The subject of this Essay is one on which there is considerable difference of opinion in the medical profession both as to its employment and the theory of its action. The practice of Contra-irritation had its origin nearly as early as the time when the first crude method of diagnosis began to call into question the elements of the healing art. From the time of its first employment until the present, it has held its ground as a therapeutic agent of the highest value, while other systems of treatment are not highly esteemed, though it have remained in the light of modern scientific research. And it will be the object of this Essay which lays no claim to originality of reasoning or deduction to endeavor...
to show that in Cauterization we possess an agent in the treat-
ment of disease which can be confidently relied upon and the
theory of whose action is not so
doubtful and uncertain as some
seem to believe. There can be no
doubt that in regard to Cauter-
ization as well as to other once
popular remedies, it is their abuse
rather than their proper use which
has brought them into disfavor.
We need only to instance the
case of bleeding and mercury,
the excessive use of which has in
a great measure tended to their
abandonment at the present day.
Though it happens that there is a
great amount of uncertainty in
the profession in regard to Cauter-
ization, the great body of evi-
dence seems to be in favor of
The term "counterirritation" means that an irritant is applied to a part of the body for the purpose of producing a reaction at that part, which will have the effect of either stopping or controlling a morbid process going on in some other part of the system. The old opinion regarding its action is based upon the resemblance which its effect was supposed to have to a phenomenon occurring in the case of some diseases and called "dehiscence" that is the sudden departure of a disease from one part followed by its appearance in a distant part of the body. Thus it was thought that the cure was by counterirritation.
artist beneficently in any given case was that the effect of the intervention was to remove or at least diminish the old one and to lighten the burden for and any benefit derived from its use in such cases was ascribed to the experience of the effects from it in similar cases. Experience was here as in many other things liable to error sometimes if the true bearing of the case was not studied, and to this cause may be due the want of success and sometimes even bad effects which occurred from the inappropriate use of counterirritation. Again the success which must have attended its use where employed with the idea of derision, was owing to the fact that in those instances it was fortimately the last means of removing the pathological condition on which
the disease depended. For example if a blister be applied to the chest in the first or acute inflammatory stage of Phthisy or Pleurisy, the Chines and others this disease will be aggravated and perhaps serious mischief done, but if the acute stage be permitted to subside, blistering will then be found to favour the return of the part to the natural healthy condition. And also in the cases in which blistering has been resorted to notwithstanding certain constitutional peculiarities which should preclude its application and where it has produced extensive suppuration and troublesome ulcers on the parts where it has been used this bringing discredit on the hypocracity of the idea generally. The real utility of the practice is generally admitted though there appears to be great difference of opinion as the
evident as in the case of Rheumatic fever where the obstruction of blood has been known to render the heart more susceptible to inflammation in the case of the malady, and of Pneumonia where congestion having been employed although the urgency of the symptoms may have been relieved the recovery has been so correspondingly slow as to give rise to reasonable doubts as to the utility of ever employing it except the necessity of such a proceeding is very plainly indicated by the most urgent symptoms. On the other hand there is abundant evidence to prove that in Rheumatic fever the use of blistering has been attended with the most beneficial results while in the latter stages of internal inflammation equally good results have been obtained.

Though Counter-irritation has to a considerable extent taken the
place of local and general blood letting. It is principally in the latter stages of acute inflammation, effects that it can be safely used upon, although in a few and acute cases it may be employed at any time in the progress of the disease. It is not our purpose to enumerate here all the different diseases in which contusion irritation is an appropriate form of treatment, but to state shortly what we consider to be the different ways in which it may be consistently supposed that its influence is exerted on the pathological condition. Which give occasion for its employment. The attention of the profession has been drawn to this subject recently by two learned physicians, Dr. Dickinson in the St. George's Hospital Reports, and Dr. Anstie in a paper read before the Medical
Society of London, and as their con-
eclusions and arguments are the
same, a short account of one paper
will serve as the reprint of both.

Senter attacks the old doctrine of
contemination with sympathetic and
though he admits its utility in some
cases he ridicules the reasons given
for its employment by systematic
writers, and considers it highly 
therein to suppose that anything
which hurts the skin benefits the
despertaneous within near the seat
of irritation or distant from it.

But he also adds what detacts very
considerably from the force of the
assentions namely, 'when there is no
intelligible means of communication
between the irritated and the irri-
tated parts, for instance he looks for
the application of a blinder to the
chest for a Pneumonia, or to the abdomen for urviving inflammation of the lung as an absurdity, because these appear to be direct of communication by which an influence may travel from the irritated part to the rest of the diseased. Now this in our opinion is not the reason why blistering should in such cases be employed, because if there was direct communications, we are by no means sure but that the influence might act injuriously than good upon the diseased part; for who would think of blistering an inflamed vein in the acute stage or in fact any inflamed tissue directly connected with the surface who blistered! It's possible proposes to substitute the word counterstimulation for counter irritation as being more appropriate for expressing
the nature of the effect produced, but
do this there is the great objection that
there are various degrees of sensitiveness
from mild stimulation up to sensitization
and that this latter term comprehends
reflex than all which sensitiveness-
lation certainly does not. It will
therefore be better that the old word
Centractivitation should be retained.

According to Dr. Austin Bethune,
there are three sets of organs, by which
when an irritant is applied to the
surface, some influence is conveyed
to parts situated at a distance from
the seat of irritation, and these are the
blood vessels, nerves and absorbents.
"First the blood-vessels, as far as they
"establish any direct communication
"between the surface and the deeper
"parts which we aim to influence an
"effect much though not always
"forgood. When the place a blista
"when the stone causes inflammation of the joint it procure a compression beneath the skin which may instead of the vessels of the joint of wrist bone because these vessels communicated with the superficial ones, and the consequence of this may be that the depilated deep vessels take up the effused fluid in the cavity of the joint. Any indirect influence through the blood vessel is denied and he asks what analogy exists between the former case and blistering the skin to relieve an inflammation of the lung tissue. Certainly there is no direct vascular communication in the latter and therefore no analogy between the two cases, but we still endeavour to show that the influence which cannot be denied is exerted upon the blood vessels of the inflamed tissue conveyed to them indirectly through
"through the nervous system - "Secondly by the nerve. The influence 
must travel along the afferentiad to 
the nervous centre and strike effect 
may be produced either in the centre 
or in some other way which has con 
unciation with that centre. But the 
effect here is much more often called 
therapeutic. Therapeutic irritation 
has in this way produced by reflexion 
lof pressure in distant muscles, lof often 
in vessels, and even; certain disease is 
the nervous centre. Therapeutic effect, 
humans have followed the use of this 
ting or trivial, where it is, tendency 
if used properly, regulated by natu 
herefore.

Thirdly by the absorbantes, but here 
the action would be altogether bad 
for he says the absorbantes would tran 
put into the system mixed matter 
from the wound made." In certain 
states of the constitution this might
happen, but it is difficult to understand that the products of counter-irritation which in the most severe form of it can only be seen, could even if at
which the cause of any distress
danger to the system indeed we had
left to train that the absorption into the
blood of the noxious products of the
simple unspecific forms of malnutrition
can be detrimental to the body as a whole or any of its individual
parts.

We shall now proceed to
describe the various ways in which we
suppose counter-irritation exerts its pre-
eminence over the pathological condi-
tions, which necessitate its employ-
ment and

1. By the Bloodvials. - The
closest influence of an irritant ap-
plied to the skin is at first to cause
c contraction of the capillaries of that
that quickly followed by a corresponding dilatation of these vessels, which being engorged with blood, press with their drawn into the surrounding tissue and an exudation takes place. Then an ordinary emotional process is left to the strain the usual time. The effect is that the part is formed into of a highly red colour and rather pain, which circumstances are due to an increased flow and subsequent stagnation of blood, and the consequent stretching of the nerves filaments from its pressure in the dermoid layer of the skin. The principle of attracting as the warm blood to the surface of the blister, especially in the case of blisters placed over parts which have a direct vascular communication with the skin, which is the seat of the neural plexus as close to the skin. The vessels of such structures are...
The vessels of such structure are relieved of the seep of stagnant blood in them and become tended in consequence as in example we have the case of vesication in which a vesicle formed affords to the side of the neck very often checks the further progress of the malady. When the irritant is stronger or kept on for a longer time the congested capillaries of the skin fast with their blisters which distends the cuticle there is sure not only the attraction of blood to the surface but the discharge of blisters from it, thus not only drying the quantity of blood in parts contiguous to the seat of irritation, but also relieving such parts of true effusion, if present, which is taken up by the vessels communicating with the blistered part. This is the if we take the example given by Dr. Auctus of a blister applied over an inflamed joint, when the effusion
into its cavity is taken up by the deep vessels of the joint to compensate for the loss of some from the superficial vessels which anastomose with the deep ones. A similar effect is produced when we blister the surface over an inflamed bursa, and the action in both instances is intelligible by the direct vascularcommunication of the vessels. Counter-irritation also produces its influence on distant organs—indirectly by the blood vessels through the nervous system.

2. Through the Nerves. The effect on the nervous system of an instantaneous application to the surface is, that the influence travels from the part by the peripheral nerves to the centre whence it is reflected by the efferent branches either of the cerebral spinal or sympathetic systems and may produce the red obscurions in parts supplied by these branches.
Counter-irritation may influence a part directly through the nerve which supplies it, or if the part is at a distance, indirectly by reflex action. It will in this way influence through branches of the brachial, sensory-motor, sympathetic structures as so distant from the seat of irritation, or it may also by reflex action to stimulate to contraction the over-distended capillaries of a part, the result of partial palsy of the sensory-motor nerves of those vessels, act as a resolution of the inflammation; or it may directly produce favourable effect by gentle stimulation when there is deficient nerve force in the nerve itself or the nervous centre to which it goes.

(a) By direct stimulation of the nerve itself, as when we blister or brandalize the nerve whose depressed state of nutrition is the cause of the disorder; the effect here when properly regulated is to stimulate the nerve and
and restore its function for a time at least. And also when blistering is applied to the course of a nerve which supplies a muscle or group of muscles which have partially lost their power of contraction, from some injury or disease, or in some cases of Rheumatism in which stimulation of the nerve products favourable results.

(c) By reflex action of the sensory-motor system, when there is a hyperesthetic state of the part due to the irritation of the nerve supplying it, the pain from which is not confined to the spot but radiates over a larger area whose nerves supply an irritated with the irritated nerve, as for example in cases of neuralgic toothache in which the painful sensation is not localized in any particular spot, but extends often over the whole side of the head. The blistering behind the neck is found to be of much
benefit in removing the pain and its influence through the cervicoscapital nerve must be reflected on to the two
car branches of the 6th pair between
Our examination we have another instance of this kind of effect from blistering. I doubt the primary cause
of it the presence of castie and in
the system inducing this diathesis but
the pain in the muscles is certainly alleviated for the time by the application of a blister over the part. These
and many other conditions which get
occasion for the employment of blisters
Erastas having the same object in
view namely the relief of pain mi
linary motion induced by inflammation
and we have only to mention those
of Gastrodynia and Enterodynia in
which blistering is so frequently resorted
to remedy.

(c) The third way in which
Comte irritation acts through the
human system is by influencing
the sympathetic, and it can do so in two ways, first by the reflexion of an impulse from the excited part to the capillaries of the organ which is the seat of the muscular action we desire to control. As the sympathetic nerve is the great centre of nutrition of the body, it is evident that no departure from the normal healthy state of the economy can take place without it being implicated in the process. So it must be clear that whenever we apply counterirritation with the view of inducing any effect a change in the altered condition of any organic structure, it is the sympathetic nerves that we desire to influence. Direct stimulation through the case-motor section produces at first contraction of the capillaries of the part, which is rapidly followed by a corresponding dilatation of those vessels, but the stimulus may travel by innervating motor nerves to the central...
and thence be reflected on to branches of the sympathetic supplying the bloodvessels of a distant organ and produce contraction and tone in these vessels, so as to cause resolution of the inflammation. The contraction of the capillaries in this instance must be due to the stimulus reflected from the sensory nerve of the irritated part to communicative branches supplying these vessels and this is easily accounted for when we look at the communication existing between the two systems of nerves. As an illustration of this we will take the example of an excretory structure such as the serous membrane which in a chronically inflamed condition with its dilated and broken capillaries forms such an excretion quite different in properties to the normal one. What we desire to do by counterirritation here is to produce contraction and tone in the distended vessels, and this
is affected by a blow is the back of the ear on itself, the nerve of which carries the stimulus indirectly to the sympathetic branches supplying those capillaries. At the same time as the vessel recovers their normal condition, the altered character of the irritation in the gland is changed and its secretion is elaborated in a healthy state. Under this head also come those cases in which one of the known forms of contusions, or, as for example in some joint diseases and also in cases of the bones, in the first stage of which it is often successful in checking short the further progress of the disease. Blistering with this intention is resorted to in many other cases such as chronic conjunctivitis, ophthalmia, and along with the use of other appropriate remedies its employment is still, notwithstanding the adverse opinion regarding it which has lately sprung up, held in considerable confidence by the
professor. The second way in which certain irritation acts through the sympathetic is by that property of this system of nerves by which the reflection of an impression from one part of the nervous system to another, or as it may be called the reciprocal feeling between different nerves and therefore the parts supplied by these nerves is brought into action, which is named Sympathy. Examples of this influence are seen in the cases where the pouring of cold water on the head restores the brain exhausted by long continued inflammation and that of the dashing of cold water on the face removing an epileptical fit or removing from a syncope. The sympathetics between organs are numerous and of great importance in regard to the line of treatment adopted in each case. Here valuable aid may be frequently derived from continuous and salutary doses of the elixirs in very often the dosage from which spring
irritation in the alimentary canal coming venting on, the result of sympathy which exists between the two organs. In such a case blistering behind the same — should he had recourse to what the idea of location as seems the chain of action by which the one part sympathized with the other. Epileptic fits have often given rise to irritation of the throat and larynx and here blistering would be of benefit in the same way. In those numerous cases of neuralgia pain in joints and other parts occurring in women of an hysterical temperament it is then to be evidence of local disease. Counter-irritation may by withdrawing the attention or sympathy from the constitutional state of the part tend to restore the series of sensation to their normal state. There can be no doubt but that this is an important way in which the application of an external irritant acts for good in the treatment of the many diseases and alterations of nervous function in which it is too often employed.
3rd By the Inunction — It is evident we cannot influence the 
set of vessels directly without at the
same time affecting the blood-vessels 
of a part which we desire to act
upon through Counter-irritation. Absorp-
tion is not entirely confined to the 
absorbers alone, for the veins are also 
found to possess this property also. 
When the veins and capillaries of 
a part are disturbed and the circu-
lation in them slow, absorption is 
at its minimum, but when the 
circulation in these vessels is altered 
through contraction and loss in them 
absorption is at its highest stage. There
fore when we desire to effect the ex-
traction of an effused fluid by means of 
blistering, the influence of the latter 
must be conveyed to the veins and 
capillaries of the part as well as to 
the absorbers which are stimulated 
to increased action. There are two 
 kinds of absorption that of fluids and 
that of solids which is called inter-
stitial absorption. When a disease men-
hand such as the fever takes on
the inflammatory process. This causes an
edema from the distended Capillaries
and small blood vessels of the membrane
and an effusion into the cavity of the
chest. This is a pain that if we
wish to effect the absorption of the fluid
we must influence not only the abscess,
whose action is for the time in alleviation,
but also the vessels whose over-distension
is the cause of the effusion. There would
be no use in this case of trying to
remove the effect of the cause which
gave rise to it, was allowed to remain
and fortunately counter-irritative acts
were employed for this condition in
both ways, by removing the saucial
product and that which gave rise
to it. It stimulates the capillaries
of the part to increased contraction
and tone, thereby preventing any
further liquefaction, and at the same
time stimulates the abscessed
interstitial
absorption or that of saucial is brought
into play when we wish to effect
the removal of the solid products of inflammation by counter-irritation. This is seen in the case of enlarged serofulvous lymphatic glands, which are treated by the optimal application of Solute of Iodine with the view of causing their absorption which can only be done by stimulation of the abundant connective tissue glands. The use of external irritants for this purpose of causing intestinal absorption is limited in its application, and seldom had recourse to with the view of removing solid material, as there are other means better adapted for this purpose now employed — in the cases also of effusion into the pelvis or other cavity such as the joint and bone, after the acute stage of inflammation has subsided, but it has often the best effect in stimulating absorption of the fluid contents.
In some one of these three ways, through the blood-vessels, nerves, or absorbents, can the influence of counter-irritation in all cases be satisfactorily explained. Whether we apply a simple embrocation for the purpose of withdrawing pain from a group of muscles in chronic inflammation, or a mustard poultice to the chest for the pain, difficulty of respiration and dyspnoea in a Bronchitis, or a blister behind the ear for a conjunctivitis, or the contrary for vertebral disease, or a lotion for Eczema; the action in all and every case can be satisfactorily explained through the agency of the blood-vessels, nerves and absorbents. As we have already stated, its action in every case is not confined to only one of these three arts of organs alone, and cannot affect it influences through two of them and sometimes the three in the instance of a pleuritic affection the influence
must be first exerted on the nervous \footnote{filaments} which cause contraction of the bloodvessels, and then stimulation of the abscissors follows. Nearly nothing is removed of the fluid. Of the three different kinds of organs through which Contractionitation acts, there can be little doubt but it is the nerves which bear the principal part in conveying and exerting its influence and it is the sympathetical in the great majority of cases, especially in those in which it is desired that true irritations of a fine nature may be affected by a new impression, and also how a mental impression such as joy, fear, anger, may be the cause of a sudden alteration or stoppage of the secretion of an important organ. The suspension of the Catamensae from a fright, the reception of paincles from the same cause, and the alteration of the milk...
and this force is directed into some other channel.

In conclusion we will allude to one other explanation given by Dr. French of the mode of removal of cutaneous irritation. He gives the constitution of its action in this way: "that in cases of arrested and long-standing disease, if an injury be inflicted upon the skin such as by the country the distended skin separates from the living and we can detect upon the healing process being carried on till the excitation is complete, and during this time this separation is going on the original involved process is observed, first, diminished and altered evident by the diminution of inflammatory products and pain and by the gradual restoration of the "structure morbidly altered to a "natural condition." He ascribes the beneficial results obtained from cutaneous irritation to the "division caused by
the reparative process of the injury inflicted by it." In so much
than saying that the abnormal mo-
strucions in the damaged part are
indeed to take as healthy action
again. Through stimulation of the
reparative process in this part, but
how can this happen? We would
also except by informing the
sympathetic which is the great-
regulating power of instincts, so
divergence of which one way on
another can take place without
its cooperation. The great result
which spring from the appropriate
use of counter-irritation justify the
Confidence and reliance in which
it is held in practice, and though
the nature of its action in some
cases may appear at first sight to
be within observe, on a close look
it will not be difficult to explain
how its mode of action is affected and to reconcile it with the laws of physiological and pathological action. This has been our object in the preceding pages, and if we have done anything hitherto imperfectly we may say with satisfaction aliquoque mala fruo usum in illis.

(End.)