INAUGURAL DISSERTATION,
ON
Pulmonicitas

SUBMITTED TO THE
PRESIDENT, BOARD OF TRUSTEES, AND MEDICAL FACULTY
OF THE
University of Nashville,
FOR THE DEGREE OF
DOCTOR OF MEDICINE.

BY
O.W. Steward

OF

March 12th, 1857

CHARLES W. SMITH,
BOOKSELLER AND STATIONER,
NASHVILLE, TENN.
To the Professors,
in the Medical Department,
of the University of Nashville.
As a mark of esteem for their thorough and efficient course of instruction, this thesis is respectfully dedicated
by
The Author.
Pneumonia or Pneumonitis,
Inflammation of the parenchyma or substance of the lung, is known by the common name of pneumonia. There are several varieties of this disease. The simplest form, "when any lobe of the lungs may be diseased," is generally designated pneumonia. In children and in persons having traumatic fever, a variety occurs in which the inflammation is more circumscribed or isolated, than in the simple form, and is therefore denominated lobular pneumonia. When both lungs are attacked at the same time, it is called double pneumonia. When the pleura is involved to some extent, it is termed pleuro-pneumonia. When a typhoid condition exists, it is called typhoid.
pneumonia, and when accompanied by a biliary derangement, it is styled bilious pneumonia.

Causes.

A predisposition seems to be established by an occurrence of the disease, and it is said that when once attacked, a person is rendered more liable to have the same disease again, from slight exciting causes. Another predisposing cause is the presence of tubercles in the lungs. Among the exciting causes, may be mentioned, any depressing influence upon the system, exposure to cold or moist atmosphere, the inhalation of irritant substances, excessive speaking in the open air. The bite of poisonous animals or reptiles.
Wounds of the lungs, and blows on the chest, frequently occur during the absence of bronchitis, phthisis, hooping cough, small pox, scarlatina, measles, and sometimes during a traumatic fever following a serious injury or surgical operation. Men are often attacked by the disease, than women, probably from the fact, that they are more exposed to the exciting causes.

Anatomical character.

The effects of inflammation of the lungs are divided into three stages. That are more or less distinct and called first, engorgement or congestion. Second, reepulization and third, purulent infiltra-
tion or suppuration.

In the stage of engorgement or congestion,
the lung is of a deep red or dark color. It is heavier and not so elastic as the healthy lung. Capillaries less under pressure, and on cutting into its substance, a bloody, frothy serous exudate, which is sometimes darker than at others. The substance of the lung is of various shades, from a red to a dark brown red, it is more compact, dense and softer than in health, and the air cells are partially obstructed by exudation.

The air mingling with the serum, forms little globules. As the disease progresses into the second stage, the lung becomes more dense and solid, the liquid and air diminishes, the lung is also softer, and may be readily torn up with the fingers, on cutting into its substance, it presents an appearance, resembling.
the liver, and is then said to be hepaticized. The fluid, when pressed out, is less in quantity, and not so frothy as in the congestive stage, owing to the fact that the air vesicles are filled with a fibrous exudation, that excludes the air.

In the third stage or that of suppuration, the lung becomes lighter in color, and more solid. And when cut, presents a grayish or yellowish appearance, and stains a yellowish fluid; it is very soft. And the least pressure will form a cavity which, becoming immediately filled with pus, is often mistaken for an abscess, a termination that seldom occurs in pneumonia. As the pus is injected, the solid portion of the lung is greatly diminished. The right lung is often attatched than
the left. And it was once supposed that
the upper lobe was more subject to inflam-
mation than the middle or lower lobes.
But I believe it is now conceded that
any lobe is equally liable with the others.
Inflammation of the upper lobe is more
fatal than that of the others.
In lobular pneumonia, the same stages
occur as in the simple or lobar form,
and the same appearances, except that the
diseased portions are more circumscribed
and are surrounded by healthy tissue.
In typhoid pneumonia, the blood seems
not to yield that plastic exudation that
fills up the air cells in the later stages
in the other forms of the disease, and
if the inflammation continues, imperfect
suppuration or gangrenous tubercles,
the lung is fully gorged with blood and quite
do soft, like the spleen, and internal splenification.

**Symptoms.**

Symptoms of general septicemia frequently
precede those of a more decided character,
when, probably, a fever is ushered in by a chill
or only slight chilliness. Sometimes the chill
or fever is the first warning to the patient.
The fever may continue a day or so before
any symptoms of disease of the lungs
manifest themselves, and again, symptoms
characteristic of pneumonia, may precede
the fever. As an oppression about the
chest, dyspnoea, pain, more or less acute,
in the region of the inflammation,
cough, and pain over the eye, the pain
The pain in the chest "which is most apt
to be complained of more than any thing"
else, is sometimes entirely wanting, though, comparatively seldom. Then again, it may be very severe, especially should the pleura be implicated to any extent, it is always increased upon a full inspiration and causes the patient to drip inflating his lungs fully, but on the contrary, he will catch his breath by short and quick jerks as it were, if the dyspnoea should be great. The patient lies, with his head and shoulders elevated, and every avenue to his lungs distended for the purpose of preventing an apparent suffocation, and his appearance will be rather wild and uneasy, when the dyspnoea is violent, and the breathing quick. The patient is in danger. When the upper lobe is diseased, these symptoms are greater.
in secretion, than when the lower lobes are inflamed. The cough is most generally present during the disease, and is sometimes frequent and painful. Though not always, it is generally dry in the commencement, and usually in a day or so, is accompanied by a viscid mucous expectoration, more or less stained with blood, that gives it a rusty color, and is said to be characteristic of the disease. As the inflammation advances, the sputum becomes darker and more tenacious. Often, so much so, that when put into a vessel it cannot be expelled out, but adheres to the bottom of the vessel in a solid mass. It sometimes becomes purulent in advanced and bad cases, again it may be thinner and of
the color of plums juice.

The fever carries from a slight flush of excitement to the highest febrile action. The skin is generally dry and parched when there is much fever. The fever may intermit regularly in some cases, as in miasmatic fevers, it may be dystemic, in form or typhoid, and sometimes with heat or bilious. The patient is very apt to complain of his head, delirium occasional occurs and is very unfavorable. The pulse may be full, strong and moderately quirl, or small, compressible and very frequent. The thirst is generally very urgent, and the appetite in many cases entirely wanting. The patient most generally lies on his back, inclined perhaps a little to one side or the other.
The most important and certain signs in this disease, are those elicited by percussion and auscultation. By percussion, we find that the healthy resonance is slightly diminished in the first stage; but this is not much relied on. Auscultation gives more reliable evidence, which, in the first stage, is a crepitation, almost "and, in many instances," entirely obscuring the vesicular murmur of a healthy lung. This crepitation is readily heard by placing the ear against the chest and over the diseased portion, or by means of the stethoscope, which would be required when we auscultated the chest of a female. The crepitation is heard only during inspiration, and to render it sufficiently
Audible, request the patient to fully inflate the lungs. To render this examination perfect, the patient should be placed in a sitting position, with the head and shoulders thrown back, and every part of the chest examined in front, under the arms and behind. Being careful, however, not to expose the patient too much, and it would be prudent to regulate the temperature of the apartment so that there would be no danger of chilling your patient. In conducting this examination, "and it is very important," it would be better to get on your knees so that the head might be as erect as possible, for if you bend your head down too much, blood will accumulate in all of the organs and.
so Confuse the hearing as to prevent you from obtaining a correct idea of the condition of the lungs.

The expectoration is caused by the bursting of innumerable little globules of air contained in the exudated fluid in the air cells. It is the characteristic sign of pneumonia, and points out the first stage of the disease. A very important point, when we come to the treatment, is the inflammatory process into the second stage, this expectoration gradually ceases and bronchial respiration is established.

Perhaps we may not hear it, especially if there be healthy lung intervening between the ear and bronchi. It will be drowned by the respiratory murmur.
and sometimes no sound will be heard, the bronchi being choked or filled with mucous or exudated matter at some point, preventing the entrance of the air. The bronchial respiration is evidence of hepatization. If, during bronchial respiration, the patient breathe or cough, the sound is conveyed to the ear with great distinctness and seems to come from the chest itself, this is called bronchophony and may be regarded as a very important sign. The evidences of percussion in this stage are more striking than in the first. As there will be greater dullness and sometimes complete flattens immediately over the affected part, which will gradually diminish to the healthy resonance.
As we approach and go beyond the circumference of the diseased region, in the third stage, there is no characteristic sign produced by percussion or auscultation, more than what is mentioned in the second degree, if the patient should be restored to health. These signs will pass through the same changes in the reverse order. The pain in the chest will give way, the fever subside, and perspiration will stand out upon the skin. The breathing will be freer and the cough and expectoration clear.

Though, sometimes, "and I think in thin cases that have been freely bled, the cough will remain for a considerable length of time, with a
tightness perhaps across the chest.

These symptoms and signs of pneumonia are somewhat modified as the disease occurs in different persons and under different circumstances. Thus in lobular pneumonia, the inflammation occurring in circumscribed patches with healthy tissue intervening, perhaps the signs give us by percussion and Auscultation will not be so distinct or conclusive. And also in biliary pneumonia, which complication may be incurred when the lower right lobe is affected, the liver may participate, and then the pneumonia sometimes occurs during the existence of an intermittent or remittent fever. The signs of Auscultation and percussion are materially the same, with the addition
of those peculiar to a biliary disturbance as head ache. Yellowishness of the skin and conjunctivae, also a yellow coating on the tongue and a yellowish red urine.

In typhoid pneumonia, many of the signs and symptoms are the same as in the other varieties, added to a low form of fever, evidencing extreme debility and depression. The mind is obtuse, and a low, muttering delirium may supervene. The pulse is usually small, compressible and frequent. There is dullness on percussion and the respiratory murmur is replaced by a mucous rattle or sound. The expectorated matter is drier, less tenacious, more abundant, and is sometimes pure blood. A diarrhea is also very frequently present.
Diagnosis.

Pneumonia may be confused with several diseases of the chest. The diagnostic signs between it and bronchitis are.

The sputa, which, in pneumonia, after the first day or so, becomes rusty colored, "and this is considered by some as pathognomonic of pneumonia," does not have this appearance in bronchitis, but is colorless or slightly changed.

The most sign is the Crepitation, a noise which occurs in pneumonia and not in bronchitis. These two symptoms or signs taken in connection with other signs of pneumonia are sufficient to distinguish the two diseases.

It is much more difficult, sometimes to distinguish it from
Fluoride. There is in fluoric acid:

- Great dullness on percussion, though it is located in the most firm and glossy, while in pneumonia, it will be found immediately over the esophageal sole, but if the fluoric acid should be so great as to fill up the cavity of the pleura, and to compress the lungs as to bush all resorptive sounds, both vesicular and bronchial. Then there would be a rounding of the chest. The intercostal spaces would be filled out, and dullness on percussion, with a slight undulating motion of the fluid coming against the hand. If it is in the right pleura, the liver will be pushed down and felt below the ribs, and the mediastinum.
pushed to the left, so that the whole sternum will sound dull. If the left pleura be affected and the effusion be great as in the last, the heart will be pushed to the right and its pulsations, distinctly felt under and to the right of the sternum.

In hepatization of the lung there is no displacement except perhaps a slight fulness on the affected side.

Prognosis.

The prognosis in a simple, uncomplicated pneumonia is always favorable. But when the disease occurs in old, debilitated and emaciated persons and also in quite young children, and also when it is complicated with other diseases, or when the whole of one lung is affected, or the upper lobes of both lungs, in all these cases the prognosis is
not favorable. Rather the reverse. In typhoid cases and when dépitie is too far. When colligivative discharges take place, in persons predisposed to or affected with tuberculous deposits, the prognosis is unfavorable. In any case where the dyspnoea becomes urgent, and the patient cannot lie down without a dreadful feeling of impending suffocation, the expectoration becoming thin and dark, the pulse frequent and weak, with probably the addition of a diaphoresis, the prognosis is exceedingly unfavorable. These are all bad symptoms.

Treatment.

In no disease, perhaps, are the opinions of physicians as widely different as in
the treatment of this disease, and first, there are many who believe in and practice copious and repeated depletion by venesection, in the first stage. They say "and the books condone this," that as the lungs are overcharged with blood, while the heart is throwing it in faster and faster, and that the respiratory organ "the most delicate of the body" is about to be overwhelmed by a high degree of inflammation, that no remedy is so potent, and beneficial in its effects in this state of things, as bleeding, and when the plethora, a full and strong pulse indicates it, bleed copiously from two large orifices, one in each arm, so as to produce a rapid and decided impression, and bleed till all
pain and oppression vanish; unless the condition of the pulse otherwise indicate. And if these symptoms return, bleed again, and repeat the remedy until the patient is out of danger. An inflammation has commenced in an organ that above all other diseases, admits the practice of dry depletion, and to break up the second stage, to break up the inflammation in its incipient. You must use the lancet firmly and boldly. Then again, they will tell you that if the second stage has formed, before you see the case, and depletion has not been mortise to, why a moderate bleeding will helper wonderfully, and will certainly do no harm. In my practice, I occasionally met with an elderly and intelligent physician, who
having acquired a considerable reputation
and particularly in his treatment of
pneumonia, always bled, at the circum-
stances, be what they may, he lost many
cases "and all physicians are bound to
lose some," but his patients invariably
died with disease of the heart. One
instance he related to me. It was a
negress, on his own plantation, about
18 years of age, stout, full habits and
generally very healthy. She was attacked
by feverly with pneumonia, and I took,
"say he," one hundred ounces of blood from
her in twenty four hours, and still she
died, but died with disease of the heart.
He could always cure the pneumonia but
could not prevent the disease of the heart
in about three fourths of his cases. Perhaps
many of his cases of heart disease were assimilations, for we learn that in
an anaemicated condition "And I should plan all his patients under that head."
"Anomalous sounds will be heard in the veins and heart. This in the heart we
will hear the "fruit de souffle" without any special disease, and thus perhaps he may be
led into a fatal error.

We find on bleeding a patient for pneumonitis, that the blood coagulates
readily, and on the top settles the buffy coat. This is concave or cupped in shape,
the fibrin is also increased in this disease. It rises from five \(\text{"its normal quantity"} \) to
even as high as ten times one thousand, in some cases. Perhaps though, it is rare
for it to get this high, the plastic form
of the blood must be very great under these circumstances, and the lungs become glued into a solid mass in a very short time. On the other hand, those who oppose the lancet say that in northern latitudes, where there is more tone in the system, the people are more robust, full habit, and much better able to bear the loss of blood, than in southern. That in the south, generally, there is a want of tone, and of blood, a condition of body that will not admit of depletion. They also say, that to burst and stop an inflammation like pneumonia, by the use of the lancet, requires such a loss of blood, that people in the south generally cannot rally under. Consequently they die from the loss of this vital fluid. or
Or some other malady suggested by this drain, perhaps, disease of the heart, I have noticed that those physicians who relied almost exclusively upon the lancet were infinitely more unsuccessful than those who never used it in any case. Perhaps, though, a median course would be better. Although the majority of pneumonia patients in a southern climate would not admit of depletion, yet perhaps a case might occur occasionally that would require it, and therefore it is best not to be on either extreme, as our prejudices might, perhaps, in one instance, cause the death of a patient.

Local depletion by means of cups over the affected part, as I believe, almost universally practiced, and as the amount
of blood, taken in this way, is small, there can be little or no harm in it, while it frequently gives relief to the part immediately concerned, at least for awhile. The treatment of venesection, generally in the south, use the Veratrum album or tincture of American hemlock, as prepared and recommended by Dr. Norwood of South Carolina. Given according to his directions, that is, eight drops to an adult patient every three hours, increasing every one by one drop, till the symptoms subside, or disappear, has always in my hands, from altogether sufficient to control the action of the heart, reduce the pulse to its natural standard, and I believe, will in connection with other remedies, relieve most cases of pneumonia.
The dose should be varied in different cases, I presume, according to the pulse, as they vary. The amount of blood taken from the arm. The Veratum, is said, also, to act both as an expectorant and diaphoretic, both of which indications are to be fulfilled in pneumonia.

In my practice I generally gave with the Veratum Divida, from 5 to 10 grs. Calomel in boswell's dose followed in proper time by oil, or I gave instead of Calomel, a dose of Cocks's pills, especially to negroes, from the bilious derangement that most generally accompanied all the cases I met with in Red River bottom. In the majority of cases I found Cocks's pills answer better than Calomel alone, as they act on the liver and brought away the accumulation of fecal
matter, but in the adjacent hills, when
bilious pneumonia seldom occurred.
Mercury was scarcely ever used in any
form, and purgative medicines generally
were to be used with caution. There was too
frequently a tendency to diarrhea.
Sarsaparilla has been used very extensively
in pneumonia, and is still used to some
extent. It has been proposed as a substitute
for dilution, and given for this purpose in
various quantities, commencing with a
minute dose and gradually increasing
as the stomach could bear the remedy
without vomiting. The object being to
produce a tolerance of the medicine,
and then continued in large doses
like all symptoms of the disease
were gone. This remedy is very highly
praised by those who used it, never having made use of it in any case, I can say nothing from experience. It is said, though, that it sometimes produces dangerous depression that carries off the patient more rapidly than if the remedy had not been used at all, and this is said to be particular by the case in Children. We have never known the Veratrum Viride to produce such results, and have never heard of a case where it was used in the proper quantities and at the proper intervals. The tincture of American hellebore is known a powerful and dangerous medicine, and must be used with caution.

In connection with the Veratrum Viride, I have been in the habit of prescribing thecamancha in a large quantity of sage or other kinds of tea, which is to be taken.
Mercury is much relied on by some physicians, following claret with doses varying from 2 to 25 grains. "My friend in Arkansas was in the habit of bleeding very freely of shoveling in from 20 to 25 ozs of Calomel." It is frequently combined with opium or Dover's powder, especially in the late stages, and when hepatisation has taken or is about to take place, fistula, "and all the books say so" it would be the best course to carry mercury to its specific effect on the system. There is little evidence was present to indicate this condition, its advantages are probably in the fact that it increases the action of the abdomen and thus the emodinemic fibrinous matter may be removed from the lungs. The opium or
Dover powder exercises a beneficial influence, by relieving pain and inducing sleep. Two very important indications. I think the patient should be made as comfortable as possible, taking care, however, not to push these remedies too far. Blisters are frequently used and are considered very efficacious. In the first stages, after the febrile condition is materially subdued, I frequently apply a mustard plaster, not for the purpose of producing a blister, but merely as a counter. In later stages, this remedy is carried further. In pneumonia of an intermittent type, quinine is used to break up the periodicity of the fever, and Dr. Wood says the stimulant effect of the quinine is overbalanced by the advantage it produces by breaking up the fever. In pneumonia, when the fever is of a
low form as in the typhoid variety, and frequently in the later stages of the other forms of the disease especially when the patient is much reduced and weak.

From opiates, venesection or other causes our only resource is in tonics and stimulants, and sometimes they have to be used freely and in large quantities to keep our patient out of the grave. Then mostly used are: Wine, brandy; the most Todd is perhaps very good. Ammonia, quinine, or.

Appendix.

Since arriving at head quarters, I have been informed by many intelligent and successful physicians, that the Veratrum Viride would do it cause fatal depression, reduces the pulse down to 30 beats in the minute, if you use
gin it in large enough doses and sufficiently long and that it will remain there or decline until it finally stops. And more than that. They say that it is not good policy to fetter into new remedies at once instantly or so. I will just add that this remedy was in use in Antiquity when I commenced the practice of medicine, and during the beneficial results of it in pneumonia. I very naturally, used it also, and I will repeat, without boasting, that in every case, in which I saw it, the happiest results were evident, and they recovered from the disease. In no case, have I witnessed the fatal depression mentioned by its opponents. Still I am willing to admit, that there are administrations cases in which its effects might prove deleterious, either from an idiosyncrasy or improperly.
administered with any of these active
remedies, I think we cannot be too
cautious as to the subjecting the time
of administration or dose,