by the twiſted future and other dreſſings, as in amputating at the under part of the thigh. The dreſſings are to be re­gained by a broad flannel roller paſſed three or four times round the body, and ſpirally over the ſtump, and ſecured. The patient is then to be laid in bed on the sound side, and treated as for amputation in other parts of the body ; only that greater attention is neceſſary, as there is no aſſiſtance from a tourniquet. Uncommon attention will alſo be neceſ­ſary to prevent inflammation, and every ſymptom of fever which may ſucceed to the operation.

When the foot is ſo much diſeaſed as to require amputa­tion, the operation might be performed at the point of the ankle ; but for the reasons given, when treating of am­putation of the leg, it is found better to do it above the ankle. When a conſiderable part remains found, it ought to be ſaved. If any or the tarſal bones are affected, theſe are to be removed. When the middle or whole body of any of the metatarſal bones are diſeaſed, they are to be removed in the same manner as directed for ſimilar opera­tions in bones of the hand ; and if even two of them re­main found, provided they be ſo placed as to ſupport the toes, they ought to be preſerved, as it is known that, by proper treatment, an oſſeous matter may afterwards fill a con­ſiderable part, if not the whole, of the void ; or if any cavi­ty remain, it may be ſo stuffed that the uſe of the foot may ſtill be enjoyed.

In performing an operation of this kind, the patient ſhould be laid upon a table, and the tourniquet applied in the ham to prevent hemorrhagy. An inciſion is then to be made along the affected part ; and if the ſeat of the diſ­eaſe admit it, the inciſion ſhould be made upon the upper side of the foot ſo as to ſave the ſole. The integuments are to be ſeparated and turned to each side, to allow the af­fected parts to be completely removed.

The principal veſſels and nerves are to be ſaved as much as poſſible ; but if any particular artery be cut, it is to be ſecured, and the part treated as after the removal of ſimilar parts of the hand.

The amputation of the toes is exactly ſimilar to that of the fingers.

Sect. V. Of *removing the Ends of Carious Bones in the Joints.*

In compound fractures, the ends of bones, when they protruded in ſuch a manner that they could not other­wiſe be returned, have frequently been ſawed through ; and their place has frequently been ſupplied by a renewal of bone, ſo as to preſerve the ordinary uſe of the limb. Many caſes have likewiſe happened, where a large part of the bo­dy of the bone has been thrown out by ſuppuration, and its place ſupplied ; and a few are upon record, where either the whole of a bone, or that end next the joint, has been thrown out, and its place filled up with callus, ſo that no inconve­nience has been felt. From theſe circumſtances, Mr White of Mancheſter was led to preſerve an arm by sawing off the head of a diſeaſed humerus ; and Mr Park of Liverpool, to ſave a limb, by ſawing off the ends of the bones, in a cafe or white ſwelling of the knee. When therefore it happens that the end of a bone is diſeaſed, while the other parts are found, the diſeaſed part may be removed, and the found one ſaved, ſo as in a great meaſure to preſerve the free uſe of the limb.

In performing the operation, the firſt ſtep ſhould be, to uſe such means as may enable the operator to have a full management of the circulation of the part affected. Then a longitudinal inciſion of sufficient length, and perhaps ano­ther across it, may be necessary to be made through the ſoft parts of the joint ; and this opening ought to be at a diſtance from the large blood-veſſels, that they may be in no danger of being injured. After the end of the diſeaſed bone is sufficiently laid bare, it is either to be brought out of the joint, or a ſpatula or ſome other proper ſubſtance is to be introduced between the bone and *ſoft* parts, ſo as to defend the latter in time of ſawing the bone. After the diſeaſed part of the bone is removed, the arterial branches are to be ſecured, and the wound treated like any other wound of equal ſize.

During the cure the limb ought to be kept in the poſture moſt favourable for the removal of the bone, and afterwards for the preſervation of the natural motion of the joint.

In this way a limb may ſometimes be ſaved which would otherwiſe have been removed. But though the removal of the diſeaſed end of one bone may be readily effected, the removal of all that part of the bones which enters into the compoſition of a joint muſt be attended with ſo must in­convenience, that it can ſeldom be uſeful, unleſs it be where the ends of bones are deſtroyed by external violence; for then *it* appears that this operation may be performed with conſiderable ſucceſs.

Chap. XXXV. *Of Diminiſhing Pain in Surgical Operations.*

The pain induced by ſurgical operations may be lessened in two different ways. The firſt is, by diminiſhing the na­tural ſenſibility of the ſyſtem ; and for this purpoſe narcotics of different kinds, and particularly opium, have been uſed ; but theſe are apt to induce diſagreeable ſymptoms, eſpecial­ly sickneſs and vomiting, which might be attended with bad conſequences after ſome operations. They are therefore ſeldom employed before an operation. When, however, they are given immediately after it, and repeated as circum­ſtances may require, they often give great relief.

The other method of diminishing pain is, by lesſening the ſenſibility of a particular part of the body. It has long been known, that the ſenſibility of any part may not only be lessened, but entirely ſuſpended, by compressing the nerves which ſupply it. From a knowledge of this circumſtance, an inſtrument (fig. 123.) was invented some years ago by Mr James Moore ot London, by which the princi­pal nerves of a member might be ſo compressed as to render the parts below perfectly inſenſible. A difficulty, however, ariſes here ; for as the nerves muſt be compressed at leaſt an hour previous to the operation, in order to render the parts quite inſenſible, and as it is extremely difficult to compreſs the nerves without at the ſame time affecting the veins, the latter are therefore in danger of being burſt. To prevent this inconvenience, Mr Moore propoſes to open a vein ; but this might be attended with bad conſequences in weakly conſtitutions. Beſides, it is ſaid, that by compressing the nerves in this manner, although leſs pain may be felt in the time oſ the operation, it is proportionally greater after the compression is removed. In certain parts of the body, however, where sufficient compreſſion can be made upon the nerves without acting much upon the veins, it would appear that the method may be practiſed with advantage ; though it has not yet been done, excepting in a few in­ſtances.

Chap. XXXVI. Of *Bandages.*

The proper application of bandages is an object of great importance in ſurgery : and though dexterity is only to be acquired in this branch by practice, yet a few general rules may be found uſeful. Bandages are employed for the retention of dreſſings, for stopping hemorrhagies, for re­