vaſated fluid. Gentle ſcratches are to be made with a ſcal­pel, till a probe (fig. 27 ), or directory (fig. 28.), can be introduced ; upon which the membrane is to be ſufficiently divided in a longitudinal, and ſometimes even in a crucial direction, till an outlet to the fluid be given.

After the dura mater has been cut in this manner, there is ſome danger of the brain protruding at the opening ; but the danger ſrom this is not equal to the bad effects ariſing from effuſed fluids compreſſing the brain.

A troubleſome and an alarming appearance now and then follows the operation of the trepan ; namely, the excrescen­ces called *fungi,* formerly ſuppoſed to grow immediately from the ſurface of the brain, but which, in general, origi­nate from the ſurface of the dura mater or cut edge of the bone granulating too luxuriantly.

It often happens that they poſſeſs little ſenſibility ; and then the beſt method to prevent their riſing to any great height is to touch them frequently with lunar cauſtic ; but ſome caſes occur where their ſenſibility is ſo great that they cannot be touched, unleſs they hang by a ſmall neck ; and then a ligature may be put round them, and tightened from time to time till they drop off, which will commonly be in the courſe of a few days. It ſeldom happens, how­ever, that there is any occaſion for applying ſuch means for the removal of theſe tumors, for they generally fall off as the perforations of the bone fill up.

If they do not, as the connection between them and the brain will be then in a great meaſure intercepted, they may be with more ſafety removed, either by excision, by cauſtic, or by ligature.

The cure being thus far completed, only a ſmall cicatrix will remain, and in general the parts will be nearly as firm as at firſt : but when much of the integuments have been ſeparated or deſtroyed, as they are never regenerated, the bone will be left covered only by a thin cuticle, with ſome ſmall quantity of cellular ſubſtance. When this is the caſe, the perſon ought to wear a piece of lead or tin, properly fitted and lined with flannel, to protect it from the cold and other external injuries.

This is the method now commonly practiſed in caſes of compreſſion ; but it frequently happens, that inſtead or com­preſſion, ſuch a degree of concuſſion takes place that no aſſiſtance from the trepan can be attended with any advan­tage ; for the effects of concuſſion are totally different from thoſe of compreſſion, and therefore to be removed in a dif­ferent manner.

Sect. II. *Of Concuſſion of the Brain.*

By concuſſion of the brain is meant ſuch an injury, ſrom external violence, as either obſtructs or deſtroys its func­tions, without leaving behind it ſuch marks as to allow its nature to be aſcertained by dissection.

Moſt of the ſymptoms attending compression of the brain occur alſo in concuſſion ; but in a compreſſed ſtate of the brain they are more permanent. There is no diſcharge of blood from the eyes, noſe, or ears, which frequently hap­pens in compreſſion ; and inſtead of that apoplectic ſtertor in breathing which accompanies compreſſion, the patient ſeems to be in a sound and natural ſleep. The pulſe is ir­regular and flow in compreſſion, and grows ſtronger and fuller by blood-letting ; but in concuſſion it is weaker, be­ing ſoft and equal, and sinks by blood-letting. There are beſides convulſions in compreſſions, which are not obſerved in a ſtate of concuſſion. The ſymptoms ariſing from con­cuſſion come on immediately after the injury is received. In the violent degrees of theſe the patient remains quite inſenſible ; the pupils are much dilated, and do not contract though the eyes be expoſed to the ſtrongeſt light.

In more violent ſymptoms, eſpecially when the patient is rendered inſenſible, it is extremely difficult to diſtinguiſh between concuſſion and depreſſion ; for ſymptoms which have been ſuppoſed to ariſe entirely from concuſſion have, after death, been found to be owing to extravaſation or undiſcovered fracture ; and extravaſation has been blamed, when, on dissection, not the leaſt morbid appearance could be diſcovered.

In concuſſion the pulſe will frequently sink and become feeble, even after the diſcharge of eight or ten ounces of blood: In doubtful caſes, therefore, blood letting ſhould be practiſed with great caution. If the pulſe become fuller and ſtronger after diſcharging a moderate quantity, if the blood appear ſizy, and eſpecially if the patient become more ſenſible, it may be concluded that the ſymptoms depend upon extravaſation, depreſſion of the ſkull, or ſome degree of inflammation ; and as long as advantage ſeems to be derived from blood-letting, we may repeat it : but if, upon drawing a few ounces of blood, the pulſe becomes feeble, and eſpecially if along with this the patient become more weakly, we ſhould immediately deſiſt from any farther evacuation of blood ; and in place of it we ought to give ſuch remedies as may ſupport and ſtrengthen the patient : cordials ought to be given internally, and ſtimulants applied externally. Warm wine ſhould be given in proportion to the degree of debility induced ; the patient, who is apt, in this caſe, to become cold, ſhould be kept warm by proper coverings ; a bliſter ought to be put to all that part or the head in which the ſkin has not been injured ; sinapis ſhould be applied to the feet ; gentle laxatives are uſeful, and ſhould be regularly given, ſo as to keep the body open. If the patient cannot ſwallow wine in ſufficient quan­tity, volatile alkali, ardent ſpirits, and other cordials of a ſtimulating kind, ſhould be given. In concuſſions of the brain, Mr Bromeſield has recommended the uſe of opiates, and ſeveral other practitioners agree with him; though ſome conſider it as hurtful in the early ſtages of the diſorder, and are of opinion that even wine and other cordials ought to be given with ſome degree of caution. Iſſues, or the fre­quent repetition of bliſters to the different parts of the head and neck, by which an almoſt constant ſtimulus is preſerved, are much recommended. When patients are re­covering from accidents of this kind, a liberal use of bark, ſteel, and mineral waters, &c. have ſometimes been of ſer­vice. When the ſtomach is loaded, gentle vomits become neceſſary ; and white vitriol is reckoned the beſt in ſuch caſes. When much languor, inactivity, and loss of me­mory continue, electricity long applied has been attended with advantage. This remedy, however, would be hurt­ful where any ſymptoms of compreſſion or inflammation of the brain are preſent.

Sect. III. *Of Inflammation of the Membranes of the Brain, or of the Brain itſelf from external violence.*

Inflammation of the brain and of its membranes is at­tended with ſymptoms which occur in inflammations af­fecting other parts of the body, and from ſimilar cauſes, and likewiſe with ſymptoms peculiar to the brain itſelf. This diſorder differs esſentially from concuſſion in its not appearing immediately ; ſeldom till ſeveral days after the accident, and ſometimes not till two, three, or more weeks, or even as many months, have elapſed ; when the patient begins to feel an univerſal uneaſineſs over his head, attended with liſtleſſneſs, ſome degree of pain in the part upon which the injury was inflicted, though of this there was perhaps no previous ſenſation. Theſe ſymptons gradually increaſe ; the patient appears dull and ſtupid ; there is now a ſenſa­tion of fulneſs, as if the brain were girt or compreſſed ; he complains of giddineſs and of nauſea, which ſometimes ter­minate in vomiting ; he is hot, and extremely uneaſy ; his