

in transit unknown to the ship's officer. It must be borne in mind that the master of a vessel is not a physician, and that his statement regarding the character of the sickness which may exist on board, or his opinion as to the health of the crew, should be accepted only as corroborative evidence. Furthermore, the certificate of the ship's surgeon, although given in all sincerity, must not be taken in lieu of an inspection. It has occurred in my experience that, after the captain and surgeon have stated that no sickness existed on board, a careful inspection with the use of the clinical thermometer has detected the presence of either mild cases, or cases in the early stages of some infectious disease.

The treatment and disinfection of a ship having one or more cases of infectious disease on board depends largely on the manner in which the patient has been cared for in transit, the character of the disease, etc. In a general way, it may be said that the patient must first be removed from the vessel, and those who have been exposed should also be transferred to some place where necessary disinfection can be performed, and where these people can be divided into groups and separated from each other, particularly while indoors, and kept under careful observation until the expiration of the period of incubation. Modern sanitation does not sanction the retention and treatment of either the patient or those exposed on board the vessel, if it is possible to remove them to some other place. While they remain on board proper disinfection cannot be performed. After the removal of the persons referred to, all bedding, hangings, etc., should be taken from the section of the ship occupied by the patient or patients, and if possible subjected to steam. If this is not available, it will be necessary for the sanitary officer in charge to use the best means in his power to destroy whatever infection may presumably exist. If the disease has occurred in the steerage quarters which are usually large and hold many people, either the berth occupied by the patient and those in its immediate vicinity, or the entire apartment, may be scrubbed with water and soap or washed with bichloride, 1 to 1,000. To what extent this shall be done depends upon the exposure, etc. However, in such instances we depend principally upon proper fumigation. The treatment of a fore-castle, which is usually quite small and generally overcrowded and filthy, should be particularly searching, as it frequently occurs that sailors suffer from mild attacks of infectious disease which are not recognized. Therefore the appearance of a case of this character among them should be followed by thorough disinfection of the clothing and effects of all who occupy these quarters. Whether or not the disinfection shall extend to the cabin is a matter which depends entirely on the amount of exposure in each case, although in ships of large size, where strict discipline exists, there is but little communication between different sections of the vessel. If smallpox should occur in the steerage or fore-castle, the disinfection of the cabin or saloon would under ordinary circumstances not be called for. If, however, cholera should appear on shipboard, we are justified in disinfecting the living apartments, clothing, bedding, water-tanks, etc., and the destruction of such provisions as may possibly have been contaminated, as in this disease there are many avenues by which its specific organism may reach the system, whereas smallpox is generally contracted by actual contact, or in some cases by infected clothing or bedding. In the fumigation of a ship great care should be observed in preparing receptacles for the generation of sulphur dioxide in order to prevent danger from fire. The immense size of the steerage quarters in some of the large ships would seem to make it more practical to use sulphur dioxide than formaldehyde.

A question which has recently been presented for serious consideration is the possible transmission of bubonic plague by rats and other vermin. It is believed that infected rats steal aboard vessels lying at docks in ports infected with bubonic plague and subsequently transmit the disease to those on board. During the prevalence of bubonic plague at Santos and Rio de Janeiro many ves-

sels from these ports arrived at New York laden with coffee. On one of these vessels three cases of bubonic plague occurred, and it was deemed proper at that time by both the Federal and State Quarantine authorities to have the cargoes of all vessels from the said ports unloaded on lighters at quarantine in order to prevent the possible escape of rats to the mainland. During this period of four or five months, I was able to collect considerable of this vermin, which were all examined bacteriologically, but in no instance was the specific organism of bubonic plague found. The cases of bubonic plague occurring on shipboard which have come under my personal observation have been clearly traced to infection occurring prior to the departure of the vessel, and I believe that thorough investigation will prove this to be the case in almost every instance when cases of this character are found on incoming vessel. Too little attention, however, is given to the frequency of the mild or unrecognized type of bubonic plague, and I feel quite certain that the danger from rat infection on shipboard is exaggerated.

We have yet much to learn regarding disinfection, but the more it receives careful and scientific investigation, the more we find that has been improperly performed.

Alvah H. Doty.

DISLOCATIONS.—The term dislocation or luxation is used to indicate the displacement of the articular surfaces of the bones composing a joint from their normal position. This displacement may be complete or incomplete. In a complete dislocation no part of one articular surface remains in contact with any part of the other, and in an incomplete or partial dislocation the opposite surfaces are not entirely separated from each other.

Further divisions, commonly made use of, are these:—

1. Traumatic or accidental—due to force or violence.
2. Pathological or spontaneous—the result of morbid changes in the bones forming, or the soft parts surrounding, a joint. Such changes are: erosion, necrosis, softening, etc., in the one case, or paralysis of muscles or relaxation of ligaments in the other.
3. Congenital—the result of a malformation that has taken place prior to birth. It may also occur during parturition, and will then not be strictly congenital, but traumatic or accidental; although this distinction can clearly be made out only by close observation during the development of the condition.

The first division may be further divided, for practical purposes, into:

(A) Recent—when the dislocation has taken place within a few days or a few weeks, a sufficient time not having elapsed to produce material changes, such as result from inflammatory, exudative, or other processes, and which are likely seriously to impede reduction. Recent dislocations, it is clear, are usually reducible.

(B) Ancient or old—when several weeks or months have elapsed since the occurrence of the dislocation. The time which must elapse before a dislocation becomes old varies for different localities of the body and under different circumstances, but in any case it must be sufficient for such changes to have taken place as are likely seriously to interfere with the return of the bone to its proper position, or to render dangerous (to life or limb) any efforts that may be made to effect a reduction, or, finally, to render such reduction or restoration impossible—an irreducible dislocation.

A dislocation is regarded as (a) *simple*, when the separation of the bones is attended by only a limited or reasonable degree of injury to the soft parts, the skin retaining its continuity; as (b) *compound*, when the head of the bone, or a fragment thereof, has been forced through the soft parts and skin, or when in some other way an external wound communicates with the joint; as (c) *complicated*, when there is an extra complication, which may attend either a simple or a compound dislocation. A fracture of one or more of the bones entering a joint; laceration of important blood-vessels, nerves, muscles, integument, etc., although the wound may possibly not communicate with the joint; an extensive or serious vis-

ceral or organic lesion elsewhere in the body—all these are examples of such a complication.

Dislocations may be single, involving one joint; multiple, involving two or more joints; unilateral or bilateral; and entire, as when both extremities of a single bone, as the clavicle, or all the articular surfaces of one or more bones of the carpus or tarsus, are displaced. A bone may be at first lodged in one position—a primary or primitive dislocation; or by accident, or through the efforts made to effect a reduction, it may be removed to another position, when it is said to be a secondary or consecutive dislocation. If after a dislocation is reduced it slips back into the abnormal position formerly occupied by it, the term recurring is used. In regular dislocations certain tissues of special joints are involved; but when other than these are involved, either exclusively or in addition to those ordinarily affected, the dislocations are known as irregular.

Special dislocations are sometimes designated by the name of the joint involved, as dislocations of the shoulder, hip, elbow, etc.; more properly, however, the proximal end or ends of the distal bone or bones involved give the designation; and yet, in the case of the clavicle, it is not unusual to speak of a dislocation of the sternal or of the acromial extremity, and not of a dislocation of the clavicle alone in the one instance, and of the scapula in the other.

ETIOLOGY.—In our discussion of the predisposing causes of dislocations, we must consider, first, the forms of the various joints. Thus, for example, the shallow glenoid cavity—if such it can be called, at the shoulder-joint—is quite different from the deep cup-shaped acetabulum, although both are known as ball-and-socket joints. Under normal conditions, the ligaments which enter into the formation of the shoulder-joint—viz., the capsular, the coraco-humeral, and the glenoid—are conspicuously weaker than those which form a part of the hip-joint—viz., the capsular, ilio-femoral, cotyloid, and transverse ligaments, and the ligamentum teres; and consequently luxation can much more readily occur in the former than in the latter. Ball-and-socket joints, from their greater range of mobility, are, as a rule, more liable to luxation than ginglymoid or hinge joints. In the next place we must consider how the different component parts of a joint are altered under abnormal conditions. Thus, for example, by overstretching of the ligaments in early life undue relaxation of the latter may be produced. Such overstretching may be brought about by the abuse of the natural functions of the joint, as well as by the normal growth of the bones themselves. Relaxation of the ligaments may be congenital or it may be the result of disease, which may also produce softening of the capsular as well as of the bones. Excessive action of antagonizing muscles, and defective contractility, from paralysis or impaired nerve function, are not only to be classed as predisposing factors, but may be the direct cause. Age is unquestionably a predisposing factor, and sex has its influence. Habit, occupation, etc., also have bearings upon the question of predisposition. I quote the following from the article of Dr. E. M. Moore, in Vol. II. (p. 485) of the former edition of this HANDBOOK: "The following statistics of dislocations (*Am. Jour. Med. Sciences*, October, 1842) are so complete that we make no apology for inserting them here:

"From an examination of the register of the Hôtel-Dieu of Paris, M. Malgaigne found that, during a period of sixteen years, 530 dislocations were admitted into that institution, of which there were:

Below 5 years old.....	1 case.
Between 5 and 10 years.....	4 cases.
" 10 " 15 ".....	20 "
" 15 " 20 ".....	29 "
" 20 " 25 ".....	32 "
" 25 " 30 ".....	40 "
" 30 " 35 ".....	48 "
" 35 " 40 ".....	38 "
" 40 " 45 ".....	45 "
" 45 " 50 ".....	52 "
" 50 " 55 ".....	52 "
" 55 " 60 ".....	51 "

Between 60 and 65 years.....	51 cases.
" 65 " 70 ".....	42 "
" 70 " 75 ".....	19 "
" 75 " 80 ".....	13 "
" 80 " 90 ".....	4 "
At 90 years.....	1 case.

"Of these 530 cases, 395 occurred in males and 135 in females. Of 497 cases in which the seat of injury was particularized, there were, of the humerus, 321; clavicle, 33; elbow, 26; radius, 4; wrist, 13; thumb, 17; fingers, 7; femur, 34; knee, 6; patella, 2; foot, 20; jaw, 7; spine, 7.

"The frequency of luxations of the shoulder in elderly persons is well shown by the fact that of 164 dislocations observed in patients above the age of sixty, when the seat of injury was mentioned, 131 occurred in this part.

"The dislocations of the clavicle were principally confined to adult life; those of the elbow, on the contrary, were mostly in young persons; one-third of all cases observed being in subjects between ten and twenty; beyond fifty-four no example of it was met with. Of the 34 dislocations of the femur, 26 were in males and 8 in females."

Finally, the position of the joint at the time of dislocation is to be considered. From their position and use some joints, although stronger, are more liable to dislocation than others. Thus, for example, the ginglymoid joint of the elbow is more often dislocated than that of the hip.

Of the direct causes, we consider of first importance violence or force, whether external or internal. In most cases the dislocation results from a combination of forces, being partly the result of a blow and partly that of muscular action; yet either will suffice in some cases. Prof. Frank H. Hamilton* says:

"The action of certain ligaments in determining the direction of some dislocations, is also a direct cause, but only subsidiary to the other causes named.

"External violence operates either directly or indirectly. When a person falls upon the knee and dislocates the head of the femur, the force is said to have acted indirectly, and this is by far the most frequent mode of dislocation; but when the blow is received upon the upper end of the humerus, and the head is sent into the axilla, it is said to have been dislocated by direct violence.

"Muscular action produces dislocation slowly, as in severe cases of chronic rheumatism, and then it is termed a spontaneous or pathological dislocation; or suddenly, as in the violent spasmodic contractions which accompany convulsions; or sometimes by the mere voluntary effort of the muscles; and both of these latter are true accidental dislocations.

"It is very probable that external force can seldom be regarded as the sole cause of a dislocation, but that, in a large majority of cases, muscular action consenting with shock, performs an important rôle in the history of the accident. The limb, being driven obliquely across its socket by the external violence, is seized by the excited and stretched muscles with such vigor as to contribute not a little to the unfortunate result. Thus it will be found that the same force which is adequate to the production of a dislocation in the living subject is wholly insufficient to accomplish the same in the dead; and a man who is fully intoxicated seldom suffers from a dislocation."

GENERAL SYMPTOMS AND DIAGNOSIS.—The most prominent symptoms are pain and deformity; loss of normal function, as shown by impaired mobility, though in some instances we may have increased mobility; change in the length and direction of the limb; change in the natural axis of the limb with its socket; the fact that when the dislocation is reduced, the parts, if undisturbed, remain, as a rule, in position; and possibly crepitus. In some of the joints the peculiar appearance of the one injured suffices to indicate the lesion, yet the swelling from in-

* "Practical Treatise on Fractures and Dislocations," 7th American edition, 1884; H. C. Lea's Son & Co., Philadelphia.

jury to the tissues, which soon arises, may alter not only these appearances but also the conditions ascertained by palpation. Immobility or other impairment of function, and pain on motion, may be marked features of certain fractures, yet when the patient is under the influence of anæsthesia, we shall often be able to discover certain peculiar differences between these cases. These differences will be noted when we come to consider the special dislocations. While there is usually lengthening of the limb, especially in downward dislocations of the shoulder and hip, yet in other instances to be mentioned there may be marked shortening; and as to the changes in direction, as well as to the retention of the parts in position after they have once been reduced, these matters require only to be mentioned at the present moment. True crepitus cannot be elicited in a simple recent dislocation; but what is known as moist crepitus, similar to the phenomenon produced by friction of a cartilaginous surface on bone, or to that produced in a case of inflamed bursa and tendons, may often be observed. In dislocations of some days' or weeks' standing, inflammatory exudations may so roughen opposed surfaces as to produce a sensation not unlike that of crepitus; yet it ought to be possible under careful examination, and especially if the patient is put under the influence of an anæsthetic, to distinguish this sensation from the sharp, grating sound which is pathognomonic of a fracture. We must remember, however, that some fractures are not accompanied by crepitus, and these are mostly found in the vicinity of a joint: that epiphyseal fractures are attended by a more muffled or indistinct crepitus than others; and that occasionally the dislocation may be accompanied by a fracture of the head of the bone or in its immediate vicinity. It is under conditions like these that the revelations of the Roentgen or x-ray apparatus are of especial value. I desire to state, however, that in my experience—although in some dislocations, especially those which have existed for some length of time, I have derived great satisfaction from the use of the x-ray—it has signally disappointed me in those occurring at the hip. In the case of the more superficial joints, such as the elbow and wrist, or even in those in which there is a smaller amount of bony structure (the shoulder, for example), it has been of the greatest service. While in some cases we may have one or more symptoms that are really pathognomonic, we often encounter cases in which it is a very difficult matter to make a correct diagnosis. However, if the surgeon possesses a thorough knowledge of the structures which enter into the formation of the various joints, if he knows what was the condition of the limb prior to the injury, and if he makes a careful collation of the facts relating to the manner in which the injury was produced, he should be able, in recent cases, to decide upon the measures that are best adapted to afford the needed relief.

GENERAL PATHOLOGICAL CONSIDERATIONS.—The first results of an accidental or traumatic dislocation are the rupture and tearing of the capsular and other ligamentous structures; contusion or laceration of muscles, tendons, and other adjacent tissues; and injury to blood-vessels and nerves. If an early reduction is effected, and if the joint is allowed to rest for from ten to twenty days, or even longer in some cases, the recuperative powers of nature will usually prove sufficient for the repair or restoration of all these pathological lesions. Under certain circumstances, however, a wounded blood-vessel may demand immediate ligation, or a torn nerve or ligament require suturing, either at once or at some later period. The laceration of ligaments and other soft parts, together with the rupture of even unimportant blood-vessels, will cause more or less immediate effusion of blood, and subsequently of serum. This alone, independently of the pressure of the misplaced bone and overstretched ligaments and tendons that are not torn, will, through pressure on sensitive nerves, occasion pain, of varying severity. Then, besides, the contractility of certain muscles may become impaired, either immediately after the accident or at some later date, through the injury inflicted

upon the motor nerves in the vicinity of the luxation. As time goes on, if the dislocation is not reduced, other changes of a far more serious character will occur. The inflammatory exudation may become organized, and in this way the laceration in the torn capsule may possibly be closed. At the same time natural bony cavities, such as that of a ball-and-socket joint, are likely to become filled, to a greater or less extent, with exudative material. Torn ligaments and tissues become reunited in abnormal positions. Some muscles kept in too high a state of tension, and others from want of use, undergo atrophy and become impaired in their contractility. Some blood-vessels and nerves are unduly stretched, while others become contracted in their length—a matter of serious moment in the aged. Gradually changes in the bones occur, and the dislocation passes from the condition of a recent lesion to that of one which occurred a long time previously—in brief, to that of a permanent or irreducible dislocation. As to these later changes, I cannot do better than to give here the following quotation from Professor Hamilton,* which I regard as graphic and instructive:

"If the dislocation remains unreduced, the margins of the old socket, in the case of enarthrodial articulations, become gradually depressed, while the concavity of the socket is filling in with a fibrous or bony tissue, until at length the whole of this portion of the joint apparatus is nearly or entirely obliterated. This process is generally very slow, and may not be consummated until after the lapse of many years.

"At the same time, but with much greater rapidity, the head of the bone in its new position, and the soft or hard parts on which it rests, are undergoing certain changes to adapt them to their new relations, and calculated in some measure to restore the limb to its normal functions. If the head of the bone rests upon muscle, the cellular and fibrous tissues which enter into the composition of the muscle become condensed and thickened, forming a shallow or elongated cup, whose margins are attached to the neck or shaft of the bone, and whose walls are lubricated with synovia. If it rests upon bone, by a process of interstitial absorption a true socket is formed, sometimes deep, and sometimes shallow, whose edges, receiving additional ossific depositions, become lifted so as to form a rim. At the same time the head of the bone is undergoing corresponding changes, to adapt itself to the newly formed socket; it is flattened or otherwise changed in form, and in the progress of this change its natural secreting and cartilaginous surfaces are gradually removed, a porcelaneous deposit taking its place. The same kind of hard, polished, ivory-like deposit is found also in those portions of the new socket which have been especially exposed to pressure and friction. Instead of the eburnation, an imperfect fibro-serous surface or synovial capsule may be formed."

"I have in my cabinet," he says, "an example of ancient luxation of the hip-joint in which the head of the femur, having rested upon the dorsum ilii, has formed a nearly flat but smooth surface—a kind of elevated plateau; in other cases I have seen the margins of the new socket so elevated as to rest against the neck of the femur, and completely lock it in.

"Coincident with these changes, and in consequence partly of the disuse of the limb, the muscles, and even the bones sometimes, suffer a gradual atrophy. In some measure these alterations may be due also to the pressure of the dislocated bone upon arterial and nervous trunks, by which their functions become partially or completely annihilated, and their structure may be wholly obliterated. In consequence also of the inflammation which immediately results, we ought not to omit to notice that the trunk of a large artery sometimes becomes firmly adherent to the capsule or periosteum of a displaced bone, and its reduction is attended with imminent danger of laceration and of a fatal hemorrhage. Numerous instances of this grave accident, especially in attempts to

*Op. cit., p. 633.

reduce old dislocations of the shoulder-joint, are upon record."

This quotation from a master in this special line of work is so in consonance with my own views and observations, and has such an important bearing on the prognosis and treatment of luxations, that I feel no hesitation in reproducing it in this place.

In those cases in which a dislocation of a ginglymoid or hinge joint is not early reduced, the bones may accommodate themselves more or less satisfactorily to the changed relations, and motion more or less practical may be regained, but the comparative restoration of function is never, or at least very rarely, so satisfactory as that of the ball-and-socket joint.

The degree of disturbance is not so marked in spontaneous or pathological dislocations as it is in those of the traumatic variety; the capsule and other ligaments may be stretched only, and not torn; the lesions of other structures are not necessarily present; and if the material changes above-mentioned do result, they are later in developing. In compound dislocations, all those additional lesions which may characterize a compound fracture—the result of suppurative or other action caused by contamination from without—are, as a rule, intensified. If complications exist, their nature, and the possibility that they may produce features of greater importance than the dislocation itself, or perhaps even a fatal termination, must be carefully and thoroughly considered.

GENERAL PROGNOSIS.—As in dislocations so much depends on the character of the particular joint involved, this subject will to a great extent be left for subsequent consideration. I may state, however, that in recent dislocations restoration of function, more or less complete, may be confidently expected when the reduction has been successfully effected, and when the proper after-treatment has been carried out; yet it is but proper to state that very few joints, after they have once been completely displaced, are ever perfectly restored. They are not only more prone to undergo subsequent dislocation when subjected to a smaller degree of force, but they are apt, for a period of many years or even during the life of the individual, to manifest other sequelæ of the original accident—such, for example, as a partial defect of mobility, diminished size and power of the muscles, and more or less pain. This latter symptom may be persistent in character or it may recur from time to time, these characteristics depending to some extent on the joint injured, on the nature of the injury, on the length of time which has elapsed between the receipt of the injury and the reduction of the dislocation, on the means employed in effecting the latter, on the subsequent condition of the patient, and on various other conditions peculiar to the joint involved. As a rule, we can never promise as satisfactory a result as we can in a case of fracture of like character.

The possibility of malpractice suits must not be lost sight of. Dislocations are almost as fruitful a source of such annoyance as fractures; possibly they are even more so. We have the usual history of a dislocation with swelling either before or after reduction. The patient is possibly informed that an early recovery may be looked for, with perfect usefulness of the limb. After the pain and swelling subside, there is much surprise, on the part of the patient, at his increasing inability to use the limb—e.g., the hand and forearm in shoulder luxations, and the foot and leg in those of the hip,—and soon well-marked symptoms of muscular atrophy may develop. Accompanying the injury there has perhaps been a contusion of one or more nerves or plexuses, and in consequence of this a peripheral neuritis develops, the symptoms of which are obscured by those necessarily attending the dislocation itself. The prognosis which was given by the surgeon is not fulfilled, and the early recovery promised does not take place. As a result, the patient, naturally disappointed after months of invalidism, and possibly in more or less suffering, eventually becomes convinced by some means or other that he is permanently disabled. The idea takes possession of him that a sur-

geon who has been so incorrect in his prognosis must have been deficient in the matter of treatment, and a suit for malpractice is regularly instituted.

The possibility of nerve injury should never be lost sight of in any important dislocation. In some cases it may be accompanied by a paralysis which manifests itself immediately after the inception of the injury. In other cases the paralysis does not develop until later. At first there may be only a slight numbness or tingling, the paralysis due to the neuritis coming on several days, or one or two weeks, or even a longer period, after the bone has been replaced. Before giving a definite prognosis the nerve supply should be carefully studied—if necessary, for a period of several days, or even for a week or more. During this time both sensation and motion should be carefully tested, and some form of electric stimulus should be employed if the least doubt or uncertainty remains.

Drs. Keen and White* say that: "In uncomplicated cases reduction is habitually followed by repair of the torn capsule and ligaments, but complete restitution to the normal condition may be prevented by faulty repair of some of the lesions, by peri-articular thickening, by subperiosteal formation of bone in the young, or by more or less thickening of the joint. Thus, at the shoulder, the ruptured tendon of the supraspinatus and the upper part of the capsule may fail to reunite, and the patient be thereby exposed to frequent recurrence of the dislocation. . . . At the elbow, the stripping up of the periosteum from the posterior aspect of the external condyle may lead to such thickening of the bone as will limit extension." These, with other features of special prognostic importance, will receive due attention further along in this article.

GENERAL TREATMENT.—It is now the accepted rule that recent dislocations should be reduced, or the parts restored to their normal position, at the earliest possible moment. Ease of reduction and diminution of pathological factors demand this. However, contingencies may arise, such as great inflammatory reaction and swelling, extreme shock, etc., that may justify a delay for a few hours or days. Shock, if not too profound, may aid in the immediate reduction by causing relaxation of opposing tissues and freedom from pain; yet extreme shock demands consideration just as much as do the associated injuries.

At the present day, manipulations made by the surgeon, either alone or aided by assistants, usually suffice for the reduction of a recent dislocation. These manipulations consist in a succession of gentle but firm movements communicated to the limb, by means of which the head of the bone is enabled, with the aid of the untorn ligaments, to re-enter the torn capsule and be rolled or slipped back into its position. In the carrying out of this procedure the tension of opposing muscles is relaxed and the contraction of others is increased. In rare instances it will be found necessary to resort to mechanical appliances and to employ an anæsthetic, the necessity for their use becoming more urgent, or possibly even imperative, the longer the dislocation remains unreduced. Manipulation is regarded by some as only applicable to typical or regular dislocations, but by the exercise of care irregular luxations can first be converted into regular, and then they may be reduced by the method just mentioned. Kocher's method of reducing anterior dislocations of the shoulder, and that employed by Prof. Nathan Smith in dorsal dislocations of the hip—both of them now regarded as classical—are typical illustrations of manipulative methods.

Occasionally, spontaneous or pathological dislocations are restored by the unaided movements of the patient, and even accidental or traumatic dislocations have been reduced by another accident. In quite a number of recent American medical journals of recognized trustworthiness a case was reported in which a man received a dis-

* "American Text-book of Surgery," p. 425; W. B. Saunders, publisher, Philadelphia, 1900.