
by

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I propose, in the following pages, to describe, the most important features in the surgical cases which have come under my notice, during the late memorable Indian Campaign; these observations extending over a period of fifteen months, from June 1857 to October 1858.

It appears to me that before entering into the purely surgical part of my paper, I ought, in some measure at least, to describe the individuals in whom the injuries occurred.
and the varying circumstances, under which they took place, as this is necessary to a proper understanding of the results observed at different times and places.

The greater part of these injuries occurred among the sepoy and others belonging to the Pattle Regiment of Sehigore, which as a regiment (although containing at a few men of middle age) was in as fine a state of efficiency as any one that could take the field, and its power of endurance so great that beyond the injuries incidental to warfare and epidemics Cholera little else occurred and only one case of Sun Stroke occurred and that
was at Allahabad after the mutiny, and before he commenced the fearful marches for the relief of Cawnpore.

The Pethis are a taller, more muscular and very race than the Hindustanis. Their religion is a very liberal Hinduism which permits them to eat and drink more freely than their religious duties of Hindustan. The flesh of calf and sheep is used when they can afford it. Off the common fowl — a bird interdicted by the Hindu — the Hindis of lower India — some drink intoxicating liquor but it must be confessed that in a disciplined regiment cases of intoxication are exceedingly rare.

Their diseases are one might suspect from their habits.
partake more of the ethical character than those of the.stdinances.
By an article of their faith they are curiously enough detached from
the use of tobacco in any form and
the who does so is uncommunicated and no longer a Sectte, but I regret
by saying that for this custom is established
switd the eating of opium, a custom
which appears to me, from seeing it
on a large scale, to be more injurious
to them than tobacco smoking,
which gives the undesirable to
opium eaters, a tendency to
dyspepsia and colic, and in inculcating
opium eating, a tendency to debility
and emaciation; and although I
am often the whole inclined to think
it may lessen the tendency to
inflammatory diseases, it appears
to increase the frequency of neuralgic
disorders, and lessen the power of recovery from diseases and injuries, as well as seriously interfering with the reparative process of nature; in fact, the continuous use of opium in excess like that of alcohol seems to produce exhaustion, although it seems pretty clear that both in moderate doses present virtues of some like tea, coffee, or and probably tobacco, and it curious as showing the almost universal tendency of some or entirely civilized communities to use one or another of these articles that the Scotch, while abusing tobacco are slave to opium.

This habit of opium eating I may further add when suddenly stopped seems to increase the mortality of the injuries, and to this cause I in some measure attribute the large mort.
ability among the Secths at Akrokon for these, opinion could scarcely be obtained by them at all.

Of the Secths, I have little to say as their number was comparatively small, with one or two exceptions they belonged to a labouring class, and most of them had been suffering privations similar to the others.

During the long period of which my remarks will refer the tribulations a struggle whilst the rest underwent more severe. They were employed at the counting of Allahabad, in every engagement with Sir H. Hardinge, the service of the Corwin of Lucknow, and the subsequent two months defence where they defended an important fort.
outpost, were present during the invasion from month’s defence of the 
Alumabaugh under Sir J. Cautrey & at the final taking of Lucknow where 
with a few Europeans they stormed 
and took the Kaisarbagh. A Juni-
Czar Palace, and latterly had a 
slight share in the hot weather 
Campaign of 1856. This period 
embraces a time when all the in-
fluences which impair health and 
disease were in full in the Con-
stantinople, indication of a running 
Cause must be attributed the small 
number of attacks from disease with 
the exception of Epidemic Cholera 
which destroyed not a few. 
At Allahabad in June 1857, the 
work was of the most trying descri-
ption, supplies were scarce and th
overworked men were crowded into trucks and the presence of the Cholera poison in great intensity must be attributed the many attacks of Cholera in the Regiment at the time, but when we commenced to march on the 30th Thurlow Major Boyd's advanced column towards Cannepore although the men were exhausted. Fortunes marly & often met, Cholera entirely kept us out during the glaring struggles ended about Hodelkot which ensued and which ended by our retaking Cannepore. Including crowds, scarcely a case of disease occurred to attend to, but on arriving at Cannepore Cholera again attacked us—again with one slight exit also normal Case leading in an and first entry into India.

Our first Campaign in Orde without
tents, in the camp season. I need scarcely allude to it. Perhaps, in the
allied hardships are generally
known. But here again very few
cases of sickness occurred in our
regiment; and the rounds, had,
generally a healthy character, but
the Europeans were literally melting
away under Cholera and Influenza.
Sad, dispirited and weary we are all when a retrograde move-
ment to Singapore became necessary,
and no sooner did we arrive there,
than Cholera fell upon one devoted
band with renewed force. In
a few days our skeleton, plague str-
cicter force had to march to Buitum
and joined a signal victory over
the overwhelming forces collected
there. In returning next day to
Campfire, we rested midway in a tree during the heat of the day and at short intervals. The melancholy gibberish of the brave 78th Highlanders was heard as our brave fellows were thrown in to the hastily dug graves prepared for them. On our return to Campfire the force encamped on an open plain but it became so flooded that the force became housed in the old cavalry stable. The cholera was still raging with redoubled fury among Europeans and blacks, big officers of our small force dying in 48 hours, and people more truthful than desponding asserted that without reinforcement our devoted band would soon have its “last man.”

Once again I would like to draw attention to the remarkable influence I change from a place which
Cholera is raging, in diminishing the attack. At the time I speak of my regiment was suffering most severely from cholera, when we were ordered to escort the sick & wounded to new Allahabad, an arduous task requiring forced marches during the night of from 20 to 24 miles, but we took the precaution for one or at most two cases occurred after we left Cawnpore - and it entirely ceased on our road back to camp. I forbear speculating on the cause of this interesting fact in the natural history of cholera - as it is foreign to the scope of this paper and now proceed to conclude my short history.

Towards the end of Sept. 1857, commenced our second
Campaign in India. Which terminated in our forced entry into Lucknow under
Arnold on the 26th Sep 1857, and from this time may be dated the untoward
result attendant upon round, both in Europeans & Natives, while impris-
oned for the next two months in Lucknow, overworked and exposed to
every one was with the depressing influence of a small diet, extreme
danger and incessant anxiety; such result are not to be wondered at
while I fear our hospitals were in some small measure poisoned
by the number of wounded who had been in them that the mater-
ials which produced. Coughing. Cough-
ing Phthisis, etc., in individuals
previously were not enough
as there is some scepticism on the
found of our being under feet in Lucknow and as it strictly bears upon my subject I have noted below what our diet beyond a few days at the entrance of retreat from Lucknow Consisted of viz for 1 Europeans —

- Beef (rare included) 12 oz
- Wheat 14 oz
- Rice 14 oz
- Salt 1/4 oz daily

2 Native Fighting Men —
- Wheat 18 1/2 oz
- Cabbage (cooking) 12 oz
- Cheese (Clarified butter) 1/2 oz
- Salt 1/4 oz

3 Native Followers —
- Wheat 12 oz
- Gram (a kind of pulse) 1/2 oz
- Salt 1/8 oz

Thus it will be seen that our food...
was not of the choicest description or even plentiful. The coarse flour was
baked into cakes, but so coarse was it
that Quin showen from this mechanical
imitation of the particle, ensued, a
short time after it was eaten. Tea
could be occasionally obtained at an
exorbitant price, but sugar was gen-
erally not procurable at all. Tobacco
was only possessed by a few and the
European soldiers smoked tea leaves
and the leaves of the tobacco plant;
there was none of, and it must be said
that among the Europeans little sickness
occurred indeed, very little disease
the time of enforced abstinence, but
every one felt that he was in
spirit of strength and physical
vigour unlike different from what
he was on entering India.
when we were relieved from
our imprisonment.

And now I proceed

to offer such remarks as my experience
of casualties in my own regiments &
while in charge of the Native Camp
Hospital at Enniskillen will enable
me to offer.

I find that I have had
d.5. Casualties I attend to and
this includes I fear some of my earlier
cases, for many of my orders & memoranda
were seized by the rebels in Lucknow;
only 5 of the numbered were Europeans
about twenty were Hindus, Lenins,
and the rest were Turks, from
having occasionally to stay for my meals
as my note, being imperfect from the above
notes came. I forbear trying to state
this mortality of the whole preferring li.
state, under each serious form of injury, the mortality.

Before entering into now the wounds had nothing special added to them beyond the effect of the injury which had been inflicted, after our entry. The case was very different other diseases formerly practically unknown as Pulmonary, Nephritis, Tuberculosis, Tuberculous, Secondary, Peritonitis, and death from apparent exhaustion were comparatively common, yet it must be added that the wounds inflicted during and forced entry into Lur. were far more serious in their degree as compared to the numbers wounded, than any I had before seen in our former engagements.
with the enemy.

1. Of the treatment of Unhull's wounds.

In a country where animal life is as abundant, and the materials for its nourishment so quickly formed by decomposition of secretions or excretions from the living body, it must be obvious that the surgeon has no difficulties to contend against in the maintenance of cleanliness among the wounded. Often will all his care in the suppurative stage of a Gunshot wound, effort will unplug the sore, and those in addition to causing great anxiety on the part of the patient, change the character of the wound frequently to Cause great pain or Constitutional disturbance. Then such a complication occurs the best treatment
is to carefully pick out the wound with a pair of forceps; to have the wound frequently washed in such a manner that the water will enter the wound in a stream to remove as much of the pus or debris as possible, and to introduce part into or wholly over the wound and packed in dressings, so in such a manner that the latter remedy shall be adapted in consequence of the want of Prof. Buntine. Here it may be allowed to pronounce a vote against the use of silk, tulle, or Cellar, or Cellar cloth, in the treatment of compound wounds; appliances useful at certain times, but not throughout the system of these injuries. I would scarcely repeat that compound wounds are peculiar in many respects, from
the injuries of civil life, in so far as they are the results of a foreign body with a given force piercing through the tissues, those wounds however inflicted by cannon balls or shells are never very analogous to those of civil life in causing great destruction to the soft parts of open wounds, although the tearing power of a machine, and the pressure exerted in railway accidents, make certain differences. Yet I imagine that the principal difference in these cases will be found to be in the relative frequency and intensity of shock. In the one case an individual not particularly excited sees an impending danger in his conscious for some time of its operation; in the other you
Generally have a high state of excitement, disregard of danger, sudden injury without previous knowledge of its approach, and little pain in its infliction. I will however consider this question under the subject of injury in a subsequent part of this paper.

Cases have been recorded in which the shot wound, particularly in the dark, have healed by the first intention, but when the ball perforated a limb or the deeper tissues, such a result must be very rare. In one case a flesh wound of the upper arm I thought such an event likely, the wound closing up in however confirmed to superficial like many of our cases of amputation which seemed to be healing by the first intention but after undergoing opened

\[\text{Handwritten Entry from Page 107-8}\]
out and suffracted.

It follows as a general rule with scarcely an exception that in a perforating gunshot wound (by far the most common form of gunshot wounds in my experience) you have a large tract of soft tissue tagging along with it generally from the position one observes the laceration for the rest of the debris. "If on the opening a small piece of linen is placed, this will be found to convert into an abscess instead of the supplicative stage in the supplicative stage - very thin linen or gauze cloth should be placed over the wound to permit of the early exit of the renuncions discharge, to facilitate this I used when necessary two dressings a day and by means of the mixture of a
of a native utensil like one tea pot on
the stile chain of the wheatsie or water
earners - a stream of water is poured
on it into the breach cleaning out all
the debris. This was attended with the
greater benefit sometimes the stream
would penetrate and run out at the
smaller aperture of entrance.
This treatment is suitable when the
dead parts were being separated from
the living was just as unnoticeable in
the stage of healing. When the discharge
of sin is just of such a quantity as to
protect the surface of the eye, and
besides, though by the microscope it
can only be learned that it is a sin
which need not be feared to con-
taminated - the bruises in this stage
then we need our oiled Hicks or Sulja
Larch & hard - with plain water...
which scarcely ever required to be medicated in my experience.

I. Slaughtering Megalence.

This horrible disease commenced shortly after one entering Bencoolen and in two of my cases came at least two days from death—the tendency of every wound, however minute (and the simplest wound was often the worst), was to take on either the actee or the milder one of sloughing, and this was observed in Europeans as well as Natives. There can be little doubt that in the Native Hospital

I am aware of at least 3 cases occurring among European officers after slight wounds, one of which proved fatal. A soldier named Wilson sustained a Contusion from a spear which cut half over the stomach, while another
and probably in other parts of the Residency - by the inevitable crowding of the wounded men into a small space, members of the wounded having the disease produced in them and acting as foci of Constipation as they had done who immediately preceded them.

In a word the Place gave its to individuals - embittered by previous hardships and privation, and now overworked and insufficiently fed and unoffi...

if at all raised the skin - sweating profusely. Adams came on to his death. He had a slight wound of the back which took on this action and nearly cost him his life. Capt. Ri. 90-7 I had a small wound on the front of the thigh which took on this action. I also had a wound in the back...
my own account. I am aware that
of their accustomed opinion may
have made them more susceptible
although as I have already stated,
I believe it to retard the healing
healing process.

Being the almost inevitable tendency
of wounds to take an fist action in our
over crowded hospitals. I removed
as many of the cases as I could,
to a small Concordance hospital,
I established in our anchorage; and
always with the best effect; but
as our anchorage had been already
once cut off from the fortress and
surrounded by the enemy and
mines exploding were often rendering
our position one of great peril. I
could only treat each case as
might on an emergency have
been able to accompany us in our retreat on foot.

Treatment: As far as my scanty means would permit of it was of a stimulating & nourishing character as regarded the system - but beyond a little extra rice or a little rum, I had nothing else to give beyond the Garrison fare.

The local treatment was somewhat peculiar - and consisted of a mixture of two methods. The one consisted in the destruction of the surface of the sore and its edges by nitric acid - and the other consisting of irrigation by water a plan brought into notice by my friend Dr. Butterland of Ottawa, and which he found successful in several cases. he having used nothing but water.

(1) Indian Annals Med. Science No. 8 p. 470.
I think I have had our Case which
succeeded under this treatment
alone, but I have found the
Combination above notice more
successful than either used
singly. After touching both
the sore and the edge with this
balsam, a dry piece of lint was
then applied, and then homeos
thereafter a stream of water was
applied after the case the frequent-
you would see the cellular tissue
bloating like silky threads in the
balsam, the irritation was cont-
mued three or four times a day
according to the nature of the case,
and in the ulcer in the foot
was covered with moist charcoal
enclosed in a layer of cloth. This
might or might not affect the
are beneficantly, but which tends down the efficiency and from its decelerizing properties diminished the chances of infectivity.

With reference to the object a cause of the treatment advertised to I think it is generally admitted that the poison of -oughing the glandular thrust of Lymphatic & laceration residual is of the most powerful kind and acts more or less in state of extreme dilution, I am also inclined to think that this powerful poison lying upon a great case after its first formation keeps itself alive by diverting the cutaneous action of the throws just as Cancer ceased to do, and that the benefit of the migration treatment - In Cark consists in the speedy removal of
the completely removed at short intervals of thirty minutes discharge. I can only say that the more cases I have treated in this way the finer is my belief in its efficacy, the Nitric Acid may only be applied once or if necessary may be reapplied again.

As already stated the Case involved future in my own practice from this disease both were men of 50 or above. In the one Case the Case was originally a non-perforating stone of the bile which took on Phagocytosis return and went extended and accompanied with extreme debility and jaundice. The stone took an easy action for a short time, but shortly after came on and the stone died of obstruction. The other case
was more one of slothful probably. then I slothful phagadaa-

"Debt Seigh Act 50 Sepahi

Chin man was injured on the 26th Sehri

by some splinters of wood; and a large

one entered his neck above the right

Clavicle near its sternal end.

The wound which was not very large

The circumstances under which this occurred

may be worth briefly mentioning; after Amelia

force had intened instruction on the 25th Feb 1887

some of this force had work out the next

day to protect the bringing in of the heavy

guns. My nephew was ordered and also;

at first the enemy had probably not

perceived us, but mutually as we advanced

along they poured a heavy fire above

us. The rendezvous was a house on the

river's bank and we had to plunge
was afterwards enlarged and a piece of wood extracted about one inch square and liberated rather deeply in the neck of the wound. Enlarged and discharged freely but 9 days after the injury severe hemorrhage came on all around.

Through a stream we at the main, one man was mortally wounded and one killed here and just as we scrambled into the houses two of our brave fellows had each a leg lost...stoned by a piece of skin - sided all was confusion, a 32 per shot came in every few minutes against the window. Shells of the house & each splinter of wood formed a dangerous projectile. Nothing done men here & there, we escaped early next morning after an anxious night.
vessels the wound was plugged. The hemorrhage ceased and the wound seemed to be granulating. Several clumps of wood chippings in the wound were extracted before it was plugged. Slight hemorrhage occurred three days afterwards but 3 days after the wound hemorrhage came on of an arteriole character. The bleeding point was on the Clavicular portion of the Sterno-mastoid. Had it he been under check in the wound an artery was tied which seemed from its position to be the Transverse Collar. or the First or Scapular. These were all composed above. He fear that hemorrhage took place back the man died two days after it.
works regarding October 2

3 October. As cases of their conditions occurred in my practice, until we entered among Europeans and natives, it was very hard to plan them. In my practice to care augmented I was an European officer the rest were British.

In the European officer the Elbow came an after he had passed from my care, and as far as I recollect twelve days after the injury and while the wound was granulating. The injury was a compound fracture of the humerus near the elbow and apparently not infecting the joint, several pieces of bone were removed along with pieces of the coat sleeve. He was killed one in a newly occupied
First and orders were given that all the sick and wounded should be removed from it and he had to go with the rest in a state of great nervous depression. In the entrenchment where Trencher died exposed and pitched a tent very quickly.

Of the other cases three occurred while besieged in Lucknow. In one case a Co. fracture of Tibia and Fibula occurred while the wound was sloughing. In the 2nd case perforating from back wound of the shoulder and leg, the wound, which had finally been sloughing, was healing where this disease superceded and joint places. In the 3rd case a bad Co. fracture of Leg, amputation was frequently.
urged but as frequently refused by
the man and his relatives. Twenty-six
days after the injury the burn was
still without an attempt at union
and slight stiffness of the jaws and
difficulty in swallowing solid
food was observed. These symptoms
continued for three days after I have
noted that the jaundice was beginning to clear up,
and the foot was shod.
Amputation was again urged as a
last resort and agreed to. The
limb was amputated below the
knee. The tetanic symptoms
sounded much relieved, but the
man always of a feeble constitution,
died three days after the operation
of exhaustion.
The 5th case occurred after the final
Taking of Lucknow, and while the  
self was stationed in a large building  
in the suburbs (la Martinisees) the  
individual had nearly rejoined  
the self from leave to take not  
charge in its Puriatiss -  
one of the Shabirs were throwing a  
large shell supposed to be empty  
when it exploded - and injured the  
drummer bug and 20 in the crew  
the examination the right arm i  
found to be injured - and a wound  
of about two inches in size in front  
radio - and one over the ulna,  
fracturing the bone at the wrist  
Two days after the injury severe  
inflammation came on requiring  
free incisions & liberal doses of  
some were extracted. Several days  
after the wound was coated as healing
to granulate, on the 8th day symptom of Petruccius came on, and he died 5 days after, the scone looking stiff and as if about to slumber. In the Care the symptoms were so excessive the extreme pain so great that breathing was not thought advisable.

In the 6th Care which was transferred to the field hospital at the time taking of Lieutenants and again brought under my Care a day before his death. Petruccius suffered on a 3d wound of the foot which was cleanly when he died 7 days after. The wound of the injury the date on which Petruccius suffered I cannot state the main age was 40 years.

In India Petruccius is much more common than in more temperate climates and I
Have little doubt that mere the
statistical of this campaign made
out Petersen would be found to
have caused a great mortality,
even in my own cases 20.5 but prob-
ably a little more in cases of Putnam
occurred while in the whole Civil
war Campaign 29 cases only occurred
5 at Scutari 24 in the Crimea &
one in England or 0.2 per cent of
the wounded! The probable exciting
cause in our cases was extremes of
temperature or during October
and Nov when most cases occurred
the days were severe and the
night-generally cold while our
Clothing be far away I can't
With reference to the Cases alone
noted I may just draw attention

'Blue Book: Med. & Surgical History of the
Campaign Vol. 2' P. 249.
In the fact that in these cases the wound were suturing, and in these healing, treatment as may be supposed I have little to say with regard to that. The medicines most frequently used were Cannabis, India and Opium and when difficult. I shall
Serious was a prominent part and it could be done. The medicines were administered by the victim along with instinctive cannabi, but in all we be
me that our medical treatment of this disease is nearly adopted and sometimes more than that, perhaps hurtful when medicines are given by the mouth especially, but this method by the victim comes
less shame, to increase and criticise of the difference of
remedies in this disease we
find that in most cases in
which individuals have recovered
under the favourite medicines,
the attack has been of a Chronic
Character and bearing in
mind that October is generally
late before the twelfth day
we must be cautious in attrib-
uting the favourable result to
these remedies.
It appears to me from all I have
seen of the disease that by
adopting the suggestion of
Marshall Hall and performing
brickotomy we would at
least get rid of one of the most distressing features,
of the disease could be
which causes the most mischief
the distention of the bladder, and the
sense of indigestion and fulness, while
the distending efforts to swallow
might in great part be avoided
by the giving of restorative accumulations in
small quantities. The large
dose of medicine given to the sick
of solid grain, having been found
undigested in the stomach after
death in cases of scarlatina would
lead us to believe that little ab
expiration of urine is seen in
the stomach. The frequent
use of purgatives, when there is
little to remove except what has
been secreted by their irritating
effects, seems also a part of the
treatment which might be well
benefit modified, for all admit the effect of irritating substances in the alimentary canal in producing convulsive diseases. Probably the most successful treatment of this disease would be by pulmonary inhalation of medicines, and all though Chloroform inhalation only alleviates the immediate symptoms of the disease, as I have seen in my own practice in Scotland, yet Belladonna - Fumitory, Indica or Opium might prove beneficial if these are administered. If they did not we might be sure of one thing that it was not caused by deficient absorption, and estimate their value more clearly.

Our conclusion while I have come to it is that the frequent
swallowing of medicine is a powerful excitant of this spasm, while I am inclined to suppose that frequent nursing is a doubtful remedy - if we consider the intimate connection between the intestine and the spinal cord, these remedies are however advanced with great difficulty but in a disease while I consider to be at present necessarily fatal in its acute form, under our present treatment they may be deemed remissible... I think.

This complex and difficult state to be described, although easily recognized, is often a product of causes not necessarily produced by the injury - and I have
thought Prof. Li-fee an abstract of the most recent view on the subject, in many respects an admirable one, while it appears in The Medico-Surgical History of the Crimean (blue book) Vol. I, p. 265.

"Among the first effects of a instantaneous shock. This work is in general use among surgeons to denote a certain state of the system immediately consequent upon injuries, and it follows all severe injuries, in a greater or less degree. But it may be fairly justly inferred whether under this generic head, many and various, essentially different states have not been included. An amount of shock and generally a very
marked and fullness perforation into the abdominal cavity by ulcer of the intestine, but although the symptoms are similar, it by no means follows that the effect upon the vital functions is the same as that consequent on the sudden and unforeseen occurrence of a hub. For powerful mental involvements again produce shock, but there is probably of a different nature from the former. Having this subject now ever where we find it and using the word in the acceptance merely given it by surgeon, the shock of the accident differs often in a very material degree and possibly in kind also from that witnessed in civil
life. When a common shot strikes a limb and carries it away, the immense velocity and momentum of the impacting force can scarcely be supposed to have no physical effect upon the neighbouring, or even distant parts; independent of, and in addition to, the shock in the ordinary acceptions of the term, which would result from the removal of the same limb by the knife of the surgeon or the crushing of it by a heavy stone or the wheel of a railway wagon. The vitality of the parts more immediately struck is destroyed as in any ordinary crushing of a limb, but in addition some are often shot far long distance above the point of immediate contact, and moves violently stretched
or otherwise injured. The vessels address to escape but, for these is
purely much bleeding or for more than a few seconds duration.
In the great majority of cases the whole frame is likewise violently shaken or
contused and probably independently of these physical effects, a further
vital influence is exerted which exists in a very minor degree, if at all in the
last named injuries, and may possibly depend upon the sympathetic
nervous system.
The shock again in great wound is in action, often differs from that state
to which the term is usually applied in civil life, in the mental constit-
ution of the patient at the time of the injury. There is an amount of mental
strain more felt by some thereby.
others, but to the existence of which anyone who has been under heavy fire can testify, if he has taken the trouble to analyze his feelings. In very old soldiers, and in much of the trench work, this condition for what only existed in a minor degree, but there is a state of apprehension, subjectivity or high nervous tension, common more or less to all men when they find themselves face to face with an armed enemy. Some hope to attain the object they are striving for, some fear personal injury, but the bravest cannot remain long under fire without being more or less affected, and whether he becomes excited or apprehensive matters little so far as the effect on the nervous
system is concerned. The strain in both cases leads to subsequent exhaustion, and in the event of a severe wound being inflicted, this exhaustion is one important element in the "shock induced."

Men were occasionally received for treatment in whom the state of nervous tension alluded to had not subsided, and they seemed to lose operation, either with or without Chloroform, and indeed in some instances helped that it might not be given. In these cases, the immediate effect of the injuy (or shock as ordinarily understood) existed and yet it's effects were counterbalanced, and its symptoms, in fact, measure held
in accordance by the mental condition + +. It often happened that there was considerable delay before men could be removed from under the enemy's fire, and the state of nervous tension was then found to have subsided and to have been replaced by the state of shock. + + +

Shortly to recapitulate: the "shock" as usually occurring under the cognizance of a military surgeon is of a compound nature, in the composition of which the following elements may often be recognized:

1. The vital effects following all severe injuries.

2. The mechanical effects, notably many and various, of the peculiar velocity & momentum
of the striking force, especially in reference to cannon shot or stones.

32. Probably, additional vital effects of the above mentioned velocity and momentum.

4. Persons depressed, consequent on previous high tensions.

Those of blood to a considerable extent, sometimes by a large quantity suddenly offered, sometimes by a larger process of fluid and saline.

Before saying anything of my own experience of Cases of Shock or of Consciousness forced upon me in this Campaign, I will further quote a passage from an anti-alcoholic writer, unwords of 140 years.
ago, has yet in a few words describe most accurately, the condition frequently found in individuals when during the excitement of a warlike struggle, they are wounded. My object is to show that shock in warfare is not at first developed if the struggle be an exciting one, but that it is a secondary complication, in cases which by observational measures afford a ground for recovery. "All our amendments were performed without waiting for reaction and it may be necessary to observe that through many of the men were carried down with their limbs torn from them, other with the most severe lacerations and fractures and are going off in particular in the
the shins of the thighs and all
the anterio subconical muscles,
turn away, exposing the contents
of the abdomen, yet in no in-
stance could we perceive the bleed-
ful perturbation and constitutional
shock so frequently described by authors
on Gun-shot wounded until some time
after the injury had been received;
and I have every reason to conceive
that amputation having so shortly
followed the wound was the only
effective means of saving many
from its dangerous influence, even under
the unfavourable circumstances in
which we were placed.

Medic Clar. Tran. Vol. 8. 1817. Statement of the
Wounded on board His Majesty's ship
Leander, in the actions before Algiers.
After this extract— I have given it may be supposed that enough has been said, with regard to the question but I will at least venture on a few remarks, as I believe me have as a journal note in this campaign seen and patients under fire and as soon as they prove

XＢｙ Ｄ Ｑｕ ａｒｒｉｅｓ． I may state that I owe a knowledge of these extracts to Mr. Syms who in a late clinical lecture brought them to the knowledge of his class, in some remarks he made with reverence to the shock of injury in civil life and the conclusions he arrived at were that in these injuries amputation be required and the shock not subside. Chloroform should be given and amputation performed as the case favours a chance while leaving the patient alone will necessarily have future in mind.
sounded. I would begin by excluding those cases which as a general rule are necessarily fatal as wounds of the lung, intestine &c., for to them the term shock is in practical language inapplicable. For the state which immediately follows is part of the death agony and may be from intrinsic death, in other instances, death may occur but certainly is the event we hope for, the injuries are principally those of the extremities. From this I would likewise exclude those cases, often considered with it in which hemorrhage and its usual immediate results are denominated by the Condemned Genevian term. There is another class of cases which might perhaps
It is also included in which the individual die after a slight wound—sometimes owing to a peculiar constitution at others, and, omitting the visceral disease, but in which the wound bears no relation to the effect produced. But while thus limiting the time my remarks will have more reference to a state while five days, shock, than to that state itself. I propose now to say a few words on the differences which occur in the after effects of injury in Civil and Military life, while home surgeon in the Military Hospital for nearly two years, I had ample opportunity of seeing the effects of injuries immediately after their infliction.
and the embroiled Conwayed in my mind was that shock was an immediate result of the injury sustained and from which the individual might or might not recover, and indeed then we consider the usual character of these injuries, but more particularly the agony of mind which must occur previous to the infliction of a serious danger, and the fearful pains which occur, as in machinery accidents, as well as the time occupied during the infliction of the injury, while even in railway accidents it is greater than in Casualties received in warfare or such enough to cause death, but we will also find another in

and extremely rapid and precise, which flat across the minds of the class usually impressed - fact, if he endure a remaining useless in individual or prove still death, and the consequences of either to his wife and children. There are few often felt in injuries which bring in their afflictions, and are still more appreciated if the injury proceeds of often thought. I believe then, that shock limiting it as I have done to injury, but necessarily fatal from unrelieved injury to vital organs, is immediately in civil life, and that in each case a reasonable delay for a short period is sufficient. I amendment are viable should be sustained before operating but
that in Case necessarily fatal without operation, a Chance should be given by operating.

In the injuries incidental to military warfare there is a wide difference in many respects both in its physical and psychological aspect. In the soldier there is always more or less excitement varying with the nature of his duty; a state which banishes the sense of danger unless in time for the first time under fire. If he is wounded under in a state of alarm he is scarcely conscious of it and looks with a degree of astonishment at his wound, while in not a few there mingle with it a degree of pride at being wounded and he feels that his country
will justify for him, but in a variable period varying much from the nature of the injury and the previous excitement, but probably never beyond half an hour. The shock comes on. Of course there are exceptional cases, and these are generally cases of slight wounds in which the individual becomes a muscular contraction, "in most frighten'd than hurt." The difference of opinion with regard to this question formerly existing between surgeons in the army and navy had

I know of one distinguished officer who had been in Afghanistan. The Surgeon-Lieutenant who told me when wounded that he had often wished to be wounded. It is, I believe, not an uncommon feeling in those who have seen much service.
doubtless his origin mainly in the time at which the murder were seen after the receipt of the injury. Dr. Quaconi's statement of his experience when the sent already justice, is entitled enough - while we find Antonio in his (common stances) Page 34 stating that "A surgeon on the field of battle can rarely have a patient brought to him requiring amputation, under less time than from a quarter to half an hour; a surgeon in a while may see his patient die less than five minutes after the receipt of the injury; and in the confusion of the many we must be able to refer for their testimony as to the absence or presence of
the constitutional clause or shock to which I have alluded, cause
to what degree they follow, immi-
dently after the recitals of
such injury— The order gives
during the Crimea Campaign that
one medical officer should always be
with the regiment under fire has
doubtless done much to show that
injuries on the field or the deck
if seen early are similar in their
effect. For instead of half an hour
sloping, medical officers not rare their
immediate care on the injury has
been inflicted. The Crimea
reports, although mostly likely Cam-
filled from the inlets of Surgeons
who received their wounded abil-
they had been attended to in the
trenches by their assistant Surgeons,
still it alludes to care in which word had not been established or as it is termed the state of nervou

tension had not subsided.

In the Indian Campaign especially at its first Commencement. A lag behind
was often equivalent to death as the

troops. In fact Cavalry often closed on our rear, and I don't say most
of our surgeons can tell of decreper
escaped from while detained by some
severe care rather long. Our surgeon
was always alongside of the receipt: sometime

while the surgeon followed closely at no small distance behind. In

native receipt with one surgeon he was to
come always and fire in return to
boy this to meant a distance of 15
or 20 yards in rear of the receipt.
It is exceedingly noteworthy. While, after
which has been laico to state
my opinion that if operative measu-
eres are necessary the course
the knifes follows the wound the
letter - his hemorrhage will

The South's service considering its numbers has
suffered pretty severely in this Campaign excluding
have sustained injuries that
officers massacred at March 22. I am aware of
I have been killed or of the 20th Army have
been severely come mortally wounded.
But let me be understand that the M/S Officers
must always be careful that it should like
to see it more recognized that in the
strict exercise of his duties and with a
more keen perception of danger than the
military cadet or the fying. He is not
the little danger; and is equally eligible
for rewards & honors.
he also incurred and chose all.

Chloroform unfortunately not be at hand the operation will be enough felt at all. I'm baptized when I had to offer all without chloroform. I have performed double amputation immediately after the injury. In the case alluded to, the individual a strong robust look had been injured by the explosion of a mine. Several ribs on the right side were fractured, matching a depression into which the first might almost be placed. Amputation below the shoulder joint was performed on one side and immediatelily after the forearm of the other side was amputated. He died of shock the next day. In another case a rebel I amputated the thigh
on one side I excursion the knee joint on the other side. The man also died the next evening from shock.

In three cases I have seen well marked shock. Even after injury, one was quite unconscious. The go 2 I were practising or at drill at the Clumber Park. Then a few belonging to one of them went off accidentally. The Enfield rifle bullet going clean through the legs of two men, slightly injuring the hands of a third. In one the shock was so great they as operation could not be performed on the individual being in a critical state. Almost hit a good deal of another person whose body had been removed. In the other locomotion of the leg was performed under Chloroform.
while the man was in a state of great exhaustion. I administered the
Sedum on that occasion and
although the pulse was but very
art susceptible at the first I
continued it as the breathing was
good - the man revived.

These two cases illustrate the
occurrence of an injury in Ceylon.
In such a case in civil life, in one
instance, I think there was no state of
excitement. The mind was cool.

Such a case occurred in my own
ship during the storming of the
Imperial Palace at Lucknow. The
man had a perforating wound of
the flabby part of the leg, which
I attended to, hurried on an
returning I found him dying.
there was no hemorrhage, but he died immediately after.
the death might have been owing to some organic disease or the
circumstances of the individual.

I will next

close this part of my subject
with a few observations which I
believe to be warrantable,

1. Shock in military warfare is
a state which occurs in cases of
injuries to vital organs or severe burns
or haemorrhage which may end in the death of the injured

2. In this stage the

knife should follow the wound
if amputation be necessary, or
let haemorrhage cease. The addi-
tional shock is produced

3. If shock be
established and show no sign of amendment. Chloriform may be given and amputation performed with the chance of success.

Primary orSecondary Amputation.

Of these two conditions, I have little to say, as a great many injuries on the field the arteries escape, the veins being broken are more liable to injury. I have had in my experience one case of haemorrhage on the field from some of the femoral veins, as far as I could ascertain, and two cases of severe haemorrhage from the facial arteries, to be afterward treated in connection with fracture of the lower jaw. In severe injuries where the limbs are to be
Sedate nearly torn off the hamstring is not great, in one of these cases where the thigh was nearly torn off high up by a shell. I tell the few
wounds on the field but there was really very little haemorrhage from it. The
wound on the other side was nearly torn off but no arteries were tied
as there was only an oozing. In both
other cases, I have seen similar
results: both men had their legs
amputated below the knee by their own
alms. A house thence there was only
oozing after I chopped them off
with a native sword for the purpose
of applying a bandage. A comrade
was attached over the site of
the firearm as a precautionary
measure. I have seen other
severe injuries of the cul-de-sacs,
with little success has labored. Then I have not examined the
state of the cataract before operation.
A perforating woundis fortunately rare - and is attended
with serious hazard, but I.
have seen one of the division
of the saccular - one of wound of
the posterior third of
probably the superfluous epithelium.

In the two cases above attended to I
adopted a plan while I was in the
years ago adopted. He had
wound of this cataract artery - he was
sent safely from a long distance with
a copper over it. Halfpenny pieces
in these two cases formed a coin of
a similar size - and they did
very well.
in which inter-ference was required only some time after the injury, in consequence of attacks of haemorrhage. These cases were under Dr. Home of the G.H. & I., but except in desiccating wounds made and wounds in which I believe the bone is fractured or these cut, the cutting or is cut cleanly by the surgeons. As a bone fracture extent is not so frequently met with.

Secondary haemorrhage is the result of coughing, either with or without complication. This complication was not uncommon in Lachnor. I have already related one case in which the whole lower muscular were thick
and other 14 cases occurred to me one of these was apparently hemorrhage from the General vein consequent when scratching about 3 weeks or so as I recollect after the original injury a wound of the vein there was profuse hemorrhage at the time of injury controlled by a compress and from that time had not bled till after the recent I have failed there was no further hemorrhage the wound becoming more healthy in the other cases the healing occurred after amputation in the first case severe hemorrhage occurred after severe inflammation of the hand consequent on treatment of amputation of a finger the case did well in the 2d case on amputation lateral astrigent dressings were used the stump was taken down and the posterior
time test. The man died of exhaustion
some time after. In the 3\textsuperscript{rd} case - sec-
ondary hemorrhage occurred after
amputation through the ankle - one
of the plantar nerves intact - the man
died some time after of exhaustion.
6. Wounds of the Head & Face
In all I have had
few cases of unimportance under
this kind, six of these were wounds
of the skull with 4 deaths; 4 were fractures of the lower jaw
with two deaths.
Wounds of the Skull
In the first case the only of which
we had the injury consisted of
a gunshot injury behind the ear
a small hole being visible but
no ball being felt & no Cerebral
symptoms present. The only thing
Complained of being faint of the
ear. The came was wounded at
the retreating of Caucaune. A lawyer
night following the injury with his
left on the left of the field on
reaching Caucaune the next day he
only complained of pain. Next day
he marched off. He was suddenly
seized with substemas. He came an
incision was made done to the
temporal bone & a ball extracted.
lying on its side the bone was extremity
fractured the brain substanes and
quantities of brain substanes escaping
in a few hours he died.

2. In this case a small
part of the entrance take of the
frontal bone about half an
inch square was driven in by
a musket ball producing
slight depression - this man recovered without a cerebral symptom. The 
order if the case were lost - but my impression is that he was sent to 
Illinois and came home after the injury 
in case he might have job worse as 
the case is so very unstable that he 
might have turned ill after he 
left one.

No. 3. This case occurred in York. 

Linda 848, July 35, 1856.
This man was wounded on the 31st of 
July by a musket ball, which struck 
him on the head, just at junction of 
frontal with frontal bone and a 
little to the right - the bone was 
surged to about the extent of 
an inch. He was seen immediately 
after the injury and complained 
a good deal of pain over the
Left temporal bone... aberrantly.

A Convulsion for he has also slight paralysis of the right leg. with dragg

nig of the hand. slight loss of
sensation — this however subsides so slowly

in a few hours. — Pulse, equal
to normal. Pulse slow.

On the 1st of Oct I have notice that

he is doing well. the leg ensuing

round bruising well. no trace

of head slight irritability of

stomach. Some days after

short fever slight rubicid Pulse pro

sued symptoms. but irritability of

stomach. Continued the esfer

home Got dry a claret coloured he

gradually sunk although somber

I died influenza. 12 days after. Per

ying. Some operative measure

it may be thought would have
been advisable in this case as there might have been cerebral abscess, but the man died it was rather unexpectedly, and the cerebral symptoms at the time were not of a nature in any mind to justify trepanning, although I believe the man had occasionally come on vertigo attacks in any absence. The nature of which I failed to discover.

No. 4. Poyam Light. Act 35 tons.

While this man was on duty at a fort in Lachowar, there were frequent thrusts over a high wall at us by the rebels. He was struck on the head by a missile which was supposed to be one of theirs. On examination it is inferred to have sustained a severe wound over left frontal bone. At issue
The patient was insensible, tossing about left arm and leg. Right leg and arm have lost their rigidity. Died about 11 A.M. Postmorbem of brain much less on lower half. A deep change had been applied over room.


The man when cut opening seen at one side of the entrance, etc., at League on Oct. 29, 17. was shot through the head by a musket ball and brought to this spot. It was found that the ball had entered at the temporal ridge of frontal bone of right side and made its mark at the opposite temporal ridge, the fracture was comminuted, an incision was made over the wound of exit and three pieces of bone
removed in all about 2 inches southeast of the frontal - a good deal of liquor in. Brain escaped from both orifices - sensible. Pulse 80 - able. Moves about - a good deal bent day. Still sensible. 10 lbs. answer questions. - Venomous. origin from wound - 31 - Feb - 7 - day.

Semi insensible died -

to succeed shoebie act 40 - Rebel.

This man while leading on the insurgents at a full angle on May 15, 154 - man wounded and brought away for the purpose of eliciting information. He is found to have sustained a fracture of the femur. Through or immediately below the humerus, the ball belonged to be an infield having lodged - he has an superficial wound. Cut of the abdomen another wound. Cut has cut the fleshly part
of chin and a slice of the symphysa, which is left dangling, there are also ten carbuncles that have taken out both eyes and separated a slice of frontal bone, leaving about a square inch of brain. In consequence of this injury of the head I did not amputate at the side joint, but took the tongue in an easy position as the case seemed hopeless; indeed, were adherent to the head, the chin wound being also approximated, he is perfectly sensible. Two days after the chin wound seemed to have united - free of frontal bone bone. Brain Gale beneath sensible. 22° In which this same state is perfectly sensible but refuses his food takes a little milk daily. 23° horse bone directed out from scalp ground - is evidently better, this sword Out that divided nasal bone
and water flowed into the mound near the chasm.
About this time or probably before as
he seemed like being in line the
stump was put in a leafy cloth - some
days after he commenced to take his
food... and on the 26 March I have
noticed that the stump has united to
the other wounds healed all leaving
the brain however suffered - an anti
plastic operation was thought of but
the contemplated scheme of the
left obliged me to hand him over
to the Civil Authorities.

This man had formerly been a Schahri
in our service, but, as I was informed
by an Leather woman, she was concealed
in countries at the time. He was the civil
leader of the Hinderi - his caste.
This case is one of the most singular I ever met with—perhaps the most singular. Considering the nature
was that of a Brahmin, and he was said to have fled a day from the
Port. At the attack he came on bravely leading his men, attacked as
Hunovarn or Mahabadeed. The morning
end of the God of war he had on a
sail of twisted cane with a flag
attached to it, and a curious cape
on his head, and his followers
had the mark of Hunovarn bet-
ween their eyes in red paint. He
was very penitent, and I carried him on to
the camp of Kuturne, and kept him in our
standy
Camp. At last I gave him over to the Civil
Authorities, hoping they might deal leniently with
him as he had been treated by me with
of the injuries, the most common
fact being that the injury initial
ej. The ball enforced to be an
Inflicted, had fractured the bone to
bedge. Only one case had previously
occurred in my practice at all. Like it
this was a machinery accident in
which the individual recovered after a
fracture of middle third of thigh. 
fracture of shin of posterior side. Fracture of both bones of arm. a fracture of chest with hearing following. They had ceased
the case occurred in little many years ago.

Consign of Earl. Rutland. They subm.
duced him to death. Just recommend
him to mercy & I after wards knew
that he was allowed to follow his
own home. Indeed as a blind man he
could do as he found became
With regard to the Case, collectively there is little to say. Most of them have terminated fatally, in one of them, it is likely they may have formed and the afflication of the trephine have been of benefit, but the evident symptoms of Concern, the rank of urgent symptom of Compulsion, and the sudden death are not prevented. That treatment being adopted while looking back when the Case as a whole would almost seem to have been warranted but while before death did not seem to be so.

[Handwritten text not legible]
a large portion of the comminuted bone removed - the case did well and was transferred some weeks after.

No. 2. This was a Gunn Shot wound of lower jaw at symphysis. There existed a deflexion in the bone. The ball not having perforated it. The case did well. This case occurred in one of our Hindustani clerk labourers at Lucknow.

No. 3. This case also occurred in Lucknow. Huzoor Singh, aged 30 Sepahis. The man while asleep suddenly was shot in the right lower jaw. He was immediately after waked lying in a pool of blood. Small arterial blood orifice - smaller wound over angle of jaw. Larger wound over symphysis both wounds lined into one and fractured
Pieces removed from about an inch from articulation to synovia, till of the facial and or smaller branches tied; upper portions of facial could not be found and a compression was applied. In the evening there was a slight tinge of blood in the cheek.

4th Day: Third day after injury. Entire removal. Whole extent of wound apparently healed with exception of small amount of crust and entrance of bull - sewend.

8th Day: Very healing of lower left side 1/8 in. Antimony every 3 hours. 10th Day: No wound during meal, healing still. slight dulness of left lower drum. Perspiration variable, frequent bowel continues, no coughing.

12th: Pain of chest can be felt as before. Rheumatic symptoms increased and
Obfuscin followed. The wound began to faze, and symptoms of infection came on - a fever, drowsiness and weakness. A bromicide was given, but he died on the evening of the 13th day after the injury.

Note: Than Lewis aged 30 prisoners
This man sustained a gun shot wound at 100 yards lasting 100 yards - on 16th March. The ball traversed the abdomen, fractured both lower jaws near the temples. He was sent to the triple hospital and again admitted into the triple hospital at 16 days after the injury. He was very feeble and only swallowed liquid food. He gradually sank with bronchial symptoms and extreme prostration with coldness from pyorrhea and died 21 days after the injury.
With regard to Case No. 2, my view is that I cannot permit me to do more than briefly refer to the two interesting cases. I would also refer to the extreme and violent haemorrhage which attended division of the facial artery in this two cases, in which it was wounded and which is quite recent, in contrast with division of arteries in other parts of the body by missiles. Here I believe is owing to the artery being cut and torn, as in other injuries it may be owing to its being divided in the bone, but it in probably more often owing to the bone being fractured and the sharp edge cutting the artery as well as a knife certainly. The haemorrhage in each alarming & in case No. 3. seemed to
have nearly proved fatal, although I saw him immediately after the injury on the 2nd when he felt.

1. Woman of the Chest
If severe cause eight were occurring and he proved fatal in one of the recovered cases, it is doubtful if the lung was injured in one of these fatal cases it was not.

No. 1. An old man, five inches of the left was wounded at the battle of Cannopen in the area of I think the right lung alone sealed in he was afterwards doing well but was seized with cholera and died.

No. 2. Baldan. Oct 21. Pyr. This man my own servant a stout healthy Hindustane was wounded in the chest on the 25th Oct. 18.
at the forced entry into Hindustan...
The ball had entered the apex of the left lung and made its exit on the left clavicle, below center. He was severely milled. Depressor Recur-. simus of which he died 12 days after the injury, on that day some haemorrhage occurred to the base of the hole of exit.

No.3. A bullet was shot in the back at the joint lacertus I lientorum. The ball lodged there. He died several days later due to no other ill.

No.4. Sept. 10. aged about 35 was wounded at the joint lacertus I lenticorum. The ball entered. The fleshly part I right shoulder perforated chest, in auxiliary space & made its exit at the left lower clavicle. He never rallied but in a few hours died.

No.5. Ting was an injury to the lungs in
a scarf at his breast. The man died of blood from a wound. The ball entered the side of his body, entered a wound of the breast. The ball entered the chest at the left corner of the heart. He suffered a great deal from pain afterwards, obliterating him to sit upright there was no evidence however of the ball being worse in the chest lying upon the diaphragm. This man ultimately recovered.

No. 97. Ball Sings. Kindtman. Native. Officer. This man was admitted into hospital at Almshouse in consequence of having accidentally wounded himself with his own musket. It was found that the ball had entered in the outside of the left nipple about
an inch and came out in a straight line over second rib. The cuticle of the arm and cheek is burned around the puncture does not enter cheek but runs toward auricle. There is however slight clotting felt in the cellular tissue near ear or pound of ear. No chest injury.

Two days after he shot this little blood and venom but beyond this no further signs occurred he was discharged some time after well.

A. H. 21st Illinois S. Soldier Cook. This man was admitted into the Camp Grant Hospital at Alum Banks in consequence of having been shot by an Enfield rifle in the back. He had been previously seen by L. Shaeve 30-1-9 and then had chest blood, he is a large stout man but as
some time has elapsed since this
injury as labour under much.
On examination it is found that the
lungs are entered right laterally upon
just to right of scapula and on a level
with the middle. It has apparently
gone through some lung a make its
exit at posterior angle of amnion of
opposite side then going through
fleshy part I saw it coming out
the front. The rib seems perforated
at round of entrance but with Com-
minhlic at round F with Cylinder
Coominhal. Respiration seems un-
endible slight swelling over left
dorsum a little oozing from round
of exit. He was first when ammi-
t small doses of Ome. Sign & saline
with of both arms. Came on to the sick
two days after the injury.
The body was exhumed 4 hours after death on 6th July 1846.

Major Hunt. Well marked, body stunk.

Head not examined.


Right. Old adhesions universal. Mark firm in firm. Upper and middle lobe imperfected. Crepitant; and firmified in fact. The upper part of lower lobe is condensite from red infiltration.

Knees large fully. Ulcer large. Skin kidney normal. The tissue of the wound from the wound of entrance on right side. Was tougher below the
the middle of the right scapula - fracturing it, the left scapula is also fractured at its middle and the fourth rib of left side is also fractured. Occurs to articulation with - rib - in no part of the spine does the wound communicate with - rib - pleura.

With reference to these cases, I would only draw attention to two of them. In the case of the Eastern Office host.

The effect of a wound through the lungs is exemplified in the rapid death: doubts such injuries are invariably fatal, for the collapse of the lung which must invariably follow on the admission of air into both pleuræ will quickly produce fatal

scene No. 6 is interesting or shining
in that a ball lodging in the lung is not necessarily fatal. In Case No. 7, the lung was so firm as no physiologic signs were to be trusted to confirm injury, yet there was slight external emphysema and the man had died of blood loss.

In Case No. 8, the most interesting of the cases, and which others as well as myself looked for a wound of the lung. Blood was spat up immediately after the injury and all the symptoms pointed to wound of the lung. Emphysema and hemoptysis are therefore not invariable tests of wound of the lung—an opinion which a recent order upon penetrating wounds of the chest has confirmed.
99

8. Wounds of the Abdomen.

In 4 cases the abdominal cavity was punctured or otherwise injured. In all the result was fatal - in one case cholera curvica the man off the ball had lodged, in another death followed in a few hours.

Case No. 3. Francis, aged 32. Hindustani officer servant. This man was admitted into the Camp Hospital at Allahabad, in consequence of an injury from a wood-shovel. It appears that while cutting clearing knives in the usual manner pressure a wound was made and struck a cask in front of him - if there was.

\(1\)

That is, in the frontier it would assume when seated on a low stool, and with anterior no stool is used generally.
Loud and struck him.

On examination it is found that the bottom of left side is tone al. to the pubis there is an oblique mark over right side of abdomen where that has stained just where there exists a soft sense of swelling. The testicle has enlarged - the scrotum has contracted and some of the scalds of the thigh are expanded. The bladder is seen at the bottom of the wound. There is a little venous hemorrhage confirms afflication. Such day there was swelling with great depression the matter was unaired to urine hardened. Two days after the injury he died of exhaustion resemble deep complaining of great pain in lower part of abdomen.

An examination
after death (a slight one only could be made) the pint of the left side was found split in side-midge shaped fragment - the rubber part of anus of same side fractured the swelling of lower part of abdomen was owing to subcutaneous infiltration. The bladder was sound. A small patch of erythema was observed on one of the small intestines, but no trace of Peritonitis.

No 44 - Hexena Act 31. Ballintemple. D. Leborne. This man is admitted in consequence of being struck by a round shot in the Allembagh. On examination it is found that about two inches below right axilla a change of about three inches square was made. The cuticle rubbed off there are no other signs of injury
but he is in a state of Collapse
he died the next day.

Post Mortem - Chick organs healthy, liver firm & healthy. Stomach distended. Tunneled Coles
ulcerated externally with blood
mesocolon (transverse) in a little state - vericose veins filled with
a bloody fluid.

The two last lines are
extremely interesting. In Case No.3. The
injury was extremely severe the
fracture of the sacrum - flush in
connection with the cone of the
spinal cord in very curiously and
somewhat inexplicable. It may
have been however fractured by an
agent similar to what occurs in
fractures by lateral crush in band injuries.

In Case No. 4. the result of a wound
that grazing over a surface at some distance from the injury which caused death, and the extremely slight nature of the external wound are both circumstances of great importance. It is a very curious case, although some mediocrity of legal cases not dissimilar have been recorded.

9. Wounds of Joint

In cases of the form of injury wound at a joint, it can be said that one case was an injury (very slight) of the shoulder joint. The knee cases were 5 out of 11 which were fatal. No 1. This case was admitted into hospital at all although, but not seen by me, the man was said to have sustained a wound of the knee joint - he died. An operation was ever formed.

No 2. King an English at 30 leperki.

This man was wounded in the leg by
a musket ball - in Louth, on the 23rd. Injury. The ball had entered the knee joint and lodged, no bone being apparently injured. The ball could not be found. Operation was performed but refused. The limb became much swollen and the tendon became exposed, from which he died 7 days after the injury.


This man while in the act of throwing a 6lb. shell from his hand was injured by it - prematurely exploding in Louth, on the 11th. While enunciating the right hand term was found completely shattered. The bone of the same side was also ligured, on the outer side was an opening of about one inch square.
extended fairly into joint and a bone piece of similar surface 2 cm about half an inch longer and 1 cm wider than 2 cm enta...The forearm was immediately amputated at its middle, the radius of ulna were free but the interosseous could not be felt, and the tibia was tied.

Examination of the joint was performed, but inflamed, a contusion and hematoma was added.

12. The skin and muscle were not swollen around the wound occupied by a fine clot. This is not removed, stumps doing well.

13. Light effusion into knee, which on being squeezed through the now debridged clot, is seen to be limpid, clear and convalescent, most part of the area still healing by the first intention.
16th Feb 10 - skin cool. 17th March 1845 fever
erich at night.
18th Discharge when inserted from twice and
yellow.
22nd A great deal of discharge from
several openings in the stump. febrile
symptoms continue.
From this time the bad symptoms
continued, the arm distended, opened and
stained. The discharge from this time become
violent and the clots emuncted on 1st Nov. 17
25 days after this injury. The
Treatment consisted of administering
of Quinine and opium.
1844 - Malvern Leigh 20th Rebel
This man was wounded on the 16th
jump, in an attempt made upon us by
the enemy at Clonmphfy. One wound
is above the knee (left) and the
limb is amputated by a piece of skin. In the other knee there exists a fracture plate. The left thigh was amputated at a
level at middle third of the knee of other leg in circle immediately by H. incision. No hemostasis followed. Although a chloroform
pump was tried he scarcely received it. He died next evening from symptoms of shock.

905 - Gorman Singh. 230. Corporal
This man was removed on the 14th March at the final taking of Lucknow and removed to the Field Hospital in consequence of a perforating wound of the knee joint he was readmitted into the 2nd Regt. Room on the 1st April evacuated and labouring under a typhoid form of fever. The knee was much swollen
and discharging profusely - he died exhausted the next day.

Oct. 6. Th. Oct. 13. was wounded by a musket ball at the taking
of Lucknow - the smaller wound was near the shoulder & above
the larger into which the finger was thrust. Could have been
admitted was placed at the inner
margin of deltoid - a clear fluid
issued from the upper wound - the
joint seemed to have been opened
but the head of the bone seemed
uninjured - no further examination
was made & the officer made a
quick recovery.

The last time it is to over its favorable
issue in as small degree. The want
of all exploratory movements into the
joint after the first examination
In the case of wound of the knee joint — all formal & speedy amputations would have been the proper treatment. and if there is a class of Cases in military warfare which demand that the knife should follow the wound it is the class in which the knee joint is injured by a muskut ball, occasioned not once do not affect the joint at all — for operative measure should always be had recourse to when there is any chance of preserving without them — and that Chance is too remote to be considered in comparison with the fearful chance of a fatal wound in this form of injury. The operation of resection of this joint while still doubtfull in most Cases.
of disease, seems to me to be applicable to some of the cases of early lost injury of the knee joint, there is little injury to the bones and the camber becomes standing one in marching among the operations is decidedly indistinguishable. It is singular why this knee joint should be so familiar in the mouth-observed for other joints, although with a smaller articulating surface, some symptoms much less in degree than those size would warrant. It is possible with the plan recommended by other means & Markred of laying the articulation freely often might lead to a cure in slight cases."

[Signature]

Markred Surgey Cincinnati June 16 1816.
10 Fractures of Extremities

I will divide my observations into cases in which operations were or were not performed. The cases of operation will be detailed under the head of Amputation.

The total number of cases was 24. Of those treated without operation, 11 cases occurred after proved fracture, while fracture of the thigh bone decided one of fracture of the humerus. In three cases, the cases treated thus — fracture of the thigh — 3 from fracture of leg one recovered, of substantial bone one case recovered. Arm 2 recovered, one result not accurately known.
he doing well when was forced up forward. In one result favourably - attains under treatment think made futile from Lachman - fracture of the thigh - No. 1. Mutte Singh aged 20. Sepahi. This man was wounded by a musket ball in the thigh at the forced entry into Lucknow on the 25th Sept. So it was pretty clearly fractured through the middle; an attempt was made to save the limb - it was therefore placed in Desault's splint. Spleaking Sympson came on and reached above the limb. He died on the 6th day after the injury.

No. 2. Musta Singh aged 50. Sepahi. This man was also wounded in
The chest on the 25th of Feb. 17.
The wound perforated middle third of chest & the femur was fractured without comminution apparently at its middle third.
As the man was old and fickle the wound small and the fracture not comminuted an attempt was made to save the limb - it was felt in De viewing of Dr."erch in subsequent came on with occasional recovery but on an attempt at recovery to die & be deceased from the 27th days after the injury.
No 3. - This case (John) Shortin has been detailed under the head of wounds of the head. He recovered -
FRACTURE OF BEG. TWO COMMINED.
No. 1 - Lupus Leish. at 30 Schafi.

This man sustained a compound Communion. Fracture round of Tibia and Fibula at the forrest entry into

Lungas on the 25th Sep. 1857. The ball

had perforated leg at middle seven.

al pieces of bone were extracted

and the limb was set and Plints.

Forty nine days after the bones

were found united and he ultim-

ately recovered well. The Case fur-

one a great deal of trouble but as

with the injury of soft parts as

hours were small I felt surprised

as to the result which occurred

while the were half started

in Lusum.

No. 2 - This case was noticed already

under the trace of Petain.

Brahmin Leish. Act 35 Schahi.
This man was wounded in Falmouth on the 6th day by a musket ball in examination he is found to have sustained a compound fracture of theibia with large flask broken several pieces of bone were extracted and a splint applied. The wound began to slough and 5 days after the injury will he took sedans from which he died two days after the accident.

Fractures of humerus.

The cause of the injury was four, in number 150 guard, fatal from Gettysburg it occurred in an American officer and has been already detailed under that head No 2. This case was doing well when transferred into the frantum had not been united

This man was wounded on the 14th March at the final Treaty of Lucknow. He had sustained a Co. Fracture of Clavicles at either third from a musket ball, perforating Tory. Seven days after the injury the bone had united. Some trouble had been incurred to an abcess had formed at lower edge of Pectoralis major.

No. 4. Lt. Hugh Auch 32. Colon. This man was also wounded on the 14th March and was found to have sustained a small cut wound of upper third of arm fracturing humerus transversely. 91 days after the injury the bone was united by one line firmly united.
FRACTURE OF THE FOREARM.

Two Cases of this injury occurred.

No. 1 - John J. Smith left to right.

This man sustained a gun shot injury of forearm on 25th July at 9 a.m. Forced cutting into Lockport, the ball perforated arm and fractured the ulna near elbow.

An abscess formed, but the bone ultimately united. Recovery followed.

No. 2 - In this case the fracture was near the wrist - it was transferred and when I left Dr. [illegible] was in New York. Unable to laterly [illegible] well after a good deal of inflammation.

I saw J. Smith briefly, [illegible].
the result of these cases we have seen that both attempts to save the thigh in the fracture cases were unsuccessful although the injury was slight to the bone and soft parts. the circumstances in which they were placed in Quinns don't seem made it as with the fatal doubt upon the whole I am inclined to think that amputation as a general rule in such cases is the proper process even in this ulcer on the skin of the thigh. when amputation seemed invariably fatal or nearly so in the Crimean, under similar circumstances we ought not amputate provided the case were a standing one. An injury of the leg conservative surgery has more value and the case in which I tried it did very well in fractures of
the leg with little communication of
the lower small fire muscles to the
muscles involved. An attempt should
be made to save the limb.

In fractures of the upper arm, the
results are as favorable and
under similar circumstances an
treatment should be made. The case
prevents useful in injuries of the
shoulder, but the treatment is
exceedingly tedious and laborious
in a hot climate. Two cases of
upper extremity-injury died if left
but there I think must be looked
upon as exceptional.

I now proceed to
consider the case of fracture of the
extremities in which operative means
have had recourse to-

I find that 17 cases of amputation
have been performed.

11 Amputations.

Of the 11 amputations, 15 were amputations in one a double amputation was performed - in that 16 individuals were operated upon of these 12 were major operations & 3 minor of the minor operations 3 in number all survive - of the major operations in Limb none survive 3 in number of whom 2 were 3 in number of whom 2

in Chamber of 5 were operated upon out of 5 Limb Residency 5 in Chamber - 3 survive Amputation of Leg - This operation was performed 5 times only one case survived.

1861 — intub Siyaf at 30 Charai This man was wounded on the 26th Sept. 1861 by a 32. Per Shell while smashed his leg immediately
above knee. Little hemorrhage occurred. Strippling man removed with a Antonio sword - bandage applied and a compress attached over gomera. Amputation of the thigh performed in the evening and of shank next day.

No. 2. Fall Creek. Oct. 31st.
This man was wounded at the same time 1 in the same battle by the round shot which injured the other. The limb was also removed by a
Nature sword & amputation performed in the evening. He died of shock next day.

Both the three cases occurred when we were constantly VK & under fire.
The wounded managed to escape on Canvas Co. This unit may be remaining above amputation.
were performed in the presence of
during my absence.
No.3- Rubean Singh Act 80. Delhi
The case the throat was ambushed
at middle Throat. The man
died next evening. The case is fully
noticed at page 106. He had also
his other knee removed.
No.4 Ranga. Act 50. Delhi (Man) 
Kindingtime. This man was ad-
mitted into the Court Native Hospital
at Alambaugh on the 27 Dec. 17 in
consequence of an injury by round
shot. On examination it is
formed that the left knee joint
is completely smashed in front, with
a large flesh wound behind it.
Below the condyle of the femur
are uninjured. The Intella &
the other vessels are unacted
Clear from pain & compulsion I
the first performed. I made an
semicircular incision down on
the femur & took the patellae
flap from the leg about two inches
of the femur however required to
the bone off. The man died still
for several days, during which
I kept him on of gross & 1 oz of
Epsom salts a day as he was a feeble
old man. 10 days after the opera-
tion Gangrene slowly coming of
lower flap came on and he
died exhausted 18 days after
injury.

No. 7 - Archie Alb. 25, Jemadar Nutwala
This man was struck by a cannon
shot on the right thigh on the
morning of 21st July 1864. On
examination it is found that
the knee and the lower third
of femur are completely crushed.
Therefore an amputation of the
thigh at the middle
third. This man died well.
I had to transfuse him last night.
Saw him on 27 March when he
was looking well and the stump
was said to be whole.
Amputation of the leg
Two amputations have been performed
by one bolt on the Recumbent
of Lecteur's bolt from St Hél.
No. 1: This case was fully detailed
at page 314. The operation was secondary.
The man had symptoms of Stenon.
Then the operation was performed
he died of exhaustion 3 days after
the operation.
412. A Daily Leaver Act 25
was wounded on the 26th Oct. 1817 at the Residency place on Cutchmore plant.
Both bones of the right leg were found to be extensively fractured, and
commence at middle of leg with large flesh wound-
leg amputated below knee with
blow for about one hour after-
Cutting. The stump elongated secondary haemorrhage came on,
the posterior thigh was raised
the stump began to swell to
again, but he died of exhaustion of
several after the injury
Amputation of the ankle joint.
This operation was performed once
at the Benares Residency. It
was fatal from other causes
than the injury or the operation.
informed on the side of the back by a musket ball in the 20th Dec. 1864. Which perforated the bone with part in the opposite side. An examination shows the bone is found fractured at the base of a dense union. Placed in extraction. The wound heals under the care of Dr. Brown. Operation was refused. Three days after the injury, the consent of the man was obtained. The injury in the Constitution of affected was removing him out. He was one of the most likely men of the regt. before. So day. After the amputation at the ankle joint (arsenal) - this incisions were made through sound, but a good flap was formed. The tissues are infiltrated with serum.
the base of or Calcic a large room
lately looked empty. shore hall laid
paved. a piece of trow adhered to
lower flag it was done just out
When tough separate from this
old room. Secondary cremation
Came on 1 day after operation - one
of the placenta was 1. the
lower flag had never unite niter-
whip. 9 days after flag reflects
formulating. This area was traced
pierced. and was one of this sick who
the hurried down to All she had
when the whole took蔡松 in
Nov. 1886 he decline on the wall of
have little doubt if calculation
I had he been stationary I
have little doubt he would have
lived.
Impatation of Alfred W. Loomis...
No. 1. Mason Bridge at 40. Flahai.

This man was blown up in a furnace by the explosion on the 17th. He 2d deep out of" the mails. On examination it was
found that the 2d, 3d, and 4th ribs of
the right side were fractured near
the sternum and again near the
ribcage. In the interior there was a
deficiency into which the clenched fist
might be thrust. The depressed
portion not being felt and the skin
rising and falling with inspiration
and expiration.

The left hand disarticulated, holding
line. I am fractured above with
branch much from radical being
intact.

The right arm is fractured above
elbow a large skin wound also
extending to near shoulder joint.
The above is also intended in its whole extent, left arm amputated immediately after injury below shoulder without chloroform. Left forearm amputated at upper third. I found in such operations very little evidence of pain. Died two days after.

1832. Engraff, age 40. Carlie.

This man was admitted into the Baptist Hospital at Almshouse in consequence of an injury to his arm from wound shot on 26 Jan 1832.

The man was thus as follows:

He has sustained a compound fracture of the right arm, with a flesh wound on inner side of arm extending into a bulla grave a small defect of articular humerus I am directed the arm immediately.
Larger flake taken from outside.
This case died well and was ultimately successful by Sol.
No. 2. Round baffle cut 35 degrees.
This man was wounded at the storming of the Kaisersberg on the 14th, and at the final taking of Lucknow.
He was found to have two transverse fractures of the humerus with fracture of the radius and ulna. The bone was amputated at the elbow.

No. 3. Rectal knife cut 60 degrees.
This man was wounded on the 15th at the final taking of Lucknow.
In the hand right, the injury was a severe wound of the arm and the amputation was performed there. He was readmitted two...
Reghth Kipple on 1st April but died on 8th April suffering under a Typhus from 7 Fever.

204 - Pat. Smais at 25. hepatic.

In this case the foreman was confirmat.

- The man had also a wound of the knee joint. The case proved fatal and is fully detailed at page 184.

The amputations of Smais, 3 cases.

Number were all successful - one was attended in lucifer with luminous bacon or sharp.

I may now in conclusion advert briefly to the unsatisfactory nature of these cases as a whole and particularly to the unsatisfactory nature of operations in Verhagwors - already noted, and I must say that while the recovery of nature
in ordinary quiet Civil life is very remarkable after severe operations & injuries - in military life under the circumstances in which we were placed - these results were even more unsatisfactory. This will impress me, a fact I will pursue further on... and I am glad to see that the same remark has been already made by others in the various campaigns. In opinion prevails that a native is a better subject for surgery than the European and this may be the case during the hot weather in our old country, but our experience during the late campaigns proved this contrary at least as far as regards the efficiency of Northern Climate... during the cold.
and every reason of the year. The success of surgical operation was consequently greatest amongst the Surgeons, less so amongst the Officers of our own army and still less so amongst the sick, broken and comfortless wounded of the enemy. And this leads me to say that in military surgery more than in civil we must be cautious in acting upon proven maxims derived from many years under different circumstances and that often we will find that the safest rule will be to regard the nature of the injury, the individual in whom it has occurred, the circumstances in

133.

Dear Sir,

I have been informed by my friend, Mr. Jones, that he wishes to dispose of some property at a very reasonable price. I thought it might be of interest to you, as a person with a good understanding of the market.

Please let me know if you are interested in viewing the property. I am sure it will be a valuable addition to your portfolio.

Yours sincerely,

[Signature]

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<thead>
<tr>
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<th>Description</th>
<th>Amount</th>
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<td>Property A</td>
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<tr>
<td>3/11/64</td>
<td>Property B</td>
<td>$5,000</td>
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<tr>
<td>6/11/64</td>
<td>Property C</td>
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<td>9/11/64</td>
<td>Property D</td>
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</tr>
<tr>
<td>12/11/64</td>
<td>Property E</td>
<td>$1,000</td>
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</tbody>
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Please find attached the detailed specifications of the properties mentioned above.
on the European Bank of Navioris force for about 3 to 6 weeks without 90-91 I am indebted to your friend Dr. Stone. Then the Surgeon of the Corps. for the week I am indebted to the ensign Surgeon. Mr. Deuszer. 17th 78: Highlanders.

<table>
<thead>
<tr>
<th>Injury</th>
<th>On Leg</th>
<th>3</th>
<th>3 100</th>
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<tbody>
<tr>
<td></td>
<td>Upper Arm</td>
<td>6</td>
<td>3 50</td>
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<tr>
<td></td>
<td>Forearm</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Foot</td>
<td>1</td>
<td>1</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Injury</th>
<th>On Leg</th>
<th>1</th>
<th>1 105</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Shoulder Joint</td>
<td>2</td>
<td>2 100</td>
</tr>
<tr>
<td></td>
<td>Upper Arm</td>
<td>3</td>
<td>2 35</td>
</tr>
<tr>
<td></td>
<td>Finger</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

One head wound in both legs by Ensign Club. Scurvy
One with wound of lower extremities.
than that I have recorded among natives - my tone does not permit me to criticise these results more closely. I regret that I have not at present the results of operations in the 73rd Highlanders.

I was in spite of these melancholy results distinctly of the opinion that in injuries of a severe nature amputation unnecessary immediately after they occur in army warfare. In this respect we must consider the course of treatment. In such circumstances be the means of losing life insteadof saving it but that this is not proportionately so. If the above extremity with operation may be saved, is the injured person under ordinary circumstances and if it does
not implicate the main acting or is attended with a large flux round.

The operation performed in Custum during the whole siege when that piece were more satisfactory. Any them in my melancholy wish my friend, Sir Edmund, then detailed them. "It will be remarked that two of these amputations were failures—legs & thighs. Of the fort, both were successful. Of the large there were 10 amputations, 4 of which have recovered. Of the leg—of which one recovered; of the shoulder joint three of which one recovered. Of the arm, four; of which three recovered. Of the forearm one which recovered. All these amputations were primary, except four—three of the arm and
one of the thighs, two of the hands recovered.

There were also three cases of amputation of fingers, two of which did well; while one was followed by mortification and death.

The causes of death among amputation, as in other cases, may be divided into four heads, viz., shock, nerve, care, infection, and exhaustion. Mortification of one, two, and three limbs. The shock of the operation, in many cases, was no doubt increased in consequence of their being little or no Chloroform, while the degerated atmosphere of the environment was that of many necessary comforts, and the generally depressing circumstances.
of the Garrison, made the patients an easy prey to the other causes of mortality.

It is a curious fact, that the operations performed on the wounded of the force, which, under General Outram and Havelock, so gloriously relieved Lucknow on the 25th, were even more unsuccessful than those performed among the old Garrison. — It would almost appear that the original inmates of the Garrison had become so lakh acclimatized at Delhi, where the troops were not so much confined and their supplies...
were generally abundant. The mortality was much less. Of 53 operations in the month of Oct. 12 Bengal Lancers 10 only proved fatal 13. Of the cases, however, were almost amputation of the hand or foot.

12 Chloroform. This agent was used whenever it could be had by one and every other surgeon by one five.

Chloroform is plentiful the handkerchief is probably the best indicator—let it make not a little of the Chloroform. Of from notices of economy have been in this habit of using a simple ointment lubricated by my friends to Listerian—


372 No 10
Civil Surgeon of Baccoo. It is a small
thin instrument.  To preserve it, the 
cole, with a large 1 thing at the bottom 
and adapted for the mouth to move 
by the margin being commanded into 
the mouth's lether - if held in the hand.

Some years ago, I was struck 
by the small quantity of Chloroform 
required in operating upon native and 
for some time believed that the suscep-
tibility was a peculiarity of the Native 
probably from his being less addicted 
than an europoean. I have formed 
however an other since has extended 
that Europoeans are equally susceptibile
In a Native 11 or 12 year old, I have just formed 
attaching with. Certainlty not above 3 sq. of 
plasmum. and in a case of lumbotomy 
of the thigh I have been able to performanunesthesia 
and during the operation with- only 1/1 two
of Chloroform - This occurred in H.M. Q. D. i. i. the Home Division of the R.E. operated. The instruments were undoubtedly saved the Chloroform but there exists in India a facility in seeing unauthorized white slaves as the home inquired. Therefore danger from consequences might ensue to which is of am construction to think seeing it. The addressing influence of climate, and the climate itself while all fit into except in the cold season, and while is probably owing to the vapor but elimination of carbon.

And now I turn

these results. It is close resemble that in many cases they are too precise in others too sparing. It would only remark that from the hurried manner in which
they have been strong together, condensation is more difficult than the reverse. I only hope that they may be of some service as a contribution to the official history of the memorable and arduous Indian Campaign of 1857 and 1858.

John Brown
Eldis. June 14 1859.