

warm atmosphere or placed in a warm bath, or his feet in a hot foot-bath, and brandy and ether given internally.

To cause contraction of the blood vessels, acetic acid and ammonia should be placed to the nose, precautions being taken that the air-passages be not irritated too violently. Painful impressions may also be called to our aid. Mustard plasters to the extremities, pinching the fingers, twitching the calves and soles, give a stimulus to the vaso-motor nerves.

A valuable remedy in shock is *digitalis*; half-drachm doses of the tincture may be given every hour. It has been used successfully by various practitioners. (*The Practitioner*, October, 1873.)

Heat has also been used in the form of the *hot-air bath* or the inhalation of *hot steam*, by Dr. E. D. MAPOTHER, of Dublin. (*Medical Press and Circular*, 1880.) He also gives enemata of water at 120° Fah., and frictions with rubefacients. Dr. HUNTER, of Philadelphia, used, with excellent results, the *hot-water bath*, beginning with 98° and rapidly raised to 110°. The patient is left in the bath from ten to fifteen minutes. (*Medical Record*, Jan., 1879.) Dr. MAPOTHER, however, considers the hot-air much more effective than the hot-water bath.

PROF. WILLIAM FULLER, OF MONTREAL.

This surgeon states (*Canada Medical Record*, February, 1877,) that to restore the circulation in shock a cardiac stimulant is not so much required as a means of restoring the tone to the vascular system. Alcohol he considers in such an emergency is far inferior to *opium*, whose special action is to dilate the vessels leading to the brain, so that the nerve centres at least receive their due amount of blood. Of course rest, heat, and external stimulants are to be used in addition, as occasion requires.

Professor ALBERT BLUM, in the *Archives Gen. de Med.*, considers the fatal issue in shock due to failure of the heart's action, and recommends laying the patient horizontally, applying heat, and giving stimulants with *opium*. Electricity may be very useful. He says, "All active surgery should be forbidden under shock."

PROF. S. D. GROSS, OF PHILADELPHIA.

The treatment of shock is naturally divided into two parts—the

promotion of reaction, and the moderation of subsequent excessive action.

The patient should be placed recumbently, constriction removed from his person, free access of cold air provided, cold water dashed in his face, and mustard plasters be applied to the præcordial regions and extremities. If the case is severe, the spine may be rubbed with turpentine and a stimulating enema given. As soon as he can swallow, brandy and water, in teaspoonful doses, may be administered. Should the accident have occurred after a full meal, an emetic of alum, ipecacuanha, sulphate of zinc, or what, perhaps, is still better under such circumstances, equal parts of common salt and mustard should be given. Even in shock from lesions of the brain this course is proper, when the stomach is oppressed by a heavy meal.

To moderate the resulting inflammation, the reaction should be held in abeyance by sponging the surface frequently with cool or tepid water, by administering a little morphia and antimony, by low diet and perfect tranquillity of mind and body. The diet for the first few days should consist mainly of animal broths, with, perhaps, milk punch or wine whey, cautiously followed by food of a more substantial character. Starvation is not to be thought of, and bleeding should very rarely be resorted to. Anodynes may be given early and freely, especially the ammoniated tincture of opium with valerian.

MR. T. HOLMES.

This writer lays particular stress on the condition of "prostration with excitement" which is apt to follow severe shock. It is marked by a rapid and weak pulse, the temperature not rising in proportion to the pulse, the stomach irritable and rejecting all or most that is put into it, the patient sleepless, restless, and more or less delirious.

This condition must be combated by *morphia* injected subcutaneously, or by chloral or opium in full doses, if the stomach will bear it. *Hyosciamus* combined with opium often acts well. The warmth of the body and extremities must be sedulously maintained, and the irritability of the stomach lessened, by the application of mustard poultices, by constantly sucking small morsels of ice, by the administration of dilute *hydrocyanic acid* ℥iij-iv in a small quantity of some vehicle, or *creosote* ℥ij in pill every three hours. At the same time food must be supplied in the most grateful and most nourishing form, in small

quantities very often repeated, and a stimulant (which ought not to be more than is absolutely necessary) in varied kinds, according to the patient's tastes and habits, and with similar precautions as to quantity and repetition.

MR. JONATHAN HUTCHINSON, F. R. S.

In that common form of shock from injuries to the head known as *concussion of the brain*, this able surgeon holds that the symptoms are due solely to arterial paralysis, and that there is no tendency to any process allied to inflammation. All there is to do, therefore, is to restore the tone to the vaso-motor nerves, and prevent cerebral softening.

During the first stage, that of collapse, the patient should be let alone, and allowed to rally. If the collapse is extreme, or unusually prolonged, a diffusible stimulant may be given by enema. Generally it is sufficient to place the patient in a recumbent position, with the head low, and apply warmth to the extremities.

The remedies from which we may select are chiefly—first, those which diminish the temperature of the head; second, those which diminish the quantity of the blood; third, those which place the heart at a disadvantage as regards sending blood into the head; fourth, those which, by causing great vascular turgescence at some other part, and also irritation of nerves, tend to diminish the vascular turgescence and nerve-irritation at the affected one; fifth, those which in a direct manner induce contraction of the arterial walls.

First. In order to diminish the temperature of the head, and thus induce contraction of the blood-vessels of the brain, the simple measure of shaving the scalp is of great importance, and, if the weather be cool, will often be quite sufficient to prevent the scalp from ever attaining an undue temperature. In warm weather, however, and whenever the heat of the scalp is well marked, either ice-bladders or evaporating lotions ought to be used.

Secondly. The chief measure by which we diminish the quantities of the circulating fluid is by direct abstraction of it by venesection. Purgation and blistering are other less direct methods of attaining the same end. As regards the influence of venesection upon the passive congestion of the brain, there can be no doubt that it is often very beneficial. If, however, the brain substance have been contused, there

is a risk that softening may follow, and this risk will probably be increased by any measure which diminishes the patient's strength.

Thirdly. The semi-erect position, where not disagreeable to the patient, should be preferred.

Fourthly. As to the good effects of counter-irritation, there can be no doubt whatever. He has been accustomed to employ it more freely than is generally done—applying repeated *blisters* (and very large ones) to the nape of the neck, shoulders and upper parts of the arms, and often with very marked advantage. Blisters may be used at any time, after reaction is established, and may often be continued throughout the whole of the case, until the patient is quite free from head symptoms. Patients who have recovered consciousness, but are still suffering from headache and confusion of thought, often speak in the most emphatic manner of the relief which they experience from the influence of a large blister.

Purgation is, perhaps, of all remedies, the one most universally and conspicuously beneficial in the treatment of the effects of concussion. Constipation is a tolerably constant condition during the state of general nervous torpor induced by concussion. Several doses of some brisk purgative are often necessary before the bowels can be got to act, but when they do so, a change for the better in the patient's symptoms is almost always remarked.

In addition to the measures of active treatment which we have adverted to, there are certain other negative rules of scarcely less importance. Concussion patients ought to be kept perfectly quiet and free from all excitement. Their diet should be mild and unstimulating. All forms of alcoholic beverages ought to be most carefully excluded.

DR. HOOD, OF LONDON.

Railway Shock.—This writer (*Lancet*, March, 1875,) urges the importance of *blood-letting* after a railway accident, in order to reduce the amount of fluid movement by the weakened heart. He considers there is not the smallest risk or danger in employing it, if the patient is bled in an *upright* posture, and the operation is performed, not immediately after the accident, but when sufficient reaction has been established, either spontaneously or by the administration of stimulants.

He adds that it is believed by many that *vinegar* is the best means of restoring consciousness after an accident due to concussion, and that

it is a substitute both for alcoholic stimulants and for bleeding. It may be given in small quantities to the extent of a wineglassful.

DR. J. MILNER FOTHERGILL

has found the following combination very frequently useful in cases of acute shock :

| | | |
|---------|-----------------------|------------|
| 147. R. | Ammonii carbonatis, | gr. v. |
| | Spiritus chloroformi, | f. ʒ ss. |
| | Aquam, | ad f. ʒ j. |

For one dose. To be repeated as required.

A teaspoonful of sal volatile in water is a pleasant and efficient stimulant. When the shock is but partial, as is witnessed in the passage of gall stones or calculi, stimulants are not desirable. A full dose of opium is then sometimes of service.

An efficient resource in collapse from shock is the hypodermic injection of *ether*, ʒj-3iv. The points of election are the abdominal walls and the thigh. The nozzle of the syringe should be introduced deeply, so as to avoid the formation of abscesses. Originally suggested by Dr. HECKER, in the collapse following excessive uterine hemorrhage, it may profitably be employed in any similar case. The effect on the pulse is prompt and easily recognized. Dr. ORTILLE, of Lille, speaking of his success with this measure, strongly recommends friction over the spot of injection, to promote absorption, and he calls attention to the contracted pupil as the sign of an anæmic brain, requiring the use of a rapid and diffusible stimulant, such as ether. Ether may also be given by enema.

Galvanism, especially over the præcordial region, is a most efficacious measure.

BLEEDING IN SHOCK.

All modern surgeons unite in condemning blood-letting in the early treatment of shock. But after the immediate effects have passed away, and it becomes necessary to guard against the violence of the reaction, opinions differ widely as to this measure. Mr. ERICHSEN considers that then blood-letting is of essential service, and is "far too much neglected at the present day." Dr. GROSS warns strongly against venesection, except in young and plethoric subjects, with a tendency to serious inflammation of some important internal organ.

The opposite course, he teaches, often exerts a most pernicious influence on the patient's recovery. Mr. HOLMES, Mr. SAVORY and Mr. TRAVERS all lean decidedly against the abstraction of blood in any except unusual cases, as leading to that condition of "prostration with excitement" which is fraught with so much danger. Dr. B. W. RICHARDSON, of London, on the other hand, advocates its frequent employment. He claims to have witnessed prompt and excellent effects from it, without any of the dangerous sequelæ spoken of by other observers. His opinion, however, is not of sufficient weight to overbalance that of the surgeons above quoted.

PROF. HENRY H. SMITH, M. D., PHILADELPHIA.

This author lays much stress on the distinction to be drawn between *immediate* or *primary* and *insidious* or *secondary* shock. The symptoms of the latter are often so masked that they escape the inexperienced observer until they are so far gone that the case is hopeless. (For the diagnosis, see Dr. SMITH'S *Principles and Practice of Surgery*, p. 45). The treatment required is to preserve the powers of the nervous system by food and stimulants, while all muscular action on the part of the patient should be prohibited. Heat to the feet, cold to the head and stimulating frictions to the spine are also required.

RÉSUMÉ OF REMEDIES.

**Acetum*. Strong vinegar applied externally, inhaled, and taken internally in teaspoonful doses, properly diluted and oft repeated, is a very efficient restorative, nearly always at hand, and followed by no objectionable reaction.

Alcohol. The routine practice of giving brandy and water, or whisky and water, in shock, is of doubtful propriety. Very frequently it is followed by dangerous reaction, disturbance of the stomach and nervous irritation.

Ammonii Carbonas, and the *liquor ammoniæ aromaticus* are valuable aids in restoring consciousness and strength.

Belladonna and *Atropia*, hypodermically, have been used with advantage in severe shock. They bring the heat to the surface and quicken the breathing.

Caffea. Small doses of strong, hot coffee are excellent stimulants in shock.

Digitalis is highly spoken of by Dr. T. L. BRUNTON. (p. 132.)

**Ether* may be given by the mouth, thrown into the rectum, or administered hypodermically. In either way it is a powerful restorative.

Hyoscyamus, combined with opium, is praised by Mr. HOLMES. (p. 133.)

Opium, in a full dose, or a subcutaneous injection of morphia, is, according to Dr. FULLER, (p. 132,) the best treatment in shock.

drops of tincture opium with from fifteen to forty grains of chloral, a new dose to be given whenever the effect of the previous one is manifestly wearing off. If there is any difficulty about the administration by the mouth, rectal injections were found to answer equally well.

DR. A. P. BOON, ST. KITTS, W. I.

After an unusually successful experience, this writer (*Lancet*, February, 1878,) lays down these rules of treatment:

First. The room must be dark and quiet; draughts are to be carefully excluded. Too much stress cannot be placed on this; the least rush of cold air, flash of light, or even sudden noise, may bring on a spasm.

Second. Nourishment should be given freely, in a liquid form, and at frequent intervals. It should be always warm, cold drink being avoided for the same reason that cold air is excluded. Stimulants should be administered from the first, in small quantities, say four or six ounces of brandy in the twenty-four hours, and increased if the pulse indicates it.

Third. Never give purgatives. It is obvious that when our object is to keep the nervous system quiet, we should avoid purgatives of all kinds.

Fourth. Hydrate of chloral, together with extract of *cannabis indica*, is to be given in rapidly increasing doses, until the frequency and severity of the spasms are controlled. He generally commences with thirty grains of chloral in an ounce of water, and two grains of the extract of Indian hemp, in the form of pill, every three or four hours, for an adult, and increases the former by fifteen grains and the latter by two grains, until the desired effect is produced, when the spasms will be few and far between, the abdominal muscles almost normally flaccid, and the mouth opened to at least an inch. The patient is then in a state of stupor, from which he can be roused to take nourishment. He finds that sixty grains of chloral and four grains of the extract is a full dose in fairly severe cases.

PROF. E. DI RENZI, M. D.

This Italian surgeon has found no benefit from amputation of the wounded part, in acute tetanus, nor from the use of internal remedies. He found, however, by experiment, that *light* renders the tetanic contrac-

tions of animal and man more frequent and intense, while absolute *repose*, during the absence of all stimulus, retards the tetanus and renders it less fatal. Of three cases of severe tetanus he treated almost exclusively by absolute repose, two cases were cured. The patients were kept isolated in a dark room; all noise, or other stimulus or irritation, was avoided, except such as was caused by the administration of food and beverage at long intervals. In one case, death resulted, notwithstanding the administration of large doses of hydrate of chloral and several hypodermic injections of woorara. It would appear that the chloral increases the difficulty of respiration, which is already affected by the disease.

In the actual condition of science, he believes *absolute repose* shows itself to be the principal remedy in the treatment of tetanus. The removal of stimulus should, however, be as complete as possible, and be recognized as an important accessory.

DR. EDWARD VANDEPOEL, NEW YORK.

This physician records (*Medical and Surgical Reporter*, May 7th, 1870,) twelve cases of tetanus, eleven of which recovered, under the use of *strychnia*, as originally suggested by Prof. VALENTINE MOTT, of New York city.

The dose, in all cases, should be from one-sixteenth to one-twelfth of a grain of strychnia every two hours, until involuntary twitching of the muscles of the extremities takes place, when the masseters will relax. The same dose should then be continued, but given only once in six hours, to maintain the advantage until, by the frequent administration of concentrated nourishment, convalescence commences. In the one case lost, the tetanic symptoms abated, but the attending physician injudiciously suspended the remedy, and they re-commenced, and the patient died of exhaustion.

RÉSUMÉ OF REMEDIES.

**Aconitum*, in large doses, has been employed by a number of practitioners, and deserves further trials. There seems to be great tolerance of the drug in this disease. It acts by diminishing the irritability of that portion of the nervous centre which controls reflex muscular action.

**Æther* has been found to be very useful in arresting tetanic symptoms in the wounded. Cases, both of idiopathic and traumatic tetanus, cured by the inhalation of ether, have been reported.

Alcohol. Stimulants, first proposed by Dr. RUSH, in this disease, are now rarely trusted to alone. Large doses of wine, brandy, and porter, have been given with success, in a number of reported cases.

Allium has been administered internally, in this disease, and by friction along the spine and limbs, with alleged success.

Antimonii et Potassii Tartras has, it is said, proved effectual in nauseant and emetic doses.

Atropia has been given hypodermically. Its effects are probably the same as belladonna (which see.)

Belladonna. The claims of this drug have been strongly urged by Dr. HENRY FITZGIBBON, surgeon to the Dublin City Hospital. (*Dublin Journal of Medical Science*, March, 1877.) He gives gr. $\frac{1}{4}$ of the extract, every two to four hours. The local application of aconite and belladonna to the wound, he also considers important as diminishing the irritability of the wounded nerve. Warm baths and laxative medicines also form part of his treatment. He also uses tobacco stupes and chloroform, and considers it would be perfectly rational to combine the internal administration of belladonna with subcutaneous injections of curarine or nicotine; but, as the latter has, at first, a tendency to produce an excited and irritated condition of the cord, before it causes any paralysis of the muscular system, he should be disposed to employ curarine in preference.

Brominium. See Potassii Bromidum.

**Cannabis Indica* has been largely employed, but with very diverse results. It has been given in the form of the extract (gr. ij), or of the tincture (mxxx), repeated every half hour, hour, or two hours, the object being to produce and maintain narcotism. Dr. JOHN C. LUCAS (*Medical Times and Gazette*, June, 1880,) advocates smoking the leaves, mixed with three or four times their quantity of tobacco. At the first indication of the spasm, the pipe is used, and will generally avert it.

**Chloral.* This substance has been highly commended in tetanus. According to Dr. CHOPARD, (*Thèse de Paris*, 1876,) it should be given in full doses, rapidly increased. \mathfrak{z} ss to \mathfrak{z} j, daily, may be required. Administration by the mouth is preferable. Five or ten drops of a solution of bicarbonate of soda (gr. l. to aquæ \mathfrak{z} j) will counteract the irritating effect of the chloral, and should be added to each dose. Often, however, administration by enema is necessary. These are best prepared by emulsifying the chloral solution with yolk of egg and adding a wineglass of milk; gr. xl-lx may be given at once in this manner. It is absolutely necessary to diminish the use of chloral gradually, or the convulsions will return. Dr. IMRAY combines it with opium. (p. 139.) In *Schmid's Jahrbücher*, June, 1879, Dr. KNECHT, after a close criticism of all recent means, gives the decided preference to chlorale in this disease.

**Chloroformum.* The inhalation of chloroform in small and frequently-repeated doses, with a large admixture of air, relieves the muscular spasms when it fails to produce a lasting benefit. By some recent writers it is claimed to be the agent which has cured the most cases. Chloroform frictions are also recommended.

Colchicum has been used, but not with very satisfactory results.

**Conium* is regarded by Dr. HARLEY as the natural antagonist of this disease, but, to be effectual, large doses of the succus must be given. If the patient cannot swallow, from f. \mathfrak{z} vj-xij of the succus, warmed to the temperature of the body, should be injected into the bowels, and repeated every two, three or four hours, according to the condition of the muscles.

Curare. See Woorara.

Glonoin. Nitro-glycerine has been employed, but must be given cautiously. It is an exceedingly powerful stimulant of the vascular system. The proper method of prescribing it is to dissolve one drop in one hundred drops of alcohol. Ten drops of this ($\frac{1}{10}$ drop of the nitro-glycerine) is a dose. The mixture is non-explosive. The dose has an immediate effect on being placed on the tongue. Its actual value in this, as in other diseases, is not yet ascertained.

Lobelia Inflata is largely used by veterinary surgeons in tetanus of the lower animals. Several successful cases have also been reported in the human subject. Three of these may be found in the *Medical and Surgical Reporter*, Dec. 3d, 1870, by Dr. GEORGE O. BUTLER, of Ohio. His formula was:

150. R. Fol. lobeliæ inflatæ, \mathfrak{z} ij.
Aquæ bullientis, \mathfrak{z} xij. M.

Make an infusion. A teaspoonful to be given every half hour, or sufficiently often to maintain a constant diaphoresis.

When the jaws are set, enemata of this infusion may be given every fifteen minutes until emesis is produced, after which it may be administered as above, by the mouth.

Morphia has been frequently used hypodermically in this disease. See Hypodermic Injections below.

Nicotia has been given hypodermically. Internally, nicotine, in doses of gt. ss-ijss in sherry and water, several times a day, has been employed with success. The alkaloid has the effect of relaxing the muscles, stopping the delirium and producing profuse sweating, which exhales a strong odor of snuff. So powerful a poison must be given with caution.

Nitrite of Amyl, by inhalation, has been exhibited with success in traumatic tetanus. Its action is similar, but less in degree, to that of glonoin (q. v.)

Nux Vomica. See Strychnia.

Oleum Terebinthinæ, internally, or by enema, sometimes exerts a beneficial influence. It may be used as an adjunct to other remedies.

Opium has been given in large doses, but is inferior, in this disease, to aconite, belladonna, chloroform or physostigma. Dr. RUPPNER recommends the hypodermic injection of gtt. xxv-lx, of liquor opii compositus, in the back, near the spinal column.

**Physostigma* is a remedy of much value, and one of which there is great tolerance in this disease. Dr. FRASER, of Edinburgh, is in favor of subcutaneous injections, especially in severe cases, (*Practitioner*, August, 1868,) but Dr. EBEN. WATSON, who has had great experience in its use, has failed to obtain, in this way, any very decided effect. He prefers to prescribe the alcoholic extract in solution, as a weak tincture; but should the stomach reject this, he gives a double dose in a starch-water enema. (*Practitioner*, April,

1870.) He agrees with Dr. FRASER in the necessity of giving it in large and repeated doses, the sole limit being the subsidence of the tetanic spasms, or the development of the poisonous effects of the drug to a dangerous degree. The strength of the patient must also be well supported by fluid nourishment and stimulants. Physostigma may fail, however, even when its full physiological effects have been produced. (F. 148.)

Potassii Bromidum, in doses of gr. xx-xl, every two or three hours, has been given in a number of reported cases of idiomatic and traumatic tetanus, with markedly favorable effects.

Quiniae Sulphas has been used, but is of doubtful power.

Strychnia, in doses of gr. $\frac{1}{16}$ - $\frac{1}{12}$, every two hours, has been employed with benefit.

Tabacum. Enemata have been employed with success in the hands of some practitioners, but have failed entirely in others. Their strength should never exceed gr. xxx of the leaves in O ss of water, and ammonia, brandy and other stimulants must be given, to prevent too great depression. The topical application of tobacco has been recommended in traumatic tetanus, a strong infusion of Cavendish tobacco being applied to the wound and surrounding parts, previously blistered; in idiopathic tetanus, it being applied to a blistered surface over the spine. See, also, *Nicotia*.

Woorara, in large doses, hypodermically, gr. $\frac{1}{80}$ - $\frac{1}{30}$ - $\frac{1}{12}$, is successful in the hands of SPENCER WELLS and others. It has not, however, justified the confident hopes that were at first entertained of its powers in tetanus.

Cathartics are useful in most cases.

EXTERNAL REMEDIES.

Actual Caustery, applied to the wound, in traumatic tetanus, was proposed by LARREY.

Baths. Warm baths, 97°-100° F., of three to four hours' duration, repeated daily, have been advised.

Blood-letting. When there exists a disposition to isochronic inflammation, and the patient is plethoric, and the pulse full, venesection at the onset has been advised.

Cantharis. Prof. STILLE states that in tetanus, "even when of traumatic origin, blistering on either side of the spinous processes and throughout the entire length of the spine, is an important, if not an essential element of treatment. It is possible, though not certain, that the endermic use of the salts of morphia on the parts thus denuded, adds greatly to the efficacy of the vesication. It were, perhaps, better to introduce the narcotic by inoculation."

Chloroformum. Chloroform frictions are said to afford relief.

Electricity. Dr. MENDELL, of Berlin, has successfully treated two cases by the local application of a gentle current of electricity to the affected muscles, with the apparent effect of subduing the excessive irritability of the sentient nerves. When a strong current is directed to the cord, powerful contractions result. The positive pole should be directed to the antagonists of the affected muscles.

Frigus. Cold Affusions have proved of little value in traumatic tetanus, but of great

service in the idiopathic form, particularly in warm climates. *Ice in bladders*, steadily applied along the whole length of the spine, has proved efficient in both the traumatic and idiopathic varieties of the disease.

Hypodermic Injections. The following remedies have been employed hypodermically, in tetanus: *Atropia*, without much success; *Liquor opii compositus*, gtt. xxv-xl, by Dr. RUPPNER, with the effect of securing comparative calm and ease; *Morphia*, gr. j-ij, during the day, of the muriate, by DEMARQUAY, the needle being carried deeply into the contracted muscles, and, if possible, to the point of entrance to the nerves; *Nicotia*, gr. $\frac{1}{50}$, about one-half of the traumatic cases, according to Prof. BARTHOLOW, treated with it getting well—a better result than from any other remedy, excepting physostigma; **Physostigma*, gr. $\frac{1}{3}$ to commence with, which may be considered as one of the most useful remedies yet employed (p. 143); *Woorara*, gr. $\frac{1}{80}$ - $\frac{1}{30}$ - $\frac{1}{12}$, with varying results, but short of the expectations based upon its peculiar physiological action.

Potassa. Counter-irritation, by caustic potassa, over the spinal column, has repeatedly proved of service in traumatic tetanus.

TRAUMATIC OR SURGICAL FEVER.

MR. T. HOLMES.

Traumatic fever is one of the occasional phenomena of inflammation, but is so important that it demands a careful study. Professor BILLROTH'S experiments seem to prove that the absorption of decomposing matter by healthy cellular tissue will produce fever, and doubtless a similar absorption by inflamed cellular tissue will have a like effect.

Some amount of traumatic fever generally, but by no means always, occurs after grave operations and severe injuries, and its persistence beyond the usual period is an evil omen.

Beyond sedulous attention to the general state of the patient, cautious inspection of the part, to see that no discharges are confined in the wound, and cleanly and skillful dressing, there is no particular treatment for traumatic fever. Attention must rather be directed to the care of the injury from which the fever springs. Everything which makes the wound do well, that is, which favors union with the least possible amount of suppuration, and as perfect immunity from putrefaction as possible, will diminish to that extent the liability to traumatic fever, and its severity when it arises.