

ing hysterical headache and peculiar sensations in the head. It is also useful in hysterical flatulence.

Assafoetida is useful in the flatulence of young children, unconnected with constipation or diarrhoea. A tea-spoonful every hour of a mixture containing a drachm of the tincture to half-a-pint of water, is strong enough to relieve distension speedily, and is readily taken by children. When the flatulence is due to constipation or diarrhoea, assafoetida does very little good.

Assafoetida has been recommended in asthma, and all members of this group are useful in chronic bronchitis, with much wheezing and abundant discharge, symptoms commonly met with in elderly people; but in cases like these, ammoniacum is generally preferred to assafoetida.

ON CANTHARIDES, BLISTERS, AND COUNTER-IRRITATION.

THE preparations of cantharides are chiefly used as rubefacients or vesicants, to control disease in neighbouring or distant parts.

That impressions made on the skin, and other parts do affect deep-seated and even distant parts, is proved by the following facts:—

I. Dr. Inman and others have shown that blisters and other counter-irritants, applied to the chest or abdomen, excite in many instances inflammation of the corresponding part of the pleura or peritoneum. An irritant applied to a knee distended by synovitis or rheumatism, increases the distension for a day or two.

II. Inflammation may spread from one part to another by mere contact, a fact well exemplified in that form of ulcerative stomatitis affecting the edges of the gums; the cheek and tongue opposed to the inflamed and ulcerated gums be-

coming often inflamed and ulcerated. Similar extension of inflammation and ulceration by mere contact is witnessed in the spread of non-specific as well as specific sores from the glans to the prepuce, or *vice versa*. Rindfleisch describes a case where from a cheesy mass a group of tubercles formed on the pulmonary pleura, on the opposing part of the costal pleura there was found a group of tubercles, although no adhesions existed between the pulmonary and costal membranes. Here the disease probably travelled by mere contact.

III. Brown-Séquard states that on irritating the skin over the kidneys, the renal arteries contract. Cold applied to part of a bat's wing causes contraction of the vessels of the corresponding part of the opposite wing.

IV. A local irritation will produce neuralgic pains at a distance from the point of irritation, well exemplified in neuralgia of the different branches of the fifth nerve from a diseased tooth. Indeed, cases are on record, where irritation of one nerve has excited neuralgia in another nerve anatomically unrelated to it; for instance, injury to the ulnar nerve has produced neuralgia of the fifth. Various serious nutritive changes may take place over the secondary seat of pain, the implicated tissues becoming red, swollen, very tender, and even indurated. Neuralgia of the temple often turns the hair of the temple rapidly grey. Neuralgia of the eye leads to serious inflammation, sometimes even ulceration, of that organ. Secretion, too, may become modified; thus each paroxysm of pain may increase, diminish, or alter the salivary or lachrymal secretions.

V. The application of aconitia ointment over a painful neuralgic nerve often relieves distant neuralgias, and sometimes sickness. (See Aconite.) For instance, we often witness a case of neuralgia of the ophthalmic branch of the fifth nerve followed in some hours by neuralgia of the auricular or occipital nerve. Here the ointment, by relieving the supra-orbital pain, will prevent the neuralgia of the other nerves. Again, in neuralgic sick headache this ointment, by

abolishing the supra-orbital pain which often radiates far above the brow, will prevent the consequent sickness.

In these instances of a local irritation producing serious alterations of nutrition at a distant part, how are these changes effected? Where there is continuity of texture between irritated skin and the part secondarily affected, as in the case of inflammation of the pleura or peritoneum, induced by blistering the chest or abdomen, there may be, either simply an extension of the inflammation through the chest or abdominal walls, or, as Dr. Inman suggests, the irritant itself may permeate and inflame the tissues, and affect the deeper parts in the same manner as the skin. Where there is no textural communication between the irritated skin and the part secondarily affected, the influence must travel through the nervous system.

In what way do local applications act through the nerves? Neuralgia and its ally migraine are generally held to depend on change, functional or organic, of some part of the central nervous system. It is sometimes said that in neuralgia, the local application benumbs or paralyses the nerve, and so prevents the occurrence of those changes in the nerve which produce pain. Others hold that the disease being central, the pain is merely referred to those territories supplied by sentient nerves in connection with the diseased centre. If this view is tenable, then local applications to the extremities of these nerves must produce some change in the central nervous system, and that this view is correct is I think shown in those neuralgias where several nerves are affected,—for instance, where the pain is felt first in some part of the region supplied by the fifth nerve, but on the subsidence of this pain, after a variable pause, but sometimes immediately, pain comes on in the region supplied by another nerve, as the back of the head or neck. In such a case a local application like aconite, veratria, &c., quickly subdues the pain in the fifth nerve, and prevents the onset of the pain in the back of the head or neck. In migraine, again, a topical application will sometimes arrest the supra-orbital pain and prevent the sickness. Further, the influence of local applications on the central nervous system, is well exemplified in some cases of epilepsy preceded by an aura. Here a local application to the seat whence the aura apparently departs, arrests the threatened epileptic attack. It may be objected that in this case the aura starts from the extremity of the nerve and travelling to the brain excites the paroxysms of epilepsy, and the local application by arresting the aura prevents the exciting cause of the epileptic attack, but I believe that it is now very generally held that the aura itself depends on central changes, and

that the peculiar sensation, as of some impression travelling up to the brain, is in the category of referred sensations. In some cases attacks of epilepsy, neuralgia or migraine are no doubt excited by some local irritation; for instance, a neuralgia depending on a carious tooth or a migraine due to derangement of the stomach, liver or uterus. Of course a topical application capable of allaying this irritation, may either prevent its producing these central changes which excite pain in neuralgia, or pain, sickness, and other disturbances in migraine; or allow the central disturbance to subside. But local applications succeed when applied both in neuralgia and migraine to the painful tract, where this region cannot be considered the exciting cause, where for instance the attack is clearly produced by fatigue or excitement. It is often said that in migraine accompanied by derangement of the stomach or of the bowels or of the liver, it is useless to give medicines to act on these parts, for these disturbances which occur only during the attack are produced by the affection of the central nervous system, but if local applications to the seat of the pain itself will arrest both this pain and the intestinal derangements, there is no reason why remedies which may affect the termination of the other sympathising nerve, namely the pneumogastric should not also modify the change in the nervous centre, and thus control the supra-orbital pain. In fact, I have no doubt that in some cases remedies which correct the gastric, hepatic or intestinal derangement, (see Podophyllin), may considerably curtail the paroxysm. In certain instances therefore, it would appear that local applications affect distant parts by controlling or obviating those central nervous changes on which these affections of the distant organs depend, whilst in other cases the distant effect appears to be a true reflex act as where a local application causes contraction of the bloodvessels of a distant part.

When applied to the surface of the body, cantharides soon excites tingling, smarting, and a sensation of heat; the papillæ of the skin shortly become reddened and raised; next, in a variable time determined by the strength of the application, on these papular elevations minute vesicles form, which gradually enlarge, and by their lateral extension soon coalesce, so that blebs of different sizes are produced. These vesicles and blebs are filled with a fluid rich in albumen, and generally contain some fibrin.

In employing these applications, it is of great importance to recollect that their effects on the body are very different when extensive vesication is produced than when their effects are limited to the production of redness, with the formation of a few small miliary vesicles. Dr. Graves insisted on the

different and even opposite effect of blisters, according to the degree of their action. Their first action is that of a stimulant to the body generally, and to the individual organs in whose neighbourhood they are applied; but if allowed to remain long enough to produce much vesication, and to form large blebs, they depress the bodily powers by acting as depletives in proportion to the amount of serum withdrawn from the vessels, and so lost to the system; a lowering effect often witnessed in weakly people, who are apt to remain depressed for several days through the loss of serum. As the serum of blisters contains almost as much albumen as the blood itself, we might as well bleed the patient to the same amount.

Should it be held desirable to reduce somewhat the strength of the patient, and at the same time to produce a counter-irritant effect on any of the individual organs or tissues of the body, then a blister may be applied, even to vesication; but as the good effects of blistering are for the most part insured by a milder application, such energetic and depressing treatment is seldom called for.

Dr. Graves commonly employed blisters as a general stimulant in certain critical conditions. In acute diseases, as the idiopathic fevers and inflammations, a patient sometimes already much prostrated drifts into a dangerous, apathetic, and unobservant state, which goes on till it reaches even partial insensibility or coma, so that he can be roused only with difficulty, and then wears a stunned, stupid and vacant aspect, and understands very imperfectly what is said to him. With this depressed mental condition the body generally sympathises, its functions becoming more and more languidly performed, till those necessary to life altogether cease. It is a condition which may be compared not inaptly to that produced by opium poisoning, where there is partial coma, which produces a lethargy in the functions of the body, their activity growing less as the coma continues and deepens. But with a patient in the partially comatose state of which we are speaking, there is no true and refreshing sleep; but in

this condition sleep is urgently needed, and an opiate and plenty of stimulants carefully given, often produce a refreshing slumber, out of which the patient wakes strengthened and much improved. (See Opium). If the functions are very languidly performed, then this blistering treatment may well precede the use of opium.

In a precarious condition like this, it is of all things essential to rouse the patient from his lethargic state, for then the functions of the body will act with renewed force, and he will pass from imminent danger to comparative safety. Blisters or mustard poultices of large size should be applied in quick succession for a short time to different parts of the body; for instance, to the chest, the abdomen, and to the thighs and calves. The great value of flying blisters in these circumstances will be the better appreciated if we bear in mind that the critical condition just described generally occurs near the end of an acute illness, when, if the patient can be kept alive for one or two days, the danger of death nearly passes away, acute diseases having a definite duration, so that if the patient can be sustained to this point his life is saved. By rousing the patient, and spurring the flagging vitality, counter-irritants may save an almost hopeless life.

Preparations of cantharides may be applied as stimulants of special parts of the body; for instance, when with a general condition like that just described, there is fear of hypostatic congestion of the lungs, and of pneumonia, in which such congestion often ends; flying blisters applied to the chest, and perhaps, as recommended by Dr. Graves, along the course of the pneumogastric nerves, may brace up the vessels, and avert a serious and often fatal complication. Or we may stimulate the heart, and in intense weakness strengthen its contractions for a short time, by flying blisters or mustard poultices placed over the precordial region, and then maintain the advantage thus temporarily gained by the free administration of alcoholic drinks.

Flying blisters are largely employed in various diseases of the deep-seated organs, as pleurisy, pneumonia, asthma, biliary and renal colic, &c.

Blisters are frequently employed in pneumonia and pleurisy. Yet among members of the profession great divergence of opinion exists as regards not only the stage of the disease in which they are useful, but even as to their utility at all. Some maintain that during the febrile stage of these diseases blisters increase the fever, and this is held to be sufficient reason to forbid their use. If blistering augment the fever, the increase is certainly very slight; for the author has not been able to excite fever by blisters in fever-free persons, nor has he ever seen them increase an already existing fever. The advocates of blistering in pneumonia maintain that it removes the pain, quiets the cough, and lessens the expectoration; but many competent authorities discredit the efficacy of blistering in pneumonia.

Whatever doubt may exist as to the influence of blistering in acute pneumonia and pleurisy, most observers agree that they lessen the pain, and must therefore benefit the patient by removing the restlessness and oppression consequent on pain, and so permitting sleep. But in estimating the effect of blistering, it must be recollected that in these acute affections the severe pain is of short duration, and spontaneously lessens or disappears in about forty-eight hours. It is, perhaps, not superfluous to recation against too free vesication.

Opinion is more agreed on the usefulness of counter-irritation in pleurisy, after the subsidence of inflammation and fever. If at this stage flying blisters of large size are promptly applied, often repeated, and quickly healed, they further the absorption of the fluid in the pleural cavity, and lessen the risk of the disease remaining indefinitely chronic. The counter-irritant, we have said, should be frequently applied, and the vesication, if it occur, healed at once; for all the good of counter-irritation is effected during the first few hours while it stimulates the skin. The hope sometimes entertained that, by free vesication and the maintenance of the discharge by irritating ointment, the fluid may be, as it were, drained off from the loaded pleura, is altogether fallacious. This barbarous treatment drains from the system

important nutritive material and weakens the patient when strength is most needed. We have already referred to the fact that blisters will redden and even inflame the pleura. Many consider counter-irritation worse than useless when the pleural effusion has lasted a long time. The production of a free discharge of serum is no doubt useless; but, although the chance of improvement in a long-standing case of effusion by any treatment is but slight, yet mild flying blisters will in some cases conduce to the absorption of the fluid. These applications may prove serviceable, if in no other way, by removing the troublesome intercostal pains often accompanying chronic pleurisy; but here a mustard poultice is to be preferred to a blister.

Counter-irritants are often of signal service in removing the oppression of the breathing in asthma, especially of bronchitic asthma, and the shortness of breath accompanying bronchitis with emphysema.

They relieve the pains arising from the passage of renal and biliary calculi.

Counter-irritation is useful in many other diseases, as phthisis, phlebitis, sciatica, facial paralysis, gleet, leucorrhœa, rheumatism, gout, and pleurodynia.

In certain forms of phthisis, counter-irritation proves of the greatest benefit. In the acute and rapid forms of this disease it is of little other service than to remove pain. But when the disease is chronic, when we have to treat what is now called the fibroid lung, when the cough is paroxysmal and violent, or frequent and distressing, preventing in either case rest and sleep, active counter-irritation of the chest corresponding to the seat of the disease often quickly quiets the cough, greatly diminishes the profuse expectoration, and thus obviates a severe drain on the strength. In blistering these weakly patients, vesication must be avoided or the exhaustion produced by the loss of serum may be so great as even to endanger life. Iodine liniment is a better counter-irritant than blisters in phthisis.

In phlebitis of the superficial veins a blister applied over

the course of the inflamed vein reduces the inflammation, hastens absorption or liquefaction of the coagulated blood, and so assists the restoration of the circulation through the obstructed vessel.

Blistering is of the greatest service in neuralgia. A flying blister to the temple or behind the ear generally relieves frontal or facial neuralgia. That obstinate form of facial neuralgia, dependent on a diseased tooth, rebellious to all treatment except the extraction, often yields to blisters; the neuralgic pains ceasing, although the toothache may continue. Blisters relieve the shifting neuralgic pains common in nervous sensitive women, although the pain is apt soon to fix upon another nerve; but flying blisters will drive it from place to place. In this migratory form the pain may alternate between a few, or may affect in succession most of the nerves, producing in addition to pain great cutaneous tenderness, or the nerves supplying the viscera may be affected and without pain produce functional disturbance, as nausea, sickness, diarrhoea, &c. This form of neuralgia, though it is right to say the disease lacks many of the more distinctive characters of neuralgia, is most difficult to cure. The obstinate intercostal neuralgia left by shingles, and occurring mostly in old people, generally yields to blisters. Anstie points out that blisters applied over the seat of pain aggravate the pain; "but, on the other hand if they are applied to a posterior branch of the spinal nerve trunk from which the painful nerve issues, a reflex effect is often produced of the most beneficial character."

Blistering paper, although mild in its action, requiring some hours' application, generally produces enough irritation to relieve facial and frontal neuralgia; but, if the pain continue unabated, a stronger preparation of cantharides should be tried.

Blisters are of the greatest service in sciatica.* They should

* The most obstinate forms of sciatica are sometimes benefited by the insertion of a needle for an inch or more in one or two places along the course of the sciatic nerve. More relief is sometimes obtained by allowing the needles to remain imbedded in the tissues for half an hour or even longer.

be applied every day or second day in the neighbourhood of the sciatic nerve, reaching in severe cases from the buttock to the knee. Free vesication sometimes succeeds where slight vesication has failed. Other counter-irritants, as mustard poultices, croton-oil liniment, iodine paint, are useful in neuralgias; but cantharides is superior to them all.

Blisters behind the ear, and especially to the temple, are very useful in rheumatic, gouty, and simple inflammation of the eye; relieving pain quickly, and subduing inflammation, but less rapidly. As it is important to repeat the application frequently, blistering paper is preferable to stronger preparations. Obstinate forms of tinea tarsi sometimes yield to repeated applications of flying blisters to the temples. Counter-irritation, by blistering fluid or croton-oil liniment behind the ear, often removes earache.

Pain and obstinate vomiting, due to disease of the stomach, are often allayed by counter-irritation at the epigastrium.

Mr. Furneaux Jordan employs counter-irritation to remove enlarged glands. "In enlarged glands, in abscess, carbuncle, boils, erysipelas, the best locality for the counter-irritation is around or adjacent to the disease. Blisters or iodine may be employed." "In enlarged cervical glands a large patch of iodine irritation at the back of the neck, which may be prolonged below the glands, will certainly prove successful in a short time.

Dr. McCall Anderson recommends blistering in erythematous lupus, and in chronic skin affections, especially in eczema of the hands, when the tissues are thickened and cracked, thereby hindering free movement.

Paralysis of the seventh nerve, dependent on alterations in its periphery from draughts or cold, in some cases is quickly removed by painting the skin over the paralysed muscles with blistering fluid. The earlier it is applied, the greater is the probability of good results.

When gleet obstinately resists all the usual methods for its removal, it is sometimes benefited by a blister applied to the perinæum and along the course of the urethra. A blister

applied over the sacrum is sometimes useful in obstinate cases of leucorrhœa, a treatment, however, which cannot be recommended.

In rheumatism, blisters are of the greatest service. Flying blisters, applied in proximity to an inflamed and painful joint, often quickly remove the pain, and with the ease thus brought about sleep often ensues, and a concurrent general improvement in the patient's condition. But blisters have been of old recommended as the sole or chief treatment of acute rheumatism, and some apply them, to the extent of free vesication, with the unfounded hope of removing from the blood the poison on which rheumatism is supposed to depend. This method has the disadvantage of reducing the strength of the patient in proportion to the quantity of serum lost, the depletion tending to prolong the attack, and to retard the convalescence, usually sufficiently tedious after a severe attack of rheumatic fever, which induces more anæmia than most other diseases. The advocates of free vesication assert that this method moderates and shortens the attack, and lessens the danger to the heart; but the author thinks that due regard is not paid to the great influence age exerts on the duration of an attack of rheumatic fever; moreover, the reported cases appear not to have recovered more speedily than frequently happens in persons of the same age, and manifesting the same body temperature, to whom no medicine at all is given.

The nightly application of a flying blister greatly relieves the pain and swelling of chronic and subacute gout, gonorrhœal rheumatism, and chronic synovitis; but if this mild application fail, strong vesication should be tried.

Pleurodynia usually yields to anodyne liniments or mild counter-irritants, but sometimes strong vesication is necessary, although the weakening loss of serum may increase the pain for a day or two.

The active principle of cantharides being soluble in oils it is useful to smear a little simple oil over preparations of cantharides. The oil, moreover, helps to maintain the application in contact with the skin.

It must be borne in mind that blistering paste and blistering paper act slowly, requiring several hours to produce a blister, and that blistering paper rarely produces much vesication. If a speedy and sharp action is necessary, we must employ blistering fluid, which sometimes vesicates in twenty minutes to half an hour.

Applied to the skin, the active principle of the Spanish-fly may become absorbed in sufficient quantity to produce congestion of the kidneys, strangury, and its other characteristic toxic effects; hence, in the treatment of acute or chronic Bright's disease, cantharides should be avoided, as we are unable to regulate the quantity which may be absorbed, and a damaging amount may be taken up by the skin.

We hope it has been made sufficiently plain that, in the great majority of cases, preparations of cantharides should not be applied long enough to cause much vesication. The vesicles should not be opened, but be covered with a layer of soft cotton wool, till the effused serum is absorbed, when a superficial desquamation follows, and no troublesome consequences need be apprehended. If blistering is carried far enough to produce large blebs, the serum will not become absorbed, and the bleb will at last burst; even in this case it is not advisable to open the blister, but to allow the underlying dermis first to heal partially, when no ulceration need be feared. If the bleb is punctured, the air will perhaps irritate the raw surface, producing much inflammation, which may end in an extensive slough, an untoward event, especially apt to follow the blistering of young children or old people, or persons whose health is broken down, as the victims of Bright's disease, etc. Hence it is generally considered advisable in such cases to use other counter-irritants. (*Vide Mustard*).

Preparations of cantharides, taken internally, produce an unpleasant burning taste, and, if in a large quantity, inflammation and vesication of the mouth.

The effect of cantharides in the stomach is in all respects similar to that in the mouth. Even small doses cause smart-

ing in the œsophagus, pharynx, and stomach; but a larger quantity produces inflammation of these parts and of the intestines, with vomiting, and diarrhœa of bloody and slimy stools, much pain and difficulty in swallowing, and often general peritonitis, with which the system sympathises, as indicated by high temperature and quick pulse.

The active principle of cantharides passes from the stomach and intestines into the blood. Its passage, it is true, has not been chemically demonstrated, but the symptoms following the administration of this drug render this certain; for, after a large dose, all the indications of acute inflammation of the kidneys set in, with much irritation or even inflammation of the urinary and generative organs, and after a poisonous dose, headache, loss of sensibility, convulsions, and death.

The changes cantharidine produces in the blood are at present unknown.

The tincture or powder used to be given in chorea and epilepsy; but this treatment has now fallen into complete disuse.

Little is known concerning the separation of the cantharidine from the body. It is conjectured that, from its volatility, some may pass off by the lungs; but, if so, it produces apparently no changes in the mucous membrane of the air-passages in its transit through the lungs. Owing to the same property, it is probable that some of the cantharidine passes off by the skin, and the internal use of preparations of Spanish-fly are recommended by several eminent French dermatologists in psoriasis, eczema, lichen, and prurigo. The chief portion of the active principles of cantharides escapes by the kidneys, and, as we have said, acts as a strong irritant to the urinary and sexual organs.

The preparations of cantharides have been recommended by high authority in certain forms of Bright's disease, but in this disease it has for years past been regarded as a most dangerous drug.

The discrepancy respecting the effects of cantharides arises, perhaps, from the difference in the dose administered by dif-

ferent observers. The author is convinced of its usefulness in acute Bright's disease, when the active inflammation and fever have subsided, as they invariably do about the fifth to the eighth day. A chronic state often follows the subsidence of the more acute stage, and the urine continues small in quantity, contains albumen, and perhaps blood. If, just at this time, that is, on the immediate subsidence of the acute inflammation, a one-minim dose of tincture of cantharides is given every three hours, the blood will almost always quickly disappear, while the albumen decreases more gradually, and the urine becomes more abundant. At a crisis like this it is true that a like amendment not unfrequently takes place without any treatment; but the influence of the cantharides can often be put to a conclusive test. To a patient in the condition described above, passing urine containing albumen and much blood, give minim doses in the way pointed out, and he will begin to improve; now, withhold the medicine and both blood and albumen return in their original quantity, and both may be augmented and lessened again and again by intermitting and reverting to the cantharides; but its influence over the blood is speedier and more decisive than over the albumen of the urine. Sometimes it checks the greater part of the blood but a small quantity remains for some weeks. This is especially the case when the patient gets up, for it is remarkable what influence even a small amount of exercise often exerts on the renal bleeding. Merely sitting up in bed in some cases notably increases the bleeding.

Cantharides, in a similar dose, has been recommended even in the acute stage of Bright's disease; and when the kidney, having undergone fatty degeneration, secretes very little urine.

After its separation by the kidneys, cantharides acts as an irritant to the urinary tract, and may be employed in cystitis, gonorrhœa, and gleet. A drop of the tincture, although five are sometimes required, given three or four times a day, is particularly useful in cases where there is frequent desire

to make water, accompanied by great pain in the region of the prostate gland, and along the urethra, while at other times severe twinges of pain are felt in the same part. The urine may contain a small amount of pus.

Women, especially middle-aged women, often suffer from frequent desire to pass water, or inability to hold it long, sometimes only in the day on moving about. Micturition causes no pain, neither is there any straining, and the urine is natural. Other women cannot help passing a little urine on straining, or sneezing, or coughing; sometimes women are troubled with both sets of symptoms, which appear due to weakness of the sphincter of the bladder. One or two drops of tincture of cantharides three or four times a day, will in many cases afford great relief and sometimes cure with astonishing rapidity, even where the symptoms have lasted months or years.

Tincture of cantharides is useful in the incontinence of urine of the aged, even when due to paralysis, and sometimes in that of children. With children, however, it is inferior to belladonna. Unfortunately, each remedy fails in a not inconsiderable number of cases.

A drop of the tincture, three times a day, will remove chor-dee in the majority of cases.

Cantharides affects the generative organs. Large quantities of the drug congest and inflame these parts, and often produce erection of the penis, effects generally attributed to the sympathy existing between the genitary and urinary tracts. It certainly excites the sexual appetite and has been often given criminally for this purpose. Full doses of cantharides, twenty to thirty drops of the tincture, or half a grain of the powder with full doses of sesqui-chloride of iron and phosphoric acid, or nux vomica three times daily, is a combination effective in some cases of impotence; in the impotence of old age, and in that resulting from self-abuse or sexual excess, it has proved successful and the patient has begotten children. Cantharides and iron combined are useful in some cases of seminal emissions.

Cantharides has been employed, sometimes successfully, to produce abortion; but the dangers are so great as to deter any medical man from so employing it.

MUSTARD.

MUSTARD is in common household use as a poultice, as a counter-irritant, or an excitant. Much that has been said of blisters applies to mustard poultices. (See Cantharides). As has been elsewhere stated, cantharides need seldom be applied to produce much vesication, and with regard to mustard, vesication should be carefully avoided, as the sore so produced is intractable, healing slowly, and paining greatly. Although mustard may be used in all cases where we should employ cantharides, short of vesication, still there are differences in their action. A mustard poultice is more painful than a blister, producing a severe burning pain, soon becoming unendurable; and if not speedily removed, it will produce troublesome vesication: therefore a mustard poultice cannot generally be borne for more than twenty minutes or half an hour; and if the skin is delicate, as in children and many women, it cannot be endured for so long a time as this. Owing to the pain it gives, and to its prompter action, a mustard poultice is more effective than a blister when applied to rouse a patient drowsy and comatose from poisoning by opium or alcohol, or in certain conditions occurring in course of fevers. (See Cantharides.)

When a mustard poultice is employed to affect deep-seated diseased organs, as in bronchitis, pleurisy, or pneumonia, its action should be sustained for a long time, over a considerable extent, as the larger the tract of skin attacked, the greater is its influence on the organs beneath. Small mustard poultices are less useful, except when employed to remove a localized pain. The poultice should be of a large size, diluted with