Thesis

on

Pneumonia

by

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The busy practitioner whose professional engagements occupy the whole of his time from morning till night has little opportunity of making original research in the phenomena of disease or of arriving to any useful or reliable extent in the action of drugs. Any deviation from the established order of things that he may meet with in the routine of his practice, is deposited in the storehouse of his memory to be forgotten until recalled by occurring in a future case, and when recognized, guiding the treatment and forming the experience of the older practitioners of which we hear so much from the public. Much useful knowledge is thus lost unfortunately to the profession in general. The young
practitioners to keep in the front of his profession must continue to read and study its literature, the productions of those scientific observers who have more favorable opportunities than himself for advancing the knowledge of disease, and carefully compare his experience with that of which he reads. In this paper I propose to give the result of my reading and experience of Pneumonia.

That this is a disease of very great importance is borne out by the facts of its frequency, general distribution and gravity. According to Zimmerman's inquiries into its statistics about eight per cent of all the deaths in the Continental cities of Europe are caused by it. In the population of the globe about three per cent of all diseases are due to the same cause and two per cent of all
Cases of disease in Hospitals. As to its distribution, it is found to exist over the whole habitable globe, occasionally taking the form of an epidemic, being met with in the hottest as well as in the coldest latitudes. It is not influenced to any great extent by sex, males and females being attacked in almost equal proportions, ship males being attacked for five females, nor does age give any exemption, as the infant, the robust, the middle aged, and the old all suffer from it.

As to its nature and situation, much has been written and various definitions have been proposed. The most simple, inflammation of the lung substance. Some authors confine it to inflammation of the subacute tissues of the lung, while others hold that all the tissues of the lung are affected. It seems very difficult to
understand, how, in one organ the

inflammation and the others remain

healthy. That in particular Bronchitis

the lining membrane of the air cells

should be covered with blood and

the tisses immediately in contact

with it unaffected, or that inflammation

of the pleuronic pleura could exist

without the same result. how can

we believe that inflammation of

the lung substance can exist

without comprising the tissues

enclosing it. we are therefore of

opinion that inflammation of the

spongy tisses of the lung does

not exist but is invariably accompanied

by Bronchitis, and often by pleurisy.

TheCough and abnormal expectoration

denoting that the lining membrane

is affected. we hold that Pneumonia
Broncho-pneumonia and lobar pneumonia are synonymous.

According to the extent of lung substance implicated, it has been divided into:

- Tubular, when confined to a lobule of a lobe.
- Lobar, when to a lobe of the whole lung, and
- Double, when both lungs are affected.

**Pathology:** Most writers adopting the division of the course of the disease proposed by Cundall and Laennec describe three stages: 1st, simple engorgement; 2nd, red hepatization; and 3rd, grey hepatization. Stokes describes a condition of the lung which he has frequently seen and which he considers a stage prior to the first stage of Laennec, in which it presents an appearance drier than usual and of a vermillion color from intense arterio-venous injection. It is natural to suppose that this should be a
period between the application of the exciting cause and the full development of its action. This period being, as
lengthy, is proportionate to the force of the cause. After this pre-inflammatory stage, we have the stage of engorge-
ment. In this, the vessels become distended with blood; the lung assumes a darker red color, still
esuripitates to the touch, though to a less extent than when healthy, and
floats in water. It feels on pressure with the finger, is very fragile
and easily torn, looking very much like the spleen; hence this stage is
called by some, that of suppuration.
The lung when torn in this stage exudes a bloody frothy serum;
this engorged state of the lung
substance is closely imitated by
the hypostatic congestion found
in a large number of dead bodies
but is to be distinguished from it.
by position. The hypostatic congestion being in that portion of the lung most dependent on the position in which the body has lain, while the pneumatic congestion may be in any part of the lung. It may happen that the part affected by the pneumatic congestion is the most dependent part. This stage of the inflammation may be arrested, and terminate by resolution. The older practitioners bled freely in this stage to arrest the flow of blood to the part,imagining that the cause of this flow was cæris et ægis while in reality it is cæris afronti. Or the disease may go on to the second stage, that of red hepatisation so-called because when the lung substance is cut in this stage, it resembles the cut surface of the liver. In this stage there is no
crepitation, the lung becomes heavier and sinks in water. It is of a dark red or mottled grey color and becomes still more friable and its substance is more easily penetrated by the finger. A frothy serous exudate from the end or torn surface only in presence. The torn surface of the lung seems to be composed of minute red granulations which are probably the air cells filled with the exuded matter which shines red through their thin walls. The lung does not collapse when exposed to air and its different tissues are still recognizable. The vessels cannot now be injected and the cells are impermeable to air. So this stage succeeds that of Grey Deposition or Suppuration. This may assume two different forms, the pus being infiltrated through the whole
of the lung substance or circumscribed forming an abscess in the lung. The former is by far the most common form. The latter is exceedingly rare in adults. Chomel in twenty-five years saw only three cases and Lachen in several hundred cases examined by him found only five. Abscesses from other causes are sometimes found, as after severe injuries or surgical operations. These are metastatic and not to be confounded with abscesses the result of pneumonic inflammation. It is supposed, that although abscesses of the latter class are seldom found after death they epiem frequently in cases that recover. In the gangrene in the Red Deputation the lung is void of expectoration. It feels solid, contains no air, and is much heavier than in health.
sinking in water. The substance is very friable and easily torn by the fingers, displaying either a mottled smooth surface or granulations of a grey color in place of the red granulations seen in the Red Hepatisation. Professor Bennett thus describes the cause of the process. "I consider acute pneumonia to be a true inflammation dependent on irritation (generally reflex) acting on the texture of the lung and as a result producing congestion of the capillaries, terminating in exudation. This exudation of the liquid sanguineous intercalates itself into the air vesicles and all the interstices between the ultimate tissues of the organ, and subsequently coagulating produces the consolidation or so-called hepatisation. This at first reddish or sanguineulent becomes afterwards grey or infiltrative,
a change resulting from the exudation and molecular
blastema passing into pus cells.
The inflammation usually commences
in the lower part of the lung. The
whole of the lower lobe may be the
seat and the upper lobe compensating
healthy. Onchial says that in
eighty-eight cases, inflammation
of the lower lobe occurred forty-seven
times, of the upper lobe thirty times
of the whole being eleven times.
Some think the lower and middle
parts almost the exclusive seats
of the disease incipient inflammation.
It may be true that they are most
frequently affected, but it has been
found not so frequently in the upper
lobes (Wood). Some authors write of
vesicular Pneumonia, but Billian
and Pankey more correctly describe
it as Vesicular Bronchitis. Lobular
Pneumonia is most common among
children occupying spaces surrounded by healthy lung. Of the lungs affected, from cases collected by Mr. Gruelle double pneumonia occurred in eight percent, of the left side in thirty percent and of the right side in fifty-two percent.

A very rare result of pneumonia is gangrene of the lung.

Causes. There are two principal forms of pneumonia, the atheric generally found in plethoric people, with hot skin and bounding pulse. This is usually a primary disease, caused by long exposure to cold while the body is in a state of perspiration. The cold entering in the extremal surface drives the blood into the extremal organs and so causes congestion of them. It may also be caused by the introduction of noxious matter into the blood, as the poison of the Rattle-
snake. It has been caused by the slow absorption of Arsenic into a wound. The abscess form is generally a secondary disease accompanying various other diseases as Fevers, Phthisis Pulmonalis, Bronchitis, Staphylococcus, Diseases of the kidneys, and other depressive diseases. The poison of which forms the organ of the power of resisting the exciting Causes. Our consider, pneumonia, a blood disease with excess of fibrin, and as the blood is purified passing through the lungs the morbid matter is thrown off into the air Cells. This is opposed by those who consider the inflammation the primary disease and the excess of fibrin secondary. Dr. Parke thinks that as the Liver is generally affected it may supply the morbid matter to the blood.
Symptoms. Generally the first symptom of pneumonia described by the patient after being exposed to cold or wet, is a fit of shivering varying in length in different cases, or there may have been only a feeling of cold which cannot be overcome, but continues till more prominent symptoms set in. Occasionally this is preceded by lassitude, uneasiness, loss of appetite. The rigor is generally succeeded by increased temperature of the skin, the temperature being highest towards evening and moderately towards morning. The increase of temperature is generally accompanied by perspiration. The pulse is usually full and strong, and sometimes as high as 120 beats in the minute. The tongue is generally coated by a white or yellow mucous, becoming brown if the disease assumes a typhoid character. When the disease is fully
established the patient gets restless, uneasy and has an anxious look with flushed countenance. The breathing is always hurried, the respirations increased to thirty or fifty in the minute. The patient lies panting for breath and complains of great tightness and oppression across the chest. The nostrils are widely dilated, and the walls of the chest are seen heaving in an unusual manner. The dyspnea is generally in proportion to the amount of lung involved, but Dr. Watson says there are many exceptions to this. In some cases, the inflammation of even a small portion of the lung is attended with great constriction or hurry of the respiration. In others who have a much larger portion of the pulmonary tissue intensely inflamed, the dyspnea appears to
be but slight, so that the degree of difficulty of breathing is not a certain measure of the seriousness or rather of the extent and the degree of the inflammation." He also says "Causus pandus inflammation of the upper lobe causes greater dyspnoeas than that of the lower." Dr. Gairdner says: "The dyspnoea of true pneumonia is a mechanism of the respiration without any of the heaving or strong respiration observed in Bronchitis or in cases where the two diseases are combined. Dr. Russell of Birmingham says respiration is the symptom which varies least and is always hurried. His hurried respiration, though apparent to the observer does not seem to be always recognized by the patient who will sometimes say that he breathes quite freely, though his chest is heaving. He generally
most characteristic general sign of pneumonia and sometimes indicates its existence when the
physical signs fail. The sputum is to be recognised from that of bronchitis, as in the latter case
the blood is in streaks and not mixed up with the other matter. If Cytant is present along with pneumonia
the sputum will contain a large quantity of frothy mucus. As
the disease advances the sputum becomes more copious, but it again becomes more scanty as the disease declines. In gangrene of the lung
the expectoration becomes very foetid. Another frequent but not invariable
sign of pneumonia is pain in
the side. This is generally described by the patient as a stitch in the
side which has appeared suddenly. This pain is generally most acute
in the beginning of the disease.
and is increased by coughing, taking a long breath, and persisted.
Dr. Watson says this pain, when
present, appears to exist only when
the pneumonia is accompanied by a
degree of pleurisy, but Stetall gives
a case when severe prurient pain
was present and the substance of
the lung only was found to be
affected. The pain may precede
or accompany the commencement
of the disease. In many cases it
does not exist.
Delirium is sometimes present
and the face, tongue, and lips may
assume a livid color. These are very
unfavorable symptoms, denoting
a want of proper oxygenation of
the blood, and that venous blood
is circulating within the Canine.

The Wind is heavy and high Colored
and the Chloride of Soda and
from it as hepatication begins.
and returns after resuscitation has taken place. During the absence of the chloride from the urine it appears in abnormal proportion in the corpus of the blood and in the syrinx (Real).

Physical signs. In diagnosis of diseases of the chest these are all important, being much more certain than the mere symptoms. They are discovered by percussion and auscultation. Prior to this use of these means the disease frequently ran its course unsuspected. In the first stage of Lasen’s division, that of engorgement, by percussion, we find very little to guide us in our diagnosis of this disease. As it advances to the patulation we have dullness increasing in proportion as the diseased tissue becomes solidified. This dullness may
be prevented by healthy tissue overlying that which is diseased. According to MODE, alteration of the sound does not take place from mere congestion, but is first perceived when exudation has begun and is then somewhat tympanitic, long as the portion of the lung affected still contains air, and this tympanitic character of the percussion sound sometimes continues after it has become quite dull. The change will be perceived in the percussion sound or in the sense of resistance unless the infiltrated tissue is in contact with the thoracic wall and at least one inch thick (wood).

By auscultation we have much more decided proofs of the presence of the disease. Raumer and subsequent writers regard the collapsing rale as the first recognizable sign of pneumonia. Dr. Stokes
gives intense inactivity of respiration as the first phenomenon. He found when the inflammation was spreading upwards the expiratory valve was preceded by frequent respiration for some time, this is probably caused by the narrowing of the minute tubes while the vesicles are yet empty, the air moving more rapidly. Dr. Watson says this might arise from the fact of the lung and the inflamed part having increased moist to the. To describe this so called expiratory valve many similes have been used, as the sound made by salt thrown in the fire, the sound emitted by rubbing a lock of hair between the finger and thumb close to the ear, the crumpling of parchment. Professor Benset illustrates it very happily by inserting the ends of a number of the small glass tubes used for
preserving vacuolar matter in water and flowing through the free air. This expiration is caused by the passing of air through fluid efflux into the amucous vessels. It is just heat mingling with the healthy vesicular mechanism but gradually becomes it. It is loudest when the deceased is at the surface of the lung and is said to be heard only during inspiration. A full inspiration will often develop it when it is not recognizable with ordinary breathing. As the disease advances the vesicles become filled with the exudation to the exclusion of air and the inspiration ceases. In the second stage tracheal inspiration is the only sound heard. This becomes more distinct as it finds a better conductor in the tubes of the lung. From this cause increased power of conducting sound attained by the
lung, the vocal resonance is increased and we have bronchoephony. Of this Dr. Watson says: "The voice of the patient descends into the paranasal bronchi, and is conveyed to the ear of the listener thus: the solid lung and is quite altered by that circumstance. The tone of it is modified. It sounds like the voice of one speaking through a tube." Before the patient is fully relaxed, the expiratory and inspiratory resonation may be heard together but as deep inspiration advances the bronchial resonance gradually prevails. In the aged the vocal resonance is more like the beating of a goat and is called tephosphy. The head sounds are also heard more distinctly when the consolidated lung is in the neighborhood of that organ. In some cases when the whole lung is gorged with effusion
and even the larger tubes filled, nothing is heard but the greatly intensified heart sounds. The third stage or that of dry consolidation cannot be distinguished from the second by any physical signs. There is the same dullness on percussion, the same absence of breath sounds. That the disease has gone on to the formation of pus in the lung may be suspected by the presence of the above symptoms of the second stage, by the increasing restlessness of the patient, and is confirmed when the lung subsides and breaks down, producing consolidation much coarser than in the first stage. This gradually disappears, the lung becomes more resonant and the vocal sounds gradually return. The symptoms of return to health can then of the wound of the disease resolved.

The three stages of the disease may
in present in the same lung at the same time, the physical signs proper to such being recognized at different parts of the chest; the fine expectoration marking the boundary between congestion and suppuration. As has already been stated there is another but rarer termination of pneumonic, namely abscess of the lung, the physical signs of which are the same as those of the suppurative state, i.e., the wall of the abscess ruptures and the contained pus escapes, when the signs of a cavity in the lung supervene. If the cavity is large and empty, there may be hyperresonance on percussion. If the opening be small there will be aphonia breathing, if large it will be cavernous. If it contains pus there will be gurgling, and on succussion, splashing or metallic tinkling.
In disease of the respiratory organs no single sign is pathognomonic of a particular disease, but it is only by the simultaneous occurrence of several signs that we can form a correct diagnosis. If we have hussive respiration, fine, rapid respirations, pain in the chest, fine exsanguine pulse and other symptoms, we may diagnose pneumonia. In double pneumonia, then, the comparison of both lungs renders percussion comparatively difficult, as the opportunity of comparing the sounds of the diseased with that of a healthy lung is lost.

In the return to health from pneumonia various critical phenomena sometimes supervene, as Copious perspiration, return of chlorea to hand, this is a favorable sign, and chills. hemorrhages.

Diagnosis. The diseases with which pneumonia may be confounded are
Phthisis pulmonalis, Bronchitis and pneumonia. When pneumonia has assumed a chronic form and is attended with abscess of the lung, the diagnosis from phthisis pulmonalis may be somewhat difficult, but when we take into consideration the history of the case, this difficulty is removed. We have in pneumonia the previous good health of the patient, the sudden accession of the disease, its continuance before reaching the chronic stage, the expectoration, broncho-phlegm and cough, sufficient to make it not an easy diagnosis. When abscess of the lung is present in pneumonia it is generally situated in the lower lobe, while in phthisis the upper lobe is most frequently the affected part. The form of Bronchitis which most resembles pneumonia is that in which the recurrent inflammation of the Bronchi are affected. In it
there is never dulness or pneumonia
to any great extent. the breath sounds
are generally persistent throughout the
disease and never assume the form
of Bronchial respiration. Instead of
the most perceptible rale, there is the
dry, or, if there is congestion in the tubes, the
most rale of Bronchitis. Vocal
resonance is not increased. The expector
is much more copious and frothy
and less viscid than in pneumonia
and when it contains blood it is
not mixed up with it, but appears
in streaks. The pain is much less
acute, being more of a soreness, and
the patient generally attributes it to
the force of the cough. It is generally
felt in the upper and middle part
of the chest. But as we have already
remarked, we believe that Pneumonia
never exists alone, but is invariably
accompanied by Bronchitis we have
tumed at the signs of both diseases.
intermingled. In pleurisy we have the pain much more abrupt than in pneumonia, the patient generally representing it as like the stabs of a knife, and is generally more concentrated. The sputum is much more transparent and without viscosity, or it is occasionally white and thickly streaked with blood, and instead of the expiratory rale there is the frequent sound caused by the rubbing together of the inflamed pleura. The vocal resonance assumes the form of a gurgling. Bronchial respiration may be heard in pleurisy, but it sounds less extensive than in pneumonia and is confined to the immediate neighborhood of the larger bronchi. When fluid is exuded by the inflamed surfaces of the pleura, there is dullness on percussion, this infarct much earlier than in pneumonia and as it advances, it is much more decided. In pleurisy
also it changes its position, with the position of the patient, the fluid gravitating to the lowest part of the pleural cavity. This sides marked if adhesions have taken place as previous pleuritic attacks, as the fluid may be prevented from evacuating by these. When the pleuritic effusion extends to any great extent there may be atelectasis of the lung on the affected side, and displacement of the contiguous organs.

The dullness on percussion may be caused by consolidation of the lung from other causes, as in the atelectasis or nonexpansion of the lung at birth. The lung may remain in a collapsed state after the absorption of the fluid in pleurisy from being taken down by adhesions, thus may be collapse of pulmonary tissue from a pellet of mucus in some of the tubes, acting as a valve, preventing the admission of
air to that part of the lung and allowing
the escape of the contained air. But again
the history of the case is the true guide
in the diagnosis. Asteur on his diagnosis
Mr. Shot Williams says that "it constantly
occurs that one pneumonied bosser
through all its stages without being
recognised, as students are taught
to lay most faith on the most
variable symptoms. A class of cases
with Necrophagic symptoms has been
mistaken for phthisis and
wrong prospects of death given when
this was really no danger.

Prognosis. The tendency of simple
uncomplicated pneumo, pneumonied is
towards health even without active
treatment. As the disease advances in the
different stages the danger becomes more
inminent. Of the third stage Dr. Wlasl
says there are no facts which prove,
indeed there are no means of proving
that the lung may recover from the
State of prevalent infiltration, the gravity of the danger is also affected by the extent of lung substance involved. Double pneumonia being a much more grave disease than simple and lower lobe tubular, although the last mentioned variety may be fatal from want of proper treatment, its presence not having been recognized. Some hold that situation of the inflammation also affects its prognosis, as they say it is more fatal when situated in the upper than when in the lower lobe though equal in extent.

Secondary pneumonia is a much more fatal disease than primary. This may be accounted for by the bimlur of the primary disease so weakening the patient, as to render him unable to withstand the complication of it. Primary disease may itself be the cause of
death

age influences the result of the disease. It is more fatal in infancy and old age than in middle age. It is said to be very mild between the eighth and twenty-first year. M. Berty found the uncomplicated pneumonia of children synonymous fatal. After fifty the disease becomes more fatal and in extreme old age recovery is rare. Age does not seem to influence the result. In persons of debilitated constitutions as in the case of drunkards it is very fatal. In patients of tuberculous death is generally established and runs a swift and fatal course. Unfavorable symptoms are, the disease assuming a typhoid form; the pulse becoming quick and feeble, the tongue becoming brown, the sputum dark colored and smelling offensively. Delirium, drowsiness, lassitude, great dyspnea, or rather Orthopnea,
lividity of the contusion. Coldness of the extremities.

Treatment. This has of late years been fruitful source of controversy and has engaged the attention of the most eminent men of the profession. Much has been written on the subject and various are the opinions arrived at. The writers may be divided into two great sections, those advocating antiphlogistic, and those advocating stimulant and restorative treatment. Of these the antiphlogistic is the older method and the principle means used are bleeding and emetics. The hemorrhage bled in what they considered hemorrhoids to an alarming extent, till the patient faints and in order that the fainting might be delayed as long as possible the bleeding was done in the recumbent position. Among the more modern advocates of bleeding Dr. Craigie writes
The treatment of pneumonic inflammation is to be conducted on the general principles of controlling inflammatory action and preventing its effects on the structure of the lung. The first most indispensible and the most effectual remedy for accomplishing this object is blood letting from the arms causes to such an amount both in extent and repetition as may exercise a decided effect on the symptoms of the disorder. Upon the necessity, the advantage, and the efficacy of this evacuation all are agreed. The only point to be determined is that the diagnosis be established both as to the nature and the stage of the disorder, and that the evacuation be made early before any or much effusion into the substance of the lung causing grey or red depreciation have taken place. If therefore this practitioner be satisfied by the general
symptoms and the physical signs that he has a case of pneumonia inflammation to treat, the first and most prominent indication is to subdue this, and with this view to detest from twenty or twenty-five ounces of blood to thirty from the arm at once. Again it rarely happens that a single blood-letting, however copious, is sufficient to remove entirely an attack of pneumonia inflammation and a second, third, fourth or fifth blood-letting may be requisite before the symptoms undergo decided alteration. He recommends that the second blood-letting should be about four hours after the first and to the extent of twenty, twenty-five, or thirty ounces if requisite. In this present day Dr. Woodward of America writes, in persons of vigorous constitutions bleeding is the most effectual remedy. In disease bears the loss of blood to the
than open well developed pneumonia also. In a corporeal patient in the earlier stage, with a sharp pulse and before desaturation has decidedly commenced from system to third names may be taken at the first operation. There is some reason to hope that we may arrest the progress of the disease by decided measures. I am entirely certain that I have witnessed this result in my own practice. Should the symptoms be in no degree alleviated, we may bleed again at an interval of from twelve to twenty-four hours and the operation may even be again repeated that the pulse not hand been reduced and the inflammatory symptoms decidedly checked. Some writers argue that this type of pneumonia has changed hand modified the treatment by bloodletting. Mr. Austin quoting Parker, after noticing the ciga
bleeding of the earlier practitioners, says 
"now however it would be an 
unwarrantable error to make success 
bleeding the basis of remedial measures 
in all cases, but this can be no 
doubt that we have it in our power 
materially to modify the course 
and shorten the duration of

Pneumonia by the judicious employment 
of bleeding, leeches,fmtar

emetic, curtate laxatives and spirits

Dr. Walshe found, in London practice 
be obtained, by taking fifteen ounces 
at first bleeding and ten or twelve 
at second or in moderate cases 
right, quite unfavorable immediate 
results as the Bowdland end by 
withdrawal of four pounds five ounces

Dr. Watson declares himself a partisan

of another side, yet he thinks remedies 
and exter emetic the proper

remedies for the early stage of

pneumonia, but he allows
that it is many years since he met with an instance of that disease that required phlebotomy. Such are some of the opinions in favor of bloodletting. Most of its later advocates say that it is only admissible in the early stage and in other cases from Louis and Caimmer were among the earliest to point out that venesection had no control over the progress of pneumonia. Ross of St. Mary's Change, introduced the treatment by large doses of tincture morphia in place of bloodletting. He prescribed four, six, eight or nine grains of the drug in the course of the day. In some cases he gave four grains the first day and six the second. He says he found that the drug given in this way was highly beneficial in removing the symptoms of inflammation, these large doses may come in his cases with very little vomiting or
evacuation. Lamarck dissatisfied with the results of the treatment by blood-letting alone, combined with it the administration of Tartar Emetic, conducting his practice thus (as quoted by Dr. Lithgow) "as soon as the disease is determined if the patient be in a state to bear bleeding. I take from eight to fifteen ounces blood from the arm. I do this as momentarily arresting the inflammation and thus giving the Tartar Emetic time to act, and I rarely require to repeat this bleeding immediately after it. I give the first dose of Tartar Emetic, of a grain or two ounces and a half of orange flower water and I repeat the dose every two hours for six times. I then allow the patient to sleep for eight or seven hours. If however, the disease be severe and the oppression great I continued the dose every two hours, till the symptoms are
magnified, increasing the dose from one to two grains, or more two and a half. This mode seemed to produce more vomiting than Rorer's treatment by Santar sémotic alone. Lachner subsequently abandoned the bleeding giving Santar sémotic combined with opium. Lachner's method has been followed, with modifications, by several French practitioners. Dr. Lachner quoted by Dr. Bacon tells us that after the requisite bleeding, he begins with one third of a grain of Santar sémotic in half a wine-glassful of water, with a few drops of laudanum or any of the poppies. Two doses of this strength he gives at the interval of one hour from each other. The urine of the patient does not vomit on the opium, but continues it if he do, doubling however the Santar sémotic. Dr. Stotes and Graves after a full bleeding gave six grains Santar sémotic in the
that twenty-four hours, adding two to three grains daily according to the urgency of the case. Dr. Walsh says, if compelled he would rather give up resection than expelling and antimony he prescribes antimony in combinations most likely to prevent its disturbing the stomach, giving at first, doses of half a grain with hydrocyanic acid, bismuth, or orange peel every hour for the first three or four hours and increasing the dose every two hours to one grain. After twelve hours it may be raised to two grains every four hours. Bismuth has been recommended in place of antimony when the latter is inadmissible. Dr. Dr. Watson says that "in his opinion it is more worthy of consideration than antimony in the second stage of the disease." It has been given with antimony and with opium in combination.

Digitalis was used formerly as an
Antiphlogistic. Of Dr. Schenck's says that green in large doses in acute inflammation it slows the pulse, lowers the temperature of the body sometimes below normal. The lowering of the temperature is independent of the slowing of the pulse, the latter commences twenty four to forty eight hours and the former thirty six to fifty after the drug is commenced. Here is a cessation of the disease connected with this alteration of the pulse and temperature, going on after the drug is stopped. Dr. Schenck says it takes longer to act in acute cases in strong persons than in chronic cases, or in acute cases as its slow. Lehmy says it was probably the cause of diminution of temperature. The blood pressure caused by it is favorable to inflammation. Varicella. Caut thinks treatment by this superior to all other methods only eight per cent moving fatal. He gives o.97 single every two or three hours till vomiting or
ulmination of the pulse. If the stomach is too irritable, it is given
with effervescing draught or with opium.
Arow always gave opium with it,
comiting seldom happened and nausea
and other depressing effects. In Glighia
found that it was not always favorable
its action was more favorable the more
recent the disease, the more easy the
tolerance the more made the depression
he says it is perhaps prudent in
severe cases to order a few bleedings
before prescribing it. Of Veratrum
Vincet & Wood says "It has been much
used in America. To guide us to
reduce the pulse to the normal stand-
and to maintain it there without comity
It applies to moderate the inflammation
and to a considerable extent to supply
the place of the harshest in those cases
in which from the state of the system
this remedy may be considered of
doubtful applicability.
Acetate of Lead. Dr. He gives this drug in full doses to the exclusion of all other remedies except blood-letting when there is great congestion. As soon as resolution begins he discontinues the drug and convalescence goes on spontaneously. Londerg gave it in forty cases of whom three died. The disease was unilateral in thirty and average duration of the use of the drug six days. There was no recurrence or blue line produced, but diarrhoea in half the cases. The pulse diminished from one hundred or moreuminoes and twenty down to seventy or even forty on fourth day of treatment. In half the cases the carotid pulsation was heard after the first day of treatment, in half cases the symptoms became more intense for one or two days.

Outward application of Cold. Professor Freynhagen of Magdeburg confidently recommends this. He covers the affected
side of the chest of patients with
epistaxis coming out of Cold water,
these are changed every five minutes.
Under this treatment the patients feel
greatly relieved. It caused an early
cessation of the epistaxis and enabled
the patients to return sooner to their
work.
Chloroform inhalation has been used
successfully by Werentzki of
Frankfort. He lost only four and one
third per cent while by other treatment
he lost fifteen per cent. In this cases,
the vapours of fifty drops was allowed
to enter the lungs for ten or fifteen
minutes, and this was repeated every
two, three or four hours. Complete
anæsthesia
was not permitted.

Opposed to the treatment by
antiphlogistics, is the treatment by
restoratives and stimulants. Of the
treatment by restoratives Professor
Benedet
is the chief advocate and his success
by this method has been very eminent. He thus describes his mode of procedure.
"As means of palliating symptoms, and especially pain and dyspnoea, warm
fomentations and poultices I believe to be the best and safest. Chloroform has
been given by Trementzapp and others with good effect. I hold also small
bleedings to the extent of eight or twelve ounces give relief; but in debilitated
persons are dangerous, and in all cases by weakening the strength at a period
when the depressed system is struggling
to regain its equilibrium, to prolong the
Convalescence and favors dangerous
sequelae. Still a small bleeding may
be employed as a palliative with caution
to relieve engorgement of the lungs and
congestion of the right side of the heart.
Although it is very rarely required. It
should be remembered in cases of
double pneumonia, that there is often
great dyspnoea in the attacks of
seventh day, which will generally yield to warm fomentations locally and moderate doses of morphia. As a curative treatment, I am satisfied that the best plan is rest in bed, bland diet, and cold drinks especially good beef tea. From the first, assisted by most minims from four to eight ounces, if the pulse becomes weak, and solid nutrients as soon as they can be taken. The elimination of the evacuation may be further assisted by saline (acetate of ammonia and small doses of tartar emetic, one sixteenth of a grain) and demercurials (citric citron), although nature will accomplish this herself if the strength of the body be maintained. All active, purgatives, contra stimulants, depressants, anodynes and lowering remedies of every description should be avoided. Dr. Lanier as the result of his experience feels certain that bleeding, tartar emetic and mercury do great harm, and
believes the recoveries from this disease much more numerous without them.

Dr. Chamber also wrote in favor of restorative treatment and recommends application of large baths like frictions as warm to increase vitality. Some practitioners while following this restorative treatment to a certain extent, use also large doses of alcoholic stimulants. This practice was followed by Dr. Todd. Dr. Reclus says that under the use of eighteen to twenty-four ounces of brandy in twenty-four hours, improvement does not extend, enlargement of respiration and heightened respiration increased unfrequented. Inflammatory products are absorbed and free excitation goes on. The pulse is increased and fever last diminished in frequency. Delirium is not excited but prevented and if present may decrease. The tongue may remain
moist and feverishness.

Modern writers with few exceptions agree that blood letting as practiced by the older practitioners would not now be borne even in ancient times in a strong robust patient. That it was not well borne then is proved by the great mortality and long convalescence among the patients of those following it. The patient had not to recover from the disease only, but he had first to recover from the loss of blood, and the weakness produced by this sudden"hine less able to withstand the disease, besides by bleeding, the constituents of the blood are altered in their proportions, the blood corpuscles being withdrawn leaving a comparatively greater amount of watery matter and fibrin, a condition much more favorable for infection. The result of this practice in this climate grown must have been most disastrous. The depressing
effects of large doses of ipecac emetic, must have materially prolonged the convalescence of the robust and have increased the mortality of those less able to withstand them, although apparently to a less extent than blood-letting as shown by the statistics of mortality. A combination of bleeding with ipecac emetic seems to have still lessened the mortality. By Professor Bennet's restorative treatment, the rate of mortality from pneumonia in Edinburgh Infirmary was decreased from one in three of the older patients to one in twelve. The length of disease and convalescence was also considerably shortened. Professor Bennet from the results of this treatment concludes that "a simple primary pneumonia, whether simple or double, if treated by the restorative plan is not a fatal disease. That neither theory of constitution nor change of type in disease explains
the result. As amongst his patients were both healthy vigorous young labourers and weak and broken down emaciated. In many and every case the disease appears to go through its natural progress long as the body is not too much emaciated, and the physician as early as possible supports it by nutrients and restoratives. That this treatment by overstimulation is as badly borne as the antiphlogistic treatment is shown by the statistics of Dr. Dodd's practice the mortality of which was one in three.

That Professor Bennett's mode of treatment is the most successful is proved by the statistics, that it is the most rational is we think shown by the fact of its supporting the strength of the patient while the disease is running its course and by keeping him in the most favourable condition to withstand its effects, and to regain
a much shorter period of convalescence
than if his body, already weakened by
the disease had been reduced and
depressed by the Antiphlogistic
method. In the few cases that have
come under his care, the writer has
followed the restorative plan of
treatment and from the results, can
add his testimony to its success.

Washington
M.R. Curr