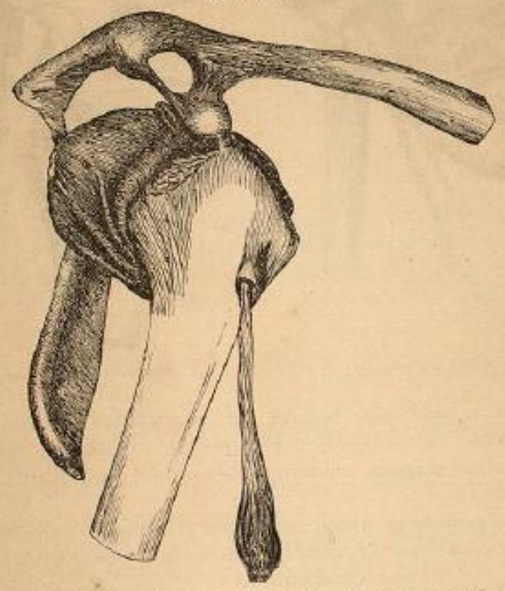
In this accident, as in dislocation downwards, the long head of the biceps is sometimes broken; the circumflex nerve may be contused or ruptured, and the capsule is generally torn very extensively.

Symptoms.—If the dislocation is subclavicular (Fig. 285), a depression exists under the outer end of the acromion process, extending also underneath its posterior margin; the elbow hangs away from the body, and a little backwards; the axis of the limb is much changed, being thrown inwards in the direction of the middle of the clavicle, the whole body inclining moderately to the same side; there is also more or less

[1] Erichsen, Science and Art of Surgery, 2d Amer. ed., p. 250.

inability to move the arm, especially in a direction forwards or outwards; a fulness is seen underneath the clavicle, and to the sternal side of the coracoid process, occasioned by the head of the humerus, the head moving with the shaft; the arm is lengthened. To these we may add the common sign of all dislocations of the humerus, mentioned by Dugas, viz., the impossibility of placing the hand upon the opposite shoulder

Fig. 286.



Showing untorn posterior half of capsule in subcoracoid dislocation of humerus. (Gunn.)

while at the same moment the elbow is made to touch the front of the chest.

If the dislocation is forwards, but subcoracoid, the head of the bone will be found below this process and deep in the anterior margin of the axillary fossa. It cannot, therefore, be so distinctly felt; but the other signs are the same as in the dislocation forwards under the clavicle, except that the arm is usually longer than the opposite arm.

Prognosis.—While on the one hand experience has shown that the axillary nerves and artery are less liable to suffer serious and permanent injury than in dislocation downwards (subglenoid), and that the capsule, with the tendinous and muscular tissues about the joint, are no more liable to laceration—on the other hand, the difficulty of reduction has been often increased, and consequently a large number of examples, in proportion to the actual number which occur, have been left unreduced.

Dr. Norris relates a case which the surgeon who was first called supposed to be a mere contusion, but which, on being admitted to the Pennsylvania Hospital, three months after the accident, was found to be a dislocation forwards under the clavicle. The arm was almost useless.

Dr. Norris made extension and counter-extension with compound pulleys nearly an hour, but to no purpose; and finally, at the request of the patient, the attempt was given over.[1]

Treatment.—The same rules of treatment which I have established in relation to dislocations into the axilla (subglenoid) will be found to be applicable to this dislocation; with the exception that the position of the arm in manipulation, or in extension, will be at first somewhat in a line backwards, and that our efforts will frequently have to be continued with more perseverance, although with less fear of injury in consequence of supposed adhesions between the artery and the adjacent tissues. The extension also must always be made downwards and outwards, if the dislocation is subclavicular, until the head of the bone has escaped from beneath the coracoid process; we may then pull directly outwards or even upwards, while at the same moment pressure is made with the hand upon the head of the bone in the direction of the socket, and the arm is rotated inwards.

Fig. 287.

Subcoracoid dislocation.

If the dislocation is subcoracoid, our modes of procedure need scarcely vary in any respect from those which I have recommended for dislocations into the axilla.

Professor Gunn, of Chicago, having in mind the probable resistance offered by the posterior and untorn portion of the capsule, directs that, in the subcoracoid dislocation an assistant shall fix the shoulder while the surgeon raises the arm to a horizontal position, carries it backwards, rotates it externally, and draws it into position.[2]

[1] Norris, Amer. Journ. Med. Sci., vol. xxv. p. 279.
[2] Gunn, loc. cit.

Professor Gunn does not fail to observe, however, that this method does not always succeed, owing, as he thinks, and as others have suggested before, to the fact that the head has slipped through a narrow rent in the capsule. The same thing happens occasionally, he believes, in other dislocations of the shoulder. To shoulder dislocations complicated by this peculiar pathological condition, he applies the term "anomalous." "The escaped head," says Professor Gunn, "under such circumstances, would be firmly grasped by the edges of this fissured opening in the capsule, in such a manner as to foil all mere manipulatory efforts. I have three times encountered what I have considered to be this state of the parts. In one case it was my fortune to be able to demonstrate the correctness of these views. It was an old forward dislocation, when, after breaking up the adhesions, I was unable to cause the head to reënter the socket. The uselessness of the arm and the necessity of relief, owing to the dependence of a family on this arm, induced me to cut down upon the dislocated head, when I found the condition above described. I freely divided, with a bistoury, one border of this slit in the capsule, and replaced the head in the glenoid fossa. This experience was before the era of antiseptic precaution, and although a prolonged suppurative history followed, a final satisfactory recovery was realized.

"The other two cases were recent axillary luxations in which no manipulatory effort was sufficient to alter the relation of the displaced head to the socket. Free rotation, backwards and forwards, through nearly all the three hundred and sixty degrees, failed to enlarge the opening sufficiently to permit reduction. Resort was then had to the compound pulley, and extension carried to the ultimate verge of temerity produced signs of laceration of ligamentous structures, but no snap of reduction. Extension was discontinued, and then simple manipulation reduced the luxation at once."

Professor Gunn must permit me to say, that while I do not doubt that "buttonholing" the head is sometimes a cause of the irreducibility of recent shoulder dislocations by the ordinary methods of manipulation, yet it is not plain to me that, in the case of the ancient dislocation cited by him, the bands, which being cut permitted the bone to return to its socket, were not supplementary or adventitious structures. Nor am I prepared to admit that in all recent cases, where well-directed manipulation does not effect reduction, the impediment consists solely, or in all cases, in a buttonholing of the head. Nor do I understand that this distinguished surgeon intends to say so, although his language might perhaps admit of this construction.

The plan adopted in the following case has been found sufficient in several examples of subcoracoid dislocation:

Mr. McA., of Buffalo, æt. 73, moderately muscular, fell through a trap-door, striking upon his right elbow, and dislocating the humerus forwards. Within two hours after the accident, I found the head of the bone resting under the coracoid process, where it could be distinctly felt and seen. There was a marked depression under the acromion process, and the arm was carried out from the body and slightly back. He had not suffered much pain. The patient was seated in a chair, and while Dr. Lemon, who was at that time my pupil, supported the acromion process, I pushed the head of the humerus outwards toward the socket with my left hand, while with my right I pulled gently upon the arm in the direction of the axis of the body. After about twenty seconds it slid suddenly into its place with an audible snap.

Simple manipulation alone will also be found sufficient in many cases of subclavicular dislocation.

A German, Simeon Grennas, æt. 21, fell upon an icy sidewalk, and dislocated his right humerus under the clavicle. We found him about an hour after the accident, sitting with his head inclined to his right side, and supporting his elbow with his left hand. A marked depression existed under the outer end of the acromion process, and instead of the usual fulness there was a flatness under the process behind. The elbow was carried out from the body, and very slightly backwards. While Dr. Boardman supported the acromion process I lifted the elbow from the side, carrying it first upwards and backwards, and then forwards, making thus a short detour with the arm, and when the manœuvre was nearly completed the bone slid into its socket with a slight snap. No extension was used, and no more force employed than was sufficient to lift and rotate the arm. He was not at the time of the reduction faint, nor were his muscles relaxed from any other cause.

More than once I have accomplished the reduction by extension made directly upwards, as in the following example:

A gentleman, forty-five years of age, had his left shoulder dislocated forwards under the clavicle in a railroad collision, on the 8th of October, 1858. A young surgeon had been making extension in various ways for half an hour, when, by placing my foot upon the top of the scapula and drawing the arm directly upwards, I accomplished the reduction immediately and without much effort. Six months after the accident, I found the deltoid muscle considerably wasted, and he was still unable to raise his arm to a right angle with the body.

I have in this way also reduced a dislocation which had existed seventeen days, the nature of the accident having been misunderstood by the attending surgeon. The man was twenty-three years old, and quite muscular. The dislocation had been produced by a severe blow received directly upon the shoulder, and the arm was still considerably swollen and very tender. The reduction was accomplished in a few seconds while the patient was under the influence of chloroform, by my hands alone, aided only by the pressure of the foot upon the top of the scapula. The method adopted successfully in both of the preceding cases, namely, pulling directly upwards, ought generally to be considered a last resort, inasmuch as it especially exposes the axillary artery, vein, and nerves to injury.

In December, 1857, Dr. White, of Buffalo, and myself, reduced a subclavicular dislocation of the right shoulder, which had existed sixty days, in a man sixty-eight years of age. The surgeon who first saw the man thought it was only a sprain or a severe bruise. When he came to Buffalo, the whole limb was enormously swollen, and neither Dr. White nor myself had much expectation of accomplishing a reduction without a resort to pulleys and anæsthetics. He was, however, placed upon the floor, and after extension made for about half an hour, during which time

we had pulled the arm in various directions, upwards, outwards, and downwards, I at last succeeded while my heel was placed in the axilla, and while the limb was undergoing a slight rotation. No anæsthetic was employed.

Dr. M. C. Cuykendall, of Bucyrus, Ohio, informs me that he has recently reduced a subclavicular dislocation on the sixty-fourth day, in a man 62 years old, by the following method: "As a last resort I secured the pulleys to the arm above the elbow, making the counter-extension with Skey's knob in the axilla, flexed the arm and made extension downwards and forwards; and when well extended I moved his body under the pulley ropes, so as to bring the arm forcibly across the breast; then, keeping up the extension, I had Dr. Richey place his knee upon the top of the scapula, and lock his fingers around the elbow, while I placed my knee against the elbow and locked my fingers around the top of the scapula, and directing the extension removed, we forced the bone upwards and outwards to its sockets;" adhesions were felt to give way, and the restoration of the bone was found to be complete.

It will be understood that this method did not succeed until after repeated and long-continued efforts had been made by other methods, such as pulling down, pulling out, and pulling directly up. Dr. Cuykendall informs me that this is the second time he has succeeded in "completing" the reduction of old dislocations of the shoulder by this manœuvre.

These several cases are mentioned that the surgeon may understand how impossible it is always to establish absolute and invariable rules of procedure which shall be applicable to every accident of this character. The method which will succeed readily in one case may fail completely in another, although belonging to the same class, and not apparently differing in its anatomical relations. Before relinquishing the attempt, we ought to have put into requisition all the expedients which the experience of other surgeons has shown to be worthy of a trial.

During the year 1865, two ancient subcoracoid dislocations came under my observation at Bellevue Hospital. One of these cases, in the person of James Thompson, æt. 49, had existed two years or more. He was employed about the hospital as a carpenter, and had a tolerably useful arm. The second, in the person of Rosanna Casey, æt. 32, had existed six weeks when she was admitted. Various attempts had been made to reduce the dislocation before admission. During the week following her admission, an attempt was made at reduction by Dr. Verona, an intelligent house surgeon, subsequently by Dr. James R. Wood, and at the end of three months the attempt was made by myself, before the class of medical students, the patient being each time under the influence of an anæsthetic. She was finally discharged with the bone still unreduced.

Mary Coffee, æt. 46, was admitted also to the Charity Hospital, in Feb. 1864, with the same dislocation, which had existed six months, having been mistaken at first for a fracture. I found her arm free from swelling or paralysis, and moving quite freely in its new socket, and declined to make any attempt at reduction.

July 28, 1873, an Irishman, about 40 years of age, was admitted to St. Francis's Hospital with a subcoracoid dislocation of the humerus of

eight or nine weeks' standing. The surgeon who first saw him believed that he reduced the dislocation, but several weeks later he found it was again out of place, and he tried ineffectually to reduce it. My own efforts, continued for an hour or more, were equally unsuccessful.

The two following cases are recorded in order that they may illustrate the apparent inutility of a successful reduction in some cases.

William E. Disbrow, of Bridgeport, Conn., received a subcoracoid dislocation of the right arm, in consequence of a violent and direct blow, May 9, 1870. Dr. George Lewis, of Bridgeport, a very intelligent surgeon, reduced the dislocation within half an hour, the patient being under the influence of ether. The restoration of the bone was complete, and attended with an audible sound. The arm was subsequently very painful, and at the end of three weeks Mr. Disbrow consulted a "natural bone-setter," who manipulated the limb violently, and perhaps dislocated it. July 9, 1870, eight weeks after the original accident, I found the bone unreduced, and in the presence of a number of medical gentlemen at Charity Hospital, effected reduction. The patient was anæsthetized, and the reduction was accomplished only after considerable extension and manipulation had been practised; the return of the bone to its socket being accompanied with a grating sensation. A thick pad was then placed in the axilla, and the arm and forearm secured across the front of the chest. Mr. Disbrow remained under observation for some time; but it was soon evident that the head of the bone was gradually receding from the socket, and that he was not to have a very useful limb.

Jan. 10, 1875, Leonard Ball, æt. 40, was thrown from a carriage at Norwich, Conn., causing a subcoracoid dislocation of the left arm. Five days later Dr. Patrick Cassidy, of Norwich, reduced the dislocation, the reduction being accompanied with a grating sensation. Four days later Dr. Cassidy found the arm again dislocated, and he again reduced it. Feb. 11th, thirty-two days after the original accident, the arm was examined by myself and other visiting surgeons at Bellevue. Some of the gentlemen doubted whether it might not be a fracture of the surgical neck of the scapula. In my opinion it was a dislocation. On the same day before the class, and under ether, I effected reduction by manipulation, very little extension being employed. The arm was, however, manipulated in various directions, and considerable adhesions were torn before success was attained, the bone returning to its socket suddenly, and with a grating sensation, while the heel was in the axilla, and I was pulling moderately upon the arm. No one doubted the fact of reduction; the arm was now done up as in the preceding case, and the patient remanded to his ward.

A few days later I found the head of the bone had receded from its socket, and was evidently tending to assume the position in which I first saw it; and the motions of the joint were very limited. He was discharged from the hospital after two or three weeks, and I have not seen him since.

It is quite probable that among the successful cases of reduction of old dislocations of the shoulder, reported from time to time, many have completed their history in a similar manner. Possibly there may have been in each of these examples a fracture of the inner lip of the glenoid cavity,

a condition which has been verified in several autopsies of old shoulder dislocation.

The rapid changes which often take place in the socket, and in the condition of the adjacent tissues, may also account for the difficulty which we often experience in reducing these dislocations, and of retaining them in place after reduction. In Professor Lister's case, already referred to, at the end of seven weeks there was a complete socket formed, smooth, cartilaginous, and partly bony; and strong fibrous bands had formed between the coracoid process, the surgical neck of the humerus, and the axillary artery, containing a spiculum of bone.

In the case of a woman whose shoulder had been dislocated six weeks, sent to me Nov. 3, 1880, by Dr. Payne, of this city, I was unable to effect reduction. During the examination a well-marked exostosis was felt upon the ribs near where the head of the humerus was resting; and I have already related the case reported by Mr. Annandale, in which, in a dislocation of six weeks, while practising resection, he found the head of the humerus united to the ribs by fibrous and bony tissues.

§ 3. Dislocations of the Humerus Backwards. (Subspinous.)

This form of dislocation has been seldom met with. Only two cases, according to Sir Astley Cooper, occurred in Guy's Hospital in thirty-eight years; but in the last edition of Sir Astley Cooper's treatise on *Fractures and Dislocations*, edited by Bransby Cooper, nine cases are mentioned.[1] Sédillot,[2] Malgaigne, Desclaux,[3] Van Buren,[4] W. Parker,[5] Lepelletier,[6] Trowbridge,[7] Physick, Snyder,[8] Stephen Smith, and myself, have each seen one example. Examples have also been seen by Dupuytren, Arnolt, Best, Levacher, Berard, Fizeau, Velpeau, Fergusson, Kirkbride,[9] and by Rogers.[10]

To these the researches of Poinsot[11] have added the observations of Lacaussade, Ph. Boyer, Goyrand, Alaboissette, Enright, Langier, Bouisson, Piel, Markham, D. Mollière, Ball, C. Périer, Desprès, Duplay, Sebilleau, Schmidt, and Tillaux.

Dr. Stephen Smith's case was seen by myself ten days after the accident, by courtesy of Dr. Smith. The patient, John Creswell, æt. 36, fell down a flight of stairs Sept. 11, 1881, striking on the front of his shoulder. A surgeon, who saw him a few hours after, thought it was simply a bruise. Sept. 21, he was an inmate of Bellevue Hospital. The head of the humerus could be distinctly seen in its new position, and there was a marked depression under the acromion process, especially in

[1] A. Cooper, op. cit., p. 352.
[2] Sédillot, Amer. Journ. of Med. Sci., vol. xiii. p. 551, Feb. 1834.
[3] Desclaux, New York Journ. of Med., Nov. 1851, p. 109, from Revue Médicale.
[4] Van Buren, Ibid., Nov. 1851, p. 110.
[5] Parker, Ibid., March, 1852, p. 186.
[6] Lepelletier, Amer. Journ. Med. Sci., vol. xvi. p. 526, from Arch. Gén., Nov. 1834.
[7] Trowbridge, Boston Med. and Surg. Journ., vol. xxvii. p. 99.
[8] Gibson's Surgery. [9] New York Journ. Med., March, 1852.
[10] Amer. Med. Times, November 9, 1861, vol. v. p. 303.
[11] Poinsot, French ed. of this treatise, p. 860.

front. The elbow hung very slightly from the body, and scarcely more forwards than the opposite elbow. He could carry it forwards pretty freely, and a little out, but he could not carry it back. He suffered very little pain, and there was no swelling of the arm or hand. On the following day Dr. Smith reduced the dislocation easily, by pulling the arm forwards, and at the same time pushing upon the head from behind. Dr. Smith informs me, however, that the bone became displaced on the following day; but that it was easily reduced, and afterwards remained in place.

Causes.—One of the patients mentioned in Mr. Cooper's book had his shoulder dislocated backwards in an epileptic convulsion; one had fallen upon his shoulder; another met with the accident while pushing a person violently with the arm elevated; and a fourth, seen by Coley, was "pulled down by a calf which he was driving, a cord having been tied to one of the calf's legs, and being held fast by the man's hand." Markham's patient being thrown from his horse and holding upon the bridle with his right hand, the arm was drawn forcibly upwards. Desprès's patient had his left arm engaged in the collar of his horse, when the animal lifting his head suddenly threw his arm upwards. Bell's patient, a miner, æt. 18, had been caught in an earth-slide when his arm was extended upwards. My own patient, Frederick Kretner, had his arm caught in machinery on the 14th of January, 1860. The dislocation was discovered when I was preparing to amputate the arm soon after the accident occurred. Pile's patient, a woman, had her arm forcibly twisted by her husband during an altercation. Desclaux's patient fell from a height with his arm in front of him. The same was the fact with Mollière's patient, except that the fall was upon the sidewalk. In the case seen by Dr. Parker, of New York, a woman, æt. 60, had fallen forwards and struck upon the outside of her elbow, arm, and shoulder. No attempt was made to reduce it until the fourteenth day, she not having for some time called the attention of any surgeon to its condition. Trowbridge's patient was thrown from a horse, striking on the palm of his hand. With the patient of Périer the dislocation was recurrent, but it occurred in the first instance during an epileptic fit.

Pathology.—Mr. Cooper has given us a careful account of the dissection in the case of Mr. Complin, already alluded to, whose arm had been dislocated by muscular spasm. This gentleman was fifty-two years of age, and had been subject to epileptic fits, in one of which the shoulder was dislocated. Many attempts were made to reduce it, but although it seemed to be easily drawn into its socket by extension merely, yet, as soon as the force ceased, the head of the bone slipped again upon the dorsum scapulæ, and in this situation it was finally permitted to remain until his death, which did not take place until five years after. In the meantime he was able to move the limb but very slightly, so that his arm was almost useless.

Mr. Cooper, to whom the arm was sent after death, found the head of the bone resting under the spine of the scapula, and against the posterior edge of the glenoid fossa, where it had formed a slight depression, and the head itself had become somewhat changed in form by absorption. The tendon of the subscapularis muscle and the internal portion of the